American Association of Colleges of Nursing

WHITE PAPER

Re-envisioning the Clinical Education of Advanced Practice Registered Nurses

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SECTION I: Background

Recently, there has been a significant increase in awareness regarding the potential contributions that advanced practice registered nurses (APRNs) could make to a reformed healthcare system. In particular, a great deal of attention has been directed to recommendations contained in the Institute of Medicine's (IOM) 2011 *The Future of Nursing* report that APRNs be allowed to practice to "the full extent of their education and training" (p. 29). APRNs are poised to deliver care to the additional 30 million individuals who are anticipated to receive health insurance under the Affordable Care Act. Nationwide, APRN education programs are experiencing a number of challenges, including increased demand for APRN education and the national faculty shortage. APRN programs are also particularly challenged to be able to provide adequate numbers and quality of clinical training sites and preceptors. Challenges experienced by each of the four APRN roles – certified nurse midwife (CNM), certified registered nurse anesthetist (CRNA), clinical nurse specialist (CNS), and nurse practitioner (NP) – are both similar and unique.

The current methods of providing educational preparation and clinical training for APRNs present numerous challenges. The model for providing clinical education for all four roles primarily has been a one-to-one preceptor-student model, which is largely unchanged from the original APRN clinical training models developed over 45 years ago, designed to serve a much more limited population of students. With the growing demand for preceptors and clinical sites and the changes in the healthcare environment, this apprenticeship approach may not be sustainable as resources become increasingly scarce. Competition for clinical sites and preceptors is becoming more intense between schools within and outside of the profession, both regionally and for distance programs.

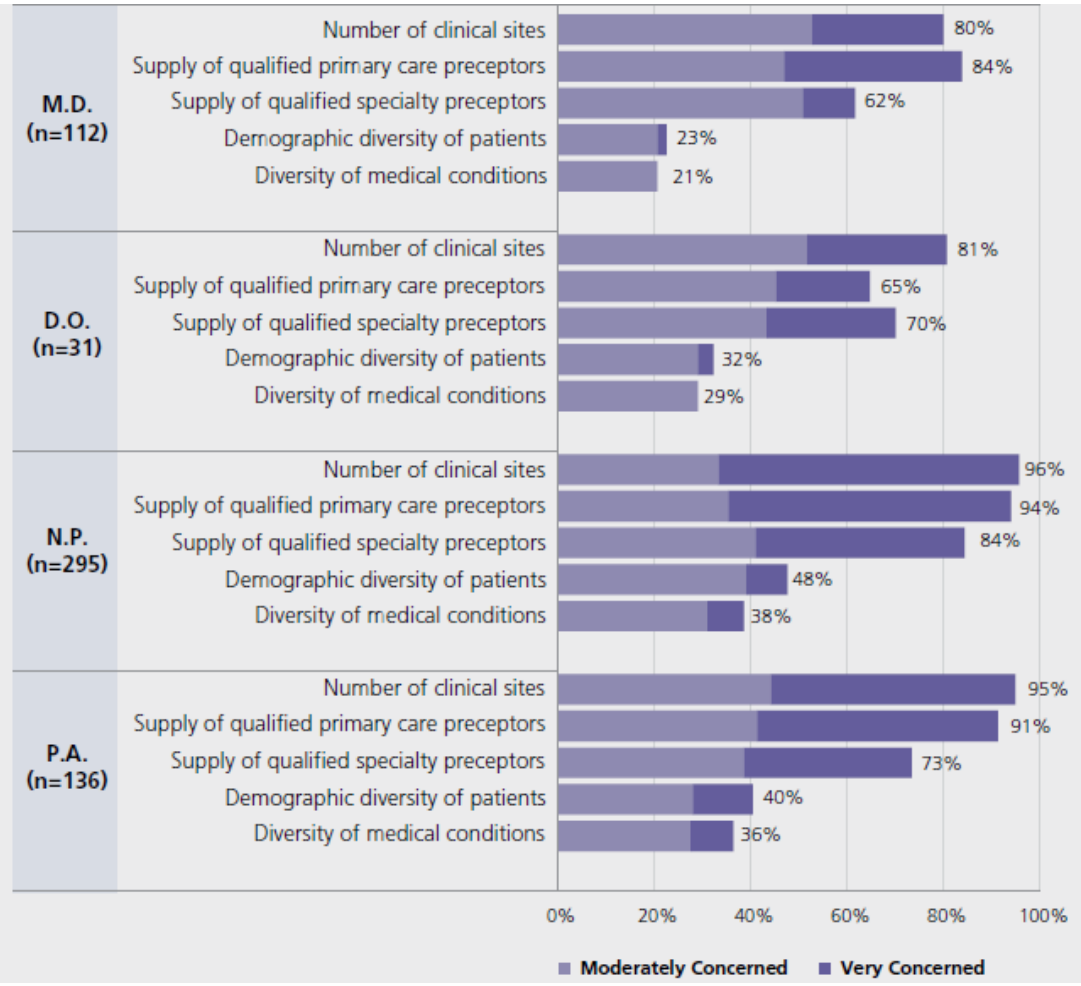
APRN students enter clinical training experiences across the curriculum with varied skill levels. Variability among APRN programs, particularly for nurse practitioners and clinical nurse specialists, exists in the clinical competencies expected at various points throughout the curriculum, varied expectations for student performance across programs, and evaluation processes and tools. This variability may hamper efforts to expand the clinical training opportunities for students.

Increasingly, new models of care are emerging with a new emphasis on interprofessional practice and education. Regulatory issues for in-state and distance-learning students are mounting. Schools are facing increasingly complex and lengthy processes for addressing administrative requirements, e.g. affiliation agreements and student clearances. A shortage of doctorally prepared advanced practice faculty to provide supervision and guidance for students is also a

growing issue. All of these challenges require educational programs to explore new and alternative models for providing clinical training for the next generation of APRNs.

Competition among programs for both primary care and specialty sites and preceptors continues to grow. The 2013 *Multi-Discipline Clerkship/Clinical Training Site Survey*—jointly conducted by the American Association of Colleges of Nursing (AACN), Association of American Colleges of Osteopathic Medicine (AACOM), Association of American Medical Colleges (AAMC), and Physician Assistant Education Association (PAEA)—assessed the concerns and factors influencing NP, physician assistant (PA), allopathic physician (MD) and osteopathic physician (DO) clinical training. A majority of respondents from all four disciplines expressed concern regarding the number of sites as well as the quality and availability of preceptors. Concerns regarding the adequacy of clinical sites and qualified preceptors have grown over the last two years, partially fueled by the growth in the number of programs and enrollments. Over 60% of schools with NP programs expressed extreme concern over the limited number of clinical sites, and 59% over an inadequate supply of qualified primary care preceptors (see Figure 1).

Figure 1. Percent of Respondents "Moderately Concerned" and "Very Concerned" Regarding the Adequacy of Clinical Opportunities, by Profession (*Multidiscipline Clinical/Training Clerkship Survey*, 2014)



Although this survey specifically focused on NP programs, this growing concern regarding the availability of clinical sites and preceptors is not limited to NP programs. Faculty members representing all four APRN roles have raised similar concerns. The annual AACN survey on enrollment and graduations consistently identifies insufficient clinical sites and preceptors as reasons for not accepting larger numbers of qualified applications for both master's and doctoral programs.

Enrollments and Demand for Clinical Sites Continue to Grow

To meet the growing demand for healthcare services, there has been a 17% increase in the number of APRN programs offered in the United States over the past five years (Fang, Tracy, & Bednash, 2010; Fang, Li, Arietti, & Bednash, 2014). Currently, nationwide, 420 institutions offer one or more master's or DNP entry-level APRN programs. The number of schools offering programs for each of the four APRN roles and student enrollment are shown in Figure 2. Over the past five years, the number of master's level APRN programs has increased by 8%, and 130 new post-baccalaureate APRN DNP programs have been developed with a 60% increase in enrollment in APRN entry-level programs. The increase in enrollments in entry-level NP programs alone was 81% over the past five years.

Figure 2. APRN Enrollment (Fall 2013)[1, 2]

Program	Schools Offering the Program	Enrollment
Master's NP	368	56,496
Master's CNS	148	2,020
Master's Nurse-Midwifery	40	1,377
Master's Nurse Anesthesia	67	3,532
Post Baccalaureate DNP NP	92	5,064
Post Baccalaureate DNP CNS	18	187
Post Baccalaureate DNP Nurse-Midwifery	7	72
Post Baccalaureate DNP Nurse Anesthesia	13	556
Any Master's or Post Baccalaureate DNP APRN	420 (405 Respondent Schools)	69,304

[1] From Tables 24 and 37, Fang, Li, Arietti, & Bednash, (2014)
[2] Numbers of schools offering the programs include the schools whose programs were closed since last year.

Competition among Nursing Programs for Clinical Sites

In many locations, there are multiple APRN educational programs within a relatively small geographic area. In some regions, these programs share clinical resources. Having greater access to in-network clinical affiliates also advantages health systems with multiple clinical sites within a network. In some instances, neighboring APRN educational programs have created consortia to share academic, clinical, and financial resources (Kost, 2010).

Competition for clinical sites and preceptors in some parts of the country is a growing problem. This challenge has raised concerns that schools may someday need to offer financial compensation to preceptors or clinical sites in order to secure these resources. However, in the 2014 *Multi-Discipline Clerkship/ Clinical Training Site Survey*, only 4% of nursing schools with an NP program reported paying a fee per student at one or more sites, and only 6% indicated they paid a fee for personnel time at clinical sites. The number, although small, was slightly higher in the Northeast than the rest of the country. While this practice is not widespread, it presents a perceived challenge for universities and schools with restrictions on paying for clinical training sites or without adequate resources to compete for preceptors in this manner, particularly because other health professional schools (allopathic medicine 16%, osteopathic medicine 71%, and physician assistant 20%) may be offering compensation to secure clinical placements at one or more community-based clinical sites. In addition, a majority of nursing schools with NP programs (58%) reported growing pressure to provide financial compensation incentives, particularly in order to recruit new sites for NP training. While similar data for the other three APRN roles are not available, anecdotal reports support similar pressures being placed on these programs as well.

Alternative incentives provided by NP programs to preceptors at community-based sites included public recognition (51%), library access (43%), educational opportunities for preceptors (35%), adjunct faculty status at the college or university (34%), continuing education opportunities (34%), and other faculty development opportunities (28%), including preceptor hour documentation for re-certification (Multi-Discipline Clerkship/Clinical Training Site Survey, 2014) . Another emerging phenomenon is that private companies are promising to find and arrange clinical sites and preceptors for students in exchange for payment. The challenge lies in determining how to best encourage preceptors to invest in future APRNs.

Regulatory Issues Challenge Schools to Establish Clinical Training Sites

Regulatory issues present unique challenges on a state-by-state basis. Outdated state and federal regulations, institutional policies, and misperceptions about provider preparation often prevent APRNs from practicing to the full extent of their education, skills, and expertise (Fitzgerald, 2012). Regulations by many state boards of nursing and federal reimbursement agencies limit the APRN scope of practice by requiring physician oversight of APRN practice. To date, there is no evidence that physician supervision provides any added value to APRN patient outcomes. (Hansen-Turton, 2009; Safriet, 1991, 2011; Newhouse, 2011).

Variable regulatory requirements by state boards of nursing and higher education boards can limit schools' ability to place students in out of state clinical rotations without completing lengthy and expensive approval processes. This is especially true for distance education programs. Also, state regulations change frequently and make institutional compliance difficult. Schools also report growing competition for clinical placements from students attending out-of-state distance programs. Approximately 50% of state boards of nursing regulate graduate nursing education programs; however, a majority of state boards have indicated they expect to be notified when out-of-state graduate students are placed in a clinical training site within the state (NCSBN, August 2013).

In addition, clinical sites are placing greater compliance-documentation demands on students prior to allowing them to participate in clinical rotations, including background checks, drug screens, HIPAA training, OSHA training, verification of health insurance, immunizations and blood titers, and, in some cases, workers' compensation coverage. Schools are struggling to increase liability-insurance limits and negotiate a variety of political and legislative activities to address physician supervision mandates and licensing requirements for APRN faculty. Additional regulatory challenges that require new approaches include student restrictions on accessing electronic health records (EHR), sites with exclusivity contracts for student placements, and the complexity of processes for establishing affiliation agreements between schools and practice sites, as well as the increased pressure to maintain or increase productivity for preceptors. For NP programs, security and legal issues (81%) (e.g., affiliation agreements, immunizations, and background checks); student access to the EHR (75%); and other administrative elements (74%, e.g., scheduling, coordination, files and forms) were cited as the top three factors influencing the ability to develop new clinical training sites (Multi-Discipline Clerkship/Clinical Training Site Survey, 2014).

In an effort to minimize risks to patients and the organization, some sites are restricting student access to certain clinical environments and increasing liability coverage costs to APRN students. This practice can be a barrier to obtaining clinical rotations at rural and underserved sites, as these institutions may be reluctant to incur the additional costs of increasing liability insurance limits to match that of the education institution. Barriers such as these have significant impact on APRN clinical education as rural and underserved clinical sites typically allow APRNs to practice to their full scope of practice and provide excellent opportunities for professional and clinical skill development.

Changing Expectations for Preparing Future APRNs Present Challenges and New Strategies

The ongoing faculty shortage in schools of nursing also impacts the clinical training of APRN students. A sufficient pool of doctorally prepared faculty with clinical expertise is a prerequisite for programs to be able to grow the number of APRNs available nationwide to address primary care and other healthcare shortages. While these faculty are primarily responsible for educating future APRNs, pervasive faculty shortages continue to limit efforts to increase enrollments (Fang, Li, Arietti, & Bednash, 2014). To meet the IOM's recommendation of ensuring that nurses practice to the full extent of their education and license, educational opportunities with a sound pedagogical foundation and availability of sufficient numbers of professional role models are essential. Expert nursing faculty are required to plan and implement learning opportunities focused on developing decision-making and problem-solving skills. Increasing numbers of clinical sites and preceptors are requiring that faculty validate students' competencies prior to entering clinical training and establish a uniform clinical evaluation tool. Program faculty are ultimately responsible for the assessment of students; however, standardized assessment tools for faculty and preceptor use would clarify expectations and evaluation for students, faculty, and preceptors. Early work has begun at several schools to develop clinical assessment tools (personal communications Stone, S., September 2014; Clark, M., October 2013). In addition, other healthcare professions' education programs, specifically medicine and physical therapy, are far ahead of nursing in developing standardized competencies for trainees and competency-based

clinical assessments. These efforts provide opportunities for nursing to collaborate and build on the work that has been done.

Use of Technology and Simulation in Nursing Education Growing

In 2004, the IOM suggested that the healthcare workforce was ill-prepared to meet the needs of current and future patients and challenged health educators to expand the use of technology to drive educational innovation. In its work to maintain high quality standards, AACN— through a national, consensus-based process—has delineated the expected outcomes for all graduates of advanced practice nursing programs. The competencies outlined in the 2006 *Essentials of Doctoral Education for Advanced Nursing Practice* include system assessment and transformation, information management, quality improvement processes and outcome analysis, and organizational leadership, in addition to direct care, diagnostic, and management competencies. APRN programs are further challenged to provide learning experiences that prepare graduates with the full continuum of these expected competencies.

The increasing challenges to identify a sufficient number of high quality clinical experiences have spurred a growing interest in the use of simulation, spanning the entire continuum of complexity, from low-fidelity task training to the use of standardized patients and high-fidelity simulation scenarios, both as teaching strategies and evaluation mechanisms. The National Council of State Boards of Nursing (NCSBN) predicts the future of clinical education in pre-licensure nursing will include the increased use of simulation (Kardong-Edgren, Willhaus, Bennett, Hayden, 2012). The NCSBN recognizes that simulation includes screen-based/PC-based simulation, virtual patients, partial task trainers, human patient simulators, standardized patients, and integrated models (Li, 2008). It seems reasonable to suggest that a similar trend can be envisioned for APRN education.

There currently is a widespread movement to use simulation of all types (low and high fidelity) in both undergraduate and graduate nursing education. For example, low-fidelity simulation experiences utilize less similar supplies and equipment than those used in practice and include case studies or paper-and-pencil activities. High fidelity simulation includes the use of standardized patients and human patient simulators. Increased demand for simulation is driven by decreasing numbers of clinical practice sites, a national nurse educator shortage, the need for student opportunities to develop decision-making and problem-solving skills, gaps between academia and practice, and the search for a new model of education, which includes technology, realism, and diagnostic reasoning skills (Kelly, & Jeffries, 2012). Development of effective and innovative higher education models will require a paradigm shift from focusing on teaching to focusing on learning.

Definitive research findings on the efficacy of high-fidelity simulation to facilitate learning are emerging. In a systematic review of 109 research articles with varying quality, the use of high-fidelity patient simulation was shown to facilitate learning under certain conditions such as providing feedback, repetitive practice, curriculum integration, multiple learning strategies, simulators that capture a wide variety of clinical conditions, a range of task difficulty, controlled environments where learners can make mistakes without consequences, individualized learning, defined outcomes, and simulator validity (Issenberg et al., 2005). In an update on simulation

published in 2011, a review of over 600 studies enrolling over 35,000 medical student participants attempted to answer the question: To what extent are simulation technologies for training healthcare professionals associated with improved outcomes in comparison with no intervention? In these comparisons, both virtual patients and technology-enhanced simulation were consistently associated with large, statistically significant benefits in the areas of knowledge, skills (instructor ratings, computer scores or minor complications in a test setting), and behaviors (similar to skills, but in the context of actual patient care; Cook, 2010, 2011). The NCSBN National Simulation Study (Hayden et al, 2014) that focused on pre-licensure programs demonstrated that the use of up to 50% simulation in lieu of traditional clinical experiences showed no significant impact on NCLEX pass rates, clinical competency, and nursing knowledge.

When evaluating the direct effects of simulation-based clinical experiences on patient outcomes such as major complications, increased mortality, or length of stay, the benefits are smaller but significant (Zendejas, 2013). Clearly, simulation-based education is effective at least when compared to no instruction at all. However, correlations between receiving frequent feedback, repetition, cognitive interactivity, clinical variation, individualized training, and longer training time also significantly improve skill outcomes (Cook, 2013). Cook concluded that, although simulation effectiveness is now established, value judgments require consideration of costs, including price of the simulator, faculty time, training expenses, facility fees, and opportunity costs. To date, few studies have enumerated these costs and none has offered a definitive position. There are examples illustrating that low-fidelity, low-cost training modules can lead to outcomes equal to much more expensive simulators (Tosterud, 2013; Tan, 2012; Finan, 2011; Levett-Jones, 20122; Friedman, 2009; Hoadley, 2009). Current curriculum standards limit or restrict the increased use of simulation in APRN education programs, particularly for NP and CNS programs (NTF, 2012; NACNS, 2011). However, the nurse anesthesia doctoral program standards currently being piloted require the use of simulation to prepare students for delivery of safe and effective patient care (COA, 2014).

Strategies and Opportunities for Enhancing and Expanding Clinical Experiences

In addition to the increased use of technology, education programs and practice settings have developed or are experimenting with innovative approaches and strategies to address the growing demand for APRN clinical training opportunities. The following is a sampling of the work underway:

- One approach has been the establishment of regional academic consortia to assign preceptors via a centralized database and matching process. Pooling and coordination of resources have been suggested to lessen competition for clinical sites and preceptors and maximize the use of all sites and preceptors within a region.
- Faculty-practice partnerships have emerged that allow a preceptor to supervise multiple students from one or more disciplines or roles and increase student access to clinical sites.
- A similar strategy has been to develop interprofessional or team-based practica experiences, which expand clinical opportunities but also facilitate the acquisition of interprofessional and role specific competencies.

- Increased use of standardized patients and other forms of simulation training are providing expanded clinical training opportunities, and emerging evidence is showing that simulation methodologies can be used to enhance or expand the preparation of students prior to entering clinical sites.

Other schools are developing new clinical education models and placement of clinical experiences by front-loading didactic content followed by clinical coursework at the end of the curriculum; developing end-of-program immersion or practice intensive experiences when students have attained increased clinical expertise/knowledge; and placing students within one healthcare system for their entire clinical experience, which not only provides a longitudinal experience, but also allows the student to develop a relationship with and understanding of one system.

Specific Clinical Education Challenges and Perspectives for the Four APRN Roles

Certified Nurse-Midwives

The Accreditation Commission for Midwifery Education (ACME) requires that all midwifery education programs incorporate the following competencies into their curricula: the American College of Nurse-Midwives (ACNM) *Standards for Practice of Midwifery* and the ACNM *Core Competencies for Midwifery Practice* (2011), and if a doctoral program, the ACNM *Competencies for the Practice Doctorate in Midwifery*. These documents address the expected educational outcomes of midwifery education. Each program is expected to provide evidence that graduates have achieved these outcomes. These competencies are examined and revised every five years. Accreditation of CNM and CM programs is accomplished by the Accreditation Commission for Midwifery Education through a peer review accreditation process. Graduates of accredited programs are eligible to take the national certification exam administered by the American Midwifery Certification Board (AMCB).

Nurse-midwifery clinical education is based on the concept of competency-based education. Therefore, no required number of clinical hours or experiences is included in the ACME accreditation standards. Education programs are charged with adequately describing to ACME how they assure that graduates attain the basic core competencies. Although most educational programs have adopted policies which do require a number of hours in a one-to-one preceptor site and many require a certain number of different experiences, this policy does leave the door open to exploring the idea of replacing some direct one-to-one preceptor experiences with simulations or other learning approaches. Early research with midwifery students has shown that simulations are an effective way to teach students how to manage rarely encountered emergency situations such as shoulder dystocia methods (Lathrop, Winningham, & VandeVusse, 2007). Competency-based education also allows programs the flexibility to adopt policies that award students credit for previous experiences through successful demonstration of a skill/competency.

Nurse-midwifery educators face a number of challenges in achieving the goal to graduate well-prepared midwives. Ideally, educators believe that students should have exposure to both in-hospital and out-of hospital experiences such as free-standing birthing centers or home birth practices. This is difficult due to the low number of out-of-hospital birthing sites. Another

challenge is the competition with medical schools for clinical sites. Obstetrics/gynecology sites were identified as the second most difficult sites to find by allopathic (49%) and osteopathic (74%) schools (Multi-Discipline Clerkship/Clinical Training Site Survey, 2014). In health science centers, the hospital frequently will not sign an agreement to have nurse-midwifery students as they want to reserve the experiences for medical students or residents. They often cite the fact that the hospital is reimbursed through Graduate Medical Education (GME) funds for these types of students but not for nursing students.

A third challenge is the gap in theory-based learning (midwifery philosophy of care) and the reality of non-evidence based clinical practices frequently seen in clinical sites. This can cause confusion and sound mentoring is required to help the student learn concepts such as therapeutic presence and non-intervention in the absence of complications (Jordan & Farley, 2008). This discrepancy, however, could present an opportunity to develop simulations and case scenarios to solidify these concepts.

Certified Registered Nurse Anesthetists

The nurse anesthesia (NA) clinical education model is unlike that of other APRNs in that students are assigned to clinical sites rather than clinical preceptors. Nurse anesthesia clinical education experiences are obtained at a variety of clinical sites rather than a single institution. While on rotation to a particular clinical site, nurse anesthesia students typically work with different preceptors from day to day. The ratio of nurse anesthesia student(s) to CRNA or MD clinical preceptor oversight is 1:1 or 2:1. Novice students typically work 1:1 with a clinical preceptor while more experienced or senior students may be supervised using a 2:1 ratio. During the course of a nurse anesthesia education program, students may work with hundreds of clinical preceptors. Certain clinical site rotations focus on specific specialty requirements, such as cardiovascular, pediatrics, obstetrics, or pain management, while rotations to other sites provide a more general exposure to patients from different populations who present for a variety of surgical or interventional procedures.

The Council on Accreditation of Nurse Anesthesia Educational Programs (COA) sets the standards for nurse anesthesia education and mandates required clinical experiences, including specialty experiences focusing on cardiovascular, pediatric, obstetrics, and pain management. Currently, a minimum 550 clinical cases in specifically defined categories are required to meet nurse anesthesia program clinical education requirements. However, current nurse anesthesia students far exceed this requirement by averaging over 800 cases and more than 2,500 total clinical hours. In 2015, the minimum case requirement for all nurse anesthesia programs will increase to 600 cases (COA, 2014). There is no option for part-time study according to COA program accreditation requirements.

Other changes in nurse anesthesia education may impact clinical education opportunities for students. The COA has mandated that by January 2022, all nurse anesthesia education programs will transition to the doctoral degree as the entry to practice (COA, 2012). Nurse anesthesia doctoral programs will encompass a minimum of 36 months and include a requirement for anesthesia practicum clinical hours as well as additional hours needed to meet the clinical practicum requirement for completion of a capstone or terminal project. The number of

educational credits required for CRNA students to complete the new doctoral program requirements will increase as will tuition costs.

In academic health centers that house both nurse anesthesia and anesthesiology programs, sharing clinical site experiences and locations is commonplace. However, priority in choosing clinical experiences is many times given to the anesthesiology resident. As a result, nurse anesthesia students must attend rotations outside of their primary health system to access specialty clinical experiences. Competition for clinical sites also exists with anesthesiologist assistant programs and may increase as anesthesiologist assistant programs increase.

While clinical rotation experiences outside of the primary institution have many advantages, including the opportunity to provide care to a highly diverse patient population in a variety of settings, nurse anesthesia students must incur the additional expense associated with travel, housing, and the recurring stress of rotating to different clinical sites. The quality of clinical preceptor expertise and degree of student oversight is also varied and more difficult to monitor, which creates a greater challenge for evaluating the student's clinical performance.

Financial reimbursement of APRN clinical preceptors varies by specialty and by institution. Nurse anesthesia educational programs do not typically reimburse clinical preceptors. The costs associated with financial reimbursement of a large number of nurse anesthesia clinical preceptors are cost prohibitive. The problem with creating financial incentives is that there are no guarantees that they can be maintained. The concern is that—with the economic difficulties of recent years and the push to create a more cost-efficient and effective healthcare workforce—incentivizing preceptors is likely not an institutional priority, and therefore, subject to withdrawal of funding where money for other projects is needed. This could create a negative situation between the clinical preceptor and the educational program and may result in loss of clinical education experiences.

Clinical Nurse Specialist

The National Association of Clinical Nurse Specialists (NACNS) used a national consensus-based process to develop current standards for CNS education. The 2011 NACNS *Criteria for the Evaluation of Clinical Nurse Specialist Master's, Practice Doctorate, and Post-Graduate Certificate Educational Programs* provides guidance for CNS curriculum development. Under the requirements of the Consensus Model for APRN Regulation (2008), CNSs can be certified by the American Nurses Credentialing Center (ANCC) or the American Association of Critical-Care Nurses (AACN). States are in varying stages of adopting APRN Consensus Model regulatory requirements for CNSs. National, consensus-based competencies for the adult-gerontology CNS were released by AACN and NACNS in 2010 and provide role and population specific guidelines on assessment and evaluation (AACN, 2010). Competencies for the women's health CNS also have been completed recently (AWOHNN & NACNS, 2014).

CNS program faculties are experiencing challenges similar to those of other APRN faculties. However, there also are unique and emerging concerns primarily related to the inconsistencies in state CNS scope of practice and licensure requirements and implementation of curricular standards. The APRN Consensus Model and the Criteria for CNS Education Programs require a

minimum of 500 hours of precepted clinical experiences in the role and specific population. Preparation in the population must include experiences across the continuum of care from wellness to acuity. This relatively new and expanded expectation for CNS curricula has challenged faculty to identify preceptors who work across the continuum of care and in a variety of healthcare settings. Anecdotal information suggests that numbers of available CNS preceptors, credentialed as CNSs, working in non-acute care settings with a focus on wellness are limited. This limitation will need to be addressed by programs to conform to the new certification requirements. Another clinical training concern specific to CNS preparation relates to specialization within the education program. NACNS issued a position paper reinforcing the need to prepare CNS graduates in a specialty area of practice in addition to the broader role and population focus (NACNS, 2013). Specialty preparation requires additional clinical training hours and experiences. As with other APRN roles, the debate over the appropriate number of clinical hours needed to prepare graduates for practice in the CNS role and population in addition to a specialty area of practice continues. Also, the impact on student time and program costs created by these additional clinical hours continues to be discussed, particularly for those earning a master's degree. The NACNS criteria for CNS programs provides increased consistency for CNS education; however, these criteria pose challenges for programs due to limited availability of faculty credentialed as CNSs, particularly those with doctorates. These changes and challenges require additional or different precepting and clinical training arrangements.

Nurse Practitioners

In addition to the education standards established for all APRN programs, standards specific to NP education are delineated in the *Criteria for Quality Nurse Practitioner Education Programs* (National Task Force on Quality Nurse Practitioner, 2012). The *Criteria*, developed and revised every 3-5 years through a national consensus process, facilitated by AACN and the National Organization of Nurse Practitioner Faculties (NONPF), include all national NP organizations that set standards for or oversee NP education. The *Criteria* delineate expectations for student-to-preceptor ratios, faculty requirements, student evaluations, and clinical hour requirements. A minimum of 500 hours are required in direct patient care experiences, which may not include simulation or lab experiences. A higher number of clinical hours is expected for students in programs preparing them to provide care to multiple ages or populations. National consensus-based competencies for NPs as well as population-specific competencies define the expected outcomes for NP graduates. Under the APRN Consensus Model, all NP graduates must be certified in the role and at least one population. NP certification for entry into practice is offered by five certification organizations. (See Figure 3 for a list of the organizations and certifications offered for all four of the APRN roles.)

The certifications listed in Figure 3 are only those that are consistent with the Consensus Model for APRN Regulation: Licensure, Accreditation, Certification and Education (APRN Consensus Work Group and National Council of State Boards of Nursing APRN Advisory Committee 2008). APRN certifying bodies either have or are in the process of phasing out certification examinations that do not meet the new regulatory criteria. Individuals currently certified and whose exams are being phased out will be able to renew the credential only through alternative methods which primarily include continuing education and practice requirements. In addition, the APRN certifying organizations listed and others offer many APRN specialty certifications

that are not intended for credentialing individuals for entry into practice or licensure (e.g. Advanced Oncology NP and CNS, Advanced Certified Hospice and Palliative Care Nurse, and Emergency NP.)

Figure 3. Certifications offered for APRN roles

APRN Role	Certifying Organization	Certifications Offered
Certified Nurse-Midwife	American Midwifery Certification Board (AMCB)	Certified Nurse-Midwife (CNM)
Certified Registered Nurse Anesthetist	National Board of Certification and Recertification for Nurse Anesthetists (NBCRNA)	Certified Registered Nurse Anesthetist (CRNA)
Clinical Nurse Specialist	American Association of Critical-Care Nurses (AACN) Certification Corporation	Clinical Nurse Specialist (wellness through acute care): Adult-Gerontology (ACCNS-AG) Clinical Nurse Specialist (wellness through acute care): Pediatric (ACCNS-P) Clinical Nurse Specialist (wellness through acute care): Neonatal (ACCNS-N)
	American Nurses Credentialing Center (ANCC)	Adult-Gerontology CNS (AGCNS-BC) Pediatric CNS (PCNS-BS) (to be retired 12/2015)
Nurse Practitioner	American Academy of Nurse Practitioners Certification Program (AANPCP)	Adult-Gerontology Primary Care Nurse Practitioner (NP-C) Family Nurse Practitioner (NP-C)
	American Association of Critical-Care Nurses (AACN) Certification Corporation	Acute Care Nurse Practitioner: Adult-Gerontology (ACNPC-AG)
	American Nurses Credentialing Center (ANCC)	Adult-Gerontology Acute Care NP (AGACNP-BC)

		Adult-Gerontology Primary Care NP (AGPCNP-BC) Family NP (FNP-BC) Pediatric Primary Care NP (PPCNP-BC) Psychiatric-Mental Health NP (across the lifespan) (PMHNP-BC)
	National Certification Corporation (NCC)	Neonatal NP (NNP-BC) Women's Health Care Nurse Practitioner (WHNP-BC)
	Pediatric Nursing Certification Board (PNCB)	Pediatric Nurse Practitioner Primary Care (CPNP-PC) Pediatric Nurse Practitioner Acute Care (CPNP-AC)

As described previously, NP program numbers and student enrollment have increased exponentially over the past 10 years. This increase has produced tremendous pressure on a majority of programs and faculty to identify and maintain clinical sites (Multi-Discipline Clerkship/Clinical Training Site Survey, 2014). A small number of programs are providing financial incentives to sites (6%) or preceptors (4%); however, a majority of programs (58%) report growing pressure to provide financial compensation. The growth in distance education programs also has increased competition not just locally but across the country for clinical sites and preceptors.

The transition to the Doctor of Nursing Practice (DNP) for NP education also has created the need to expand the number of practice hours, which includes not only direct patient care experiences, but also learning practice opportunities in systems, organization, and policy processes frequently referred to as indirect care experiences. The AACN *Essentials of Doctoral Education for Advanced Nursing Practice* (2006) sets a minimum of 1,000 practice hours as the expectation for all DNP Programs, including all APRN programs. Although this represents a significant increase over the 500 clinical hours required in master's programs, past studies have demonstrated that a majority of NP programs have exceeded the 500 minimum clinical hours for many years (AACN & NONPF, 2002).

Due to the changing expectations for practice experiences within the NP education program, a national dialogue is occurring regarding the appropriateness and effectiveness in using simulation experiences to enhance or substitute for the traditional clinical experiences. Also, a

dialogue around the use of competency-based assessments in place of or in addition to minimum required clinical hours is emerging.

Summary

In summary, the four APRN roles share many common challenges in delivering clinical training. Competition for clinical sites and preceptors is becoming more intense between schools both within and outside of the profession. These same challenges exist for programs within the same geographic region as well as for distance programs. The growth in number of APRN programs as well as the increase in enrollments has created additional challenges for developing clinical opportunities. An inadequate supply of clinical sites and preceptors is a common theme for all four APRN roles. Also, regulatory restrictions on scope of practice in some states create challenges for identifying role models/preceptors that practice to the full scope of the APRN role. State and local regulatory requirements for in-state and distance-learning programs are mounting and present frequently changing requirements and barriers for schools. Preceptor expectations of APRN students entering their clinical training sites vary as well as evaluation criteria and assessment tools used by APRN programs. A shortage of doctorally prepared advanced practice faculty to provide supervision and guidance for APRN students is another ongoing issue. The current state of APRN clinical training and challenges described in this section, require innovative thinking as well as new strategies and models to continue to prepare the growing number of APRNs needed to address the current and evolving healthcare needs.

SECTION II: The Role of Academic–Practice Collaborative Relationships in Developing and Providing Quality Clinical Training Opportunities

The growing challenges described in Section I to establishing and maintaining quality clinical experiences for APRN students require concerted collaborative efforts from all stakeholders to synchronize, rather than compete, for increasingly scarce resources. One way to achieve synchrony is through the establishment of academic-practice partnerships between schools of nursing and healthcare institutions.

Intra-Professional Academic Practice Partnerships

The AACN and American Organization of Nurse Executives (AONE) Task Force on Academic-Practice Partnerships provided guiding principles that are meant to influence the development of these types of partnerships (AACN & AONE, 2012). Among these principles is the suggestion that there be a formalized relationship between the executive leadership within both institutions to clearly articulate a mutual vision and goals for the partnership as well as practice mutual trust and respect within that relationship. The partnership is characterized by synergistic relationships between partner institutions, and permeates all levels of the collaborating institutions.

The academic-practice partnership is characterized by an environment of mutual respect through regular engagement and interaction in both settings through joint committees, continuing education, and research forums. Shared knowledge also is a hallmark of these partnerships and can be achieved through a variety of means and mechanisms based on local circumstances and resources. The partnership should commit to providing support and resources necessary to

optimize each nursing student's potential to achieve the highest level of his/her scope of practice. Other areas to be addressed by the academic-practice collaborative relationship include the development of an evidence-based transition program for new graduates that is sustainable and cost-effective, creation of learning experiences that prepare students for practice within an evolving healthcare environment, and mutually establish an infrastructure to collect and analyze data on the current and future needs of the RN workforce (AACN & AONE, 2012).

New models of clinical teaching are emerging, which require significant input from both academia and practice. One model for baccalaureate nursing students now recommended by a number of organizations, including the National Council of State Boards of Nursing, is the Dedicated Education Unit (DEU). This model of clinical nursing education integrates quality and safety competencies into the teaching and learning experiences at the unit level (Kafel, 2008). DEUs combine learning concepts with the realities of nursing practice (Edgecombe et al., 1999). Although most of the literature on DEUs focuses on undergraduate clinical education, this model is being tested at the University of Pennsylvania through the Graduate Nursing Education Demonstration Project and could be considered for APRN clinical training as well. The potential for this model to have a widespread impact on clinical education is intriguing as well as challenging within the context of healthcare reform. For example, with the establishment of Accountable Care Organizations (ACOs), opportunities for well-trained and qualified APRNs should grow and competition may increase. Shared models of clinical education provide opportunities for training and recruiting future graduates. These models also open the possibilities for collaborations between ACOs or other integrated care models and academia for developing long-standing, comprehensive clinical rotations for NP or other APRN students in a variety of practice settings across the continuum of care.

To better prepare students for clinical learning experiences, the AAMC is working to develop pre-clinical expectations for medical students known as Entrustable Professional Activities (EPAs). EPAs are unique, observable, measurable integrated units of professional work that can be used as a basis for workplace assessment and transition into practice. The AAMC developed guiding principles in drafting the EPA document, which identified patient safety as the primary motivation. A secondary goal is to enhance confidence of new residents, program directors, and patients with respect to the residents' abilities to perform activities without direct supervision upon entry to the residency (Association of American Medical Colleges, 2013). The EPAs also define milestones that allow competency-based rather than time-based advancement through the transition from student to professional practice. These milestones provide a model of expected behaviors upon entrance to formal clinical training and facilitate faculty and student assessment in relation to the competencies. Similar competency expectations and milestones for APRN clinical training, developed with input from both academia and practice, would potentially strengthen the academic-practice partnership and address many of the clinical training challenges currently being faced.

Interprofessional Partnerships

Over a decade ago, the IOM's (2001) *Crossing the Quality Care Chasm* declared that the lack of collaboration in patient care was perpetuating wasteful, unsupported, and unsafe practices. The IOM encouraged common language among professionals stating that ". . . clinicians must develop a unifying framework for interpreting all types of decision making" (Greiner & Knebel,

2003, p. 123). Interprofessional partnerships should be considered broadly and beyond the traditional health professions. In today's healthcare environment, collaborations between nursing, engineering, systems analysis, business, finance, theology, and the social sciences, to name just a few, are growing and becoming more imperative in addressing the concerns and gaps that face healthcare delivery.

Interprofessional collaboration can improve care outcomes and processes; conversely, lack of collaboration can have a negative impact (Zwarenstein, Goldman, & Reeves, 2009). A deliberate approach to training healthcare providers is strongly supported by the World Health Organization (WHO, 2010) and the six healthcare associations represented in the Interprofessional Education Collaborative (IPEC, 2011). According to the WHO (2010, p. 10), "interprofessional education occurs when students from two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes." The Liaison Committee on Medical Education (LCME), the accrediting body for 134 U.S. and 17 Canadian medical degree programs, has established a standard requirement for medical schools to provide curricular and practical interprofessional education (IPE) no later than the 2014-2015 academic year to maintain accreditation (Liaison Committee on Medical Education, 2013). Standards for medical school core curricula also require the program to prepare medical students to function collaboratively on healthcare teams that include health professionals from other disciplines as they provide coordinated services to patients.

Nursing education accreditation standards currently do not explicitly mandate IPE experiences. The AACN *Essentials* for baccalaureate, master's and DNP programs, however, do include expected outcomes for interprofessional practice. These *Essentials* are required by the Commission on Collegiate Nursing Education (CCNE) for accreditation of nursing programs. The Trial Standards for Nurse Anesthesia Programs (COA, 2014) also support IPE. Adding standardized expectations for IPE to program accreditation and IP practice competencies (IPEC, 2011) to APRN certification requirements would propel the implementation of IPE. However, the unique needs of geographic regions (e.g., rural and urban), types of institutions (e.g. Academic Health Centers, small liberal arts schools), and types of programs (e.g. distance, traditional) would need to be considered.

Many of the barriers to implementing IPE are similar to implementing any change in nursing education. Time, support, expertise, and funding are all identified as problematic. Time, especially the coordination of scheduling across professional programs is cited as the greatest barrier to IPE implementation; however, changes in provider knowledge and patient care are the most important outcomes of health professional training programs (Malik et al., 2012). Gradual or step-wise implementation of IPE in nursing and other health professional education would allow schools to develop collaborative relationships with other programs/schools, jointly design quality IPE experiences that meet the needs of all participating professions, provide faculty development, create faculty practices that role model inter-professional collaboration and team-based care, and evaluate the outcomes of IPE on health professionals' practice and patient outcomes. One first step might be mentored IP student projects implemented during a clinical immersion. Providing an IPE course in the early phases of the curriculum and expanding upon the collaborative activities as students' progress through the curriculum have been identified as other viable starts to IPE implementation (Blue, Mitcham, Smith, Raymond & Greenberg, 2010).

Academic-Practice Partnerships to Prepare Graduates to Care for Vulnerable Populations

APRN students are expected to develop competencies related to care delivery for vulnerable populations. Development of academic-practice relationships with safety net providers, such as Federally Qualified Health Centers (FQHCs), nurse-managed health centers, and community health clinics can enhance the capacity for clinical training focused on hard-to-reach, vulnerable, and medically underserved populations. Other partnership arrangements that provide clinical learning opportunities in rural areas include hiring agreements with local APRNs who live in the students' home-communities and provide supervision for didactic and clinical learning experiences.

Telehealth is another model for providing both IPE and clinical learning experiences in more remote or rural settings, but requires a close academic-practice relationship. Programs and providers that would benefit from interactions with physicians or other specialty providers, telementoring via telehealth technology, such as managing complex patients using a multidisciplinary team approach has been shown to improve patient outcomes (Arora et al., 2011). Coordinating IPE opportunities for preceptors and students in disparate sites can be achieved with minimal cost to the academic institutions or rural providers. Telementoring is supporting the preceptor and student remotely. Students explore ideas, qualify experiences, and interact with faculty members through internet or telephone connections. This open-access dialogue supports students, preceptor and provides feedback to academia. This interaction may continue beyond student-preceptor relationships. Academic partnerships with preceptors can foster clinical innovation, continuing education, and enhancing community partnerships. Through the use of remote mentorship, academia can also continue to support new graduates in the role of clinician, mentor, and alumnus. This ongoing, supportive relationship may improve retention of APRNs within their community and recruit future preceptors. Telementoring projects are being replicated throughout the US and the world by supporting collaborative learning experiences that provide support, accredited education, clinical teaching opportunities, and mentorships.

Academic-Practice Partnerships to Support APRN Clinical Education

APRN clinical education is entering a new era where linkage between academia and practice is essential. The education of APRNs for all four roles has evolved over many decades. Currently, APRN educators and practitioners are faced with providing health care to increasingly diverse, aging, and vulnerable populations while trying to educate a growing number of practitioners to meet the needs of a changing healthcare system. Also, with the increased use of distance education and learning technologies, new challenges for APRN clinical education are emerging.

In addition to meeting the broad-based academic-practice partnership principles described above and the need to develop interprofessional partnerships that support IP learning experiences, specific characteristics and requirements describe the effective academic-practice partnership to support APRN clinical education. As with all partnerships, the partnership is characterized by synergistic relationships between partner institutions, and permeates all levels of the collaborating institutions. The relationship needs to be established at the highest levels of leadership and extend down to the point of care. Clinical staff and faculty need to be involved in the process of relationship building from the beginning.

Academic and practice partners need to collaborate to co-design clinical education opportunities for APRNs that build on the entire curriculum. Academic faculty should collaborate with practice partners, including preceptors, directors, and chief nurse executives, to develop curricula, clinical experiences, preceptor orientation, and program evaluation. The goal of this collaboration is to provide rich clinical learning while utilizing resources efficiently and ensuring optimal patient outcomes. One goal of an effective academic-practice partnership is ensuring that students are ready to begin clinical training to maximize learning and ensure safety of care delivery. One strategy to achieve this goal would be to identify minimum clinical competencies, developed and recognized by both faculty and preceptors, which students must demonstrate prior to beginning clinical rotations.

Practice partnerships for all types, sizes and locations of nursing institutions are critically important in accessing clinical training opportunities. Creating partnerships between schools of nursing and a variety of traditional and less-traditional healthcare delivery sites creates an efficacious alliance. In these partnerships, academic and practice stakeholders share in the development of program outcomes and in the design of the learning opportunities. Faculty members participating in healthcare service, management, and research establish bonds between academia and regional or local healthcare providers. Establishment of formal joint faculty–healthcare industry appointments also serve to clarify responsibilities to students from both the academic and practice perspectives. Mutual academic and practice benefits and incentives—such as adjunct or joint faculty appointments, access to library and other resources, and ongoing education opportunities—are critical for supporting and promoting ongoing effective partnerships.

The AACN and University HealthSystem Consortium (UHC) identified strategies to expand or develop new clinical learning experiences through faculty-practice partnerships (AACN, 2003), including to:

- Expand faculty capacity by sharing clinical faculty and/or funding additional faculty positions.
- Design clinical learning experiences that accommodate increased numbers of students and provide better use of clinical resources (e.g., patients, preceptors, and physical spaces).

- Evaluate ways to increase access to educational opportunities through creative scheduling and coordinated use of clinical sites (e.g., through geographic consortia).
- Establish linkages and share expertise between schools of nursing and healthcare practice settings, including clinical and research expertise.

There are multiple benefits to having faculty present in the clinical environment or readily accessible via technology. Faculty can serve as a liaison between preceptors and students. Faculty can serve as role models or mentors to preceptors and provide educational opportunities for clinical sites by providing education sessions, update information on best practices, and clarify latest research findings. Faculty also are excellent at networking and can connect preceptors in the area or regionally. Likewise, faculty maintain current practice expertise and competencies, attain an understanding of the evolving healthcare environment and establish or extend professional networks, including interprofessional networks.

For the APRN clinical academic-practice partnership to be truly collaborative, those involved must agree on expectations for faculty, student, and preceptor roles and responsibilities. On the academic side, nurse educators must identify the expected outcomes for the clinical experience, pre-clinical preparation of the student, oversight of student assessment, and evaluation of the clinical experience. For the practice side, preceptors must have the necessary experience and knowledge to provide student oversight, sufficient resources, and access to appropriate patients and experiences to meet the learning objectives for the experience. Clinical staff at the practice partner institution should receive comprehensive training or orientation and ongoing support for the clinical preceptor role.

To be successful, clearly defined expectations must be in place and agreed to by both sides. Specifically, this requires clear communication with the site and identified preceptor(s) prior to placing a student. A detailed written agreement that defines expectations on both sides plus a pre-clinical site visit, either face-to-face or virtual, where the expectations are reviewed in detail is needed. The written agreement should be reviewed by the faculty at the academic institution as well as by the preceptor and the student so that everyone understands the expectations. The practice institution must participate fully in the clinical training, including creating and scheduling clinical rotations, as well as in ongoing process evaluations and evaluations of the trainees.

Co-designed preceptor orientation would support and benefit APRN clinical education. One format that is being used by APRN organizations and individual programs includes easily accessible on-line modules that also may provide optional continuing education credits. The module content should include:

- Performance evaluation
- Measuring and describing student performance
- Utilizing evaluative data to track performance and patterns of behavior
- Providing feedback, including both positive encouragement and remediation
- Using scaffolding techniques to build on practice skills over time
- Resources such as published standards of care, course texts, course syllabi, and faculty information.
- Use of technology and communication strategies such as software and online platforms for educators and preceptors to remain connected and engaged with one another and with students throughout the clinical rotation and to monitor ongoing student progress.

Summary

A broad range of partnerships between academic institutions and community organizations and providers can create mutual benefits and provide additional learning experiences for APRN students, such as introduction to new care delivery models and settings, service learning opportunities in chronic care, health promotion and wellness services; interprofessional learning opportunities; and experiences with diverse and underserved populations. Academic-practice partnerships are essential for the development of quality, mutually beneficial clinical learning opportunities.

Providing academic credit for domestic and international missions can create learning opportunities to increase student understanding of global social conditions and service to underserved and disadvantaged populations internationally, as well as provide cultural immersion experiences. Demonstration projects highlighting new models of clinical teaching and learning, such as the implementation of DEUs, EPAs, and telementoring could address some of the challenges being faced in APRN education.

SECTION III: Competency-Based Education and Assessment in APRN Education

Recently, the higher education literature has included numerous discussions regarding competency-based education and assessment in a variety of disciplines and more specifically in the health professions (Carraccio, 2002, 2013). There has been considerable discussion around and support for the need to reduce dependence on more traditional measures, including seat time or credit hours as metrics of student achievement to the identification of observable, measurable competencies as a basis for both teaching and assessment of learning.

Nursing, including APRN education, has considered the use of competency-based education for over three decades. Various professional organizations have identified education competencies or expected outcomes that have provided a foundation for both curricular development and individual student assessment for each of the four APRN roles. For example, the American College of Nurse-Midwives first developed the *Core Competencies in Nurse-Midwifery* in 1978 and the document has undergone six revisions over time (ACNM, 2011). The Association of Faculties of Pediatric Nurse Practitioners first published the *Philosophy, Conceptual Model, Terminal Competencies for the Education of Pediatric Nurses* in 1982. The National Organization of Nurse Practitioner Faculties (NONPF) produced the *Domains and Core Competencies for Nurse Practitioner Practice* beginning in 1990 and has regularly updated and revised these competencies over the ensuing years. In April 2011, NONPF released the most current, nationally validated set of core competencies for nurse practitioners (NONPF, 2011). In 2012, NONPF amended the NP Core Competencies to build upon previous work to identify knowledge and skills essential to DNP competencies (NONPF, 2012). The National Association of Clinical Nurse Specialists (NACNS) published the *Statement on Clinical Nurse Specialist (CNS) Practice and Education* in 1998 with subsequent revision in 2004, which includes CNS competencies and outcomes (NACNS, 1998, 2004). Core CNS practice doctorate competencies were developed in 2009, and Adult-Gerontology CNS competencies followed in 2010. The American Association of Nurse Anesthetists (AANA) first published a *Scope of Practice* statement in 1980 as part of guidelines for the practice of certified registered nurse anesthetists (AANA, 2013). AANA has revised and retitled the document over the years and most recently (2013) has provided revisions to the *Scope of Nurse Anesthesia Practice* for entry into nurse anesthesia practice (AANA, 2013).

Advanced practice programs accredited through the Commission on Collegiate Nursing Education (CCNE) or through the Accreditation Commission for Education in Nursing (ACEN) put forth standards and criteria that programs must meet to receive formal accreditation status, including the expectation that programs identify the nationally recognized competencies and standards used by the program to develop curricula.

In 1996, the *AACN Essentials of Master's Education* delineated the first national, consensus-based competencies for all master's nursing education programs, including specific competencies for all APRNs. The APRN competencies, now known as the APRN Core, were divided into three areas: Advanced Health/Physical Assessment, Advanced Physiology/Pathophysiology, and Advanced Pharmacology. These APRN core competencies are also included in the AACN *Essentials of Doctoral Education for Advanced Nursing Practice* (2006) and are cited as a requirement for all APRN Education in the *Consensus Model for APRN Regulation* (2008).

Despite this long history of expressed commitment to competency-based education, there has been no agreed-to definition of competency so that the competencies that have been developed do not represent the same level of specificity and measurability, and therefore may limit communication and common understanding across APRN roles as well as among other health professionals. In addition, most APRN programs have developed assessment tools, but currently there are no assessment tools that are nationally recognized for use by any of the four APRN roles.

As described in Section I, nurse midwifery and nurse anesthesia have established required numbers or types of experiences and procedures. The current NP and CNS curricular standards as well as the certifying organizations for NPs and CNSs rely on a required number of clinical hours in combination with satisfactory completion of specific coursework to verify eligibility for the national certification examinations required for licensure to practice in all but four states.

Recently, there has been an emerging national discussion in nursing, as in other disciplines, regarding the usefulness of relying predominately on satisfying a set number of clinical hours to meet graduation and certification requirements. A recent study by Hallas et al. (2012) examined the long-held standard of a minimum clinical hour requirement for graduation compared to evaluating clinical competencies. Competencies were assessed through clinical evaluation materials from faculty, preceptors, and student self-evaluation, program outcomes, and the analysis of electronic student logs. The study was unable to provide evidence that the clinical hour requirement was an effective proxy for the NONPF (2006) core competencies. Clinical hours did relate to the ability to perform specific skills and identify expected diagnoses. However, exposure to less common diagnoses such as cardiac or orthopedic problems was unlikely to occur within the minimum clinical hour experiences. In the most recent revision of the *Criteria for Evaluation of Nurse Practitioner Programs*, the National Task Force (NTF) addressed competency-based education but also identified the need for further study and definition of the metrics necessary to assess achievement of competencies before moving forward:

> The NTF recognizes that as NP programs move to improved outcome assessment methods the greater emphasis will be on attainment of competencies rather than minimum hours. The NTF will monitor the progress of this in NP education and will readdress the issue in the next review and updating of the *Criteria for Evaluation of Nurse Practitioner Programs*." (NTF, 2012; pg.2)

The Council on Accreditation (COA) of Nurse Anesthesia Educational Programs (2013) requires that formative and summative evaluations of each student ascertain student achievement and verify competence. Additionally, students must demonstrate the ability to meet selected clinical

practice criteria. Performance criteria are partnered with a minimum number of clinical experiences to ensure that sufficient practice time has been experienced by the student. New standards now also establish a minimum number of practice hours.

The American College of Nurse-Midwives (ACNM) requires that nurse-midwifery students satisfy the ACNM *Standards for the Practice of Midwifery*, which addresses expected outcomes or competencies. Each program is expected to develop its own method of documenting that students have achieved these core competencies.

A competency framework for APRN practice appears to be desirable. It must be noted, however, that – to date – APRN professional organizations are moving in unique trajectories that are exclusive and unique to each particular role. Prior to the work of this task force or since the establishment of the APRN Core in 1996 , there have not been collective discussions about a "common" set of competencies applicable to any and all APRNs or required of all APRN graduates as one component of national certification examination eligibility or for APRN program accreditation. The Consensus Model provides a consistent definition of an APRN noting that in addition to other criteria, an APRN is a nurse "who has acquired advanced clinical knowledge and skills preparing him/her to provide direct care to patients, as well as a component of indirect care; however, the defining factor for all APRNs is that a significant component of the education and practice focuses on direct care of individuals" (APRN Consensus Work Group and the NCSBN APRN Advisory Committee, 2008, p. 7). The Consensus Model requires a broad-based APRN education that includes advanced physiology/pathophysiology, health assessment, and pharmacology. Expected student outcomes for each of these three areas are delineated in the master's and DNP *Essentials* and are identified as the APRN Core. However, mechanisms for assessing these broad-based competencies have not been developed. To date, APRN professional and credentialing organizations have focused on developing role-specific competencies for each population. Further the many published lists of competencies for each of these roles vary widely in both scope and specificity, from extensive lists of psychomotor skills to broad statements of achievement that are neither observable nor measurable. This confusion is likely related to the lack of a common understanding of the term competency. The task force proposes that APRN education adopt a common definition of the terms competence and competency. Perhaps the most broadly recognized definitions of these terms in the interprofessional literature are those proposed by Frank, Snell and colleagues (2010), who define *competence* as:

> The array of abilities across multiple domains or aspects of…performance in a certain context. Statements about competence require descriptive qualifiers to define the relevant abilities, context, and stages of training. Competence is multi-dimensional and dynamic. It changes with time, experience, and setting. (p. 641)

Competency is defined as:

> An observable ability of a health professional, integrating multiple components such as knowledge, skills, values, and attitudes. Since competencies are observable, they can be measured and assessed to ensure their acquisition. Competencies can be assembled like building blocks to facilitate progressive development. (p. 641)

It is important to note that while APRN organizations appear to be continuing in divergent directions with a focus on increasingly specialized competencies, health professions education across disciplines appears to be moving toward the identification of common competencies in direct patient care and that are common across professions (Frenk et. al, 2010; Interprofessional Education Collaborative, 2011; Schmitt, et al., 2011). An excellent example of this process is the *Core Competencies for Interprofessional Collaborative Practice* (IPEC, 2011). Educational programs across a variety of health professions are integrating achievement of these competencies into progression standards for students. If it is possible to identify observable, measurable competencies across disparate health professions, it seems reasonable to assume that there are common competencies that exist across the four APRN roles, and further, that there are standardized methods by which achievement of these competencies could be assessed.

Not all faculty and practitioners, however, are eager to embrace competency as the solution to demonstrating a person's ability to practice according to the standards of practice. Criticism of the use of competencies for evaluating a student raises the issue of minimum standards, mediocrity rather than excellence, a focus on tasks and standardization rather than creativity, versatility, and academic abilities (Brawer, 2009; Gardner et al., 2007). Similarly, there is reluctance among some faculty to relinquish reliance upon a minimum number of experiences or hours.

Competency-based Education and Assessment in Other Health Professional Education

Across many of the health professions, core competencies have emerged as a mechanism for ensuring quality and safe practice. Physical therapy (PT) began to explore, develop, and refine evaluation tools that educators and clinical providers could use to measure the competency of PT students throughout the program from novice to entry-level practitioner more than 20 years ago. The resulting American Physical Therapy Association (APTA) Clinical Performance Instrument (CPI) has been thoroughly studied for its psychometric properties and is currently used by schools across the country (Roach et al., 2002, 2012). PT students are evaluated under three major domains: professional practice, patient management, and practice management. Behaviors associated with these categories are shown in Figure 4.

The Association of American Medical Colleges (AAMC) developed a common taxonomy of competency domains collectively called EPAs that may be applicable for other healthcare professions, including nursing (Englander et al., 2013). This framework provides for a shared language that may assist in promoting the understanding necessary for effective collaborative practice. Figure 5 further describes medicine's core competencies referenced above and also includes physical therapy and nursing. The models described in the table do not address those competencies that are unique to the specialty but rather are more generic to all aspects of health and healthcare delivery that can easily be shared across disciplines.

A current work effort of the Accreditation Council for Graduate Medical Education (ACGME), known as *Milestones*, involves a partnership effort between ACGME and specialty medical organizations, for semi-annual evaluation of medical residents and for accreditation reporting to ACGME. Milestones efforts include progressive evaluation opportunities in dermatology, pediatrics, and internal medicine.

Figure 4. Clinical Performance Criteria for Physical Therapy Students

Professional Practice	Patient Management	Practice Management
1. Safety 2. Professional Behavior 3. Accountability 4. Communication 5. Cultural Competence	6. Clinical reasoning 7. Screening 8. Examination 9. Evaluation 10. Diagnosis and prognosis 11. Plan of care 12. Procedural interventions 13. Educational interventions 14. Documentation 15. Outcomes assessment	16. Financial Management 17. Directs and supervises personnel 18. Professional development

Current Status of Interprofessional Competency-Based Assessment

Given the contemporary focus on both interprofessional collaboration and competency-based education, it is not surprising that some voices have argued for a common lexicon across health professions. In a widely cited article, Englander et al. (2013) proposed a common taxonomy of competency domains for the health professions. These domains, drawn from the work of the ACGME and AACN are proposed to serve as an organizing framework under which specific competencies could be identified for various health professions. The eight competency domains proposed are: Patient Care, Knowledge for Practice, Practice-Based Learning and Improvement, Interpersonal and Communication Skills, Professionalism, Systems-Based Practice, Interprofessional Collaboration, and Personal and Professional Development.

As an example of the utility of the use of a common taxonomy, Englander et al. used this framework to identify a list of general physician competencies. It seems reasonable to assume that the framework could also serve to aid in the identification of common APRN competencies and perhaps even competencies unique to each of the four APRN roles. This approach would allow competencies to be identified at a common level of specificity and measurability.

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Figure 5. Competency Models

Organization	Models of Activities	Competencies
Association of American Medical Colleges	Core Entrustable Professional Activities for Entering Residency (CEPAER)	• Patient Care • Knowledge for Practice • Practice-Based Learning & Improvement • Interpersonal and Communication Skills • Professionalism • Systems-Based Practice • Interprofessional Collaboration • Personal & Professional Development
American Physical Therapy Association	PT Clinical Performance Instrument	• Professional Practice • Patient Management • Practice Management
Interprofessional Education Collaborative	Core Competencies for Interprofessional Collaborative Practice	• Values/Ethics for Inter-professional Practice • Roles/Responsibilities • Interprofessional Communication • Teams & Teamwork
AACN DNP Essentials	Advanced Nursing Expected Outcomes	• Scientific Underpinnings for Practice • Organizational and Systems Leadership for Quality Improvement and Systems Thinking • Clinical Scholarship and Analytical Methods for EBP • Information Systems/Patient Care Technology for the Improvement and transformation of Health Care • Health Care Policy for Advocacy in Health Care • Interprofessional Collaboration for Improving Patient and Population Health Outcomes • *Clinical Prevention and Populations Health for Improving the Nation's Health* • Advanced Nursing Practice

Questions Regarding Competency-Based Assessment

A systematic and comprehensive approach to competency assessment requires the careful scrutiny of key assumptions underlying both population and role competencies. It is important to consider unique and shared advanced practice role competencies and congruence between population competencies. Competency assessment requires preliminary consideration of the following questions:

Issues Related to Measuring Competency:

- Clinical competence is currently evaluated by faculty, preceptors, and the student (self) within the context of an established range of required supervised clinical hours. If a competency-based performance assessment model is selected, should an established minimum number of practice hours continue to be required or is attainment of measured competency the gold standard?
- How should competency for entry-level APRNs be measured? Educational flexibility is highly valued but should benchmarks in process and timing be established? Carraccio and Englander (2013) noted that competency-based medical education moved slowly until regulatory boards required this type of education. It is likely that nursing education will also require a regulatory-based impetus in some form to stimulate a transition to competency-based education.
- What is the role of simulation in competency assessment? Is there adequate evidence to support the premise that simulation achieves comparable outcomes for assessing APRN competency as traditional one-on-one preceptor and self-evaluation strategies? And if yes, are there differences between competency assessment using different forms of simulation?

APRN Common Competencies

Competencies have been established for each of the four APRN roles and for most populations identified in the APRN Consensus Model. The APRN Core has been universally supported within the model specific to a shared core of pathophysiology, health/physical assessment, and pharmacology. Therefore, it seems reasonable to conclude that there should be consistencies in competencies across all APRN roles; however, the question has been raised whether these consistencies exist for all APRNs or those practicing within a particular population, such adult-gerontology or pediatrics. To date, no cross-walk has been conducted between the four APRN role and individual population competencies. The premise of the APRN Consensus Model is that there is a shared set of competencies and knowledge that should be achieved by any nurse credentialed in advanced practice regardless of region, educational program type, or APRN role. Diverse pathways to achieving these competencies may be needed, influenced by resources, regional characteristics, and program-type.
The ACGME *Milestones*, the AAMC EPAs, and APTA's work related to standardizing core competencies and assessment tools provide an opportunity for nurse educators to consider similar evaluative approaches. Questions to consider include:

- What are the desired shared outcomes of APRN education?

- Is there a unique and important set of common competencies for safe, clinical practice that could be identified and endorsed across APRN roles by national stakeholders? Based on APRN common competencies, could a standardized APRN evaluation tool be developed to provide a common base for practice evaluation, either using simulation or clinical practice experiences?
- Could common APRN competencies provide a basis for developing interprofessional practice experiences and assessments?

SECTION IV: RECOMMENDATIONS

I. Simulation should be used to enhance APRN clinical education and the use of simulation to replace more traditional clinical experiences should be explored.

A**.** Seek funding for five demonstration projects that are designed to study the impact of various methods along the continuum of simulation learning approaches as one component of APRN clinical education and assessment.

B. Funding and other resources should be provided at both the national and local levels for the development and use of simulation for learning and assessment, including funding for a national center of faculty innovation and faculty preparation and certification.

C. A national repository should be created and maintained for reliable/valid APRN simulation education materials.

D. Simulations should be developed and tested for assessment of APRN competencies.

Rationale: There is an increased role for simulation in APRN education. The results of the National Council of State Boards of Nursing National Simulation Study (2014) in pre-licensure nursing education provide substantial evidence that substituting high quality simulation experiences for up to half of traditional clinical hours produces comparable end-of-program educational outcomes in new graduates ready for clinical practice. While these results are encouraging for pre-licensure students, the use of simulation needs to be studied in application to APRN clinical education. The use of simulation to prepare APRN students for entry into clinical training and establishment of APRN competencies could help to alleviate current clinical preceptor and clinical site resource restrictions. The Task Force recommends the development of a national demonstration project(s) designed to build a body of evidence on the efficacy and utility of this approach as well as support for innovations in APRN education.

Timeline: The funding and implementation of five demonstration projects to study the impact of simulation learning as one component of APRN clinical education and student assessment could take several years. A series of smaller, short-term or one year pilot projects could be supported that would build on current work at schools to develop and test various forms of simulation and the learning outcomes and assessment reliability/validity.

Resources required: Funding sources, expert researchers, simulation settings, and expert faculty in simulation education.

II. AACN-AONE principles for academic-practice partnerships should be adopted by all APRN programs.

A. APRN programs, including face-to-face and distance education programs, should implement expectations described in Section II, regarding the development and maintenance of APRN clinical experiences and student oversight.

B. Encourage and support the development of innovative partnerships for APRN clinical education as well as the use of a variety of incentives for practice sites and preceptors, e.g., adjunct faculty status, joint appointments, participation on curricular committees, research support, continuing education credits, academic credit towards graduate degrees.

Rationale: Clinical education and training of APRN students is a joint venture with investment on the part of both the academic setting and the practice partner. Academic and practice leaders should collaborate to co-design new models of clinical education to include new curriculum models, clinical experiences, and program evaluation. The co-design of education and practice models maximizes resource efficiency, productivity, patient outcomes, and provides rich learning experiences for students. Adoption of delineated expectations for both academia and practice will support and clarify faculty and preceptor understanding and implementation of quality student experiences. Joint faculty appointments provide students with access to current and diverse expertise. Also, the use of a variety of preceptor and clinical site incentives should increase the number of available preceptors and enhance the quality of experiences.
Timeline: Dissemination of the TF recommendations regarding an effective academic-practice partnership and expectations that support APRN clinical education can be done immediately. Providing faculty development opportunities focused on clinical education will assist with the implementation.
Resources Required: Presentations at conferences, webinars, and in writing.

C. Support the development and testing of innovative APRN academic/practice regional consortia that reflect geographic and institutional diversity.

1. Seek funding for a minimum of three demonstration projects to support the development and testing of innovative APRN regional or state consortia or other models of clinical site/preceptor registries to determine the benefits for enhancing or increasing APRN clinical sites. Consortia also may support the sharing of other resources that include faculty and courses to expand and maximize the availability of both clinical sites, preceptors and other resources for APRN clinical training.

Rationale: Experience in one of the GNE demonstration projects, a number of similar registries used at the undergraduate level, and in physical therapy education suggest that the development of regional shared registries of clinical sites and/or preceptors has served to increase the number of available clinical experiences and maximize the use of existing sites. Also, clinical agencies have cited the burden associated with fielding multiple competing requests for clinical placements that arrive through a variety of disparate methods and involve the allocation of significant clinical and/or clerical staff time. However, in developing regional consortia and registries, concerns over the fear of sharing

information regarding clinical sites and increased competition would need to be addressed. The impact and use of clinical sites by distance education programs would also need to be addressed. The development of a limited number of demonstration projects in defined areas would help address these concerns as well as test and revise different processes and models prior to wider dissemination.

Timeline: The funding and implementation of demonstration projects to implement and pilot several models for sharing and coordinating clinical and possibly other resources could take two years; this timeframe would allow for the planning, implementation, and revision as necessary.

Resources required: Funding source(s), buy-in from several state or regional school of nursing consortia willing to pilot the model, researcher to oversee the design for implementation, and data collection processes.

D. Develop and implement an accessible repository for APRN preceptor orientation materials.

1. Identify existing preceptor guidelines and orientation resources developed by APRN organizations or programs.

2. Develop a "toolkit" for orientation and training for preceptors.

Rationale: Developing this repository would extend resources to schools of all types, decrease duplicative use of resources, and ensure that nationally recognized expectations for preceptor orientation are disseminated and available to all programs. Several professional organizations as well as individual schools have developed resources for preceptor training. Building on these existing resources, a common toolkit would make these resources available to all schools as well as eliminate redundancies and disparities among programs regarding preceptor expectations and training. Some programs provide no or minimal preceptor orientation or guidance; the online resources would help to establish common expectations and guidelines for preceptors as well as the expectation that programs provide this oversight and support.

Timeline: This project could be accomplished in only a few months if appropriate and applicable materials are identified.

Resources required: Access to existing preceptor training materials from national organizations and APRN programs. Expert APRN faculty and staff time are needed as well as website support services.

III. APRN clinical education and assessment should be competency-based.

This recommendation entails a series of sub-recommendations that can only be achieved sequentially and over a period of several years. A national process that is inclusive of APRN education and practice stakeholders is required to achieve this overall goal and the underlying steps. Facilitation by a lead organization is required; AACN, due to its mission, broad membership, and previous experience is well positioned to leverage the necessary resources and coordinate these processes.

A. Establish a common language or taxonomy by adopting definitions for competence, competencies, and competency framework that are recognized by APRN organizations and other health professions. (See definitions and citations in Englander et al., October 2013)

Rationale: Competency-based education and assessment is becoming predominant in higher education, including health professions education. This method allows faculty to design curricula and measure student progression based on achievement of demonstrable knowledge, skills and attitudes (KSAs). Faculty and preceptors relate a greater degree of confidence that students are adequately prepared to conduct the essential elements of their professional practice than with traditional time-based or encounter-based requirements. During a number of face-to-face and online forums, AACN members have expressed overwhelming support for APRN competency-based clinical education and believe there are common APRN competencies. Representatives from APRN stakeholder organizations in education, certification, accreditation, and membership support the need for establishing a common taxonomy as a necessary first step in achieving the overall goal of competency based APRN education.

Timeline: The goal of reaching consensus on definitions is seen as relatively short term. APRN organization representatives at the October 2014 stakeholder invitational meeting identified this as the first needed step. An ongoing dialogue among these organizations has been initiated electronically. The Task Force recommends continuing this dialogue, which is a basis for subsequent recommendations.

Resources required: This is not resource intensive and could be achieved through electronic venue such as a collaborative community or possibly through the LACE Network. Reaching consensus does require commitment from the organizations representing all four APRN roles and education, certification, accreditation, and licensure.

B. Identify common, measurable APRN competencies that cross all four roles and build on the expected outcomes for the APRN Core Courses: advanced physiology/pathophysiology, advanced health assessment, and advanced pharmacology (AACN, 2006; APRN Consensus Work Group & NCSBN APRN Advisory Committee, 2008).

1. Convene a work group representing education, certification, accreditation, and practice from the four APRN roles. A consensus-building process similar to that used previously by AACN to develop consensus-based APRN competencies.

2. Achieving this goal requires leadership and stewardship of resources; AACN is poised to provide this leadership and facilitate an inclusive process to facilitate a consensus-based process representing all four APRN roles to identify common, measurable APRN competencies.

3. The work group should build on the work and consensus achieved under Recommendation A, which includes consensus-based definitions and a common organizing framework for APRN clinical competencies. Common domains and language used by the four APRN roles should also be explored.

4. The APRN competency framework should be consistent with model(s) developed by other health professions to foster a common language across all health professions and

promote interprofessional (IP) education and practice. The domains should be flexible and allow for evolution over time. Recommend the stakeholder workgroup explore the Domain Framework developed by Englander et al. (October 2013), which is intended to apply to all health professions.

Rationale: Organizations representing each of the four APRN roles have identified various role-specific competencies at varying levels of specificity. If the profession is to move toward competency-based education for all APRN roles, there is a need to extend and build upon this work, particularly with a common terminology and understanding. Building on the work previously completed by organizations to identify role and/or population-focused competencies as well as the expected outcomes for the required APRN Core courses first delineated in the AACN Master's Essentials (1996) and now required under the APRN Consensus Model for APRN Regulation: Licensure, Accreditation, Certification and Education (2008). Tthe goal is to identify a set of common high-level competencies that cross all APRN roles. These common competencies will facilitate understanding and communication across APRN education and practice and with other health professions. Common competencies may also provide opportunities for developing shared APRN coursework or experiences as well as for developing IP education experiences that will promote successful IP practice. The identification of common APRN competencies should provide greater confidence in preceptor and faculty assessment and potentially eliminate widely varying expectations both within and across APRN programs described by preceptors and clinical sites. Finally, clearly defining APRN practice through common competencies is important for delineating to the public and external stakeholders what APRNs can and do contribute to healthcare delivery.

Timeline: Eighteen months to identify and achieve consensus on a common taxonomy and set of common, high-level competencies by the representative APRN workgroup convened by AACN.

Resources required: Chair, staff support, conference calls, web-supported meetings and several face-to-face workgroup meetings. Materials such as existing competencies from each of the four APRN groups will be needed, along with a commitment to collaboration.

C. Progression of competence or milestones should be identified and defined across each of the common competencies.

1. Task the APRN work group convened under recommendation B to identify and define common measurable benchmarks/milestones toward achievement of each of the common APRN competencies from pre-clinical experience to graduation.
2. Each APRN role should identify for that role points for achieving the milestones across the curriculum.

Rationale: Identifying common benchmarks/ milestones for the common APRN competencies, from entry into clinical training to graduation, will address preceptor demand for greater consistency in APRN student preparation prior to entry into clinical training and will provide consistency in the APRN graduate and more realistic expectations by employers particularly in the areas of common APRN competencies or expectations. Identification of benchmarks/milestones between pre-clinical and graduation also would help to guide the clinical education of the APRN student by identifying incremental and

measurable steps toward achievement of competencies. Following this step, each APRN role may choose to align the role/population specific competencies with the APRN common competencies/milestones.
Timeline: It is believed that this goal could be achieved in conjunction with recommendation B within the same 18-month timeframe.
Resources required: Same as B.

D. Develop standardized assessment tool to be available to faculty and preceptors to use for formative and summative evaluation of the common APRN competencies.

1. An assessment tool should be developed that is psychometrically reliable and valid to assess progression of competence for the common APRN role competencies. This assessment tool would be available to each of the four APRN roles to implement as deemed appropriate.

2. An online training module/process should be developed to train faculty/preceptors in the use of the tool to promote rater reliability and validity of the assessment.

Rationale: Development of a standardized assessment tool (s) for faculty and preceptor use for evaluating student progression on the common APRN competencies will provide greater consistency in clinical education and evaluation. Familiarity and utilization of the tool will promote preceptor and faculty understanding of common competencies and expertise in application of the tool in the clinical setting. Standardization in assessment also promotes clearer student, preceptor, and faculty expectations. A timeline for implementation of and use of the tool may vary based on current accreditation and certification processes and expectations across the four APRN roles.
Timeline: This time-intensive endeavor will require an iterative process of developing, testing, and revising the tool and therefore may take 2-3 years to accomplish.
Resources required: Consultants (e.g., from PT) and experts in tool development along with representatives from the four APRN role groups.

IV. Support the development of alternative or innovative APRN clinical education models

A. Encourage regulatory bodies to support or allow APRN education programs to develop and test innovative or less traditional clinical models.

B. Encourage APRN programs to explore, implement, and test innovative or less traditional clinical models, including interprofessional learning experiences and use of technology.
In addition to others, alternative models may include:
1. Interprofessional team training under IP faculty supervision, e.g., VA Primary Care Centers of Excellence
2. APRN Dedicated Education Units in a variety of practice settings
3. Front-loading curriculum with didactic and clinical simulation experiences and provide intensive clinical immersion experience for APRN students
4. Telementoring

C. Seek funding to support the development and evaluation of alternative or innovative APRN clinical training models.

Rationale: The models listed above are models that have been identified in the literature or through communication with a variety of stakeholders; other models may exist or evolve. Faculty are encouraged to develop and test these and other potential models for clinical education which enable programs to maintain and/or expand the preparation of APRNs. Reduced reliance on one-to-one apprenticeship models and use of IP teams of preceptors and students is encouraged to explore the potential to maximize available resources and to better prepare graduates for IP practice. The use of technology should be explored to increase access to preceptors and expand the use of qualified preceptors and other clinical resources. Models might include remote mentoring and precepting. Clinical immersion experiences are recommended for APRN students to provide continuity of care and develop a better understanding of organizational systems. Clinical immersion experiences may improve student satisfaction as well as practice satisfaction by reducing the episodic and fragmented clinical education experiences currently used by a majority of programs. Results of pilot projects should be published and disseminated widely.
Timeline: The implementation, testing, and dissemination of new models for APRN clinical education should be immediate and ongoing to extend across several years.
Resources required: Schools willing to pilot innovative new models of care and, ideally, sources of funding to incentivize the ongoing development, implementation, and testing of pilot programs. Willingness to support these efforts from accreditation and credentialing bodies is also necessary.

SUMMARY LIST of RECOMMENDATIONS

I. Simulation should be used to enhance APRN clinical education, and the use of simulation to replace more traditional clinical experiences should be explored.

A. Seek funding for five demonstration projects that are designed to study the impact of various methods along the continuum of simulation learning approaches as one component of APRN clinical education and assessment.

B. Funding and other resources should be provided at both the national and local levels for the development and use of simulation for learning and assessment, including funding for a national center of faculty innovation and faculty preparation and certification.

C. A national repository should be created and maintained for reliable/valid APRN simulation education materials.

D. Simulations should be developed and tested for assessment of the APRN common competencies.

II. AACN-AONE principles for academic-practice partnerships should be adopted by all APRN programs.

A. APRN programs, including face-to-face and distance education programs, should implement expectations described in Section II regarding the development and maintenance of APRN clinical experiences and student oversight

B. Encourage and support the development of innovative partnerships for APRN clinical education as well as the use of a variety of incentives for practice sites and preceptors, e.g., adjunct faculty status, joint appointments, participation on curricular committees, research support, continuing education credits, academic credit towards graduate degrees.

C. Support the development and testing of innovative APRN academic/practice regional consortia that reflect geographic and institutional diversity.

D. Develop and implement an accessible repository for APRN preceptor orientation materials should be developed and implemented.

III. APRN clinical education and assessment should be competency based.

A. Establish a common language or taxonomy by adopting definitions for competence, competencies, and competency framework that are recognized by APRN organizations and other health professions.

B. Identify common, measurable APRN competencies that cross all four roles and build on the expected outcomes for the APRN Core Courses: advanced physiology/pathophysiology, advanced health assessment, and advanced pharmacology (AACN, 2006; APRN Consensus Work Group & NCSBN APRN Advisory Committee, 2008).

C. Progression of competence or milestones should be identified and defined across each of the common competencies.

D. Develop standardized assessment tool to be available to faculty and preceptors to use for formative and summative evaluation of the common APRN competencies.

IV. Support the development of alternative or innovative APRN clinical education models

A. Encourage regulatory bodies to support or allow APRN education programs to develop and test innovative or less traditional clinical models.

B. Encourage APRN programs to explore, implement, and test innovative or less traditional clinical models, including interprofessional learning experiences and use of technology.

C. Seek funding to support the development and evaluation of alternative or innovative APRN clinical training models.

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APRN Clinical Training Task Force

Laurie M. Lauzon Clabo, PhD, RN, (*Chair)*
Dean and Professor, MGH Institute of Health Professions
School of Nursing
Boston, MA

Roy Addington, FNP, DNP
Assistant Professor, University of New Mexico
College of Nursing
Albuquerque, NM

Barbara J. Berner**,** EdD, RN, FNP
Director, University of Alaska
School of Nursing
Anchorage, AK

Patricia Clinton, PhD, RN, ARNP, FAANP
Professor Emeritus, University of Iowa
College of Nursing
Iowa City, IA

Chris Esperat, RN, PhD, FAAN
Professor and Associate Dean
Texas Tech University
School of Nursing
Lubbock, TX

Sharon J. Hawks, DNP, MSN, CRNA
Assistant Professor
Duke University
School of Nursing
Durham, NC

Robin Lawson, DNP, RN, ACNP-BC, NP-C, CCRN
Professor and Associate Dean
University of South Alabama
College of Nursing
Mobile, AL

Susan E. Stone, DNSc, CNM, FACNM
President, Frontier Nursing University
Hyden, KY

Patti R. Zuzelo, EdD, RN, ACNS-BC, ANP-BC, FAAN
Clinical Professor
Drexel University
College of Nursing and Health Professions
Philadelphia, PA

Joan Stanley, PhD, CRNP, FAAN, FAANP
AACN Staff liaison
Senior Director of Education Policy
AACN

Karen Kesten, DNP, APRN, CCRN, PCCN, CCNS, CNE
AACN Staff liaison
Director of Educational Innovations
AACN

Horacio Oliveira
Program Manager, Education Policy
AACN