



**National  
Association of  
Neonatal  
Nurses**

---

**National Association of  
Neonatal Nurse Practitioners**   
*A division of NANN*

# **The Future of Neonatal Advanced Practice Registered Nurse Practice**

## **White Paper**

NANNP Council  
January 2014

NANN Board of Directors  
January 2014

In recent years, the National Association of Neonatal Nurses (NANN) and the National Association of Neonatal Nurse Practitioners (NANNP) have been monitoring aspects of neonatal advanced practice nursing and providing leadership and advocacy to address concerns related to workforce, education, competency, fatigue, safety, and scope of practice. This white paper discusses current barriers within neonatal advanced practice registered nurse (APRN) practice as well as strategies to promote the longevity of the neonatal APRN roles.

## **Introduction**

NANN and NANNP define advanced practice nursing and the APRN in accordance with the APRN Consensus Model for APRN Regulation definitions (National Council of State Boards of Nursing [NCSBN], 2008; NANN, 2002; NANNP, 2009). The neonatal community is served by two neonatal APRN roles—the neonatal nurse practitioner (NNP) and the neonatal clinical nurse specialist (NCNS; NANNP, 2014a).

## **Background and Significance**

The neonatal population has traditionally been identified as those patients in the neonatal intensive care unit (NICU). The scope of the neonatal APRN has evolved through time, experience, and the growth of the healthcare system. Although the APRN scope has changed, the neonatal population has consistently been inclusive of preterm (<37 weeks) and term neonates, infants and toddlers through 2 years of age (NANN, 2002; NANNP, 2009). In 2010, NANNP's Competencies and Orientation Toolkit for NNPs confirmed that the population was not just those infants physically housed in the NICU, but also those who suffered from chronic conditions as a result of complications of prematurity and neonatal pathophysiology (NANNP, 2010). NNP educational standards include primary and chronic care across the continuum in program curricula (NANN, 2002; NANN, 2009; NANNP, 2014b). The NCNS scope of practice involves collecting data relevant to the three spheres of influence: patient, nurse, and system. The NCNS, while not providing direct patient care the majority of the time, will ensure the highest quality of care is provided to all patients and their families, in conjunction with the NCNS's NNP and physician colleagues (American Association of Critical Care Nurses [AACCN], 2002).

## **Workforce**

NICUs rely on the neonatal APRN to play a vital role in caring for critically ill neonates. As a healthcare provider on an interprofessional team, the neonatal APRN participates in a wide variety of complex patient care activities in settings that include, but are not limited to, all levels of neonatal inpatient care in both academic- and community-based settings; transport, acute and chronic care; delivery room management; and outpatient settings (AACCN, 2002; Missouri Nursing Association, n. d.). The nature of the practice of the neonatal APRN is multifaceted and includes integration of research, education, practice, and management with a high degree of professional autonomy in independent or collaborative practice. Advanced health assessment skills, critical decision-making, diagnostic reasoning, and advanced clinical competencies are also important aspects of the neonatal APRN role.

Historically, the supply of NNPs has rarely met the demand for services, although needs vary by region at any given time (Timoney & Sansoucie, 2012). Future increased demand for NNPs will depend on the nature of institutions providing employment and evolving pediatric residency training requirements (Klein, 2005). Because the NNP role is a collaborative one, a shortage of NNPs leaves a gap in

the team approach to care (Freed et al., 2010). Cusson and Strange found that the primary motivators to becoming an NNP include increased autonomy and knowledge base (2008). A majority of NNPs are very satisfied with their career, citing enhanced contribution to the interprofessional team, increased autonomy, and increased status and professionalism as key factors for their satisfaction (Freed et al., 2010; Smith & Hall, 2011). Timoney and Sansoucie (2012) found that job satisfaction was positively correlated with advanced educational preparation. Role satisfaction is an important component of role actualization and impacts how individuals project the role to others (Freed et al., 2010). Factors that influence job satisfaction and ultimately recruitment and retention include salary, autonomy, inclusion in decision making, respect of the role, workload, and shifts worked. This directly impacts the NNP role due to current challenges in recruitment and regional NNP shortages. The annual number of NNP graduates has been static over the past few years. A shortage of preceptors and faculty in NNP education programs has been reported as well. Reports suggest a nationwide shortage of NNPs in both academic and community hospitals (Freed et al., 2010; Klein, 2005; NANNP, 2013; Timoney & Sansoucie, 2012). To meet the future needs of high-risk and critically ill newborns, efforts must focus on the recruitment of registered nurses as NNP and NCNS students, while retaining existing, practicing APRNs.

In the *Report of the 2011 Neonatal Nurse Practitioner Workforce Survey* the following recommendations were made (Timoney & Sansoucie, 2012):

- Full implementation of the APRN Consensus Model in all 50 states and the District of Columbia should be achieved. Full implementation of this model will ensure uniformity in licensure, accreditation, certification, and education to facilitate the regulation of safe and competent APRNs in every state. Allowing NNPs to practice to the full extent of their education and certification will promote consistency in reimbursement laws.
- NNPs should be empowered to develop collaborative practice models with physician colleagues focusing on full partnership, evidence-based practice, and patient outcomes. These practice models must include dedicated time for NNPs to pursue outcomes-based research, education, and quality initiatives.
- NNPs should be visible to consumers, regulatory bodies, and state and federal legislators to educate them about who NNPs are, what they do, and why they're uniquely poised to be full partners in the future of health care.

In addition, the American Hospital Association (AHA; 2011) developed the following recommendations for workforce issues:

- All healthcare professionals should be educated within the context of interprofessional learning teams.
- There must be clear role delineation, education, and development for each member of the healthcare team.

- Trust and respect among healthcare professionals in an environment that allows them to practice to the full scope of their license will allow for delivery of the highest quality of care.
- Care must be provided by interprofessional teams, so the work is “role based,” not “task based,” and the team is empowered to create innovative approaches to healthcare delivery.

Providing sustainable solutions to workforce issues while ensuring the continued delivery of high-quality care is complicated. Yet with careful strategic planning, dissolution of scope of practice barriers for neonatal APRNs, and active recruitment of students, faculty and funding within neonatal APRN programs, these challenges can be minimized.

### **Barriers to Neonatal APRN Practice**

Although APRNs are acknowledged as integral members of the healthcare system, there is a lack of consistency in regulations across state boundaries in the United States. The barriers to practice created by the lack of standardization are counterproductive because they exacerbate the regional shortages of qualified NNPs that already exists. Currently, 22 states allow autonomous practice of APRNs. Some states, such as Colorado, allow autonomous practice and prescriptive authority as an NP after a certain number of supervised hours of practice. The goal of this model is to balance access to APRN providers with the need for patient and public safety (Pocock, 2010; State of Colorado, 2013). NANNP supports the full implementation of the APRN Consensus Model and the model regulatory language from the NCSBN to allow neonatal APRNs to practice to the extent of their education, certification, and scope. This includes full prescriptive authority for schedule II-V controlled substances.

### ***Prescriptive Authority for Neonatal APRNs, Including Schedule II-V Controlled Substances***

Prescriptive authority for APRNs is associated with the development of the APRN role. Barriers to implementing effective prescriptive authority continue to be a challenge. Current state restrictions on APRNs, particularly prescriptive authority regulations for controlled substances, limit the scope of practice. Twelve states and the District of Columbia allow APRNs to prescribe independently with no requirement for physician involvement, including controlled substances schedules II through V (Prescriptive Authority Update, 2013). The majority of states (28) require physician collaboration for controlled substance prescribing while ten states use the terminology of “physician supervision” in prescriptive guidelines (Prescriptive Authority Update, 2013). Several states also have specific formulary requirements for APRNs. For APRNs to effectively and responsively care for patients, state legislatures must remove barriers to prescriptive authority throughout the United States. This is especially critical in intensive care units where uncontrolled pain negatively impacts long-term outcomes (Anand & Hickey, 1987; Grunau, Whitfield, & Petrie, 1994; Gunnar, Porter, Wolf, Rigarus, & Larson, 1995; Taddio, Katz, Ilersich, & Koren, 1997).

### ***Institutional Restrictiveness Extending Beyond State Regulations***

Credentialing and privileging are processes used by hospitals to ensure healthcare professionals are educated, trained, certified, and licensed to provide safe and competent care. Credentialing involves primary source verification of licensure and authorization to practice, as well as relevant certifications, education, training and reporting to malpractice carriers or other databanks. This process also confirms professional references and any past disciplinary actions and criminal history. Privileging is the process through which a provider is granted authority to perform specific procedures or provide diagnostic and therapeutic services within the hospital. Each provider must follow the privileges granted within the institution or health system. The permitted patient care activities may follow those allowed by state and federal laws or may be further restricted by the institution.

Each hospital's bylaws specify how APRNs may be granted privileges and may include provisions for supervision that are more restrictive than state laws. The Institute of Medicine (IOM) (2010) report recommends that APRNs be eligible for hospital clinical privileges, admitting and discharge privileges, and hospital medical staff membership and also be permitted to perform hospital admission assessments, documenting medical histories and performing physical examinations (IOM, 2010). Institutional restrictions in excess of state regulations should be removed to enhance interprofessional collaboration within the system (AARP Public Policy Institute, 2011).

### ***Lost Revenue for APRN Services Due to Physician Oversight and Billing***

Nursing services, which traditionally have included APRN care, have been treated as an expense rather than a revenue source. APRN services are seldom separated from institutional charges, promoting the misperception that they are not revenue generators (Frakes & Evans, 2006). Yet, financially both physicians and APRNs have equivalent relative work values. APRNs can receive reimbursement from third-party payers for direct patient care, but are unable to generate revenue due to institutional, practice, or regulatory barriers.

A series of regulations govern healthcare reimbursement for all providers with additional requirements for APRNs. Requirements for "provider services" reimbursement include the following: payment is made only for services defined by Current Procedural Terminology (CPT) or International Classification of Diseases (ICD) codes and must be medically necessary, actually provided, accurately documented, and properly submitted. For APRN providers, additional reimbursement regulatory requirements include national APRN certification. Of note, there is no Medicare distinction between different APRN roles, so differences in ability to bill for services provided and reimbursement rates between NNPs and NCNSs are a function of their scope of practice as defined by the individual states (IOM, 2010). Because licensure is state based, there are

wide variations in scope of practice. This inconsistency causes additional problems with reimbursement practices.

If allowed by state regulations, an APRN can bill in one of two ways: “incident to” and direct billing. The most lucrative reimbursement rate, 100% of the physician rate, requires the APRN to provide care “incident to” or under supervision of a physician. Using his or her own Medicare provider number, an APRN can be reimbursed for direct care; however, the APRN’s reimbursement rate may be lower than the physician rate (rates vary state by state). Limited billing practices and reimbursement rates hinder the expansion of APRN services and contribute to the perception that “they cost too much.” APRNs must understand reimbursement regulations and implement strategies to optimize billing and revenue capture to optimize the economic viability of their practice (IOM, 2010).

### ***Preparation and Competence of Neonatal APRNs to Care for the Entire Population***

In 2008, a work group of NP educators and representatives of NP certification organizations studied the overlap of the acute care and primary care competencies (APRN Joint Dialogue Group, 2008). The work group identified many similar competencies that were distinguished only by the patient populations served. Based on this review and subsequent discussions, the work group recommended that the Consensus Model should retain only one role delineation for the NP. Further distinction between primary and acute care roles were then made at the level of the population foci (NCSBN, 2008).

A fundamental premise within the Consensus Model is a focus of care based on patient care needs—not setting—which then defines the acute care nurse practitioner (ACNP) and the primary care nurse practitioner (PCNP) scope and competencies. ACNPs focus on restorative care characterized by rapidly changing clinical conditions, including unstable chronic conditions, complex acute illnesses, and critical illnesses (NONPF, 2004). PCNPs focus on comprehensive, continuous care and coordination of services, characterized by a long-term relationship between the patient and PCNP (NONPF, 2011). APRNs should be regulated according to their education, certification, services performed, and population served, not setting or location (NONPF, 2012).

Although these definitions are easily understood in the adult and pediatric patient populations, they have not been applied to the neonatal population. If we ascribe to the true definition of primary care being “comprehensive first contact and continuing care for persons with any undiagnosed sign, symptom, or health concern not limited by problem origin, organ system, or diagnosis” (AAFP, 2013), then the neonatologist and the NNP are truly both acute care and primary care providers. Primary care includes health promotion, disease prevention, health maintenance counseling, patient education, diagnosis, and treatment of acute and chronic illnesses in a variety of healthcare settings. Nowhere else is this more apparent than when birth is the point of first contact, which may continue

for months to years in the hospital and then is extended beyond the hospital into a continuity setting. It is clear that the scope of the neonatal APRN extends across both primary and acute care settings. NNP programs are required to include clinical and didactic content related to primary care of the preterm (<37 weeks) and term neonates, infants, and children during the first 2 years of life (NANN, 2002; NANNP, 2009; NANNP, 2014b). NCNS programs should cover this content and include clinical experiences for their students. In collaboration with schools of nursing, continuing competency programs that include clinical experiences should be developed for APRNs who are not comfortable caring for the full range of the neonatal population.

## **Future Perspectives**

### ***Educational Barriers***

In fall 2010, the U.S. Department of Education (DOE) announced its “program integrity” regulations related to higher education (U.S. Department of Education, 2010). This impacted institutions of higher education in many significant ways, most notably in redefining a credit hour and creating state authorization regulations. These state authorization regulations created significant hurdles for students pursuing higher education through distance learning. These regulations have made it more difficult and expensive for institutions to obtain permission to operate across state lines. Many institutions and programs of study have stopped enrolling students from states with significant requirements.

For potential APRN students, finding a program in their desired area of study that offers distance education is now impacted by their state of residence. If there is not a program of study in their state, relocation to pursue education endeavors is necessary, which is a significant barrier for many potential students. APRN programs with distance education components must now expend significant time and resources to screen potential students and to continually monitor interstate requirements. This has impacted student acceptance and enrollment into neonatal APRN programs.

These barriers have caused great concern within the neonatal APRN community. Restrictions and changes on graduate medical education and pediatric residency requirements have decreased resident time in the NICU, thereby increasing workforce needs of neonatal APRNs. This escalating shortage throughout the country further emphasizes the critical need to expand neonatal APRN programs. According to the latest data collected by Ensearch Management Consultants, there are 35 active NNP programs (Mattis, 2013). Five of those have self-identified as having an “unknown” status for the future, due to budget or other concerns; another three have suspended admissions or significantly altered admission criteria for 2013 or 2014 academic years based on the state authorization regulations (Mattis, 2013). Further complicating this matter is that a total of 17 NNP programs have closed since 2005. NCNSs have not fared any better. Based on July 2013 data from AACN Credentialing Corporation, there are currently only six neonatal-specific CNS programs in the United States and only

five candidates have taken the NCNS certification exam in the past year (C. Hartigan, personal communication, July 2013). When comparing the neonatal population to other population foci, there are fewer training programs, yet the smallest number of providers serve the neonatal population with the highest demand. Best approximations of practicing NNPs in the United States are approximately 5,200 (NCC, 2013). This is approximated, based on current National Certification Corporation (NCC) certification rates. Latest statistics in July 2013 showed a current supply-to-demand deficit of 3.9%, which is expected to continue to increase since the implementation of new pediatric residency guidelines (July 2013).

Moving forward, neonatal programs and faculty must be aggressively proactive in recruiting students to meet workforce demands. This will require close collaboration with front-line NNPs in practice. APRN program expansion has been concentrated in primary care realms of preparation due to the excessive public focus on access deficits in that arena. This has left huge gaps in provider preparation in specialty areas. NNPs are also primary care providers, as previously discussed. Recognition of primary care provider status for NNPs may allow universities access to federal and state funding available for primary care education programs. On a more global level, nursing organizations and schools of nursing should advocate for regulation changes with the DOE. Nursing programs undergo intense accreditation processes, which are standardized nationally based on DOE rules to ensure program integrity. Further regulations or accreditation processes at the state level (based on the DOE's program integrity regulations) serve only to increase educational costs to programs and students (Staebler, 2013).

Neonatal APRNs must actively engage with university programs to increase recruitment efforts (increasing enrollment) and increase the number of programs in the United States as well as to serve as preceptors for students. APRNs must market the role and advocate for the primary care we provide to improve funding opportunities. Streamlined postgraduate NP preparation in the neonatal population would further practice options for NPs certified in other population areas (e. g., pediatric or family). APRNs within geographic areas that do not have a neonatal program should collaborate with local schools of nursing to develop programs of study to meet local workforce demands. New programs not currently offering the neonatal population specialty could consider developing collaborative agreements with current neonatal programs to minimize costs and faculty needs (Siewert, Rasmussen, Lofgren, & Clinton, 2011). These institutional collaborations may prove to be a strategy to overcome the state authorization regulations.

### ***Measuring and Validating APRN Practice***

Stakeholders in American health care (i.e., quality watchdogs, regulatory bodies, and the public) are increasingly aware of the inherent waste and risks of the system. In the current healthcare reform climate, there is continuous pressure on



providers to demonstrate competency, efficiency, and cost effectiveness while maintaining quality patient outcomes. It is no longer enough for APRNs to say they provide quality cost-effective care; there must be reliable data provided to validate those claims. In the interests of advanced practice providers and the institutions they serve, validation of efficiency, cost effectiveness, outcomes, and quality of care through the ongoing collection of data are the best protection against reimbursement penalties and potential liability claims. Data needs to be collected at the individual, group, and institutional levels. Core metrics for neonatal APRN practice need to be established through systemic demonstration projects at the national level. Since each practice varies in role and job expectations, some metrics may be different from practice to practice, but the established core metrics will be universally applicable. Data collection should be automated through electronic health records with a conscious effort to minimize manual collection methods. When possible, data collection methodology should allow for benchmarking and comparisons across the spectrum of care regardless of site of care or level of care.

### ***Certification***

As each state works toward adopting the regulatory language of the APRN Consensus Model, all newly licensed APRNs will be required to have certification in an APRN role and population (NCSBN, 2008). The model and its proposed implementation date of 2015 are supported by all advanced practice organizations, including the American Association of Nurse Practitioners, NANNP, and NCSBN. Fifty-two states and jurisdictions already require advanced certification. Presently, only Kansas and New York have no requirement for advanced certification for APRNs. California and Indiana do not require certification for at least one of the APRN roles (NCSBN, 2013).

Certification has been a method of validation for NNP knowledge competency for the past 30 years. The NCNS certification is a more recent phenomenon, with AACN-CC initially offering the neonatal specific exam in 1999. For nurse practitioners, certification has become the gold standard for entry into practice in 46 of the 50 states (NCSBN, 2013). Certification in a nursing population or specialty is not only an objective measure of knowledge to validate qualifications for providing specialized nursing care, but it also demonstrates to patients, families, and professional colleagues that the care provided meets the highest standards set by the specialty organization (ABSBN, 2013; AACCN, 2013). Certification maintenance demonstrates that the neonatal APRN is keeping up with the latest advancements in their field, provides professional credibility, and ensures continuing competency. The Consensus Model mandates that certification bodies develop the means for continuing competency evaluation, and maintenance of APRN certification serves as the basis for continuing knowledge competency in the United States (NCSBN, 2008). Certification continuing competency programs identify strengths and knowledge gaps so that continuing education in the role and population foci are specific to the needs of each provider (NCC, 2013).

Certification moves the profession forward and provide a means of continuing competency validation, regardless of state regulations or requirements. With specialty certification readily available to all neonatal APRNs, NANNP recommends that all neonatal APRNs obtain national specialty certification. We recommend that certification be accepted for ongoing knowledge competency validation consistent among all state boards of nursing without the need for additional continuing education hours.

### ***Lifelong Learning and Professional Development***

The challenge of lifelong learning for the neonatal APRN includes the maintenance of clinical competency and contribution to future nursing education. Due to the ever-increasing complexity of the healthcare system and practice, NANNP encourages doctoral preparation of neonatal APRNs who will continue to practice beyond 2020. There are two post-master's degree educational paths: doctor of philosophy (PhD) or doctor of nursing practice (DNP). It is critical to recognize that while these two educational preparations are different, they work synergistically to ensure scientific basis for clinical practice and the dissemination/translation of the science into practice. It is important that future generations of students view doctoral preparation in nursing with the same degree of respect and achievement as medicine, recognizing that while there may be some overlap in areas of practice, there is a distinct philosophical difference between the two.

Future students in DNP programs may encounter the perception that decreased bedside nursing experience leaves the student ill prepared to begin the clinical practicum in an advanced practice nursing role at the doctoral level (Clinton & Sperhac, 2009). As post-BSN education moves toward the DNP, the focus will shift away from accumulation of clinical hours toward achievement of clinical competencies that support sound decision making and mastery of outcomes at the DNP level. For the post-master's degree DNP student, the focus will shift from practicum to the clinical experiences that will enrich the individual's practice and focus on interprofessional practice relationships, increased awareness of health delivery systems, and analytic skills necessary to evaluate and implement an evidence-based quality improvement program (American Association of Colleges of Nursing, 2006).

### **Summary**

- NANNP supports the full implementation of the APRN Consensus Model and model regulatory language to allow practice of neonatal APRNs to the extent of their education, certification, and scope of practice.
- Interprofessional collaboration is enhanced when APRNs have hospital privileges that allow them to practice to the full extent of their scope of practice.

- Neonatal APRNs must understand reimbursement regulations and implement strategies to increase billing and revenue capture to optimize the economic viability of their practice.
- Neonatal APRNs are truly both acute care and primary care providers.
- Neonatal APRNs must actively engage with university programs to increase recruitment efforts (increasing enrollment) and increase the number of programs in the United States as well as serving as preceptors for students.
- Core metrics for neonatal APRN practice should be established through systemic demonstration projects at the national level.
- With specialty certification readily available to all neonatal APRNs, NANNP recommends that all neonatal APRNs obtain and maintain national specialty certification.
- NANNP recommends that certification be accepted for ongoing knowledge competency validation without the need for additional continuing education hours. This should be consistent among all state boards of nursing.
- Due to the ever-increasing complexity of the healthcare system and practice, NANNP encourages doctoral preparation of neonatal APRNs who will continue to practice beyond 2020. .

The role of the neonatal APRN has a long and rich legacy. Articulating the role, preparation and scope of practice of the neonatal APRN (NNP and CNS), identifying current barriers within neonatal APRN practice, and presenting future considerations for neonatal APRN role longevity are key components to the continuation and preservation of the neonatal APRN roles. NANNP is committed to working strategically to provide sustainable solutions to neonatal APRN issues while ensuring the continued delivery of high-quality care.

## **References**

AARP Public Policy Institute. (2011). Removing barriers to advanced practice registered nurse care: hospital privileges. Retrieved from [www.aarp.org/health/doctors-hospitals/info-10-2011/Removing-Barriers-to-Advanced-Practice-Registered-Nurse-Care-Hospital-Privileges.html](http://www.aarp.org/health/doctors-hospitals/info-10-2011/Removing-Barriers-to-Advanced-Practice-Registered-Nurse-Care-Hospital-Privileges.html)

Anand, K., & Hickey, P. (1987). Pain and its effects in the human neonate and fetus. *New England Journal of Medicine*, 217, 1321-1329.

American Association of Colleges of Nursing. (2006). The essentials of doctoral education for advanced nursing practice. Washington, DC: Author.

- American Association of Critical Care Nurses. (2002). Scope of practice and standards of professional performance for the acute and critical care clinical nurse specialist. Aliso Viejo, CA: Author.
- American Association of Critical Care Nursing. (2013). Home page. Accessed at [www.aacn.org](http://www.aacn.org)
- American Association of Family Physicians (2013). Primary care. Retrieved from [www.aafp.org/about/policies/all/primary-care.html](http://www.aafp.org/about/policies/all/primary-care.html)
- American Board of Nursing Specialties. (2013). Home page. Accessed at [www.nursingcertification.org](http://www.nursingcertification.org)
- American Hospital Association (2011). Health care workforce. Retrieved from [www.healthcareworkforce.org](http://www.healthcareworkforce.org)
- APRN Joint Dialogue Group. (2008). Overlap between acute care and primary care NP competencies. Preliminary report of a working group of the Joint Dialogue Group.
- Clinton, P., & Sperhac, A. M. (2009). The DNP and unintended consequences: An opportunity for dialogue. *Journal of Pediatric Health Care*, 23(5), 348–351.
- Cusson, R. M., & Strange, S. N. (2008). Neonatal nurse practitioner role transition: The process of reattaining expert status. *Journal of Perinatal Neonatal Nursing*, 22(4), 329–337.
- Frakes, M. A., & Evans, T. (2006). An overview of Medicare reimbursement regulations for advance practice nurses. *Nursing Economics*, (24)2, 59–66.
- Freed, G. L., Dunham, K. M., Lamarand, K. E., Loveland-Cherry, C., Martyn, K. K., & the Research Advisory Committee of the American Board of Pediatrics (2010). Neonatal nurse practitioners: Distribution, roles and scope of practice. *Pediatrics*, 126(5), 856–860.
- Grunau, R., Whitfield, M., Petrie, J., & al, e. (1994). Early pain experience, child and family factors, as precursors of somatization: A prospective study of extremely premature and fullterm children. *Pain*, 56, 353-359.
- Gunnar, M., Porter, F., Wolf, C., Rigaruso, J., & Larson, M. (1995). Neonatal stress reactivity: predictions to later emotional temperament. *Child Development*, 66, 1-13.
- Institute of Medicine. (2010). Consensus Report. The Future of Nursing: Leading Change, Advancing Health. Retrieved from [http://books.nap.edu/openbook.php?record\\_id=12956](http://books.nap.edu/openbook.php?record_id=12956)

Klein, T. (2005). Scope of practice and the nurse practitioner: Regulation, competency, expansion and evolution. *Topics in Advance Practice Nursing eJournal*, 5(2).

Mattis, T. (2013). Ensearch management consultants, NNP program survey results. Presented at the 2013 Neonatal APN Forum in Washington, DC, May 2013.

Missouri Nursing Association. (n.d.). The status of advanced practice registered nurses in Missouri: A white paper. Missouri Council on Advanced Practice Nurses of the Missouri Nurses Association.

National Association of Neonatal Nurses. (2002). Education Standards and Curriculum Guidelines for Neonatal Nurse Practitioner Programs. Glenview, IL: Author.

National Association of Neonatal Nurse Practitioners. (2009). Education Standards and Curriculum Guidelines for Neonatal Nurse Practitioner Programs. Glenview, IL: Author.

National Association of Neonatal Nurse Practitioners. (2010). Competencies and Orientation Toolkit for NNPs. Chicago, IL: Author.

National Association of Neonatal Nurse Practitioners. (2013). Position statement: Neonatal nurse practitioner workforce. Position Statement #3058. Chicago, IL: Author.

National Association of Neonatal Nurse Practitioners. (2014a). Position statement: The neonatal APRN. Chicago, IL: Author.

National Association of Neonatal Nurse Practitioners. (2014b). Education Standards and Curriculum Guidelines for Neonatal Nurse Practitioner Programs. Chicago, IL: Author; In press.

National Certification Corporation. (2013). Home page. Retrieved from [www.nccwebsite.org/default.aspx](http://www.nccwebsite.org/default.aspx)

National Council of State Boards of Nursing. (2008). Consensus model for APRN regulation: Licensure, accreditation, certification, and education. Chicago, IL: Author.

National Council of State Boards of Nursing. (2013). APRN maps. Retrieved from [www.ncsbn.org/2567.htm](http://www.ncsbn.org/2567.htm)

National Organization of Nurse Practitioner Faculties. (2004). Acute care nurse practitioner competencies. Washington, DC: Author.

National Organization of Nurse Practitioners Faculties. (2011). Statement on Acute Care and Primary Care Nurse Practitioner practice. Retrieved from [http://c.ymcdn.com/sites/www.nonpf.org/resource/resmgr/imported/IntegratedNP\\_CoreCompsFINALApril2011.pdf](http://c.ymcdn.com/sites/www.nonpf.org/resource/resmgr/imported/IntegratedNP_CoreCompsFINALApril2011.pdf)

National Organization of Nurse Practitioner Faculties. (2012). Statement on acute care and primary care certified nurse practitioners. Retrieved from <http://c.ymcdn.com/sites/www.nonpf.org/resource/resmgr/imported/acpcstatementfinaljune2012.pdf>

Pocock, P. W. (2010). States ease requirements for nurse practitioners—A review of Colorado's new advanced practice nursing law. Retrieved from [www.martindale.com/health-care-law/article\\_Barnes-Thornburg-LLP\\_1136558.htm](http://www.martindale.com/health-care-law/article_Barnes-Thornburg-LLP_1136558.htm)

Prescriptive Authority Update. (2013). Retrieved from <http://nurse-practitioners-and-physician-assistants.advanceweb.com/article/prescriptive-authority-update.aspx>

Siewert, R. C., Rasmussen, L., Lofgren, M., & Clinton, P. (2011). Innovative university partnership meets neonatal nurse practitioner program need amid faculty shortage. *Journal of Nursing Education*, 50(3), 159–162.

Smith, S. L., & Hall, M. A. (2011). Advanced neonatal nurse practitioners in the workforce: a review of the evidence to date. *Archives of Diseases in Childhood: Fetal Neonatal Edition*, 96, F151–F155.

Staebler, S. (2013). New barriers impact education of APRNs. *NANN Central*, 29(3), 2.

State of Colorado: Department of Regulatory Agencies (2013). Recent Legislation. Retrieved from <http://cdn.colorado.gov/cs/Satellite?c=Page&childpagename=DORA-Reg%2FDORALayout&cid=1251629639995&pagename=CBONWrapper>

Taddio, A., Katz, J., Ilersich, A., & Koren, G. (1997). Effect of neonatal circumcision on pain response during subsequent routine vaccination. *Lancet*, 349, 599–604.

Timoney, P., & Sansoucie, D. (2012). Neonatal nurse practitioner workforce survey executive summary. *Advances in Neonatal Care*, 12(3), 176–178.

U.S. Department of Education. (2010). Office of post secondary education:  
Program integrity: New programs. Retrieved from  
[www2.ed.gov/legislation/FedRegister/finrule/2010-4/102910b.html](http://www2.ed.gov/legislation/FedRegister/finrule/2010-4/102910b.html)

---

Copyright © 2014 by the National Association of Neonatal Nurses. No part of this statement may be reproduced without the written consent of the National Association of Neonatal Nurses.



**National  
Association of  
Neonatal  
Nurses**

---

**National Association of  
Neonatal Nurse Practitioners**   
*A division of NANN*

8735 W. Higgins Road, Suite 300, Chicago, IL 60631  
800.451.3795 • 847.375.3660 • Fax 866.927.5321  
[www.nann.org](http://www.nann.org)