

**American Association of Neuroscience Nurses  
Scope of Practice  
for  
Neuroscience Advanced Practice Nurses**

## Background

Specialization in nursing arose as a way to enhance quality of care and improve access to care, in the face of increasing knowledge and technological advances. A nursing specialty is characterized by a unique body of knowledge and skill set, with nurses providing care focused on phenomena unique to the practice. *Neuroscience nursing* is a unique nursing discipline that addresses the needs of individuals with biopsychosocial alterations as a result of nervous system dysfunction (Webb, 2000). Recognition of neuroscience nursing as a practice specialty began in the 1960s and resulted in the formation of the American Association of Neurosurgical Nurses in 1968. To reflect the broader practice of its members, the association was renamed the American Association of Neuroscience Nurses in 1983.

As neuroscience nursing evolved as a specialty, so did opportunities for advanced practice. The nursing shortage, need to improve quality of care, restricted residency hours and promotion of cost effective care have led to increasing use of advanced practice nurses. The number of advanced practice nurses in neuroscience nursing has grown in recent decades, reflecting the complexity and diversity of the field. Through education and certification, the Neuroscience Advanced Practice Nurse demonstrates basic competency in the role. Neuroscience Advanced Practice Nurses include clinical nurse specialists and nurse practitioners. Neuroscience Advanced Practice Nurses work in a variety of settings, demonstrate specific competencies unique to neuroscience nursing, and have a broad scope of responsibilities.

This document provides a framework for the Neuroscience Advanced Practice Nurse to practice. While neuroscience advanced practice nursing roles are defined,

procedures and activities that may be performed are not defined, as those are subject to individual collaborative practice as guided by state law and institutional or practice policy (Hermann & Zabramski, 2005). There are many diverse statutes (state, federal, community) and institutional guidelines which govern APN practice, and the *Scope of Practice for Neuroscience Advanced Practice Nurses* does not supersede those statutes or guidelines. For those advanced practice nurses who are required to practice within a contractual agreement, protocols may be collaboratively developed that address specific responsibilities and expectations. The ability to perform specific clinical tasks is a multifaceted process involving advanced practice nurse competency, collaborative agreement with the physician or institution (if required), and state statutes. As practice evolves and statutes change, updates to this document may be necessary in order to reflect developments in the practice environment.

#### Definition and Scope of Practice

The American Association of Neuroscience Nurses defines the Neuroscience Advanced Practice Nurse as a registered nurse who has completed a graduate degree nursing and has direct or indirect clinical practice involving clients with biopsychosocial alterations as a result of nervous system dysfunction. Specific Neuroscience Advanced Practice Nurse activities may be influenced by workforce fluctuations, development of related healthcare specialties, geographic and economic disparities, economic incentives, and consumer demand.

Expert clinical practice is the hallmark of advanced practice nursing. Clinical practice involves assessment, diagnosis and management of client problems as well as

health promotion. Primary generic responsibilities, regardless of specialty, identify the following responsibilities of the advanced practice nurse (ANA, 1996; AACN, 1998):

- Plans and coordinates interventions from a multidisciplinary perspective
- Functions across the healthcare system and works with diverse populations
- Initiates and facilitates quality improvement initiatives
- Facilitates, conducts and promotes utilization of research activities in practice
- Develops education strategies and evaluates effectiveness of educational interventions
- Recommends and influences social and healthcare policies
- Provides consultation to improve care
- Applies legal and ethical standards to complex situations

Each of these responsibilities may be directly applied into specialty practice by the Neuroscience Advanced Practice Nurse (Villanueva, Blank-Reid, Stewart-Amidei, Cartwright, Haymore, & Jones, 2008). Interventions may occur from a collaborative or independent decision-making position.

### Advanced Practice Roles in Neuroscience Nursing

Although other advanced practice roles exist within nursing, this document focuses on the advanced practice roles found in neuroscience nursing.

#### *Clinical Nurse Specialist (CNS)*

The clinical nurse specialist is defined as a registered nurse who is prepared at the masters or doctoral level and provides an advanced level of care in a specialized area of nursing (ANA, 1976; ANA, 1980). Graduate level education prepares the CNS to think critically and abstractly to assess care situations at an advanced level and to integrate

research into clinical practice (NCSBN, 2002). Certification is required for licensure in many states; certification exams are provided by the American Nurses Credentialing Center and the American Association of Critical Care Nurses. The CNS role encompasses seven competencies: direct clinical practice, expert coaching and guidance, consultation, research, clinical and professional leadership, collaboration and ethical decision-making (NACNS, 2003; 2004).

The CNS impacts the health care system, team and patient. Educational preparation and expert practice enables the CNS to institute practice changes through a broad range of influence. A CNS who is delegated the responsibility to establish a stroke center exemplifies this influence. The CNS leads and facilitates a team to review the evidenced-based literature and to develop stroke treatment protocols that cross many practice boundaries (emergency room, intensive care unit, operating room and the acute care floor). The CNS uses leadership skills to bring institutional resources together. Educator skills are used to enhance learning for bedside nurses who care for persons with stroke. The CNS uses the research competency to assist the stroke team in identifying best practices for blood pressure control. The CNS collects data to track the stroke complications, and communicates regularly with the stroke team and administration on patient outcomes and program success.

#### *Nurse Practitioner (NP)*

Nurse Practitioners (NPs) are registered nurses who are prepared, through advanced education and clinical training, to provide a wide range of preventative and acute healthcare services to individuals of all ages (ACNP, 2008). Certification is required for licensure following completion of the program of study. National

certification exams are provided by the American Nurses Credentialing Center, the Academy of Nurse Practitioners (AANP) and the American Association of Critical Care Nurses. At the present time there are no NP programs with a dedicated program of study for neuroscience. NPs practicing in neuroscience have completed a program of study (e.g. adult health or acute care) and then practice with individuals with neuroscience disorders.

The role of the NP in the care of neuroscience patients is highly variable. Typical activities for a neuroscience NP may include performing a health history and exam (minor to comprehensive), ordering and interpreting appropriate laboratory tests and diagnostic studies, diagnosing and treating illness, promoting wellness and prevention of disease and injury, providing patient education and counseling, performing procedures, engaging in research, education, patient advocacy and administrative duties, exercising autonomy in clinical decision-making, working collaboratively with other members of the healthcare team and providing these services in a cost-effective manner (ACNP, 2008).

It is important to note that the CNS and NP roles may be blended in some settings, without distinct differences in work activities or responsibilities between the two titles. Both CNS and NP advanced practice nurses may perform procedures, bill for services provided and prescribe medications. Further, many nurses with CNS credentialing have undergone training in the NP role as well.

#### Environment for Neuroscience Advanced Practice Nursing

The Neuroscience Advanced Practice Nurse may be employed in any area where clients with biopsychosocial alterations as a result of nervous system dysfunction may be encountered. There are multiple practice sites for neuroscience patients such as hospitals,

outpatient settings, private practice, academic institutions, research facilities, rehabilitation centers, and community settings. Client care may have a specific disease focus, such as neuro-oncology, specialty focus, such as neurosurgery, or problem focus, such as chronic pain management. Client care may be provided across the lifespan, or within a specific age group (children or older adults).

The advanced practice nurse may practice in the neurosurgery intensive care unit, providing direct patient care while mentoring staff nurses and orienting new graduates. Another advanced practice nurse may have pediatric neurosurgery as the specialty, performing preoperative and postoperative assessments of children and/or providing direct and indirect care to children in the ICU with complex neurosurgical needs (e.g., traumatic brain injury, craniotomy for tumor resection, cranial vault remodeling and neonates with myelomeningocele). Another advanced practice nurse may practice in the clinic setting, providing specialized care to elderly patients with movement disorders such as Parkinson's disease or myasthenia gravis, or manage care for both inpatients and outpatients. Another advanced practice nurse may work with a neuro-oncology team, coordinating radiation, chemotherapy and surgical interventions all the while helping the patient navigate hospital bureaucracy. The role of the NP in a neuroscience practice may be specific or include many parts of the various groups and settings described.

#### Education and Certification for Neuroscience Advanced Practice Nurses

The Neuroscience Advanced Practice Nurse has a specialized body of knowledge and expanded clinical skills acquired at the graduate level, with the master's degree as the minimum requirement for entry into advanced practice (AACN, 1998). The American Association of Neuroscience Nurses supports the concept of doctoral preparation for

advanced practice nursing. Advanced practice certification via examination through the appropriate nationally recognized organization is a requirement for licensure. The American Nurses Credentialing Center offers nine certification examinations for nurse practitioners and nine certification examinations for clinical nurse specialists in addition to four other advanced practice examinations (ANCC, 2008). Specialty nursing certifications exams for advanced practice, such as those offered through the Oncology Nursing Certification Corporation and the American Association of Critical Care Nurses Certification Corporation, may also be acceptable for licensure.

#### Regulation of Advanced Practice

The nurse practice act and regulations promulgated by individual state boards of nursing delineate the scope of practice for the Neuroscience Advanced Practice Nurse. Not all states currently recognize the CNS as an advanced practice nurse. In twenty-three states NPs are allowed to practice independently without any physician involvement or supervision. Four states require physician involvement but do not require written documentation of that relationship. Twenty-four states still mandate physician supervision with documentation of this relationship (Pearson, 2008). Advanced practice nurses are required to hold at least two licenses to practice, one to practice as a registered nurse and the second to practice at the advanced level.

Institutions or practice groups may also require a collaborative practice agreement. The collaborative practice agreement delegates authority to the Neuroscience Advanced Practice Nurse, and sets forth responsibilities mutually agreed upon by both the collaborating physician and the Neuroscience Advanced Practice Nurse. The agreement consists of: 1) guidelines or protocols, 2) responsibilities, 3) evaluation and 4)

periodic reviews of protocols or guidelines. It also outlines direct, indirect or remote levels of supervision required, which may be specific for certain situations, and sets forth the manner in which the Neuroscience Advanced Practice Nurse will communicate with the collaborating physician, especially when the advanced practice nurse encounters a situation outside the scope of practice. Responsibilities might include procedures such as shunt taps, lumbar punctures, insertion of an intracranial monitor, application of spinal traction, or programming of a neurological device such as a shunt valve, deep brain stimulator or intrathecal pump. Although all states provide some aspect of prescriptive authority to advanced practice nurses, there is variability to the independence allowed (O'Malley & Mains, 2003). When permitted, prescriptive authority requires advanced pharmacology knowledge as well as compliance with state requirements for a particular specialty area. A collaborative practice agreement also serves to delineate prescriptive authority.

### Summary

The Neuroscience Advanced Practice Nurse is challenged to provide care to patients and families within a complex and constantly changing healthcare environment. The role of the Neuroscience Advanced Practice Nurse is multifaceted and variable. It is crucial for the Neuroscience Advanced Practice Nurse to be aware of the diverse statutes governing their practice and practice within their defined scope of practice. This document serves to assist the Neuroscience Advanced Practice Nurse in developing a framework for practice.

## **Neuroscience Advanced Practice Nurse Standards of Practice**

### **Standard I. Assessment**

The Neuroscience Advance Practice Nurse collects comprehensive data in order to make clinical decisions and positively impact patient outcomes for the patient with neurologic dysfunction.

#### Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Systematically conducts a comprehensive examination, based on health history, age, cultural background, patient complaint, and potential causes of neurologic dysfunction.
  - a. Utilizes all available sources of information, including family members, caregivers, other interdisciplinary health care team members, health care records, and system data as relevant.
  - b. Utilizes appropriate assessment techniques, incorporating technological data and diagnostic information where appropriate.
2. Initiates and interprets diagnostic tests and procedures as permitted by state nurse practice act or credentialing body.
3. Prioritizes data collection based on patient condition, anticipated needs, or environmental situation.
4. Identifies family or caregiver needs that influence patient outcomes.
5. Identifies system and personnel needs in the clinical environment that influence patient outcomes.
6. Synthesizes data to identify patient risks and needs, refocusing data collection and prioritization on an ongoing basis.
7. Documents relevant assessment data in a confidential, accessible and retrievable format.

### **Standard II. Diagnosis**

The Neuroscience Advance Practice Nurse uses information obtained from assessment data to formulate diagnoses for the patient with neurologic dysfunction.

#### Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Collaboratively develops and prioritizes diagnoses, consulting other members of the interdisciplinary health care team as necessary.
  - a. Systematically compares and contrasts findings to determine differential diagnoses where appropriate.
2. Validates diagnoses with the patient, family, and other interdisciplinary health care team members to improve communication and adherence to the treatment plan, revising diagnoses as necessary.
3. Documents diagnoses in a manner that facilitates communication among the interdisciplinary team as well as determination of expected outcomes and plan of care.

**Standard III. Outcome Identification**

The Neuroscience Advance Practice Nurse develops individualized, diagnosis-based expected outcomes for the patient with neurologic dysfunction.

Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Derives outcomes from assessment and diagnostic data that include time frames and provide direction for care.
2. Establishes outcomes to measure effectiveness of interventions, modifying outcomes in response to changing needs or condition.
3. Mutually formulates outcomes with the patient, family, and interdisciplinary health care team members.
4. Formulates developmentally and culturally appropriate, cost-effective and realistic outcomes in relation to capabilities and available resources.
5. Identifies outcomes that are consistent with clinical practice and current scientific evidence and are ethically sound.
6. Analyzes factors that hinder achievement of outcomes for patients, families, nurses or systems.
7. Documents outcomes in a manner that facilitates outcome measurement and communication among the interdisciplinary team.

#### **Standard IV. Planning**

The Neuroscience Advance Practice Nurse develops a comprehensive plan of care to achieve expected outcomes for the patient with neurologic dysfunction.

##### Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Develops a mutually derived plan of care with the patient, using assessment data, evidence-based practice interventions and theoretical knowledge.
  - a. Includes the patient and family needs, values, beliefs, and resources in developing the plan of care.
  - b. Considers cost, benefits and alternatives in developing the plan of care.
  - c. Addresses disease prevention, health promotion, and health maintenance in the plan of care.
2. Creates, advises, and influences system level policies that affect programs of care.
3. Documents the plan of care outcomes in a manner that facilitates implementation of the plan and communication among the interdisciplinary team.

#### **Standard V. Implementation**

The Neuroscience Advance Practice Nurse implements the plan of care to achieve expected outcomes for the patient with neurologic dysfunction.

##### Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Reviews the set of all possible interventions and possible consequences associated with each intervention.
  - a. Considers available resources, costs, risks and benefits for each intervention.
  - b. Assures interventions are ethical, developmentally and culturally appropriate, and based on best available evidence.
2. Recommends, selects, and/or orders interventions as permitted by state nurse practice act or credentialing body.
  - a. Establishes algorithms, standing orders, or practice guidelines.

- b. Prescribes pharmacologic and non-pharmacologic interventions according to patient needs, best available evidence, and physiologic principles.
  - c. Monitors responses to interventions with specific attention to potential adverse effects.
  - d. Adjusts interventions on an ongoing basis as needed.
  - e. Provides the patient with information about interventions, including intended effects, potential risks, possible alternatives, costs, and patient role.
3. Performs interventions in a safe and ethical manner, or delegates interventions where appropriate.
4. Assures coordination of care and patient and family involvement to meet individualized needs.
  - a. Provides consultation based on defined role responsibilities.
  - b. Provides referrals based on cost and benefit considerations.
  - c. Implements recommendations from referral sources as appropriate.
5. Initiates and sustains collaborative relationships among health care teams to facilitate interdisciplinary interventions.
6. Incorporates system and community resources when implementing interventions.
7. Documents responses to interventions implemented in a manner that demonstrates accountability, minimizes error, and facilitates communication among the interdisciplinary team and outcome measurement.

## **Standard VI. Evaluation**

The Neuroscience Advance Practice Nurse evaluates progress in attainment of expected outcomes for the patient with neurologic dysfunction.

### Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Conducts a systematic, ongoing evaluation of expected outcomes.
  - a. Includes the patient, family, other interdisciplinary health care team members, and system in the evaluation process.

- b. Incorporates advanced nursing knowledge, quality scientific indicators and best available evidence into evaluative measures.
2. Analyzes findings from evaluative measures to assess effectiveness of the plan in attaining outcomes.
3. Revises the diagnoses, expected outcomes, plan of care and interventions to address outcomes that have not been met or have been only partially met.
4. Disseminates evaluation findings to the patient family, other interdisciplinary health care team members, and system to improve overall quality, satisfaction and safety of care.
5. Documents the evaluation performed and any necessary revisions to the diagnoses, expected outcomes, plan of care or interventions.

## **Neuroscience Advanced Practice Nurse Standards of Professional Performance**

### **Standard I. Quality of Care**

The Neuroscience Advanced Practice Nurse systematically evaluates the quality and effectiveness of nursing practice

#### Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Uses current, evidenced-based treatment interventions to promote optimal patient outcomes while maintaining patient safety and considering cost.
2. Participates in quality of care activities as appropriate to the individual's education, experience and position.
  - a. Systematically develops criteria for evaluating the quality and effectiveness of nursing practice as well as organizational systems in order to assess quality of care.
  - b. Collects and analyzes data to monitor quality care and uses this data to formulate recommendations to improve nursing practice and patient outcomes.
3. Assumes a leadership role in the development of policies, procedures and practice guidelines to improve quality of care and patient outcomes as a clinical expert.
4. Utilizes an interdisciplinary approach to assure quality, evidence-based, cost-effective holistic care for the neuroscience patient.

### **Standard II. Performance Appraisal**

The Neuroscience Advanced Practice Nurse continuously evaluates one's own practice in relation to professional practice standards and relevant statutes and regulations and is accountable to the public and profession for providing competent clinical care.

#### Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Demonstrates knowledge of current professional practice standards, laws and regulations through practice.
2. Engages in performance appraisal on a regular basis, seeking constructive feedback regarding one's own practice according to professional standards and identifying areas of strength as well as areas where professional development would be beneficial.
3. Incorporates role performance reviews from peers, professional colleagues, clients and others as appropriate into practice.

### **Standard III. Education**

The Neuroscience Advanced Practice Nurse acquires and maintains current knowledge and competency in advanced nursing practice.

Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Participates in ongoing educational activities related to clinical and theoretical knowledge and professional issues.
2. Seeks experiences to acquire and maintain clinical skills and competence appropriate to area of practice.
3. Maintains professional certification and obtains continuing education as required for licensure.

### **Standard IV. Collegiality**

The Neuroscience Advanced Practice Nurse contributes to the professional development of nursing and other health care colleagues.

*The Neuroscience Advanced Practice Nurse:*

1. Shares knowledge and skills with colleagues and members of the multidisciplinary team and models expert practice.
2. Promotes a healthy work environment that is conducive to safe and effective patient care.
3. Partners with others to promote an environment conducive to the clinical education of students, nurses and health care team members.
4. Interacts with colleagues on both a local and national level to enhance one's own professional nursing practice.
5. Participates in professional organizations to improve the quality of nursing care and optimize patient outcomes.

### **Standard V. Ethics**

The Neuroscience Advanced Practice Nurse formulates decisions on patient care and acts on behalf of the patient with neurologic dysfunction by using ethical principles and systematic criteria.

Measurement Criteria

1. Utilizes the *Code of Ethics for Nurses with Interpretive Statements* to guide practice.
2. Provides nondiscriminatory care to diverse populations while maintaining patient confidentiality within legal and regulatory parameters.
3. Acts as a patient advocate while maintaining a therapeutic and professional relationship with the patient.
4. Informs the patient of expected health care outcomes including anticipated risks, potential benefits and possible alternatives while supporting care that preserves patient autonomy, dignity and rights.
5. Contributes to the resolution of ethical dilemmas of both systems and individuals through an interdisciplinary approach.

### **Standard VI. Collaboration**

The Neuroscience Advanced Practice Nurse collaborates with patients, families, nurses, physicians, other health care providers, and relevant system parties when assessing, planning, delivering, and evaluating the care of a patient or group of patients with neurologic dysfunction.

#### Measurement Criteria

*The Neuroscience Advanced Practice Nurse:*

1. Collaborates with the patient, family, nurse, and other healthcare providers in the formulation of overall goals and the plan of care, and in decisions related to care and the delivery of services.
2. Facilitates the formation of an interdisciplinary team to work collaboratively to optimize patient outcomes.
3. Serves as a mentor to nurses and other health care team members.
4. Consults with and makes referrals to appropriate providers to ensure that the full spectrum of the patient needs is met across the continuum of care.

### **Standard VII. Research**

The Neuroscience Advance Practice Nurse integrates research into practice.

#### Measurement Criteria

*The Neuroscience Advance Practice Nurse:*

1. Utilizes the best available evidence to guide practice interventions and advance patient care.
  - a. Critically appraises research for practice application.
  - b. Critically appraises practice in the context of best available evidence.
2. Utilizes research to enhance the environment of care and improve patient outcomes.

- a. Utilizes research skills in problem evaluation.
3. Participates in research activities appropriate to education, experience and environment. Activities may include:
  - a. Identifies and prioritizes research problems of concern to neuroscience nursing.
  - b. Participates in data collection.
  - c. Participates in a research program at the organizational level.
  - d. Disseminates research findings through all available avenues.
  - e. Conducts research to advance patient care.
  - f. Encourages and facilitates the neuroscience nursing research agenda.
  - g. Utilizes research findings to develop clinical guidelines, policies, and procedures.

### **Standard VIII. Resource Utilization**

The Neuroscience Advance Practice Nurse considers factors related to safety, efficacy, and fiscal responsibility when delivering care for the patient with neurologic dysfunction.

#### Measurement Criteria

*The Neuroscience Advance Practice Nurse:*

1. Integrates safety, efficacy, and cost considerations into practice decisions as part of an interdisciplinary approach to care.
2. Facilitates patient and family access to appropriate care resources.
3. Delegates tasks based upon patient condition, skills of the designated caregiver, potential for harm, complexity of the task, and predictability of the outcome.
4. Serves as a resource to influence health care policy.
5. Advocates for patient rights, an optimal care environment, access to care and improved quality of care.
6. Develops innovations to maximize safety, efficacy, and cost effectiveness of care.

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