Clinical Nurse Specialist Role and Practice in the United States of America

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Abstract

In the United States, the clinical nurse specialist (CNS) is an advanced practice nursing role. Emerging in the 1960s in response to a recognized need for clinical experts in nursing care, CNSs practice in three interrelated domains—called spheres of impact. In the direct care sphere, CNSs provide care to prevent, remediate, or alleviate illness and promote health with a defined specialty population. In the nursing/nursing practice sphere, CNSs teach, coach, mentor, and lead nurses and nursing personnel in the delivery of evidence-based care for specialty populations. In the system sphere, CNSs lead organizational-level change, coordinate specialized care, and implement programs of care for quality improvement, patient safety, and improved clinical and fiscal outcomes. The National Association of Clinical Nurse Specialists (NACNS), founded in 1995, developed a model of practice including core practice competencies and expected outcomes for each practice domain. NACNS created recommendations for essential content in CNS graduate curricula to assure students develop requisite knowledge and skill practice. CNS practice is regulated as an advanced practice nurse, and CNSs are expected to hold professional certification as a CNS in a specialty

This chapter has been written before the 2020 APN ICN guidelines were published and reflects the views of the authors.

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population. Each of the 50 states regulates CNS practice, though with some variability. National regulatory guidelines are available presenting both opportunity and challenges for CNSs.

Keywords
Clinical nurse specialist · Advanced practice registered nurse · National Association of Clinical Nurse Specialists (NACNS) · Advanced practice nurse · Core practice competencies

5.1 History of CNS Role and Practice

In the United States, the clinical nurse specialist (CNS) role was developed in response to a recognized need for an advanced clinical expert nurse at a time when nursing's emphasis was on preparing excellent educators and hospital supervisors. The landmark Brown Report (1948) called attention to the need to abandon hospital apprentice-type training and move to collegiate-based education. The report noted the need for nurses to make unique contributions to clinical care, improve and develop nursing skills, teach and mentor nurses and nursing personnel, and collaborate with other professions as peers in the design and delivery of care (Allen et al. 1948). Nursing education began slowly moving into university settings, and by the 1960s it was apparent that nursing needed a clinical expert to provide direct care to complex patients, to lead the design and implement nursing practice advancements and innovations, and to teach and mentor nurses at the bedside. The CNS role was developed by nurse leaders in education and practice to be that clinical expert. The role required graduate nursing preparation with specialty knowledge and skill that was to be imbedded in the graduate curriculum—specialty was foundational, not in addition to, clinical nursing expertise. The first CNS graduate program was the psychiatric/mental health CNS under the direction of Dr. Hildegard Peplau at Rutgers University (Fulton 2014).

The number of CNS programs continued to grow with the support of the US government nursing workforce development grants. Multiple specialty areas were developed to address the need for nurse experts in emerging and established areas of practice. The criterion for practicing as a CNS was a graduate degree in nursing from a program that prepared graduates as CNSs in a specialty area. Professional certification was optional, available for some specialties and considered a measure of excellence; 3 years of experience was required for certification eligibility. No agreed-upon curricular standards existed for graduate nursing programs preparing CNSs. However, four curricular content areas were considered central to academic preparation of CNSs including (1) psychopathology and pathophysiology related to the clinical specialty, (2) knowledge and skills in the clinical practice of the specialty including teaching and research, (3) behavioral sciences essential to leadership and systems thinking, and (4) knowledge of the social framework in which health care is delivered (Fulton 2014).

To further distinguish the CNS role and practice from other advanced practice roles, it became increasingly important to establish core practice competencies, develop educational standards, and create regulatory protections for CNSs. In 1995 the National Association of Clinical Nurse Specialists (NACNS) was founded, and in 1998 NACNS released the *Statement on Clinical Nurse Specialist Practice and Education*, which included core CNS practice competencies regardless of specialty and educational recommendations for achieving the core competencies (NACNS 1998). NACNS also advocated for regulatory protections for the CNS role recommending guidelines for governmental regulations. NACNS continues to advocate for CNS practice and education and, in 2019, released the third edition of the *Statement on Clinical Nurse Specialist Practice and Education* (NACNS 2019). Across the years, CNSs have been the clinical nursing expert for specialty care in three domains—direct care to patients and families, leadership for advancing nursing practice for nurses and nursing personnel, and system-level change agent for removing barriers and facilitating best practices. This tripartite practice maintains the original intent of the CNS to fill the need for an advanced clinical nursing expert by and for nursing practice.

5.2 Definition of Clinical Nurse Specialist

The clinical nurse specialist (CNS) role is one of the four advanced practice registered nurse (APRN) roles recognized in the United States. The other APRN roles are nurse practitioner, nurse-midwife, and nurse anesthetist. All APRN scopes of practice extend beyond the generalist nurse in terms of expertise, role functions, mastery, and accountability and reflect a core body of nursing and health knowledge.

Professional nursing organizations have similar definitions of the CNS. The American Nurses Association defines a CNS as an advanced practice nurse who diagnoses, treats, and provides ongoing management of patients; provides expertise and support to nurses caring for patients; helps drive practice changes throughout the organization; and ensures use of best practices and evidence-based care to achieve the best possible patient outcomes (ANA 2019). The American Association of Critical-Care Nurses defines an acute care CNS as an advanced practice nurse practicing within a defined specialty as an expert clinician and patient advocate, leader in advancing nursing practice, and leader in organizational and system change (AACN 2014). The NACNS defines a clinical nurse specialist as a clinical expert in a specialty area practicing in three interrelated domains—patient/family, nurses/nursing practice, and organizations/systems. CNSs provide direct patient care to prevent, remediate, or alleviate illness and promote health with a defined specialty population—be that specialty broad or narrow, well established, or emerging. CNSs teach, coach, mentor, and lead nurses and nursing personnel in the delivery of evidence-based care for specialty populations. CNSs lead change, coordinate specialized care, and implement evidence-based programs of care at the system level for quality improvement, patient safety, and improved clinical and fiscal outcomes (NACNS 2019).

Consistent with the International Council of Nurses (ICN) definition of an advanced nurse, a CNS is a registered nurse (RN) with preparation beyond the level of a generalist nurse, has an earned graduate degree in nursing (master's or doctorate), has been educationally prepared in the CNS role, has the requisite knowledge and skills for specialty care, and is authorized to practice as a CNS. ICN states that specialist practice includes clinical, teaching, administration, research, and consultant roles (ICN 2009). A CNS is a clinical practice role that incorporates elements of teaching, research, and consultation for the purpose of advancing the practice of nursing. The focus of the CNS role is clinical care.

In summary, a CNS is defined as an advanced practice nurse prepared with a graduate degree in nursing to evaluate disease patterns, technological advances, environmental conditions, and political influences so as to interpret nursing's responsibility to serve the public's need for nursing services. CNSs function as expert clinicians, leading the advancement of nursing practice. CNS practice may adapt to clinical needs and system priorities; however, the following characteristics delineate the CNS role and practice:

- CNSs are professional nurses with a graduate-level preparation.
- CNSs are expert clinicians providing direct clinical care in a specialized area of nursing practice.
- CNS practice within a specialty population includes health promotion, risk reduction, and management of symptoms and functional problems related to disease and illness.
- CNSs provide direct care to patients and families, which may include diagnosis and treatment of disease.
- CNSs provide patient-/family-centered care that emphasizes strengths and wellness over disease or deficit.
- CNSs influence nursing practice outcomes by leading and supporting nurses to provide scientifically grounded, evidence-based care.
- CNSs implement improvements in the healthcare delivery system and translate high-quality research and other evidence into clinical practice to improve clinical and fiscal outcomes.
- CNSs participate in the conduct of research to generate knowledge for practice.
- CNSs design, implement, and evaluate programs of care and programs of research that address common problems for specialty populations.
- CNSs practice in a wide variety of healthcare settings, such as hospitals, community clinics, schools, mental health facilities, and occupational health clinics.

5.3 A Model of CNS Practice

Clinical nurse specialist (CNS) practice occurs across three highly interactive domains. Initial conceptualizations of the CNS role and practice were organized as "sub-roles," including but not limited to expert clinician, educator, researcher, change agent, and consultant. These sub-roles were not clearly defined and alternatingly represented skill sets, practice activities, and practice outcomes (Hamric and

Spross 1989; Sparacino et al. 1990; Gawlinski and Kern 1994). Portioning CNS practice into discrete units of skills or activities belied the integrated nature of CNS practice while simultaneously failing to identify unique practice competencies and associated outcomes. Additionally, the knowledge and skills associated with the sub-roles as skills represent practice expectations for all nurses. For example, all nurses teach, but the level of skill and expected outcomes varies by specialty role and academic preparation. The sub-roles conceptualization of the CNS contributed greatly to confusion about the CNS role. A role is a unique set of functions achieved thorough academic preparation. Practice is the act of applying knowledge and skills in a competent manner within the scope of the functional role. A role is a unified whole. While the skills and activities imbedded in the sub-roles model are germane to CNS practice, the sub-roles conceptualization of CNS role has been abandoned in favor of a more explanatory model of CNS practice.

CNS practice is better explained by three distinct yet interrelated domains of practice each with designated core practice competencies and outcome expectations (NACNS 1998, 2004). The model was developed using a systematic process including a comprehensive literature review, review of a national sample of CNS job descriptions, and expert panel review by nurse leaders (Baldwin et al. 2007). The model includes three domains of CNS practice—direct patient care, nurses/nursing practice, and organization/system. A subsequent comprehensive review of literature identified substantive areas of CNS practice that closely aligned with the three domains (Lewandowski and Adamle 2009). The substantive areas of practice identified were (a) managing the care of complex and/or vulnerable populations of patients and families through expert direct care, care coordination, and collaboration with the interdisciplinary team; (b) educating and supporting the interdisciplinary team through education, consultation, and collaboration; and (c) facilitating change and innovation within healthcare systems through change agency. NACNS has continued to develop the model and update the core practice competencies and outcomes organized by the three domains of practice. The practice competencies and outcomes have been independently validated by researchers (Baldwin et al. 2009; Fulton et al. 2015).

The NACNS model for CNS practice assumes (1) CNS practice is highly integrated across three domains, (2) expert advanced clinical care is central to CNS practice, (3) practice occurs within specialty with specialty knowledge and skill, and (4) practice occurs in the larger context of society and the healthcare environment. The domains and concepts in the model are interactive and are enacted through practice within a scope unique to the CNS role (NACNS 2019). In the updated 2019 model, the names of the domains were changed to *spheres of impact* from the previous name *spheres of influence* (NACNS 2019) (Fig. 5.1).

5.4 Practice Competencies

Core CNS practice competencies are foundational to defining CNS practice in today's complex and evolving healthcare system. The core competencies are comprehensive, entry-level competencies expected of graduates of all nursing programs

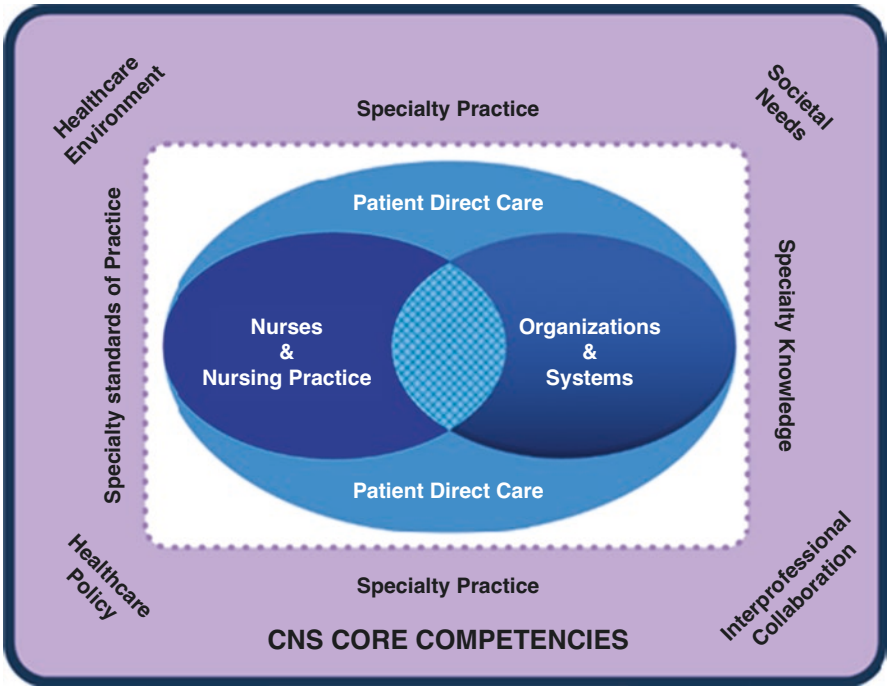

Fig. 5.1 CNS practice conceptualized as core competencies in three interacting spheres actualized in specialty practice and guided by specialty knowledge, skills/competencies, and practice competencies within the context of the ever-changing healthcare environment, healthcare policy, interprofessional collaboration, and societal needs (NACNS 2019). (Used with permission)

preparing CNSs. Due to the wide range of specialties in which CNSs practice, these competencies are core for CNS practicing in any specialty (NACNS 2019). In 2019, NACNS revised the competencies originally written in 1998 and revised in 2004 and 2010. The earlier versions of the core CNS competencies have been validated by expert panel and research (Baldwin et al. 2007, 2009), and the 2019 competencies were validated by an invitational panel representing 20 nursing organizations providing structured partner input to the current, updated competencies (NACNS 2019). The NACNS core CNS practice competencies are summarized in Table 5.1.

5.5 Outcome Measures and Evaluation

With greater focus on healthcare reporting of quality measures, CNSs are called to make measurement, evaluation, and dissemination of CNS outcomes a priority. One ongoing challenge to CNS outcome measurement and evaluation is the lack of standardized metrics for CNS outcomes. Unlike other advanced practice roles that use many of the metrics established for medical care, CNS practice across three domains lacks established measures for many outcomes.

Table 5.1 NACNS core CNS practice competencies (NACNS 2019) (*Published with permission*)

Competencies: Patient direct care sphere	
P.1	Uses relationship-building communication to promote health and wellness, healing, self-care, and peaceful end of life
P.2	Conducts a comprehensive health assessment in diverse care settings including psychosocial, functional, physical, and environmental factors
P.3	Synthesizes assessment findings using advanced knowledge, expertise, critical thinking, and clinical judgment to formulate differential diagnoses
P.4	Designs evidence-based, cost-effective interventions, including advanced nursing therapies, to meet the multifaceted needs of complex patients
P.5	Implements customized evidence-based advanced nursing interventions, including the provision of direct care
P.6	Prescribes medications, therapeutics, diagnostic studies, equipment, and procedures to manage the health issues of patients
P.7	Designs and employs educational strategies that consider readiness to learn, individual preferences, and other social determinants of health
P.8	Uses advanced communication skills in complex situations and difficult conversations
P.9	Provides expert consultation based on a broad range of theories and evidence for patients with complex healthcare needs
P.10	Provides education and coaching to patients with complex learning needs and atypical responses
P.11	Evaluates impact of nursing interventions on patients' aggregate outcomes using a scientific approach
P.12	Leads and facilitates coordinated care and transitions in collaboration with the patient and interprofessional team
P.13	Facilitates patient and family understanding of the risks, benefits, and outcomes of proposed healthcare regimens to promote informed, shared decision-making
P.14	Facilitates resolution of ethical conflicts in complex patient care situations
P.15	Analyzes the ethical impact of scientific advances, including cost and clinical effectiveness, on patient and family values and preferences
P.16	Advocates for patient's preferences and rights
Nurses and nursing practice sphere	
N.1	Provides expert specialty consultation to nurses related to complex patient care needs
N.2	Promotes interventions that prevent the impact of implicit bias on relationship building and outcomes
N.3	Advocates for nurses to practice to the full extent of their role in the delivery of health care
N.4	Leads efforts to resolve ethical conflict and moral distress experienced by nurses and nursing staff
N.5	Fosters a healthy work environment by exhibiting positive regard, conveying mutual respect, and acknowledging the contributions of others
N.6	Employs conflict management and negotiation skills to promote a healthy work environment
N.7	Assesses the nursing practice environment and processes for improvement opportunities
N.8	Uses evidence-based knowledge as a foundation for nursing practice to achieve optimal nurse-sensitive outcomes
N.9	Mentors nurses and nursing staff in using evidence-based practice principles
N.10	Leads nurses in the process of planning, implementing, and evaluating change considering intended and unintended consequences
N.11	Evaluates the outcomes of nursing practice using methods that provide valid data
N.12	Facilitates opportunities for nurses, students, and other staff to acquire knowledge and skills that foster professional development

(continued)

Table 5.1 (continued)

N.13	Engages nurses in reflective practice activities that promote self-awareness and invite peer feedback to improve the practice of nursing
N.14	Mentors nurses to analyze legislative, regulatory, and fiscal policies that affect nursing practice and patient outcomes
Organization/system sphere	
O.1	Cultivates a practice environment in which mutual respect, communication, and collaboration contribute to safe, quality outcomes
O.2	Uses leadership, team building, negotiation, collaboration, and conflict resolution skills to build partnerships within and across systems and/or communities
O.3	Consults with healthcare team members to integrate the needs, preferences, and strengths of a population into the healthcare plan, to optimize health outcomes and patient experience within a healthcare system
O.4	Leads and participates in systematic quality improvement and safety initiatives based on precise problem/etiology identification, gap analysis, and process evaluation
O.5	Provides leadership for the interprofessional team in identifying, developing, implementing, and evaluating evidence-based practices and research opportunities
O.6	Partners with research-focused, doctorally prepared (e.g., PhD) colleagues to translate, conduct, and disseminate research that addresses gaps and improves clinical knowledge and practice
O.7	Leads and participates in the process of selecting, integrating, managing, and evaluating technology and products to promote safety, quality, efficiency, and optimal health outcomes
O.8	Leads and facilitates change in response to organizational and community needs in a dynamic healthcare environment
O.9	Evaluates system-level interventions, programs, and outcomes based on the analysis of information from relevant sources
O.10	Demonstrates stewardship of human and fiscal resources in decision-making
O.11	Disseminates CNS practice and fiscal outcomes to internal stakeholders and to the public
O.12	Promotes nursing's unique contributions to advancing health to stakeholders (such as the organization, the community, the public, and policy-makers)
O.13	Advocates for equitable health care by participating in professional organizations and public policy activities
O.14	Advocates for ethical principles in protecting the dignity, uniqueness, and safety of all

Measuring CNS outcomes and evaluating the impact requires determining outcomes associated with and sensitive to CNS practice. Doran et al. (2014) conducted a literature review to identify evidence of CNS impact on patient-focused and organization-focused outcomes. The review included 25 articles published between 1989 and 2006, including 12 randomized controlled trials. Patient-focused outcomes demonstrating sensitivity to CNS practice included (a) disease-/condition-specific outcomes; (b) physical and psychosocial symptom outcomes; (c) early identification and prevention of complications; (d) self-management and adherence to treatment; and (e) patient satisfaction. Organization-focused outcomes sensitive to CNS practice included (a) unit/hospital length of stay and (b) total healthcare costs.

A systematic review conducted by Newhouse et al. (2011) compared processes and outcomes of care delivered by APRNs to a comparison provider group, most often physicians. The review included studies published between 1990 and 2008 with findings from 11 studies of CNS outcomes, including 4 randomized controlled

trials. Findings demonstrated that CNS practice had a high impact on length of stay (seven studies) and cost of care (four studies) and a moderate impact on physical complications (three studies). CNS impact on patient satisfaction (three studies) was similar to comparison groups. The Doran et al. (2014) and Newhouse et al. (2011) reviews were conducted for different purposes, yet the years of the literature overlapped. Only 4 studies were included in both reviews suggesting the difficulty in accurately locating research related to CNS outcomes and the quality of the reports.

In an international review of CNS practice outcomes including 24 articles covering 2012 to 2018, Bryant-Lukosius and Kietkoetter (2021) identified outcomes of CNS practice by sphere of impact. CNS-sensitive outcomes in the patient sphere included (1) prevention, alleviation, or reduction of disease- or treatment-related symptoms, functional problems, or risk behavior; prevention of complications or error prevention; and (2) improved quality of life and functional abilities. Examples of specific outcomes include improved comfort, increased patient satisfaction, improved patient/family knowledge, increased patient/family involvement in care and decision-making, increased rates of smoking cessation, reduced hospital readmission, reduced patient safety risks, and rapid response to deteriorating physiologic conditions.

CNS outcomes in the nurses/nursing practice sphere included improved implementation of best practices; increased number of nurses achieving required competencies; increased number of nurse-led evidence-based practice projects; sustained integration of practice changes; improved interprofessional team communication; increased staff satisfaction; cost saving through reduction in labor costs; increased nurse engagement; and empowerment. Outcomes related to engaging nurses in research included successful completion of studies, improved climate of inquiry, and nurse satisfaction in study participation. In addition, the outcomes in this sphere were also found to be relevant to other health professional consistent with CNS's initiatives working with interprofessional teams.

In the organization/system sphere, CNS outcomes demonstrated innovative care delivery models across the continuum of care, staff compliance with regulatory requirements and standards, and changes to policies and protocols to improve patient care. Specific examples of CNS outcomes include organizational achievement of Magnet; sustained integration of policy/practice change; strengthened organizational culture of inquiry; increased nurse use of patient education plans; increased organizational involvement in national initiatives; reduced hospital staffing costs (reduced nurse overtime and turnover); reduced 30-day readmission; reduced infection rates; reduced pressure ulcer rates; reduced catheter-associated urinary tract infection rates; and improved quality of care for ventilated patients with fewer intensive care readmissions and reduced length of stay.

CNS-sensitive outcomes were developed by the NACNS to correspond with core practice competencies. In a study to validate the practice outcomes, a national sample of CNSs rated the outcomes as highly important and reported the outcomes frequently were incorporated in employer job descriptions. When the CNS participants were not held accountable for the outcomes by others in the workplace, they nonetheless reported using the outcomes to guide practice priorities and initiatives

(Fulton et al. 2015). Although there was high agreement on outcome accountability and perceived importance, fewer CNSs indicated that they always monitor outcomes, suggesting a need to create standards and methods for collecting, analyzing, and reporting outcomes of CNS practice (Fulton et al. 2015). Reporting formats using templates and technology could facilitate linking outcomes to job responsibilities and job performance. The ability to aggregate data from multiple CNS specialty practices is needed to demonstrate the contributions of CNSs to patients, nursing practice, and the healthcare system. The NACNS CNS practice outcomes are listed in Table 5.2.

Table 5.2 NACNS practice outcomes by sphere of impact (NACNS 2019) (*Published with permission*)

Outcomes: Patient direct care sphere	
PO.1	Phenomena of concern requiring nursing interventions are identified
PO.2	Diagnoses are accurately aligned with assessment data and etiologies
PO.3	Plans of care are appropriate for meeting patient needs with available resources, reflecting patient/family treatment preferences and shared decision-making
PO.4	Nursing interventions target specified etiologies
PO.5	Programs of care are designed for specific populations (e.g., oncology, specific ethnic groups, end of life)
PO.6	Prevention, alleviation, and reduction of symptoms, functional problems, or risk behaviors are achieved
PO.7	Nursing interventions, in combination with interventions by members of other disciplines, result in synergistic patient outcomes
PO.8	Unintended consequences and errors are prevented
PO.9	Predicted and measurable nurse-sensitive patient outcomes are attained through evidence-based practice
PO.10	Interventions have measurable outcomes that are incorporated into guidelines for practice with deletion of inappropriate interventions
PO.11	Collaboration with patients/families, nursing staff, physicians, and other healthcare professionals occurs as appropriate
PO.12	Desired measurable patient outcomes are achieved (Desired outcomes of care may include improved clinical status, quality of life, functional status, alleviation or remediation of symptoms, patient/family satisfaction, and cost-effective care)
PO.13	Innovative educational programs for patients, families, and groups are developed, implemented, and evaluated
PO.14	Transitions of patients are fully integrated across the continuum of care to decrease fragmentation
PO.15	Reports of new clinical phenomena and/or interventions are disseminated through presentations and publications
PO.16	Interventions that are effective in achieving nurse-sensitive outcomes are incorporated into guidelines and policies
Outcomes: Nurses and nursing practice sphere	
NO.1	Knowledge and skill development needs of nurses are delineated
NO.2	Evidence-based practices are used by nurses
NO.3	The research and scientific base for innovations is articulated, understandable, and accessible
NO.4	Nurses can articulate their unique contributions to patient care and nurse-sensitive outcomes
NO.5	Nurses are empowered to solve patient care problems at the point of service

Table 5.2 (continued)

NO.6	Desired patient outcomes are achieved through the synergistic effects of collaborative practice
NO.7	Nurses' career enhancement programs are ongoing, accessible, innovative, and effective
NO.8	Nurses experience job satisfaction
NO.9	Nurses engage in learning experiences to advance or maintain competence
NO.10	Nurses use resources judiciously to reduce overall costs of care and enhance the quality of patient care
NO.11	Competent nursing personnel are retained because of increased job satisfaction and career enhancement
NO.12	The impact of implicit bias on relationships and outcomes is recognized and minimized
NO.13	Educational programs that advance the practice of nursing are developed, implemented, evaluated, and linked to evidence-based practice and effects on clinical and fiscal outcomes
NO.14	Nurses have an effective voice in decision-making about patient care
Outcomes: Organization/system sphere	
OO.1	Clinical problems are articulated in the context of the organization/system structure, mission, culture, policies, and resources
OO.2	Patient care processes reflect continuous improvements that benefit the system
OO.3	Change strategies are integrated throughout the system
OO.4	Policies enhance the practice of nurses individually as members of multidisciplinary teams
OO.5	Innovative models of practice are developed, piloted, evaluated, and incorporated across the continuum of care
OO.6	Evidence-based, best practice models are developed and implemented
OO.7	Nursing care and outcomes are articulated at organizational/system decision-making levels
OO.8	Stakeholders (nurses, other healthcare professionals, and management) share a common vision of practice outcomes
OO.9	Decision-makers within the institution are informed about practice problems, factors contributing to the problems, and the significance of those problems with respect to outcomes and costs
OO.10	Patient care initiatives reflect knowledge of cost management and revenue enhancement strategies
OO.11	Patient care programs are aligned with the organization's strategic imperatives, mission, vision, philosophy, and values
OO.12	Staff comply with policies, protocols, and standards of care that reflect regulatory requirements and standards
OO.13	Policy-making bodies are influenced to develop regulations/procedures to improve patient care and health services

5.6 CNS Education

CNSs are educated with a graduate degree in nursing at the master's or doctoral level. CNS curricula are built on foundational content for all graduate programs, recommendations for advanced practice nurses, recommendations for CNS content, and finally specialty practice (Fig. 5.2). The foundational content for master's-level education is the American Association of Colleges of Nursing's *The Essentials of Master's Education in Nursing* (AACN 2011), which includes nine foundational

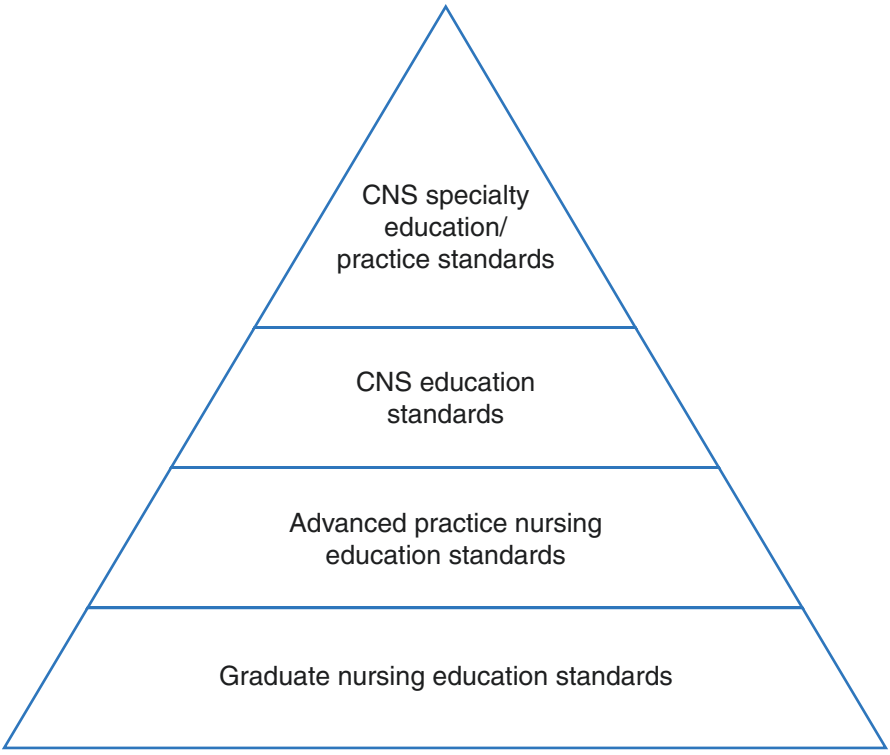

Fig. 5.2 Educational standards building blocks for graduate-level clinical nurse specialist education

content areas recommended for all graduate nursing education. A summary of the master's Essentials is in Table 5.3.

Advanced practice nursing functional roles, with practices focused on direct care, share a common core of knowledge for practice. Standards specific to advanced practice nursing are the next educational criteria build upon the foundational standards. The only known standards for advanced nursing practice curriculum regardless of the functional role are *The Essentials of Doctoral Education for Advanced Nursing Practice* (AACN 2006) developed for preparing advanced nurses with a practice doctorate (Doctor of Nursing Practice, DNP). Practice doctorates have only recently been introduced in the United States. The master's degree continues to be the dominant degree option for entry into practice as a CNS or advanced practice nurse. NACNS has called for the DNP to be the entry into practice degree for CNSs by 2030 (NACNS 2015).

The *Advanced Practice Registered Nurses (APRN) Consensus Model* was developed by the nursing community and includes APRN educational recommendations for three separate graduate-level courses. Educational programs preparing APRNs,

Table 5.3 Essentials of master's nursing education (AACN 2011)

Essential I	**Background for practice from sciences and humanities**
	Recognizes that the master's-prepared nurse integrates scientific findings from nursing, biopsychosocial fields, genetics, public health, quality improvement, and organizational sciences for the continual improvement of nursing care across diverse settings
Essential II	**Organizational and systems leadership**
	Recognizes that organizational and systems leadership are critical to the promotion of high-quality and safe patient care. Leadership skills are needed that emphasize ethical and critical decision-making, effective working relationships, and a systems perspective
Essential III	**Quality improvement and safety**
	Recognizes that a master's-prepared nurse must be articulate in the methods, tools, performance measures, and standards related to quality, as well as prepared to apply quality principles within an organization
Essential IV	**Translating and integrating scholarship into practice**
	Recognizes that the master's-prepared nurse applies research outcomes within the practice setting, resolves practice problems, works as a change agent, and disseminates results
Essential V	**Informatics and healthcare technologies**
	Recognizes that the master's-prepared nurse uses patient-care technologies to deliver and enhance care and uses communication technologies to integrate and coordinate care
Essential VI	**Health policy and advocacy**
	Recognizes that the master's-prepared nurse is able to intervene at the system level through the policy development process and to employ advocacy strategies to influence health and health care
Essential VII	**Interprofessional collaboration for improving patient and population health outcomes**
	Recognizes that the master's-prepared nurse, as a member and leader of interprofessional teams, communicates, collaborates, and consults with other health professionals to manage and coordinate care
Essential VIII	**Clinical prevention and population health for improving health**
	Recognizes that the master's-prepared nurse applies and integrates broad, organizational, client-centered, and culturally appropriate concepts in the planning, delivery, management, and evaluation of evidence-based clinical prevention and population care and services to individuals, families, and aggregates/identified populations
Essential IX	**Master's-level nursing practice**
	Recognizes that nursing practice, at the master's level, is broadly defined as any form of nursing intervention that influences healthcare outcomes for individuals, populations, or systems. Master's-level nursing graduates must have an advanced level of understanding of nursing and relevant sciences as well as the ability to integrate this knowledge into practice. Nursing practice interventions include both direct and indirect care components

regardless of role, should include one course each in physiology/pathophysiology, pharmacology, and health assessment. In addition, a minimum of 500 supervised clinical practice hours are recommended be included in the master's curriculum for all advanced practice functional roles (National Council of State Boards of Nursing 2008).

The NACNS *Statement on Clinical Nurse Specialist Practice and Education* (2019) includes recommendations for CNS education specifically designed to achieve the NACNS core CNS practice competencies. Specialty knowledge and skills are the last layer of content to be included in the curricula. A summary of the NACNS curricular recommendations is in Chap. 4, Table 4.2. Professional specialty organizations publish standards for specialty practice that should be incorporated in the curriculum as part of specialty graduate education. NACNS also publishes criteria for evaluating CNS graduate programs. These criteria are summarized in Chap. 4, Table 4.4.

Schools of nursing preparing CNSs must be accredited by a professional accrediting organization approved and monitored for ongoing quality by the US Department of Education. The National League for Nursing (NLN) Commission for Nursing Education Accreditation (CNEA) and Commission on Collegiate Nursing Education (CCNE) are two professional organizations that accredit graduate nursing programs. Each accrediting organization publishes criteria that schools must meet in order to achieve academic program accreditation (Commission on Collegiate Nursing Education 2018; National League for Nursing 2016).

5.7 Credentialing

Credentialing of CNSs occurs through legal entities, such as state governments, and professional nursing organizations. Authority to practice within a legally designated scope is granted by a state legislature through statutory code (law), usually referred to as the Nurse Practice Act. The rules for obtaining authorized practice within a designated legal scope are stipulated in corresponding regulations developed to guide implementation of the statute. Under delegated authority from the legislature, a state board of nursing (or board of health professions) establishes and implements regulations. Though similar across the country, in the United States, each of the 50 states has separate laws and regulations for granting practice authority to nurses, including CNSs. Authority to practice as a CNS must be obtained from each state in which a CNS practices with a few exceptions. Nurses practicing in federal health systems, such as the Veterans Administration or a branch of the US military, can practice with authority from any of the 50 states. An interstate compact has been designed to allow nurses authorized/licensed to practice in one state to likewise practice in another state, provided both states are members of the compact. To date very few states are participating in the advanced practice interstate compact.

Professional credentialing involves certification by professional organizations. Certification represents professional validation of competencies in a circumscribed specialty area of practice. The American Nurses Association (2017) defines a specialty as encompassing a specified area of discrete study, research, and practice as defined and recognized by the profession. Specialists are those who elect to focus their professional practice to their identified specialty. A specialty includes, among other criteria, a well-derived knowledge base particular to the practice of the nursing specialty; existing mechanisms to develop, support, review, disseminate, and

integrate research into practice; competencies for the area of specialty nursing practice; and defined educational criteria for specialty preparation or graduate degree.

Whereas certification was initially designed as a measure of excellence, it has since become a measure of entry-level competency. Each certification body has eligibility requirements including evidence of graduation for a CNS graduate program; submission of a transcript demonstrating three separate courses in advanced pathophysiology, pharmacology, and physical assessment; and school attestation that the curriculum included 500 clock hours of supervised clinical experiences in the CNS role.

To address variability in requirements to practice as an advanced practice registered nurse (APRN), the nursing community collaborated on guidelines to align educational requirements, educational program accreditation, professional certification, and legal authority to practice. This effort resulted in the creation of the *Consensus Model for APRN Regulation: Licensure, Accreditation, Certification and Education* (National Council of State Boards of Nursing 2008). The model specifies that all APRNs must hold a graduate degree from an accredited graduate program that prepared graduates in one of the four recognized APRN roles (CNS, nurse practitioner, nurse-midwife, nurse anesthetist) and be certified by a professional organization. The model delineates only six specialty populations—neonatal, pediatrics, adult/gerontology, women's/men's health, family across the life span, and psychiatric/mental health across the life span. Specialty practice is in addition to population focus. A major shortcoming of the model is the limitations on specialty practice. Currently, CNSs do not have certification options in all specialties or for all populations.

CNSs obtain practice privileges from their respective states through an application process and are granted a license or other recognition to practice. When available, CNSs should be certified in a specialty area of practice, though not all states require certification for authority to practice as a CNS. Legal authority to practice as a CNS includes the autonomous authority to assess, diagnose, and initiate orders for treatment and therapy to include prescriptive authority for pharmacologic and nonpharmacologic therapies (National Council of State Boards of Nursing 2008).

5.8 Moving Forward: Challenges and Opportunities

For over 50 years, the CNS role has existed in the United States. In 1998, the NACNS created a model of CNS practice linking core practice competencies to expected outcomes. The model has been refined over the years with the latest version published in 2019. As a model *of* practice, it explains *how* CNSs practice—as an interactive process across three domains called spheres of impact that are linked to outcomes. As with any model, it needs continual theoretical and empiric support to remain a valid explanation of contemporary CNS practice. Additional research to validate the model, competencies, and outcomes is needed.

Measuring outcomes of CNS practice is a continuing challenge for CNSs. Comprehensive literature reviews of CNS practice outcomes provide strong

evidence of the value of CNS practice (Lewandowski and Adamle 2009; Doran et al. 2014; Newhouse et al. 2011; Bryant-Lukosius and Kietkoetter 2021). Continued efforts are needed to establish measures evaluating CNS practice competencies and outcomes. The delivery of health care has been undergoing many changes in the United States. Measurement of CNS practice outcomes should reflect priorities of patients, healthcare systems, and insurance and government agencies as payers.

While hundreds of existing publications provide a consistent core representation of the CNS role and practice, it is curious that so often publications include commentary noting CNS role ambiguity. Understanding the CNS role and practice is inextricably tied to the ability to articulate the value of nursing, suggesting that continuing assertions about CNS role ambiguity reflects a lack of clarity about nursing and nursing practice. As a profession, nursing frequently lacks the ability to define its value to the public health and well-being, making it even more challenging to describe CNS practice as nursing practiced at an advanced level.

The *APRN Consensus Model* as a guide for education, certification, and regulation presents challenges for CNSs. Limited to only six designated specialty populations limits CNS's ability to lead nursing practice in new and emerging areas of specialty need compromising nursing's responsibility to a social mandate (Fulton 2019). As designed, the *APRN Consensus Model* is unnecessarily prescriptive and restrictive.

As the premier organization representing CNSs in the United States, the NACNS needs greater outreach and interaction with CNSs globally. Improving the ability of CNSs to network and engage with ICN, other national CNS organizations/groups, universities, and other education and research institutions will strengthen the global value of the CNS as an advanced practice nurse.

5.9 Exemplar of Clinical Nurse Specialist Practice: Critical Care CNS

Patients with complex, life-threatening disease and injury are treated in critical care units. These critically ill patients are at risk for developing physical and cognitive problems related to their underlying disease, medical treatments, and the restrictive, high-tech intensive care environment. A crucial care CNS leads nursing and interprofessional teams in preventing or minimizing risk for problems such as deconditioning, delirium, and pressure ulcers. One intervention known to reduce risks for critical care patients is early progressive mobility, which can reduce the number of days on mechanical ventilation, decrease length of intensive care unit stay, minimize physical deconditioning, and prevent delirium (Lai et al. 2017; Inouye et al. 1999; Connolly et al. 2016). CNSs assess patients and develop mobility plans that incorporate baseline functioning and goals of medical treatment. Individualized mobility plans address barriers such as oversedation, untreated pain, and devices that restrict mobility such as urinary catheters and intravenous lines. The CNS leads the interprofessional team in collaborating to safely and successfully mobilize

patients. For example, a CNS collaborates with respiratory therapists to identify ways to monitor the endotracheal tube and oxygenation, physical therapists to direct the team in proper body mechanics and safe patient movement, and nurses and nursing assistants to support safe mobility and prevent falls. A CNS is essential in directing the team of professionals to enable mobilization, promote positive outcomes, eliminate fear of falling, and reinforce to the interprofessional team the importance of early mobility of critically ill patients.

In addition to individual patient care interventions, a CNS works at the system level to change practice by leading the development, implementation, and evaluation of evidence-based protocols for early mobility of critical care patients. A CNS bridges the gap between what is known and what is practiced by creating provider order sets, policies setting mobility as an expectation, and interprofessional educational programs for staff and employees. CNSs develop audit tools to measure and evaluate clinical and fiscal outcomes. A CNS is the content expert and consultant in each step of the process of designing a progressive mobility protocol.

Along with other CNSs in a multi-facility hospital system, the critical care CNS designed and implemented a progressive mobility protocol. Protocol implementation involved an interprofessional team, led by the CNSs. After implementation, the hospital's critical care unit experienced a 26% decrease in ventilator days, 36% reduction in hospital-acquired pressure injuries, and a 50% reduction in falls.

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