2nd Edition

Statement on Clinical Nurse Specialist Practice and Education

NATIONAL ASSOCIATION OF CLINICAL NURSE SPECIALISTS

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INTRODUCTION

Clinical Nurse Specialists (CNSs) comprise a group of over 67,000 advanced practice nurses (U. S. Department of Health and Human Services, 2002). In 1995, the National Association of Clinical Nurse Specialists (NACNS) was formed to be the national organization specifically dedicated to CNS issues and to promote the unique practice of CNSs. NACNS has been involved in articulating CNS practice competencies, educational guidelines, and credentialing requirements. Following the founding of NACNS, the organization's Board of Directors and membership identified an urgent need for a national statement that would define CNS competencies and contributions to the healthcare of society. Other advanced practice nursing groups — certified registered nurse anesthetists (CRNA), certified nurse midwives (CNM), and nurse practitioners (NP) — had formed professional organizations many years before NACNS and, therefore, had been visible in shaping the national health agenda and the related advanced practice nursing agenda. NACNS's entry into the national dialogue offers a balanced view among the four groups vested in the national health agenda and in issues involving education, practice, and regulation surrounding the four different advanced practice categories. The competencies and expected outcomes that distinguish CNS practice are articulated in this 2004 revision of the NACNS *Statement on Clinical Nurse Specialist Practice and Education*.

History of the Development of the Statement

CNSs have existed for approximately 50 years as models of "expertness representing advanced or newly developed practices [in nursing]" (Peplau, 1965/2003, p. 6). During this time span, much has been written about Clinical Nurse Specialists, including descriptions of the practice, title, role, education, and regulation. Over this 50 year period, CNS practice has evolved with changes in (a) patient care needs across the continuum of care, (b) healthcare systems delivery models, (c) academic education and life-long learning, and (d) research providing the underpinnings of the science of nursing practice and explication of outcomes.

The first edition of the *Statement on Clinical Nurse Specialist Practice and Education* (1998) represented an initial endeavor to articulate the competencies and outcomes of contemporary CNS practice. The competencies described in the first document were derived from input from CNSs across many geographical regions and practice settings, and from other published sources, including more than 70 CNS position descriptions from a variety of healthcare agencies. The *Statement* was extensively reviewed by more than 60 external reviewers including nationally recognized nurse leaders and CNSs in organizations representing various specialties and practice settings. Reviewers also included nurses who were selected for their special contributions to CNS practice. The *Statement* provides the basis upon which specialty practice is built, allowing for regional differences in healthcare, and being flexible enough to respond to rapidly changing dynamics of healthcare.

More than 8,000 copies of the original 1998 *Statement on Clinical Nurse Specialist Practice and Education* have been disseminated to students, practicing CNSs, organizations, schools of nursing, employers, state boards of nursing, and other local, regional, and national groups. Changes in healthcare have occurred since the original *Statement*. For example, there has been a new and evolving emphasis on evidence-based practice, nurse sensitive outcomes, behavioral models of healthcare, concerns about patient safety, family care, special needs of older adults, and end-of-life care, as well as a heightened emphasis on quality and

clinical practice improvement. These trends, along with feedback from consumers and stakeholders, led to the refinement and updating of the *Statement*. The updated *Statement* builds on the original document and offers clarification of conceptual issues and positions of NACNS. This second edition, like the first, has been extensively reviewed by practicing CNSs, CNS educators, nursing leaders, nursing organizations, and other stakeholders in nursing practice.

The NACNS *Statement* is an evolving document and it will continue to be shaped over time; however, it will always reflect NACNS's commitment to ensuring that society benefits from the full range of nursing services and the competencies characteristic of CNS practice. A national consensus on CNS competencies and outcomes brings CNS contributions to the forefront and shapes the agenda for education, public policy, professional practice, and performance standards.

Section 1 of the updated *Statement* describes CNS practice, outlines the historical foundations of CNS practice, defines the CNS, and discusses essential characteristics of CNS practice. It provides a conceptual model of CNS practice, and describes the social mandate for CNS practice, the relationship between CNS practice, specialty knowledge, and practice standards, as well as the regulation and validation of CNS practice. Section 2 focuses on the competencies and outcomes of CNS practice across the three spheres of influence. Section 3 explains the recommendations for graduate preparation of CNSs to achieve the core competencies described in Section 2. The appendices include other important elements: Appendix A is a glossary of terms used throughout the document; Appendix B is an annotated bibliography of research and other articles about CNS practice and outcomes.

Parameters of the Statement

Clinical expertise in a specialty is the hallmark of CNS practice. For the CNS, entry into practice occurs at the level of the master's degree. This *Statement* describes generic competencies for CNS practice regardless of specialty. Mastery of the competencies is achieved with experience and continuing education.

The conceptual model utilized to describe the competencies of a CNS uses three spheres of influence as the framework. CNS practice includes the patient/client sphere, the nurses and nursing practice sphere, and the organization/system sphere. NACNS recognizes that, depending on specialty, settings, populations, and other factors, CNS practice may be actualized differently — competencies in one sphere of influence may dominate the practice. However, this document describes the competencies for the entire framework of CNS practice.

The competencies required for specific nursing specialty practice are not addressed in this document. Individual CNSs are expected to define their practice using this *Statement* along with other relevant specialty standards from specialty organizations, if available at the advanced practice level. By defining generic competencies, this *Statement* has implications for credentialing, education, and regulation. It articulates the unique competencies of CNS practice and the education necessary to support that practice. This *Statement* does not compare CNS practice with the practice of other advanced nursing groups.

Goals of the Statement

The purpose of the NACNS *Statement on Clinical Nurse Specialist Practice and Education* is to describe entry-level competencies and associated outcomes for CNS practice regardless of specialty across three spheres of influence. Specialty competencies, including those associated with populations or settings, should overlay the entry-level competencies to provide greater specification or emphasis among the competencies across the three spheres.

The *Statement* has four goals. The goals are to:

- Articulate competencies for CNS practice and associated outcomes;
- Make explicit the contributions of CNSs in meeting societal health care needs;
- Provide a foundation for core CNS credentialing, including certification examination, portfolio, or other mechanisms; and
- Provide a standardized framework for CNS education at the graduate level.

SECTION 1.
CLINICAL NURSE SPECIALIST PRACTICE

Introduction

Clinical Nurse Specialists are one of four categories of advanced practice nurses, each with distinctively different practice characteristics. While all four groups — clinical nurse specialists, nurse practitioners, nurse midwives, and nurse anesthetists — have their origins within professional and statutory definitions of nursing, each group's practice has expanded and specialized in diverse ways to meet different aspects of the health needs of individuals, families, groups, and communities. Each category of advanced practice nursing has a knowledge base unique to its practice to support its distinctive contributions. Each group's unique practice functions within the healthcare system for the purpose of delivering cost-effective quality outcomes.

The essence of CNS practice is clinical nursing expertise in diagnosis and treatment to prevent, remediate, or alleviate illness and promote health with a defined specialty population — be that specialty broad or narrow, well established, or emerging. The expertise of clinical practice is manifested in the care of clients — individuals, families, groups, and communities. CNS practice is the translation of clinical expertise into nursing care provided either directly or by influencing nurses and nursing personnel through evidence-based nursing

care standards and programs of care. CNS practice also influences systems — healthcare agencies, political systems, and public and professional organizations, to mobilize, change, or transform these systems to facilitate expertly designed nursing interventions. Thus, CNS practice is consistently targeted toward achieving quality, cost-effective patient-focused outcomes across three spheres of influence.

CNSs are responsible and accountable for the diagnosis and treatment of illnesses/suffering and risk behaviors among individuals, families, groups, and communities. Illness may occur whether or not a patient/client has a disease (see the Glossary for the definitions of illness and patient/client). If illness occurs in the absence of disease, CNSs become a key provider of care. CNSs who care for patients experiencing illness with disease etiologies are also experts in assisting with disease-related diagnosis and treatment. In cases where disease is such an over-riding context to the patient's illness, some CNSs may expand their nursing practice to include prescriptive authority for pharmacologic agents to augment the care that they are responsible and accountable to provide.

Historical Foundations of CNS Practice

Historically, CNS practice is grounded in the nature of nursing as initially described by Florence Nightingale (1859/1969). Based upon her observations and analysis of data, Nightingale proposed that illness and disease are two distinctly different phenomena; that is, although illness can have disease-related etiologies, many times factors other than disease cause suffering. These factors are described in this *Statement* as nondisease etiologies.

> In watching diseases . . . the thing that strikes the experienced observer most forcibly is this, that the symptoms or the sufferings generally considered to be inevitable and incident to the disease are very often not symptoms of the disease at all, but of something quite different — of want of fresh air, or of light, or of warmth, or of quiet, or of cleanliness, or of punctuality and care in the administration of diet, of each or of all of these (p. 8)

Nightingale described and articulated the shape and focus of CNS practice expansion. Her focus was different from the primary orientation of medical practice as the diagnosis and treatment of disease. In the Nightingale tradition, CNSs integrate illness care with disease care.

The analysis and conclusions by Nightingale about the differences between illness and disease were grounded in her scientific approaches to understanding the effects of differing causes of patients' problems and the effect of different treatments upon patient conditions. When patients had concurrently occurring illness problems and disease problems and when they received services from both nursing and medicine, these patients benefited from the synergistic effects of care from the two professions. Nightingale concluded that if patients received services from only one perspective, when in fact they had two underlying causes of the problems, or if they received the services from the wrong profession or perspective, suffering and recovery were prolonged and in some cases death occurred. Furthermore, if patients suffered from illness, but were treated as if they had a disease, the misdiagnosis and treatment resulted in poor outcomes.

Nightingale also emphasized nursing activities concerned with teaching principles of life and health for the purpose of preventing illness and disease. Reed and Zurakowski (1983) stated that Nightingale promoted two types of nursing — sick nursing to address illness and suffering, and health nursing to prevent disease. Regardless of the focus, Nightingale emphasized activities based on observation, use of data and statistics, scientific knowledge, and administrative skills.

In summary, Nightingale's gift to contemporary nursing is to define nursing's unique contribution in preventing and treating illness caused by etiologies other than disease; alleviating risk behaviors; and expertly assisting with medical care. Her contributions to contemporary CNS practice include (a) the delineation of the practices of nursing and medicine as distinctly different with nursing focusing on illness/suffering and medicine focusing on disease, (b) the recognition that misdiagnosis and treatment of patients problems resulted in

poor outcomes, (c) the articulation that alleviation of suffering from nondisease and disease related factors and prevention of disease from nondisease factors were nursing responsibilities, (d) the belief that nursing practice should be grounded in the scientific approach of data collection and analysis, e) the recognition that the quality of nursing care is tied to the competencies of the nurse(s), and f) the global view that the healthcare system was a place where nurses needed to have influence (Nightingale, 1859/1969). Patients often require an integration of the unique contributions of nursing care with medical care to achieve desired outcomes.

The scientific underpinnings of nursing continued to expand from the 1950's into the mid-1970's through a number of initiatives. During this time, nurses typically obtained graduate degrees in disciplines other than nursing, and as a result their research tended to be more about nurses and nursing education than on nursing practice. Nonetheless, these initiatives made important contributions to CNS practice by introducing into nursing greater use of scientific methods and the fundamentals of theory construction. Graduate nursing programs for CNSs in this period of time typically included course work in research through the master's thesis.

Several nursing scholars began constructing theories for nursing. Early theories tended to emphasize the patient as a dependent recipient of nursing care, including Wiedenbach (1964), Henderson (1966) and Levine (1973). Later theories for nursing, including those by Neuman (1972, 1982), King (1971), Rogers (1970), Roy (1970), Newman (1979), Parse (1981), and Orem (1985), placed emphasis on the subjective nature of health and illness, the importance of emphasizing the patient as an independent participant, and the value of practice based on the patient's perspective. These scholars renewed the emphasis begun by Nightingale on the subjective nature of illness and suffering. Consequently, graduate nursing programs for CNSs in this period of time typically had requirements that the student's clinical course work be focused on one or more of these theorists.

Peplau's 1965 classic contribution to CNS practice, an article that outlined the emerging issues in specialty practice, defined the clinical nursing expert as the

first advanced practice nurse. She titled this group Clinical Nurse Specialists. As she pointed out, the term Clinical Nurse Specialist was first used in 1938, but Dr. Peplau is credited with describing the CNS, an advanced practice nurse, as having expertise in nursing practice in the care of complex patients. Peplau (1965/2003) proposed that graduate education in nursing, at a minimum of the master's level with a clinical focus, was requisite to prepare CNSs for expert clinical practice.

Other authors have published texts and compilations of articles in the professional literature that clarified the practice and roles of CNSs (Ayers, 1972; ANA, Council of Clinical Nurse Specialists, 1986; Beecroft & Papenhausen, 1989; Gawlinski & Kern, 1994; Hamric & Spross, 1983, 1989; Lewis, 1970; Sparacino, Cooper, & Minarik, 1990). The American Nurses Association (ANA), in the first edition of the *Social Policy Statement*, defined a CNS as a nurse who held a master's degree in nursing with a clinical focus (ANA, 1980). Drawing on this rich history, NACNS developed the first *Statement on Clinical Nurse Specialist Practice and Education* in 1998, as well as a position paper in 2003 affirming the general principles that CNSs are clinical experts with a specialty area of nursing and that they are prepared through graduate education (NACNS, 2003b).

Additionally, between 1960 and 1999, scientific research related to the practice of nursing increased dramatically, and specific knowledge about nursing practice emerged, aptly termed nursing science (Donaldson, 2000). Nursing research focused on health phenomena related to human experience, health status, and behavior of humans, rather than on the function or status of cells, organs, or organ systems. During this time nursing research included breakthroughs about person and family health, pain management, neonatal and young child development, research utilization, dementia care, transitional care, health and violence, women's health, urinary incontinence in women, psychobiological health, and biobehavioral health (Donaldson). CNSs became consumers of this research and developed competencies in research utilization (Barnard & Hoehn, 1978; Haller, Reynolds, & Horsley, 1979; Horsley & Crane, 1981; Krueger, Nelson, & Wolanin, 1978; Stetler, 1985). These competencies have formed the basis for the current role of many CNSs as leaders in evidence-based practice efforts.

To summarize, the influence of the historical foundations define CNS practice as focused on the differential diagnosis and treatment of illness, which can occur in the presence or absence of disease (Lyon, 1990; Lyon, 1996a). CNSs provide evidence-based interventions for illness etiologies. (For examples of illness etiologies, see glossary.)

Social and Professional Mandate for CNS Practice

CNSs were created by the nursing profession to meet the increasingly complex needs of patients. CNSs provide expert care to patients with complex conditions and advance the practice of nursing by (a) designing innovative evidence-based interventions, (b) influencing the practice of other nurses, and (c) influencing the healthcare system environment to support autonomous nursing practice.

The ANA recognizes CNSs as clinical experts in nursing with attributes distinguishing them from other advanced practice nurses (ANA, 2004). The ANA acknowledges that while there is an overlap of knowledge and skills among the advanced practice groups, the scope of practice of CNSs is distinguishable from the other advance practice groups.

As a profession, nursing has a social mandate to evolve its practice to meet the needs of that society which creates and supports it. The profession is responsible for helping shape statutes and regulations to enable nurses to provide the autonomous scope of practice for which nursing is responsible and accountable. Professions are responsible for self-interpretation and self-regulation; therefore, it is imperative that nursing continues to interpret itself in the context of contemporary social needs. Because CNSs demonstrate mastery in the application of science to nursing practice, CNS leadership in advancing nursing practice as a profession is critically important.

CNSs bring emerging nursing science to the prevention and early detection of illness. Preventable illness comprises approximately 70% of the healthcare burden and its associated costs (Fries, Koop, Sokolov, Beadle, & Wright, 1998). In an analysis of the causes of death in the U.S., using underlying causes rather than

the traditional disease-oriented classifications, researchers found that preventable illness associated with nondisease etiologies, such as lack of exercise and poor nutrition represented eight of the top nine causes of death (Fries et al.; McGinnis & Foege, 1993). Thus, many illnesses are experienced because of nondisease factors that can be prevented or resolved through nursing interventions.

CNSs integrate scientific knowledge to design new interventions that treat symptoms, functional problems, and complications of disease treatment. Regardless of the setting, complications and failure to recover from disease and medical treatment may be prevented by appropriate diagnosis and treatment of illness. Innovation in illness diagnosis and treatment is one of the hallmarks of CNS practice. For example, to implement nursing care and prevent complications from both illness and disease, Vollman, an acute care CNS, designed the Vollman Prone Positioner to enhance nurses' ability to turn patients to the prone position (www.vollman.com). Additionally, research has demonstrated improved outcomes from CNSs providing prenatal home care of mothers with high risk of delivering low-birth weight infants and for early discharge of very low birth weight infants with follow-up (Brooten et al., 2002; Naylor & Brooten, 1993). More than 150 articles describing the focus and outcomes of CNS practice can be found in the annotated bibliography (Appendix B).

CNSs are recognized as having in-depth knowledge of evidence-based nursing practice within a specialty that results in competencies to (a) expand the boundaries of nursing practice by focusing on illness management, (b) advance the practice of other nurses and nursing personnel, and (c) develop organizational/system modifications to support and improve the practice of nursing. CNSs articulate nursing's unique autonomous contributions to care of patients.

Definition of Clinical Nurse Specialists

Clinical Nurse Specialists (CNSs) are licensed registered professional nurses with graduate preparation (earned master's or doctorate) from a program that prepares CNSs. They may also be prepared in a post-master's certificate program that is recognized by a national nursing accrediting body as preparing graduates to practice as a CNS for a specialty population (Lyon & Minarik, 2001a; Lyon & Minarik, 2001b). CNSs are clinical experts in the diagnosis and treatment of illness, and the delivery of evidence-based nursing interventions (ANA, 2004). Additionally, CNSs are experts in executing delegated medical regimens associated with the diagnosis and treatment of disease for a specialty population. CNSs CNSs possess advanced knowledge of the science of nursing with a specialty focus and apply that knowledge to nursing assessments, diagnoses, and interventions, and the design of innovations (ANA, 2004). They function independently to provide theory and evidence-based care to patients/clients in their attainment of health goals (ANA, 2004; Lyon & Minarik, 2001a; Lyon & Minarik, 2001b; Lyon, 2002). CNSs work with other nurses to advance their nursing practices and improve outcomes, and provide clinical expertise to effect system-wide changes to improve programs of care (ANA 2004; Lyon & Minarik, 2001b).

CNSs specialize in a delimited area of practice with evidence-based competencies associated with that specialty. Specialty areas are evolving as the science of care evolves. Typically, the specialty can be identified in terms of the following (ANA, 2004; NACNS, 1998):

- Population (e.g., pediatrics, geriatrics, women's health)
- Type of problem (e.g., pain, wound management, stress).
- Setting (e.g., critical care unit, operating room, emergency department, community clinic)
- Type of care (e.g., rehabilitation, end-of-life)
- Disease/pathology/medical specialty (e.g., diabetes, oncology, psychiatry)

Relationship Between CNS Practice, Specialty Knowledge, and Practice Standards

This *Statement* describes the core CNS practice competencies in three spheres of influence. The core competencies are consistent across all specialty practice areas, and are actualized in specialty practice (see Figure 1). The essence of CNS practice is clinical expertise based on advanced knowledge of nursing science. Thus, the patient/client sphere is depicted as the largest and most all-encompassing. CNS clinical expertise, directed by the specialty, is the basis for competencies in the nurses/nursing practice sphere and the organization/system sphere. The context for CNS practice is the specialty. The specialty directs specific knowledge and skill acquisition; thus, the specialty area shapes the core competencies of clinical expertise.

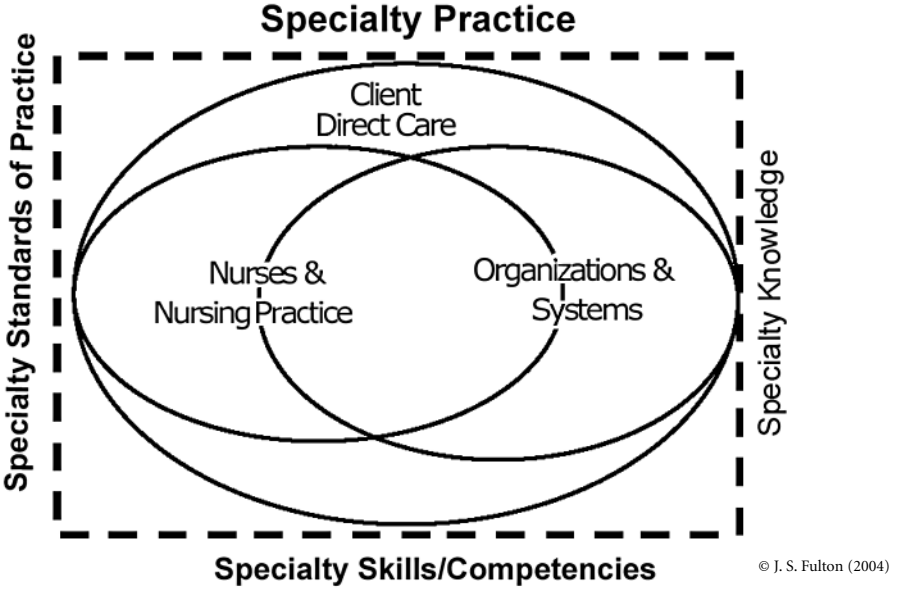

Figure 1. CNS practice conceptualized as core competencies in three interacting spheres actualized in specialty practice, and guided by specialty knowledge and specialty standards.

Essential Characteristics of the CNS

Influence is the power to produce desired effects or outcomes by moving others to action (*Merriam-Webster's Online Dictionary*, 2003). The ability to influence is essential for effective CNS practice and is manifested through seven

essential characteristics: (1) clinical expertise in the specialty, (2) leadership skills, (3) collaboration skills, (4) consultation skills, (5) professional attributes, (6) ethical conduct, and (7) professional citizenship beyond the specialty and in the profession of nursing.

CLINICAL EXPERTISE IN A SPECIALTY

Clinical expertise in a specialty is the essence of all CNS practice. The CNS has unique, advanced expertise in the following areas:

1. Evidence-based assessments and treatments of illness (symptoms and functional problems), and risk behaviors
2. Comprehensive assessment, differential diagnosis, and interventions to treat or prevent illness if disease is present
3. Human and organizational factors that affect resource management, quality, and cost across the continuum of care
4. Health promotion activities that reduce risk behaviors
5. Utilization of evidence to develop, teach, guide, and implement best practices, professional standards and organizational policies
6. Public policy and resources that can be used to improve outcomes

LEADERSHIP SKILLS

To be a leader, the CNS must be a skilled communicator and educator who is capable of identifying patterns and using disciplined inquiry/research and ethical reasoning to make decisions, describe reality, and anticipate the future accurately. These abilities are critical for describing and analyzing problems, formulating a vision, seeing creative possibilities for change, and inspiring others to follow (Hanson & Malone, 2000; Ward, 2002). They include the following:

1. Communication that encompasses these skills:
    - Interpersonal skills of listening, validating, reflecting, providing constructive feedback and conveying a caring attitude

- An ability to formulate and logically convey ideas while being sensitive to the needs and feelings of others

2. Disciplined inquiry that encompasses these skills:
   - Critical thinking, decision-making, and ability to synthesize scientific knowledge and to participate in research, clinical inquiry projects, and research utilization including cost/analysis
   - Discovery of innovations in patient care
   - Utilization of nursing science and knowledge generated by related disciplines

3. Collaborative systems thinking that recognizes what is working well, what needs to be fixed, and what interventions will best predict the achievement of quality, cost-effective patient care and outcomes. Changes incorporating evidence-based practice are developed and implemented collaboratively between nurses, other professions, and the organization to improve safety, quality, and cost effectiveness.

4. A shared decision-making philosophy that stimulates strong working relationships among nurses and other multidisciplinary healthcare providers

COLLABORATION SKILLS

Collaboration is a process in which people work jointly with others, especially in intellectual endeavors (*Merriam-Webster*, 2003). Hanson, Spross, and Carr (2000) define collaboration as "a dynamic, interpersonal process in which two or more individuals make a commitment to each other to interact authentically and constructively to solve problems and to learn from each other in order to accomplish identified goals, purposes, or outcomes" (p. 318). All three spheres of CNS influence necessitate intradisciplinary as well as multidisciplinary collaboration. The CNS's professional attributes and leadership skills enable effective work through collaboration, which is a professional imperative (ANA, 2002).

CONSULTATION SKILLS

"Consultation is a two-way interaction — a process of seeking, giving, and receiving help. Consulting is aimed at aiding a person, group, organization, or larger system in mobilizing . . . resources to deal with problem confrontations and change efforts" (Lippitt & Lippitt, 1986, p. 1). Consultation can help to shape the practices of consultees and protégés, thus significantly improving the quality and comprehensiveness of care available to patients and families (Barron & White, 2000). CNS consultation is directed toward a wide range of needs, including (1) complex patient problems, (2) staff knowledge and performance, (3) program development, (4) professional practice models, (5) development of best practice models, (6) system change strategies, and (7) professional development (Boyle, 1996). As a content expert, the CNS suggests a wide range of alternative approaches to clinical or systems problems (Sparacino, 2000).

PROFESSIONAL ATTRIBUTES

Professional attributes refer to those characteristics which are enhanced and expanded as the CNS practices in the role. These characteristics include the following:

1. Honesty and personal integrity
2. Personal mastery in managing thoughts and emotions
3. Positive self-regard and confidence
4. Willingness to take risks and be wrong
5. Knowledge of one's own strengths and weaknesses coupled with openness to continued learning and goals for development
6. Self-review and willingness to solicit and accept peer review, and
7. Ability to value and support diversity

ETHICAL CONDUCT

According to Benner, Tanner and Chesla (1996), developing clinical expertise demands developing ethical expertise embedded in an ethic of care. An ethic of care is a moral obligation that includes respect for individual uniqueness,

personal relationships, and the dynamic nature of life as interrelated and interdependent (American Association of Critical Care Nurses, 2002). An array of ethical dilemmas is found in clinical practice settings today. Opportunities for CNS influence on ethical dilemmas are found in all three spheres. Examples of behaviors that demonstrate ethical CNS influence include fostering autonomy and truth-telling, advocacy for patients, family members and other nurses, assisting patients and families to address end-of-life issues with dignity, and mentoring nurses and other professionals to deliver equitable and safe care. The CNS recognizes and brackets one's own biases when asking questions and solving problems associated with the values, beliefs, and principles embedded in quality patient care, within and outside the organization.

PROFESSIONAL CITIZENSHIP FOR THE SPECIALTY AND IN THE PROFESSION OF NURSING

The CNS is responsible for contributing to local, state, and national healthcare policy, particularly as it applies to patients and families and/or a population within the CNS specialty area. The CNS mentors nurses to develop evidence-based policy (e.g., legislation and regulations) in collaboration with consumers, to ensure access to healthcare services and safe competent nursing care (ANA, 2002).

Conceptual Model of CNS Practice

Historically, the broad scope of CNS practice was described in terms of subroles, including expert practitioner, educator, researcher, change agent, administrator, and consultant (ANA Council, 1986; Hamric, 1989; Sparacino, 2000). These subroles were created at a time when schools of nursing were seeking ways to organize concepts and activities to direct curricula. However, defining CNS practice by subroles partitions the skills and activities rather than integrating them. It is the integration and aggregation of those activities that makes for effective CNS practice.

CNS competencies are integrated across the three spheres of influence, but it is expert nursing practice in the patient/client sphere that provides the underpinnings for CNS practice. Thus, the model for CNS practice, as articulated in this and the original *Statement*, is based upon the position that CNS practice

is consistently targeted toward achieving quality, cost-effective outcomes through patient/client care, by influencing the practice of other nurses and nursing personnel, and by influencing the healthcare organization to support nursing practice.

Elements of the model — specialty focus, clinical expertise, and spheres of influence — are interactive and collectively determine the scope or breadth of practice activities within and across the spheres. The core competencies for each sphere of influence and associated outcomes are presented in Section 2.

CNS PRACTICE:
PATIENT/CLIENT SPHERE

Clinical expertise, embedded in the patient/client sphere of influence, is the foundation of CNS practice in the other two spheres. CNSs have the knowledge and skill to assess, diagnose, and treat the illness among patients. Illness can have nondisease or disease etiologies, or both (see Glossary of Key Terms). Patients may seek or need the care of CNSs to prevent, alleviate, or minimize illness, or to alter risk behaviors. The goal of the care is to decrease or prevent symptoms/suffering and improve functioning.

Illness includes

- symptoms that are physiological, psychological, or environmental in origin and interfere with recovery from disease, maintenance of wellness, and quality of life, such as nausea, fatigue, pain, dizziness, dyspnea and anxiety; and
- functional problems that interfere with independent living, such as unsteady gait, urinary incontinence, cognitive impairment, and self management problems that are detrimental to wellness or contribute to disease, such as impaired decision making, ineffective self management decisions, inadequate environmental control.

Risk behaviors that threaten wellness and contribute to illness include:

- smoking
- violence
- overeating

- lack of exercise
- neglect of environment

Some clients perceive themselves as well; however, they may seek CNS services to maintain or improve their health. A central goal of health promotion is to reduce risk behaviors so as to postpone or prevent illnesses and diseases (Fries et al., 1998). CNSs intervene to modify risk behaviors, and emphasize health promoting lifestyles.

CNS PRACTICE:
NURSES AND NURSING PRACTICE SPHERE

CNSs advance nursing practice and improve patient outcomes by updating and improving norms of care and by using standards of care that direct actions of nurses and nursing personnel. The current culture of healthcare delivery places great demand on all nurses to provide evidence-based care and support patients and families in transitions from acute care settings to home and community environments. CNSs develop population profiles and conduct clinical inquiries to determine the need to change practice. They exert influence through role-modeling, consultation, and education with other nursing personnel to improve nursing practice and thus improve patient outcomes. CNSs provide leadership in the development of evidence-based policies, procedures and protocols, and best practice models/guidelines. They assist nursing personnel to evaluate and change practice standards and ensure that nursing practice is evidence-based. The effects of CNS practice on the practice of nursing by others may be assessed at the patient, nursing personnel, and systems levels.

CNS PRACTICE:
ORGANIZATION/SYSTEM SPHERE

The third sphere of CNS influence — the organization and system level — is critically important in the complex healthcare systems of today. The CNS articulates the value of nursing care at the organizational, decision-making level, and advocates for professional nursing. Evidence shows that a higher proportion of hours of care by registered professional nurses and lower nurse-patient ratios correlates with better outcomes for hospitalized patients (Aiken, Clarke, Sloan, Sochalski, & Saber, 2002; Needleman, Buerhouse, Mattke, Stewart & Zelevinsky, 2002). With the current focus on outpatient diagnostic and therapeutic

procedures, hospital admissions are reserved for patients who need continuous nursing care. The CNS influences the trajectory of care from admission through discharge in order to assist the patient in achieving the desired outcomes after discharge and to minimize recidivism and readmission. To enhance abilities of patients and their families to manage care at home, CNSs lead nursing and multidisciplinary groups to implement innovative patient care programs that address patient needs across the full continuum of care.

The CNS influences changes in the system that will facilitate nursing practice for improvement of quality cost-effective patient outcomes. The system supports the CNS by providing mechanisms by which the CNS can collect and analyze data to document the impact of nursing practice on outcomes and cost-effectiveness. The system supports the delivery of effective nursing care by ensuring CNS leadership. With the shift of care from inpatient settings to homes and community settings, the CNS interacts with governmental and regulatory agencies and healthcare insurers to assure that policies are established and resources are allocated.

Legislative Regulation of Clinical Nurse Specialist Practice

CNSs are licensed registered professional nurses who are educated at the graduate level as CNSs to practice nursing at an advanced level. Regulation of CNS practice includes both title protection explicated in statute and scope of practice delineated in regulations.

Statute/Law: Title protection for CNSs should be included in state statutes (laws created by legislative bodies). A statute granting title protection should specify that those who use the CNS title must hold a graduate degree (masters or doctorate) in nursing from a program that prepares CNSs. Lack of title protection in a state can result in misuse of the title by those without graduate preparation as a CNS.

Regulation: The scope of CNS practice should be explicated in regulation. The scope of practice should be such that CNSs are recognized and held accountable for nursing at an advanced level. Evidence of specialty expertise may be defined in regulation. Requirements for evidence — psychometric

examination, portfolio, continuing education, or other mechanisms — if required, should be obtained from professional specialty organizations, and should be available, legally defensible, and logically linked to the specialty practice.

The registered nurse license authorizes autonomy in the diagnosis and treatment of health-related problems amenable to nursing interventions, as well as the authority to execute medical regimens. CNS education prepares graduates to expand the practice of nursing through application of knowledge and development of competencies for the purpose of increasing the depth and breadth of nursing practice within nursing's autonomous scope. CNSs are also responsible for the delivery of medical therapies.

CNSs apply knowledge and develop skills related to the methods, techniques, and management of medical therapies. Examples: A physician may prescribe intravenous therapy, but CNSs evaluate products and recommend the most efficacious and cost-effective equipment to safely deliver the prescribed therapy. A physician may prescribe enteral nutrition therapy, but the CNS adapts delivery methods to meet the patient's nutritional goals and demonstrates related techniques to other nurses. In addition, physicians and other providers may make decisions about continuing, modifying, or discontinuing therapies based on CNS judgment.

CNS practice, therefore, may be both independent with its unique focus on illness management and interdependent in the execution of medical regimens. Figure 2 demonstrates the relationship between nursing practice and medical practice, and shows both nursing's autonomous scope of practice and authority

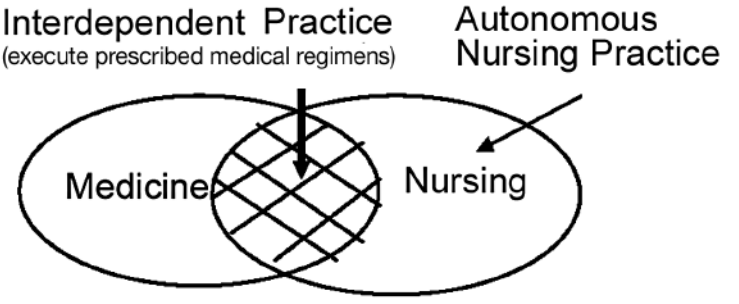

Figure 2. The relationship between nursing practice and medical practice

to execute medical regimes. In practice, the execution of medical regimes is an interdependent relationship between nursing and medicine.

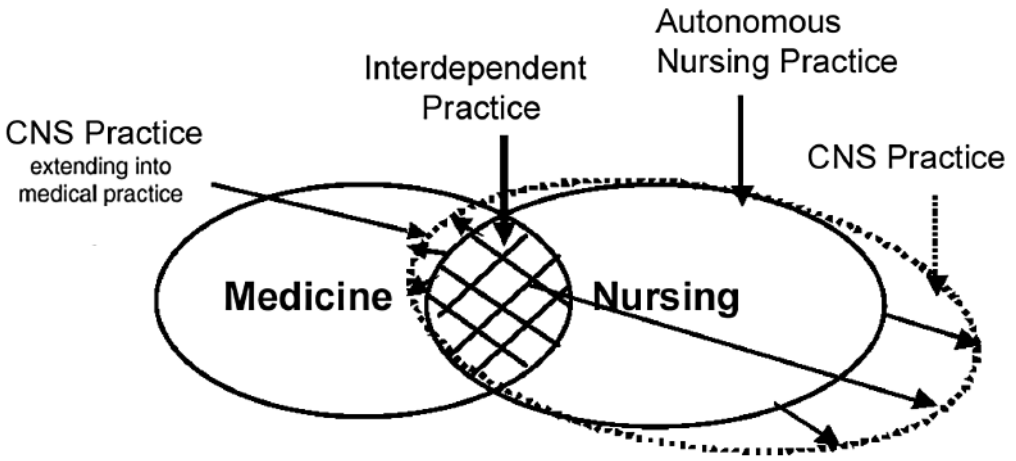

Figure 3. The relationship between medical practice, nursing practice, and clinical nurse specialist practice

In some specialties, CNS practice may overlap with medical practice, extending into the diagnosis and treatment of disease. Figure 3 demonstrates the expansion of CNS practice beyond nursing's autonomous scope of practice. An example of expansion into medical practice is a CNS with the authority to prescribe topical wound care agents as a part of a comprehensive wound management plan, or a psychiatric CNS who prescribes medication to augment psychotherapy. Practice that expands beyond the scope of authority for nursing diagnosis and interventions, and the execution of medical regimes, may need additional authority to practice. Authority to practice outside the nursing scope of practice as authorized by the RN license, such as prescriptive authority, is considered optional for CNSs. Optional authority for practice that expands into the medical scope of practice should be addressed in state regulations (not statute). Expansion into the scope of medical practice is optional because the primary purposes of CNS practice are to prevent, diagnose, and treat illness, and to minimize risk behaviors. CNSs must be vigilant in the protection and retention of the unique contributions of nursing to health.

Professional Validation of CNS Competencies

Validation of practice competency and practice expertise is the responsibility

of professional organizations. Validation should be consistent with the specialty focus of the professional organization. NACNS supports a wide variety of initiatives by professional organizations to validate practice competencies of CNSs. Professional validation of practice competencies must include the core competencies for CNS practice as actualized in specialty practice. NACNS supports various methods for validation of competencies, including certification by psychometric examination and portfolio review. Validation of competencies may occur at various time points in a CNS's career, including entry into practice and continuing abilities. Evidence used for validation of continuing competencies may include continuing education, psychometric examination, portfolio review, publication, research activities, or other evidence or combinations of evidence determined appropriate for the specialty by the professional organization.

Validation of competencies should match the specialty focus of the CNS practice. Validation of broad competencies or competencies in related content or practice areas do not attest to specialty competency. The practice of CNS is uniquely different from the practice of other advanced practice nurse groups; therefore, there can be no validation of core practice competencies across two or more advanced practice groups.

A CNS who has earned a master's degree in nursing from a program with a clinical focus but not specifically designated a CNS program, and who has been practicing competently as a CNS, should be permitted to demonstrate evidence of practice competencies in a specialty. Professional organizations determine eligibility criteria and documentation requirements for meeting that criteria. Example: A CNS who graduated from a clinical program with a master's in nursing and has practiced competently as a gerontology CNS should be afforded an opportunity to submit evidence of practice in the specialty and should be granted eligibility to take a gerontology CNS certification examination even though the master's degree did not focus on gerontology. This position is based on the historical lack of CNS programs in specialties for which there are now programs to validate competencies. It is important to find ways to embrace our most educated and experienced nurses. Nursing needs the continued competency of these time-proven CNSs.

Summary

Nightingale's (1859/1969) groundbreaking work on the nature of nursing as separate from medicine set in motion the rich history of nursing as a profession with an autonomous practice. Peplau's (1965/2003) delineation of CNSs as master's prepared clinical nursing experts provided the underpinnings of a specialized group of advanced practice nurses. Fulfilling a professional and societal mandate, CNSs use evidence to change nursing practice to improve clinical and economic outcomes across three spheres of influence. CNSs advance nursing practice by serving as expert clinicians who assure that nursing interventions are based upon the most current evidence. CNSs integrate nursing practice with medical practice when patient problems are due to both illness etiologies and disease-related etiologies. CNSs translate new knowledge into innovative practice, identify clinical phenomena that need empirical examination, and support intervention research that brings new nursing therapies to practice. CNSs work collaboratively with nurses and other providers of healthcare to achieve quality, cost-effective outcomes for individuals and populations. CNSs are responsible for advancing and articulating the unique contributions of nursing care in an interdisciplinary healthcare system to patients, nursing personnel, and organizations.

SECTION 2.
CLINICAL NURSE SPECIALIST COMPETENCIES AND OUTCOMES

Introduction

This section describes the core competencies of CNS practice in an evolving healthcare system. CNSs achieve outcomes through the effective use of core competencies combined with essential characteristics (see Section 1) to influence outcomes. While the majority of CNSs are employed by healthcare agencies, including those in community and acute care settings, increasing numbers are self employed in private practice, consultation, and other entrepreneurial practices. (NACNS, 2001; NACNS, 2003a). Implementation of core competencies is not limited to any particular practice setting.

Overview of the CNS Core Competencies

Regardless of setting and specialty, CNSs enact core competencies. Thus, CNSs:

1. Use knowledge of differential illness diagnoses and treatments in comprehensive, holistic assessments of patients within the context of disease, diagnoses, and treatments. The outcome of differential diagnosis of illness is to explicate etiology(ies) that require nursing interventions to prevent or alleviate the illness;

2. Design, implement, and evaluate innovative individual and/or population-based programs of care to achieve desired quality, cost-effective nurse-sensitive outcomes;

3. Serve as leader/consultant/mentor/change agent in advancing the practice of nursing among other nurses and across organizations to achieve outcomes;

4. Advance nursing practice through innovative evidence-based interventions, best-practice guidelines, and modification of professional standards and organizational policies that direct the care of nursing personnel and other providers of healthcare to improve outcomes;

5. Lead multidisciplinary groups to facilitate collaboration with other disciplines in the attainment of outcomes across the continuum of care;

6. Interpret the dimensions of nursing care requiring resources at the system level, and provide leadership to assure that the system adequately supports the delivery of nursing care;

7. Expand the practice of nursing through ongoing generation and acquisition of scientific knowledge and skills to maintain expert clinical competencies that leads to desired outcomes; and

8. Demonstrate professional citizenship and fiscal responsibility in the healthcare system by focusing on health policy and/or resource management to ensure quality, cost-effective outcomes of nursing care.

Assumptions Underlying the Core Competencies

Core competencies of CNS practice provide the foundation for the addition of specialty competencies and are actualized in the specialty practice. The following assumptions provide the foundation from which the CNS competency statements were derived:

1. CNS practice makes a unique contribution to meeting societal healthcare needs.

2. The CNS has knowledge and expertise in pertinent illness diagnoses and interventions related to the specialty area.

3. CNS competencies build upon those associated with baccalaureate education, or its equivalent, in nursing.

4. Graduate education with preparation as a CNS is requisite for entry into CNS practice.

5. Graduate education provides advanced knowledge requisite for developing the core competencies.

6. Effective outcomes are the result of deliberative CNS practice.

CNS Competencies by Spheres of Influence

Spheres of influence provide the framework for describing core CNS competencies. A fundamental characteristic of this framework is the interaction among the competencies with clinical expertise in the patient/client sphere as the core. Within each sphere, CNS competencies are described within the framework of the nursing process.

Competency statements represent skills that are essential to fulfill CNS performance expectations. Core competencies in each sphere of influence can be applied to any setting or population, whether the patient/client is an individual, group, family, community, organization, network, or influencing legislators or policy makers. An individual CNS may wish to acquire additional competencies beyond those presented in this *Statement*. Such competencies may be necessary in certain specialty practice settings. Additional academic or professional education may be required to achieve competencies beyond the core competencies and education recommendations described in Section 3.

The core competencies and essential characteristics of CNS practice (e.g., clinical expertise in a specialty, leadership skills, collaboration skills, consultation

skills, professional attributes, ethical conduct, and professional citizenship) interact to produce outcomes in the three spheres of CNS influence. Achievement of outcomes can be mediated by contextual factors such as organizational structure and processes, organizational culture, social context, human and material resources, financial resources, and public policy.

Outcomes and core competencies for each sphere of influence are presented below. Each set of competencies is preceded by examples of outcomes that exemplify deliberative CNS practice within that sphere.

I. Sphere of Influence: Patient/Client

A. Outcomes of CNS Practice

1. Phenomena of concern requiring nursing interventions are identified.
2. Diagnoses are accurately aligned with assessment data and etiologies.
3. Plans of care are appropriate for meeting patient needs with available resources, reflecting patient/family treatment preferences.
4. Nursing interventions target specified etiologies.
5. Programs of care are designed for specific populations (e.g., oncology, specific ethnic groups, end-of-life).
6. Prevention, alleviation, and/or reduction of symptoms, functional problems, or risk behaviors are achieved.
7. Nursing interventions, in combination with interventions by members of other disciplines, result in synergistic patient outcomes.
8. Unintended consequences and errors are prevented.
9. Predicted and measurable nurse-sensitive patient outcomes are attained through evidence-based practice.
10. Interventions have measurable outcomes that are

incorporated into guidelines for practice with deletion of inappropriate interventions.

11. Collaboration with patients/clients, nursing staff, as well as physicians and other healthcare professionals, occurs as appropriate.
12. Desired measurable patient/client 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.
13. Innovative educational programs for patients, families, and groups are developed, implemented, and evaluated.
14. Transitions of patients/clients are fully integrated across the continuum of care to decrease fragmentation.
15. Reports of new clinical phenomena and/or interventions are disseminated through presentations and publications.
16. Interventions that are effective in achieving nurse sensitive outcomes are incorporated into guidelines and policies.

B. Competencies of CNS Practice

1. Assessment
    a. Conducts comprehensive, holistic wellness and illness assessments using known or innovative evidence-based techniques, tools, and methods.
    b. Obtains data about context, such as disease, culture, and age-related factors, along with data related to etiologies (including both nondisease and disease-related factors) necessary to formulate differential diagnoses.
    c. Identifies the need for new or modified assessment methods or instruments within a specialty area.
    d. Before designing new programs, identifies, collects, and analyzes appropriate data on the target population that

serve as the basis for demonstrating CNS impact on program outcomes.

2. Diagnosis, Planning, and Identification of Outcomes
    a. Synthesizes assessment data and develops differential diagnoses of illness problems.
    b. Draws conclusions about individual or aggregate patient problems with etiologies amenable to nursing interventions.
    c. Describes problems in context, including variations in normal and abnormal symptoms, functional problems, or risk behaviors inherent in disease, illness, or developmental processes.
    d. Plans for systematic investigation of patient problems needing clinical inquiry, including etiologies of problems, needs for interventions, outcomes of current practice, and costs associated with care.
    e. Predicts outcomes of interventions relative to prevention, remediation, modification, and/or resolution of problems.
    f. Anticipates ethical conflicts that may arise in the healthcare environment and plans for resolution.
3. Intervention
    a. Selects evidence-based nursing interventions for patients/clients that target the etiologies of illness or risk behaviors.
    b. Develops interventions that enhance the attainment of predicted outcomes while minimizing unintended consequences.
    c. Implements interventions that integrate the unique needs of individuals, families, groups, and communities.
    d. Collaborates with multidisciplinary professionals to integrate nursing interventions into a comprehensive plan of care to enhance patient outcomes.

e. Incorporates evidence-based research into nursing interventions within the specialty population.

4. Evaluation

a. Selects, develops, and/or applies appropriate methods to evaluate outcomes of nursing interventions.

b. Evaluates effects of nursing interventions for individuals and populations of patients/clients for clinical effectiveness, patient responses, efficiency, cost-effectiveness, consumer satisfaction, and ethical considerations.

c. Collaborates with patients/clients and other healthcare professionals, as appropriate, to monitor progress toward outcomes and modifications as needed.

d. Evaluates the impact of nursing interventions on fiscal and human resources.

e. Documents outcomes in a reportable manner.

f. Disseminates the results of innovative care.

II. Sphere of Influence: Nurses and Nursing Practice

A. Outcomes of CNS Practice

1. Knowledge and skill development needs of nurses are delineated.
2. Evidence-based practices are used by nurses.
3. The research and scientific base for innovations is articulated, understandable, and accessible.
4. Nurses are able to articulate their unique contributions to patient care and nurse-sensitive outcomes.
5. Nurses are empowered to solve patient care problems at the point of service.
6. Desired patient outcomes are achieved through the synergistic effects of collaborative practice.

7. Nurses career enhancement programs are ongoing, accessible, innovative, and effective.
8. Nurses experience job satisfaction.
9. Nurses engage in learning experiences to advance or maintain competence.
10. Nurses use resources judiciously to reduce overall costs of care and enhance the quality of patient care.
11. Competent nursing personnel are retained due to increased job satisfaction and career enhancement.
12. 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.
13. Nurses have an effective voice in decision-making about patient care (ANA, 2002; Kramer & Schmalenberg, 2003).

B. Competencies of CNS Practice

1. Assessment: Identifying and Defining Problems and Opportunities
    a. Uses/designs methods and instruments to assess patterns of outcomes related to nursing practice within and across units of care.
    b. Uses/designs appropriate methods and instruments to assess knowledge, skills, and practice competencies of nurses and nursing personnel to advance the practice of nursing.
    c. Identifies, in collaboration with nursing personnel and other healthcare providers, needed changes in equipment or other products based on evidence, clinical outcomes and cost-effectiveness.
    d. Gathers and analyzes data to substantiate desirable and undesirable patient outcomes linked to nursing practice.
    e. Identifies interpersonal, technological, environmental, or

system facilitators and barriers to implementing nursing practices that influence nurse-sensitive outcomes.

f. Collaborates with nurses to assess the processes within and across units that contribute to barriers in changing nursing practices.

2. Diagnosis, Outcome Identification, and Planning
   a. Draws conclusions about the evidence-base and outcomes of nursing practice that require change, enhancement, or maintenance.
   b. Identifies desired outcomes of continuing or changing nursing practices.
   c. Anticipates both intended and unintended consequences of change.
   d. Incorporates clinical and fiscal considerations in the planning process for product and device evaluation.
   e. Plans for achieving intended and avoiding unintended outcomes.
   f. Plans for using facilitators and overcoming barriers for changing nursing practice and incorporating new products and devices.
   g. Considers resource management needs when weighing the benefits of changing practices.
3. Intervention: Developing and Testing Solutions
   a. Anchors nursing practice to evidence-based information to achieve nurse-sensitive outcomes.
   b. Mentors nurses to critique and apply research evidence to nursing practices.
   c. Works collaboratively with nursing personnel to implement innovative interventions that improve outcomes.
   d. Implements interventions that are effective and appropriate to the complexity of patient care problems and the resources of the system.

e. Develops and implements educational programs that target the needs of staff to improve nursing practice and patient outcomes.

f. Assists staff in the development of innovative, cost-effective patient/client programs of care.

g. Mentors nurses to acquire new skills and develop their careers.

h. Creates an environment that stimulates self-learning and reflective practice.

4. Evaluation of the Effects

a. Evaluates the ability of nurses and nursing personnel to implement changes in nursing practice, with individual patients/clients and populations.

b. Evaluates the effect of change on clinical outcomes, nurse satisfaction, and collaboration with other multidisciplinary healthcare providers.

c. Documents outcomes in a reportable manner.

d. Disseminates results of changes to stakeholders.

III. Sphere of Influence: Organization/System

A. Outcomes of CNS Practice

1. Clinical problems are articulated within the context of the organization/system structure, mission, culture, policies, and resources.

2. Patient care processes reflect continuous improvements that benefit the system.

3. Change strategies are integrated throughout the system.

4. Policies enhance the practice of nurses individually as members of multidisciplinary teams.

5. Innovative models of practice are developed, piloted, evaluated, and incorporated across the continuum of care.

6. Evidence-based, best practice models are developed and implemented.
7. Nursing care and outcomes are articulated at organizational/system decision-making levels.
8. Stakeholders (nurses, other healthcare professionals, and management) share a common vision of practice outcomes.
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.
10. Patient care initiatives reflect knowledge of cost management and revenue enhancement strategies.
11. Patient care programs are aligned with the organization's strategic imperatives, mission, vision, philosophy and values.
12. Staff comply with regulatory requirements and standards.
13. Policy-making bodies are influenced to develop regulations/procedures to improve patient care and health services.

B. Competencies of CNS Practice

1. Assessment: Identifying and Defining Problems and Opportunities
    a. Uses/designs system-level assessment methods and instruments to identify organization structures and functions that impact nursing practice and nurse-sensitive patient care outcomes.
    b. Assesses the professional climate and multidisciplinary collaboration within and across units for their impact on nursing practice and outcomes.
    c. Assesses targeted system-level variables, such as culture, finances, regulatory requirements, and external demands, that influence nursing practice and outcomes.

d. Identifies relationships within and external to the organization/system that are facilitators or barriers to nursing practice and any proposed change.

e. Identifies effects of organizational culture on departments, teams and/or groups within an organization.

f. Monitors legislative and regulatory health policy that may impact nursing practice and/or CNS practice for the specialty area/population.

2. Diagnosis, Outcome Identification, and Planning

a. Diagnoses facilitators and barriers to achieving desired outcomes of integrated programs of care across the continuum and at points of service.

b. Diagnoses variations in organizational culture (i.e., values, beliefs, or attitudes) that can positively or negatively affect outcomes.

c. Draws conclusions about the effects of variance across the organization that influence outcomes of nursing practice.

d. Plans for achieving intended system-wide outcomes, while avoiding or minimizing unintended consequences.

e. Draws conclusions about the impact of legislative and regulatory policies as they apply to nursing practice and outcomes for specialty populations.

3. Intervention: Developing and Testing Solutions

a. Develops innovative solutions that can be generalized across differing units, populations, or specialties.

b. Leads nursing and multidisciplinary groups in implementing innovative patient care programs that address issues across the full continuum of care for different population groups and/or different specialties.

c. Contributes to the development of multidisciplinary

standards of practice and evidence-based guidelines for care, such as pathways, care maps, benchmarks.

d. Solidifies relationships and multidisciplinary linkages that foster the adoption of innovations.

e. Develops or influences system-level policies that will affect innovation and programs of care.

f. Targets and reduces system-level barriers to proposed changes in nursing practices and programs of care.

g. Facilitates factors to effect program-level change.

h. Designs methods/strategies to sustain and spread change and innovation.

i. Implements methods and processes to sustain evidence-based changes in nursing practice, programs of care, and clinical innovation.

j. Provides leadership for legislative and regulatory initiatives to advance the health of the public with a focus on the specialty practice area/population.

k. Mobilizes professional and public resources to support legislative and regulatory issues that advance the health of the public.

4. Evaluation of the Effects

a. Selects evaluation methods and instruments to identify system-level outcomes of programs of care.

b. Evaluates system-level clinical and fiscal outcomes of products, devices, and patient care processes using performance methods.

c. Uses organizational structure and processes to provide feedback about the effectiveness of nursing practices and multidisciplinary relationships in meeting identified outcomes of programs of care.

d. Evaluates organizational policies for their ability to support and sustain outcomes of programs of care.

e. Evaluates and documents the impact of CNS practice on the organization.

f. Documents all outcomes in a reportable manner.

g. Disseminates outcomes of system-wide changes, impact of nursing practices, and CNS work to stakeholders.

Summary

The three spheres of CNS influence provide an organizing framework to describe core CNS competencies. These competencies represent essential skills used to achieve desired outcomes in CNS practice. A CNS may focus on any one or all of the three spheres of CNS practice, but clinical expertise in the patient/client sphere remains the core of CNS practice for each of the other two spheres. These competencies are used in other spheres to influence nurses and the organization/system to improve patient outcomes, provide cost-effective care, and advance nursing practice. Deliberative CNS practice, working with colleagues from other disciplines, assures that desired patient/client outcomes will be attained.

SECTION 3.
RECOMMENDATIONS FOR GRADUATE PREPARATION OF CLINICAL NURSE SPECIALISTS

Introduction

This section presents recommendations for graduate preparation of CNSs necessary for the acquisition of CNS core competencies. The curricular content areas were derived from a review of the literature, a survey of existing CNS program curricula, feedback from practicing CNSs, and a survey of faculty teaching in CNS programs (Walker et al., 2003). It is important to note that the curriculum for specialty practice competencies is beyond the scope of these recommendations. For specialty practice, national standards articulated by specialty organizations should be used to develop additional courses, content areas, or threads as needed. The recommendations contained in this section are designed to support the revision or development of CNS programs, and to guide current CNSs in practice as they continue professional development.

History and Evolution of CNS Education

In direct response to the National League for Nursing's recommendations for universities to develop master's level nursing curricula, Peplau and Reiter proposed the psychiatric CNS role in the 1940s as a model of advanced clinical

nursing (Mick & Ackerman, 2002; Reiter, 1966; Sparacino, 1990). The first CNS program was initiated at Rutgers University in 1954, heralding a fundamental shift in education for nurses away from the culture of hospital-based diploma education to university-based knowledge development and application of that knowledge through expertise (Mick & Ackerman). CNS education was developed to prepare CNSs as expert clinical nurses, providing specialized nursing care directly to patients, and indirectly improving care by focusing on nursing staff education and system analysis (Boyd, 1991; Fenton, 1985; Page & Arena, 1994).

By 1980, there were multiple programs for CNS education, and early evaluation research validated the innovative contributions of CNS care (Bigbee & Amidi-Nouri, 2000; Georgopoulous & Christman, 1970; Georgopoulos & Jackson, 1970). During the 1980s, some nursing leaders suggested that reconfiguring the curricula and coalescing the CNS, NP, and CNM roles into one single advanced practice nursing role was a way to gain political clout and position nurses as a major provider of primary care, gaining public acceptance of APNs (Schroer, 1991). The proposal for a single title, however, generated significant debate within the profession (Sparacino, 2000) and was abandoned because the unique contributions of each group were lost.

In the early 1990s, healthcare restructuring and cost-cutting initiatives led to the loss of CNS positions in the U.S., which briefly affected enrollments in some programs. However, by the late 1990s, amid reports of a dramatic rise in adverse events in acute care settings (Institute of Medicine, 1999), it became apparent that CNSs played a critically important role in achieving important patient outcomes (Clark, 2001a, 2001b). At the same time, impressive legislative gains at state and national levels, including specific definition of CNS practice and eligibility for Medicare reimbursement in the Balanced Budget Act of 1997 (Safriet, 1998), further advanced CNS education by eliminating some of the barriers to practice. Today, the number of CNS education programs is increasing (Walker et al., 2003; Gerard & Walker, 2003).

Background to the Recommendations

Surveys of graduate nursing programs that prepare CNSs, NPs, and CNMs in the United States have revealed significant variations in the length of programs, number of courses in the major, specialty titling, and competencies (American Association of Colleges of Nursing [AACN], 1994; Burns et al., 1993; Walker et al., 2003). These findings, along with changes in the healthcare system and debate within the nursing community concerning the requisite knowledge for nursing at the advanced level, have led to the publication of several position statements. These statements provide direction for advanced preparation by (1) recommending changes in the regulation of health professionals (Pew Health Professions Commission, 1995), (2) delineating the scope and standards of advanced practice nursing (ANA, 1996; ANA 2004), and (3) providing guidelines for graduate preparation of advanced practice nurses (AACN, 1996).

The AACN's *The Essentials of Master's Education for Advanced Practice Nursing* (1996) filled a gap by offering guidance for curricular development for graduate programs. This document states that graduates of master's programs in nursing must have "critical thinking and decision making skills . . . ability to critically and accurately assess, plan, intervene and evaluate the health and illness experiences of clients . . . ability to communicate effectively . . . [and] the ability to analyze, synthesize, and utilize knowledge . . . " (p. 6). The concepts in AACN's *The Essentials of Master's Education for Advanced Practice Nursing* are similar to those in the American Nurses Association's *Nursing: A Social Policy Statement* (2003), the *Scope and Standards of Advanced Practice Registered Nursing* (1996), and the recent ANA document *Nursing: Scope and Standards of Practice* (2004).

Some of these national documents suggest a general framework for preparing nurses at an advanced level and tend to emphasize disease management at the direct care point-of-service . CNS practice focuses on illness care and risk behaviors, with disease as context, therefore, these existing documents offer only partial guidelines for CNS education. Content on the diagnosis of illness and risk behaviors is essential for CNS practice and should be included in the curriculum, along with content about disease etiologies and

management, as appropriate for the specialty. Diagnosis and treatment of illness, and the expert delivery of medical interventions appropriate to the specialty, are the unique contributions of the CNS to patient care and the process by which CNSs advance the practice of nursing.

Curricular Recommendations

NACNS recommends the following curricula content for CNS education:

1. AACN-recommended graduate nursing core content that meets NACNS recommendations for CNS education includes content on research, ethics, health policy, health promotion, organization and financing of healthcare, human diversity, and social issues.

2. AACN-recommended content that should be modified to meet NACNS recommendations for CNS education includes:
   a. Advanced physiology/pathophysiology should be modified to be advanced science content and selected for applicability to the specialty. For example, advanced science content may include physiology/pathophysiology, epidemiology, psychobiology, or genetics. Advanced science content should include concepts and principles relevant for CNS practice, should reflect a balance between illness and disease etiologies applicable to the specialty and should also be integrated throughout the curriculum.
   b. Advanced assessment must emphasize evaluation of wellness, illness, and risk behaviors adequate to support differential diagnosis within the context of a comprehensive database.
   c. Advanced pharmacology, if appropriate to the specialty, should include principles of pharmacodynamics, pharmacokinetics, pharmacotherapeutics, drug-drug, and drug-food interactions pertinent to this specialty. In situations in which the CNS desires prescriptive authority, an advanced pharmacology course should meet statute requirements.

3. NACNS recommends the following additional core content specific to CNS practice (a description of each content area follows):
    a. Theoretical foundations for CNS practice
    b. Theoretical and empirical knowledge of phenomena of concern that forms the basis for assessment, diagnosis, and treatment of illness and wellness within the CNS specialty
    c. Theoretical and scientific base for the design and development of innovative nursing interventions and programs of care
    d. Clinical inquiry/critical thinking with advanced knowledge
    e. Selection, use, and evaluation of technology/products/devices
    f. Theories of teaching, mentoring, and coaching for use in all three spheres
    g. Influencing change
    h. Systems thinking in regard to the organizational culture
    i. Leadership development for multidisciplinary collaboration
    j. Consultation theory
    k. Measurement
    l. Outcome evaluation methods
    m. Evidence-based practice and research utilization

Essential Core Content Areas for Developing Clinical Nurse Specialist Competencies

A content area identifies the subject matter focus. Content areas do not specify courses since any content area may be represented by integrated threads throughout a CNS curriculum or may be reflected in a discrete course. Content areas encompass all pertinent learning experiences in both the acquisition and application of knowledge to CNS practice. The following areas of content are recommended for inclusion in CNS curricula:

1. Theoretical foundations for CNS practice:

DESCRIPTION: This content area focuses on theories, conceptual models, and research that shape the CNS perspective.

EXAMPLES: Theories of health, illness, and wellness; health behavior (including self-care) and health behavior change; and theories of learning, stress, leadership, consultation, collaboration, and organizational development.

RATIONALE: Theoretical foundations of CNS practice serve as a basis for the development of CNS competencies.

2. Phenomena of concern:

DESCRIPTION: This content area focuses on theoretical and empirical knowledge of illness and wellness phenomena with nondisease and disease etiologies. In order for the CNS student to engage in a differential diagnosis of illness and risk behaviors, knowledge of nondisease causes of illness should be learned and applied to patient care within the context of disease if appropriate to the specialty. Phenomena from all three spheres of influence should be incorporated into the curriculum.

EXAMPLES: Cognitive impairment, iatrogenesis, developmental delay, end of life/dying, environmental hazards, impaired mobility, ineffective coping, impaired wound healing, nausea, parenting, sleep disturbances, unsafe work place, and work place violence.

RATIONALE: Mastery of knowledge about the phenomena of concern to nursing prepares the CNS to differentially diagnose problems that are amenable to existing or innovative interventions. This knowledge also enables the CNS to (1) articulate nursing's unique contributions to patient/client care, (2) collaborate with other healthcare professionals,

and (3) identify outcomes of care reflective of CNS interventions.

3. Design and development of innovative nursing interventions:

DESCRIPTION: This content area focuses on the design and development of nursing assessments, interventions, and programs of care. The content includes validating existing practices and identifying the need for innovations. This knowledge area also includes the theoretical and scientific basis for the selection and use of specific nursing assessment instruments and interventions and is the basis for nursing innovation.

EXAMPLES: Creating innovative interventions to decrease medication errors; designing a program for parents of dying children; creating an innovative community-based screening and education program for patients/clients at high risk for chronic obstructive lung disease; and designing nursing assessments to identify etiologies of risks for falls, and developing innovative interventions to decrease risk.

RATIONALE: This content is critical for CNSs because it requires graduate level analysis and synthesis of theory and research. CNSs develop innovative assessments and interventions with cost-effective outcomes, thus advancing the practice of nursing.

4. Clinical inquiry/critical thinking using advanced knowledge:

DESCRIPTION: This content area focuses on the development of intellectual skills that underpin the essential characteristics and competencies of the CNS. These cognitive skills are applied to the conduct of clinical inquiries to discover knowledge important for understanding the phenomena of concern to nursing, to recognize the nuances of patient

experiences, and to identify the commonalties and uniqueness among population groups. These skills are used to determine the appropriate application of evidence to individuals or population groups. This content also includes the ability to reframe and hold biases and stereotypes in abeyance.

EXAMPLES: Critical thinking, diagnostic reasoning, pattern identification, clinical decision making, and problem-solving strategies.

RATIONALE: CNS practice requires the ability to understand and synthesize multiple perspectives, to be aware of personal thinking patterns, and to make effective decisions that enhance nursing practice and improve quality and cost-effectiveness.

5. Technology, products, and devices:

DESCRIPTION: This content area focuses on the critique, selection, and use of existing technology, products, and devices that support nursing practice and contribute to improved outcomes. Content may also focus on the development of new technology, products, and devices.

EXAMPLES: Critiquing patient education products; using informatics; evaluating the sensitivity and specificity of a device to monitor a body function; using strategies to evaluate technology, products, and devices from the perspectives of utility, cost-benefit analysis, ease of use, and effects on patient outcomes; utilizing technology and products to improve patient safety; and evaluating ethical considerations. In addition, content includes consideration of strategies for standardization of products across a system so that errors and variance are reduced.

RATIONALE: CNSs are experts on technology, products, and devices in their respective specialty areas. CNSs serve as coaches to patients/clients, family members, and nursing personnel, and as consultants to purchasing departments and technology development companies. In an increasingly complex healthcare system, technology, products, and devices play a large role in supporting nursing practice.

6. Teaching and coaching:

DESCRIPTION: This content area focuses on theories and research about the factors that influence learning, health behaviors, and the teaching and coaching of learners who are patients/clients, nurses, and other healthcare professionals.

EXAMPLES: Conducting needs assessments; designing health messages and health education materials to match literacy ability, cultural diversity, and physical capability; using theories to design teaching strategies to enhance learning environments; mentoring; and developing professional growth strategies.

RATIONALE: The CNS is responsible for developing innovative educational programs for patients, families, nurses, and other healthcare personnel. A continuing focus of CNS practice is teaching and coaching, particularly in the patient/client and nursing personnel spheres of influence. Approaches must be accessible, learner-friendly, and cost-effective and must achieve outcomes that are meaningful.

7. Influencing change:

DESCRIPTION: This content area focuses on the underpinnings of the essential characteristics and competencies of the CNS. It includes change theory, and techniques of persuasion, influence, and negotiation.

EXAMPLES: Using persuasion to influence decision-making; building consensus through negotiation; using expert power; influencing changes in risk behaviors; and designing and implementing system level change.

RATIONALE: Changes in healthcare delivery mandate more egalitarian and empowering relationships with patients/clients; require nurses to change the way they interact with patients and others; and necessitate that systems expand their services to include health promotion, prevention, and multidisciplinary practice groups to achieve desired outcomes and consumer satisfaction. These shifts require increased use of collaborative and mutually derived approaches that depend on influence, persuasion, and negotiation between CNSs and patients/clients, nurses, and other providers. Knowing how to influence organizational change through skillful negotiation is an essential part of CNS practice.

8. Systems thinking:

DESCRIPTION: This content area focuses on system theory and research to understand, evaluate, and predict individual, group, and organizational behaviors. The content includes skills in participating in change and policy-setting that influence the quality of care within a system. A professional nursing practice environment is one which empowers nurses to participate in clinical decision-making and in the organization of clinical care systems (AACN, 2002; Kramer & Schmalenberg, 2003).

EXAMPLES: Assessing organizational culture, including formal and informal power bases; understanding how a change in one unit may create unintended adverse outcomes in another unit; engaging informal leaders in a planned change

strategy; being able to constructively use system-level feedback to influence policies and standards of care; creating and evaluating organizational policy; and helping organizations respond proactively to outside influences requiring regulatory or other change. In addition, theories of organizational behavior and change related to organizational learning and development should be included.

RATIONALE: healthcare is delivered in a complex system. CNSs need to understand the context within which nursing care is delivered and develop strategies for influencing change and creating innovation.

9. Leadership for multidisciplinary collaboration:

DESCRIPTION: This content area focuses on developing process leadership skills to create a collaborative environment for multidisciplinary teams. The content encompasses interpersonal qualities (e.g., respectful communication) needed to ensure a healthy work environment and shared goals of the organization.

EXAMPLES: Developing facilitators and removing barriers to collaboration; working within the organizational culture; articulating nursing's unique contributions within the context of multidisciplinary teams; describing shared risks and benefits of collaboration; communicating with respect; engaging in risk-taking behaviors; and promoting the organization's vision.

RATIONALE: Successful nursing care delivery depends on multidisciplinary cooperation. Multidisciplinary collaboration is essential to improve the quality of care and patient safety and should be taught and modeled in educational environments (Wakefield & O'Grady, 2000).

Moving organizations forward requires competent, exemplary leaders.

10. Consultation theory:

DESCRIPTION: This content area focuses on consultation theory and research, and the associated process skills of serving as a clinical expert consultant.

EXAMPLES: Identifying a problem for which a consultant is appropriate; clarifying the role of a consultant in problem-solving; developing alternative strategies for a client/consultee to consider; understanding revenue-generating processes; and using clinical expertise as a power base.

RATIONALE: Consultation skills are essential when working with patients/clients, nurses, or other healthcare providers. Consultation activities promote collaboration with other healthcare professionals, solving complex patient problems, developing best practice models, and improving systems of care.

11. Measurement:

DESCRIPTION: This content area focuses on theories and clinical considerations of measurements (e.g., physiological, behavioral, psychosocial) required to assess and diagnose problems and to evaluate quality of care and clinical and fiscal outcomes.

EXAMPLES: Selecting measurement instruments for evaluation of interventions at the individual, group, and system level, and critiquing the validity, reliability, and clinical applicability of measurement instruments.

RATIONALE: CNSs use instruments to measure phenomena of concern to nursing as well as using multiple indicators of quality

pertinent to making system-level changes. CNS decision-making must be based on data. Understanding measurement is critical to CNS leadership in assuring quality, cost-effective outcomes.

12. Outcome evaluation methods:

DESCRIPTION: This content area focuses on research methods and techniques to evaluate nurse-sensitive outcomes consistent with the organization's mission and goals. These methods are also important in the development of databases relevant to evaluation of CNS practice outcomes, as well as efficacy of treatment at the patient level. Evaluation methods include various units of analysis within the system, the generation of cost-effective/cost-benefit data, and generation of data on patient outcomes, such as symptom resolution, enhanced functional ability, patient and family knowledge, and patient satisfaction (Oermann & Floyd, 2002).

EXAMPLES: System characteristics, resources, and variance; the selection of appropriate outcomes of interest, including clinical, fiscal, patient/family satisfaction (Prevost, 2002), and nurse satisfaction; and organizational outcomes, such as recidivism, readmissions, iatrogenic complications.

RATIONALE: CNSs must provide evidence of dependable, cost-effective and high-quality care (Oermann & Floyd, 2002; Brooten et al., 2002). CNSs must use evaluation strategies to demonstrate cost-effectiveness of programs. Program and outcome evaluation are necessary to enhance organizational performance.

13. Evidence-based practice and research utilization:

DESCRIPTION: This content area focuses on critiquing the research basis for nursing practice.

EXAMPLES: Using sources of evidence and rating systems for levels of evidence; evaluating current practice for the evidence base; applying evidence to designing innovations; using skills to critique evidence-based research studies; developing skills to apply an evidence base to clinical practice; and analyzing sources of specialty-specific, evidence-based guidelines.

RATIONALE: Research utilization is an important competency for CNSs. In order to advance the practice of nursing, CNSs should use evidence to support or guide changes in nursing practice to demonstrate that interventions contribute to nurse-sensitive, cost-effective outcomes (Glanville, Schirm, & Wineman, 2000; Youngblut & Brooten, 2001). The ability to conduct analysis and synthesis of evidence is necessary in order to develop practice guidelines that will improve quality outcomes (IOM, 2001).

Additional Educational Preparation

In addition to the core content areas, the practice and socialization experiences of CNS students are shaped by the following:

1. Opportunities for students to develop competencies in the three spheres of influence through preceptorships with CNSs. Preceptorships provide continuing experiences with peer review and establish a network of CNS colleagues who can serve as resources for continuing development and professional collaboration. CNS students may augment clinical experiences by taking opportunities to work with other healthcare providers appropriate to the specialty. However, the emphasis of CNS student clinical experiences must be on learning the CNS practice competencies under the guidance of an experienced CNS who serves as preceptor.

2. Opportunities to individualize the program of study to meet personal career goals and competencies related to the CNS's specialty. Educational programs need to provide content on both CNS core competencies and specialty competencies if the education program purports to prepare

students for practice in a specialty area. Faculty in many schools preparing CNSs report use of the NACNS *Statement* as required reading for their students to assist in learning about CNS core competencies. Other documents will be needed to supplement this and provide information about particular specialty competencies.

3. Socialization experiences for full and part-time students as a continuing process from the time of matriculation to graduation. The CNS educational preparation is more than the sum of completed courses. To become a clinical and professional leader, a CNS must integrate acquired knowledge and competencies with activities that enable the CNS to build a network with other specialty CNSs as well as other nursing and policy leaders.

4. A minimum of 500 hours in clinical practice consistent with the conceptual framework of the three spheres of influence to acquire CNS competencies. This recommendation is based on the directive of AACN, the views of faculty who teach in CNS graduate nursing programs (Walker et al., 2003), practicing CNSs who are members of NACNS, and external reviewers.

NACNS does not recommend "blended" or "merged" advanced practice educational programs — programs that purport to prepare students to obtain certification as both CNS and NP. While some content may be applicable to both CNS and NP (e.g. theory, research, pathophysiology of disease), the application of content to meet the core competencies is different for CNSs and NPs. It is in the application of knowledge that the differences in competencies emerge with CNSs having a nursing-focused practice and NPs having a medical-focused practice (Lyon, 2004). CNSs diagnose and treat illnesses; NPs provide health and medical care (ANA, 2004). A minimum of 500 supervised clinical hours is recommended and those hours must focus on CNS competencies in all three spheres of influence. A "blended/merged" CNS/NP program contributes to the loss of boundaries of the CNS scope of practice and obscures the unique CNS contributions to outcomes (Lyon, 1996b; Mick & Ackerman, 2002; Page & Arena, 1994).

Thus, NACNS recommends that eligibility for professional validation of entry-level practice competencies include a minimum of 500 supervised clinical hours and that those 500 hours focus exclusively on the CNS competencies. Educational preparation as both a CNS and NP within a single program means a student would complete additional supervised hours focused on requirements for both the CNS and NP practice competencies as recommended by NACNS and the NP professional organizations.

Summary

Recommendations for graduate education of the CNS address core competencies and outcomes of CNS practice within the three spheres of influence. The recommendations for curricula focus on essential content areas and threads, using some of the recommendations of the ACCN, with NACNS-recommended additions and modifications to produce specific competencies of the CNS. For preparation in a specialty area, schools of nursing may provide additional courses and experiences beyond these recommendations.

In addition to the core content, CNS students should have opportunities to individualize their programs of study to meet personal career goals and develop specialty area competencies. Students should be precepted by CNSs who exemplify competencies and who can facilitate the students' socialization into the role. It is recommended that students have a minimum of 500 hours of direct clinical practice to achieve entry-level knowledge and competence in the three spheres of influence.

It is recognized that some schools of nursing and their CNS programs and curricula do not address the recommendations of this document. It is recommended that faculty teaching in or planning to teach in a CNS program use this *Statement* to develop new programs or to revise curricula.

STATEMENT CONCLUSION

CNSs provide expert and independent care to promote health by promoting wellness, preventing illness, and providing expert assistance with disease care.

This *Statement* was written to meet four goals: 1) to articulate competencies for CNS practice and associated outcomes; 2) to make explicit the contributions of CNSs in meeting societal healthcare needs; 3) to provide a foundation for core CNS credentialing, including certification examination, portfolio, or other mechanisms; and 4) to provide a standardized framework for CNS education at the graduate level.

Section 1 described the historical foundations and social/professional mandate for CNS practice; defined CNS practice and described the essential characteristics; provided the overview with assumptions of the core CNS competencies; explained the conceptual framework of CNS practice in three spheres of influence; and discussed the regulation of CNS practice. Section 2 provided a description of entry-level core competencies required for CNS practice, which are conceptualized across three spheres of influence. Depending on the specialty focus, the emphasis of individual CNSs can vary within these spheres. The outcomes of CNS practice are described, illustrating the valuable contributions of CNSs to healthcare. Because CNS practice focuses on illness and

wellness in the presence or absence of disease, the contributions of CNSs to healthcare are made explicit. Section 3 provided a framework for the progressive evolution of CNS preparation. The number of CNS programs in the U. S. is increasing and there is a demand for CNSs in a variety of healthcare settings.

The essence of CNS practice is clinical nursing expertise in the diagnosis and treatment of illness, and the promotion of health with a defined specialty population. CNSs are also expert in the delivery of evidence-based nursing interventions. This expertise is manifested in the care of a variety of patients/clients, including individuals, families, groups, and communities.

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Appendix A.
Glossary of Key Terms

Competencies: A collection of skills necessary to perform a specific job or service; an individual's capability to perform at the level of expectations (Joint Commission on Accreditation of Healthcare Organizations, 2002). Cognitive skills, psychomotor skills, and interpersonal skills are all elements of performance competencies. In this *Statement*, competency refers to a behavior that is measurable; it does not refer to the knowledge that is requisite for competency. For example, the competency "Conducts comprehensive, holistic wellness and illness assessments using known or innovative evidence-based techniques, tools, and methods" (Sec 2., p. 29) presumes knowledge of pertinent research-based tools, techniques, and methods and the ability to apply that knowledge to patient problems. Likewise, the competency, "Selects evidence-based nursing interventions for patients/clients that target the etiologies of illness or risk behaviors" (Sec 2., p.30) presumes knowledge of the phenomena of concern, including the range of potential etiologies of symptoms and functional problems, and innovative nursing interventions to treat the etiologies.

Differential diagnosis: A process of clinical reasoning whereby the CNS synthesizes data from assessments to rule in or rule out possible etiologies of illness and the presence of risk behaviors, and draws a conclusion about the factors contributing to illness or risk behavior of an individual, family, group, community, and/or population. A wide diagnostic search of possible etiologies is considered by the expert CNS, using knowledge of nondisease etiologies within the context of disease. The CNS makes differential diagnoses of symptoms, functional problems, and risk behaviors in the presence or absence of disease, pathology, or injury. Potential differential diagnoses are based on a broad knowledge of advanced nursing as well as specific knowledge of the specialty area. The search for all relevant etiologies is context-dependent. Etiologies of the patient's problems may include personal or environmental factors, or some combination of these. A diagnosis represents a statement of conclusion based on the process of differential diagnosis.

Environment-person interaction: Environment refers to the context of a person's life, including family, culture, community, resources, and other factors that are external to a person and influence a person's experience of health. Person factors refer to internal aspects of the person that influence illness and health. The interactions of these two factors directly contribute to illness and health. Illness can have nondisease, disease, and/or environmental causes.

Etiologies: Factors that contribute to symptoms, functional problems, or risk behaviors that are amenable to nursing intervention. Many different etiologies may contribute to the experience of illness, such as immobility, lack of knowledge, ineffective coping, low self confidence, ineffective self care practice, inadequate nutrition or hydration.

Expansion of CNS practice: The application of theory and research knowledge and development of competencies for the purpose of extending the boundaries of independent, autonomous nursing practice.

Expertise: An essential CNS quality whereby the CNS is skillful by virtue of possessing special knowledge. Elements of expertise in CNS practice include advanced knowledge of the specialty; application of advanced knowledge in the care of a variety of patients in the specialty; habitually using a wide search of possible etiologies in clinical decision-making; critical thinking skills; use of analytic thinking; the ability to see patterns in phenomena of interest; and therapeutic use of self. The CNS expert "sees the big picture" and anticipates the unexpected, using intuitive perception to act on knowledge holistically rather than in fragmented, incremental steps (Benner, 1984; Rew, 1988). The CNS expert can rapidly and effortlessly associate experiences, make decisions, or perform actions (Williams, Faulkner, & Fleck, 1998).

Health: A person's or group's evaluation of how it feels and functions (Lyon, 1990). Health is expressed in terms of perceived wellness and illness, both of which can occur in the presence or absence of disease. (ANA, 2004)

Illness: The subjective experience of somatic discomfort, including physical discomfort, emotional discomfort, and/or reduction in functional ability below the perceived capability level. Functional ability encompasses activities of daily living (ADLs), self-care ability, decision-making ability, problem-solving ability, social interaction ability, spiritual ability, and ability to meet personal needs for such things as sleep and intimacy. Illness can be viewed as the human experience of disease (Jensen & Allen, 1993; Lyon, 1990), but it also extends to nondisease conditions that humans may experience. Disease and illness are two distinctly different phenomena. Illness can be experienced in the presence or absence of disease (Lyon, 1990) and is the focus of CNS practice. CNSs in some specialties apply expert knowledge to assist with the diagnosis and treatment of disease but the hallmark of CNS practice is the diagnosis and treatment of illness (Dayhoff & Lyon, 2001; Lyon, 1996a). Both health and illness are human experiences, and the presence of illness does not preclude health. Likewise, optimal health does not preclude illness (ANA, 2003). The goal of nursing care for the person who is ill is to assist the person in eliminating or decreasing uncomfortable or unpleasant sensations and in reaching full functional potential.

Interventions, innovative: Innovations may be one of four types: (1) entirely new or novel intervention through invention; (2) modification of something that already exists through adaptation; (3) adoption of an intervention from one population of patients to another through novel application; or (4) adoption of an intervention into nursing practice that is used by another provider (Thomas, 1984). Diffusion of innovation is more apt to succeed if there is a perception of perceived benefit from the change and if the innovation is compatible with the values and beliefs of those who will adopt it (Berwick, 2003).

Interventions, nursing: Nurse-initiated activities designed to effect change in etiologies, or causative factors that are contributing to actual or potential symptoms or functional problems, and thereby alter the illness or promote wellness.

Nursing practice: Acts performed by nurses for the purpose of preventing illness, alleviating suffering, improving functioning, and protecting, promoting, and restoring health with individuals, families, groups, communities, and populations.

Nursing practice advancement: The CNS generates and uses new knowledge from nursing science and other basic and applied sciences to improve patient care in a particular population and to advance nursing practice. For example, the recent explosion of knowledge about diabetes management has created a need for the CNS to bridge the gap between prior knowledge (exchange lists) and current methods of care, e.g., postprandial glucose evaluation, carbohydrate counting, or prescription of specifically targeted medications. Another example involves the CNS using deliberative evaluation of new intravenous pumps to enhance patient safety.

Outcomes, CNS: The results of deliberative CNS action within each sphere of influence and may include the initiation and facilitation of change or transformation actions. As in any clinical or field setting, it is difficult to attribute outcomes to a single cause or healthcare provider. The outcomes identified in this *Statement*, however, are unlikely to occur without the deliberative actions which requires expert problem identification and problem solving by the CNS.

Patient: The recipient of nursing care, including individuals, groups, families, communities, and populations (ANA, 2004). Throughout the *Statement*, the term patient is used to mean patient or client.

Risk behavior: An action or habit that threatens wellness and contributes to illness. Examples include overeating, lack of exercise, smoking, violence, and neglect of environment. Risk behaviors may occur in individuals, groups, or communities.

Specialization, CNS: A delimited or concentrated area of expert clinical practice, with focused knowledge and skills. The area may be broadly or narrowly defined; the area may be well established or emerging. Specialty areas are identified in terms of the following (ANA, 2004; NACNS, 1998):

- Population (e.g., pediatrics, geriatrics, women's health)
- Type of problem (e.g., pain, wound management, stress)
- Setting (e.g., critical care unit, operating room, emergency department, community clinic)
- Type of care (e.g., rehabilitation, end-of-life, health promotion)
- Disease/pathology/medical specialty (e.g., diabetes, oncology, psychiatry)

Sphere of Influence: A domain or area of CNS practice that reflects the pertinent stakeholders or consumers of CNS services. A particular sphere of influence includes the scope of practice, activities, and parameters of targeted outcomes (Lyon, 1990).

Wellness: Wellness is a subjective experience and is characterized by pleasant sensations and a perception of comfort. It can be experienced in the presence or absence of disease.

Appendix B.
Annotated Bibliography of Research Studies and Articles About CNS Practice and Outcomes

An exhaustive literature review was conducted using MEDLINE and CINHAL. The terms CNS, clinical nurse specialist, APN, and advanced practice nurse were used for the search. Articles authored by CNSs and others writing about CNSs were reviewed for content relating to CNS practice. If the article described the outcomes of CNS practice, it was included in the annotated bibliography. When authors were listed as APNs, review of their biographical information was conducted. If they were practicing as CNSs or had been educated as CNSs, and if the article related to CNS practice, the article was included. Individuals who reviewed the original *Statement* and draft copies for this revision were specifically asked to recommend articles for review and possible inclusion. Participants at the 2003 NACNS National Conference were asked to send useful articles relevant to CNS practice to the *Statement* Task Force.

Building an evidence-base for practice is of the utmost importance, and identifying research studies about innovative CNS-designed nursing practice is imperative. Consumers of the *Statement* and NACNS members knowing of other valuable studies are encouraged to inform NACNS (nacns.org) so that they can be included in future revisions of the *Statement*. NACNS wishes to express appreciation to Dr. Kathy Baldwin, a member of the *Statement* Task Force, who conducted the literature review and analysis.

ANNOTATED BIBLIOGRAPHY OF RESEARCH STUDIES AND ARTICLES ABOUT CNS PRACTICE AND OUTCOMES

by Kathleen Baldwin, PhD, RN, and NACNS

RESEARCH

Publication	Method	Results
Adams, P. (2000). Insight into a mental health prevention intervention. *Nurs Clin North Am,* *35*(2), 329-338.	Research Study Quasi-experimental pilot study (n = 29 women)	The outcomes research study used Gordon's Insight Program in a community-based setting to address depression in women and found a statistically significant and clinically relevant improvement in scores on all tools.
Ahrens, T., Yancey, V., & Lollef, M. (2003). Improving family communication at the end of life: Implication for length of stay in the intensive care unit and resource use. *Am J of Crit Care,* *12*(4), 317-323.	Research Study Quasi-experimental study (n = 151)	The study evaluated the effect of a communication team that included a physician and CNS on length of stay and cost of care for ICU patients at end of life. The patients who had the communication team intervention had shorter ICU stays (6.1 vs. 9.5 days) and hospital stays (11.3 vs. 16.4 days). They also had lower fixed costs ($15,559 vs. $24,080) and variable costs ($5,087 vs. $8,035).
Alexander, J. S., Younger, R. E., Cohen, R. M., & Crawford, L.V. (1998). Effectiveness of a nurse-managed program for children with chronic asthma. *J of Pediatric Nurs,* *3*(5), 312-317.	Research Study Randomized clinical trial (n = 21 patients)	This study evaluated a nurse-managed program for children with asthma. When compared with the 12-month period prior to enrollment, the CNS group subjects demonstrated a significant reduction in the frequency of ER visits (2.6 ± 1.1 versus 0.6 ± 0.9 ER visits per patient, p = <0.001). Control group subjects demonstrated no change in ER utilization (2.5 ± 1.5 versus 2.4 ± 2.1 ER visits per patient).
Badger, T. A., Gagan, M .J. & McNiece, C. (2001). Community analysis for health planning with vulnerable populations. *Clin Nurse Spec,* *15*(3), 95-102.	Research Study Descriptive study (n = 242 adults)	This study was an epidemiological research study undertaken by CNSs to determine the need for alternative healthcare delivery models for vulnerable populations using the framework derived from Anderson and Aday and Ferketich, Phillips, and Verran. Results showed subjects lacked access to routine care, had little knowledge of disease prevention, and used few preventative services.
Baird, K. K. & Pierce, L. L. (2001). Adherence to cardiac therapy for men with coronary artery disease. *Rehabilitation Nurs,* *26*(6), 233-243.	Research Study Qualitative interview study (n = 5 men)	The CNS authors used Orem's Self-Care Deficit Theory of Nursing to identify factors facilitating and inhibiting adherence to a cardiac therapy program. Facilitative factors included developmental status, health state, healthcare system, and family system. Inhibitory factors included age, pattern of living, environmental factors, and resource availability and adequacy.

Publication	Method	Results
Barnason, S., Merboth, M., Pozehl, B., & Tietjen, M. J. (1998). Utilizing an outcomes approach to improve pain management by nurses: A pilot study. *Clin Nurse Spec,* *12*(1), 28-36.	Research Study Outcomes evaluation (pilot study) (n = 47)	CNSs developed and implemented a structured intervention for clinical pain management. Patient satisfaction with pain management during hospitalization was demonstrated, as well as consistency in patients' ability to rate pain intensity and ability to identify perceived level of "acceptable" pain. In addition, there was significant improvement in the cognitive knowledge of staff nurses ($p = 0.001$) related to pain management and use of more consistent practice patterns of pain management by staff.
Barnason, S., & Rasmussen, D. (2000). Comparison of clinical practice changes in a rapid recovery program for coronary artery bypass graft patients. *Nurs Clin North Am,* *35*(2), 395-403.	Research Study Retrospective chart review (n = 100 CABG patients)	This outcomes research study was designed by CNSs to identify factors facilitating and inhibiting adherence to a cardiac therapy program. Results showed that groups differed in only one variable: oxygenation status. Fewer patients in the rapid recovery group required oxygen on Day 2.
Brandl, K. M., Langley, K. A., Riker, M. D., Dork, L. A., Qualls, C. R. & Levy, H. (2001). Confirming the reliability of the sedation-agitation scale administered by ICU nurses without experience in its use. *Pharmacotherapy,* *21*(4), 431-486.	Research Study Prospective, psychometric evaluation (n = 75 grouped observations of staff nurses and CNSs)	The research study was designed to test the ability of nurses to use the SAS (sedation/agitation scale) to accurately assess and describe consciousness and agitation resulting management problems and drug inconsistencies. Results showed statistically significant and clinically relevant improvement in scores on all tools.
Brooten, D., Gennaro, S., Knapp, H., Jovene, N., Brown, L., & York, R. (1991). Functions of the CNS in the early discharge and home followup of very low birthweight infants. *Clin Nurs Spec,* *5*(1) 196-201.	Research Study Randomized clinical trial (n = 36 mothers and 39 infants)	CNSs functions fell under two main categories: assessment and intervention. The majority of functions were assessments. Teaching was identified as the most frequent intervention. Liaison, consultant, referral activities were second and involved linking parents with a variety of services.
Brooten, D., Kumar, S., Brown, L. P., Butts, P., Finkler, S., Bakewell-Sachs, S., et al. (1996). A randomized clinical trial of early hospital discharge and home follow-up of very low birthweight infants. *New England J of Med*, *315*, 934-939.	Research Study Randomized clinical trial (n = 79 patients)	This study evaluated safe and cost-effective care by CNS for early discharge of very low birth weight infants with follow-up. Mean hospital costs were 27% less than the control group ($47,520 versus $64,940, $p = < 0.01$), and the mean physician's charge was 22% less ($5,933 versus $7,649, $p < 0.01$). The mean cost of home follow-up care was $576, yielding a net saving of $18,560 for each infant.

Publication	Method	Results
Brooten, D., Youngblut, J. M., Brown, L., Finkler, S. A., Neff, D. F., & Madigan, E. (2001). A randomized trial of nurse specialist home care for women with high-risk pregnancies: outcomes and costs. *Am J Manag Care, 7*(8), 793-803.	Research Study Randomized clinical trial (n = 173 women and 194 infants)	Prenatal, maternal, and infant outcomes and costs through one year were examined using a model of prenatal care for women at high risk to deliver low-birth weight infants where half of the prenatal care is delivered in the home by CNSs. Results showed the group cared for in the home had 2 fetal/infant deaths (control group = 9), 11 fewer pre-term infants, 77.7% of twin pregnancies carried to term (control group = 33.3%), 4 fewer prenatal hospitalizations, 18 infant re-hospitalizations (control group = 24). CNS prenatal home care saved 750 total hospital days or about $2,500,000.
Carroll, D. L., Robinson, E., Bussell, E., Berry, D., & Rankin, S. H. (2001). Activities of the APN to enhance unpartnered elders' self-efficacy after myocardial infarction. *Clin Nurse Spec, 15*(2), 60-66.	Research Study Telephone interviews (n = 44 randomly assigned participants)	Bandura's Social Cognition Theory was tested as a way to improve physical and emotional support for un-partnered elders following acute myocardial infarction. Results identified four themes of activities used by APNs: patient education, validation/feedback, encouragement/support, and problem solving. Enhancing self-efficacy improved function and decreased risk of poor outcomes. An APN-coached telephone intervention was a cost-effective, low technology way to assist un-partnered elders following acute MI.
Coward, D. D. (1998). Facilitation of self-transcendence in a breast cancer support group. *Oncol Nurs Forum, 25*(1), 75-84.	Research Study Pre-experimental design pilot intervention study (n = 16)	An oncology CNS, a psychotherapist, and a breast cancer survivor facilitated a theory-driven support group intervention of 8 weeks. Scores on self-transcendence and well-being increased from baseline at the end of the intervention. Measures of functional performance status, mood state, and satisfaction with life reached statistical significance.
Crimlisk, J. T., Bernardo, J., Blansfield, J. S., Loughlin, M., McGonagle, E. G., McEachern, G., et al. (1997). Endotracheal intubation: A closer look at a preventable condition. *Clin Nurse Spec, 11*(4), 145-150.	Research Study Prospective study (n = 862)	A pulmonary and emergency CNS initiated the study with a physician intensivist. Frequency and causes of reintubation were determined, and the impact of an educational intervention aimed at minimizing unplanned extubations was evaluated. The reintubation rate was decreased from 4.4% to 1.9% (p = 0.005). Reintubations after unplanned extubation were decreased from 14% to 5.2% (rate ratio, 0.374; 95% confidence interval = 0.141, 0.990). Multiple reintubation events decreased from 45% to 18.8% (p = 0.07). Increased provider education and protocol changes were associated with lower intubation rates.

Publication	Method	Results
Damato, E. G., Dill, P. Z., Gennaro, S., Brown, L. P., York, R., & Brooten, D. (1993). The association between CNS direct care time and total time and very low birthweight infant outcomes. *Clin Nurse Spec*, *7*(2), 75-79.	Research Study Randomized clinical trial (n = 39 patients)	This study evaluated CNS direct care time and outcomes of very low birthweight infants. Significant relationships were found between the amount of CNS direct care time and the number of acute care visits ($r = 0.45$, $p < 0.01$) and infant rehospitalizations ($r = 0.51$, $p < 0.01$).
Deisch, P., Soukup, M., Adams, P., & Wild, M. C. (2000). Guided imagery replication study using coronary artery bypass graft patients. *Nurs Clin North Am, 35*(2), 417-425.	Research Study Prospective, replication study (n = 100 patients)	The CNS authors tested the use of guided imagery in patients who have had coronary artery bypass grafts. Results showed that use of guided imagery reduced pain, fatigue, anxiety, narcotic usage, and length of stay, and increased patient satisfaction.
De Vito Dabbs, A., Curran, C. R. & Lenz, E. R. (2000). A database to describe the practice component of the CNS role. *Clin Nurse Spec, 14*(4), 174-183.	Research Study Descriptive pilot study	The study described the development of a comprehensive database and tested its usefulness in capturing CNS patient encounters and in describing CNS functions. The database profiled CNS practice during the 3 months of data collection and showed 424 clinical encounters with 98 patients/families where 787 problems were addressed and 1130 functions were performed. The database provided a way to efficiently summarize CNS practice activities.
Dobscha, S. K., Gerrity, M. S., & Ward, M. F. (2001). Effectiveness of an intervention to improve primary care provider recognition of depression. *American College of Physicians.* Retrieved 8/16/03, from http://www.acponline.org.	Research Study Outcomes research (n = 160 chart reviews pre-intervention, n = 97 chart reviews post-intervention)	Physician researchers conducted a study using a mental health CNS as the intervention nurse. They found that limited intervention could improve recognition and initial management of depression in a VA primary care setting.
Flannery, J., & Van Gaasbeek, D. E. (1998). Factors in job satisfaction of the psychiatric clinical nurse specialist. *Nursingconnections*, *11*(4), 27-36.	Research Study Exploratory, descriptive study (n = 52 CNSs)	The variables that affect job satisfaction in psychiatric/mental health CNSs were examined. Results showed a statistically significant higher degree of job satisfaction in CNSs who were employed in private practice.

Publication	Method	Results
Gaston-Johansson, F., Ohly, K. V., Fall-Dickson, J. M., Nanda, J. P., & Kennedy, M. J. (1999). Pain, psychological distress, health status, and coping in patients with breast cancer scheduled for autotransplantation. *Oncol Nurs Forum, 26*(8), 1337-1345.	Research Study Descriptive, correlational (n = 83 women)	The study described pain, psychological distress, health status, and coping in patients with breast cancer awaiting autotransplantation. Important variables of perceived health status were hypothesized to be total pain intensity, sensory pain, depression, and catastrophizing.
Girouard, S. (1978). An experiment in preoperative teaching. *International J of Nurs Studies*, *15*(2), 57-65.	Research Study Quasi-experimental pretest/posttest	Results showed increased performance of nurses in the experimental group (CNS using the linker model of planned change) for pre-operative teaching and its documentation.
Goodenough, S. K., Bines, A., & Schneider, W. (1986). The effect of clinical nursing expertise on patient outcome. *Crit Care Med, 14*(4), 358.	Research Study Nonequivalent control group pretest/posttest (n = 159 patients pretest and n = 162 patients posttest)	Results showed a difference in the percentage of mechanical/skill-related patient outcome criteria in the experimental unit patients (with a unit-based pulmonary CNS) between pretest and posttest ($p = < 0.001$)
Gravely, E. A., & Littlefield, J. H. (1992). Cost effective analysis of three staffing models for the delivery of low risk prenatal care. *Am J of Public Health, 82*(2), 180-184	Research Study Comparative cost analysis (n = 156 patients)	The clinic staffed by CNSs had the greatest client satisfaction and the lowest cost per visit. Use of CNSs might substantially reduce the cost of providing prenatal care while maintaining quality, thereby saving valuable resources.
Haddock, K. S. (1994). Collaborative discharge planning: Nursing and social services. *Clin Nurse Spec*, *8*(5), 248-252, 288.	Research Study Quasi-experimental study (n = 64)	The experimental group (n = 29) had discharge planning directed through collaboration between a CNS and a social worker. Patients in the experimental group had a shorter length of stay, fewer readmissions, and received a higher rate of indicated post-discharge services. Documentation was not significantly affected, except for patient education, which was less complete in the experimental group.

Publication	Method	Results
Hall, I. P., Callow, I. M., Evans, S. A., & Johnston, I. D. A. (1994). Audit of a complete home nebulizer service provided by a respiratory nurse specialist. *Resp Med*, *88*, 429-433.	Research Study Retrospective chart audit (n = 76)	In 57 patients who had chronic problems with obstructed airflow, nebulizer use was identified by the nurse specialist as inappropriate or not practical for 28% (n = 16). In 4 of these 16 patients, other treatment was considered suboptimal, and in 12 patients a nebulizer trial was impractical because of patients' poor comprehension or inability to use a nebuhaler or PEF meter. It was concluded that control of nebulizer provision within the respiratory unit, including formal assessment and subsequent supervision, is likely to resolve many of the deficiencies in the use of nebulizers. Also clerical support for the nurse specialist to run the service is necessary as 64% of the time was spent on clerical duties.
Hanneman, S., Bines, A., & Schnieder, S. (1993). The indirect patient care effect of a unit-based clinical nurse specialist on preventable pulmonary complications. *Am J of Crit Care,* *2*(4), 331-338.	Research Study Nonequivalent control group/pretest/posttest (n = 160 patients in each group)	This study showed a significant reduction in preventable pulmonary complications on the experimental unit, even though the acuity was significantly higher in posttest patients. Indirect patient care by a unit-based CNS can reduce the incidence of preventable pulmonary complications.
Heslop, A. P., & Bagnall, P. (1988). A study to evaluate the intervention of a nurse visiting patients with disabling chest disease in the community. *J of Adv Prac,* *13*, 71-77.	Research Study Controlled clinical trial (n = 75)	Two advanced nurses visited patients with chronic respiratory disease at home. Outcome measures suggested fewer deaths among patients in the nurses' group but failed to show any changes in quality of life.
Hillier, A. (2001). The advanced practice nurse in gastroenterology: Identifying and comparing care interactions of nurse practitioners and Clinical Nurse Specialists. *Gastroenterol Nurs*, *24*(5), 239-245.	Research Study Descriptive, cross-sectional (n = 32)	The study compared NP and CNS roles in gastroenterology. The results showed no significant difference in salary structure or performance evaluation factors. Individual roles are still evolving and the author believed more research was needed.
Howard, J. C., Wolff, P. H., Perry, J., New, Z., & Stelton, S.D. (1989). Cost-related variables: A pilot study. *Clin Nurse Spec,* 1989, *3*(1), 37-40.	Research Study Retrospective chart audit (n = 142 patient charts)	Length of stay was found to be an independent predictor of hospital charge variance. Research by CNSs facilitated identification of important practice variables and laid the groundwork for further studies to explore whether specific nursing interventions were related to desired outcome and reduced hospital charges.

Publication	Method	Results
Iglesias, G. H. (1998). Role evolution of the mental health clinical nurse specialist in home care. *Clin Nurse Spec,* *12*(1), 38-44.	Research Study Descriptive, retrospective (n = 150 patients/ families)	The possible expansion of the community mental health CNS into home care was explored. Results showed that depression, anxiety, grieving, and non-compliance were the most frequent reasons for referral. Situational low self-esteem, altered role performance, and caregiver role strain were the most common nursing diagnoses. The evolving role of the community mental health CNS in home care needs further research.
Kleinbeck, S. V. (2000). Dimensions of perioperative nursing for a national specialty nomenclature. *J Adv Nurs,* *31*(3), 529-535.	Research Study Descriptive survey (n = 239 nurses)	The study described the dimensions of perioperative nursing using CNSs as part of the subjects. Patient and family behavioral responses to surgery, perioperative patient safety, perioperative physiological response to surgery, and patient mental/emotional response to surgery were the four factors accounting for 46.4% of the variance among diagnoses.
Lacko, L. A., Dellasega, C., Salerno, F. A., Singer, H., DeLucca, J., & Rothenberger, C. (2000). The role of the advanced practice nurse in facilitating a clinical research study. *Clin Nurse Spec*, 2000. *14*(3), 110-115.	Research Study Quasi-experimental (n = 45, total intervention group = 34, control = 11)	An intervention developed by APNs to improve delirium-screening abilities of hospital staff nurses was tested. Staff nurses correctly identified all of the cases that occurred on the intervention unit and none of the cases that occurred on the control unit. The tools helped nurses identify delirium and have been incorporated into mental status testing by the nurses who used them.
Laskowski, C. (2001). The mental health clinical nurse specialist and the "difficult" patient: Evolving meaning. *Issues in Mental Health Nurs,* *22*(1), 5-22.	Research Study Grounded theory (n = 12 CNSs)	Mental health CNSs experiences with difficult client behavior were described. Establishing boundaries, planning ahead for encounters with difficult clients, negotiating with clients instead of exerting power, and seeking support from other healthcare professionals were felt to be necessary. Some CNSs and their families reported being stalked.
Ley, S. J. (2001). Quality care outcomes in cardiac surgery: The role of evidence-based practice. *AACN Clin Issues,* *12*(4), 606-617; quiz 633-635.	Research Study Retrospective chart review (n = 165 total, 48 in clopidogrel group, 117 in nonclopidogrel comparison group)	The study evaluated the impact of clopidogrel on cardiac surgical bleeding using Juran's model for continuous quality improvement and found that use of clopidogrel resulted in adverse clinical outcomes and increased cost of care. The result was development and implementation of a clinical practice guideline limiting its use.

Publication	Method	Results
Lincoln, P. E. (2000). Comparing CNS and NP role activities: A replication. *Clin Nurse Spec,* *14*(6), 269-277.	Research Study Descriptive, comparative, replication (n = 130 CNSs and 189 NPs)	The study replicated one previously done that compared NP and CNS role activities in Minnesota. Results showed that although similarities were found in role function, daily work activities were significantly different in 22 of 25 areas and each specialty made unique contributions to client care.
Linde, B. J., & Janz, N. M. (1979). Effect of a teaching program on knowledge and compliance of cardiac patients. *Nurs Res,* *28*(5), 282-286.	Research Study Pretest-posttest control group (n = 58 patients)	Results of the study showed CNSs had a significantly greater impact on patient learning than staff nurses.
Little, D. E., & Carnevalli, D. (1979). Nurse specialist effect on tuberculosis: Report on a field experiment. *Nurs Res,* *16*(4), 321-326.	Research Study Three-phase experiment with random assignment (n = 270 patients)	Results of the study showed CNSs were significantly more patient-centered than their staff nurse counterparts; a possible difference in improvement of patients on the experimental unit was evidenced by X-ray findings.
Lombness, P. (1994). Differences in length of stay with care managed by clinical nurse specialists or physician assistants. *Clin Nurse Spec,* *8*(5), 253-260.	Research Study Descriptive two-group design (n = 105 patients)	Significantly lower mean LOS was shown in CNS-managed group at 7.377 days when compared with PA-managed group at 9.059 days. During the 6 months of this study, an estimated cost savings achieved by reduction in patient days was almost $550,000.
Manworren, R. C. B. (2000). Pediatric nurses' knowledge and attitudes survey regarding pain. *Pediatric Nurs,* *26*(6), 610-614.	Research Study Descriptive survey (n = 247 nurses)	A pediatric pain management CNS identified pain management knowledge deficiencies through descriptive survey of nurses. The deficiencies were identified in areas of assessment, pharmacologic management with opioids, nonopioids, and adjuvant medications, risks of addiction, risks of respiratory depression, nonpharmacologic pain interventions, and treatment of procedural pain, surgical pain, and cancer pain.
Mathew, L. J., Gutsch, H. M., Hackney, N. W., & Munsat, E. M. (1994). Promoting quality and cost-effective care of geropsychiatric patients. *Issues in Mental Health Nurs,* *15*, 169-185.	Research Study Demonstration project — 1 year retrospective review (n = 109)	Utilization of a geropsychiatric clinical nurse specialist who facilitated a number of interventions was central to the project. Length of stay and financial losses were significantly reduced. A change in knowledge levels and positive attitudes of nursing staff occurred, although the change was not statistically significant. An association between attitudes and job satisfaction was found, and approximately half the patients had improved outcomes.

Publication	Method	Results
Mayhew, P. A., Acton, G. J., Yauk, S., & Hopkins, B. A. (2001). Communication from individuals with advanced DAT: Can it provide clues to their sense of self-awareness and well-being? *Geriatr Nurs, 22*(2), 106-110.	Research Study Exploratory, qualitative (n = 5)	The study to enhance understanding of communication from people with advanced dementia of the Alzheimers type (DAT) was conducted. During interviews with a gerontologic CNS, subjects seemed to be aware of their cognitive decline, displayed a sense of self, showed indicators of well-being, displayed a range of emotions such as creativity and self-expression, relaxation, affectional warmth, and humor. Some subjects showed assertion of will, social sensitivity, initiation of social contact, and helpfulness.
McBride, A. B., Austin, J. K., Chesnut, E. E., Main, C. S., Richards, B. S., & Roy, B. A. (1987). Evaluation of the impact of the clinical nurse specialist in a state psychiatric hospital. *Arch of Psychiatr Nurs, 1*(1), 55-61.	Research Study Descriptive (n = 65 patients, n = 17 staff members)	Statistically significant differences were found in the quality and quantity of the nurses' notes half a year after a CNS had been at work. New treatment plans were designed and evidence of more nursing action were implemented and evaluated.
McCorkle, R., Benoliel, J., Donaldson, G., Gergiadou, F., Moinpour, C., & Goodell, R. (1989). A randomized clinical trial of home nursing care for lung cancer patients. *Cancer, 64*(6), 1375-1382.	Research Study Randomized clinical trial (n = 166 patients)	Among three treatment programs, 1) specialized oncology home care program (OHC, group care provided by CNSs), 2) standard home care program group (SHC, care provided by an interdisciplinary team), and 3) office care program (OC, care provided by patients' physicians), there were no significant differences in terms of pain, mood disturbance, and concerns among the three groups. Social dependency and health perceptions of the two home nursing care groups (OHC and SHC) showed less distress and more independence 6 weeks longer than the group that had been in the office care program. In addition, subjects in the OHC and SHC groups tended to have fewer admissions for symptoms and for complications related to malignancy. The specialized home caregivers, CNSs in the OHC group, may have had an ability to prevent certain symptoms and complications or to substitute for some types of inpatient care in a way that standard care providers could not. This study provides evidence that nurses can improve the quality of living with progressive illnesses such as cancer.

Publication	Method	Results
Micheels, T. A., Wheeler, L. M., & Hays, B. (1995). Linking quality and cost effectiveness: Case management by an advanced practice nurse. *Clin Nurse Spec,* *9*(2), 107-111.	Research Study Retrospective chart review (n = 78 patients)	This study showed a trend in CNS case-managed patients toward higher acuity and shorter LOS. It appeared that CNS involvement in care negated acuity as a predictor of LOS.
Mick, D. J. & Ackerman, M. H. (2000). Advanced practice nursing role delineation in acute and critical care: Application of the strong model of advanced practice. *Heart Lung,* *29*(3), 210-221.	Research Study Descriptive, exploratory pilot study (n = 18)	The study described differences in the roles of CNS and acute care NP using the Strong Model of Advanced Practice and Benner's Professional Advancement Model as conceptual frameworks. Findings supported separate, not blended, roles and recommended further research.
Moore, S., Grant, E. & Katz, B. (1998). Nurse perceptions of ostomy patients & their ostomy care competence. *Home Care Provid,* *3*(4), 214-220.	Research Study Causal, comparative (n = 70 nurses, 45 in acute care, 25 in home care)	Using the King Conceptual Model, the authors, one of whom was a CNS, explored acute care and home care nurses' perceptions of ostomy patients and nurses' competency in their nursing care. Acute care nurses scored lower in ostomy care competency and perception of ostomy patients than did home care nurses.
Naylor, M. (1990). Comprehensive discharge planning for hospitalized elderly: A pilot study. *Nurs Res,* *39*(3), 156-161.	Research Study Randomized clinical trial (n = 4)	The effects of a comprehensive discharge planning protocol implemented by a gerontological CNS were compared with the hospital's general discharge planning procedure. There were no statistically significant differences between groups in terms of length of initial patient hospitalization or in rates of infections that occurred after patients were released from the hospital. A statistically significant difference was found when groups were compared as to the number of subjects rehospitalized during the study period.
Naylor, M., Brooten, D., Jones, R., Lavizzo-Mourey, R., Mezey, M., & Pauly, M. (1994). Comprehensive discharge planning for the hospitalized elderly. *Ann of Inter Med,* *120*(12), 999-1006.	Research Study Randomized clinical trial (n = 276 patients, n = 125 caregivers)	Patient and caregiver outcomes and cost of care were evaluated to show the effects of a comprehensive discharge planning protocol designed specifically for elderly patients and implemented by a gerontological CNS (medical and surgical intervention groups). From the initial hospital discharge until 6 weeks after discharge, the medical intervention group had fewer readmissions, fewer total days of rehospitalization, lower readmission

(continued)

Publication	Method	Results
(continued from previous page)		charges, and lower charges for healthcare services after discharge. The surgical intervention and control groups showed no differences in terms of these outcomes during this period.
Neidlinger, S. H., Scroggins, K., & Kennedy, L. M. (1987). Cost evaluation of discharge planning for hospitalized elderly. *Nurs Econ,* *5*(5), 225-230.	Research Study Double-blind experimental with random assignment (n = 80 patients)	The study found the average cost of implementing the comprehensive discharge planning protocol by a CNS was $20.80 per patient. These direct costs were 2.3% of the gross excess revenues in the experimental group. Knowledge of internal and external resources enabled the CNS to make appropriate referrals quickly.
Patton, M., & Schaerf, R. (1995). Thoracotomy critical pathway, and clinical outcomes. *Cancer Practice,* *3*(5), 286-294.	Research Study CQI with cost analysis (n = 160)	Over a 2-year period after implementation of a critical path with nursing (CNS), respiratory therapy, and physical therapy cooperating to bring about a coordinated teaching plan, average length of stay decreased from 12.6 days to 3.7 days, ancillary resource use fell dramatically, recidivism after surgery was negligible, and cost of care was reduced by more than 50%.
Phipps, C. G. (1987). Effectiveness of the clinical nurse specialist in preadmission testing. *Health Matrix,* *5*(4), 23-27.	Research Study Program evaluation	In 9 months the CNS saved approximately 525 patient days. One year of experience with the preadmission CNS role demonstrated its effectiveness to the individual patient, the payer, and the hospital.
Pozen, M. W., Stechmiller, J. A., Harris, W., Smith, S., Fried, D. D., & Voight, G. C. (1997). A nurse rehabilitator's impact on patients with myocardial infarction. *Medical Care,* *15*(10), 830-837.	Research Study Prospective randomized controlled trial (n = 102 patients)	Increased return-to-work rate ($p = < 0.05$) and decreased smoking ($p = < 0.05$) were obtained by increasing patient knowledge of heart disease ($p = < 0.01$) and individual counseling.
Rantz, M. J., Popejoy, L., Petroski, G. F., Madsen, R. W., Mehr, D. R., Zwygart-Stauffacher, M., et al. (2001). Randomized clinical trial of a quality improvement intervention in nursing homes. *Gerontologist,* *41*(4), 525-538.	Research Study 3 Group, randomized (n = 113 nursing homes)	The study compared nursing homes with quality performance information and education about quality improvement and those with a stronger intervention using expert clinical consultation with the nursing home staff. Improved clinical practices and resident outcomes showed no significant differences in assessment criteria, with the exception of one MDS criterion. Gerontologic CNS consultation did improve in quality indicators measuring falls, behavioral symptoms, little or no activity, and pressure ulcers.

Publication	Method	Results
Russell, L. C. (1989). Cost containment of modified radical mastectomy: The impact of the clinical nurse specialist. *Point of View,* *26*(3), 18-19.	Research Study Retrospective audit (n = 30)	Patients in Group 1 (with pre- and post-operative guidance of a CNS working in collaboration with a surgical oncologist) had an average hospital stay of 3.4 days; those in Group 2 (with pre- and post-operative instruction and care by unit personnel under the guidance of an operating surgeon) had an average stay of 6.7 days ($p = < 0.001$). Hospital costs for Group 1 averaged $2,965.99 and for Group 2 averaged $4,634.42 The cost of hospitalization differed by an average of $1,668.43 per patient ($p = < 0.001$). A total of $25,026.45 was saved for 15 patients in Group 1. Patients in Group 1 received intensive pre- and postoperative counseling and instruction.
Savage, L. S. & Grap, M. J. (1999). Telephone monitoring after early discharge for cardiac surgery patients. *Am J Crit Care,* *8*(3), 154-159.	Research Study Descriptive (n = 342 patients)	Patients' concerns in the early recovery period after open-heart surgery and the impact of advanced practice nurses during this phase were described. Findings showed a cardiovascular CNS alleviated stress associated with rapid discharge to home after open-heart surgery through telephone monitoring. Leg edema, appetite disturbance, dyspnea, sleep disturbance, and wound drainage were the major patient problems. Reassurance about post-operative progress, giving diet information, instructing about activity, providing emotional support, referring for medical treatment, and explaining medications were the major CNS interventions.
Scott, R. A. (1999). A description of the roles, activities, and skills of clinical nurse specialists in the United States. *Clin Nurse Spec,* *13*(4), 183-190.	Research Study Descriptive study (n = 724 CNSs)	Role Theory was used to describe the roles, activities, skills, and cost-savings and revenue-generating activities of CNSs practicing in the traditional role in the US. Findings revealed that CNSs spent the most time in the expert clinician role followed by educator, consultant, administrator, and researcher, but administrative responsibilities were increasing, and only a few CNSs identified cost-saving and revenue-generating activities.
Sechrist, K. R., & Berlin, L. E. (1998). Role of the clinical nurse specialist: An integrative review of the literature. *AACN Clin Issues,* *9*(2), 306-324.	Research Study Integrative literature review	An integrative literature review of the CNS role, sponsored by the American Association of Critical Care Nurses, described the uniqueness of the CNS role and identified 6 major themes – CNS role delineation, convergence/ divergence of the CNS and NP roles, credentialing, new and evolving roles, outcomes of care, and reimbursement. Gaps in the literature regarding each theme and solutions for the gaps were provided.

Publication	Method	Results
Shea, R. A., Brooks, J. A., Dayhoff, N. E., & Keck, J. (2002). Pain intensity and post operative pulmonary complications among the elderly after abdominal surgery. *Heart & Lung,* *31*(6), 440-449	Research Study Exploratory secondary data analysis (n = 86)	A study conducted by CNSs showed pain is a contributing factor to the development of postoperative pulmonary complications in the elderly. Nursing interventions of pain assessment and management, deep breathing, and ambulation were recommended to prevent this.
Sherman, J. J., & Johnson, P. K. (1994). CNS as unit-based case manager. *Clin Nurse Spec,* *8*(2), 76-80.	Research Study Quasi-experimental (n = 50)	Patient satisfaction showed a statistically significant increase at 6 months, but neither nurses' job satisfaction nor patients' perceived quality of life showed significant improvement after implementation of nursing case management. CNSs as unit-based case managers planned, coordinated, and facilitated care that was delivered by RNs, LPNs, and nursing assistants.
Smith, J. E., & Waltman, N. L. (1994). Oncology clinical nurse specialists' perceptions of their influence on patient outcomes. *Onc Nurs Forum*, *21*(5), 887-893.	Research Study Descriptive survey (n = 104)	Significant relationships ($p = < 0.05$) were demonstrated among influences on cost of care, patient/family responses to care, and interdisciplinary processes. Influences on organizational processes and time spent on staff education varied significantly with the size of the employing institutions. Lack of time and multiple job expectations frequently were encountered as barriers.
Sullivan-Marx, E. M., Strumpf, N. E., Evans, L. K., Baumgarten, M., & Maislin, G. (1999). Predictors of continued physical restraint use in nursing home residents following restraint reduction efforts. *J Am Geriatr Soc,* *47*(3), 342-348.	Research Study Quasi-experimental, secondary data analysis (n = 135 physically restrained nursing home residents)	The predictors of continued restraint use in nursing home residents following restraint reduction efforts were identified in this study and included physical dependency, lower cognitive status, behavior, presence of treatment devices, presence of psychiatric disorders, fall risk, and fall risk as staff rationale were associated with continued restraint use. Severe cognitive impairment or fall risk most often predicted use of continued restraint.
Tedaldi, E., Willard, S., Gilmore, J., Holdsworth, C., Dix-Lassiter, S., & Axelrod, P. (2002). Continuation of postpartum antiretroviral therapy in a cohort of women infected with human immunodeficiency virus. *J Assoc Nurses AIDS Care,* *13*(1), 60-65.	Research Study Descriptive, retrospective chart review (n = 29 women)	Demographic, clinical, and epidemiological factors that may predict continuation or cessation of antiretroviral therapy (ART) during the postpartum period are identified. Findings showed 48% of the women discontinued ART in the first 6 postpartum months, but women with more advanced disease and Latina ethnicity continued treatment.

Publication	Method	Results
Topp, R., Tucker, D., & Weber, C. (1998). Effect of a clinical case manager/clinical nurse specialist on patients hospitalized with congestive heart failure. *Nurs Case Manag,* *3*(4), 140-145; quiz 146-147, 182.	Research Study Quasi-experimental, retrospective chart review (n = 491)	The effect of case management by a CNS on length of stay and hospital charges for patients with congestive heart failure (CHF) throughout a 12- month period was evaluated and showed length of stay and hospital charges were significantly less in patients who were case-managed by a CNS.
Tucker, S., Sandvik, G., Clark, J., Sikkink, V., & Steers, R. (1999). Enhancing psychiatric nursing practice: Role of an advanced practice nurse. *Clin Nurse Spec,* *13*(3), 133-139.	Research Study Descriptive, case study (n = 34 nurses)	The process and outcomes of integrating an advanced practice nurse (APN) on an inpatient psychiatric unit were examined and results showed that both staff nurses and multidisciplinary team members were positive about integration of a unit-based APN and that APNs were important for promoting staff development.
Volker, D. L. (2001). Oncology nurses' experiences with requests for assisted dying from terminally ill patients with cancer. *Oncol Nurs Forum,* *28*(1), 39-49.	Research Study Descriptive, naturalistic (n = 40 stories, 40 nurses)	Oncology nurses' experiences with terminally ill patients requests for assisted dying were explored and revealed 4 main themes: control, conflict, covert communication, and enduring influence. A mixture of patient and family requests for pain relief, anticipatory fear of future pain, desire to end life before unacceptable deterioration, and family requests to hasten the dying trajectory reflected the larger societal struggle over control of dying.
Walker, J., Gerard, P. S., Bayley, E. W., Coeling, H., Clark, A., Dayhoff, N., & Goudreau, K. (2003). A description of clinical nurse specialist programs in the United States. *Clin Nurse Spec,* *17*(1), 50-57.	Research Study Descriptive survey (n = 157 programs)	Results of a national survey of current CNS programs were reported. The number of CNS-only programs has increased greatly from 143 to 183 since 1997. The AACN Essentials and the NACNS *Statement* on CNS Practice and Education documents have influenced the didactic content in programs. Clinical clock hours have also increased in programs. Only 16% of respondents indicated that their graduates are having difficulty finding jobs. Graduates from 84% of respondents have no difficulty.
Wheeler, E. C. (1999). The effect of the clinical nurse specialist on patient outcomes. *Crit Care Nurs Clin North Am,* *11*(2), 269-275.	Research Study Quasi-experimental, comparative (n = 4 orthopedic units in 4 different hospitals)	The study determined whether or not differences existed between hospital units with and without CNSs and showed shorter lengths of stay and about 1/3 the number of complications in units with CNSs.

Publication	Method	Results
Wheeler, E. C. (2000). The CNS's impact on process and outcome of patients with total knee replacement. *Clin Nurse Spec,* *14*(4), 159-169.	Research Study Quasi-experimental, comparative, correlational (n = 164 charts)	The study determined whether differences existed in patients with total knee replacement in hospital units with and without CNSs and found patients on the units with CNSs received more nursing care interventions more frequently, had shorter total lengths of stay, and had fewer complications. Length of stay correlated positively with APPI scores and negatively with HRDSPI scores. Complications correlated negatively with HRDSPI scores.
Willoughby, D., & Burroughs, D. (2001). A CNS-managed diabetes foot-care clinic: A descriptive survey of characteristics and foot-care behaviors of the patient population. *Clin Nurse Spec,* *15*(2), 52-57.	Research Study Descriptive (n = 63 diabetic patient total, 48 clinic patients, 15 community patients)	The study described the characteristics and foot-care behaviors of people with diabetes who attended a CNS-managed foot-care clinic and findings revealed that clinic patients were more likely to have foot pathology, were more likely to have their feet examined at each healthcare visit, and to use appropriate foot-care practices.
York, R., Brown, L.P., Samuels, P., Finkler, S.A., Jacobsen, B., Persely, C.A., et al. (1997). A randomized trial of discharge and nurse specialist follow-up care of high-risk childbearing women. *Nurs Res,* *46*(5), 254-260.	Research Study Randomized clinical trial (n = 54 control, n = 44 intervention)	During pregnancy, the intervention group who received care from the CNS had significantly fewer rehospitalizations. Diabetic women in the control group (29%) were more likely to have infants with a low birth weight (< 2,500g) than were diabetic women in the intervention group (8.3%). Mean total hospital charges for the intervention group were 44% less than for the control group. The mean cost of CNS follow-up care was 2% of total hospital charges for the control group. A net savings of $13,327 was shown for each infant-mother dyad discharged early from the hospital.

PROGRAM DEVELOPMENT / EVALUATION

Publication	Method	Results
Beauman, S. S. (2001). Didactic components of a comprehensive pediatric competency program. *J Infus Nurs, 24*(6), 367-74.	Programs Program development/ Evaluation	A CNS consultant described the development of a program to meet the education requirements for pediatric infusion specialists and specific areas to test for competency validation.
Butcher, L. A., & Gaffney, M. (1995). Building healthy families: A program for single mothers. *Clin Nurse Spec, 9*(4), 221-225.	Programs Program evaluation (n = 5 mothers)	All participants found the combination of lecture and small-group discussion helpful and were satisfied with the facilities and childcare services. They reported new information, discussions, and listening skills of group leaders as positive aspects of the program.
Cisar, N. S. & Mitchell, A. (2001). Development of a program to manage costly outliers. *Clin Nurse Spec, 15*(1), 25-33.	Programs Program development/ Evaluation	A way to manage patients with hospital costs exceeding $50,000 was described by the CNS authors. Steps included identification of clinical characteristics of the outliers, development of a screening tool, delineation of the role of the APN in managing screened patients, and dissemination of the results showing the impact of the program. Reduced hospital stay and decreased hospital costs during the program occurred.
Crawford, M., Soukup, M., Woods, S. S., & Deisch, P. (2000). Peripherally inserted central catheter program. *Nurs Clin North Am, 35*(2), 349-360.	Programs Program development/ Evaluation	The authors described the systematic development, implementation, and evaluation of comprehensive peripherally inserted catheter program, using the Advanced Nursing Practice Evidence-Based Practice Model.
DiIorio, C., Price, M. E., & Becker, J. K. (2001). Neuroscience nurse internship program: The first decade. *J Neuro Nurs, 33*(1), 42-52.	Programs Program evaluation	Evaluation of a neuroscience nurse internship program during the first 10 years of its existence was described using the RSA Model of Continuing Education in Nursing. Results showed satisfaction with both didactic and clinical content among nurse-interns.
Duffy, J. R. (2002). The clinical leadership role of the CNS in the identification of nursing-sensitive and multidisciplinary quality indicator sets. *Clin Nurse Spec, 16*(2), 70-76.	Programs CQI	The author described the CNS role in facilitating the inclusion of relevant quality indicators, preserving both multidisciplinary and nursing-sensitive approaches, and maintaining efficient during the quality improvement process.

Publication	Method	Results
Edge, R. M., Peterson, C., & James Ward, S. (1999). The development of a community breast center. *Radiol Manag, 21*(3), 38-43.	Programs Program development	Development of a multidisciplinary community breast center program was described. The CNS served as an educator and case manager.
Eisenberg, P., & Painter, J. (2002). Intravascular therapy process improvement in a multihospital system: Don't get stuck with substandard care. *Clin Nurse Spec, 16* (4), 182-186.	Programs CQI	CNSs designed a program using research-based data, national recommendations, and benchmark data to improve the quality of intravenous therapy care.
Halm, M. A., & Denker, J. (2003). Primary prevention programs to reduce heart disease in women. *Clin Nurse Spec, 17*(1), 101-109.	Programs Program development/ Implementation	The authors described developing and implementing a Women's Prevention Center by a multidisciplinary team including a CNS, cardiovascular fellow, exercise physiologist, and a cardiac rehab/outreach leader. The CNS was able to practice in all 3 spheres of influence in this setting.
Inouye, S. K., Bogardus, S. T., Baker, D. I., Leo-Summers, L., & Cooney, L. M. (2000). The Hospital Elder Life Program: A model of care to prevent cognitive and functional decline in older hospitalized patients. *J Am Geriatr Soc, 48*(12), 1697-1706.	Programs Program development	A hospital elder life program designed to prevent cognitive and functional decline in older hospitalized patients was described using the geriatric CNS.
Jacavone, J. B., Daniels, R. D., & Tyner, I. (1999). CNS facilitation of a cardiac surgery clinical pathway program. *Clin Nurse Spec, 13*(3), 126-132.	Programs Program development	A collaborative project in which a CNS worked with other healthcare team members using a clinical pathway group work process to implement changes in nursing, medical, and respiratory care in cardiac surgery patients was discussed.
Junkin, J. (2000). Promoting healthy skin in various settings. *Nurs Clin North Am, 35*(2), 339-347.	Programs Program development	The CNS author described development of a program to improve skin health through standardized skin care across care settings.

Publication	Method	Results
Kaye, J., Ashline, V., Erickson., D., Zeiler, K., Gavigan, D., Gannon, L., et al. (1999). Critical care bug team: A multidisciplinary team approach to reducing ventilator-associated pneumonia. *Am J Infect Control, 27*(2), 197-201.	Programs Program development	Development of a multidisciplinary team, including a CNS, used to decrease the incidence of ventilator-dependent pneumonia in the ICU was described.
Kurz-Cringle, R., Blake, L. A., Dunham, D., Miller, M. J., & Annecillo, C. (1994). A nurse-managed inpatient program for patients with chronic mental disorders. *Arc of Psych Nurs, 8*(1), 14-21.	Programs Program evaluation – 6 months (n = 54)	Multidisciplinary treatment team planning with a psychiatric clinical nurse specialist as team leader was evaluated. The CNS and two nurse practitioners as well as a primary care provider served as case managers. A program evaluation showed that cost-effective, quality care (savings of $17,600 annually in reduced physician time and increased nursing time) can be achieved with a reduction in polypharmacy (approximately $9,500 saved annually in reduced number of doses) and overall neuroleptic usage.
Larsen, L. S., Neverett, S. G., & Larsen, R. F. (2001). Clinical nurse specialist as facilitator of interdisciplinary collaborative program for adult sickle cell population. *Clin Nurse Spec, 15*(1), 15-22.	Programs Program development	The evolution, implementation, and outcome evaluations of a collaborative interdisciplinary program to improve healthcare quality provided to adults with sickle-cell disease was described. The CNS role was described as one of facilitator.
Leininger, S. (1998). Quality circle of joint care. *Orthop Nurs, 17*(5), 74-83.	Programs Program development	The interdisciplinary development, implementation, and evaluation of a clinical pathway for total hip and total knee arthroplasty patients in the home by a team including a CNS were described.
McAlpine, L., Cohen, I. L., & Truckenbrod, A. (1997). Reducing resource consumption through work redesign in a surgical intensive care unit: A multidisciplinary, protocol-based progressive care area. *Heart & Lung,* 26(4), 329-334.	Programs Program (system) evaluation	Implementation of a progressive care area within an existing ICU resulted in reduction in both the frequency and variation of resources used. The progressive care area was a viable alternative for patients who have prolonged lengths of stay and are acutely ill.

Publication	Method	Results
Merboth, M. K., & Barnason, S. (2000). Managing pain the fifth vital sign. *Nurs Clin North Am, 35*(2), 375-383.	Programs Program development	The Center for Advanced Nursing Practice Evidence-Based Practice Model was used to redesign a pain management program incorporating national standards.
Mian, P. (2000). The role of the clinical nurse specialist in the development of a domestic violence program. *Clin Nurse Spec, 14*(5), 229-234.	Programs Program development	The author described the role of a CNS in the development of an innovative, hospital-wide, multidisciplinary domestic violence program. The program was thoroughly described and the CNSs subroles of expert clinician, consultant, educator, and researcher were addressed in relation to the program.
Mion, L. C., Palmer, R. M., Anetzberger, G. J., & Meldon, S. W. (2001). Establishing a case-finding and referral system for at-risk older individuals in the emergency department setting: The SIGNET model. *J Am Geriatr Soc, 49*(10), 1379-1386.	Programs Program development	The development, implementation, and evaluation of the multidisciplinary Systematic Intervention for a Geriatric Network of Evaluation and Treatment that resulted in improved case finding and linkages between several hospitals emergency departments and clinical agencies was described. Gerontologic CNSs had a prominent role.
Moss, J. K., Steiner, K., Mahnke, K., & Cohen, R., (1998). A model to manage capitated risk. *Nurs Econ, 16*(2), 65-68.	Programs Program development	A team approach to development, implementation, and evaluation of an integrated care management system for elders to control medical costs was described.
Patterson, J. E., Strumpf, N., & Evans, L. (1995). Nursing consultation to reduce restraints in a nursing home. *Clin Nurse Spec, 9*(4), 231-235.	Programs Program evaluation	At the end of the 24-week intervention by a CNS, the number of restrained residents had decreased by half.
Price, M. E., DiIorio, C., & Becker, J.K. (2000). The Neuroscience Nurse Internship Program: The description. J *Neurosci Nurs, 32*(6), 318-323.	Programs Program development	The development, implementation, and evaluation of a 6-month neuroscience nurse internship program at the NIH Clinical Center was described by the authors, one of whom was a CNS.

Publication	Method	Results
Prows, C. A., & Latta, K. (1995). Implementation of a program model to develop specialty staff resource nurses in genetics. *Clin Nurse Spec, 9*(3), 161-166.	Programs Program evaluation (n = 28 nurses)	Pre- and post-workshop scores indicated a significant gain in nurses' knowledge of genetic concepts and resources. Resource nurses' interventions with genetic clients increased 3 and 6 months after the workshop. Staff nurses' referrals of genetics clients to CNSs continued to increase 3 and 6 months after the workshop.
Seemann, S. (2000). Interdisciplinary approach to a total knee replacement program. *Nurs Clin North Am, 35*(2), 405-415.	Programs Program development	The Center for Advanced Nursing Practice Evidence-Based Practice Model was used to describe development, implementation, and evaluation of an interdisciplinary project to develop a program for care of patients following total knee replacement.
Seemann, S., Soukup, S. M., & Adams, P. (2000). Hospital-wide intravenous initiative. *Nurs Clin North Am, 35*(2), 361-373.	Programs Program development	The Center for Advanced Nursing Practice Evidence-Based Practice Model was used to describe development, implementation, and evaluation of a hospital-wide program to standardize intravenous equipment aimed at best practice.
Selig, C. (2000). Sexual assault nurse examiner and sexual assault response team (SANE/SART) program. Nurs *Clin North Am, 35*(2), 311-319.	Programs Program development	The author used the Center for Advanced Nursing Practice Evidence-Based Practice Model to describe development, implementation, and evaluation of a sexual assault nurse examiner and sexual assault team program.
Smith, E. L., Whedon, M. B., & Bookbinder, M. (2002). Quality improvement of painful peripheral neuropathy. *Semin Oncol Nurs, 18*(1), 36-43.	Programs CQI	CNSs using quality improvement methodology to improve assessment and treatment of neuropathic pain from chemotherapy-related nerve damage was described.
Sulzbach-Hoke, L. M., & Gift, A.G. (1995). Use of quality management to provide nutrition to intubated patients. *Clin Nurse Spec, 9*(5), 248-251.	Programs CQI	The QM program was initiated by the CNS who collected data to validate the extent of the problem. Average number of days to institute feeding was reduced by a mean of 6.4 days for all types of feeding.

Publication	Method	Results
Wilson, L.C. (2000). Implementation and evaluation of church-based health fairs. *J Community Health Nurs,* 17(1), 39-48.	Programs Program development	A comprehensive health-needs assessment based on the Neuman Systems Model to develop, implement, and evaluate a health promotion program to increase awareness of cardiovascular disease and hypertension among residents of the target community was described.
Woods, S. S., Nass, J., & Deisch, P. (2000). Selection and implementation of a transparent dressing for central vascular access devices. *Nurs Clin North Am, 35*(2), 385-393.	Programs Program development	The Center for Advanced Nursing Practice Evidence-Based Practice Model was used to describe development, implementation, and evaluation of a hospital-wide program that standardized transparent dressing protocols.

ANECDOTAL ACCOUNTS

Publication	Method	Results
Arena, D. M., & Page, N. E. (1992). The imposter phenomenon in the clinical nurse specialist role. *Image: J of Nurs Scholarship, 24*(2), 121-125.	Anecdotal CNS practice	The authors discussed the imposter phenomenon that can make CNSs feel that they are misrepresenting themselves because they are not expert in all of five sub-roles.
Bakker, D. J., & Vincensi, B. B. (1995). Economic impact of the CNS: Practitioner role. *Clin Nurse Spec*, *9*(1), 50-53.	Anecdotal Financial analysis	Overall, preliminary data from two evaluation tools confirmed that a CNS can positively impact patient care and validated the CNS role as an economic asset.
Baltimore, J. J., & Gillett, P. (1998). Clinical nurse specialist prescriptive authority and the legislative process. *Adv Pract Nurs Q, 4*(2), 78-82.	Anecdotal Legislation	The New Mexico Council of Clinical Nurse Specialist's experiences during the legislative process of obtaining prescriptive authority were described.

Publication	Method	Results
Bennett, B. J., & Manley, E. (1998). Psychiatric mental health nursing: Thriving in a changing environment through outcomes-based measurements. *Semin Nurse Manag,* *6*(3), 144-148.	Anecdotal CNS practice	The need for outcomes-based measures to ensure survival of the psychiatric/mental health CNS was discussed, incorporating a description of one outcomes study.
Blackburn, K. M. (1998). Roles of advanced practice nurses in oncology. *Oncology,* (Huntingt), *12*(4), 591-596, 598; discussion 598, 601-603.	Anecdotal CNS practice	All advanced practice nursing roles were described both generally and related to oncology. The need for oncology CNSs to justify their role through outcomes was discussed in detail.
Boyle, D. A.(1998). Top ten reasons to rethink taking that clinical nurse specialist position. *Clin Nurse Spec,* *12*(3), 93.	Anecdotal CNS employment	Ten red flags to watch for when interviewing for a CNS job were discussed.
Buchanan, L. C. (1992). A rehabilitation clinical nurse specialist: Evaluation of the role in a home healthcare setting. *Holistic Nurs Prac,* *6*(2), 42-50.	Anecdotal Activity record	A CNS activity record documented and justified practice responsibilities, as well as assisted with goal development and quantification of outcomes of CNS interventions.
Capasso, V. A. (1998). The theory is the practice: An exemplar. *Clin Nurse Spec,* *12*(6), 226-229.	Anecdotal Theory-directed practice	The CNS author used an exemplar to illustrate how Newman's theory of Health as Expanding Consciousness can guide practice.
Clark, A. P. (2002). Can we improve the quality of dying in hospitals? *Clin Nurse Spec,* *16*(4), 180-181.	Anecdotal CNS practice	End-of-life care issues and CNS practice involving assisting patients and families were discussed.
Cobb, M. A. (1998). CNS role in women's health promotion and maintenance in a collaborative practice. *Clin Nurse Spec,* *12*(3), 112-116.	Anecdotal CNS practice	The author described the CNS role in women's health in detail. Sub roles of expert clinician, educator, consultant, and researcher within this context were described. Ways CNSs can help meet the needs identified in Healthy People 2000 and the Guide to Clinical Preventative Services were also described.

Publication	Method	Results
Cohen, S. S., Crego, N., Cuming, R. G., & Smith, M. (2002). The synergy model and the role of clinical nurse specialists in a multihospital system. *Am J of Crit Care, 11*(5), 436-446.	Anecdotal CNS practice	Using the Synergy Model developed by AACN and the Spheres of Influence developed by NACNS, the authors developed the re-conceptualized CNS role within their organization. The eight attributes of the Synergy Model (clinical judgment, clinical inquiry, facilitator of learning, collaboration, systems thinking, advocacy/moral agency, caring practices, and response to diversity) and the three Spheres of Influence (patient/client, nursing personnel, organizational/network) were used in CNS role delineation.
Conger, M., & Craig, C. (1998). Advanced nurse practice: A model for collaboration. *Nurs Case Manag, 3*(3), 120-127.	Anecdotal Practice divergence	The authors presented an argument for separate advanced practice roles with collaborative practice between NPs and CNSs serving as case managers. A description of the differences between the two roles was provided.
De Villers, M. J. (1998). The clinical nurse specialist as expert practitioner in the obstetrical/ gynecological setting. *Clin Nurse Spec, 12*(5), 193-199.	Anecdotal CNS practice	The author presented a comprehensive description of the CNS role as expert practitioner in the obstetrical/gynecological setting, framing that practice within the Roy Adaptation Model.
Disch, J., Walton, M., & Barnsteiner, J. (2001). The role of the clinical nurse specialist in creating a healthy work environment. *AACN Clin Issues, 12*(3), 345-355.	Anecdotal CNS practice	The pivotal contribution a CNS made to a healthy work environment in intensive care units through partnerships with the nursing staff, nurse manager, physicians, and other healthcare professionals was discussed.
Ebright, P. R., Patterson, E. S., & Render, M. L. (2002). The "new look" approach to patient safety: A guide for clinical nurse specialist leadership. *Clin Nurse Spec, 16*(5), 247-253.	Anecdotal Theory-directed practice	A complex system model based on human performance factors was presented as a new way to improve patient safety.
Elzer, R., & Houdek, D.L. (1998). Case managing heparin-induced thrombocytopenia. *Clin Nurse Spec, 12*(6): 238-243; quiz 244-245.	Anecdotal CNS practice	CNS practice in case management of patient with heparin-induced thrombocytopenia was discussed. Goals to reduce morbidity, mortality, and cost of care included prevention, early recognition, diagnosis, and treatment.

Publication	Method	Results
Fife, B., & Lemler, S. (1983). The psychiatric nurse specialist: A valuable asset in the general hospital. *J of Nurs Admin,* *13*(4), 14-17.	Anecdotal CNS practice	A description of CNS contribution to cost-effective quality patient care and professional development of the staff was presented.
Fitzgerald, M., Thomlinson, P. S., Peden-McAlpine, C., & Sherman, S. (2003). Clinical nurse specialist participation on a collaborative research project barriers and benefits. *Clin Nurs Spec,* *17*(1), 44-49.	Anecdotal CNS practice	The practice of a CNS in a collaborative research team of 2 university professors, 2 CNSs, a statistician, and several graduate research assistants was discussed. The CNSs believed that the benefits outweighed the challenges and that their research skills improved.
Fullwood, J., Granger, B., Bride, W., & Taylor, M. C. (1999). Heart Center nursing research: A team effort. Heart Center Nursing Research Work Group Members. *Prog Cardiovasc Nurs,* *14*(1), 25-29.	Anecdotal CNS practice	A process used to increase the amount and visibility of nursing research within the authors' Heart Center was described, identifying the CNS as an integral player in promoting research.
Gigliotti, E. (2002). A theory-based clinical nurse specialist practice exemplar using Neuman's systems model and nursing's taxonomies. *Clin Nurse Spec,* *16*(1), 10-6.	Anecdotal Theory-directed practice	The Neuman Systems Model was presented as a guide CNS practice using clinical examples.
Hales, A., Karshmer, J., Montes-Sandoval, L., & Fitzbein, A. (1998). Preparing for prescriptive privileges: A CNS-physician collaborative model. Expanding the scope of the psychiatric-mental health clinical nurse specialist. *Clin Nurse Spec,* *12*(2), 73-80; quiz 81-2.	Anecdotal Prescriptive authority	The authors believed the practice of psychiatric/mental health CNSs should be expanded to include prescriptive authority. A case example was used outlining a collaborative CNS-physician model for care.

Publication	Method	Results
Hales, A., Karshmer, J., Montes-Sandoval, L., Glasscosk, G., Summers, L.C., Williams, J., & Robbins, L. K. (2003). Psychiatric-mental health clinical nurse specialist practice in a public school setting. *Clin Nurse Spec, 17*(2), 95-100.	Anecdotal CNS practice	The authors described the need for and the importance of behavioral healthcare services for adolescents. They viewed the psych/mental health CNS as ideally suited to fulfill this need.
Halm, M. A., Gagner, S., Goering, M., Sabo, J., Smith, M., Zaccagnini, M. (2003). Interdisciplinary rounds impact on patients, families, and staff. *Clin Nurse Spec, 17*(3), 133-142.	Anecdotal CNS practice	The article discussed how CNSs broadened discharge planning rounds at one hospital into interdisciplinary rounds. A greater participation by all disciplines to achieve patient and family outcomes was noted as a result of the change.
Hemstrom, M., Ambrose, M. A., Donahue, G., Glick, L., Lai, H. L., Preechawong, S. (2000). The clinical specialist in community health nursing: A solution for the 21st century. *Public Health Nurs*, *17*(5), 386-391.	Anecdotal CNS practice	CNS practice role in community health nursing was described using four programs developed by graduate students as exemplars of what CNSs could accomplish. A community health CNS curriculum overview was provided.
Holmes, S.B. (1998). Advanced practice nursing role: Clinical nurse specialist. *Orthop Nurs, 17*(6), 61-64.	Anecdotal CNS practice	The author presented an overview of CNS practice addressing historical context and future trends.
Jacob, E. (1999). Making the transition from hospital to home: Caring for the newly diagnosed child with cancer. *Home Care Provid, 4*(2), 67-73; quiz 74-75.	Anecdotal CNS practice	CNS practice for children with cancer and their families who transition from hospital to home care was described. Providing psychosocial support, reinforcing teaching, minimizing risks for complications, and performing home infusion therapy of needed medications were included as part of the role.
Jezewski, D.L. (2000). The clinical nurse specialist as a case manager in acute care. *Clin Nurse Spec, 14*(3), 133-137.	Anecdotal CNS practice	CNS practice as a case manager in critical care was described and believed to be one means of increasing CNS visibility and economic worth.

Publication	Method	Results
Jones, A. G., Jasperson, J., & Gusa, D. (2000). Cranial nerve wheel of competencies. *J Contin Educ Nurs, 31*(4), 152-154.	Anecdotal CNS practice	Development of a way to test cranial nerve competencies in staff by an interactive game developed by a group, which included CNSs, was described. The challenging, non-intimidating game was preferred to the written test by staff.
Kirkland, S. C., & Tinsley, D. (1990). CNS: Special skill really contains costs! *Nurs Manag, 21*(9), 97-98.	Anecdotal Case report	A new method for wound management, developed by a CNS, reduced cost by $1,915.14 per week. In addition, the new technique resulted in decreased anxiety for the patient and family and improved wound management for the nursing staff.
Kosper, K. G., Horn, P. B., & Carpenter, A. D. (1994). Successful collaboration within an integrative practice model. *Clin Nurse Spec, 8*(6), 330-333.	Anecdotal CNS practice	The integrative practice model depicted the clinical nurse manager, staff development specialist, and clinical nurse specialist roles as having positive, measurable outcomes that included significantly improved scores on a computer-based quality monitoring system (from 61% to 84%), advancement of nursing staff up the clinical ladder (from 5% to 45%), and increased numbers of patients with primary nurses (from 53% to 93%).
Mick, D. J., & Ackerman, M. H. (2002). Deconstructing the myth of the advanced practice blended role: Support for role divergence. *Heart & Lung, 31*(6), 393-398.	Anecdotal Practice divergence	Authors used recent and historical literature to support the need for role divergence, instead of blending. Conclusion reached is that different ideologies on CNS and NP practice lead to diverse patient and systems outcomes.
Mohit, D. (2000). Psychiatric home care and family therapy: A window of opportunity for the psychiatric clinical nurse specialist. *Arch Psychiatr Nurs, 14*(3), 127-133.	Anecdotal Case studies	Use of the Developmental-Interactional Model of family therapy in the home care setting by psychiatric CNSs was described and case studies were provided to show application and outcomes of using the model.
Moloney-Harmon, P. A. (1999). The Synergy Model: Contemporary practice of the clinical nurse specialist. *Crit Care Nurse, 19*(2), 101-104.	Anecdotal Synergy model	The Synergy Model and the NACNS conceptual model of CNS practice with three Spheres of Influence were used to describe CNS practice and a case study explained the integration.

Publication	Method	Results
Morrison, J. D. (2000). Evolution of the perioperative clinical nurse specialist role. *AORN J,* *72*(2), 227-232.	Anecdotal CNS practice	CNS practice in peri-operative nursing was described and an overview of the historical development was presented. Each of the CNS subroles in the perioperative nursing environment was thoroughly described.
Nokes, K. M. (2000). Exploring the clinical nurse specialist role in an AIDS community-based organization. *Clin Nurse Spec,* *14*(1), 8-11.	Anecdotal CNS practice	The role of the CNS in community-based HIV/AIDS care was described and the subroles of expert clinician, educator, researcher, and change agent through policy development were discussed.
Ocker, B. M. & Plank, D. M. (2000). The research nurse role in a clinic-based oncology research setting. *Cancer Nurs,* *23*(4), 286-292; quiz 293-294.	Anecdotal CNS practice	The development and implementation of the research nurse role in a clinic-based oncology setting were described by the authors, one of whom was a CNS. Although roles of the research nurse were described as staff educator, patient advocate, and protocol manager, no educational requirements for the role were presented.
O'Keefe, B., & Gilliss, C. L. (1988). Family care in the coronary care unit: An analysis of clinical nurse specialist intervention. *Heart & Lung,* *17*(2), 191-198.	Anecdotal Case report	Intervention by a CNS benefited the patient, the family, and nursing staff. Long-term outcomes of support were improved coping, adaptation, and integrity of the family system. It was fiscally prudent to promote speedy recovery of a patient through incorporation of the family into the plan of care.
Ponto, J., Sabo, K., Fitzgerald, M. A., & Wilson, D. E. (2002). Operationalizing advanced practice registered nurse legislation: Perspectives from the clinical nurse specialist task force. *Clin Nurse Spec,* *16*(5), 263-269.	Anecdotal CNS practice	The authors discussed issues surrounding certification for CNSs in Minnesota. They described an overview of the legislation and describe the process of obtaining and operationalizing the law.
Popejoy, L. L., Rantz, M. J., Conn, V., Wipke-Tevis, D., Grando, V. T., & Porter, R. (2000). Improving quality of care in nursing facilities: Gerontological clinical nurse specialist as research nurse consultant. *J Gerontol Nurs,* *26*(4), 6-13.	Anecdotal CNS practice	The practice of the gerontologic CNS consultant in the development and implementation of a Quality Improvement Intervention Study designed to support quality improvement activities in nursing homes based on data from the facilities' Minimum Data Set was described.

Publication	Method	Results
Portillo, C. J., & Schumacher, K. L. (1998). Graduate program: Advanced practice nurses in the home. *AACN Clin Issues, 9*(3), 355-361.	Anecdotal Role divergence	A graduate nursing curriculum in home care with specific roles and functions of both the CNS and NP was discussed. Recommendation was made for this to be a separate specialty area for advanced practice nurses.
Prevost, S. S. (2002). Clinical nurse specialist outcomes: Vision, voice, and value. *Clin Nurse Spec, 16*(3). 119-124.	Anecdotal CNS practice	This keynote address from the 2002 national convention discussed the vision of CNS influence, future directions for CNS practice, and the identification of mechanisms for CNSs to prove their worth through cost-savings and outcomes measurements.
Quaal, S.J. (1998). Cardiovascular clinical specialist: Insights and inspirations. *J Cardiovasc Nurs, 12*(2), 79-87.	Anecdotal CNS practice	The author described her career as a cardiovascular CNS.
Ragaisis, K. M. (1996). The psychiatric consultation-liaison nurse and medical family therapy. *Clin Nurse Spec, 10*(1), 50-56.	Anecdotal Case studies	Over an 8-month period, a pediatric consultation liaison nurse in a non-teaching hospital intervened with 10 families at an estimated cost savings of $65,000.
Rasmussen, D., & Barnason, S. (2000). Chest pain management linking tertiary and rural settings. *Nurs Clin North Am, 35*(2), 321-328.	Anecdotal Theory-directed practice	The Center for Advanced Nursing Practice Evidence-Based Practice Model was used to describe development, implementation, and evaluation of a rural program of care for |rapid identification of appropriate treatment, risk, outcomes, and cost for patients with chest pain.
Rogers, A. C., & Dupuis, M. E. (1999). The role of a CNS in a memory clinic. *Clin Nurse Spec, 13*(1), 24-27.	Anecdotal CNS practice	The practice of the gerontologic CNS in the diagnosis and treatment of mild to moderate Alzheimers, including provider of direct client and family care, clinic facilitator, community developer, and researcher, was discussed.
Rose, S. B., All, A. C., & Gresham, D. (2003). Role preservation of the clinical nurse specialist and the nurse practitioner. *The Internet J of Adv Prac Nurs,* 5(2), 1-13.	Anecdotal CNS practice	Historical development and current and future roles for APNs were discussed with particular focus on the CNS and NP roles.

Publication	Method	Results
Rosher, R. B., Robinson, S. B., Boesdorfer, D., & Lee, K. (2001). Interdisciplinary education in a community-based geriatric evaluation clinic. *Teach Learn Med,* *13*(4), 247-52.	Anecdotal CNS practice	The role of a community geriatric evaluation clinic in the education of future physicians, nurses, and social workers was discussed. Gerontologic CNS practice within the clinic was to acquire initial telephone patient/family information, perform a function exam on the patient, and communicate this information to the healthcare team.
Ross, S. K. (1999). The clinical nurse specialist's role in school health. *Clin Nurse Spec,* *13*(1), 28-33.	Anecdotal CNS practice	The practice of a CNS in school health was explored, including a historical review of school nursing, identification of CNS subroles and areas for expansion within school nursing, and current issues and trends in school nursing.
Schulmeister, L. (1999). Starting a nursing consultation practice. *Clin Nurse Spec,* *13*(2), 94-100.	Anecdotal CNS practice	CNS consulting opportunities and the business management/administration aspects of developing consultant practices were discussed.
Sohl-Krieger, R., Lagaard, M. W., & Scherrer, J. (1996). Nursing case management: Relationships as a strategy to improve care. *Clin Nurse Spec,* *10*(2), 107-113.	Anecdotal Case report	Two case studies involving expert practice of a CNS case manager with high-risk populations illustrated coordination of care and resultant increased patient satisfaction and decreased costs of hospitalization, which minimized financial loss to the institution.
Soukup, M. (2000). The center for advanced nursing practice evidence-based practice model. *Nurs Clin North Am,* *35*(2), 301-309.	Anecdotal Theory-directed practice	The Center for Advanced Nursing Practice Evidence-Based Practice Model developed by CNSs to promote the scholarship of practice was described.
Ward-Smith, P. (2002). Clinical nurse specialist participation in an epidemiologic study: Implications for practice. *Clin Nurse Spec,* *16*(1), 17-21.	Anecdotal CNS practice	The pivotal role a CNS played in an epidemiological research study to evaluate whether local contamination resulted in an increased incidence of brain cancer in residents was discussed and implications for CNS practice within epidemiological research were presented.
Welch, J. L., Fisher, M. L., & Dayhoff, N. E. (2002). A cost effectiveness worksheet for patient-education programs. *Clin Nurse Spec,* *16*(4), 187-192.	Anecdotal CNS education	The authors described the development, implementation, and evaluation of a worksheet to help students learn to estimate the cost-effectiveness of patient education programs.

Publication	Method	Results
White, J. H. (2000). Developing a CNS role to meet the mental health needs of the underserved. *Clin Nurse Spec, 14*(3), 141-149.	Anecdotal CNS education	A CNS program designed to prepare psychiatric mental health CNSs to meet needs in a community setting and the curriculum and program at Catholic University were described in detail.
Worley, N. K., Drago, L., & Hadley, T. (1990). Improving the physical health-mental health interface for the chronically mentally ill: Could nurse case managers make a difference? *Arch of Psych Nurs, 4*(2), 108-113.	Anecdotal CNS practice	A model of case management was proposed that used psychiatric clinical nurse specialists in supervisory and consultative roles and nurse practitioners to deliver primary care. This model was used to propose that chronically mentally ill clients could be entered into treatment at more appropriate and less costly service levels and that case management systems could be accountable for physical healthcare.

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