EMERGENCE AND FUTURE PROJECTION FOR THE
ACUTE CARE NURSE PRACTITIONER

by

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Statement By The Author

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ABSTRACT

The Acute Care Nurse Practitioner (ACNP) is the newest Advanced Practice Nurse with advanced clinical education and experience in acute and critical care. The ACNP uses a collaborative practice model to provide direct services to acutely and critically ill adult patients in a variety of settings. There are approximately 21,000 Nurse Practitioners in the United States with 8% working in the acute care setting. The literature was reviewed to examine historical evolution and assess if the role has resulted in favorable cost and quality outcomes, future employment potential and autonomy. The role has not been without controversy, however early research finding suggest that ACNPs make a substantial impact on quality and cost of health care. Legislation has been favorable, diminishing previous limitations and swinging the door of opportunity wide for further development and autonomy in the Acute Care Nurse Practitioner Role.
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REFERENCES
I. Why Look at Acute Care Nurse Practitioner?

The Acute Care Nurse Practitioner (ACNP) is one of the newest advanced practice roles in nursing and part of an emerging trend of nonphysician clinicians. It affords nurses with vision, the opportunity to take part in developing this new role. Interest in this advanced practice role stimulated the development of sixty educational programs nationwide in 1999 (Logan, 1999) with an additional fifteen educational programs in 2002 (Howie & Erickson, 2002). New programs are springing up across the United States; including one at Arizona State University (2003).

According to van Soeren & Micevski (2001), approximately 21,000 nurse practitioners are employed in the U.S., with 8% working in the acute care setting. Over two thousand Advanced Practice Nurses (APNs), according to Kleinpell (2002), have sought certification as ACNPs. These statistics do not include nurse practitioners who lack certification as ACNPs, but still working in the acute care setting. Thus, it is really unclear how many NPs are currently in this role. A significant number of nurses are pursuing this advanced practice role, with a corresponding response by educators to meet the demand.

Acute Care Nurse Practitioners are registered nurses with a master’s degree in advanced clinical education and experience in acute and critical care (Steinke & Hayes, 2000). Most use a collaborative practice model to provide direct services for acutely and critically ill adult patients in a variety of settings. Their advanced education, practice skills, diagnostic reasoning, and experience
with advanced therapeutic interventions are key elements assisting them in
providing quality care to their patients. They consult, collaborate, and use system
management to provide effective restorative care and are directly accountable for
clinical judgments as they make independent and interdependent decisions.
Steinke and Hayes (2000, p 1) cited Richmond and Keane’s description of the
ACNP as nurses who have expanded their scope of practice in order to
incorporate the “caring paradigm of nursing and parts of the therapeutic paradigm
of medicine.”

A manual and computerized large literature search was completed using
two large computer databases, Ovid and EBSCO host, and the following key
words were searched: Nurse Practitioner, Acute Care Nurse Practitioner,
nonphysician clinician, research studies, evolution, economics, and outcomes.
Using multiple combinations of these terms, over 153 articles were identified with
the purpose of examining the historical evolution of the Acute Care Nurse
Practitioner, as an advanced practice nurse and a nonphysician clinician. The
term nonphysician clinician is used because most government documents,
research articles, and physicians address mid-level practitioners (NPs, PAs,
CNSs) with this title. The literature was critically reviewed for outcome research
studies, studies on anticipated growth predictions, focusing beyond clinical
expertise to the planning and delivery of care. The goal of this review was to
examine historical evolution and assess whether the role has resulted in favorable
cost and quality outcomes, future employment potential, and autonomy.
II. Definitions of Terms

**Acute Care (tertiary setting)** - defined as a continuum of services with a focus on restorative care, largely provided in the hospital setting with zones on either side extending from the critical-care units to long-term facilities (Shah, 1997, p. 91).

**Tertiary Setting** - for the purpose of this paper, refers to the hospital setting.

**Acute Care Nurse Practitioner** - (ACNP) is a Nurse Practitioner with a master’s degree in nursing, advanced clinical education and experience in acute and critical care nursing.

**Hospitalists** - being defined as a physician who cares for hospitalized patients and refers the patients to the care of their primary care physician upon hospital discharge (Howie & Erickson, 2002, p. 448; Wolf, 2000, p. 31).
III. Historical Evolution of the Role

Nursing has traditionally expanded its role in response to a need, as examined by Lucille A. Joel, in the article titled, “APNs Examine Issue Affecting Current and Future Roles” (Cora, 2002). One of the earliest historical records of a nurses assisting with anesthesia was during the civil war period, but it was not until the 1930s that they became Certified Registered Nurse Anesthetists (American Association of Nurse Anesthetists, 2003). The Clinical Nurse Specialist was developed in the 1950s by nurse educators to improve nursing care and support nursing education amidst the massive knowledge and technological growth that occurred in the Post-World War II Era. The focus of this role was care facilitation and education, as well as assisting adaptation of patients and their families to disease processes and their progression (Hravnak, Rosenzweig & Baldisseri, 1996; Logan, 1999; Keane & Angstadt, 1999).

In 1965, a need for increased access to medical care for children in the ambulatory and rural setting was the impetus for the Primary Care Nurse Practitioner (PCNP) as a direct care provider. This role eventually expanded to include the family, geriatrics (Hravnak, Rosenzweig & Baldisseri, 1996; Keane & Angstadt, 1999), women’s health, and school nursing (Morton, 1999). The neonatal nurse practitioner role was the first ACNP role to gain acceptance in the tertiary setting. Other NPs with expertise in areas like cardiology and critical care began to follow suit and enter into familiar practice areas.
Two major factors, in the 1980s, led to the expansion of the APN role from primary and long-term care to acute care setting: 1) changes in medical education and 2) increasing health costs. In 1996, medical training program restructuring cut the number of resident work hours per week to improve the safety of patients, working conditions and education (Steinbrook, 2002). The focus of these medical training programs was to supply a broad range of experiences in caring for the critical and acutely ill patients. Therefore patients with low teaching potential were sometimes given low priority (Hravnak, Rosenzweig & Baldisseri, 1996, p. 290), though they merited equivalent care.

Hospital expenditures from 1970 to 1980 were the single largest components of total health care costs in the United States exceeding 10% per year (Price, Pfoutz & Chang, 2001).

Initially, to enter the acute care setting, NPs needed no formal educational preparation. This resulted in NPs learning needed skills for acute care practice through independent study and physician mentoring (Morton, 1999). As the role gained momentum, formal ACNP programs were developed nationwide (Magdic & Rosenzweig, 1997).

In 1993, at the Preparing Nurses for Advanced Practice in Acute Care Consensus Conference, standards were incorporated into Standards of Clinical Practice and Scope of Practice for the Advanced Practice Nurse to enter the acute care setting (American Association of Critical-Care Nurses & American Nurses Association, 1995). Preparation for practice was set at the graduate level with a
greater emphasis on pharmacology, pharmokinetics, pathophysiology, diagnostic reasoning, and management of health care problems as a direct care provider. Since advanced practice roles like CNS, nurse educator, and nurse administrator had traditionally been at the master's level, this requirement of role preparation for the ACNP was readily embraced as a natural extension of prior experience and expectations (Hravnak, Rosenzweig & Baldisseri, 1996). Once educational standards were implemented, a certification exam was developed to provide a method of evaluating the acquisition of skills and knowledge. The first ACNP certification exam was offered by the American Nurses Credentialing Center in December 1995 (Morton, 1999; Steinke & Hayes, 2000).

In 1996, the restructuring of medical residency programs and shortages of salaried physician positions in the acute care setting provided further impetus to the development and utilization of the ACNP. The ACNPs were viewed as being able to focus on the primary goal of patient care. In contrast, medical residents needed to balance meeting learning requirements with addressing patient care needs that led to fragmented care (Howie & Erickson, 2002; Hravnak, Rosenzweig & Baldisseri, 1996). Kleinpell (2002), a nursing leader and faculty member in the acute care nurse practitioner program at Rush University in Chicago, II noted that one impetus for the expansion of this advanced practice role was a decrease in the number of medical residency programs. She attributed the expansion of the ACNP role to the increased acuity of hospitalized patients along with the demands of managed care to reduce length of stay and to better
coordinate patient care. King (2001), the program director of the Acute Care Nurse Practitioner Track at Vanderbilt University, School of Nursing, suggested that the emergence of this advanced practice role was an outcome of questioning former practices, which removed walls and expanded boundaries for NPs in other settings.

Health care delivery system changes in the 1990s led to further demand for accessible high-quality care at lower costs. Health care costs rose from 12.5% of the gross national product in 1990 to nearly 14% in 1993 (Morton, 1999). These circumstances left hospitals with the added burden of caring for increasingly complex patients without adequate reimbursement from insurance or government programs (Morton, 1999). This spurred the ACNPs to augment their clinical expertise with a focus on planning and delivery of care that would result in favorable health outcomes at an acceptable price.

Concerns about health care quality and cost continue to provide ongoing impetus for the development of the ANCP role. According to Cap Gemini Ernst & Young Health (2003), a leading consulting service in health industry, the top health care business issues today are: increasing costs and scarce labor; an ongoing problem in health care with shortages in nursing. Another issue facing the industry is more demanding consumers who want more information about outcomes, quality, and costs.

Health care costs continue to rise in proportion to the GDP. In July to December 2002, health care cost rose 10% while the GDP increased 3.2%. In
January to July 2003, health care spending increased 8.5% and the GDP increased 2.9% (Strunk and Ginsburg, 2003). These cost trends affect employers through rising insurance premiums. Employer sponsored health insurance premium trends reported a 13-year peak in 2003 at 13.9% (Strunk and Ginsburg, 2003). Today, 15% or more than 43 million people in the United States are without health insurance, with an additional 20 million who are intermittently without insurance during the year (Cap et al., 2003). Thus the problem of being uninsured is no longer confined to the poor; in fact, 80% of the uninsured are families with one working member. The development of the ANCP role is one response to reduce cost and provide affordable care to the uninsured.

Price, Pfoutz, & Chang (2001) indicated that Advanced Practice Nurses in a variety of health care settings, from primary care to the acute care setting, can provide increased access to preventive services at an affordable price, which makes this role more marketable for consumers. Historically they have been able to adapt to changes in the health care delivery system to fulfill their social contract with patients by helping to provide responsible, comprehensive and cost effective care (Keane & Angstadt, 1999).

In summary, the trend of NPs adapting to changes in health care is ongoing. The NP role has expanded into the acute care setting to meet the need created by restructuring of medical residency programs and a shortage of salaried physicians in 1996, to give lower priority patients equivalent care. In addition
rising health care costs further supported the use of NPs since they increase access and provide preventive services at an affordable price.

Initially no formal education was necessary for NPs to enter the acute care setting. In 1993, The American Association of Critical-Care Nurses and The American Nurses Association developed standards for ACNP at the graduate level. Once standards were established, a certification exam was developed to test knowledge and skill level. The first ACNP certification exam was in December 1995.
IV. Studies on ACNPs: role development, utilization and outcomes

As a new role is introduced into practice, programs of research emerge to first determine safety and quality, and later to describe interventions linked to these outcomes. Initially, researchers identified the cost-benefit of employing NPs. This led researchers to examine if the ACNP could substitute for a primary care physician or a medical resident, which was followed by studies focused on cost effectiveness and role description.

*Initial Study: Cost Benefit of Employing Nurse Practitioners*

Initial research by Spisso, O’Callaghan, McKennan, & Holcroft (1990) compared the cost and benefit of employing two NPs in the trauma service at Davis Medical Center at the University of California. The impetus for using NPs was the legislative mandate to reduce house staff work hours and increase volume of patients from 2,031 (in fiscal year 1983-1984) to 3,606 patients (in fiscal year 1986-1987).

Two NPs with critical care background performed physical exams, invasive procedures and coordinated hospital and outpatient follow-up. Several studies were conducted including a cost benefit ratio of the NPs, an assessment of the documentation of quality of care for hospitalized and clinic patients and an analysis of the impact of the NPs on the health care team. They found that NPs worked 40 hours/week, with average salary and benefits $41,600 annually compared to the house staff who worked 84-120 hours/week, with an average salary of $32,950. Though the cost of employing NPs was high related to hours
worked they reduced the length of stay by an average of 1.05 days, improved documentation, decreased waiting times in outpatient clinics, decreased complaints from patients, and freed up the house staff. In summary, it was found that the introduction of NPs into the health care team reduced length of stay, reduced patient complaints and increased quality of care. Limitations of the study included a lack of detail on how outcome improvement occurred or how quality of care was provided by the NPs.

*Substitutability Study*

In 1995, Riportella-Muller, Libby and Kindig, examined the substitutability of the NP (ACNP was not a formal designation at this time) and Physician Assistants (PAs) to perform tasks previously performed by physician resident staff. The impetus for their study was a report on national healthcare workforce reform by the Council on Graduate Medical Education. The Council recommended an overall reduction in the nation’s physician supply. The decrease in the number of physicians in training created a need for documentation on the substitution of nonphysician providers for physicians. The study had three purposes: (1) to document the extent of substitution occurring in clinical departments of teaching hospitals; (2) to describe department characteristics where substitution was occurring; and (3) to report constraints associated with practice substitution in these departments.

Postcards were initially sent to 391 hospitals medical directors who belonged to the Council of Teaching Hospitals (COTH), a voluntary association.
There was a 73% response rate. The researchers then compared responders to non-responders hospitals to examine major differences in bed size, ownership or geographic location. The responders were representative of all COTH members’ hospitals in the United States. The responding medical directors reported that NPs or the PAs substituted for the medical residents 62% of the time in 463 clinical departments.

Following the postcards, questionnaires were sent to each of the 463 clinical departments thought to be using NPs or PAs. Prior to mailing to the 463 clinical departments, the questionnaire was evaluated for content validity by a panel of health service research experts, clinicians, and educators in nursing and the physician assistant programs. Seventy percent of the questionnaires were returned. Only 78% of these were eligible for the survey. Thirteen percent of the survey responses were ineligible because NPs and PAs were being used only to enhance the work of residents rather than substitute for the residents. Five percent were ineligible because the sites did not employ nonphysician clinicians. Another three percent did not meet the sampling criteria.

The results of the substitutability survey found that physician assistants substituted for physicians more in surgery and emergency departments while NPs were used as substitutes for physicians in pediatrics and neonatal care departments. The average length of NP or PA employment was 7.4 years. Many respondents commented that hospitals lacked the ability to offer competitive salaries to attract qualified candidates, and that each department had one opening
at the time of survey. Two-thirds of the departments planned to maintain the current level of substitution with the other third planning to increase the extent of substitution for residents' work by PAs and NPs. In departments with fewer residents there were more nonphysician providers, conversely departments with plenty of residents had fewer nonphysicians. When the departments were asked if they had cutback using medical residents because of PA and or NP employment, 87% responded that there was no change in the use of medical residents when available. Fourteen percent of those who used PAs reported that such use had coincided with decrease in the number of residents; 13% of those using NPs also reported a decrease in the number of residents. The study could not determine if nonphysicians were the cause or an effect of the slowdown in resident openings in the clinics, but 59% reported they hired PAs and NPs as a result of cutbacks in residency positions or applicants.

Follow up phone interviews with respondents revealed that although NPs and PAs had been hired initially to fill the resident slots, there was a perception of improved quality of care afforded by full time, permanent workers. This study indicated that the hiring of nonphysicians is one solution that teaching hospitals have used to cope with declines in residence program size. There was a lack of details on how outcome improvement occurred or how quality of care was determined in this study, which could have been accomplished by retrospective study.
Early Cost Outcome Study

In July 1996, Vanderbilt Heart Failure Program recruited a nurse practitioner to assist with patients admitted for uncomplicated heart failure. The study examined whether the addition of an NP would result in cost savings (Dahle, Smith, Ingersoll & Wilson, 1998). Prior to July 1996, heart failure patients were admitted to a house staff team consisting of one resident and one intern. An observation was made that most of these patients were treated using standard protocols and it was postulated that transferring care of the uncomplicated heart failure patient from a rotating house staff to the NP might result in cost savings.

In this study, patients discharged for heart failure were identified and examined for total hospital costs, itemized hospital costs, length of stay and 30-day readmission rate. A comparison was made of the year prior to the addition of the NP and the following year. The outcome was a total decrease in hospital costs attributed to decreased utilization of ancillary services such as laboratory work, radiology, electrocardiography, and respiratory therapy. The average saving per patient was $1,400 with an annual savings of $133,000. The cost for the NP’s time and salary was $30,000, a calculated saving of $103,000. These findings indicate that NPs can manage uncomplicated patients with heart failure with a substantial cost savings. A study limitation was the lack of randomization of patients. The pre-post test design cannot attribute cost savings solely to the NP.
Comparison Study: Activities and Outcomes of ACNPs, PAs and Residents

Another comparison study was published in 1998. Researchers looked at care activities and outcomes of patients cared for by ACNPs, PAs, and Resident Physicians (Rudy et al., 1998). This descriptive, longitudinal design study collected data over a 14-month period. The trends that spurred the administrators to entertain the idea of using ACNPs and PAs to supplement the workforce were the decrease in the number of specialty residents, regulated by limitations of the number of hours they could work and higher patient acuity. The administrators also wanted to identify differences in clinical outcomes between patients whose principal care providers were NPs or PAs and those whose principal care provider were resident physicians. Their questions included “How will NPs & PAs “fit” in with the other hospital staff? Can they successfully integrate into the structure of the acute care delivery system? Though midlevel practitioners have excellent outcomes in primary care, their effectiveness in the acute care environment is still questioned.” (p. 268).

The study setting was two academic medical centers, one in Pittsburgh, PA and the other in Cleveland, OH. An attending physician at each hospital assigned staff to care for particular patients, taking into account workload of residents and practitioners while providing the residents with good learning experiences. Excluded from the study were those PAs and NPs employed by physicians’ groups or who were employed by the clinics. Eleven ACNPs, 5 PAs,
and a total of 54 residents, were asked to participate in the study. The residents rotated in and out of the study due to educational rotations.

ACNPs, PAs, and resident physicians used daily log diaries to compare performed activities and tasks. Data were collected every three months for one week, a total of four times. Data collectors at each site reviewed the logs, addressed questions, and instructed the participants on how to log the information. Because of monthly rotations, the residents could not be compared to the same nonphysician provider every three months, but the same PAs and ACNPs were compared each time. The coders identified inconsistencies in how activities were categorized, which required the development of a forced-choice checklist, with additional 5 spaces to record activities not specifically mentioned. Activities were qualified by always, usually, sometimes, rarely and never. Two tools were used to determine patient acuity: the Acute Physiology and Chronic Health Evaluation (APACHE) and Therapeutic Intervention Scoring System (TISS).

The participants’ demographics differed significantly. The majority (94%) of the ACNPs and PAs were women with a mean age of 39 (SD, 8.7; range 29-58). Residents were predominantly male (64%) with a mean age of 29 (SD, 3.3; range 23-42). The patient sample consisted of 208 women (54%) and 181 men (47%) with a mean age of 55.2 years (SD, 19). Patients had 258 different admitting diagnoses and 262 primary diagnoses with the 4 most common admitting diagnoses being pneumonia, unstable angina, dehydration, and chest pain. Residents treated higher acuity patients, which were not surprising since
patients were not randomly assigned, while the nonphysicians treated less acute patients. Early in the study it was identified that ACNPs and PAs were not performing invasive procedures.

Residents worked 13.4 hours (SD=6.20) each day and ACNPs and PAs worked 10.1 (SD=1.36) each day. This difference was statistically significant. The residents assessed, cared for and actively discussed more patients with the attending, than ACNPs and PAs. In activities that occurred during rounds the residents discussed the patients more among themselves, provided hands on treatment, and precepted or instructed one another. The ACNPs and PAs spent more time formally presenting the patients to the care team and discussing care of the patient with the RN. The residents spent more time (recorded in minutes) charting, dictating, computing, writing orders, and in additional discussion about the patient. They also had more formal consultations, procedures, and obtained and reviewed laboratory tests and other diagnostic procedures. Care related activities (recorded in minutes) that the ACNPs and PAs spent more time on: hands-on assessment, transferring on units, and interacting with patients' family. All groups spent equal amount of time reviewing charts, notes or records. ACNPs and PAs had more time logged in administrative duties, research activities, and teaching activities, while the residents had more time spent in conferences or lectures, and off-the-unit activities.

In general, the residents focused on the more acute patients, invasive procedures, and training while the nonphysicians spent more time on the unit...
doing hands-on care. ACNPs and PAs were more accessible to educate patients, families, and staff, along with overseeing care of less acute patients. Since the residents no longer had to spend time overseeing the less acute patients, it afforded them the opportunity to do more procedures and increase their learning experience.

*Pre-experimental Cost Studies in the University Health System*

A study conducted at Loyola University Health System from 1998 to 2001, reported by Larkin (2003), examined the cost of using ACNPs. Executives were dissatisfied with the center’s cardiovascular surgery program reputation. Loyola’s standing was similar to other local programs but regionally and nationally they fell short of their goal. The hospital, under the direction of Dr. Schwartz (a surgeon), developed and implemented protocols for admission, case management, monitoring, weaning and rehabilitation protocols. In order to keep patients moving through the system, the primary responsibility for managing the cardiovascular surgery patient’s care in the intensive care unit and on the floor was shifted from the cardiology residents to three specially trained nurse practitioners.

The NPs primary focus was to ensure that the protocols were followed while monitoring the status of the patients, adjusting their care, and progressing them toward discharge. Patients’ families were informed that the NPs would be their primary resource as they moved through the system, which included follow up care.
From 1998 to 2001 the program achieved the lowest mortality rate among the 50 University Health Systems Consortium of academic cardiovascular programs. The risk-adjusted operative mortality rate dropped from 3% to 0.9% as measured by the Society of Thoracic Surgeons’ database. Costs declined more than 9% per case, resulting in an annualized saving of about $1 million. Schwartz attributed the program’s success to “the highly skilled nurse practitioners.” The NPs gained knowledge about individual patients enabling them to spot early signs of trouble that could have been missed by other care givers who only saw the patient for a few minutes or in follow up clinic.

Shaw and colleagues did a retrospective outcome study in 1999 with the Nurse Practitioners at the University of Virginia Health System neuroscience area. The NPs were compared to other disciplines (not specifically indicated). The average length of stay was reduced by three days. On an annual basis this was estimated to result in a decrease of 2,000 patients’ days, and $2.4 million saving the first year. Shaw attributed the NPs case assessment skills as key in identifying patients who needed extra support at discharge. Therefore, arrangements were made early instead of holding a discharged patient until placement arrangements could be made. The NPs’ initial salaries and benefits, at the University of Virginia Health System were approximately $150,000, a return on their initial investment of 1,600%. Shaw and colleagues also identified a drop in urinary tract infections, pneumonias and skin lesions for those patients treated by the NPs.
Another successful program within the University Hospital Health System employed NPs in the adult medical intensive care unit. Protocols for aggressive implementation of ventilator weaning, which cut cost by an estimated $3,341 per case, since fewer tracheotomies were needed. An estimate of 2,000 fewer ventilator days led to a savings of $1.2 million. This health care system used a hospitalist team approach to deliver care with documented positive outcomes.

*Study of Role Development Over Time*

In 1999, Kleinpell-Nowell began the first longitudinal survey of Acute Care Nurse Practitioners practices over five-years to monitor the role development and practice issues of the ACNP. This study is still in progress, thus only partial results are available to compare year 1 and year 2. Prior to this study, little had been conducted on the implementation of the role. The feedback obtained through this research was hoped to help guide new ACNPs and educators in the evaluation and restructuring of current programs.

The study examined role aspects and issues in this new advanced practice role. The first six groups of ACNPs, who took the national certification exam offered by the American Nurses Credentialing Center, were asked to participate in the study. Seven hundred and forty people were surveyed to assess the role aspect and changes one year after certification. Three practicing ACNPs and three ACNP educators reviewed the 44-question survey for content validity. The questionnaire assessed role responsibilities, percentage of time spent in clinical patient care, satisfaction with the ACNP role, evaluation of the extent to which
ACNP education prepared them for the role, and recommendations to the ACNP educators. It also assessed reasons for those not currently working as an ACNP due to leaving their current job, and for some, choosing to no longer work as an ACNP. Non-respondents received an additional survey in a second mailing. Strategies employed to combat attrition were cover letters, reporting study updates and publications, and a request to notify the principal investigator of an address change.

The response rate was 84% (n=619), with 72% still practicing as an ACNP. The length of practice ranged from 1 to 126 months with 37% (n=172) not practicing, but actively seeking employment, with only 1% seeking other employment. A reason given for non-employment status, as an ACNP, was the quest for the perfect job or formulating the ideal job. Forty-four ACNPs reported leaving positions. Thirty ACNPs had left one ACNP position for another. Fourteen reported they had left the position for one of the following reasons: lack of utilization, no positions in current area, job dissatisfaction, limited role opportunity, long hours, a better job offer, shift rotation, the taxing physical demand, and downsizing which all led to the termination of the position.

Reported benefits were increased autonomy, responsibility, security, and confidence after practicing one year. The ACNPs also reported that if no positions were available, they felt it was important to explore available options to create a position, consider relocation, negotiate salary, and to network with other ACNPs.
The following were cited as barriers to their practice: not enough clinical/residency hours, lack of exposure to other ACNPs, and insufficient knowledge of pharmacology. Further barriers noted by the ACNPs interviewed were: "Some physicians and hospital administrators still do not see the role as advanced practice, just as a very experienced nurse." And another ACNP wrote, "I continue to have difficulty with physicians trying to limit my practice as well as fighting prescriptive authority in my state (p. 8)."

In the second year (Kleinpell-Nowell, 2001), a follow up survey was mailed to all subjects (n=619) who had previously responded to the first study. A 46-item questionnaire assessed role components, job characteristics, and satisfaction with the ACNP role. The questionnaire also included plans for employment and demographic data. Two questions were added to the second survey to evaluate position benefits, resources, and recommendations for newly graduating ACNPs.

The survey was mailed with a postage paid stamped return envelope and a second mailing was done after four weeks to those who had not initially responded. Five hundred forty-five responded of the 619 who responded to year one survey, a response rate of 88%. A comparison study of the two years showed an increased in practice opportunity for the ACNPs in physician group practices (up from 16% to 25%) with less than 50% working in tertiary teaching/university affiliated hospital as opportunities in community hospitals had become available.
with little or no role change. Salary and benefits increased from the previous year with the 2nd year survey highlighting negotiation for professional fees.

In the second year of the survey, changes occurring in healthcare and inadequate preparation created barriers for the ACNP role in the acute care setting, which led them (<0.05%) to find work elsewhere. Some reported working in other advanced practice roles, and others were working as staff nurses to gain more clinical experience. This is an important finding since length of experience prior to entrance into ACNP programs varies. One advantage mentioned was 3 to 5 years of acute care nursing experience in an area of intended practice, whereas in the year 1 survey, only education was highlighted as most important. This finding implied that both lack of education and experience can be barriers to the effectiveness of the ACNP.

A barrier reported in the year 1 survey was the lack of being mentored by an ACNP. The year 2 survey reflected that those who desired to be mentored in year 1 were now mentoring ACNP students, with an additional emphasis placed on the importance on networking with other ACNPs.

Of the 149 ACNPs that left the practice in year 2, 31% were working in another advanced practice role, and 18% were seeking employment. Stated barriers for leaving the practice were childcare (13%), family responsibilities (3%), and other reasons (31%) including long hours, demanding work schedules, and hospital downsizing. Of the ACNPs currently working, 59 reported previously leaving one ACNP position. Thus, stress and burnout in relation to
ACNP role is a major concern. Some direct quotes from the ACNPs were: "The role is very flexible but it is still developing." "I am still pioneering the role." "While I have more responsibility. I also have more stress, and I am worried about burnout in the ACNP role" (p. 10). In summary, Kleinpell-Nowell five-year longitudinal study is still in progress, but has already contributed in defining barriers, benefits and potential areas needed in education to better prepare for the role.

In conclusion, this new advanced practice role has gradually gained momentum with subsequent documentation of the progression of the role by researchers. Initial studies have demonstrated substitutability of ACNPs and PAs for medical residents. A series of small pre-experimental studies indicate a potential for substantial cost savings associated with the use of ACNPs. This has opened up opportunity for the ACNP in the acute care setting, especially with current cutbacks in medical resident programs. Though similarities and differences have been identified with residents, initial outcome data has been favorable. The outcome data reflects positive changes in mortality and morbidity, infection control, decreasing of hospital days, and cost control. Kleinpell’s longitudinal study on role development further suggested both opportunities and barriers for future ACNP practice. The ACNP research, though favorable, needs further development to document capability, quality assurance, improvement, and measured outcomes.
V. Projected Workforce of the ACNP Clinician:

Competition or Collaboration

Previous changes in the health care workforce have supported the use of NPs and PAs in the acute care setting. Three major factors have contributed to bringing about these changes:

- Amendments made in regulations and state laws,
- New opportunities created by changes in the health care market for NPs and PAs to engage in clinical practice;
- An increase in the number of NPs and PAs being educated.

These changes, though favorable, occurred at a time when health care was anticipating an oversupply of physicians in the workforce. In 1998 Dr Cooper, the director of the Health Policy Institute at the Medical College of Wisconsin (Greene, 2001) and colleagues, Laud & Dietrich, published an extremely influential study. Cooper and colleagues (1998), study suggested that fewer NPs and PAs would be needed in the health care workforce because of an oversupply of physicians. The results created a competitive environment for the ACNP. It continues to be referenced when examining workforce projections for health care and is a significant barrier to the growth of ACNP role.

Cooper, Laud & Dietrich compared 10 nonphysician clinician disciplines divided into the following three groups: traditional disciplines, alternative disciplines, and specialty disciplines. The traditional discipline included the NPs, PAs, and CNMs. The alternative disciplines included chiropractors,
acupuncturists, herbalists, and naturopaths. Optometrists, podiatrists, CRNAs, and CNSs were in the specialty disciplines.

Data collection was accomplished by reviewing professionally published literature related to nonphysician clinician training programs, graduates, current and past number of practitioners, and national organizations and certifications. Data regarding alternative disciplines were obtained directly from the individual schools and colleges. Twenty-one professional associations and organizations were contacted via telephone, fax or by via email for supplementary data and information. Excluded from the study, were CNSs and NPs primarily engaged in education or research, or practicing in mental health, psychiatry and community health. Acupuncturists whose practice was limited to addiction therapy and/or other professions who practiced acupuncture were also excluded from the study.

Workforce numbers were projected by adjusting the number of practitioners estimated for base year of 1995 for the entry of graduates, taking into account attrition through death, retirement and change of career direction. Population projections were determined by comparing earlier studies to the US Census Bureau’s middle series, adjusting for minority populations undercounting and underestimation of Hispanic birth rates.

For the purpose of this paper, only the traditional disciplines with physician results are discussed. The current estimation and future projections for the traditional disciplines were altered by 5% based on the assumption that not all licensed clinicians actually practice.
Due the expansion of the traditional disciplines, Cooper and colleagues recognized that it was unclear how the graduation rates would change as the practice continued to proliferate. They assumed that graduation rates would have little variation over several years and therefore, remain unchanged. Graduation rates were extrapolated from actual enrollment data for 1994-1997. In this time frame, graduate nurse practitioners increased by 3,825 with a projected increase of 900 additional graduates in 2001. Physician assistants for the same time frame increased by 850 graduates with a projected growth of 600 by 2001. Certified Nurse Midwives had a moderate increase of 180 in comparison to NPs and PAs for the same time period, with a projected increase of 186 graduates by 2001.

Cooper and colleagues documented an increase of 150 institutions offering master’s-level NP programs from 1992 to 1997. Seventy-one thousand nurses had formal preparation as NPs in 1996, with approximately 63,000 who were actively employed in nursing. The supply of NPs was projected to increase to 106,500 by 2005 and 151,000 in 2015.

Physician assistants also increased by 8,000 by 1990, an additional 10,000 clinically active in 1997. Copper and colleagues projected an increase of 25,800 practicing PAs by 2015. Certified nurse midwives experienced an increase from 3,000 by 1997 with a projected growth of 3,500 by 2015.

Collectively there were 90,000 active practitioners in 1990 with a projected growth of 152,000 in clinical practice by 2015. Translated to per capita terms, in 1995 there were 34 practitioners per 100,000 with a projected 75 per
100,000 by 2015, which is an increase of 120% in 20 years. Copper and colleagues indicated that projections from 2015 were subject to considerable error.

By comparison, patient care physicians were projected to grow by 24 per 100,000 populations between 1995 and 2005, which is half of the projected growth of nonphysician clinicians. The question is: What is the impact of the nonphysician clinicians on the demand for physicians? Cooper et al. projected that nonphysician clinicians would have a significant impact on specialists and primary care physicians.

This study stirred a widely returned circulated editorial and debate, "Physicians and nonphysician clinicians complements or competitors" (Grumbach & Coffman, 1998). Grumbach & Coffman indicated that Cooper et al. had overestimated the future surplus of healthcare workers but agreed that the general magnitude of the projections were valid. They concurred that nonphysician clinicians would be competitors and could challenge protected and privileged physician position in the United States. This could be accomplished by further challenging laws, that granted physicians control over training and licensure, that restrict opportunities for others to practice medicine.

*Amendments in Regulations and State Laws Enhance Practice Prerogatives*

Grumbach & Coffman identified that nonphysician clinicians were advocating for further liberalization of regulations to allow an expanded scope of practice and independence from physician supervision. They pointed out that
these advocates lobbied for public financing for education in these disciplines in order to work in underserved communities, but in actuality some were practicing in the same socioeconomic areas, resulting in a competitive market. Robert Evans, a health economist, was cited in this article to illustrate supply and demand in this market. If the supply of physicians increased as well as the supply of nonphysician clinicians and the income per worker remains the same, then health care expenditures also will increase. If health care costs remain constant in this scenario, either incomes must decrease or a displacement of workers must occur, which would foster a rivalry among physicians and nonphysician clinicians to protect jobs and income in a financially constrained area.

Grumbach & Coffman also examined the opposite position that nonphysician clinicians could complement the health care system by the development of multidisciplinary groups in which each discipline could contribute its unique perspective and training to the practice. They identified the scarcity of research on this type of interdisciplinary teams at that time.

*Opportunities Created by Changes in the Health Care Market*

Since the Grumbach & Coffman 1998 editorial, several interdisciplinary teams have emerged to provide a broader spectrum of care to their patients, foregoing the competitive scenario as indicated by Copper and colleagues. The impetus for interdisciplinary teams were an increasing number of medical patients, restrictive admission caps, and restrictions on the number of worked hours per week by house staff. As these teams began to emerge, researchers
subsequently began to document their effectiveness. One such multidisciplinary
team found in the literature is the hospitalist team.

The hospitalist team typically consists of the hospitalist, ACNPs, residents, interns and medical students. The hospitalist is considered an expert on common inpatient disorders. As the admitting physician he and/or she oversees care for hospitalized patients. Upon discharge the patients are referred to the primary care physicians for follow-up care (Howie & Erickson, 2002, p. 448; Wolf, 2000, p. 31). Hospitalists may spend 25 to 50% of their time working in the hospital setting and the remainder of their time in group practice. The ACNPs remains in the hospital to handle the myriad of responsibilities, which include diagnostic tests, test results and staff/family questions. ACNPs also may perform emergency procedures under the supervision of an MD team member. The ACNP collaborates with the hospitalist on admissions and discharges.

Anecdotal reports suggest that hospitalists’ multidisciplinary teams may produce cost savings without adversely impacting quality of care (Wolf, 2000). Wolf (2000) interviewed an ACNP, one member of the hospitalist interdisciplinary team, who stated that one of the big advantages of this type of team is “availability” to the nursing staff. This availability is translated in faster intervention when there is a change or deterioration in the patient’s condition.

In spite of the movement toward multidisciplinary teams, further editorial responses to Cooper et al. (1998), demonstrates ongoing tension between physicians’ concerns regarding competition and movement toward more
collaborative practice. In "Letters," to the editor in JAMA (1999), Dr. Owens the president of the American Society of Anesthesiology wrote:

Nonphysician clinicians have much to offer if they are willing to accept the limitations of their training and abilities to deliver patient care. But it is time to draw the line on so-called practice prerogatives being sought by some NPCs. Those who wish to practice medicine should do so by education, not legislation. As a practicing physician with more than 30 years of experience, turf has never been important to me. What is important is the safety and welfare of patients. If physicians do not fight for what is in the patient's best interest, who will?

Boodley, Pulcini, & Harper (1999), leaders in the National Organization of NPs responded:

The increasing supply of NPs has not gone unnoticed by our profession. The National Organization of Nurse Practitioner Faculties (NONPF's) Workforce Report recognized these trends for NPs, recommended working with other health care professions on developing a coherent workforce policy and now can be used to build on the suggestions present in the JAMA (Cooper, 1998) articles.

The NONPF report suggest the need to (1) develop a strategic plan for NP program development linked to state, regional and national health professions workforce supply and demand (2) stabilize NP program growth; (3) develop a continuous oversight body to review workforce supply and demand issues to formulate policy and funding recommendations with minimum representation from NPs, PAs CNMs, medical doctors, doctors of osteopathy and other providers of primary care services; and (4) fund, a national level, the coordination of workforce data to inform policy decisions.

Cooper, Dietrich, & Laud (1999) responded to Boodley et al.:

We agree with Dr. Boodley and colleagues that it is time to be creative and visionary in establishing collaborative models for physicians and NPs, and we would extend this notion to include other NPCs as well.

Catlin & McAuliffe (1999) responded to Dr. Owens comments about drawing a line on increased practice prerogatives and competitive turf as follows:
...This is less likely to become reality because studies of consumers continue to reflect satisfaction, acceptance, and equal outcomes. Acute care NPs are beginning to enter tertiary medical centers to work side by side with physicians in neonatal and adult intensive care units. Successful nurse-physician collaboration has allowed patients to receive care from nurses with a prevention and education focus, as well as care from physicians.

Catlin & McAuliffe (1999) expanded their response by asking a variety of nurse leaders to comment on the Cooper articles. Ira A. Gunn, a nurse anesthetist from El Paso, Texas reminded the readers that state law does not require anesthesiologist supervision and 29 states do not require physician supervision. Gunn also encouraged APNs in other specialties to examine their actions; in December of 1998 the AMA House of Delegates meeting in Hawaii voted that “anesthesia is the practice of medicine.” Thus it appears that in the case of CRNAs the medical community is fighting for turf.

Ruth Kleinpell, a faculty member at Rush University in the acute care nurse practitioner program reported that the development of ACNPs was an outgrowth of the need for better inpatient management by APNs. The role is expanding to a variety of areas and practice settings. “Rather than fear competition in the health care market, nurse practitioners and other advanced practice nurses should look to create new roles including expansion to rural areas in both clinic and acute care settings.” They ended their article by quoting Barbara Bates M.D.:

By expanding your knowledge and skills into medicine, and thereby acquiring some of that control, you can in fact expand into nursing. In so doing, you will be bringing the patient the guidance, care, help understanding, and comfort that he has needed all along and perhaps not
received from the physician.... By virtue of you having learned more medicine and enhance your ability to move into a more medical role, that patient may get less medicine...Less medicine, when mixed with more nursing, is probably better medicine (or, to translate, better health care)... The values of nursing must not get lost in the dominant medical culture...our patients need the knowledge and skills of both medicine and nursing.

The Cooper and colleague (1998) articles instigated considerable discussion about the surplus of physicians and nonphysician clinicians and issues of competition or collaboration. Since then trends in the American Medical News (AM news) have demonstrated a general predisposition to restrain practice prerogatives. An example of these contrasts, the March 12, 2001 edition of the AM news, a press release initially seemed favorable towards NPs with a primary care physician’s quote, “We treat them as colleagues. They are invaluable.” In the tertiary setting surgeons praised ACNPs, “Nurse practitioners and physicians working in collaboration under the same roof is a big success story.” The hiring of nurse practitioners enabled surgeons to increase their caseload by 30%.

However, the article proceeded to unveil a position that AMA has long supported collaborative arrangements with nonphysician clinicians, but that the Association and specialty societies believe some nonphysician groups have begun to expand outside the boundaries of their education and training. These physician specialty groups along with state and medical associations yearly opposed legislative bills that sought to expand the scope of practice of nurse practitioners.

In AM news: May 1, 2000, a press release documented the attempt of the association to encourage state medical boards to regulate nonphysician clinicians.
This attempt failed, since the Federation of State Medical Boards has no jurisdiction of nonphysician clinicians. The State Medical Boards did agree to monitor the expanding scopes of practice for midlevel practitioners, since dozens of states are considering or have approved additional prescriptive rights or expanded scopes of practice to nonphysician clinicians and advanced practice nurses.

In July 2, 2001, the AM news documented a big win in states over scope of practice issues. Jay Greene (2001) wrote, “The 2001 state legislative sessions proved a banner year for physicians as they defeated a slew of scope-of-practice bills that sought to give additional independent practice rights to advanced-practice nurses....” It’s difficult to read the AM news and not see the line of competition drawn by America’s physicians.

This effort continues as reported by Jill Rollet, the editor for Advanced Newsmagazines for Nurse Practitioners, special report, “ACNP (American College of Nurse Practitioners) Testifies at Federal Hearing about Barriers to Practice” (2003). According to Rollet, Susan Apold NP, President of the American College of Nurse Practitioners, and Dean of Nursing at the College of Mount St. Vincent in New York, was invited to discuss barriers to NP practice at the Hearing on Health Care and Competition Law and Policy. The Federal Trade Commission and Department of Justice Antitrust Division jointly ran these hearings. One cited barrier to practice was how physician organizations mislead the populace about NPs scope of practice and imposed an anticompetitive health
care environment. These proceedings began in February 2003 and ended in September 2003. Ms. Apold testified that there is an “organized and concerted effort by some health care professionals to maintain control of the entire industry.”

Three predominant barriers to NP practice (in general) have been identified as: insurance company policies, narrow hospital privilege policies, and restrictive laws and regulations. These data were collected by the American College of Nurse Practitioners, from 500 NPs who answered the call to submit their personal experiences of discrimination. The NPs reported that differences in state practice acts and prescriptive authority prevented them from practicing at their level of training. Apold commented (Rollet, 2003), “state practice acts and prescriptive authority are not based on science or patient outcomes, but are the by-products of political maneuvering often by the medical community.” She also described inconsistencies in federal laws and specifically laws covering skilled nursing facilities and home health care. For example, NPs can develop the plan of care, but under current Medicare regulations, a physician must implement the plan, even though they are reliant upon the expertise of the NP.

Many of the barriers to practice may be perceived as a response to competition by NPs and concerns about an oversupply in the workforce. Ironically, the findings that triggered the controversy were later retracted. Cooper, Getzen, McKee & Laud (January/February, 2002) retracted the 1998 workforce projections and noted that instead of expected surplus of physicians, there actually was a shortage. They indicated that previous studies failed to
accurately account for population growth, work-effort of physicians, and contribution of services by nonphysician clinicians and economic expansion. Cooper and colleagues (1998) had used the 1981 Graduate Medical Education National Advisory Committee estimation of 270 million US population in 2000. The 2002 census figures reported 285 million thus a population estimate error of approximately 25% of the physician surplus had been previously predicted. To offset this deficit according to Cooper (Greene, 2002) it would require the total output of 10 to 12 medical schools. The article concluded with a recommendation to use nonphysician clinicians especially advanced practice nurses!

**Scope of Practice Study**

Druss, Marcus, Olfson, Tanielian, & Duss Pincu’s (2003) used the Cooper and colleague (1998) articles as background for their study of the following questions:

- How much care do these nonphysician clinicians deliver?
- How is that care changing over time?
- Are nonphysician clinicians providing care autonomously or in conjunction with physicians?
- What are the implications of these patterns for providers and patients?

They used two nationally representative surveys, the 1987 National Medical Expenditure Survey and the 1997 Medical Expenditure Panel Survey to examine the answer to these questions. These surveys provided national estimates
of the use, expenditures for, and financing of health services for the civilian, non-institutionalized population of the United States.

In these surveys respondents were asked, "Did you see a medical doctor during this particular visit?" If the response was no, an additional question was asked, "What type of medical person did you talk to?" The surveys identified the following options: nurse or nurse practitioner, chiropractor, midwife, optometrist, podiatrist, physician assistant, occupational or physical therapist, social worker, psychologist or other. The provider groups were similar to the 10 categories of nonphysician clinicians identified in Cooper et al. (1998), with the exclusion of clinical nurse anesthetists, naturopaths and acupuncturists. Only one provider could be identified for each survey. The respondents also identified the condition or conditions that led them to seek medical attention. These conditions were each coded by a trained coder according to the International Classification of Diseases, Ninth Revision and grouped by diagnoses into clinical categories. They also identified what type of care was received during the visit.

Medical providers supplied estimated expenditures on services rendered, which were used to approximate expenditure. When cost data were not available; they were obtained from individual respondents. The 1987 survey reflected providers' charges and the 1997 survey used actual payments for services. In order to achieve comparability, the results of the 1987 survey were adjusted using methods developed by the Agency for Healthcare Research and Quality.
Respondents were analyzed for demographic factors, insurance status, geographic factors and total number of conditions. Also examined were difference between patients who saw nonphysician clinicians and those who saw physicians. If a respondent made one or more visits to a nonphysician clinician their characteristics and expenditures were compared between the two study years to examine changes in the proportion of respondents in each of following three mutually exclusive categories:

- Those who visited a nonphysician clinician only
- Those who visited a physician only

A similar analysis was completed for each of the eight most frequently treated categories of care by nonphysician clinicians. Patients who saw nonphysician clinicians and physicians were compared. The results of the study showed that for general visits there was an increase in proportion of patients who visited NPs and PAs from 12.3% in 1987 to 18% in 1997. There was also an increase in the proportion of patients who saw both nonphysician clinicians and physicians from 23.5% in 1987 to 30.9% in 1997.

There was a decline in the proportion of patients treated for an acute illness by a nonphysician clinician from 7.2% in 1987 to 5.3% in 1997. Those treated by only physicians for a specific medical condition also declined from 69.3 % to 63.9 %. One unexpected finding was a substantial increase in the number of respondents who visited both types of providers, with an increase in
the number of visits to physicians from 5.88 to 6.88, P<0.001, accompanied by a decrease in the number of visits to nonphysician clinicians from 6.52 to 5.27 with P<0.001. It was also found that in 1987, 14.3% of nonphysician clinician worked at the same location as physicians. In 1997, this increased to 41.1%.

Predominantly white females visited nonphysician clinicians. Less than 12.5% of their patient population was Black, Hispanic, and or other than white in 1987 and increased to 15.4% in 1997. Greater than 80% of these patients had graduated high school or higher. Less than 10% were uninsured with 2 or more conditions to be treated.

Physicians treated males, predominantly, with greater than 25% under the age of 18. Approximately 17% of the physicians’ population was Blacks, Hispanics, and or other than whites in 1987, and increased to 23% in 1997. In 1987 greater than 25% had less than a high school education and that number increased to 35.2% in 1997. Physicians saw 10% uninsured in 1987 and only 7.5% in 1997. Fifty percent of the time, physicians saw clients with fewer than 2 conditions.

Another interesting finding was a decline in the percentage of nonphysician clinicians working in the acute care setting from 1987 to 1997; 68.1% to 49.2% respectively. The percentage of physicians working in the acute care setting also declined from 79.1% in 1987 to 76.3% in 1997. In regards to region, urban versus rural, both groups practices were predominantly urban with rural practices less than 26% in 1987 for physicians and 24.6% for nonphysician
clinicians, thus in actuality they are practicing in the same socioeconomic areas which concurs with Grumbach & Coffman (1998).

Druss, Marcus, Olfson, Tanielian, & Duss Pincu’s (2003) study showed that a NP with a conjoint or collaborative practice with a physician or physician group could have a favorable outcome. The data showed that the nonphysician clinician or physician, alone, had declined in the mean number of respondents seen. A collaborative practice afforded the clientele the opportunity to choose whom to see within the practice. The physicians and nonphysician clinician’s patient populations tended to be different, thus in a conjoint practice it could increase the volume of patients. Physicians tended to see patients with one or two conditions; nonphysician clinicians tended to see patients with chronic multiple conditions. In this study there was also a decline in both physician and nonphysician clinicians who served in the acute care setting, with no explanation given as to why. Also, there were little data on coordination, quality or outcome of care. The category nonphysician clinicians used in the survey limited the ability to specifically distinguish what type of NP or PA delivered care.

Druss, Marcus, Olfson, Tanielian, & Duss Pincu’s (2003) study also generated some editorials in the literature. Yox, Barclay & DeNoon (2002) asked L. Aiken, PhD, RN, of the Center for Health Outcomes and Policy Research at the University of Pennsylvania in Philadelphia and H. Hellman a CPNP, in private practice in Eastern Long Island, New York, about their impressions of the findings. Dr. Aiken’s suggested that healthcare was becoming more integrated
and attributed this to nonphysician clinicians, especially nurses, who have a strong commitment to integrating services. H. Hellman believed that health care was becoming more coordinated and more effective at using all providers as the patient’s needs indicate.

The editor from Medscape Internal Medicine, Dr. D. Danar (2003) indicated in an editorial, “January 2003: Outpatient Care—Increased Coordination or Fragmentation?” that the data from Druss et al. (2003) should not surprise anyone since these changes in health care delivery have occurred over the last 15 years or so. Dr. Scherger, Dean of Florida State University School of Medicine, teacher of family medicine and researcher indicated that it would be wrong to interpret the results as a growing transfer of clinical care from physicians to nonphysician clinicians, but evidence of increased collaborative care among health professionals. He saw this as a transition from physician craft model to team practice and encouraged physicians to welcome this transition especially with the aging populace at hand.

Implementing a Hospitalist Interdisciplinary Team

Howie & Erickson (2003) described a framework for implementing a hospitalist interdisciplinary team. They identified facilitators and barriers to development of the hospitalist team at the University of California, San Francisco Medical Center. The team provided continuity for patients who were repeatedly admitted because of acute exacerbations of chronic illness. As the ACNPs
developed a relationship with these patients and the patients' primary care providers, transitions between home and hospital became much smoother.

Reasons cited for using NPs in this hospitalist team were due to an increase in medical patients, restrictive admission caps for house staff, and the need for workload reduction. The decision to implement the team involved the school of medicine, school of nursing, and hospital administrators who provided financial support for the concept in an effort to meet accreditation requirements and patient care activities of the medicine service. In follow-up surveys, residents ranked ACNPs as either competent or superior in the categories of responsibility, continuity of care, interaction with patients, interaction with team members, and record keeping. They also ranked ACNPs as competent in clinical judgment and collective knowledge. On interview the residents and attending physicians indicated that previous nursing experience negated initial concerns related to the management of inpatients on the medicine service. Wolf (2000) and Howie et al. (2002) concurred with Grumbach & Coffman's (1998) speculations in their editorial, that physicians and nonphysician clinicians can complement each other, but lack of outcome research discounts the studies.

In conclusion, Cooper et al. (1998) workforce projection study contributed to a competitive environment for ACNPs even though a retraction of his initial projections was written in 2002. This demonstrated the power of publicized literature especially when supported by a strong organization like the AMA.
It also indicates the importance of the need for further publicized nursing outcome research to substantiate the role.

Literature shows evidence of advancement beyond the competitive arena to a more collaborative interdisciplinary team practice. Druss and colleagues study (2003) pointed out that a conjoint effort brought the uniqueness of each discipline into the practice. This broadens their capacity to provide care, making a complementary practice more inviting for the consumer. This type of complementary practice has also transitioned into the acute care where ACNPs are collaborating in multidisciplinary teams. Though research is in its initial stages, the outcome data are favorable and should be followed for further review.

As previously identified, NPs were advocating for further liberalization of regulations to expanded scope of practice and autonomy from physician supervision (Grumbach & Coffman, 1998). NPs and ACNPs are not adverse to being part of a multidisciplinary team or in a collaborative practice, with the goal autonomy.
VI. From Competitor to Collaborator: The Importance of Autonomy

Autonomy is a widely used term that connotes self-determination or independence. In healthcare ethics and law, autonomy is stated to arise from a person's ideals as a moral agent, who has sovereign rights over themselves (Rini, 2001, p. 247). This implies that an individual has the intellect and ability to make choices without external influence. Keenan (1999), in "A concept analysis of autonomy" identified several points for operational definitions of autonomy.

- The capacity to think, decide, and act on the basis of such thought and decision freely and independently and without hindrance—Gillion (1995), a philosopher with an interest in medical ethics.
- A personal form of liberty of action where the individual determines the course of his/her actions according to a plan chosen by himself and or herself—Abramson (1985), who was writing the context of a social work practice (p. 557).

Styles, as cited by Keenan (1999) noted that group autonomy is the sole characteristic that differentiates one group of professionals from others. For NPs, autonomy is linked to a body of law, governing licensure, and scope of practice. Nursing professionals through state boards, organizations, and legislation decided scope of practice for advanced practice nurses.

For NPs, scope of practice, and thus, autonomy varies from state to state; dependent upon legislative sanctioned diagnosing, prescribing, reimbursement authority, and the amount of delegated physician involvement required for a nurse practitioner to practice. Full professional autonomy for advanced practice nurses will not be obtained until all forms of required physician collaboration or supervision are eliminated. Since the AMA held the legal definition for their
scope of practice for over 100 years, they have been able to achieve broad
authority over practice. This means all other health care professionals must get a
piece of the "health care pie" by seeking exclusion from the Medical Practice Act
(Pearson, 2002).

Pearson, the editor-in-chief of The Nurse Practitioner (Pearson, 2001,
2002, 2003, 2004) has tracked legislative updates that affected advanced nursing
practice autonomy for the last sixteen years. She compiled data annually from
100 State Boards of Nursing (BON), nursing associations, and NP organizations.
The information is broad since ACNPs have not been tracked as a subgroup.

A key element of each state’s practice act is the criteria that must be met
to be legally recognized as an NP title protection. Title protection varies from
state to state, from most restrictive to least restrictive. In 2001, only one state was
without title protection for NPs, which meant they functioned under a broad nurse
practice act. Eleven percent of the states had NP title protection and scope of
practice authorized by the SBON and the Board of Medicine (BOM). Thirteen
percent of the states had NP title protection with scope of practice authorized by
SBON only, but required physician supervision. A larger percentage, 25%, had
NP title protection and scope of practice by the SBON but required physicians
collaboration. The most autonomous states, 47%, had NP title protection and
scope of practice by the SBON without any regulatory requirement for
collaboration or supervision by a physician.
Pearson (2004) documented the changes in title protection had occurred over time. In 2004, all states had title protection by the SBON. Less than 1% of the states scope of practice was still authorized by both, the SBON and the BOM. A larger percentage, 11%, of the states still required physician supervision and 27% of the states still required physician collaboration. In only three years there was a 3% increase in the number of states in which the SBON had sole authority over the NPs scope of practice. This is an indication of increased autonomy for NPs since there were no regulatory requirements for physician collaboration or supervision.

In conclusion, advances in title protection and scopes of practice help to draw nurse practitioners closer to complete autonomy from subordinate or inferior roles to physicians. Primary care nurse practitioners appear to have more autonomy than acute care nurse practitioners because ACNPs function under the auspice of the hospital governance, but nowhere does health care team proposals imply this (Pearson, 2004). According to Pearson (2004), there is no reason to turn natural collaboration in the health care team model, associated with prudent and safe health care providers, into mandatory supervision with one health care profession dominant over another. ACNPs can gain further autonomy by continuing to lobby for uniformity in state practice acts. ACNP autonomy connotes self-determination of what needs to be done for patient care, to act on one’s assessment, and accept accountability for one’s actions.
VII. Conclusion

Advanced nursing practice has evolved from Clinical Nurse Specialist in the 1950s, Primary Care Provider in 1965, to Advanced Practice Nursing roles in long-term setting in the 1980s, and to the acute care setting in 1990s. ACNPs entered the tertiary arena to respond to the physician shortage. The ACNP role in the acute care has not been without controversy. However, preliminary research findings suggest ACNPs may make a substantial impact on quality and cost of health care in the acute care setting.

Initial longitudinal studies on role and role development have not yet been completed. In order to thrive, ACNPs must demonstrate the impact of their care in measurable outcomes like productivity, patient satisfaction, and cost effectiveness. Though the initial measured outcomes have begun to demonstrate that ACNPs in the acute care setting can achieve desired outcomes, these studies have been limited in terms of research design and sample size. Further research is needed to continue documenting the outcomes of care and how this new advanced practice role contributes to patient care in the tertiary setting.

The workforce shortage in medicine provided an open door for more ACNPs to enter the tertiary setting. But the nursing shortage, and decline of nursing professors threatens the growth of the role. These are important issues to be monitored within the next few years. The ultimate impact of these issues is unknown.
In response to the competitive undertones, advanced practice nurses have become more politically active to promote autonomy. Legislation has been favorable, diminishing previous limitations and swinging the door of opportunity wide for further development and autonomy in the acute care nurse practitioner role. Current trends and research studies are projecting a much brighter future for ACNPs in the hospital setting, which can be embraced by educators with further development of educational programs to prepare advanced practice nurses for this role. Previous NP roles did not evolve without controversy, yet are now established providers in health care. If history repeats itself, then their success is a good indicator for the future success of the Acute Care Nurse Practitioner.
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