

ACUTE CARE NURSE PRACTITIONERS IN THE EMERGENCY, TRAUMA, AND
CRITICAL CARE UNITS

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DEDICATION

This report is dedicated to my loving and ever-supportive husband. Without his help and encouragement, I would never have completed this challenge. I would also like to dedicate this report to my children and family. They remained calm, sweet, and relatively unruffled from the unlimited hours “mom” spent studying and writing.

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ABSTRACT

The role of the acute care nurse practitioner is relatively new, with the acute care nurse practitioner certification examination beginning in 1996. With the examination being just over 12 years old, both the role and the examination are still considered to be in the developing stages. While studies regarding the impact of the acute care nurse practitioner are limited to date, there is evidence that employing an acute care nurse practitioner in the critical care and acute care settings provides a number of advantages. These advantages include decreased length of stay, decreased cost, increased reimbursement, and maintaining continuity of care. This report will discuss scope of practice issues between the acute care nurse practitioner and other nurse practitioner specialties in the acute care setting and how the acute care nurse practitioner role has added value to patients and other health care providers in the emergency, trauma, and intensive care units.

CHAPTER 1: INTRODUCTION

The first nurse practitioner (NP) program was established at the University of Colorado in 1965 (NPs through the Decades, 2005). In the 1970s and early '80s, there was an emergence of a number of specialty NP practices. These specialties include the Family Nurse Practitioner (FNP), Pediatric Nurse Practitioner (PNP), Adult Nurse Practitioner (ANP), Gerontological Nurse Practitioner (GNP) and the Women's Health Nurse Practitioner (WHNP). While these specialties focused mainly on primary care, there was no specialty focused mainly on the acutely ill population. This population was ultimately cared for by one of the primary care NPs working in a specialty arena.

In 1996, the Acute Care Nurse Practitioner (ACNP) national certification exam became available. At that time, the ACNP was an advanced practice nurse (APN) who had completed a post-master's certificate in acute care. Primary care NPs, mainly FNP and ANPs, are educated in providing advanced nursing care for the entire family or adults in the ambulatory care or primary care setting. The ACNP is educated in caring for acutely, critically, and/or chronically ill patient in settings involving complex monitoring, treatments, or high-intensity interventions (Acute Care Nurse Practitioner Competencies, 2004).

In a 2006 membership survey conducted by the American Academy of Nurse Practitioners (AANP), practice settings for all NPs included private physician practices, community and public health, hospital outpatient clinic, in-patient hospital, rural health, and emergency/urgent care. While there was no specific delineation as to which NP

specialty practiced in which specific area, FNPs and ANPs were the most represented NP population:

Table 1: Clinical Specialization of Members and Respondents

Main Specialty	2006 Member Survey	2006 Member Specialties
	Respondents	
ACNP	4.6	5.7
ANP	20.5	20.1
FNP	57.9	55.8
GNP	4.1	2.9
NNP	0.2	0.2
PNP	2.6	2.9
MHNP	1.3	1.2
WHNP	4.3	3.4
ENP	1.7	1.4
OCCNP	0.8	0.8
ONCNP	1.7	1.1
SNP	0.2	0.3

Source: 2006 AANP membership survey

While the FNP and ANP are educated as advanced practice nurses much like the ACNP, the complex and intense training of the ACNP in the management of the acutely

and chronically ill patient is better suited for the emergency, trauma, and/or critical care setting.

Problem Statement and Purpose

As one of the most recently established specialties of NP practice, it is imperative for ACNPs to fully understand the impact they can have on the trauma, emergency and critical care services. Hospital, clinic, and/or office staff and administrators as well as physicians may not recognize the importance ACNPs can have in decreasing length of stay (LOS), decreasing cost while increasing insurance reimbursement, and providing a continuity of care that interns, residents, or even attending physicians cannot provide due to monthly rotations, off-site duties, or other responsibilities or obligations.

The purpose of this report is to examine the challenges the ACNP faces in demonstrating the complex treatment competencies of the ACNP to the emergency, trauma, and critical care communities (staff, administrators, and physicians). This examination not only includes the technical skills of the ACNP, but also the competencies an ACNP possesses to enhance patient flow regarding LOS, decreased cost, and continuity of care in trauma, emergency, and critical care services.

CHAPTER 2: BACKGROUND REVIEW OF TRADITIONAL NP ROLES

ACNPs in the Critical Care Unit (CCU)

Howie-Esquivel & Fontaine (2006) describe the evolving role of the ACNP in critical care. The critical care nurse desired to gain greater knowledge about the patients they routinely cared for. In the early 1990's, nursing schools began to offer NP programs that specifically focused on acute and/or critical care. After the 80-hour work week for residents rule came into effect in 2003, the American Nurses Association and the American Association of Critical Care Nurses recognized a developing NP role and created a task force to define the scope of practice and standards for the ACNP (NONPF, 2004). This would identify the practice capacity of the ACNP in the critical care setting.

ACNPs now have become employed in all types of intensive care units (ICU): cardiothoracic, coronary, medical, neurological, surgical, and transplant. Working in the ICU setting was the original idea for the ACNP (Kleinpell, 2005). However, the ACNP has recognized the need for expanding their role in the ICU and other practice settings. This expansion includes administrative responsibilities, teaching, research, program development, quality assurance, and department projects (Kleinpell, 2005).

Family and Adult NPs in Emergency Care

NPs began practicing in the Emergency Department (ED) in the 1970s (McGee & Kaplan, 2007). The initiation of NP practice in the ED stemmed mainly from the problem of overcrowding. NPs were introduced to streamline care for those who

presented to the ED for non-emergent situations, thus to improve the efficiency and care of the physician in the ED (McGee & Kaplan, 2007).

In 2004, of those NPs practicing in the ED, roughly 70% of all NPs are certified as FNPs and 11.5% are ANPs (McGee & Kaplan, 2007). The remaining 18.5% are educated in another form of NP education, either an emergency nurse practitioner (15%) or a non-specified NP program (3.6%). While 15% of NPs in the ED are educated in emergency practice, the majority of those NPs work in the fast track and urgent care centers.

In a qualitative exploratory study of four hospitals in the southwestern Washington state area, McGee & Kaplan (2007) sought to determine factors that influenced utilizing NPs in the ED. This was done by interviewing the ED manager from each facility. All four managers indicated that the hospital contracted with an outside physician group who ultimately employed the NP. Therefore, the decision rested with the physician group and not with the manager. All of the four ED managers stated that overcrowding was a problem faced by the ED. The number of visits to the ED ranged from 27,000 to 65,000 visits a year with 25-40% triaged as non-emergent using a 5-tier triage system (see table below). As one ED manager stated these non-emergent visits are “visits for problems that can be handled by an NP - chronic pain patients, lacerations, sprains, strains, more minor kinds of things” (McGee & Kaplan, 2007, pp. 444).

Table 2: Five-tier Triage System Categories

Level 1	Life Threatening: High acuity, patient is intubated, apneic or pulseless
Level 2	Emergent: High acuity, patient not in above category, but is in a high risk situation, confused, lethargic, or in severe pain with dangerous vital signs.
Level 3	Urgent: Uses at least two resources (i.e.; lab work, IV, IV medications), may wait to see physician without complications for >30 minutes.
Level 4	Non-emergent: Uses one resource. Does not require vital signs to make triage decision.
Level 5	Clinic: Uses no resources. Is simply for medication refill or new written prescriptions.

Source: Tanabe, Gimbel, Yarnold, & Adams, 2004

ACNPs have emerged as the NP specialty practice to be used in the ED (Cole & Kleinpell, 2006). The NP working in the ED setting must be competent in advanced physical assessment, emergency preparedness, ability to triage and prioritize, crisis intervention, and maintain consistency across the continuum of care.

Utilization of NPs in Trauma Services

The reduction of resident work hour requirements and the multiple responsibilities of trauma attendings have led to the integration of midlevel practitioners into trauma service teams. Midlevel practitioners, namely Physician Assistants (PA) and NPs, were utilized in trauma settings as early as the 1970's (Nyberg, et al, 2007). The PAs were mainly used in surgical settings while the NPs took care of the primary care situations.

Trauma services began to use strictly trauma Pediatric Nurse Practitioners (PNP) in 2002 to restructure the trauma team caring for the pediatric population (Mckay, 2006). When resident work hours were restricted to 80 hours per week in 2003, trauma centers then began to increasingly use NPs as a part of both the adult and pediatric trauma team (Haan, et al, 2007). It is unclear whether these NPs employed in the trauma team are specialized in acute care.

CHAPTER 3: SIGNIFICANCE OF THE IMPACT OF THE ACNP

Decreased length of stay (LOS), hospital readmission, and cost in the ICU

There have been some studies within the last five years that have examined the outcomes of utilizing ACNPs in the ICU (Hoffman, et al, 2005; Hoffman, et al, 2003; & Kleinpell, Ely, & Grabenkort, 2008). In 2003, Hoffman and colleagues conducted a longitudinal study over 19 months to determine how time spent at work activities differed for ACNPs versus physicians-in-training (which were pulmonary and/or critical care fellows) in a step-down medical ICU at the University of Pittsburgh Medical Center. The researchers collected data at three different intervals: when the ACNP had less than 6 months of experience, after the ACNP was experienced for 1 year, and when the fellows rotated through the unit and the ACNP was not present. The sample consisted of one ACNP with a master's degree and 6 physicians in training 5 days a week in collaboration with an attending physician. Activities were divided into three categories: nonunit activities, routine management of patients, and coordination of care. The results of the study showed that the physicians in training spent a greater amount of time than the ACNP in nonunit activities, such as personal time, attending conferences, sleeping after call, and eating. The ACNP was found to participate in much more coordination of care than the fellows. These coordination of care activities included discussions with nursing staff and other disciplines, discussion with the ICU's attending physician, and consultation with other physicians. With increased presence in the ICU, the ACNP had a greater chance to develop a professional relationship with ICU staff. This relationship

enabled staff members to feel more comfortable asking the ACNP questions. They were also seen as facilitating greater continuity of care, promoting team work, and attending to the needs of the patient and family. This team-oriented atmosphere may lead to a shorter LOS, higher quality of care, and greater ability of the team to meet the needs of the patients' families. These researchers recommended further research to confirm this assumption (Shortell, 1994).

In 2005, the same authors performed a nonrandomized, repeated measures, equivalent time samples design study to test their theory that patients who are stable enough to be admitted to the subacute medical ICU would have the same outcome when treated by an ACNP/attending physician team or a team consisting of an attending physician and critical care/pulmonary fellows (Hoffman, et al, 2005). Both the ACNP/attending physician team and the fellow/attending team had the same amount of oversight by the attending physician. A total of 526 patients were admitted to the unit over a 31 month period with 276 cared for by the fellows' team and 250 managed by the ACNP team. Multivariate analysis showed that the median LOS for both teams did not differ significantly ($p=0.52$). Readmission rates to the high-acuity ICU also did not differ significantly. Approximately thirteen percent of those managed by the ACNP team and 12.9% of the patients managed by the fellows' team were readmitted to the high-acuity ICU, respectively. Findings from this study supported the hypothesis that similar outcomes were met by an ACNP/attending physician team and fellow/attending physician team. The ACNP team was observed to be always available while the fellows

participated in more off-unit activities. This made the ACNP team more aware of every day aspect of care for the patients. They could “see problems coming” (Hoffman, et al, 2005, pp. 127) and limit or eliminate unfavorable consequences. The limitations include only one ACNP practicing in this study and a smaller MICU than most units with only 6-8 patients treated during the study duration. Despite these limitations, it can be suggested that the findings support an ACNP team competently managing a caseload of chronically critically ill patients.

Kleinpell, Ely and Grabenkort (2008) conducted an extensive review of literature to determine the impact and outcomes of an NP or a PA in the ICU. Their review of over 145 publications revealed that there are limited studies regarding the impact of PA and NP care in acute or critical care. Only 31 studies were research studies that focused on NP or PA care of the acute or critically ill and many of which were performed prior to the new millennium. These studies were often limited to small sample size, short outcome duration, limited site selection, and limited populations of interest. However, some studies showed proved cost savings, decreased LOS, and decreased rates of hospital readmission when utilizing NPs in critical or acute care. These authors therefore suggest needing further information regarding successful multidisciplinary models of care and additional research on the use of NPs and PAs, addressing supply and demand on staffing needs in the ICU setting, and how NPs and PAs should bill to obtain the correct reimbursement for care.

Impact of the ACNP in the trauma service

The Department of Trauma/Surgical Critical Care and Shock Trauma Center at the R. Adams Cowley Shock Trauma Center in Baltimore Maryland conducted a study to determine whether the utilization of a certified registered nurse practitioner (CRNP) had any effect on the efficiency of multidisciplinary rounds (Haan, et al, 2007). The center had initially seen a problem with an increase in patient volume while staffing remained the same. This caused a burden for the center, which was one of the few designated trauma centers in the area. A “discharge round” process was initiated to facilitate patient flow and decrease inpatient LOS. However, with the induction of the mandatory 80-hour workweek for residents, there is a lack of continuity of care by residents who were not able to make rounds on patients every day. In 2003, two CRNPs were introduced to each of the three trauma teams to assist in continuity of care and attempt to maintain a low LOS. At the time of implementation, the authors were concerned that the NPs were new graduates and that they could not discuss patient care “at a level that could effect definitive decision-making” as residents or fellows (pp. 342). However, they found that the implementation of the NPs to the teams had “no decreases in the efficiency of the discharge round process” (pp. 342). The LOS was shortened from the initiation of discharge rounds. They also found that the NPs were able to discuss patient care and making decisions in the same definitive manner as the fellows or residents. In addition, the implementation of the NPs to the trauma service improved several quality markers such as discharge education and outpatient follow up which these authors did not intend

to examine. These CRNPs were described as “invaluable” in performing the much needed highest quality and most efficient patient care.

After the initiation of the Accreditation Council for Graduate Medical Education’s mandatory work hour requirements for residents, the Department of Surgery and the Trauma Institute at the University of Louisville (Kentucky) decided to employ NPs in their trauma service. Christmas and associates (2004) conducted a study to determine if the employment of NPs assisted the residents in meeting the work hour requirement without a change in the care of trauma patients as well as the impact of NPs on the trauma service. The findings showed that with the integration of physician extenders to the trauma service, the hospital realized a significant decrease in LOS and resident work hours. This decrease did not have an adverse effect on patient mortality. In fact, there was a slightly lower mortality rate (8%) upon integration of physician extenders as compared to the year prior to the integration (9%). After the initiation of the work hour requirement and prior to integration of NPs, frequent hand-offs and sign-outs were observed among residents, resulting in an error prone environment. After NPs were employed, it was noted that NPs provided a continuity of care that was not evident in the multiple hand-off situation in which the patient care was turned over to several different people in a short period of time. The daily presence of the NP decreased the possibility of errors such as missed orders or ancillary testing. It was also shown that the presence of NPs provided a more efficient patient flow and maintained a high quality of care. The addition of the NPs to the trauma service showed no increase in the direct cost to the

patient. While the addition of two NPs to the trauma service cost over \$135,000 a year, this cost would have been significantly higher if more physicians or residents were hired instead.

Cupuro and Alperovich (1997) discussed their experience with Trauma Nurse Practitioners (TNP) at the Good Samaritan Hospital in Chicago, Illinois, a Level I trauma center without a residency program. The TNPs are responsible for care of the trauma patient beginning in the emergency room, continuing through ICU stay, stay on the floor, discharge and clinic follow-up. While the trauma surgeon is the direct supervising physician, the TNPs take over full care, including resuscitation. The authors reported that after initiation of the TNPs there was an increased patient satisfaction, continuity of care, and increased follow-up care and education to the patient upon discharge. TNPs have proved to be extremely beneficial to this facility where no residents were available to take on caseloads to free up the supervising trauma surgeon.

Patient satisfaction and decreased LOS in the ED

ACNPs are beginning to be used internationally as well as nationally in the ED (Thrasher & Purc-Stephenson, 2008; Jennings, et al, 2008; Steiner, et al, 2008; Nash, Zachariah, Nitschmann, & Psenick, 2007; & Currie, Edwards, Colligan, & Crouch, 2007). The EDs in Canada, Australia, New Zealand, and the United Kingdom (UK) began utilizing NPs at the turn of the century after seeing favorable results from studies performed in the United States (US) (Currie, Edwards, Colligan, & Crouch, 2007; Thrasher & Purc-Stephenson, 2008; & Jennings, et al., 2008). There have been several

studies that have sought to determine the impact an ACNP can have on the ED patient satisfaction and LOS (Thrasher & Purc-Stephenson, 2008; Jennings, et al, 2008; Steiner, et al, 2008; & Nash, Zachariah, Nitschmann, & Psenick, 2007).

Thrasher & Purc-Stephenson (2008) conducted a study via questionnaire to investigate patient satisfaction with NP care received in the ED in 6 hospitals in both urban and rural Ontario. The study included hospitals with high and low volume, those affiliated with a teaching facility, and different models of reimbursement for physicians. They found that of 113 completed questionnaires, 71% preferred to see a NP while 29% preferred to see a MD. Patients were “highly satisfied” with the care provided by the NP (p. 235). Those patients who completed the questionnaire indicated that the NP spent enough time with them, took them seriously, and gave the patient the opportunity to say what they were thinking. Those with a low to moderate income (income ranged from \$9,999/year to \$90,000 /year) had significantly higher levels of satisfaction with the NP care received versus those with a higher income. The researchers could not explain this significant difference. They also found that those patients who have been treated previously by a NP reported a higher satisfaction level than those who have not ever seen a NP.

Melbourne, Australia began implementing emergency nurse practitioners (ENP) in their EDs to decrease wait times, improve both patient and staff satisfaction, and increase cost-effective care (Jennings, et al., 2008). Jennings and colleagues (2008) studied the impact of incorporating ENP practice into the ED on wait times and LOS at

the Alfred Emergency and Trauma Center in Victoria, Australia. The study was a retrospective case series which had the ENP seeing patients categorized as a level 3-5 in the Australasian Triage System (ATS), similar to the system used in the US (Jennings, et al, 2008). They systematically studied patients who presented to the ED during work hours of the ENP and those presenting when there was no ENP on duty to compare LOS and wait times during those two periods of time. The results showed that 18.1% of 3,156 patients in this study were seen by the ENP. The researchers reported that the ENP had a great impact on LOS and wait times when the ED was at its' busiest times. Patients who presented to the ED and were seen by a physician while the ENP was not on duty waited 19 minutes longer to be seen ($p < 0.001$). The LOS was 94 minutes for the ENP compared to 170 minutes for the physician group, however, patients seen by ENP had a lower acuity than by the physician.

A large Southwestern US University-affiliated hospital experienced patient wait times over 5 hours and roughly 7% of the patients leaving the ED without being seen by a provider (Nash, Zachariah, Nitschmann, & Psencik, 2007). The ED had a minor care area to treat patients presenting with minor injuries by attending physicians and residents as well as nursing staff. Routinely, however, patients treated required more services than initially thought. This increased patient wait time and LOS in the entire ED. This level 1 trauma facility switched to utilizing a fast track (FT) unit staffed by NPs in 2004 in an attempt to decrease wait times and LOS. Nash, Zachariah, Nitschmann, & Psencik (2007) examined the efficiency of the FT unit in this facility to determine if wait times

decreased, unscheduled return visits dropped, and patients did not leave prior to being seen by a provider. The results indicated that 2.3% of the 5,995 patients seen in the FT area had an unscheduled return visit within 3 days but none required admission to the hospital, while the main ED experienced a return rate of 4.2%. The researchers felt this indicated proper treatment provided by the NP. There was a statistically significant difference in left-without-being-seen rates. The percentage of those who left before being seen by a provider for the main ED was 6.7% vs. 3.9% for the FT area. However, there was not a significant decrease in LOS, or turnaround times, after implementation of the FT. When compared to LOS in the FT unit (4.6 hours) and the previous minor care area (4.68 hours), the times were not statistically significantly different ($p = .08$). The researchers proposed the following potential reasons to explain this finding. Since this was a new FT unit, some kinks are expected and should be resolved with further evaluation. This was noted to be the busiest time the ED had ever experienced. Some patients waited in the ED for a hospital bed after admission for up to three days. Finally, out of four NPs hired, all but one was a newly graduated NP with absolutely no prior ED experience. It is possible that NPs need a period of adjustment before working efficiently in the ED.

In Canada, there are no accredited academic programs, certifications, and scope of practices in emergency care for NPs. Steiner and associates (2008) compared quality of medical care provided by a NP versus an emergency physician at the Northeast Community Health Center (NECHC) in Canada to identify ED patients appropriate for

autonomous NP practice and to acquire data to facilitate the development of the clinical scope of practice recommendations for ED practice for NPs. The NECHC is a free-standing ED that opens 24 hours a day and does not have any inpatient beds, admitting physicians, or onsite consultants. The NECHC does not routinely accept patients via ambulance and any patient requiring hospitalization or diagnostic imaging beyond basic radiographs or simple ultrasound are referred and transferred to an acute care hospital. The emergency physicians at the NECHC acquired a grant to create a model of emergency service delivery to optimize the use of emergency physicians through implementation of a NP. Results indicated that there was a significant difference in care provided by the NP versus the physician. The NP, trained by emergency physicians, was able to perform follow-up visits, lab and radiology result follow-up phone calls, and repair simple lacerations at the level of the physician. The researchers felt that NPs with extensive emergency experience and training might ultimately be able to function as autonomous ED care providers. There is also a need for standardized academic programs, an accrediting body as well as a national scope of practice for NPs in Canada.

CHAPTER 4: BARRIERS OF ACNP PRACTICE

Even studies indicated employment of ACNPs to be beneficial in a variety of ways, ACNPs continue to meet challenges in proving their competencies in care. Some barriers include lack of international standards in emergency care, ACNPs continue to be employed in the FT area of the ED, staff and physician attitudes regarding NPs in the ED, physicians views on the use of NPs vs. residents in trauma services, and lack of understanding of the ACNP role in the CCU.

Lack of international standards in regulation, education, and core competencies

ACNPs are beginning to be utilized in countries other than the US (Currie, Edwards, Colligan, & Crouch, 2007). With the implementation of an ACNP or ENP to EDs throughout the world, introducing international standards has been proposed (Currie, Edwards, Colligan, & Crouch, 2007). Currie and associates compared the role of ENP between UK, Australia, and New Zealand with the goal of determining feasibility and challenges of introducing international standards in regulation, education and core components in practice.

The NP role in the UK has been developed based on trial and error. The role in New Zealand and Australia has been formed by regulation, rigorous training, and accreditation. It was found that NPs write their own clinical practice guidelines in each ED in all three countries.

Education requirements are different between the UK, Australia, and New Zealand. In order to work as an ENP in the UK, the nurse must take six week educational

courses or Master's level University based education. It is a required for an ENP to obtain a Masters level education prior to functioning in the ENP role in both Australia and New Zealand. Candidates seeking training in Australia and New Zealand are required to have a minimum of 4 years of clinical experience in the specialty of choice. It is suggested that international standards of academic education be introduced in order to greater clarify the capabilities of the NP working in the ED (Currie, et al., 2007).

The title of NP is restricted in the US, Australia, and New Zealand, but it is unrestricted in the UK (Currie, et al, 2007 & Pearson, 2008). This can lead to problems in obtaining licensure to prescribe medication. In the US, even with statutes in place, boards of nursing in every state, and regulation regarding NP title use, many states do not allow complete prescribing authority to NPs (Pearson, 2008). Full prescribing rights have also not been recognized in Australia (Currie, et al, 2007).

Both Currie (2007) and Pearson (2008) strongly advise NPs to contact legislatures in order to achieve standards of practice worldwide. This way, NPs working in the ED have full prescribing authority and can treat any patient presenting to the ED. It would also allow for those NPs working in the US to be able to travel and work abroad with no restrictions and vice versa.

International staff and physician attitudes on NPs in the ED

Griffin & Melby (2006) conducted a study to identify the attitude of emergency physicians, emergency nurses, and general practitioners in advanced practice nursing (APN) service, how this would affect ED patient care, and factors that may hinder or help

the development of the APN in Ireland. There were 107 total subjects and only 11% of the participants were clear on the understanding of the APN role while 90% would appreciate a clear definition. The majority of participants felt that an APN in the ED would improve wait times and the quality of existing service (94% and 80%, respectively). Other potential benefits mentioned by both nurses and physicians include improve cost effectiveness, continuity of care, and opportunities for advancement in nursing. However, only 50% felt that the ANP should be able to practice autonomously. Roughly 79% felt that ANPs who wish to work in the ED should have at least 5 years of emergency nursing experience. Both the emergency physicians and nurses welcomed this role but the general practitioners displayed a little reluctance when asked if they would refer patients to an ANP for emergency care. However, 84% of general practitioners stated they would feel comfortable referring patients to an ANP only for treatment of minor injuries. The perceived difficulties of the ANP role by physicians included increased risk of litigation, difficulty in changing patient's perceptions, difficulties in prescribing, role definition, and acceptance from other medical professionals. The perceived difficulties of the ANP role by nurses included resistance from medical staff, identifying boundaries, support from management, prescribing issues, physician's feeling threatened and patient's acceptance. Both physicians and nurses felt that ANP has potential benefits of reducing waiting times, providing cost effective care, and serving as a role model for staff. Potential difficulties of the ANP role listed by both

physicians and nurses included prescribing, unacceptance of the new role by patients, and identifying clinical boundaries.

In Australia, the ENP was introduced to the ED in 2004. Lee, Jennings, & Bailey (2007) sought to explore staff knowledge regarding this newly introduced NP role. The study was performed via questionnaire given to ED staff at the Northern Hospital in Melbourne. A total of 76 staff participated this study. The results showed that greater than 90% of the staff agreed that the NP made the ED team more efficient even though one-third of the staff did not have a clear understanding of the NP scope of practice. Staff also felt that the NP should be supervised by the emergency physician. They welcomed the NP approaching them with questions regarding patient management and care. The results also indicated that there was a good level of staff knowledge of the NP role. The staff was not clear about the educational requirements of the ENP and requested to obtain further information regarding this. It was argued that if staff clearly understood the scope of practice of the ENP, ENPs may be utilized more in the main ED instead of simply the FT area (Lee, Jennings, & Bailey 2007).

Continued employment of NPs in the fast track area of the ED

Table 3: Top 10 Reasons for Visits to the ED

1.	Stomach and Abdominal Pain, Cramps, and Spasms
2.	Chest Pain and Related Symptoms
3.	Fever
4.	Back Symptoms
5.	Headache, Pain in the Head
6.	Cough
7.	Shortness of Breath
8.	Vomiting
9.	Pain, Site Not Referable to a Specific Body Part
10.	Lacerations and Cuts, Upper Extremity

McGee & Kaplan (2007). Adapted from McCaig LF, Nawar EW.

It was determined that only a few problems listed in the table include true emergent problems (McGee & Kaplan, 2007). Because of inadequate care capacity in primary care (McGee & Kaplan, 2007), there is an increasing number of ED visits that would be labeled as primary or urgent care. Thus, many recent studies have shown a major benefit in employing NPs in the FT area of the ED to streamline care (Cole & Kleinpell, 2006; Jennings, et al., 2008; McGee & Kaplan, 2007; & Mills & McSweeney, 2005). Given the historic use of FNPs in the ED setting, it is understandable that NPs have been used in only the FT area. However, with the advanced training in the care of the acutely and emergently ill patient, the ACNP can be used in the main area of the ED to streamline care.

The following table is a list of the most common symptom categories of patient complaints seen by NPs in the ED (Mills & McSweeney, 2005):

Table 4: Common ED Patient Complaints Treated by NPs

Symptoms Referable to the Musculoskeletal system	General Symptoms	Respiratory System	Symptoms Referable to the Digestive System	Eyes and Ears
Back pain Low back pain Leg pain Ankle pain Shoulder pain Wrist pain Hand pain Finger pain	Chest pain with fever Side pain with fever Flank pain with fever	Difficulty breathing Shortness of breath Cough Sore throat Nasal Congestion	Abdominal pain Pelvic pain	Earache Eye irritation Eye pain

It was estimated that NPs in the ED treated roughly 5.76 million patients during 1997-2000 (Mills & McSweeney, 2005). This total represented only 1.4% of all ED visits in the US during that time period. While the ACNP is educationally prepared to care for patients with acute and chronic illness including emergency illnesses (Cole & Kleinpell, 2006), these data suggest ACNPs continue to be underutilized in the main ED.

NP and resident services in the trauma environment

The recent work hour restrictions set in place for residents has had a significant impact on trauma services (Haan, et al, 2007; Christmas, et al, 2005; Nyberg, Waswick, Wynn & Keuter, 2007; Terry, 2007; & Cupuro & Alperovich, 1997). However, the implementation of the work hour restriction led to a decrease in staff capable of caring for trauma patients. Multiple recent studies indicate that implementation of NPs or PAs in the trauma service has allowed for continued excellence of care in lieu of residents (Haan, et al, 2007; Christmas, et al, 2005; Nyberg, Waswick, Wynn & Keuter, 2007; Terry, 2007; & Cupuro & Alperovich, 1997).

One trauma service found that there was not only equal care provided by the NP when compared to the house staff but also an unexpected increase in several quality markers, such as discharge education and outpatient follow-up (Haan, et al, 2007). Another study determined that since the NP did not have as many off-site duties as residents, they were able to maintain a higher level of continuity of care (Christmas, et al 2005). It was determined that there was also a decreased direct cost per patient after implementation of the NPs to the trauma service (Christmas, et al, 2005).

A survey of 109 trauma patients was conducted to determine patient satisfaction with their care provided by a NP or PA (Nyberg, Waswick, Wynn & Keuter, 2007). Over 85% of the respondents felt that they had received high quality of care provided by the NP/PA while in the trauma service. More than 80% felt that they also received compassionate care while in the trauma service. Residents who participated in the survey also felt that utilization of a NP or PA in addition to residents in the trauma service has had a positive impact on care of the trauma patient.

Surgical residents who rotate through the trauma service have a number of assigned duties and educational functions which decrease the amount of time spent providing direct care to patients (Terry, 2007). With the utilization of NP/PAs in the trauma service, patient care duties can be assigned to these midlevel provider thus freeing up the surgical resident to perform skills required for educational advancement without an increase in cost to the patient (Terry, 2007). Having a NP/PA on duty day to day increases the continuity of care provided to the trauma patient (Terry, 2007). Because of

this day to day interaction with trauma patients, nurses, and attending physicians, the midlevel providers do not need to be retrained on a monthly basis as surgical residents do on each rotation. The attitudes of physicians, nurses, administrators, and even surgical residents have been positive with regard to the addition of the NP/PAs to the trauma service (Terry, 2007).

Understanding the ACNP role in the ICU

The ACNP was originally created to work in the critical care areas of hospitals (Howie-Esquivel & Fontaine, 2006). Only 4-6% of the 115,000 NPs certified in the US are acute care trained (Kleinpell, Ely, & Grabenkort, 2008). The settings of ACNP practice have broadened since initiation of this specialty to include not only the ICU but also EDs, trauma, specialty tertiary care centers (such as orthopedics, internal medicine, and interventional cardiology), clinic settings which include cardiology, infectious disease, pain management, and nephrology, and other areas including occupational medicine, sports medicine, dialysis, and heart transplant (Kleinpell, 2005). More recently, in order to decrease patient mortality rates, ACNPs are being employed as team leaders for rapid response teams (Howie-Esquivel & Fontaine, 2006).

The American College of Critical Care Medicine Task Force on Models of Critical Care Delivery recognizes that a team approach to the management of patients in the critical care unit improves the quality of care (Kleinpell, Ely, & Grabenkort, 2008). The team model used includes the use of nonphysician providers to reduce both ICU and hospital LOS and cost of care. However, Kleinpell, Ely, & Grabenkort (2008) found that

there were a limited number of studies focusing on the impact of care the NP has in the critical care unit.

Some of the more recent studies available show favorable outcomes when ACNPs are used in the ICU as part of a team (Hoffman, et al, 2003 & Hoffman, et al, 2005). In 2003, Hoffman and colleagues found that ACNPs provided similar care to physicians in training in the ICU. ACNPs spend more time in providing continuity of care to the patients and families while the physicians in training were often participated in off-site education. In 2005, the same authors showed that the team approach to ICU care, whether provided by an ACNP/physician team or a fellow/physician team, provided consistently high quality care (Hoffman, et al, 2005). Clinical outcomes, such as ventilator weaning, patient disposition, and patient mortality were not statistically significantly different between the two teams.

Other barriers for the ACNP

The ACNP faces other barriers to practice including the view of physician preceptors towards NP students and reimbursement for cost of care. Transitioning from the role of the staff nurse to an advanced practice clinician requires a significant shift in thinking (Ligas, 1997). While obtaining educational training, the ACNP student must find preceptors that are willing to assist the former staff nurse with this transition (Ligas, 1997). This may be difficult since physicians may feel inadequately prepared to train a nurse in the medical management of patients (Ligas, 1997). Some physicians may also feel that the clinical experience of the NP is vastly lower than the experience of a resident

or PA (Ligas, 1997). Physicians must fully understand the role of the NP before NPs are viewed as an important piece of the medical care puzzle.

A second barrier that the ACNP faces is reimbursement for medical care provided. In a position statement by the American Nurses' Association (ANA) in 2005, it was determined that numerous state laws and regulations as well as restrictive reimbursement policies for Medicaid and private insurers were barriers brought on by the Balanced Budget Act of 1997. Some of the laws and regulations that restrict practice also include a limitation on prescriptive authority, a requirement for physician supervision of care, and limitations on institutional privileges. In their position statement, the ANA supports the removal of these restrictions to make access to healthcare more affordable and available (ANA, 2005).

Buppert (2005) discussed several reimbursement issues for the ACNP. She listed several different barriers found in APN reimbursement. Those include:

- ✓ Third party payers will usually pay for one physician service per patient per specialty per day. These are services performed and described by the Current Procedural Terminology (CPT) code. Therefore, if an ACNP and a physician are not from the same place of employment, they cannot share billing to the patient.
- ✓ ACNPs may perform physician services that are nonbillable.
- ✓ Physicians, administrators, and ACNPs themselves may not be familiar with the billing process for ACNP services.

- ✓ There can be some vague state laws regarding ACNP scope of practice. Therefore, Medicare (for example) requires that physician services billed by the ACNP are within the scope of practice for that state.
- ✓ Rates and policies for commercial payers vary regarding ACNP reimbursement (Buppert, 2005)

The following is a list of billable and nonbillable procedures performed by an ACNP in routine ACNP practice (Buppert, 2005). These services are listed in order of most frequently performed to least. Some procedures were included because they are not billable nursing services.

Table 5: Billable Opportunities for ACNPs

Procedures (those percentage performed by an ACNP)	Billing Opportunity
Discuss care with family (95%) Order/interpret lab tests (90%)	Billable if “counseling” is done face to face Billable as a component of evaluation and management
Initiate discharge management (88%)	Billable if all components of discharge planning are done.
Perform cultures (85%)	Billable if clinician performs actual microbiology of procedure
Initiate specialty consultation (79%)	Not billable.
Perform wound packing (60%)	Not billable. Is a nursing service
Manage patients requiring mechanical ventilation(49%)	Billable if management is physician service.
Suture superficial laceration (48%)	Billable as simple repair
Perform incision and drainage (40%)	Billable.
Insert chest tube (9%)	Billable as “thoracostomy tube”.

Buppert (2005) suggests that the ACNP should become aware of the practicing system for their place of employment. It is important to bill a service that the ACNP performs as long as another provider has not billed for the same service on the same day.

Clarification of the state law and scope of practices for the individual state the ACNP practices is important (Buppert, 2005). Each state has different rules and regulations and it is imperative to know exactly what applies to the ACNP. Buppert (2005) also suggests that if the ACNP accepts a position that is less procedural and more integrative, that s/he asks exactly how the job is funded. The ACNP should be properly educated on the intricacies of business funding, monitoring income and expenses, and how to present oral and written arguments supporting points in the system, and remain current on the laws and policy changes of each state (Buppert, 2005).

CHAPTER 5: SIGNIFICANCE TO NURSING PRACTICE AND CONCLUSION

Significance to nursing practice

There are a wide variety of NP specialties. ACNPs must distinguish themselves from other specialties as to why they are different and important. ACNPs are better prepared educationally than FNPs and ANPs to care for the acutely ill patients. Several studies outline the positive impact an ACNP can have on maintaining continuity of care, decreasing hospital or ED LOS and wait times, and decreasing direct cost to the patient (Christmas, et al, 2004; Cole & Kleinpell, 2006; Cupuro & Alperovich, 1997; Haan, et al, 2007; Hoffman, et al, 2005; Hoffman, et al, 2003; Jennings, et al, 2008; McGee & Kaplan, 2007; McKay, 2006; Nyberg, et al, 2007; Steiner, et al, 2008; Terry, 2007; & Thrasher & Purc-Stephenson, 2008). ACNPs are not physician replacements. The ACNP is to enhance medical continuity of care and this can be achieved in a team environment.

ACNPs continue, however, to face barriers and challenges. Even though APNs are able to practice independently in numerous states, not all states recognize complete independent practice (Pearson, 2008). Role confusion may be abundant and it is important for ACNPs to be able to justify the specialty role. As shown throughout this paper, the acutely and chronically ill population continues to reap the benefits of the ACNP who is educationally prepared to care for them. It is clear that the ACNP must individually understand his/her role before beginning to educate the public about the role.

Using various specialty NPs in a variety of different settings has occurred since the inception of the NP practice. Even today, there continues to be debates as to whether the NP should seek specialization (Hoppel, 2008). Questions remain if this would limit practice settings or job opportunities for the ACNP as well as other NP specialties. A personal communication with the Arizona State Board of Nursing (January 7, 2009) indicates APN may soon be required to be certified as an ACNP to work in an acute care setting in Arizona. In addition, the state Board of Nursing indicated that ACNPs may practice in the acute care setting and only with the population educated on (personal communication, January 7, 2009). This would mean an ACNP who was trained in an adult program would have to obtain certification in pediatric acute care in order to work in an acute care setting with patients that cross the lifespan. When this requirement becomes effective, role definition and delineation of ACNPs should come easier to those in practice.

Conclusion

The role of the ACNP has expanded dramatically since its beginning in the 1990's. They initially began practice in the ICU and expanded to include any acute care setting as well as specialty practices. Education and certification in the United States has secured a place in advanced nursing practice for the ACNP. However, it is important for other countries that are initiating ACNPs to standardize education, training, and certification. With this global standardization of ACNP practice and education, the

ACNP can be recognized as a leader and expert in acute care by physicians, other healthcare professionals, administration, and patients.

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