FAMILY NURSE PRACTITIONER PREPARATION FOR MANAGING EMERGENT HEALTH NEEDS IN THE RURAL CLINIC

by

Christine Sue McGuire

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Christine Sue McGuire

This project has been read by each member of the project committee and has been found to be satisfactory regarding content, English usage, format, citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

M. Jean Shreffler, PhD, RN
Committee Chair
M Jean Shreffler (Signature)
8-1-00 (Date)

Approval for the College of Nursing

Lea Acord, PhD, RN
Dean
Lea Acord (Signature)
8/14/00 (Date)

Approval for the College of Graduate Studies

Bruce McLeod, PhD
Graduate Dean
Bruce L. McLeod (Signature)
8-15-00 (Date)

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Signature Christine S McGuire

Date 7-20-00

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ABSTRACT

Family nurse practitioners may be employed in rural and medically underserved areas. The family nurse practitioner provides a critical link for health care to rural dwellers. This critical link is cost-effective and assists to provide timely, appropriate access to health care. Difficulties arise with the provision of health care in rural areas.

There is a complex interaction between individual, cultural, and geographical factors in the rural environment that impact health care. To effectively provide care in this environment several aspects of the rural culture must be understood. The definition of health in rural areas is often based upon a role performance model. Health care may not be sought until the individual is unable to function in the usual role.

Access to health care must be considered beyond the physical availability of a health care provider and clinic. The family nurse practitioner may be employed in a rural clinic, as opposed to an emergency department, or facility with adequate staff to manage the care of an emergent health need. The educational preparation of the family nurse practitioner may not include the emergency care beyond the consideration of life-threatening diagnoses as a differential diagnosis.

Therefore, it is imperative that the family nurse practitioner is prepared with the knowledge and skills necessary to identify an emergent health need. Ultimately, prior planning for emergent health needs, equipment to provide the appropriate and timely care, and preparedness to transport patients to definitive care is essential.

Family nurse practitioner curricula needs to address emergency care. Advanced nursing education and continuing education is imperative for the family nurse practitioner to be prepared to deliver expert care in the rural clinic.

CHAPTER 1

INTRODUCTION

"In every moment lies all potential possibility. The reality we experience is the one we create by the things we focus on" (Koerner & Burgess, 1997, p. 4).

The family nurse practitioner (FNP) as a primary health care provider in a rural area, will encounter individuals with a multitude of health needs. People will present to the FNP's clinic with emergent health needs, which may be the result of numerous factors. The delivery of timely, essential, appropriate, and expert care to the patient with emergent needs is crucial (Dacey, 1999).

Registered nurses (RNs) enter FNP programs with diverse nursing backgrounds, which may not have involved emergency care. Graduate level nursing curricula teach the recognition of life-threatening problems as differential diagnosis. The many facets of management involved in the care of emergent health problems are generally not addressed, although, clinical preceptorships in emergency departments can be arranged on an individual basis.

This project was motivated by the author's experience in prehospital and hospital emergency care. The knowledge, experiences, dreams, and career goals also influenced the inspiration for this project. Issues were formulated, and validated through informal interviews with rural FNPs, physicians, and physician's assistants. Illustrations offered by these health care providers have been included within the body of the project. The comments have been referenced as anonymous to protect the anonymity of the patients and communities.

The state of Montana recognizes advanced practice nurses (APRNs) as registered nurses with additional professional education (Montana State Board of Nursing, 1999). The family nurse practitioner (FNP) is one of several nursing specialties defined as an APRN. Therefore, this project has focused on the FNP.

Purpose

The purpose of this professional project was to influence the quality of patient care and ultimately the health outcomes of patients with emergent conditions who present to the rural FNP's office. This was accomplished

through the development of recommendations focused on improving preparations for the care of patients with emergent needs. The recommendations addressed educational preparation, office setup, and transport plans for patients.

Background and Significance

Rural life may be described as a life of contrasts. It has been described as a challenge or an adventure. Remoteness and isolation may allow the rural area to be a haven for retreat or a place from which to escape. The paradoxical attributes of charm and nostalgia, as well as exasperation and adversities of rural life have been discussed in the literature. The attributes of familiarity and lack of anonymity were identified as key concepts for rural dwellers and rural nursing care providers (Bushy, 1991a; Lee, 1999; Mott & Roemer, 1948).

In 1862 Abraham Lincoln received a report from Dr. W. W. Hall, the first Commissioner of Agriculture, identifying the health risks associated with rural life. Dr. Hall proceeded to "discuss the excessive burden of insanity, the shortened life expectancy, and the general hardships of

agricultural existence which may make of the farmer's wife a 'vision, not of youth and beauty, innocence and exuberant health, but that of the pale and wan and haggard face" (Mott & Roemer, 1948, p. vi).

More recent publications have identified similar observations on the adverse effects of rural life on health status, morbidity, and mortality. Rural living is associated with higher rates of mortality and chronic illness, which is ultimately associated with increased morbidity (Office of Technology Assessment, 1990; Schneider & Greenberg, 1992; Yawn, Bushy, & Yawn, 1994).

A variety of factors contribute to these statistics. Rural areas have a greater proportion of elderly, of people living at a poverty level, and of people having lower levels of education than do urban areas (Coward, McLaughlin, Duncan, & Bull, 1994; Rural Sociological Society Task Force, 1993). Roemer (1976) associated rural life with increased risk for preventable conditions, namely, traumatic conditions and infections. Research studies in Utah and South Dakota found significantly higher rates of trauma related deaths in comparison to urban or other rural areas (Bigbee, 1992). In 1998, Montana ranked

second in the nation for deaths from motor vehicle crashes per 100,000 vehicle miles (National Safety Council, 1999).

Rural environments provide challenges in relation to accessing health care. Difficulties with access to and utilization of health care in this environment are factors contributing to morbidity and mortality statistics. Income resources affect the health of families through the quality of housing they can afford, nutrition, and health insurance affordability, which also impact their access to health care. The poverty rate in Montana for 1998 was 16.6%. This is compared to 12.7% nationally (U.S. Bureau of the Census, 1999).

Access to emergency health care in the rural community is a valued commodity (Bushy, 1991b; Ramsbottom-Lucier, Emmett, Rich, & Wilson, 1996; Rosenblatt & Moscovice, 1982; Rutledge, Ricketts, & Bell, 1992). The emergency medical service (EMS) is one avenue of access to emergency care. Rural access to EMS may be limited however. Rural EMS providers are predominately volunteers who vary in their level of healthcare training. Their availability to obtain training and respond to emergencies is often limited because they are volunteers, generally employed at full time jobs. Funding for the rural EMS services may be

minimal. Consequently, equipment availability, educational opportunities, and time constraints of personal lives affect the quality of prehospital care.

The need for emergent access to health care may be a result of the individual's personal definition of health, rather than external factors. This health definition is integral to health-seeking behavior and often dictates the focus for nursing care and intervention. This is particularly true when health is defined according to the role-performance model (Smith, 1981). The client's concept of health in relation to the ability to work is a significant determinant in seeking or not seeking health care (Long, 1999).

When one defines health as the ability to work, the tendency is to delay seeking health care until one is no longer able to function in one's work role. Therefore, health care may be sought for advanced conditions requiring extensive and possibly immediate interventions. Rural dwellers are often self-employed and may be underinsured or uninsured which may further contribute to delays in seeking health care.

Nursing research has identified important key concepts regarding the provision for health care to rural dwellers.

These include distance, isolation, lack of anonymity, familiarity, old-timer, newcomer, insider, outsider, self-reliance, and hardiness (Lee, 1999). An understanding of these concepts is helpful to facilitate assimilation of the FNP into the community. The basic beliefs held by the local residents need to be understood to gain their trust and respect before they may access local health care.

Knowledge of the various definitions of rural assist in understanding the difficulties associated with the delivery of health care by any rural health care provider. Statistics in relation to the provision of health care are often reported in terms of rural or urban. Definitions of rural may refer to population size, density, or distance from a metropolitan area.

The Montana State University (MSU) Rurality Index is a definition of rural that incorporates county population statistics and distance to emergency care. The Rurality Index recognizes that variability of the degree of rurality occurs within counties. This index computes a "locally normed resident-based measure of rurality" (Weinert & Boik, 1999, p. 469). Therefore, a measurement of the rurality variable can be determined for individual persons or families. This is valuable to understanding because of the

variation that may exist in population density of rural counties.

The U.S. Census Bureau defines urban areas as having more than 2,500 inhabitants. Areas that do not meet urban requirements are, therefore, rural. (U.S. Bureau of Census, 1993). Still another classification defines a metropolitan statistical area (MSA) as a county with more than 50,000 inhabitants or an urbanized area of more than 100,000 inhabitants. Nonmetropolitan statistical areas are rural counties that do not meet these criteria (Office of Management and Budget, 1983).

The U.S. Department of Health and Human Services defines rural as having a population density of less than 100 but more than six people per square mile and, being 30 minutes driving time from the next level of medical care. In 1985, the Frontier Health Care Task Force was organized and worked with the National Rural Health Association (NRHA) to define characteristics that delineate frontier areas from rural and urban areas. Frontier counties are designated as counties that contain less than six people per square mile (Elison, 1986). Montana has 46 counties that meet the criteria for frontier; ten are classified as

rural and two counties contain metropolitan statistical areas (Montana Office of Rural Health, 1999).

Rural areas may be classified as medically underserved areas. This concept is intended to imply inadequate health care. It was first utilized in 1973 in Health Maintenance Organization Act legislation (DeFriese & Ricketts, 1989). The Rural Health Clinics Services Act (P.L. 95-210) of 1977, was designed to assist with access to health care in rural areas and to pay for services provided by mid-level practitioners. Medicaid and Medicare reimburse for health care at a higher rate if the practice is located in an area designated as a medically underserved rural community (Hewitt, 1992).

Montana was ranked 19th in the nation for the number of counties without access to primary care in 1998. The Montana Office of Rural Health (1999) determined that 12.5% of the Montana population did not have ready access to primary care. As of April 26, 1999, there were eight counties without a primary care provider (Montana Office of Rural Health, 1999). Forty-six counties in Montana are designated as health professional shortage areas (HPSA) and 23 counties are designated as medically underserved areas (Montana Area Health Education Center, 1999).

Family nurse practitioners and other mid-level providers have been identified as a viable solution to meeting the needs of the medically underserved community (Bigbee, 1992; National Center for Nursing Research, 1995; Rural Information Center for Health Service, 1994). A state-wide health assessment and resource development survey conducted in Montana in 1995, identified 179 FNPs employed in the state. When the larger population density counties of Cascade, Flathead, Gallatin, Missoula, Silverbow, and Yellowstone are excluded from this assessment, there were only 73 FNPs employed in the remaining 50 counties, which were designated as either HSPA or MUAs, or both. (Montana Department of Public Health & Human Services, 1995). During 1999, there were still four counties without a physician or mid-level provider (Montana Office of Rural Health, 1999).

Nurse Practitioners are not physician extenders or substitutes. The FNP role is complementary to the medical role. The holistic emphasis of an FNP can result in a health service with an extensive focus beyond the immediate needs of episodic care. FNPs advocate health as wellness and a way of life.

A health care system that is focused on episodic and crisis-oriented treatment may be encouraged by individual financial issues, insurance availability and choice, geographical distance, and individual health definitions. Encountering an emergent situation in the rural health care provider's office will occur. The emergencies encountered may be a result of a traumatic event, a sudden onset of symptoms, or as the result of a delay in seeking health care. Examples of situations were described by one FNP:

> "We had a number of adults that arrived in the clinic complaining of acute chest pain. One man had been swimming several days earlier and he dove into shallow water. Several days later, his arms went numb. That's when he came into the office. His cervical spine fracture was obvious on x-ray. He was immobilized and transported by ambulance to an Emergency Department. One day we had a death in the clinic. It was an abused child that died in the office. There were always critical situations that came into the office since the nearest Emergency Room was so far away." (Anonymous personal communication, November 18, 1999).

The Problem

Difficulties with access to health care in the rural environment are a consequence of the complex interaction of individual, cultural, and geographical factors. The local FNP's office may be the sole source of health care in the rural community or within a reasonable distance. Therefore,

critically ill or injured patients will present to the FNP's rural office. Prompt recognition, stabilization, and management of these people prior to transport for definitive care is imperative for the goal of positive health outcomes.

The typical FNP curriculum usually does not address the provision of emergency care. Admission criteria for FNP programs may not include critical care or emergency experience. Therefore, the FNP may have limited education and or experience with emergency care. Additionally, rural health care clinics may not be physically designed, equipped, or have the staff preparation to expertly care for the patient who has emergent health needs. Local EMS may be limited in availability and scope of practice. Therefore, significant problems may exist in providing care to the patient with emergent health care needs in the FNP's rural office.

Objectives

The quality of care and ultimately, the health outcomes of patients with emergent conditions who present to the FNP's rural office can be influenced through

adequate preparation. This project has focused on the development of recommendations to improve preparations for patients with emergent health care needs.

Several specific objectives have been addressed. The objectives included the development of: a) recommendations for educational preparation for FNPs; b) recommendations for emergency medical equipment for the rural office; and c) an emergency transport planning worksheet.

Conceptual Framework

Family nurse practitioners are uniquely capable of providing emergency care in a holistic manner. Neuman's system model was utilized to provide a conceptual framework at the organizational level of the rural FNPs practice (Neuman, 1995). Neuman's model provides an "integrated systems-management model… with a multidimensional framework" (Kelley & Sanders, 1995, p. 347). Figure 1 depicts Neuman's system model applied to the rural FNP setting. This model depicts the function of primary, secondary, and tertiary levels of prevention applied to the management and function of the rural office. The core characteristics of each of the variables; psychological,

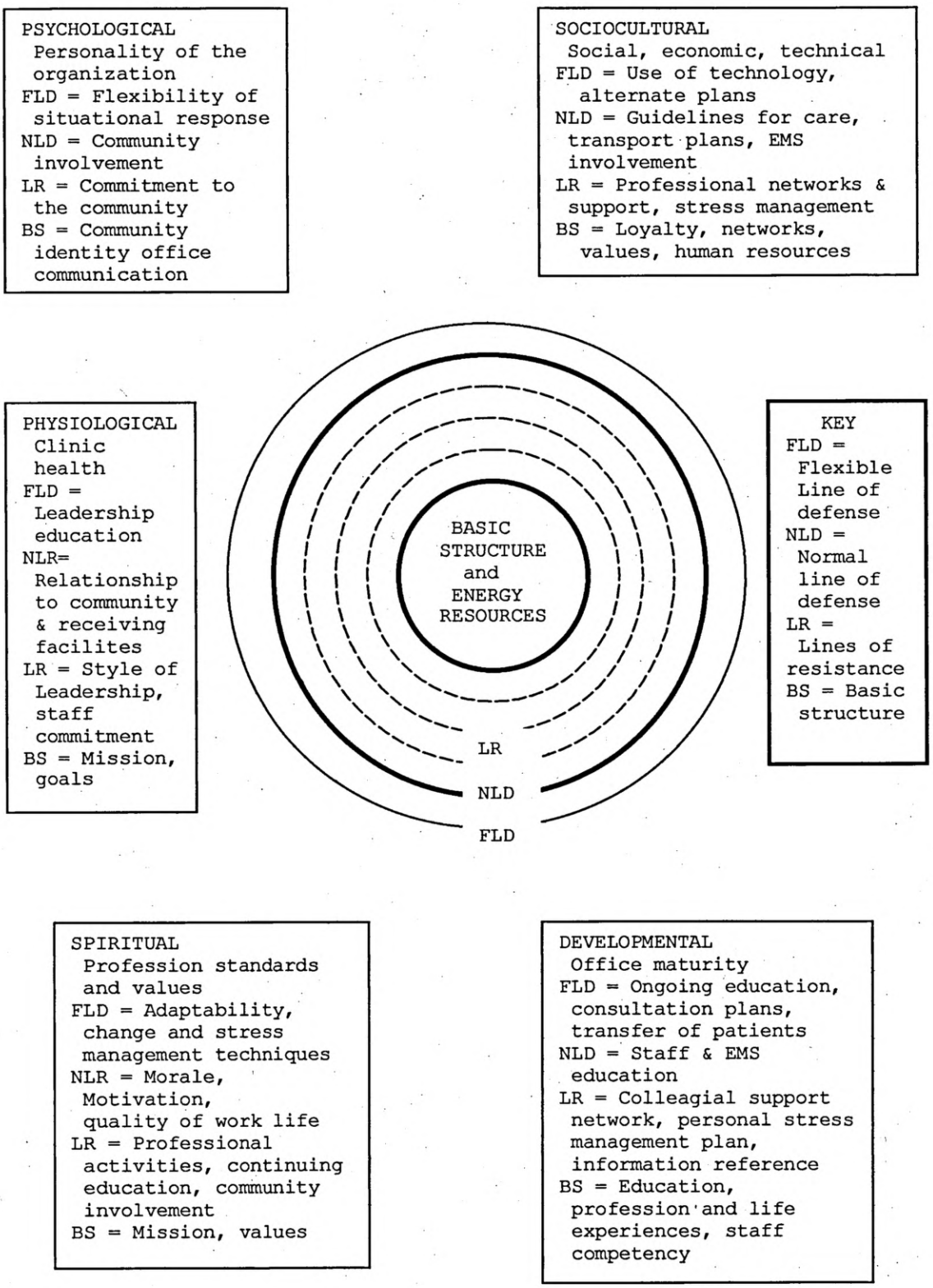
sociocultural, physiological, spiritual, and developmental are included.

Effective patient care and the goal of positive health outcomes are dependent on a solid basic structure of office setup, office management and functioning, educational preparation for staff, and preplanning for emergencies. The lines of resistance represent the resources that prevent stressors from threatening the viability of the system and its functioning. These resources include predetermined networks for patient referral and transport. Another resource to be considered is a contingency plan of alternate provider coverage to allow the local FNP time away from the practice for continuing education.

The normal lines of defense represent a stable state for the office. These lines are developed over time with experience and knowledge. The decision making process is critical in maintaining the normal lines of defense.

The flexible lines of defense reflect the dynamic state of health within the organization. The strength of these lines is contingent upon the current events and situation. The response of an organization to a stressor is contingent upon these lines. Therefore, the response of the rural FNP's office to the stress of an emergent patient is dependent upon prior planning, knowledge of resources, and appropriate triage.

Figure 1. Neuman's System Theory-Overview (Neuman, 1995)



The basic structural characteristics include psychological, sociocultural, physiological, spiritual, and developmental components. These were defined in terms of the model framework. The core concepts of person, health, environment, and nursing were incorporated within the definitions of the structural components. Consequently, the model can be utilized as an evaluation tool when it is applied as a framework for the organizational system of the rural clinic.

Neuman's system model provided an appropriate framework for this project. The statement of the problem and purpose and the subsequent literature review was guided by the need to identify and develop an understanding of the basic structure and strategic internal design needed for a rural health clinic. The project objectives were designed in consideration of the need to formulate a strategic mode for action to manage crises, while maintaining a stable business.

CHAPTER 2

LITERATURE REVIEW

"Given this situation, what is essential, what part of it can I provide uniquely and what part requires the services of a comprehensive team?" (Koerner & Burgess, 1997, p. 5).

Introduction

The purpose of this professional project was to influence the quality of care and ultimately the health outcomes of patients with emergent conditions who present to the rural Family Nurse Practitioner's (FNP) office. The process of providing quality care to the patient with an emergent condition in the rural primary care office is dependent on multiple essential factors. These include definitions of health, access to care, educational preparation of the nurse practitioner, physical office layout and functional organization, and transport needs for additional medical care.

A solid management and organizational foundation for the rural health care practice is crucial to the interaction of the factors which interact and influence favorable health outcomes for clients. A summary of the literature review is included in the following discussion. The recommendations resulting from the literature review are also included within the discussion.

Health and Health Seeking Behaviors

The meaning of health can be considered purely as a dictionary definition or in multiple contexts. These contexts include "historical, cultural, social, personal, scientific, philosophical and spiritual. These meanings, which are sometimes contradictory and often overlapping, will always exist in the various contexts of human experience" (Edelman & Mandle, 1998, p. 9). A reciprocal relationship between health and social well-being in any environment has been identified by several authors (Afifi, 1997; Roemer, 1976).

The meaning of health may be understood in terms of various models. Smith (1981) identified four models of health: "(1) eudamonistic, (2) adaptive, (3) role-

performance, and (4) clinical" (p. 44). The eudamonistic model is the most comprehensive. It is a holistic model, encompassing the multiple contexts of human experience. Stability, functionality, and the ability to meet daily needs are integral components of both the clinical and role-performance models.

Individual definitions of health evolve with time through a complex interrelationship among all aspects of life. Edelman and Mandle (1998) assert that it is impossible to assess an individual's health status without their direct involvement in the assessment. An individual's beliefs about health and illness influence how the individual interprets what the health care provider is saying and conversely, how the health care provider interprets the health practices and beliefs of the individual.

Individual characteristics and concepts of health have a significant influence on decisions to seek health care. An understanding of an individual's meaning of health must be considered within a holistic perspective of the individual's life. Therefore, to provide health care in a rural environment, it is essential to have an understanding of rural culture.

Difficulties arise because of the existence of diverse cultures within rural areas. However, there are general definitions of health that are more prevalent among rural peoples (Long, 1999). Health may be perceived as the ability to fulfill personal roles or jobs. At the opposite end of the spectrum is illness, which is the inability to maintain functioning within the usual roles.

Research within the rural arena seems to support the role-performance model as the predominant definition of health (Weinert & Burman, 1994; Long, 1999; Roemer, 1976; Bartlomé, Bartlomé & Bradham, 1992). The individual's concept of health based on one's ability to work is a significant factor when health care utilization is considered. Symptoms must be recognized as a problem before health care is accessed. Alleviation of symptoms that interfere with role performance is a primary goal when the definition of health is based on this model. "The role performance model provides a minimal conception of health...they may be physically ill even though able to fulfill their central roles" (Smith, 1981, p. 46).

Many rural residents are self-employed. If they are ill or injured and unable to work, there is no income. These people may also be reluctant to take time off for

health maintenance appointments. They may also delay seeking medical assistance with symptoms until the symptoms advance to the point that they are unable to work. When rural residents do seek care, intensive medical intervention may be required.

Montana has a large number of small, locally-owned and operated businesses. Ninety-six percent of businesses in the state employ less than 50 workers. Fifty-four percent of businesses in the state employ less than four workers (Montana Office of Rural Health, 1999). Health insurance may not be available in these small businesses. Additionally, time off from work to attend medical appointments may be difficult to arrange.

Chrisman and Kleinman (1983) identified two social processes involved in health seeking behavior. A role shift was identified as the individual alters daily behaviors and activities to alleviate or accommodate the health problem. The second process refers to social consultation and referrals as the individual interacts with the social and cultural network to assess, diagnose, treat, and/or monitor the health difficulty. Chrisman (1977) also identified that the "nature and quality of perceived changes in individual

health states are major determinants of subsequent health-related actions" (p. 354).

This process was described as the "Symptom-Action-Time-Line Process" by Buehler, Malone, and Majerus (1999, p. 318). This qualitative study examined the processes of health-seeking behavior as individuals seek to take responsibility for their own health. This responsibility involves self-evaluation and self-treatment for both health maintenance and illness treatment.

Some of the same qualities that allow people to flourish in a rural environment have also been implicated in the delay in seeking timely, appropriate health care. These qualities were identified as key concepts for rural nursing. They include familiarity, hardiness, and self-reliance. Familiarity refers to the connectedness or supportive nature of the rural community. This aspect provides a sense of belonging, caring, friendliness, and informality among residents (McNeely & Shreffler, 1999). Familiarity may also have a negative effect. This may be a primary reason that local health care providers are not accessed. Alternately, familiarity may be the major impetus for individuals to use the local provider.

Self-reliance and hardiness are other relevant attributes that influence the health of rural dwellers. The primary characteristics of self-reliance include "self-reliance as a learned, decisional choice and independence" (Chafey, Sullivan & Shannon, 1999, p. 162). Commonalities related to hardiness were described through the "themes of positive attitude, adaptability, endurance, challenge and/or fortitude" (Wirtz, Lee, & Running, 1999, p. 272).

Both self-reliance and hardiness may be factors when considering the delay in seeking health care. Alternately, self-reliance and hardiness may also be considered positive attributes that prompt the individual to participate in preventive health practices.

According to Hassinger and Hobbs "the issue of rural health care is one of quality of life" (1992, p. 190). The discussion of the key rural concepts is included to reinforce the fact that in the rural environment, cultural beliefs and practices must be considered in the provision of health care and planning.

Access to Care

The Institute of Medicine (IOM) (1993) developed a model for monitoring access to health care that would be useful to health care policy makers. Access was defined as "the timely use of personal health services to achieve the best possible health outcomes" (p. 4). Barriers to access were a "complex interaction of structural, financial, personal, and cultural factors" (IOM, 1993, p. 39).

Access as defined by Penchansky and Thomas (1981) is "a concept representing the degree of 'fit' between the clients and the system" (p. 128). Five dimensions of access were identified. These included: availability, accessibility, accommodation, affordability, and acceptability (National Center Nursing Research (NCNR), 1995; Penchansky & Thomas, 1981).

Access to health care is a result of personal, social, and or environmental factors. These various factors may be perceived as facilitators, barriers, or challenges depending on the client's or health care provider's viewpoints. Lack of access was noted to have negative effects on individual health status (Beck, Jijon & Edwards, 1996). Delays in seeking health care and limited

utilization of health screening and preventive services were also associated with lack of access (Ramsbottom-Lucier et al., 1996; Beck, Jijon & Edwards, 1996; DeFriese & Ricketts, 1989).

Montana was one of more than 35 states that identified access and availability of care as a primary issue during a health manpower and shortages assessment in 1988 (U.S. Department of Health and Human Services, 1990). Montana continues to have an ongoing concern about access to health care. In 1999, the state identified a goal "to assure that all Montanans have access to basic health care: preventive, as well as curative, medical and dental services" (Montana Department of Public Health and Human Services, 1999, p.1).

Lack of access may result in the delay of seeking health care until the problem becomes more complex and requires greater resources and interventions to diagnose, treat, and prevent disability. Failure to procure health care may be related to the interaction of personal or geographical factors. Bryant (1975) proposed that "many in need of health care do not seek it because they do not know they need it, do not know how to seek it, or are afraid to seek it" (p. 21).

Appropriateness of care was also identified as an aspect of access to health care by Krout (1986) and Williams, Ebrite, and Redford (1991). Services provided must be perceived by the rural dwellers as important in their community for their health needs.

Appropriateness of care may be perceived differently by the population and the health care provider. Community assessments and prior planning of health services will help to meet the perceived needs of the community. Public education and awareness of the scope of care available from the local FNP will also help increase utilization. Local services will be utilized if individuals have found them appropriate and perceive that these services will meet their needs. The local information web is instrumental in dissemination of any type of news, gossip, or small talk. This local web can also prove to be a vital component for community awareness about health care services.

Availability as a dimension of access to care refers to both objective presence of health care and subjective perception of services (NCNR, 1995). Rural residents may be unaware of the health care services that are available. This may be particularly true for services offered by a FNP due to lack of knowledge and prior experience with a FNP.

Availability is also affected by transportation issues including whether a vehicle and driver are accessible, road conditions, distance, and physical status of the individual requiring health care (Coward, McLaughlin, Duncan, & Bull, 1994; Rural Sociological Society Task Force, 1993). The adequate supply of health care providers is also a primary factor to access.

The elderly population is significantly affected by the availability of health care. The trend in rural areas to have a greater proportion of elderly is a significant factor for health care access. This age group often has a greater need for access to health care, as well as more barriers to access that care.

The elderly may be affected by their degree of functional independence and physical and mental health. The issue may be as basic as their ability to drive themselves or to find someone willing to drive them. According to Goins and Mitchell (1999) "what is important to aging is not just simply survival but rather health-related quality of life with which one survives. Longevity may be a desirable goal for some, but healthy aging is what makes living a long time worthwhile" (p. 147).

Home health care and hospice services may be unavailable in rural areas. Therefore, family members or informal caregivers may be caring for individuals in their homes. Time, economic resources, and emotional commitments for this endeavor make a significant impact on the lives of everyone involved. According to Goins and Mitchell (1999) "rural elders are more likely than their urban counterparts to rely exclusively on family care" (p. 148).

Distance may be a factor in availability of care. Distance may be measured by mileage, time required to travel, or in the individual's perception (Henson, Sadler & Walton, 1999). Some rural dwellers have chosen to live in these areas primarily because of the remoteness. Distance becomes an advantage. However, distance is a great disadvantage during inclement weather conditions or in emergencies. Transportation availability, road conditions, and road quality all enter into the decision making process of traveling for care. The rural FNP's office may be the only source of medical care for many miles.

The physical accessibility of health care services is impacted by many of the same factors discussed previously. This component of health care access is perhaps more in the control of the health care provider. The hours, location,

and physical layout of the local clinic become factors in accessibility and accommodation. Community perception of these components is rapidly communicated throughout the informal network.

The affordability of rural health care as another aspect of access to care, considers tangible as well as intangible costs. Tangible costs are affected by income and insurance availability for local consumers. The lack of health insurance has a significant impact on the utilization of health services. During 1997, 19.5% of Montana's population was not covered by health insurance (Montana Office of Rural Health, 1999). Medicare and Medicaid programs do improve access to care. During 1998, 26% of the state population was enrolled in Medicare or Medicaid (Montana Office of Rural Health, 1999).

In 1997, Montana ranked 50th in the nation for annual income. The national average income was $37,714, while Montana's average was $20,925. Montana had the highest poverty rate in the northwest with 17% of the population below the poverty level in 1996 (Montana Office of Rural Health, 1999).

Intangible costs affect the affordability of health care. Many services may not be available in rural

communities, for example, hospice care, assisted living, mental health services, public transportation, or respite care. Travel and time expenses are also considered intangible costs. Time commitment by family and informal lay care networks may be a vital component of a rural individual's health support. Consequently, this impacts utilization of health care. Intangible costs are often not a part of rural community health assessments but are an important consideration.

Acceptability of health care is a broader dimension of the various aspects of access. It includes attitudes or perceptions of the client as well as the care provider. People must perceive and be satisfied with the services offered and the manner in which they are provided (NCNR, 1995; Penchansky & Thomas, 1981; Hicks, 1992). Community perception of the FNP's technical ability to provide quality care to the multiple health needs of a rural community is only a small component. The community's perception of the cultural beliefs, values, and attitudes of the FNP may be an asset or a hindrance in the utilization of local care.

Acceptability includes objective and subjective perceptions. Donabedian (1988) identified two essential

elements in assessing the performance of practitioners and their ability to provide quality care. These included technical and interpersonal aspects. Professional training and skills demonstrated by the FNP in the process of providing health care form the basis of the technical element. Interpersonal aspects of professionalism are the way the values, beliefs, mission, and vision of the organization are communicated. Interpersonal aspects also include verbal and nonverbal communication style through which the practitioner performs the technical elements of practice.

The interpersonal aspects were summarized by Rosenow (1999). He discusses the challenge of becoming a distinguished clinician. These qualities included consistency of verbal and nonverbal behavior; intuition and instinct as an intrinsic system of ethics; genuine caring for the patient; and consistency of attitude and character.

Educational Preparation of the FNP

"A student's program of study is an education journey…an indoctrinating experience. With this

understanding, education becomes a moral endeavor" (Jones & Jones, 1998, p. 176).

The position statement of the American Association of Colleges of Nursing (AACN) states that "all Advanced Practice Nurses should hold a graduate degree in nursing and be certified" (1999, p. 1). The state of Montana definition for an advanced practice registered nurse is "a registered professional nurse who has completed educational requirements related to the nurse's specific practice role, in addition to basic nursing education, as specified by the board pursuant to 37-8-202(5)(a)" (Montana State Board of Nursing, 1998, p. 45).

The educational requirements are further defined in 37-8-202(5)(a) to be "additional professional education beyond the basic nursing degree required of a registered nurse. Additional education must be obtained in courses offered in a university setting or its equivalent" (Montana State Board of Nursing, 1998, p. 51). Montana recognizes four nursing specialty areas that have the legal right to use the title of APRN. These include nurse practitioner, nurse midwife, nurse anesthetist and clinical nurse specialist (Montana State Board of Nursing, 1999, 8.32.304).

Nearly 40 years have passed since the first nurse practitioner program began. A program of expanded nursing roles for the rural setting was attempted at Duke University in the late 1950's and early 1960's. This program was denied accreditation on three occasions by the National League for Nursing (NLN). The premise for these refusals was that the performance of medical tasks by nurses was inappropriate and potentially dangerous (Bliss & Cohen, 1977).

Finally, in the early 1960's, the nurse practitioner movement started at the University of Colorado within the discipline of pediatric nursing. These graduates were given the title of Pediatric Nurse Associates and were Master's prepared. From this point forward, the educational opportunities for advanced practice roles in nursing gained momentum. As technological advances in medicine were introduced, the redistribution of primary care physicians from rural to urban settings occurred. This corresponded to the trend in the growth of medical specialties and away from the general medical practitioner. The 'mid-level' practitioner was seen as a viable option to meet the need for primary care providers in underserved areas (Vessey & Morrison, 1997).

Most of the early nurse practitioner programs were certificate programs varying in length from four to twelve months. Admission criteria was basic, requiring relevant experience and references. The previous level of nursing education was not a factor in admission (Vessey & Morrison, 1997). Certification of nurse practitioners began in 1976 by the American Nurses Association (ANA). By 1990, there were 208 nurse practitioner programs in the U.S. Of those programs, 194 conferred master's degrees. The mean length of all the programs was 1.7 years. The range of total clinical hours extended from 92 to 1600, with a median at 569 hours. Clinical experience was gained primarily in outpatient settings. These variations in time lengths for clinical experiences raises two questions "How much is enough...and competent for what?" (Morgan & Trolinger, 1994).

Didactic and clinical experiences in the nurse practitioner Master's programs are not standardized. Nor are all nurse practitioner programs nationally certified. The issues of curriculum guidelines and essential didactic competencies have been addressed by multiple national nursing organizations. All the organizations recommended altered and expanded competencies for advanced practice nurses to prepare them for their roles (American Academy of

Nurse Practitioners (AANP), 1998a; American Association of Colleges of Nursing (AACN), 1999b; American Nurses Association (ANA), 1996; Emergency Nurses Association (ENA), 1998a; National League for Nursing (NLN), 1999; National Organization of Nurse Practitioner Faculties (NONPF),1999.).

A survey of nurse practitioner programs and curriculum trends found that three primary topics for practice competence were identified (Bellack, Graber, O'Neil, Musham & Lancaster, 1999). These were "primary care, health promotion/disease prevention, and effective patient-provider relationships/communication" (Bellack et al. 1999, p.22; Ray & Hardin, 1995). Barriers to curriculum change were identified as "an already crowded curriculum, inadequate funding and limited availability of learning sites" (Bellack, et al. 1999, p. 22).

Master's level nursing education has been identified as the appropriate level to provide the competency requirements for advanced practice nurses. These competency requirements include advanced assessment, outcomes and quality management, business and financial management, research process, communication, informatics, diversity, epidemiology, educational strategies, pharmacology, and

health promotion (Berger, et al. 1996; Ray & Hardin, 1995; Douglas, 1996).

Graduate level nursing programs provide a holistic focus for a nurse practitioner's clinical practice. A family nurse practitioner program enables the FNP to practice in a multitude of settings with clients of all ages. FNPs are ultimately capable of meeting many of the health needs of the public in a competent, cost-effective, and quality manner (Douglas, 1996).

The quality of the FNP master's education is reflected by the graduates. Applicants have a diversity of clinical skills from nursing and personal life experiences. Admission criteria for FNP programs may vary widely. The NONPF criteria for evaluation of programs address student admission criteria in a general manner. These criteria recommend that preset admission criteria be utilized. It is recommended that criteria for progression through the program also be established (NONPF, 1997).

Benner (1982) proposed that development of skill and competency pass through five levels of proficiency. These levels include novice, advanced beginner, competent, proficient, and expert. Adams, et al. (1997) suggested that "practice is brought to the expert level through a unique

and subtle combination of knowledge and experience in context" (p. 220).

A solid theoretical knowledge base is the cornerstone for expert practice. Actual progress from novice to expert has yet to be quantifiably measured. The critical thinking skills necessary to move towards expertise can be enhanced through the educational process. "Because expertise is gained in the context of practice, expertise cannot be achieved out of context or taught as an academic exercise" (Adams et al., 1997, p. 217) "Intuition, superior skills and competencies, specific role functions, and clinical outcomes have so far emerged as the key characteristics of expert practice" (Adams et al., 1997, p. 220).

The process of making rational, logical decisions and the risk taking behaviors that accompany decision making are also skills to be refined. The ability to critically analyze and prioritize needs, despite time pressures and changing conditions, is a skill that can be developed through education. Nursing has labeled this process by various terms including clinical-decision making and critical thinking skills. It is the process of utilizing a wide range of analytical and intuitive thinking processes (Corcoran-Perry & Narayan, 1977).

Analytical and intuitive thinking are critical skills for the rural FNP. Preparation for the unknown increases the willingness for risk-taking, as decisions are made in relation to critical patients. Naturalistic decision-making or recognition-primed decision-making refers to the process of making decisions based on the analysis of critical cues and the context of the situations in which they present. This form of decision making was first utilized by the U.S. Army. It has expanded to fire and emergency services, airline pilots, and other military commanders (Burkell & Wood, 1999, p. 43). Research in professional education is also pointing towards this type of pattern recognition and response (NLN, 1999). This process utilizes knowledge, practice, maintenance of skills, and outcomes.

The importance of critical thinking, decision making skills, and risk taking behaviors becomes even more obvious in rural areas. The FNP may be practicing in an area that is isolated from colleagues or consultants by geography, weather, and technology failures.

The challenging experience of a rural practice requires a broad clinical knowledge base. It has been suggested that rural areas require a nursing generalist or 'jack-of-all trades' for providing health services because

of the wide variety of health care needs (Long & Weinert, 1999; St. Clair, Pickard, & Harlow, 1991).

Bigbee (1992) discussed primary care opportunities for NP's in frontier counties. Brief reference was made to the emergency services that are required. This was the only published material identified that referred to the nurse practitioners role in emergency care despite an extensive literature review addressing this issue. Three other articles referred to the need for rural or frontier nurses in general to be proficient in emergency skills. The authors discussed the need for rural nurses to be generalists, and proficient in many areas of nursing (Bigbee, 1993; Davis,& Droes, 1993; Doty, 1996). Of interest, is that the topic of emergency care in the office has been addressed by the dental field and pediatricians (Buyre, Gobetti, & Plezia, 1998; Emery & Guttenberg, 1999; Flores & Weinstock, 1996; Malamed, 1997; Norris, 1994; Schexnayder & Schexnayder, 1996).

A review of FNP curricula found during an on-line search of the internet using Yahoo as a search engine, revealed that, generally, FNP programs do not contain specific courses related to emergency care. The University of Texas-Houston is the only nurse practitioner (NP)

program that is specifically directed to emergency care. There are at least 10 other programs throughout the United States that offer acute care NP programs with alternative tracks emphasizing emergency care/trauma or other critical care specialties that require clinical practicum hours in an emergency department setting (ENA, 1998b).

The Emergency Nurse Association (ENA) is a national organization with a mission "to provide visionary leadership for emergency nursing and emergency care" (ENA, 1999a). ENA's vision is "defining the future of emergency nursing and emergency care through advocacy, expertise, innovation, and leadership" (ENA, 1999). In 1990, the ENA developed a position statement entitled "Integration of Emergency Nursing Concepts in Nursing Curricula" (ENA, 1998c). Unfortunately, the inclusion of this content in curricula still appears to be the exception for undergraduate and graduate nursing programs.

Several authors suggest that curriculum for nurse practitioner programs should be developed in consideration of the skills and knowledge needed in actual practice. The curricula should not be role specific, but rather empower the students with the theoretical knowledge, and critical

thinking behaviors and skills to be successful as advanced practice nurses (Ray & Hardin, 1995; Wilson, 1995).

Continuing Education

Nurse practitioner students graduate with the knowledge and skills to enable them to practice in various settings, including rural areas. Certification is maintained through ongoing continuing education, which also helps to maintain competency with health care and technological advances. Continuing education and experience are necessary to advance from novice to expert levels in all aspects of the nurse practitioner's role.

The provision of emergency care in rural clinics has not yet been addressed by the ENA. There are signs of progress towards further definition of emergency care in this setting. ENA Resolution 99-02 identified nursing care provided in Episodic Care Centers (ECC) as emergency care. This resolution was approved by the 1999 ENA General Assembly to establish a work group with several goals related to emergency care in these centers. The goals of this resolution include to "assess and evaluate the current environments of ECCs, work to establish a special interest

group for ECCs, promote the utilization of ENA's Standards of Practice in ECCs" (ENA, 1999).

Continuing education opportunities are an essential component of preparation for the management of health emergencies. In a study of the preparedness of pediatricians for emergencies in the office, the investigators found that "of all the eligible staff, 14% were certified in basic life support and 17% in pediatric advanced life support" (Flores & Weinstock, 1996).

A meta-analysis investigated the effectiveness of life support courses including Basic Cardiac Life Support (BCLS), Advanced Cardiac Life Support (ACLS), Pediatric Advanced Life Support (PALS), Modified Advanced Pediatric Life Support (APLS), Advanced Trauma Life Support (ATLS), and Neonatal Resuscitation Program (NRP). The authors concluded that "retention of knowledge and skills acquired by the participation in support courses is poor. However, refresher activities increase knowledge retention…There is evidence that the use of the Advanced Trauma Life Support course has decreased mortality and morbidity" (Jabbour, Osmond, & Klassen, 1996, p. 690). A limitation of this meta-analysis for the current discussion, is that although

RNs were reported as subjects in the studies cited, FNPs were not included.

Two RNs, each with more than 20 years experience in a large Emergency Department, wrote of the challenges of their transition to Emergency Nurse Practitioner roles. They found that their "confidence in previously mastered knowledge and skills did not guarantee an easy transition to the role of an NP" (Sanning Shea, & Selfridge-Thomas, 1997, p.236). Another NP decided to take a FNP position in remote or 'bush' Alaska. Her previous employment had been as an emergency department FNP. To prepare herself for this new role she gained prehospital experience as an ALS ambulance paramedic and as a flight nurse on a fixed-wing ambulance (Johnson, 1996).

The personal experiences of these NPs and a review of the literature reveal that educational preparedness for the care of the emergent patient is imperative. Dacey (1999) emphasized that the well-managed approach to unstable patients in the first ten minutes of intervention can improve chances of survival and minimize subsequent morbidity. An analysis of preventable trauma deaths was completed by Esposito, Sanddal, Hansen, and Reynolds (1995) and determined that the providers' education for emergency

care ought to focus on the primary principles of appropriate trauma management and early recognition (Critical Illness and Trauma Foundation, 1994).

There are a number of courses in basic to advanced life support for neonates to adults and trauma management courses available for FNP participation. The format of these various programs is similar. Courses may be held in their entirety during a one or two-day session, or presented separately as modules. The basic format includes didactic instruction and psychomotor skill stations. Each course emphasizes a systematic approach to assessment beginning with airway, breathing, and circulation (ABC's). Testing at the end of the course consists of a written exam and psychomotor skill stations.

Prehospital programs may also be relevant for continuing education opportunities for FNPs practicing in rural area. Rural FNPs may choose to become involved in the local EMS system and may not have had prior prehospital care experience. Research has shown that the mechanism of trauma directly correlates with injuries suffered. An understanding of what has occurred prior to the patient's arrival at the FNP's clinic will provide valuable history that guides patient assessment.

If the FNP is current in the content of the courses discussed, alternatives to attending a conference are to complete continuing education credits in professional journals, audio or videotapes, or the internet. A listing of on-line sites offering continuing education in emergency care or links to such sites may be found in Appendix A.

Basic life support (BLS) is offered through the American Red Cross and the American Heart Association. This course emphasizes the initial steps to follow in any type of emergency with any individual of all ages. The BLS's emphasis is that time to treatment is critical and that maintenance of airway, breathing, and circulation are the foundation. Recertification is done annually or biannually (American Heart Association, 1998; American National Red Cross, 1993)

The neonatal resuscitation program (NRP) provides a systematic approach to the airway and circulatory management of the newborn with life threatening medical needs. (American Heart Association/American Academy of Pediatrics Neonatal Resuscitation Program Steering Committee, 1995).

Pediatric Advanced Life Support (PALS) emphasizes recognition and identification of life-threatening problems

of neonates and children. Course content includes basic and advanced life support measures, vascular access, fluid therapy and medications, trauma resuscitation, stabilization and transport, and legal or ethical aspects of resuscitation in children (American Heart Association, 1988).

The ENA developed the Emergency Nursing Pediatric Course (ENPC) after completing a needs assessment among emergency nurses in 1991. ENPC is designed to educate emergency and pediatric nurses in all aspects of pediatric emergencies (ENA, 1993). The systematic approach of the ABC's is maintained throughout this course. The information is comprehensive, basic, and concise

Nycz and Schmelzer (1992) found the majority of EMS calls in rural areas were for cardiac or central nervous system complaints rather than trauma. Advanced cardiac life support (ACLS) courses teach the fundamentals of cardiovascular emergency care. The 1997 ACLS curriculum included a new chapter addressing acute stroke (American Heart Association, 1997).

Advanced life support may be required for health needs other than medical problems. Injuries and trauma have been implicated as the leading causes of death in rural people,

ages one through 44 (Esposito, et al., 1995; Gesler & Ricketts, 1992; Yawn, et al., 1994). Several trauma educational courses have been developed. These courses vary in the recommended audiences and the settings in which the curricula are applied.

Advanced Trauma Life Support (ATLS) was developed "in response to a perceived need to identify a safe, consistent, standardized, and effective way to initially evaluate and resuscitate patients with multiple trauma" (Bell, Krantz & Weigelt, 1999, p. 233). The target audience is physicians, however, nonphysician providers are currently allowed to participate in the course. The focus of the course is the recognition of life threatening injuries and interventions for stabilization and transport of trauma victims (Collicott & Hughes, 1980).

Research has concluded that education in the provision of emergency care should include the basic principles of patient stabilization and initial treatment of acute trauma (Critical Illness and Trauma Foundation, 1994, p. 12). Other publications have concluded that this may be the most cost-effective method of reducing morbidity and mortality from trauma in the rural setting (Collicott, 1992; Esposito et al. 1995).

Several published articles addressed the definition of the target audience of the ATLS course. These articles suggested that the wrong groups of physicians were being trained and that the target audience should be the rural physician (Ben-Abraham, Shemer, Kluger, Barzilay & Paret, 1999; Hughes, & Price, 1999). Absent from the literature discussion about trauma traning is the provision of care to rural dwellers by midlevel providers. Midlevel providers may be the only advanced nursing or medical provider employed by rural facilities and Critical Access Hospitals. Therefore, they may be the initial health care provider a trauma victim encounters. Appropriate trauma training and skills for FNPs and physician assistants are imperative.

Registered nurses also have been identified as the target audiences for trauma management programs. The ENA developed Trauma Nursing Core Curriculum (TNCC), which is intended for emergency department nurses (ENA, 1999c). Trauma Education for Rural Nurses (TERN) was developed in Montana as a component of the state trauma grant funding. This course is similar in content to TNCC. It was designed for the rural nurse as an independent modular study (Montana Department of Health & Environmental Services, 1993). Both TNCC and TERN advocate the systematic approach

to assessment and interventions by the RN in the provision of emergency care

Another trauma management course developed by the ENA is the Course in Advanced Trauma Nursing (CATN). This course builds upon the knowledge base learned in TNCC. The focus audience is the trauma nurse who is a collaborative member of a trauma team. "The CATN concepts correlate broad psychophysiologic and pathophysiologic processes to specific clinical problems and further develop substantive knowledge in trauma nursing" (ENA, 1999b).

Trauma management courses may also focus on prehospital care. Prehospital trauma life support (PHTLS) was developed to establish an organized prehospital trauma system (National Association of Emergency Medical Technicians, 1994).

Each of the continuing education courses discussed above educate the health care provider about a different aspect of care for the management of the emergency or trauma patient. The mission and goals of the rural FNP should guide the pursuit of applicable continuing education. Time and commitment will also guide the participation in this pursuit. The goal of improving the quality of care and influencing health outcomes of

individuals can be achieved through participation and implementation of the knowledge and skills learned in the courses discussed.

Continuing Education Recommendations

Based on the review of available literature, education courses, FNP interviews, and the author's own area of expertise, continuing education recommendations for the FNP in rural practice are summarized in Table 1 on pages 50-52. The courses have been identified as essential or optional. The essential designation are given to those courses believed to be essential to the rural FNP. Courses designated as optional are courses are dependent on the FNP's education and experience. Additional considerations for participation are given in the recommendation column.

Table 1. Emergency Care Courses - Summary

COURSE	CONTENT SUMMARY	RECOMMENDATION	ESSENTIAL	OPTIONAL
Basic Cardiac Life Support (BCLS)	Interventions for airway, breathing and circulatory emergencies for all ages. Topics include: rescue breathing, obstructed airway. Cardiopulmonary Resuscitation (American Heart Association, 1998; American National Red Cross, 1993)	FNP and all clinic staff. Involvement in community education of BCLS should be considered.	Y	
Neonatal Resuscitation Program (NRP)	Resuscitation of the neonate. Topics include: initial resuscitation, chest compressions, intubation, medications (American Heart Association/American Academy of Pediatrics Neonatal Resuscitation Program Steering Committee, 1995)	This would be a valuable program for the rural FNP with limited obstetric experience.		Y
Pediatric Advanced Life Support (PALS)	Intervention for pediatric emergency. Topics include: airway management, trauma, child abuse, altered level of consciousness, sepsis, meningitis, diabetes, pain and medication management, sedation, neonatal and office emergencies (American Heart Association, 1988)	PALS is an essential course for the initial management of ABC's for pediatric patients.	Y	
Emergency Nursing Pediatric Course (ENPC)	Interventions in pediatric emergencies. Topics include: triage and assessment, epidemiology, respiratory emergencies, respiratory failure and shock, trauma, child maltreatment, neonatal and medical emergencies, crisis intervention, environmental/toxicologic emergencies, legal/ethical considerations, stabilization and transport. (Emergency Nurses Association, 1993)	The rural FNP with limited pediatric and or emergency experience will find ENPC helpful. A basic, systematic approach to assessment and intervention with pediatric patients will be established through completion of this course.		Y

COURSE	CONTENT SUMMARY	RECOMMENDATION	ESSENTIAL	OPTIONAL
Advanced Cardiac Life Support (ACLS)	Advanced life support interventions for respiratory and cardiac emergencies, acute stroke interventions. Topics include: assessment, airway management, arrhythmias, defibrillation, cardiac pacing, intravenous techniques, pharmacology, acute myocardial infarction, acute stroke, special resuscitation situations, adjuncts for artificial circulation, invasive monitoring and therapeutic techniques, cerebral resuscitation, ethical aspects, community approach and chain of survival (American Heart Association, 1997)	Essential for the FNP for the management of life-threatening cardiac and selected medical emergencies. The primary patient focus is the adult patient.	Y	
Advanced Trauma Life Support (ATLS)	Interventions for initial assessment and management of the trauma patient. Topics include: course overview and history, initial assessment and management, airway and ventilatory management, shock, thoracic trauma, abdominal trauma, head trauma, spinal and extremity trauma, injuries as a result of burns and cold, pediatric trauma, trauma in pregnancy, stabilization and transport (American College of Surgeons, 1995)	ATLS would benefit rural FNPs for the initial management of traumatic emergencies. An option in Montana that allows the FNP exposure to the didactic and psychomotor stations of ATLS is to participate as staff in an ATLS course.	Y	
Trauma Nursing Core Course (TNCC)	Nursing interventions for trauma patients. Topics include: overview, epidemiology and mechanism of injury, assessment, shock, the effect of trauma to individual body systems, burn injuries, multiple trauma, crisis intervention and psychosocial aspects of care, stabilization and transport (Emergency Nurses Association, 1999c)	The FNP with limited trauma or emergency experience will find TNCC valuable in the development of a systematic approach to assessment and initial management of trauma patients.		Y

COURSE	CONTENT SUMMARY	RECOMMENDATION	ESSENTIAL	OPTIONAL
Trauma Education for Rural Nurse Program (TERN)	Nursing interventions. Topics include: early recognition of injuries, assessment, resuscitation, stabilization and transport, and rehabilitation issues for trauma victims. (Authors, 1993)	The FNP with limited emergency experience will find TERN valuable in the development of a systematic approach to assessment and initial management of trauma patients.		Y
Course in Advanced Trauma Nursing (CATN)	Nursing interventions for a collaborative role in a trauma team. Topics include: overview, decision making, ethical considerations, trauma team collaborations and relationships, oxygenation and ventilation, perfusion, tissue integrity, mobility and sensation, pain, consciousness (ENA, 1999d)	The target audience for CATN is the trauma team member. This may be useful for the FNP employed in a larger emergency department.		Y
Prehospital Trauma Life Support (PHTLS)	Prehospital interventions for the trauma victim. Topics include: overview, rapid assessment of the trauma patient in the prehospital setting, treatment for shock and hypoxemia, stabilization and transport, special considerations in technical rescue, helicopter emergency medical transport (National Association of Emergency Medical Technicians, 1994)	The FNP who is interested in being involved with the local EMS system and assisting in the education of prehospital providers may find this course helpful.		Y

Health Practice Setup

The mission and vision of the FNP's rural practice will dictate the type of equipment necessary to provide health care to the target community. The commitment of the FNP to provide and maintain both training and equipment for emergencies will also guide office preparations.

It has been well documented that rural residents value access to emergency care, as well as primary medical services (Bushy, 1991b; Rosenblatt & Moscovice, 1982; Straub & Walzer, 1992; Watts, et al., 1999; Yawn, et al., 1994). Therefore, to promote utilization of and access to the local FNP, a plan for managing the emergent patient will include not only equipment, but also staff or team roles.

Joint Commission on Accreditation of Healthcare Organizations (JCAHO), Clinical Laboratory Improvement Act, and the College of American Pathology have specific regulations pertaining to laboratory and clinic operation for the clinics which are regulated by these agencies. Regulations associated with these agencies have not been addressed because this is beyond the scope of this professional project.

All emergencies involve management of airway, breathing, and circulation. The approach to any emergency can be kept simple and systematic while remembering these basic interventions.

An emergency plan of action for each staff member, similar to that of a hospital's disaster plan, will indicate specifically the roles each person will fulfill. Practice sessions such as 'mock codes' allow for role playing, familiarity with processes, and evaluation sessions for revisions of plans. The size of the office staff and educational levels will dictate how roles are delegated. A plan for calling additional assistance to help, such as secretarial, law enforcement, or EMS providers, pastors, or counselors may need to be considered.

Consideration of the physical floor plan and layout of the office is essential. Emergency supplies should be stored in an easily accessible location near the designated treatment area. A system for maintaining supplies and monitoring outdates of equipment utilizing checksheets and performed on a regular basis will help assure that necessary supplies will be readily available when needed. Battery operated equipment, such as laryngoscopes, cardiac

monitors, and defibrillators should be tested for operation on a daily basis.

A collaborative training practice with the local ambulance service will assist in planning physical access to the patient care area. A practice session with the ambulance gurney will determine whether remodeling of doors, corners, or other spaces are necessary to allow expedient access and transport.

The interviews with rural FNPs in Western Montana conducted as a part of this project, revealed that they kept cardiac monitors and ALS supplies available in their clinics. Table 2 on page 56 provides a list of equipment recommended for office emergencies. Medications have not been addressed since these are outside the scope of objectives for this project. Further information regarding emergency medications may be accessed from the manuals for ACLS, PALS, and/or ATLS.

Table 2. Recommended Equipment for Office Emergencies

Personal Protective Equipment
Nonlatex gloves
Face masks with shields or protective glasses
Disposable nonpermeable gowns

Airway
Oropharyngeal Airways in various sizes
Nasotracheal Airways in various sizes
Suction machine
Suction catheters in various sizes
Laryngoscope handle and assorted blades
Endotracheal tubes: Uncuffed sizes 3.5 - 5.0 mm
Endotracheal tubes: Cuffed sizes 5.5, 6.6, 7.5, 8.5 mm
Endotracheal stylets
Magill forceps
12 Gauge over-needle catheter

Breathing
Stethoscope
Oxygen tanks and regulators or flow meters
Oxygen masks, nasal prongs: infant to adult sizes
Nebulizer masks, mouthpieces and tubings
Oximeter
CO_2 detectors
Bag-valve-masks (disposable) with reservoir and connecting tubing in infant, child and adult sizes
Nasogastric tubes of various sizes
Bulb syringes

Circulation
Intravenous catheters: 12, 16, 18, 22 and 24 gauge
Intraosseous needles: 15 or 18 gauge
Isotonic crystaloid IV solutions (normal saline and lactated ringers)
IV Set up kits: tape, alcohol, betadine, armboard, tourniquet and IV tubings
Syringes and needles
Sphygmomanometer
Cardiac Monitor / Defibrillator
Thermometer: hypothermia
Blankets

Emergency Transport Issues

The emergent patient may arrive at the rural clinic in a private vehicle. Furthermore, the patient may have driven himself or herself to the clinic. Transport to definitive and possibly, intensive care will need to be arranged. This may involve private vehicle and driver or ground ambulance or air ambulance. Geographical and weather considerations, methods of communication, and availability of transportation alternatives become factors in the transport of patients (Yawn et al., 1994).

Expedient transport of a patient with health needs requiring emergency interventions is vital. Planning for these situations will allow coordinated efforts of the FNP and clinic staff. Preparation for managing patients with emergent health needs involves the entire clinic staff. Roles must be defined to assign telephone or radio communications with ambulances or other outside agencies, copying medical records, assisting in completion of the transfer worksheet, in addition to providing basic, technical support for the FNP and patient.

The certification level of EMS providers must be considered when arranging local ambulance transport of

patients from the rural clinic. Consequently, patients requiring advanced life support measures, which includes airway maintenance with an endotracheal tube, intravenous lines, or cardiac monitoring require ambulance personnel with ALS certification (Barton, 1999; Rosenblatt & Moscovice, 1982; Rousch, 1989; Straub & Walzer,1992). Road conditions for ground transport may impact decisions. The weather and time of day should be taken into consideration for air transport (Newberry, 1998; Rosenblatt & Moscovice, 1982; Roush, 1989; Worsing, 1993).

Prior arrangements for air ambulance services may be required. Weather, pre-designated, and well-lit landing zones for rotor wing ambulances must be considered. An acceptable airstrip for fixed wing must be available (Barton, 1999; Worsing, 1993). Often rotor wing services will not land after dark unless there is a designated, lighted landing zone. Therefore, contact with the air transport team is necessary during the planning stage for clinic operations.

Ground ambulance transport may be required to assist with landing and transport of the flight crew to and from the aircraft. Therefore, the local ambulance and EMS crew will also need to be dispatched.

Table 3 on page 60 provides a worksheet that can help guide the steps towards successful patient transport and transfer. The worksheet should be started when it is determined that a patient will need transport. The completion of the worksheet should be delegated to clinic staff. This will help assure that appropriate medical records are copied and ready to go with the patient.

Table 3. Patient Transport/Transfer Worksheet

EMS Dispatch: 9-1-1 other _____

Air Ambulance: Rotor: _____ Fixed Wing_____

*Notify local EMS for transport assist: Yes No

Local weather: wind_____clouds_____ precip_____

Law enforcement: Yes No

Patient Information

Age:_____ Sex:_____ Weight:_____

Chief complaint:_____

Mental Status:_____

Family accompany?: Yes_____weight_____

Family contact:Name:_____relationship:_____

Phone:_____

Referral Consults (Name & Phone)

Emergency Department:location:_____ phone:_____

MD:_____ Fax #: _____

Consulting MD:_____ phone:_____ fax:_____

Documentation: (attached)

Transfer Note:_____ Interventions:_____

Past Medical History:_____ Living Will:_____

Labs:_____EKGs:_____ Xrays:_____

Medication list:_____

Destination:_____ Receiving MD:_____

Summary

The preceding review of literature focused on several significant factors that impact the ability of the FNP in the process of providing quality health care to an individual with emergent health care needs. These included health definitions, issues surrounding access to health care, educational preparation of the FNP, physical design and functional organization of the rural clinic, and transport factors.

The manner in which the individual defines health has a direct impact on utilization of health care resources. Social processes or culture influence the individual definitions. The literature review revealed that rural dwellers primarily define health in terms of the ability to work or fulfill role obligations. This idea is influential as decisions are made to seek health care. Delay in seeking care may result in conditions that have progressed and require more extensive interventions for management.

Timely and appropriate access to care is impacted by the individual's definition of health and other factors. Five dimensions of access include availability, accessibility, accommodation, affordability, and

acceptability (NCNR, 1995; Penchansky & Thomas, 1981). The literature shows that personal and cultural beliefs, geography, communication, transportation, and weather influence access to care.

Lack of access has been shown to have a negative impact on health status. The rural FNP can be instrumental in affecting the health status of individuals and communities. It is vital to consider both definitions of health and the interrelationship of access to care in developing the rural clinic.

Educational preparation of the FNP at the Master's level generally does not include all the aspects of care involved in emergency management. The holistic focus of curricula does provide a knowledge base and decision making skills necessary for the FNP to work in various clinical settings. To augment these skills the FNP may take advantage of nationally recognized and widely available continuing education courses that have been reviewed. These included BCLS, NRP, PALS, ENPC, ACLS, ATLS, TNCC, TERN, CATN, and PHTLS. Alternate sources for continuing education, including video and audiotapes, written modules, and the internet are also available. Table 4 summarizes internet sites and may be found in the Appendix.

The mission of the FNP's practice will help guide the focus for continuing education needs. The basic office physical structure and functioning should be considered in terms of management of the inevitable patient with emergent health needs. Planning and preparation for the physical access or layout of the clinic will help expedite emergency care interventions and accommodate ambulance crews. Readily available supplies are essential.

Care of the patient with emergent needs requires preplanning in all aspects of clinic management and physical layout. The key to expedient patient transport is knowledge of the region in which the clinic is located and how to access transport resources and services. Therefore, it is important to have plans for referral of the emergent patient for definitive care. Referral physicians must be contacted prior to arranging transport. Established referral patterns and plans will guide the process.

CHAPTER 3

METHODOLOGY

Project Design

This professional project was designed to influence the quality of care and health outcomes of patients with emergent health needs that present to the rural FNP clinic. The objectives of this project were designed to assist the FNP in preparing to manage emergent health needs in the rural clinic and assist in the expedient transport to definitive care.

The intent of this professional project was to provide an introduction for the FNP with limited formal education or experience in the specialty of emergency care. The educational offerings reviewed were selected because of the specific focus of the program, eg. either patient age-specific, or specific to the focus of identified health needs. The courses were also chosen for review because most are readily available throughout all regions of the country. The exception to this is the TERN program. Transport issues were included because of the impact that the rural environment has in the management and treatment

of emergent health needs. The transport section also discussed issues to be considered in the initial development and design of the rural clinic.

Bigbee (1992) advocated addressing emergency services in frontier areas for the nurse practitioner. Nurse practitioners are encouraged "to develop a strong relationship with Emergency Medical Services personnel…Networking with clinical facilities for complex tertiary and in-patient care outside of the frontier areas, coordinating support services (such as transportation), and providing well integrated follow-up services are equally critical functions for the NP" (p. 64). The same thoughts were addressed by Davis and Droes (1993). These authors' works guided development of the vision for this professional project.

Literature selected for review was pertinent to the topics of access to care and the health definitions while considering the influence of rural environment and culture. Educational preparation of the FNP was examined in relation to general graduate-level preparation and continued learning needs. The review of office preparation and patient transport considerations were completed to provide a holistic perspective on health care management of

individuals with emergent health needs.

The literature review was guided by a search of main mesh headings, which included access to care, rural, rural health, health definitions, family nurse practitioner, education, continuing education, rural emergency care, office medical emergencies, and rural health services. The reference lists contained in the publications were scanned for relevant documents which, were not identified by the search of the major mesh headings.

The literature review revealed the need for FNPs to participate in continuing education that advance clinical knowledge and skills for specialty roles. Practice management strategies for the FNP role, particularly in consideration of the rural clinic setting were also discussed. These needs were confirmed during informal interviews conducted with four rural FNPs in western Montana, during the course of this project.

These interviews of the FNPs were conducted to assist in guiding the literature review, as well as to validate findings from the reviews. The interviews were conducted by telephone or in person. A general series of questions guided the conversations, which included the following items.

- Describe your practice in terms of the geographical setting and distance to the nearest hospital or emergency department.
- What type of emergency management education or clinical preceptorships did you receive in your FNP program?
- What type of prior emergency care experience did you have prior to working in this rural clinic?
- Do you maintain any certification in ACLS or PALS, or similar courses?
- How do you meet your continuing education needs?
- What level of involvement do you maintain with the local EMS providers?
- What advice would you have for a FNP thinking about entering practice in a rural clinic?
- Are there any specific situations that come to mind when the topic of emergency patient in the clinic is discussed? Do you mind sharing an example?
-

Analysis of Data

Although this professional project was not a research

study, it did prove to be an exploration. Relevant literature was reviewed, summarized, and provided a basis for the formation of recommendations. The interviews with FNPs validated findings of the literature review and offered examples of personal experiences of the rural FNPs, which were included for the emphasis of ideas.

Recommendations for the continuing education courses developed as a outcome of the literature review, course content, relative availability of courses, and applicability of the course to the rural clinic and project purpose and objectives. The recommendations regarding office preparation and patient transport planning were developed from the literature reviews, interviews, and personal experience.

Discussion of Human Subjects

This professional project was not reviewed by the Montana State University, College of Nursing, Human Subjects Committee. The primary reason for this was that the intent of the project was not research. The informal interviews with FNP's were to guide the design and validate findings. Interviewees were not identified within the

project report to maintain confidentiality within each of the small, rural communities involved.

CHAPTER 4

PROJECT OUTCOMES

Family nurse practitioners may be working in rural clinics that are the only source of health care for many miles. Rural cultural and geographical factors must be considered in planning the rural health clinic. The purpose of this professional project was to influence the quality of care and health outcomes of patients with emergent health needs that present to the FNP's rural clinic.

Evaluation of results

The Neuman System's model provided the conceptual framework for the project. The premise of this model is that through the establishment of a solid structural framework or clinic management the stability of the organization will be maintained. If lines of defense and resistance are developed, some of which include continuing education, community involvement, professional networking, and referral channels are established, the stability of the

clinic to function during times of stress or crisis will be maintained. This model provided a visual and functional format from which to develop objectives, guide the literature review, FNP interviews, and guide the development of recommendations.

One major consistency in the literature review was quite apparent. There is a need for emergency care in rural areas and it is valued among rural dwellers. This fact was discussed extensively in nursing, medical, and prehospital literature. The education and coordination between the disciplines for the provision of emergency care in rural areas was the point of divergence.

The review of nursing literature revealed a distinct lack of publications related to the care of emergent health needs in the rural clinic. Bigbee (1992) advocated for nurse practitioners to "be involved in and informed about frontier health care development, so they can provide leadership for the innovative practice models needed to meet the health care needs of frontier residents" (p. 47). Davis and Droes (1993) briefly addressed the need for community health nurses to have education and experience in emergency care but did not specifically address APRNs.

The coordination among the various health professions

for continuing education is lacking. This is particularly apparent when considering trauma care. Utilizing ATLS as an example; nurse practitioners may participate in the course, but they are not awarded certificates of completion. Prehospital courses are targeted at EMS providers for the management of prehospital care. Courses for nurses in emergency care focus on the care settings within the hospital or emergency department environment and target RNs. The content of these courses is basic and does not provide the FNP with enough knowledge as the primary healthcare provider to manage the care for the emergent client.

Limitations

The vision and mission of the rural clinic may differentiate an advanced practice nurse's holistic focus from a medical model of care. However, when an urgent or emergent situation presents, all health care providers should address the management of airway, breathing, and circulation. Advanced life support management of the ABC's should be the same whether provided by APRN or physician.

The extensive review of the literature verified the

fact that there is a paucity of published material about the FNP's role in providing emergency care in the rural health clinic. This lack of literature and research directly affected the course of the project.

The continuing education courses reviewed were limited primarily to widely recognized, national, and readily available courses, with the exception of the TERN course. These courses provide a foundation for knowledge and skills. The recertification requirements assist the FNP to maintain skills and update knowledge according to current research within the field of emergency management.

The Emergency Nursing Association (ENA) has begun to address the definition of emergency care in the episodic care setting. A work group to address the issue of APRNs employed in episodic care centers is currently being organized. The actual problem on which this project focused has not yet been specifically addressed by ENA, nor have health clinics in frontier areas. Because this project focused on FNPs practicing in rural clinics the conclusions and recommendations can not be generalized to all APRNs.

Summary

APRNs are employed in underserved and rural areas. Rural FNPs provide a critical link for individuals to access cost-effective, quality health care in a timely and appropriate manner. Their roles may include primary care in rural clinics as well as emergency department coverage in rural hospitals. Educational preparation for the role in the management of emergent health needs has not been adequately addressed within most graduate curricula.

There is a need to promote advanced nursing education and provide appropriate education and continuing education for FNPs to be adequately prepared to provide expert care in the rural clinic. This education needs to begin within the graduate curricula. The theoretical, didactic, and clinical aspects of graduate training should address the provision for health care in the rural clinic setting.

Numerous researchers have addressed concerns about the adequacy and appropriateness of rural emergency care. Questions arise in reference to the actual educational level required of health care providers employed in rural areas. Are the primary care providers employed in rural areas receiving formal education and continuing education

opportunities that enable them to provide adequate care to individuals with emergent health needs?

Advanced continuing educational preparation is available with specific age-related or specialty care foci. The courses provide a knowledge base adequate for the FNP to provide primary care and emergency health interventions in the rural clinic. Selected courses were summarized in Table 1, which can be found on pages 53-55.

According to the ENA, the standard of practice for APRNs in emergency nursing includes criteria that the advanced practice nurse is "clinically active in the specialty area. ENA supports the establishment of standards and clear criteria for credentialing the advanced practice nurse in the emergency care setting" (ENA, 1998a). This professional project has taken a slightly different focus for emergency care since it has discussed the rural clinic setting.

The informal interviews validated ideas for the types of formal or continuing education that would enhance the FNP's effectiveness in the rural clinic environment. The FNPs interviewed as a component of this professional project were all employed at rural clinics in western Montana. They all had experience in emergency care as

Registered Nurses. The opinion was unanimous that involvement with the local EMS providers was important to the FNPs clinical practice.

Implications

Family nurse practitioner programs were developed to meet the health needs of medically underserved populations. The scope of practice of a FNP allows independent practice, health promotional and preventive interventions, management of minor acute and chronic illnesses, and coordination of health care services. These aspects make them a cost-effective alternative in rural areas. A recently published study compared health outcomes of patients treated by either NPs or physicians. The authors found comparable outcomes among the two groups of providers when the "nurse practitioners had the same authority, responsibilities, productivity and administrative requirements and patient population" (Mundinger, et al., 2000, p. 59-68).

Admission criteria for rural FNP programs may need to specifically include nursing experience in emergency care, critical care, and possibly, prehospital care (Cole & Ramirez, 1997; Fitzsimmons, Hadley, & Shively, 1999). The

recommendation has also been voiced that nurses in the rural environment need to be generalists, capable of practicing in all areas of nursing (Berger, et al. 1996; Bigbee, 1992; Davis & Droes, 1993; Ray & Hardin, 1995).

Barriers to rural practice have been identified in the literature and should be addressed by community task forces as they search for a health care provider. The factors that make a rural area the ideal environment for some people may be exactly the wrong factors for others. Economic forces within rural areas may make them less desirable to FNP and other health professionals, who may be entering into practice with substantial educational debts, unquestionably desiring higher salaries than they may earn in rural areas.

Family nurse practitioners have been identified as a

> "good match with rural communities--they have met the health care needs of rural populations and performed effectively in rural systems of care. They are cost-effective, committed to medically underserved populations, and providers of quality care" (Rural Information Center Health Service, 1994, p. 1).

Community education campaigns provide residents with an understanding of the FNP's scope of practice and can impact actual recruitment efforts. Community involvement in recruitment of health care providers contributes to acceptability and utilization of health care within their community (Bergeron, Neuman, & Kinsey, 1999; Cordes, Van

der Sluis, Lamphear, & Hoffman, 1999; NHRA, 1999). Increased utilization of the local FNP will encourage professional retention in the rural clinic. In light of this, active recruitment of a FNP maybe an excellent option for rural communities.

Finally, to adequately examine issues related to rural FNPs to attaining and maintaining knowledge and skills for the management of emergency health needs in the rural clinic, formal research investigations should be conducted. The focus of these studies should be on rural and/or frontier areas. Conclusions can then be drawn and changes made within FNP curricula that are based on actual data. Several potential research topics that related to FNPs and rural practice include:

- the effect of clinical experience of students prior to admission to FNP programs
- the effects of the setting of clinical practicums during graduate nursing education
- the length of time necessary for the graduate FNP to move from novice to expert level and feel comfortable enough to be employed in a rural clinic setting
- the variation in the amount of continuing education the FNP completes compared to what is required by the

national accreditation bodies

- the types of continuing education the FNP seeks in the rural setting
- are there differences between continuing education completed by rural FNPs as compared to urban FNPs
- methods that FNPs utilize to maintain skills in emergency care when these are used infrequently
- the level of involvement with community EMS

REFERENCES CITED

Adams, A., Pelletier, D., Duffield, C., Nagy, S., Crisp, J., Mitten-Lewis, S., & Murphy, J. (1997). Determining and discerning expert practice: A review of literature. Clinical Nurse Specialist, 11(5), 217-222.

Afifi, L. (1997). Increasing access to health care: The indigenous health worker option. In S. Moorhead (Ed.), Nursing roles: Evolving or recycled? (pp. 90-103). Thousand Oaks, CA: Sage.

American Academy of Nurse Practitioners. (1998). Standards of practice. [On-Line]. Available: http://aanp.org/standard.htm

American Academy of Nurse Practitioners. (1998). Scope of practice for nurse practitioners. [On-Line]. Available: http://www.aanp.org/scopeof.htm

American Association of Colleges of Nursing. (1999). Position statement: Certification and regulation of advanced practice nurses. Journal of Professional Nursing, 15(2), 130-132.

American Association of Colleges of Nursing. (1999). Certification and regulation of advanced practice nurses. [On-Line]. Available: http://www.aacn.nche.edu/Publications/positions/cerreg.htm

American College of Surgeons. (1993). Advanced trauma life support. Chicago: American College of Surgeons

American Heart Association. (1997). Advanced cardiac life support. Dallas, TX: American Heart Association.

American Heart Association. (1998). Basic life support: Instructor's manual. Dallas, TX: American Heart Association.

American Heart Association/American Academy of Pediatrics Neonatal Resuscitation Program Steering Committee. (1995). Textbook of Neonatal Resuscitation. Dallas, TX: American Heart Association.

American National Red Cross. (1993). First aid and CPR. Hanover, MD: Staywell.

American Nurses Association. (1996). Scope and standards of advanced practice registered nursing. Washington D.C.: American Nurses Publishing.

Bartlomé, J., Bartlomé, P., & Bradham, D. (1992). Self-care and illness response behaviors in a frontier area. The Journal of Rural Health, 8(1), 4-12.

Barton, C. (1999). Management of office emergencies. New York: McGraw Hill.

Beck, R., Jijon, C., & Edwards, J. (1996). The relationships among gender, perceived financial barriers to care, and health status in rural population. The Journal of Rural Health, 12(3), 188-195.

Bell, R., Krantz, B., & Weigelt, J. (1999). ATLS: A foundation for trauma training. Annals of Emergency Medicine, 34(2), 233-237.

Bellack, J., Graber, D., O'Neil, E., Musham, C., & Lancaster, C. (1999). Curriculum trends in nurse practitioner programs: Current and ideal. Journal of Professional Nursing, 15(1), 15-27.

Ben-Abraham, R., Stein, M., Shemer, J., Kluger, Y., Barzilay, Z., & Paret, G. (1999). Advanced trauma life support (ATLS) courses: Should training be refocused towards rural physicians? [On-Line]. European Journal of Emergency Medicine, 6(2), 111-114. Abstract from: National Library of Medicine, Internet Grateful Med: MED/99390654.

Benner, P. (1982). From novice to expert. American Journal of Nursing, March, 402-407.

Berger, A., Eilers, J., Pattrin, L., Rolf-Fixley, M., Pfeifer, B., Rogge, J., Wheeler, L., Bergstrom, N., & Heck, C. (1996). Advance practice roles for nurses in tomorrow's healthcare systems. Clinical Nurse Specialist, 10(5), 250-255.

Bergernon, J., Neuman, K., & Kinsey, J. (1999). Do advanced practice nurses and physician assistants benefit

small rural hospitals. The Journal of Rural Health, 15(2), 219-232.

Bigbee, J. (1992). Frontier Areas: Opportunities for NP's primary care services. Nurse Practitioner, 17(9), 47-60.

Bigbee, J. (1993). The uniqueness of rural nursing. In J. Anderson (Ed.), Nursing Clinics of North America, 28(1), 131-143.

Bliss, A., & Cohen E. (Eds.). (1977). The new health professionals: Nurse practitioners and physician's assistants. Germantown, MD: Aspen.

Bryant, J. (1975). Health care trends and nursing roles. In M. Leininger (Ed.), Barriers and facilitators to quality health care (pp. 17-28). Philadelphia: F.A. Davis.

Buehler, J., Malone, M., & Majerus, J. (1999) Patterns of responses to symptoms in rural residents: The symptom-action-time-line process. In H. Lee (Ed.), Conceptual basis for rural nursing (pp. 318 - 328). New York: Springer.

Burkell, C., & Wood, H. (1999). Make the right call. Fire Chief. March, 42-47.

Bushy, A. (Ed.) (1991). Rural nursing: Volume 1. Newbury Park, CA: Sage.

Bushy, A. (Ed.) (1991). Rural nursing: Volume 2. Newbury Park, CA: Sage.

Burye, M., Gobetti, J., & Plezia, R. (1998). A basic approach to management of medical emergencies in the dental office. Journal of the Michigan Dental Association, 80(1), 34-43.

Chafey, K., Sullivan, T., & Shannon, A. (1999). Self-reliance: Characterization of their own autonomy by elderly rural women. In H. Lee (Ed.), Conceptual basis for rural nursing (pp. 156-177). New York: Springer.

Chameides, L., Hazinski, M. (1997). Pediatric advanced life support. Dallas, TX: American Heart Association.

Chrisman, N. (1977). The health seeking process: An approach to the natural history of illness. Culture, Medicine and Psychiatry, 1, 351-377.

Chrisman, N., & Kleinman, A. (1983). Popular health care, social networks, and cultural meanings: The orientation of medical anthropology. In D. Mechanic (Ed.), Handbook of health, health care, and the health professions (pp. 569-590). New York: Free Press.

Cole, F., & Ramirez, E. (1997). The emergency nurse practitioner: An educational model. Journal of Emergency Nursing, 23(2), 112-115.

Collicott, P. (1992). Advanced trauma life support (ATLS): Past, present, future: 16th Stone lecture, American Trauma Society. The Journal of Trauma, 33(5), 749-753.

Collicott, P., & Hughes, I. (1980). Training in advanced trauma life support. Journal of the American Medical Association, 243 (11), 1156-1159.

Corocan-Perry, S., & Narayan, S. (1997). Clinical decision making. Advanced practice nursing. New York: Springer.

Cordes, S., Van der Sluis, E., Lamphear, C., & Hoffman, J. (1999). Rural hospitals and the local economy: A needed extension and refinement of existing empirical research. Journal of Rural Health, 15(2), 189-201.

Coward, R.T., McLaughlin, D.K., Duncan, R.P., & Bull, C.N. (1994). An overview of health and aging in rural America. In R. Coward, C. Bull, G. Kukulka, & J. Galliher (Eds.), Health services for Rural Elders (pp. 1-32). New York: Springer.

Critical Illness and Trauma Foundation, Inc. (1994, January). Rural preventable mortality and protocol compliance study. Final Report: Rural Trauma Grant (BRH1J0001-01-0). Big Timber, MT: Author.

Dacey, M. (1999). Managing the unstable patient. The first 10 minutes often set the course. Postgraduate Medicine, 105(4), 69-72, 75, 78.

Davis, D., & Droes, N. (1993). Community health nursing in rural and frontier counties. In J. Anderson (Eds.), Nursing Clinics of North America, 28(1), 159-169.

DeFriese, G., & Ricketts, T. (1989). Primary health care in rural areas: An agenda for research. Health Services Research, 23(6), 931-974.

Donabedian, A. (1988). The quality of care: How can it be assessed? Journal of the American Medical Association, 260(12), 1743-1748.

Doty, R. (1996). Alternative theoretical perspectives: Essential knowledge for the advanced practice nurse in the promotion of rural family health. Clinical Nurse Specialist, 10(5), 217-220.

Douglass, L. (1996). The effective nurse: Leader and manager. St. Louis, MO: Mosby.

Edelman, C., & Mandle, C. (1998). Health promotion throughout the lifespan. St. Louis, MO: Mosby.

Elison, G. (1986). Frontier areas: Problems for delivery of health care services. Rural Health Care, 8(5), 1-3.

Emergency Nurses Association. (1993). Emergency Nursing Pediatric Course. Park Ridge, IL: Emergency Nursing Association.

Emergency Nurses Association. (1998). Advanced practice in emergency nursing: Position statement. [On-Line]. Available: http://www.ena.org/services/posistate/data/advprac.htm

Emergency Nurses Association. (1998). Graduate nursing programs offering emergency or trauma-related nursing tracks. Journal of Emergency Nursing, 24(6), 47A.

Emergency Nurses Association. (1998). Integration of emergency nursing concepts in nursing curricula: Position statement. [On-Line]. Available: http://www.ena.org/services/posistate/data/inteme.htm.

Emergency Nurses Association. (1999). 1999 General assembly: Resolution 99-02. [On-Line]. Available: http://www.ena.org/members/ga/bylawsres99-5.htm

Emergency Nurses Association. (1999). Course in Advanced Trauma Nursing. [On-Line]. Available: http://www.ena.org/services/continue/index.htm

Emergency Nurses Association. (1999). Trauma Nurse Core Curriculum. [On-Line]. Available: http://www.ena.org/services/continue/index.htm

Emery, R., & Guttengerg, S. (1999). Management priorities and treatment strategies for medical emergencies in the dental office. Dental Clinics of North America, 43(3), 401-419.

Espisito, T., Sanndal, N., Hansen, J., & Reynolds, S. (1995). Analysis of preventable trauma deaths and inappropriate trauma care in a rural state. The Journal of Trauma: Injury, Infection and Critical Care, 39(5), 955-962.

Fitzsimmons, L., Hadley, S., & Shively, M. (1999). The education of advanced practice nurses: A contemporary approach. Critical Care Nursing Quarterly. February 1999, pp. 77-84.

Flores, G., & Weinstock, D. (1996). The preparedness of pediatricians for emergencies in the office. What is broken, should we care, and how can we fix it. [On-Line] Archives of Pediatric Adolescent Medicine, 150(3), 249-256. Abstract from: National Library of Medicine: Internet Grateful Med: MED/96183689

Gesler, W., & Ricketts, T. (1992). Health in rural North America: The geography of health care services and delivery. New Brunswick, NJ: Rutgers University Press.

Goins, T., & Mitchell, J. (1999). Health-related quality of life: Does rurality matter? The Journal of Rural Health, 15 (2), 147-156.

Hassinger, E., & Hobbs, D. (1992). Rural society - The environment of rural health care. In L. Straub & N. Walzer

(Eds.), Rural health: Innovation in a changing environment (pp. 178-190). Westport, CN: Prague.

Hensen, D., Sadler, T., & Walton, S. (1999). Distance. In H. Lee (Ed.), Conceptual basis for rural nursing (pp. 51-59). New York: Springer.

Hewitt, M. (1992). Defining "rural" areas: Impact on health care policy and research. In W. Gesler, & T. Ricketts (Eds.), Health in rural North America: The geography of health care services and delivery (pp. 25-54). New Brunswick, NJ: Rutgers University Press.

Hicks, L. (1992). Access and utilization: Special populations - special needs. In L. Straub & N. Walzer (Eds.), Rural health care: Innovation in a changing environment (pp. 20-34). Westport, CN: Praeger.

Hughes, G., & Price, A. (1999). ATLS: Are we training the wrong people? [On-Line]. Australian and New Zealand Journal of Surgery, 69(8), 567-568. Abstract from: National Library of Medicine: Internet Grateful Med: MED/99399885

Institute of Medicine. (1993). Access to health care in America. Washington DC: National Academy Press.

Jabbour, M., Osmond, M., & Klassen, T. (1996). Life support courses: Are they effective? Annals of Emergency Medicine, 28(6), 690-698.

Johnson, E. (1996). A nurse practitioner's experience in bush Alaska. Journal of Emergency Nursing, 22(6), 509-510.

Jones, J., & Jones, K. (1998). Nurse practitioner education: Living it and learning it. Journal of Nursing Education, 37(4), 176-178.

Kelley, J., & Sanders, N. (1995). A systems approach to the health of nursing and health care organizations. In B. Neuman, (Ed.), The Neuman systems model (pp. 347-364). Norwalk, CN: Appleton & Lange.

Koerner, J., & Burgess, C. (1997). Nursing's role and functions in a seamless continuum of care. In S. Moorhead

(Ed.), Nursing roles: Evolving or recycled (pp. 1-14). Thousand Oaks, CA: Sage.

Krout, J. (1986). The aged in rural America. New York: Greenwood.

Lee, H. (Ed.). (1999). Conceptual basis for rural nursing. New York: Springer.

Leebov, W. (1988). Service excellence. U.S.A.: American Hospital Association.

Long, K. (1999). The concept of health: Rural perspectives. In H. Lee (Ed.), Conceptual basis for rural nursing (pp. 211-222). New York: Springer.

Long, K., & Weinert, C. (1999). Rural nursing: Developing the theory base. In H. Lee (Ed.), Conceptual basis for rural nursing (pp. 3-18). New York: Springer.

McNeely, G., & Shreffler, M. (1999) Familiarity. In H. Lee (Ed.), Conceptual basis for rural nursing (pp. 89-101). New York: Springer.

Montana Area Health Education Center (1999). Federal & state designated health professional shortage area (HSPAs), medically underserved areas (MUAs) and medically underserved populations (MUPs) in Montana. [On-Line]. Available: http://ahec.msu.montana.edu/mtahec/Hspa.htm

Montana Department of Health & Environmental Sciences. (1993). Trauma education for rural nurses. Helena, MT: Authors.

Montana Department of Public Health & Human Services (1999). Access to health care: Montana goals and objectives. [On-Line]. Available: http://www.dphhs.state.mt.us/hpsd/pubheal/healplan/goals/access.htm

Montana Department of Public Health & Human Services. (1995). Health assessment and resource development: County Health Profile. Helena, MT: Department of Public Health & Human Services.

Montana Office Of Rural Health (1999). Montana statistics. [On-Line]. Available: http://healthinfo.montana.edu/msu/Mtstats.html

Montana State Board of Nursing. (1998). Statutes and Rules Relating to Nursing. Helena, MT: State of Montana, Department of Commerce.

Morgan, W., & Trolinger, J. (1994). The clinical education of primary care nurse practitioner students. Nurse Practitioner, 19(4), 62-66.

Mott, F., & Roemer, M., (1948). Rural health and medical care. New York: McGraw-Hill.

Mundinger, M., Kane, R., Lenz, E., Totten, A., Tsai, W., Cleary, P., Friedewald, W., Siu, A., & Shelanski, M. (2000). Primary care outcomes in patients treated by nurse practitioners or physicians: A randomized trial. Journal of the American Medical Association, 283(1), 59-68.

National Association for Emergency Medical Technicians. (1994). Pre-hospital trauma life support. St. Louis, MO: Mosby.

National Center for Nursing Research (1995). Rural America: Challenges and opportunities. [On-line]. Available: http://www.nih.gov/ninr/vol7/chapter2.htm

National League for Nursing. (1999). A vision for nursing education. [On-Line]. Available: http://www.nln.org/infor-vision.htm

National Organization of Nurse Practitioner Faculties. (1997). Criteria for evaluation of nurse practitioner programs, 1997. [On-Line]. Available: http:www.nonpf.com/

National Safety Council. (1999). National center for health statistics: Accident facts. [On-Line]. Available: http://commerce.mt.gov/ceic/rankings/rank21.txt

Neuman, B. (1995). The Neuman systems model. East Norwalk, VA: Appleton & Lange.

Newberry, L. (Ed.). (1998). Emergency nursing: Principles and practice. St. Louis, MO: Mosby.

Norris, L. (1994). Early recognition limits in in-office emergencies. Journal of the Massachusetts Dental Society, 43(3), 19-23.

Nycz, G., & Schmelzer, J. (1992). Geographic variation and health expenditures. In W. Gesler & T. Ricketts (Eds.), Health in rural North America: The geography of health care services and delivery (pp. 249 - 274). New Brunswick, NJ: Rutgers University Press.

Office of Management and Budget. (1983). Metropolitan statistical areas. Washington DC: Executive Office of the President. (NTIS No. PB83-218891).

Office of Technology Assessment. (1990). Health care in rural America. (OTA-H-434) Washington, DC: U.S. Government Printing Office.

Penchansky, D., & Thomas, W. (1981). The concept of access: Definition and relationship to consumer satisfaction. Medical Care, 19(2), 127-140.

Ramsbottom-Lucier, M., Emmett, K., Rich. E., & Wilson, J. (1996). Hills, ridges, mountains, and roads: Geographical factors and access to care in rural Kentucky. Journal of Rural Health, 12(3), 386-394.

Ray, G., & Hardin, S. (1995). Advanced practice nursing. Nursing Management, 26(2), 45-47.

Roemer, M. (1976). Rural health. St. Louis: Mosby.

Rosenblatt, R., Moscovice, I. (1982). Rural health care. NY: John Wiley & Sons.

Rosenow, E. (1999). The challenge of becoming a distinguished clinician. Mayo Clinic Procedures, 74, 635-637.

Roush, W. (Ed.). (1989). Principles of EMS systems. Dallas, TX: American College of Surgeons.

Rural Information Center Health Service. (1995). Nurse practitioners, physician assistants, and certified nurse midwives: Primary care providers in rural areas. [On-Line]. Available: http://www.nal.usda.gov/ric/richs/

Rural Sociological Society Task Force on Persistent Rural Poverty. (1993). Persistent poverty in rural America. Boulder, CO: Westview Press.

Rutledge, R., Ricketts, T., & Bell, E. (1992). Emergency medical services in rural areas. In W. Gesler & T. Ricketts (Eds.), Health in rural North America: The geography of health care services and delivery (pp. 226-245). New Brunswick, NJ: Rutgers University Press.

Sanning Shea, S., & Selfridge-Thomas, J. (1997). The ED nurse practitioner: Pearls and pitfalls of role transition and development. Journal of Emergency Nursing, 23(3), 235-237.

Schexnayder, S., & Schnexnayder, R. (1996). 911 in your office: Preparations to keep emergencies from becoming catastrophies. Pediatric Annals, 25(12), 665-669.

Schneider, D., & Greenberg, M. (1992). Death rates in rural America: 1939-1981. In W. Gesler, & T. Ricketts (Eds.), Health in rural North America: The geography of health care services and delivery (pp. 55-68). New Brunswick, NJ: Rutgers University Press.

Smith, J. (1981). The idea of health: A philosophical inquiry. Advances in Nursing Science, 3, 43-50.

St. Clair, M., Pickard, M., & Harlow, K. (1991). Continuing education for self-actualization: Building a plan for rural nurses. In A. Bushy (Ed.), Rural Nursing: Vol. 2 (pp. 91-100). Newbury Park, CA: Sage.

Straub, L., & Walzer, N. (1992). Rural health care: Innovation in a changing environment. Westport, CN: Praeger.

U.S. Bureau of the Census. (1993). Statistical abstract of the United States: 1993. Washington, DC: Government Printing Office.

U.S. Bureau of the Census. (1999). Statistical abstract of the United States and poverty in the United States (Report P60-207). [On-Line]. Available: http://commerce.mt.gov/ceic/rankings/rank19.txt

U.S. Department of Health and Human Services. (1990). States' assessment of health personnel shortages: Issues and concerns. (DHHS Publication No. HRS-P-OD 90-6). Washington, DC: Public Health Service

Vessey, J., & Morrison, C. (1997). A missed opportunity: Master's education for certified nurse practitioners. Journal of Professional Nursing, 13 (5), 288-293.

Watts, P., Dinger, M., Baldwin, K., Sisk, R., Brockschmidt, B., & McCubbin, J. (1999). Accessibility and perceived value of health services in five western Illinois rural communities. Journal of Community Health, 24(2), 147-57.

Weinert, C., & Boik, R. (1999). MSU rurality index: Development and evaluation. In H. Lee (Ed.), Conceptual basis for rural nursing (pp. 449-472). New York: Springer.

Weinert, C., & Burman, M. (1994). Rural health and health-seeking behaviors. In J. Fitzpatrick, S. & Stevenson (Eds.), Annual Review of Nursing Research , 12 (65 -92), New York: Springer.

Williams, M., Ebrite, F., & Redford, L. (1991). In-home services for elders in rural America. Kansas City, MO: National Resource Center for Rural Elderly.

Wilson, D. (1995). Concerns about future NP education. Nurse Practitioner, 20(8), 13-15.

Wirtz, E., Lee, H., & Running, A. (1999). The lived experience of hardiness in rural men and women. In H. Lee (Ed.), Conceptual basis for rural nursing (pp. 257-274). New York: Springer.

Worsing, R. (Ed.) (1993). Rural rescue and emergency care. Rosemont, IL: American Academy of Orthopaedic Surgeons.

Yawn, B., Bushy, A., & Yawn, R. (Eds.). (1994). Exploring rural medicine: Current issues and concepts. Thousand Oaks, CA: Sage.

APPENDIX

FAMILY NURSE PRACTITITONER PREPARATION FOR MANAGING EMERGENT HEALTH NEEDS IN THE RURAL CLINIC

Table 4. Web Sites for Continuing Education

WEB SITES	CONTENT
http://www.ena.org/	Emergency nursing association homepage, ENPC, TNCC, CATN
http://ENW.org/	Emergency Nursing World homepage. Practice based resource for nurses. Excellent links.
http://ENW.org/EmNsgPrograms.ems	University level educational programs worldwide in emergency nursing
http://www.enw.org/ATLS.htm	Emergency Nursing World, review of changes to the ATLS curriculum
http://www.springnet.com/	Resources for nursing and health professional, managers, Nurse Practitioners and students
http://www.nursinglife.com/	Resources for nursing professionals
http://www.traumanursesoc.org/	Society for Trauma Nurses homepage. Professional nursing organization which spans the continuum of trauma care
http://www.nurse-beat.com/	Cardiac nursing electronic journal
http://www.facs.org/	American College of Surgeons homepage. ATLS
http://ruralnet.marshall.edu/	Marshall University School of Medicine rural health resources. Rural health resources links
http://www.hcs.edu/som/crem/	West Virginia University Center for Rural Emergency Medicine. Lecture series on-line. Injury prevention. Links. On-line CPR refresher
http://www.jersey.net/~hija/EMS_Nsg_Med_links.htm	Continuing educational links to health care and EMS…A to Z. Excellent CE links.
http://www.ncemi.org/	National Center for Emergency Medicine Informatics. Emergency medicine on the web. On-line information Resource
http://www.saem.org/	Society for Academic Emergency Medicine. Educational resource listing
http://www.emgint.org/	Emergency International homepage. Mission is to improve emergency care throughout the world

WEB SITES	CONTENT
http://www.emedicine.com/emerg/index.shtml	Physician peer-reviewed material, continually updated for the medical profession and public
http://www.embbs.com/	Educational resources for emergency and primary health care providers. Excellent resource
http://oac3.hsc.uth.tmc.edu/pub_affairs/news/er.html	University of Texas-Houston Health Science Center describes roles of the Emergency Nurse Practitioner in trauma centers, rural practice
http://www.home.earthlink.net/~codern2/	A personal web site with a tremendous number of links to other emergency and medical sites
http://www.eminet.com/	On-line continuing education for all levels of prehospital providers. Accredited CE.
http://www.jems.com/	Journal of Emergency Medical System for EMS, fire, rescue and public safety community. Education, books, videos, services, journals
http://www.ccspublishing.com/j_fammed.htm	Journal of current medical therapeutics for family medicine
http://www.rnweb.com/	An on-line community for nurses, nursing topics
http://members.aol.com/aclsnet/index.htm	Information to help prepare for ACLS courses
http://www.learncpr.org/	Educational information for CPR. Certification is not available on-line
http://www.americanheart.org/	American Heart Association homepage
http://www.acep.org/	American College of Emergency Physicians homepage
http://aap.org/	American Association of Pediatricians homepage. Professional education, links
http://www.redcross.org/	Information about BLS, CPR
http://caep.ca/caep/plsql/get?page=index3.html	Canadian Association of Emergency Physicians, ER work and environment depicted by alphabet
http://www.virtualer.com/	Emergency medical tutorials, clinical and radiological images, medical library
http://www.medconnect.com/	CME links. On-line medical journals
http://www.Mdchoice.com/	Interactive education. ACLS, PALS simulators
http://www.landesslezak.com/cgi-bin/start.cgi/cmeu/index.htm	CME unlimited. Nonprofit division of audio-digest foundation. Subscription CME

WEB SITES	CONTENT
http://oac.hsc.uth.tmc.edu/uth_orgs/emer_med/links.html	University of Texas. Link page. Excellent site
http://www.ems-c.org/	Office of Emergency Medical Services for Children homepage
http://www.emed.org/	Emergency medicine resources
http://www.nal.usda.gov.ric/richs	Publications, organizations, funding and internet resources for EMS providers