

PREPARATION OF FAMILY NURSE PRACTITIONERS AT THE UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES FOR THEIR ROLE IN HUMANITARIAN ASSISTANCE OPERATIONS

Susan J. Lee

APPROVED:

Eugene Lewis 25 January 2001  
Chair Date  
Catherine M. Schupp 25 January 2001  
Member Date  
Margaret Sawyer Lt Col 25 Jan 2001  
Member Date

APPROVED:

Fayyaz M. Abdellah 11 April 01  
F.G. Abdellah, EdD, ScD, RN, FAAN, Dean Date

## **DISCLAIMER STATEMENT**

### **Department of Defense**

This work was supported by the Uniformed Services University of the Health Sciences Protocol No. TO61BE-01. The opinions or assertions contained herein are the private opinions of the author and are not to be construed as official or reflecting the views of the Department of Defense or the Uniformed Services University of the Health Sciences.

## **COPYRIGHT STATEMENT**

The author hereby certifies that the use of any copyrighted material in the thesis entitled:

**PREPARATION OF FAMILY NURSE PRACTITIONERS FOR THEIR ROLE IN  
HUMANITARIAN ASSISTANCE OPERATIONS**

beyond brief excerpts is with the permission of the copyrighted owner, and will save and hold harmless the Uniformed Services University of the Health Sciences from any damage, which may arise from such copyright violations.

## ABSTRACT

The purpose of this study was to evaluate the preparation of family nurse practitioners (FNPs) in the Graduate School of Nursing at the Uniformed Services University of the Health Sciences (USUHS) to provide health care in the humanitarian assistance setting. Three recent humanitarian assistance operations were analyzed to determine the types of illnesses/conditions that have been typically treated by military medical providers. Based on these data, a tool was developed to allow all 53 FNP Master's Degree graduates from USUHS to evaluate the preparation they received at USUHS to provide the specific care required in humanitarian assistance operations. Based on Sister Callista Roy's Adaptation Theory, this study focused on the FNP's ability to adapt to circumstances that may be very different from their normal practice. Content validity was established by three USUHS FNP faculty members' review of the tool, and reliability of the tool was determined by the test-retest method, with Class of 2000 FNP students completing the questionnaire twice, two weeks apart. Following the Institutional Review Board approval from USUHS, the tool was sent to the 53 subjects via electronic mail or postal service. The data collected were entered into and analyzed by the Statistical Package for the Social Sciences (SPSS) – 9 software. Thirty-four graduates (64%) responded, and 31 (91% of the respondents) stated they feel prepared to be deployed in the role of FNP in humanitarian assistance operations. Many had suggestions for enhancing the program to better equip them for that role.

Key Words: **family nurse practitioner**, **preparation**, **military deployment**, **humanitarian assistance**, **primary care**.

PREPARATION OF FAMILY NURSE PRACTITIONERS AT THE UNIFORMED  
SERVICES UNIVERSITY OF THE HEALTH SCIENCES FOR THEIR  
ROLE IN HUMANITARIAN ASSISTANCE OPERATIONS

by

Susan J. Lee, BSN

THESIS

Presented to the Graduate School of Nursing Faculty of  
the Uniformed Services University of the Health  
Sciences In Partial Fulfillment of the  
Requirements for the  
Degree of

MASTER OF SCIENCE

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

MAY 2001

## TABLE OF CONTENTS

PREFACE .....	ix
DEDICATION .....	x
ACKNOWLEDGEMENTS .....	xi
LIST OF TABLES .....	xii
LIST OF FIGURES .....	xiii
CHAPTER I. INTRODUCTION .....	1
Background .....	1
Research Questions .....	3
Conceptual and Theoretical Framework .....	3
Definitions .....	6
Assumptions and Limitations .....	7
Relevance to Nursing Practice .....	7
Summary .....	8
CHAPTER II. REVIEW OF THE LITERATURE .....	10
Introduction .....	10
Medical Involvement in MOOTW .....	10
The Role of the FNP in Primary Care .....	15
Preparation of Family Nurse Practitioners at USUHS .....	18
Summary .....	21
CHAPTER III. METHODS .....	23
Research Design .....	23
Research Setting .....	24

Sample .....	24
Instrumentation .....	24
Data Analysis .....	26
Protection of Human Subjects .....	27
CHAPTER IV. ANALYSIS .....	29
Conditions/Illnesses/Injuries Expected in Humanitarian Operations .....	29
Demographic Data .....	31
Deployment Data .....	32
Questionnaire Results .....	33
Summary .....	37
CHAPTER V. SUMMARY .....	39
Conclusions .....	39
Recommendations .....	43
Recommendations for Future Research .....	45
REFERENCES .....	46
APPENDICES .....	50
APPENDIX A - Timeline for Thesis Project	
APPENDIX B - Questionnaire Sent to FNP Graduates of USUHS	
APPENDIX C - Cover Letter for Participation in Study	
APPENDIX D - Approval Letter from Institutional Review Board - USUHS	

## **PREFACE**

This research was conducted to evaluate the preparation of family nurse practitioners at the Uniformed Services University of the Health Sciences for their role in humanitarian assistance operations.



## **DEDICATION**

I dedicate this work to the past, present, and future family nurse practitioner students at the Uniformed Services University of the Health Sciences. When I was 12 years old, I dreamed of becoming a military nurse. Twenty-five years later, I followed that dream; I have not been disappointed.

## **ACKNOWLEDGEMENTS**

I owe an enormous amount of gratitude to my husband, Larry, for his love and support throughout this research project. Not only did he grant me emotional support, but actual physical help with the details of getting the questionnaire out. I could not have done it without him. I also am indebted to my thesis committee members for their time and effort to make this all come together. Dr. Eugene Levine, COL Catherine Schempp, and LTC Marjorie Graziano, words cannot express the depth of my gratitude to you. I also must thank my parents for instilling in me the drive to always do my best, to always pursue knowledge, and to never, never give up. I especially thank my daughter, Crystal Whisman, for her love and support, as well as her understanding for the time this endeavor took.

## LIST OF TABLES

Table 1. The 10 Most Frequent Medical Diagnoses During Flash Canoe 97 .....	12
Table 2. Diagnoses for Initial Visits to Clinics by Haitian Civilian Patients From Apr - Aug 1997 .....	14
Table 3. Ten Most Frequent Complaints Treated After 1994 Northridge Earthquake ...	15
Table 4. Courses Required for Master's Degree Completion in FNP Program at USUHS .....	19
Table 5. Top 10 Diagnoses Overall in Three Humanitarian Assistance Operations .....	30
Table 6. Responses to Three Diagnoses Respondents Felt Most Prepared to Care For .....	35
Table 7. Responses to Three Diagnoses Respondents Felt Least Prepared to Care For .....	36

## LIST OF FIGURES

Figure 1. Roy's Adaptation Model for Nursing .....	5
Figure 2. Percentage Respondents per Graduation Year .....	31
Figure 3. Percentage of Respondents to Questionnaire by Service Affiliation .....	32
Figure 4. Year Graduated USUHS and Whether Prepared for Humanitarian Operation .....	33

## CHAPTER I: INTRODUCTION

The purpose of this study was twofold: to determine the specific type of illnesses and/or injuries that have been seen and treated in humanitarian assistance settings within the scope of military medicine, and to evaluate the preparation of family nurse practitioners (FNPs) in the Graduate School of Nursing (GSN) program at the Uniformed Services University of the Health Sciences (USUHS), Bethesda, MD, to serve in these settings.

### Background

Since the end of the Cold War era, the United States (U.S.) military has altered its focus from predominantly combat readiness to a more global involvement. Assisting populations, both foreign and domestic, that are affected by natural or human-caused disasters is important for the maintenance of peace, security, and stability in the world today. Renewed emphasis has been placed on humanitarian assistance such as disaster relief, refugee management, and humanitarian intervention during conflicts by the military forces of all nations, in addition to peacekeeping/monitoring roles (Burkle, Frost, Greco, Petersen, & Lillibridge, 1996). One particular advantage of the use of military forces in military operations other than war (MOOTW) is their ability to impose security that may be required to reach some populations in need. Another distinct advantage of the use of military forces in these situations is their extensive capability to move large quantities of both supplies and personnel to and within distant locations, and also to develop transportation and delivery systems within devastated areas by utilizing their various engineering type units (Sharp, Yip, & Malone, 1994).

Historically, the U.S. military has long provided emergency humanitarian relief, both at home and abroad. One early example of this occurred after the San Francisco earthquake in 1906. Regular soldiers were joined by state militia soldiers and the Navy, Marines, and Cadet Corps from state universities, providing shelter, food, and medical care for survivors (Gaydos & Luz, 1994).

Internationally, U.S. forces have provided disaster relief/humanitarian assistance in response to a variety of situations over recent years. They responded to the Nicaraguan earthquake in 1972 (Coultrip, 1974), the Sri Lanka cyclone of 1978 (Byrd, 1980), and more recently in 1991, following the Persian Gulf War, to the fleeing Kurdish refugees who were stranded on the Turkish-Iraqi border (Sharp et al., 1994).

Both man-made and natural disasters cause morbidity and mortality, destroy homes, and disrupt the usual procedures for obtaining food, water, medical care, and sanitation. Because military units are prepared to respond quickly and have the capability to mobilize large masses of equipment and personnel, including complete field hospital units, it is common sense to utilize them in humanitarian efforts. The primary focus of military medicine has historically been to support combat operations (Sharp et al., 1994). But given the nature of MOOTW, whether the mission is to assist civilians in disaster relief, to distribute medical and other supplies in a humanitarian effort, or to provide medical support in a nation-assistance program, medical support is a key component (Davis et al., 1996). But then the question arises, if the U.S. military forces are trained primarily to respond to a combat type environment, are

they truly ready to meet the needs of a multitude of unexpected disasters anywhere in the world? More specifically, will the medical personnel, including FNPs, be adequately prepared to meet the challenges presented in disaster situations?

Only in the past decade has the U.S. Air Force (USAF) officially acknowledged and endorsed the FNP role in military health care (Larino, 1997). Until this year, the USAF had not placed FNPs on any of the primary care deployment teams. As of February 29, 2000, there were five primary care treatment teams with the requirement of two FNPs assigned to each team (J.T. Gavron, personal communication, March 25, 1999). However, to date, only one of these FNPs has actually been deployed in that capacity. If USAF FNPs have been deployed on humanitarian assistance operations, it was not in that position, but rather in some other position, most likely one held by the FNP prior to becoming an FNP, such as that for medical/surgical nurse.

With this new development in the military career field for FNPs within the USAF, it must be ascertained that the FNPs are adequately prepared to take on the role as primary health care providers in humanitarian assistance operations, as well as more traditional situations the military places them in.

#### Research Questions

1. What are the specific conditions/illnesses/injuries that are expected during a humanitarian assistance type military operation?
2. Is the FNP educated at the Uniformed Services University of the Health Sciences adequately prepared to meet these specific challenges?

### Conceptual and Theoretical Framework

Sister Callista Roy's Adaptation Model asserts that people are constantly faced with the need to adapt to focal, contextual, and residual stimuli. The focal stimuli represent the situation, such as stress, injury, or illness, immediately confronting the individual. The contextual stimuli are the other factors present, such as family situations or environment. Other influencing factors from the individual's background, such as beliefs, attitudes, experiences, and characteristics, make up the residual stimuli (Stanhope & Lancaster, 1992). Roy describes the person as an adaptive system with coping mechanisms that are influenced by four modes: physiological, self-concept, role function, and interdependence (Pearson, Vaughan, & Fitzgerald, 1996). She identifies six basic physiological needs that have to be met in order to maintain homeostasis or integrity: exercise and rest; nutrition; elimination; fluid and electrolytes; oxygenation and circulation; and regulation of temperature, senses and the endocrine system. In each of these six areas, it is necessary to have knowledge of body structure and function, the ranges and standards that are accepted as normal, the stresses which can affect them, and maladaptive behaviors which may occur within each. Rambo (1984) pointed out that when related to adaptation nursing, self-concept consists of feelings and beliefs that permit an individual to know who he or she is and feel that the self is adequate in meeting needs and desires.

Roy further describes role as the title given to the individual, as well as the behaviors that society expects an individual to perform in order to maintain the title (Pearson et al., 1996). Interdependence, then, is a term Roy uses for the fine balance between dependence on others and independence.



The goals of nursing according to Roy's Adaptation Model are:

- Related to achieving adaptive responses in the physiological, self-concept, role function, and interdependence modes
- Stated in behavioral terms
- Guided by a knowledge of "norms"
- Planned in conjunction with the patient

(Pearson et al., 1996, p. 113).

Figure 1 is a diagrammatic representation of Roy's Adaptation Model for Nursing (Pearson et al., 1996, p. 116).

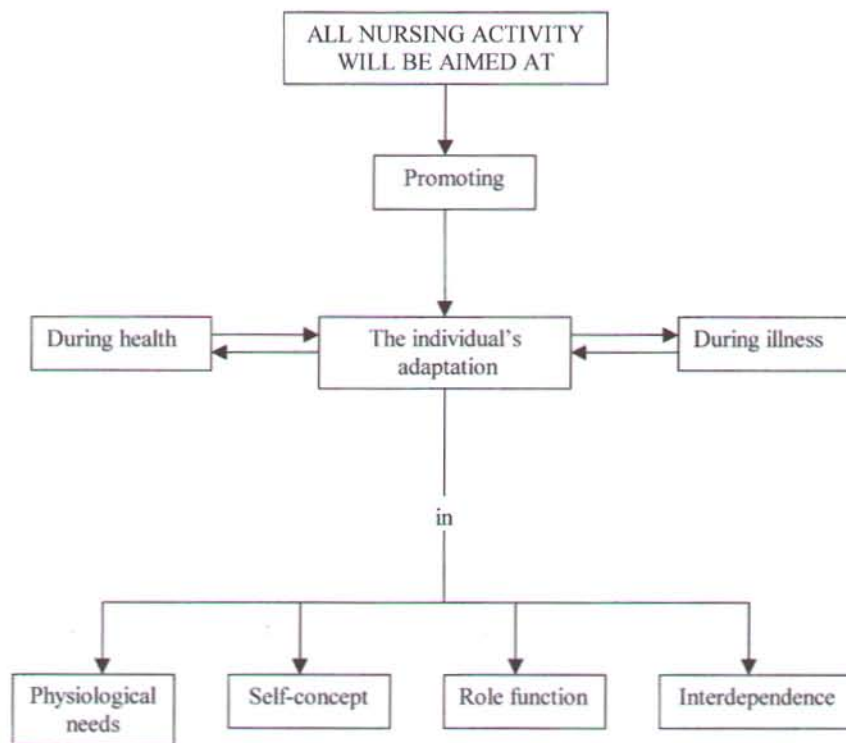


Figure 1.

Roy's Adaptation Model for Nursing

Both aspects of this study incorporated Roy's Adaptation Model. By analyzing the data from medical operations in times of catastrophe, the study considered how the victims did or did not adapt to the environmental occurrences, as reflected by their health complaints or problems. The rest of this study evaluated the preparation of FNP's at USUHS to meet Roy's goals of nursing in humanitarian assistance situations. By achieving these goals, a FNP will be providing the means for the clients to successfully adapt to changes in their environment, in all of the four modes mentioned above. This part of the study allowed FNP graduates of USUHS to self-evaluate their preparation for this type of environment.

#### Definitions: Conceptual and Operational

##### Military Operations Other than War (MOOTW)

Conceptual: Military operations that do not include combat or other hostile situations, such as peacekeeping, peace enforcement, or humanitarian assistance (Davis et al., 1996).

Operational: Medical diagnoses data from Exercise Flash Canoe 97, the Fleet Hospital 5 humanitarian relief mission in Haiti in 1997, and the Northridge, California earthquake on 17 January 1994 were analyzed to determine specific diseases/injuries treated during these missions. The diagnoses treated during these three missions were all coded to the ICD-9 disease classification system, so they could be totaled to attain the top 10 percentages of all diagnoses seen among the three missions. This was done in an effort to depict a comprehensive, but brief, representation of diagnoses a FNP could expect to see on humanitarian assistance missions in a variety of locations.

### Family Nurse Practitioner (FNP)

Conceptual: An advanced practice nurse with a Master's Degree who possesses the knowledge and skills necessary to assess, diagnose, and treat acute self-limiting conditions and management of chronic, stable conditions across the lifespan. These skills include providing primary ambulatory care, educating, guiding and counseling families and individuals, and consulting with and referring to physicians (Arcangelo, Fitzgerald, Carroll, & Plumb, 1996).

Operational: All FNPs who received a Master's Degree at the Uniformed Services University of the Health Sciences since its inception in 1993.

### Assumptions and Limitations

#### Assumptions

1. The illnesses/conditions as described by ICD-9 identifiers in previous humanitarian assistance operations will be similar to those in future operations.
2. The FNPs who responded to the questionnaire responded honestly on each item.

#### Limitations

1. Most of the available data from previous MOOTW are from U.S. Army units, and may not be generalizable to the USAF.
2. Because disasters can occur anywhere in the world, the data may not be generalizable to all other future areas of MOOTW due to climate and cultural differences.
3. The responses are self-reported and do not assess actual capabilities of the FNP.

### Relevance to Nursing Practice

This study is relevant to nursing practice because the public depends on nursing professionals to be adequately prepared to provide medical and nursing care. In time of emergencies, such as immediately following disasters, nurse practitioners responding to the need for humanitarian assistance must be prepared to respond to a variety of situations without requiring last-minute training. One way to evaluate the adequacy of the training FNPs receive in preparation of humanitarian assistance operations is to ask FNPs if the FNP program they attended prepared them to diagnose and treat specific conditions that have been frequently encountered in humanitarian assistance missions.

### Summary

Because the military forces of the United States possess the capabilities, training and equipment to respond quickly in times of disaster to any part of the world does not necessarily mean all these assets are appropriate for every situation. In particular, the primary focus of military medicine has been to support combat operations, not to provide humanitarian assistance, although increasingly the U.S. military medical units are called upon to provide just such care. This year, for the first time, the USAF has defined a place in deployment teams for the FNP to perform in that explicit role. The purpose of this study was to compile a specific list of diseases/conditions that have been diagnosed and treated in previous MOOTW scenarios, and then evaluate the preparation FNPs received at USUHS, to determine whether they are indeed ready to step into this new environment. The results may be helpful in improving the FNP program at USUHS to include an appropriate training platform for medical readiness

preparedness, and validating the current program as effective in preparing FNPs for the military's expectations of them in humanitarian assistance operations.

## CHAPTER II: REVIEW OF THE LITERATURE

### Introduction

The purpose of this research study was to determine the adequacy of the preparation of USAF FNPs at USUHS with respect to the probability that they will one day be assigned to humanitarian assistance medical teams. In order to accomplish this study, it first had to be determined exactly what types of medical conditions/illnesses/injuries have typically been seen during these situations. The first phase of the review of the literature, therefore, includes current literature on past humanitarian efforts involving medical personnel, as well as technical data reports of several missions. Once this is accomplished, further literature review will address the role of the FNP in primary care and the preparation of the FNP at USUHS to assume that role.

### Medical Involvement in MOOTW

Ryals and Baker (1996) explored mission and staffing differences for military medical units being deployed to humanitarian relief sites. They acknowledged that military health care providers are trained for wartime scenarios, which emphasizes care of the trauma patient, usually a healthy young male adult. When a military medical unit is deployed to a country that is already overwhelmed by war or natural disaster, that focus will be drastically altered. The unit will need to function less to combat care and more like community health care, focusing on primary care and public health. The staff will be treating populations of women, children, and the elderly. According to Ryals and Baker, "Complex humanitarian missions often rely heavily on primary care physicians, nurse practitioners, and physician

assistants...refugee populations will need more pediatric and obstetric services,” (p. 503).

During Operation Pacific Haven, from September 1996 - April 1997, when Kurdish refugees were evacuated from northern Iraq to Anderson Air Force Base, Guam, they were provided direct support, sustainment and resettlement (Rumbaugh, 1998). This support included medical and dental care. The primary medical concern in this MOOTW was conducting physical exams on each evacuee to meet the requirements of the Immigration and Naturalization Service. An average of 200 physical exams were performed daily. Routine primary care also was provided for both the Kurdish refugees and the U.S. personnel. Thirty percent of the Kurdish evacuees were adult males. Seventy percent were adult females and children. Rumbaugh concluded that current military medical platforms, trained with a primary mission of providing combat service support, mostly to the young adult male, are not adequate to meet the diverse challenges of humanitarian assistance. This particular mission required augmentation of extra personnel in family practice, pediatrics, obstetrics and gynecology.

Using past experiences in humanitarian assistance deployments, Baker and Ryals (1999a) discussed doctrinal, personnel and supply differences between the usual combat support mission of military medical units and in MOOTW. They pointed out that MOOTW usually required more primary care providers, obstetricians, public health officers, infectious disease specialists, and pediatricians than the combat mission requires. Supplies and equipment required in humanitarian assistance missions, but not for combat support, included oral re-hydration supplies,

formulas for starvation, treatments to prevent epidemic infectious diseases, medicines appropriate for pregnant women and children, vitamins, skin disease treatments and diarrhea medications.

In a study of a Medical Civil Action Program (MEDCAP) visit by U.S. Navy medical personnel to Cambodia in 1997, in support of Exercise Flash Canoe 97, Baker and Ryals (1999b) compiled a list of the top conditions diagnosed and treated among the nearly 3000 patients seen. Although exact numbers of each diagnosis were not provided, and the conditions in some cases were combined with similar disease processes, Table 1 provides a good picture of types of illnesses/conditions to expect in a similar MOOTW.

Table 1

The 10 Most Frequent Medical Diagnoses During Flash Canoe 97

Patient Complaint/Diagnosis	Percent of Total Diagnoses Seen
Upper respiratory infection / sore throat / sinusitis	14.6
Musculoskeletal complaints / back pain	12.6
Abdominal pain / diarrhea	11.6
Headache / dizziness	10.7
Sexually transmitted disease / urinary tract infection / vaginitis	8.0
Fever	7.5
Gastrointestinal helminthes (worms)	7.1
Fatigue / anemia	5.3
Skin infections / rash	4.3
Ear complaints / infections	3.9



Gauker, Emens-Hesslink, and Konoske (1998) conducted a descriptive analysis of patient encounter data from the Fleet Hospital 5 humanitarian relief mission in Haiti from April 4 to August 5, 1997. This report described patient demographics, type of medical encounters, diagnoses, and medications provided for over 10,000 Haitian patients by medical personnel of Fleet Hospital 5. Frequently, patients were given more than one diagnosis. Gauker et al. used the ICD-9 classification system, an international classification system established by the World Health Organization for classifying and coding diseases and medical conditions in order to provide international standards for comparison of disease prevalence and treatment (World Health Organization, 1996). Table 2 shows the breakdown of the 15,538 diagnoses treated by Fleet Hospital 5. The table indicates that the most frequently seen diagnoses were parasitic infections, digestive problems, anemia, respiratory infections, headache, and fever.

Table 2

Diagnoses for Initial Visits to Clinics by Haitian Civilian Patients, April - August 1997

ICD-9 Classification (brief title)	No. of Diagnoses	Percent
Infectious/Parasitic	3,886	25
..... <i>Worms</i> <i>10.7% of total</i>		
..... <i>Scabies</i> <i>6.7% of total</i>		
Signs & Symptoms	2,052	13
..... <i>Headache</i> <i>4.7% of total</i>		
..... <i>Fever</i> <i>3.0% of total</i>		
Digestive	2,011	13
... <i>GERD</i> <i>4.0% of total</i>		
Anemia	1,572	10
Respiratory	1,433	9
... <i>URI</i> <i>5.8% of total</i>		
Musculoskeletal	912	6
Skin	881	6
Nervous/Sensory	754	5
Endocrine/Nutritional	727	5
... <i>Malnutrition</i> <i>3.7% of total</i>		
Genitourinary	456	3
Other	854	5
<b>Total</b>	<b>15,538</b>	<b>100</b>

In the aftermath of the Northridge earthquake in California on 17 January 1994, primary health care focusing on diagnosis and treatment of disease was provided for victims at Disaster Application Centers. Registered nurses, nurse practitioners and physician assistants volunteered from 82 Veteran's Affairs health care facilities, and successfully provided primary health care for 17,883 individuals. The chief complaints treated are shown in Table 3. Other complaints treated, on a smaller scale, were conjunctivitis, asthma, dermatitis, amenorrhea, dysmenorrhea, ectoparasitic infestations, insect bites, dry skin, prenatal care, superficial fungal or bacterial infections, along with well baby examinations and immunizations (Teeter, 1996).

Specific demographics of patients were not available in this study. However, the types of illnesses/injuries were similar to those that occur in disasters and their aftermath, many of which are provided with humanitarian assistance from U.S. military forces.

Table 3

Ten Most Frequent Complaints Treated after 1994 Northridge Earthquake

Chief Complaint/Diagnosis	Number	Percent
Upper respiratory tract infection	5,636	32
Headache	1,765	10
Stress	1,670	9
Musculoskeletal	1,607	9
Blood pressure measurement	1,481	8
Gastrointestinal	1,258	7
Medication refill	1,099	6
Otitis media	891	5
Laceration or abrasion	575	3
Need baby supplies	320	2
Other	1581	9
Total	17883	100

### The Role of the FNP in Primary Care

The first nurse practitioner (NP) training program was established in 1965, at the University of Colorado's School of Medicine and Nursing by Loretta Ford and Henry Silver. The driving force for preparing nurses to assume the role of providing primary health care services for children was the shortage of physicians at that time and the predictions of an even greater shortage expected in the decades ahead (Hoekelman, 1998). The pediatric nurse practitioner was one solution to meet the challenge of providing primary health care to all children. The impact of the establishment of this program has been enormous because it opened the door to the advanced education of

nurses in essentially every field of health care. According to Hoekelman, in 1995 there were 527 primary care and specialty master's and postmaster's degree programs in nursing schools throughout the United States, nurse practitioner specialties in family, pediatrics, gerontology, woman's health, public health, clinical nurse midwives, adults, acute care, occupational health, and psychiatric care.

Arcangelo et al. (1996) explored the role of the nurse practitioner in primary care, and stated:

They work with a variety of patient populations in multiple practice settings. Primary care nurse practitioners care for patients and their families, assisting them in remaining healthy, treating illness as needed, and attending to the social and emotional needs of the patient" (p.104).

Arcangelo et al. (1996) further described the nurse practitioner's scope of practice, according to their interpretation of the American Nurses Association guidelines (as cited in American Nurses Association, 1987), to be:

1. Provision of primary health care services to patients (individuals, families, and groups) emphasizing promotion of health, prevention of disease
2. Management of actual and potential health problems, which include common diseases and human responses to diseases
3. Consultation and referral as needed
4. Collaboration with patients to establish realistic goals and activities to guide the patient and provider in implementing the plan of care
5. Accountability for outcome of practice

6. Expansion of nursing practice by creation of an additional model for delivery of nursing care to the public by incorporating selected medical services into professional nursing practice

7. Self-regulation – mechanisms include

Certification

Code of ethics

Peer review

Continuing education (Arcangelo et al., 1996, p.105).

Wright (1997) described the role of the nurse practitioner to be both to cure patients and give them care. She indicated that the NP who serves as a primary care provider does not focus only on diagnosis and treatment of disease because of training in the medical sciences, but is actively involved in teaching, screening, and disease prevention more often than in diagnosis and treatment of disease as a result of their nursing training. The advanced practice nursing role was recently stated as, “Neither bound by setting nor restricted by role. The [Advanced Practice Nurse], grounded in nursing, uses additional multidisciplinary practice models to enhance the basic nursing foundation in providing well-rounded, wholistic, cost-efficient, quality care” (p. 60).

The American College of Nurse Practitioners (1999) defines the nurse practitioner as, “A registered nurse with advanced academic and clinical experience, which enables him or her to diagnose and manage most common and many chronic illnesses, either independently or as part of a health care team” (p. 1). This professional organization further explains the role of the NP as focusing largely on

health maintenance, disease prevention, counseling and patient education in a wide variety of settings, with a strong emphasis in primary care.

#### Preparation of Family Nurse Practitioners at USUHS

The Graduate School of Nursing at USUHS admitted its first students in 1993 (Graduate School of Nursing, 1999a). Fifty-three students have graduated with a Master's Degree from the Family Nurse Practitioner program as of Fall, 2000, and are currently serving in the military forces or in the U. S. Public Health Service as nurse practitioners. There are currently 29 students enrolled in the program.

This FNP program consists of 24 months of full-time combined didactic and clinical experiences, including 1035 clinical hours of practice in both military and civilian agencies with experienced nurse practitioner or physician preceptors (Graduate School of Nursing, 1999b). Since the FNP program's inception, some curriculum changes have occurred, but according to the Graduate School of Nursing(1999c) Internet Web-page, Table 4 shows the courses currently required for completion of a Master's Degree in the FNP program at USUHS.

Table 4

Courses Required for Master's Degree Completion in FNP Program at USUHS

Course Title	Credit hours
Physiology for Advanced Nursing Practice	3
Role Development in Advanced Practice Nursing	2
Operational Readiness	1
Thesis	6
Issues in Uniformed Services Nursing	1
Clinical Pathophysiology	3
Introduction to Health Assessment	2
Theoretical Foundations for Nursing Practice & Research	2
Conducting Research for Nursing Practice	2
Anatomy & Cell Biology	2
Neuroscience I	1
Nursing Operational Readiness	3
Principles in Women's Health for Nurse Practitioners	6
Advanced Pharmacology for Nurse Practitioners	3
Advanced Health Assessment	1
Integrating Family Theory into Nurse Practitioner Practice	3
Clinical Practicum for Nurse Practitioners V	9
Primary Care of Adults	5
Primary Care of Children	5
Total Credit Hours	60

According to course descriptions provided by the Graduate School of Nursing (1999d), the Operational Readiness course is:

Designed to provide the students with the skills and information necessary to bridge the span between traditional civilian health and the government model to include military echelons of care and the United States Public Health Service (USPHS) role in civilian disaster health care (p. 6).

Other courses, such as Principles in Women's Health for Nurse Practitioners, Clinical Practicum for Nurse Practitioners, Clinical Pathophysiology for Advanced

Practice Nurses, and Primary Care of Adults all contain elements specific to operational medicine and deployment/readiness issues (Graduate School of Nursing, 1999d).

More specifically, the Clinical Pathophysiology for Advanced Practice Nurses course includes lectures on concepts of pulmonary dysfunction and selected pulmonary disorders, selected infectious diseases, gastrointestinal dysfunction and selected gastrointestinal disorders, common musculoskeletal disorders, neurologic dysfunction, including headache, hematologic dysfunction and hematologic laboratory assessment, among other topics. According to the course description, “An emphasis will also be placed on pathophysiologic topics and clinical cases which are reflective of the military medical theater of operations” (Bustos, 2000, p. 1).

The Primary Care of Children course provides instruction on assessment, diagnosis, treatment, and prevention of disorders of the ears, nose, and throat, including upper respiratory infections, hematology, the gastrointestinal system, the genitourinary system, and dermatologic conditions (Ricciardi & Murphy, 2000).

All of the diagnoses seen in the three humanitarian assistance missions included in this study are thoroughly discussed in the courses Primary Care of Adults (Grandjean, 1999) or Principles in Women’s Health for the Nurse Practitioners (McMullen & Seibert, 2000). All aspects of care, including assessment, diagnosis, treatment, prevention, and implication for referrals, are covered in these courses.

The FNP program has undergone revisions since its inception in 1993. More science courses have been added since the beginning, with Clinical Pathophysiology added for the Class of 1996, and Anatomy and Cell Biology and Neuroscience I



added for the Class of 2001. Principles of Women's Health for Advanced Nurse Practitioners as a separate course from Primary Care was incorporated for the Class of 1996. In 1996, for the Class of 1997, Advanced Health Assessment was added to the curriculum, and in 2000, Integrating Family Theory into Nurse Practitioner Practice was added, starting for the Class of 2000. Operational Readiness has consistently been a one- hour credit course throughout the life of the FNP program (Graduate School of Nursing, 2000a).

To be admitted into the Master's Degree Family Nurse Practitioner program at USUHS, an applicant must have a baccalaureate degree in Nursing from a National League for Nursing accredited school. The applicant must be a commissioned officer in one of the U.S. uniformed services, have a minimum of two years clinical practice, and have the approval of the sponsoring military service or agency (Graduate School of Nursing, 1999b). The screening process is intense and competitive, and once admitted, the student is obligated to serve a period of time according to the requirements of his/her sponsoring organization as a pay-back for the education. There are other graduate students in the FNP program who already hold a Master's Degree and from the Department of Veteran's Affairs who are taking courses to become certified as FNPs, but they are not included in this study.

### Summary

With the broadening scope of military actions turning more and more to peacekeeping and humanitarian assistance missions, and the end of Cold War tensions, today's military medical personnel must be equipped to do more than support combat troops. By studying previous MOOTW missions closely, specifically

the medical care that was provided, medical personnel can better prepare themselves for future missions. The literature indicates that the FNP is capable of most primary care type health care for clients across the entire lifespan. The FNP Program at USUHS is comprehensive, and fully supported by all the uniformed services. It is important to determine if the program at USUHS has truly prepared FNPs for the humanitarian assistance environment they may be deployed to in the future. This study will explore whether the military FNPs prepared at USUHS are ready to assume the full role expected of them in humanitarian assistance operations.

## CHAPTER III: METHODS

The purpose of this study was to evaluate the preparation of family nurse practitioners in the Graduate School of Nursing at the Uniformed Services University of the Health Sciences, Bethesda, MD, to meet the requirements of providing health care in the humanitarian assistance setting. The time line for this study's activities is shown in Appendix A.

### Research Design

The research design for this study was a descriptive survey. Descriptive studies are designed to provide detailed information about a specific field of study, and are often used to identify problems or justify current practice (Burns & Grove, 1997). A questionnaire created by the author of this study, based on the documented health care provided in three recent humanitarian assistance missions, was used to allow all FNP graduates of the GSN program at USUHS to evaluate their preparation for their role in humanitarian assistance missions.

Because the nature of humanitarian assistance is to respond in emergency situations, the geographic location can seldom be predicted. Therefore, the three missions used to compile the ten most frequently diagnosed problems to be used in the questionnaire were from three distinctly different parts of the world. Data were collected from Operation Pacific Haven, in 1996-1997, when Kurdish refugees were evacuated from Iraq to Guam. Another mission that provided recent data was Exercise Flash Canoe 97, in Cambodia. The third mission data were obtained from was a humanitarian relief mission of Fleet Hospital 5 to Haiti, also in 1997.

### Research Setting

Graduates of the FNP program at USUHS are assigned to locations throughout the world. Therefore, this study was conducted via electronic-mail, after obtaining current electronic-mail addresses from the Graduate School of Nursing. For those former students for whom the GSN office did not have current electronic-mail addresses, the author sent letters via the postal service, requesting their electronic-mail addresses, if available. For any graduates who did not have access to electronic-mail, the questionnaire was sent to them via the postal service.

### Sample

A total of 53 students have graduated with a Master's Degree from the FNP program at the GSN at USUHS through Spring 2000. Because of the limited population, all graduates who earned a Master's Degree at the GSN at USUHS were included in the study. The GSN office provided the names and addresses of the graduates.

### Instrumentation

The research instrument was a questionnaire designed by the author. The survey consisted of three parts: demographic data, deployment data, and a set of items that allowed subjects to evaluate their preparation to provide five aspects of care for each of the 10 most frequently diagnosed problems in recent humanitarian assistance missions. The five aspects of care were: assess/diagnose, treat, provide education, refer, and prevention. Specific definitions of each of the five were included in the survey instructions (see Appendix B). The 10 specific diagnoses selected for evaluation were taken from three recent humanitarian assistance missions. The

diagnoses treated during these three missions were coded to the ICD-9 disease classification system, so they could be totaled to attain the top 10 percentages of diagnoses seen among the three missions. This was done in an effort to depict a comprehensive, but brief, representation of diagnoses a FNP could expect to see on humanitarian missions in a variety of locations.

The measurement scale was a five-level ordinal scale, with each level described in detail in the survey instructions (see Appendix B). The scale was numbered 1 through 5, with 1 representing thorough preparation and clinical experience, and 5 representing no preparation or clinical experience.

Content validity of the instrument was established by three faculty members of the FNP program in the GSN at USUHS. They were asked to review the questionnaire for relevance of each of the five aspects of care and the 10 diagnoses to be considered. The content validity index was determined by having the faculty members rate the relevance of each condition and aspect of its care using a 4-point rating scale that read, “1 = not relevant; 2 = unable to assess relevance without item revision or item is in need of such revision that it would no longer be relevant; 3 = relevant but needs minor alteration; 4 = very relevant and succinct.” They were asked to determine the appropriateness of each item within the scope of care of a FNP, using this scale. All three reviewers responded to all items on the instrument with, “4 = very relevant and succinct,” with no variability of responses.

Reliability was tested using the test-retest method, with seven second-year FNP students as the subjects. The questionnaire was administered via electronic mail to the class members, at a two-week interval. These students were nearing completion of the

FNP program by that time, and the results from the two successive surveys were compared for consistency of responses. The results were consistent over this time period with 92% agreement. There were four responses that changed from the first administration of the questionnaire to the second administration. One respondent initially responded, “Had thorough education and clinical experience at USUHS, would require no supervision,” to an item and on the second administration changed that response to “Had thorough education but no clinical experience at USUHS, may need some supervision,” on the same item. Two other respondents changed their response from “Had thorough education but no clinical experience at USUHS, may need some supervision,” to “Had thorough education and clinical experience at USUHS, would require no supervision,” on other items. One respondent failed to respond to one item on the second administration of the questionnaire. By the time of the second administration of the questionnaire, these students had completed all their requirements for graduation, so their results were included in the study.

Based on the pilot testing of the second-year FNP students, no adjustments to the questionnaire were necessary. The questionnaire was sent via electronic mail to the 40 other identified graduates of the FNP program at USUHS. For the subjects that the author was unable to obtain electronic mail addresses, a questionnaire was sent via the postal service with a self-addressed, stamped envelope for return mailing.

### Data Analysis

Research Question #1: What are the specific conditions/illnesses/injuries that are expected in a humanitarian assistance type military operation? This question was answered by studying three humanitarian assistance operations in different locations.

The ten most frequently seen diagnoses seen in each operation, and the percentages of the total patients represented by each of the ten diagnoses within that operation were recorded. These totals were compiled to determine the ten most frequently seen diagnoses overall in the three operations.

Research Question #2: Is the FNP educated at the Uniformed Services University of the Health Sciences adequately prepared to meet these specific challenges? The results of the questionnaires were entered into an Statistical Package for the Social Sciences (SPSS)-9 software program to generate descriptive statistics. The specific answers to the questions, as well as the means of the answers were compared. The results indicated the degree to which graduates of the FNP program at USUHS felt the school prepared them to provide health care in common humanitarian assistance situations.

#### Protection of Human Subjects

The study proposal was submitted to the USUHS Institutional Review Board for approval. Once approved, the questionnaire was distributed via electronic mail or postal service. The questionnaire was set up as a webpage, and the link to the webpage sent to the graduates along with a cover letter (see Appendix C) explaining the confidentiality and that by submitting their responses via the webpage, that would be implying consent to be included in the study. When they completed the questionnaire on the webpage and clicked on the “Submit” icon, it was sent to the researcher with no identifiable name or address of the sender. This was done to provide anonymity and to ensure confidentiality.

When the completed questionnaires were returned via electronic mail, they were printed without the subjects' names or return addresses prior to evaluation by the researcher. The data were encoded into the SPSS-9 software program using code numbers for all subjects, with no reference to name or location of subjects. The data from the questionnaires returned by postal service were handled in the same manner. Once the data had been entered into a database and double checked for accuracy, the data were downloaded onto a 3 ½ inch floppy disk and will be stored in a locked file cabinet in the author's home for five years. The original data were deleted from the hard drive of the computer and all paper copies of the completed questionnaires were destroyed once the data had all been entered into the SPSS-9 software program. This ensured the privacy of the subjects and confidentiality of their responses.



## CHAPTER IV: ANALYSIS

The purpose of this study was twofold: to determine the specific type of illnesses and/or injuries that have been seen and treated in humanitarian assistance settings within the scope of military medicine, and to evaluate the preparation of family nurse practitioners in the Graduate School of Nursing program at the Uniformed Services University of the Health Sciences, Bethesda, MD, to meet these expectations.

Conditions/Illnesses/Injuries Expected in Humanitarian  
Assistance Operations

Three specific humanitarian assistance operations were included in this background study: Operation Flash Canoe 97 in Cambodia, Fleet Hospital 5 humanitarian relief mission in Haiti, and the aftermath of the Northridge Earthquake in California. Tables 1,2, and 3 of this manuscript depict exact numbers of diagnoses seen in each of these operations. Table 5 shows the top 10 average percentages for the three operations combined.

Table 5Top 10 Diagnoses Overall in Three Humanitarian Assistance Operations

Diagnosis	Percent of Total
Upper Respiratory Infections	17.5
Gastrointestinal Problems	10.5
Musculoskeletal Problems	9.2
Headache	8.5
Parasitic Infections	8.2
Anemia	5.1
Skin Problems	4.3
Genitourinary Problems	3.6
Fever	3.5
Ear Infections	3.0
All others	26.6

Using this information, the author created a questionnaire to allow FNP graduates of USUHS to evaluate their preparation at USUHS to provide care for patients with these 10 diagnoses. The ability to provide care for these diagnoses was further broken down into five realms: assess/diagnose, treat, provide education, make referrals, and prevention. The questionnaire was set up using a five-point ordinal scale to allow subjects to be specific about how well prepared they believe they are as a result of education and training at USUHS (see Appendix B).

## Demographic Data

Of the 53 subjects, 34 responded, for 64% response rate. Figure 2 shows the percentage of respondents for each year of graduation from the FNP program at USUHS.

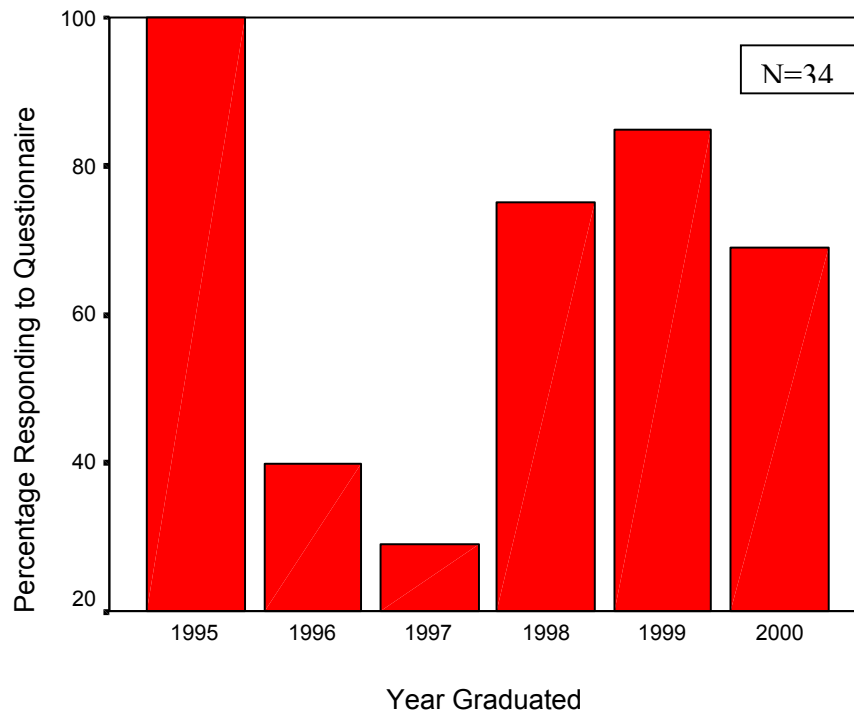


Figure 2.

Percentage Respondents per Graduation Year

Of the 34 respondents, five were in the United States Army, six were in the United States Public Health Service, and the remaining 23 are in the United States Air Force (see Figure 3).

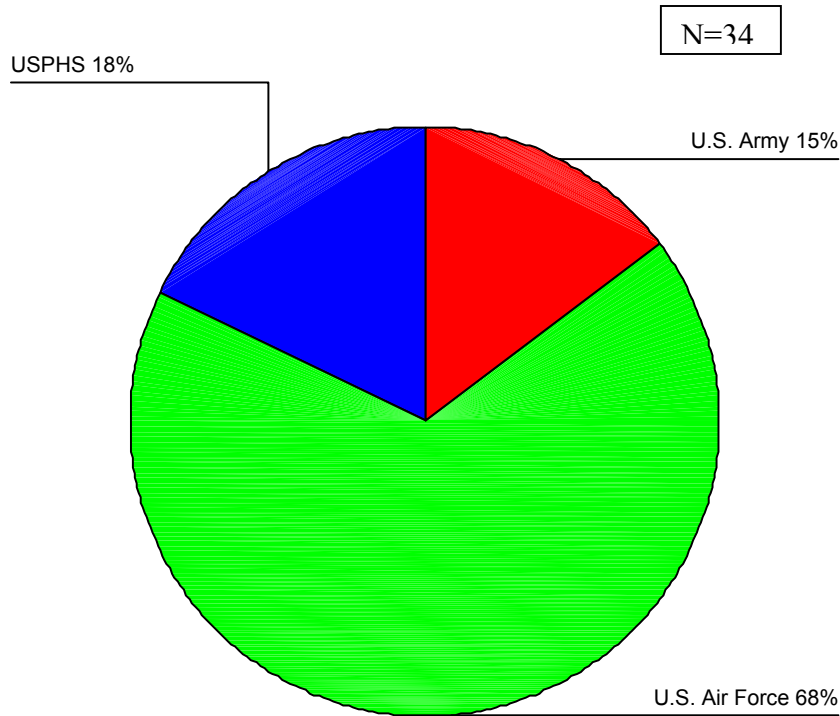


Figure 3.

Percentage of Respondents to Questionnaire by Service Affiliation

Respondents ranged in age from 32 to 55, with a mean age of 39.6, with a standard deviation of 5.9. Four respondents were male, the other 30, female. None of the respondents were advanced practice nurses prior to entering the FNP program at USUHS. Two respondents, both USAF, stated they had been deployed since becoming FNP's, but only one was on a humanitarian assistance mission.

Deployment Data

The respondents in this study overwhelmingly responded “yes” to the question: If you were deployed today on a humanitarian mission, based on your education/training at USUHS, do you feel prepared to function as a FNP in that setting? Thirty-one of the 34 respondents, or 91%, replied yes (see Figure 4).

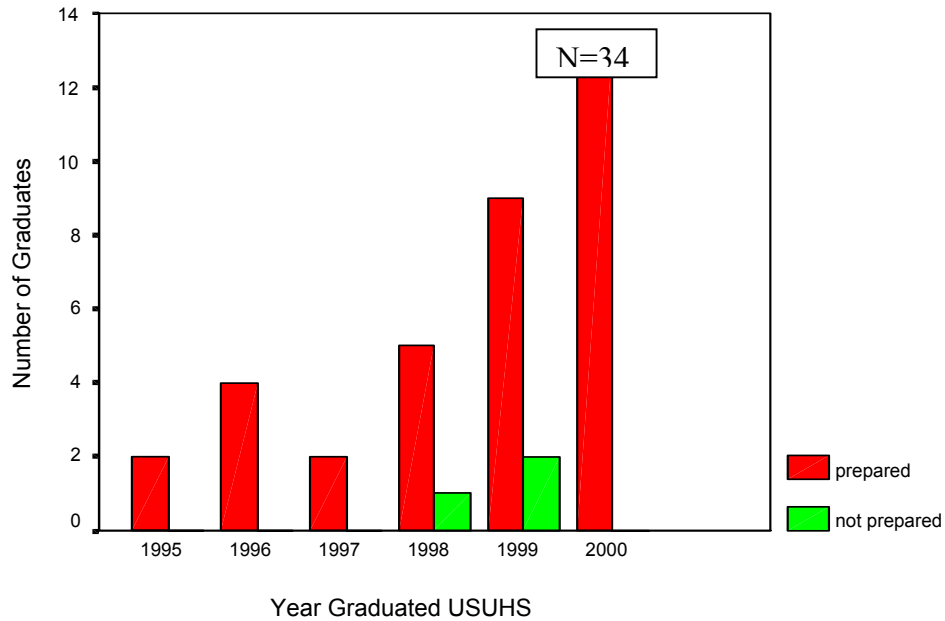


Figure 4.

Year Graduated USUHS and Whether Prepared for Humanitarian Mission

Of the respondents who answered they do not feel prepared to function as a FNP in a humanitarian mission, one was male and two were female, out of a total of four males and 30 females in the study. Thus, 25% of the males and 6% of the females that participated in the study did not feel prepared for this role. All those that responded they are not prepared are serving in the USAF. It is important to note, however, that 23 of the total respondents were in the USAF, compared to five in the Army and six in the USPHS.

#### Questionnaire Results

The questionnaire contained a total of 50 questions relating to the top 10 diagnoses seen in three previous humanitarian assistance operations. The respondents answered 76.8% of these questions with the response: Had thorough education and

clinical experience at USUHS; would require no supervision. Another 16.9% of the questions were answered: Had thorough education but no clinical experience at USUHS; may need some supervision. Only 2.8% of the questions were answered: Had little education or clinical experience at USUHS; definitely need supervision. A mere 1.8% of the questions were answered: Had no experience at USUHS but have seen it in practice; may need review and supervision. Only for one of the questions did a respondent answer: Had no experience or training at USUHS or in practice; not comfortable treating this patient. There were 27 questions left unanswered, accounting for the final 1.6% of responses.

Respondents expressed significantly higher confidence in their ability to provide the five aspects of care for three of the ten diagnoses evaluated. These are Upper Respiratory Infections (URI), Ear Infections, and Genitourinary (GU) Problems. Table 6 shows the means and standard deviations (S.D.) of the responses among these three categories.

Table 6

---

Number of Responses to Three Diagnoses Respondents Felt Most Prepared to Care For


---

Diagnosis & Aspect of Care	Preparedness Level*					Mean	S.D.
	1	2	3	4	5		
URI-assess & diagnose**	33					1.00	.00
URI-treat**	33					1.00	.00
URI-education**	33					1.00	.00
URI-refer**	33				1	1.09	.52
URI-prevention**	30	1	1			1.09	.38
Ear Infections-assess & diagnose**	31	2				1.06	.24
Ear Infections-treat**	31	2				1.06	.24
Ear Infections-education**	33					1.00	.00
Ear Infections-refer**	32		1			1.06	.35
Ear Infections-prevention	34					1.00	.00
GU-assess & diagnose**	30	3				1.09	.29
GU-treat**	29	4				1.12	.33
GU-education**	32	1				1.03	.17
GU-refer**	32	1				1.03	.17
GU-prevention**	32	1				1.03	.17

\*1= Had thorough education and clinical experience at USUHS; require no supervision

2 = Had thorough education, no clinical experience at USUHS; need some supervision

3 = Had little education or experience at USUHS; definitely need supervision

4 = Had no experience at USUHS, seen it in practice; need review and supervision

5 = Had no experience/training at USUHS or practice; not comfortable treating patient

\*\* One respondent did not answer this section of questions.

At the other end of the scale, the three diagnoses that yielded the most responses of feeling the need to review and/or supervision in order to provide adequate care were: parasitic infections, skin infections/conditions, and musculoskeletal problems (Table 7).

Table 7Number of Responses to Three Diagnoses Respondents Felt Least Prepared to Care For

Diagnosis & Aspect of Care	Preparedness Level*					Mean	S.D.
	1	2	3	4	5		
Parasitic Infections-assess & diagnose	11	13	6	4		2.09	1.00
Parasitic Infections-treat	11	15	4	4		2.03	.97
Parasitic Infections-education	16	12	4	2		1.76	.89
Parasitic Infections-refer**	19	9	3	3		1.64	.90
Parasitic Infections-prevention	21	8	4	1		1.56	.82
Skin Problems-assess & diagnose	19	10	4	1		1.62	.82
Skin Problems-treat	18	12	3	1		1.62	.78
Skin Problems-education	25	6	2	1		1.38	.74
Skin Problems-refer**	25	5	2	1		1.36	.74
Skin Problems-prevention**	25	6	1	1		1.33	.69
Musculoskeletal Problems- Assess & diagnose	17	12	3	2		1.71	.87
Musculoskeletal-treat	20	12	1	1		1.50	.71
Musculoskeletal-education	24	9		1		1.35	.65
Musculoskeletal-refer	25	8		1		1.32	.64
Musculoskeletal-prevention	24	8	1	1		1.38	.70

\*1= Had thorough education and clinical experience at USUHS; require no supervision

2 = Had thorough education, no clinical experience at USUHS; need some supervision

3 = Had little education or experience at USUHS; definitely need supervision

4 = Had no experience at USUHS, seen it in practice; need review and supervision

5 = Had no experience/training at USUHS or practice; not comfortable treating patient

\*\* One respondent did not answer this section of questions

In comparing the responses to the questions relating to the 3 diagnoses for which respondents were most confident in providing care (see Table 6) to the responses to the questions relating to the three diagnoses for which respondents were least



confident in providing care (see Table 7), there were noticeable differences. The frequency of the response, “Had thorough education and clinical experience at USUHS; require no supervision,” was 94% in the group of three diagnoses respondents were most confident providing care for, while that response frequency in the group of 3 diagnoses respondents were least confident providing care for was only 59%. The mean response, on the scale of 1 to 5, in the first group was 1.04, while the mean response in the second group was 1.58.

Although respondents indicated by their responses that they felt less prepared to provide full care for parasitic infections, skin problems, and musculoskeletal problems, they indicated they are prepared to provide education, make referrals, and offer prevention measures for these conditions (Table 7). While only 11 respondents felt they could assess, diagnose, and treat parasitic infections without any supervision, 28 felt they could provide education and make appropriate referrals, and 29 felt they could offer preventative measures for parasitic infections with little or no supervision. Twenty-nine respondents felt they could assess and diagnose both skin problems and musculoskeletal problems with little or no supervision; 30 could treat skin problems and 32 could treat musculoskeletal problems with little or no supervision. An even higher number could provide education, make referrals and offer preventative measures for these last two diagnoses.

### Summary

The purpose of this study was to determine the specific types of illnesses and/or injuries that have been seen and treated in humanitarian assistance settings within the scope of military medicine, and to evaluate the preparation of family nurse

practitioners in the Graduate School of Nursing program at the Uniformed Services University of the Health Sciences to meet these expectations. Data analysis has been presented on a total of 34 questionnaires from graduates of the FNP program at USUHS. The questionnaires allowed the FNPs to evaluate how well they feel their experience at USUHS prepared them to provide primary care for the 10 most commonly diagnosed conditions in humanitarian assistance operations. Overall, 91% of the respondents answered, “Yes,” to the research question, “Is the FNP educated at the Uniformed Services University of the Health Sciences adequately prepared to meet these specific challenges?” The final chapter will provide discussion, summarize conclusions, and make recommendations for further research.

## CHAPTER V: SUMMARY

Since the end of the Cold War era, the United States military forces have more and more frequently been tasked to provide humanitarian assistance in times of disaster, both natural and man-made. Military medicine's primary focus for generations has been combat support. But if military health care providers, including family nurse practitioners (FNPs), are trained primarily to respond to a combat type environment, are they prepared to meet the needs of victims of a multitude of unexpected disasters anywhere in the world? More specifically, this study evaluated the preparation of FNPs at the Uniformed Services University of the Health Sciences (USUHS) to provide primary health care in humanitarian assistance operations.

## Conclusions

Specific Conditions/Illnesses/Injuries Expected in Humanitarian Assistance Operations

Data were compiled from three recent humanitarian assistance operations involving military medical personnel: Operation Flash Canoe 97 (Baker & Ryals, 1996b), the Fleet Hospital 5 mission in Haiti in 1997 (Gauker, Emens-Hesslink, & Konoske, 1998), and the aftermath of the Northridge Earthquake in California in 1994 (Teeter, 1996). The resulting overall top 10 diagnoses seen in these operations, as depicted in Table 5, were: upper respiratory infections with 17.5% of the total diagnoses seen, gastrointestinal with 10.5%, musculoskeletal problems with 9.2%, headache with 8.5%, parasitic infections with 8.2%, anemia with 5.1%, skin problems with 4.3%, genitourinary problems (including sexually transmitted diseases) with 3.6%, fever with 3.5%, ear infections with 3.0%, and all other diagnoses with the

remaining 26.6% of all diagnoses seen. Some of the other diagnoses seen in smaller numbers were stress, medication refills, malnutrition, pregnancy and childbirth, neoplasms, and mental disorders.

### Preparation of FNPs at USUHS to Provide Primary Care in Humanitarian Assistance Operations

According to course syllabi and descriptions (Bustos, 2000; Graduate School of Nursing, 1999d; Grandjean, 1999; McMullen & Seibert, 2000; Ricciardi & Murphy, 2000), the FNP program at USUHS provides instruction on all of the top 10 diagnoses seen in the three humanitarian assistance operations studied.

A questionnaire was created to allow all FNP graduates of USUHS to evaluate their preparation to provide primary care for humanitarian assistance operations, based on the top 10 diagnoses seen in the three previously mentioned operations. Five aspects of care were evaluated for each diagnosis. They included: assess/diagnose, treat, provide education, know when to refer care out to a specialist, and prevention. The questionnaire was sent out to all 53 FNP graduates of USUHS since the program's inception, via either electronic mail or traditional postal service. Thirty-four graduates responded, for a rate of 64%. Of the 34 respondents, 31 (91% of the total respondents) stated they do feel prepared to function as a FNP if deployed today on a humanitarian assistance mission.

The most frequently seen condition, upper respiratory infection, produced the following results on the questionnaire: All respondents who evaluated the ability to assess/diagnose, treat, and provide education about this condition felt they had thorough education and clinical experience at USUHS and would require no

supervision. One respondent did not answer this section of questions. All respondents except one also felt they would need no supervision to know when to refer a patient with this condition to a specialist, while the one responded, “Would need review and supervision.” Thirty responded they would need no supervision to provide prevention information for upper respiratory infections, but one responded “Need some supervision,” and another responded, “Definitely need supervision,” to that question.

The conditions, ear infections and genitourinary problems, according to the respondents’ answers on the questionnaire, were the next two, respectively, the respondents felt most competent providing all five aspects of care.

The condition of the top 10 diagnoses expected in humanitarian assistance operations that graduates were least prepared to provide care for was parasitic infections. Only 11, or 32%, felt they could assess/diagnose and treat parasitic infections without any review or supervision. The next two conditions that respondents felt most in need of review and/or supervision, respectively, were skin problems, and musculoskeletal problems.

Of the entire questionnaire, evaluating five aspects of care for 10 different conditions/illnesses, only one respondent replied, “Had no experience/training at USUHS or practice; not comfortable treating patient,” for knowing when to refer gastrointestinal problems for more definitive care with a specialist.

Overall, graduates of the FNP program at USUHS believe they are competent to function as a FNP in humanitarian assistance operations, and provide care for the most frequently seen diagnoses.

### Theoretical Framework

Sister Callista Roy described the individual as an adaptive system with coping mechanisms that are influenced by four modes: physiological, self-concept, role function, and interdependence (Pearson et al., 1996). She went on to identify six basic physiological needs that have to be met in order to maintain homeostasis: exercise and rest; nutrition; elimination; fluid and electrolytes; oxygenation and circulation; regulation of temperature, senses and the endocrine system. These needs are present in the ten most frequently seen diagnoses in humanitarian assistance operations that were considered in this study.

Roy went on to describe role as the title given to the individual, as well as behaviors that society expects an individual to perform in order to maintain the title (Pearson et al., 1996). This study examined the role of nurse practitioners in primary care, including the American College of Nurse Practitioners (1999) definition of nurse practitioner: “A registered nurse with advanced academic and clinical experience, which enables him or her to diagnose and manage most common and many chronic illnesses, either independently or as part of a health care team” (p. 1).

Roy’s goals of nursing are related to achieving adaptive responses with patients in all four modes, guided by a knowledge of “norms”, planned in conjunction with patients, and stated in terms related to behavior (Pearson et al., 1996). With these goals of nursing in mind, in conjunction with the role of the nurse practitioner, this study examined how well FNPs educated and trained at USUHS feel they were prepared to provide care for patients in a humanitarian assistance type operation. A questionnaire was used that included the five aspects of care (assess/diagnose, treat,

provide education, refer, and prevention) of each of the ten most frequently seen diagnoses in humanitarian assistance operations. Graduates of the FNP program at USUHS had the opportunity to carefully consider how well they could adapt to these situations, perform the role of FNP, and how well they could provide care for patients with specific conditions, thus helping them to adapt to their circumstances.

Based on responses to the questionnaire, graduates of the FNP program at USUHS are ready to adapt to any situation within the realm of FNP in a humanitarian assistance mission, and are capable of adapting to that role as needed.

### Recommendations

According to transcripts made available by the Graduate School of Nursing (Graduate School of Nursing, 2000a), the FNP program has evolved over the years, adding a number of courses. In the Spring 2000 semester, a two-day seminar, “Medical Humanitarian Assistance Course for Advanced Practice Nurses,” was sponsored by the Graduate School of Nursing at USUHS (Graduate School of Nursing, 2000b) as a part of the Operational Readiness course. The seminar included lectures about disasters, role of non-governmental agencies, ethics of humanitarian missions, and providing care in austere conditions. Two FNPs who had been deployed on humanitarian assistance missions spoke of their personal experiences (Graduate School of Nursing, 2000b). This seminar is a major step in improving preparation of FNPs for their role in humanitarian assistance operations.

Based on the results of the questionnaire, it is recommended that the Graduate School of Nursing consider enhancing certain areas of the curriculum, especially parasitic infections, musculoskeletal problems, and skin problems. These topics are

covered, to some degree, in the current curriculum (Bustos, 2000; Graduate School of Nursing, 1999d; McMullen & Seibert, 2000; Ricciardi & Murphy, 2000). Responses to the questionnaire indicate, however, that more is needed in these areas.

As part of the questionnaire, this question was asked, “What additional skills/training at USUHS do you feel would better prepare you to function as a FNP in the humanitarian assistance mission role?” Twenty-eight respondents offered suggestions, and many of them duplicated each other. Some of their suggestions have been implemented already, since their graduation. For example, the recommendation to provide an autopsy class to become familiar with the inside of the body: as of 1999, Anatomy and Cell Biology, with lab experience dissecting a cadaver, has been added to the FNP curriculum (Graduate School of Nursing, 1999c; Graduate School of Nursing, 1999d).

Several respondents recommended suturing, casting and splinting, and other minor procedural skills training be added into the curriculum. Some respondents also suggested clinical rotation time in the Emergency Room would be helpful. If this were accomplished, hands-on experience with the suturing, wound care, casting and splinting skills would likely be a part of that experience.

Five respondents suggested field training as part of the curriculum of Operational Readiness. The recommendation is made to form a field-training exercise as a part of the Operational Readiness course that would include the information provided in the two-day seminar, “Medical Humanitarian Assistance Course for Advanced Practice Nurses.” The proposed exercise could also incorporate first-aid, splinting and casting, and other emergency procedures, that would likely be seen in both humanitarian



assistance and combat support operations. Students in the FNP program at USUHS are experienced nurses, trained to function as nurses in the field by their respective service specific requirements. As FNPs, that role becomes primary care provider, and this new, expanded role should be practiced in the field, too.

#### Recommendations for Future Research

Future studies are recommended comparing preparation of military FNPs at USUHS and civilian graduate nursing programs. Being a Department of Defense sponsored school, the question: Is there a significant difference in how FNPs are prepared at USUHS and civilian schools for their role in humanitarian assistance operations should be answered. This study has demonstrated that graduates of the FNP program at USUHS feel adequately prepared to provide care as a primary care provider in humanitarian assistance operations. If there is a significant difference in their preparation and the preparation of FNPs in civilian schools for providing health care for conditions commonly seen in humanitarian assistance operations, these differences should be considered when selecting graduate nursing schools for the active duty military member to attend.

## REFERENCES

- American College of Nurse Practitioners. (1999). What is a nurse practitioner? [On-line]. Available: [www.nurse.org/acnp/facts](http://www.nurse.org/acnp/facts).
- American Nurses Association. (1987). The scope of practice of the primary health care nurse practitioner. Washington D.C.
- Arcangelo, V., Fitzgerald, M., Carroll, D., & Plumb, J. D. (1996). Collaborative care between nurse practitioners and primary care physicians. Primary Care, 23 (1), 103-113.
- Baker, M. S., & Ryals, P. A. (1999a). The medical department in military operations other than war. Part 1. Planning for deployment. Military Medicine, 164 (8), 572-579.
- Baker, M. S., & Ryals, P. A. (1999b). The medical department in military operations other than war. Part II. Medical civic assistance program in Southeast Asia. Military Medicine, 164, 619-625.
- Burkle, F. M., Frost, D. S., Greco, S. B., Petersen, H. V., & Lillibridge, S. R. (1996). Strategic disaster preparedness and response: Implications for military medicine under joint command. Military Medicine, 161, 442-447.
- Burns, N. & Grove, S. K. (1997). The Practice of Nursing Research: Conduct, Critique, & Utilization (3<sup>rd</sup> ed.). Philadelphia: W. B. Saunders.
- Bustos, O. (2000). Clinical Pathophysiology for Advanced Practice Nurses Course Outline. Unpublished manuscript, Uniformed Services University of the Health Sciences, Bethesda, MD.

Byrd, T. (1980). Disaster medicine: Toward a more rational approach. Military Medicine, 145, 270-273.

Coultrip, R. (1974). Medical aspects of US disaster relief operations in Nicaragua. Military Medicine, 139, 879-883.

Davis, L. M., Hosek, S. D., Tate, M. G., Perry, M., Hepler, G., & Steingerg, P. S. (1996). Army Medical Support for Peace Operations and Humanitarian Assistance. Santa Monica, CA: Rand.

Gauker, E. D., Emens-Hesslink, K., & Konoske, P. J. (1998). A descriptive analysis of patient encounter data from the fleet hospital's 5 humanitarian relief mission in Haiti (Report No. 98-38). San Diego, CA: Naval Health Research Center.

Gaydos, J. C., & Luz, G. A. (1994). Military participation in emergency humanitarian assistance. Disasters, 18, 48-57.

Graduate School of Nursing, Uniformed Services University of the Health Sciences. (1999a). Graduate School of Nursing History [On-line]. Available: [www.usuhs.mil/gsn/hist.html](http://www.usuhs.mil/gsn/hist.html).

Graduate School of Nursing, Uniformed Services University of the Health Sciences. (1999b). GSN-department of nurse practitioner family nurse practitioner program. [On-line]. Available: [www.usuhs.mil/gsn/nurpr1.html](http://www.usuhs.mil/gsn/nurpr1.html).

Graduate School of Nursing, Uniformed Services University of the Health Sciences. (1999c). GSN curriculum [On-line]. Available: [www.usuhs.mil/gsn/curricul.html](http://www.usuhs.mil/gsn/curricul.html).

Graduate School of Nursing, Uniformed Services University of the Health Sciences. (1999d). GSN-department of nurse practitioner course descriptions. [Online]. Available: [www.usuhs.mil/gsn/fnpcd.html](http://www.usuhs.mil/gsn/fnpcd.html).

Graduate School of Nursing, Uniformed Services University of the Health Sciences. (2000a). Official transcripts. Unpublished data, Uniformed Services University of the Health Sciences, Bethesda, MD.

Graduate School of Nursing, Uniformed Services University of the Health Sciences. (2000b). Medical Humanitarian Assistance Course for Advanced Practice Nurses Schedule and Handouts. Unpublished course materials, Uniformed Services University of the Health Sciences, Bethesda, MD.

Grandjean, C. (1999). Primary care of adults course syllabus. Unpublished course materials, Uniformed Services University of the Health Sciences, Bethesda, MD.

Hoekelman, C. R. (1998). [Commentary] A program to increase health care for children: the pediatric nurse practitioner program, by Henry K. Silver, MD, Loretta C. Ford, EDD, and Susan G. Stearly, MS, *Pediatrics*, 1997; 39: 756-760. *Pediatrics*, 102, 245-248.

Larino, E. A. (1997). Determining the level of care provided by the family nurse practitioner during a deployment. Unpublished master's thesis, Uniformed Services University of the Health Sciences, Bethesda, MD.

McMullen, P. & Seibert, D. (2000). Principles of Women's Health for Nurse Practitioners Course Syllabus. Unpublished course materials, Uniformed Services University of the Health Sciences, Bethesda, MD.

- Pearson, A., Vaughan, B., & Fitzgerald, M. (1996). Nursing Models for Practice (2nd ed.). Boston: Reed Educational and Professional Publishing Ltd.
- Rambo, B. J. (1984). Adaptation Nursing: Assessment and Intervention. Philadelphia: W. B. Saunders.
- Ricciardi, R., & Murphy, K. (2000). Primary care of children course syllabus. Unpublished course materials, Uniformed Services University of the Health Sciences, Bethesda, MD.
- Rumbaugh, J. R. (1998). Operation Pacific Haven: Humanitarian medical support for Kurdish evacuees. Military Medicine, 163, 269-271).
- Ryals, P. A., & Baker, M. S. (1996). Military medicine in operations other than war part II: Humanitarian relief missions for naval reserve fleet hospitals. Military Medicine, 161, 502-504.
- Sharp, T. W., Yip, R., & Malone, J. D. (1994). US military forces and emergency international humanitarian assistance. Journal of the American Medical Association, 272, 386-390.
- Stanhope, M., & Lancaster, J. (Eds.). (1992). Community Health Nursing: Process and Practice for Promoting Health (3rd ed.). St. Louis: Mosby Year Book.
- Teeter, D. S. (1996). Illnesses and injuries reported at disaster application centers following the 1994 Northridge earthquake. Military Medicine, 161, 526-530.
- World Health Organization (1996). International classification of diseases, 9<sup>th</sup> revision, clinical modification (4<sup>th</sup> ed.).
- Wright, K. B. (1997). Advanced practice nursing: Merging the clinical nurse specialist and nurse practitioner roles. Gastroenterology Nursing, 20, 57-60.

APPENDICES

APPENDIX A – Timeline for Thesis Project

APPENDIX B – Questionnaire Sent to FNP Graduates of USUHS

APPENDIX C – Cover Letter for Participation in Study

APPENDIX D – Approval Letter from Institutional Review Board - USUHS

## APPENDIX A

### Timeline for Thesis Project





APPENDIX B

Questionnaire Sent to FNP Graduates of USUHS

DEMOGRAPHIC DATA

Age: \_\_\_\_\_ Sex: 1. Female \_\_\_\_ 2. Male \_\_\_\_

Year graduated USUHS: 1. 1995 \_\_\_\_  
2. 1996 \_\_\_\_  
3. 1997 \_\_\_\_  
4. 1998 \_\_\_\_  
5. 1999 \_\_\_\_  
6. 2000 \_\_\_\_

Number years as RN prior to becoming FNP: \_\_\_\_\_

Were you an Advanced Practice Nurse prior to graduation from USUHS?  
1. Yes \_\_\_\_ 2. No \_\_\_\_

If so, specialty: 1. Pediatrics \_\_\_\_  
2. Women's Health \_\_\_\_  
3. Adult Health \_\_\_\_  
4. Psychiatric \_\_\_\_  
5. Critical Care \_\_\_\_  
6. Other (write in) \_\_\_\_\_

Number years in military: \_\_\_\_\_ Number years worked as FNP: \_\_\_\_

Number of years service in military prior to becoming an RN: \_\_\_\_\_

Clinic Experiences as a FNP:	No. Years
1. Family Practice/Primary Care clinic	_____
2. OB/GYN clinic	_____
3. Pediatric clinic	_____
4. ER	_____
5. Surgery/Ortho clinic	_____
6. None	_____
7. Other	_____

Branch of military service: 1. U. S. Army \_\_\_\_  
2. U. S. Navy \_\_\_\_  
3. U. S. Air Force \_\_\_\_  
4. U. S. Public Health Service \_\_\_\_  
5. Civilian \_\_\_\_

DEPLOYMENT DATA

Have you been deployed since becoming a FNP? 1. Yes: \_\_\_\_ 2. No: \_\_\_\_

If so, was it a humanitarian mission? 1. Yes: \_\_\_\_ 2. No: \_\_\_\_

Were you deployed in a FNP billet? 1. Yes: \_\_\_\_ 2. No: \_\_\_\_

If not deployed as a FNP, what was the billeted position you filled?

- 1. ICU nurse \_\_\_\_\_
- 2. ER nurse \_\_\_\_\_
- 3. OB/GYN nurse \_\_\_\_\_
- 4. Medical/Surgical nurse \_\_\_\_\_
- 5. Pediatric nurse \_\_\_\_\_
- 6. Orthopedic nurse \_\_\_\_\_
- 7. Operating Room nurse \_\_\_\_\_
- 8. Public Health nurse \_\_\_\_\_
- 9. Other \_\_\_\_\_

Were you utilized as a FNP while filling another billet? 1. Yes: \_\_\_\_ 2. No: \_\_\_\_

If you were deployed today on a humanitarian mission, based on your education/training at USUHS, do you feel prepared to function as a FNP in that setting? Yes: \_\_\_\_ No: \_\_\_\_

What additional skills/training at USUHS do you feel would better prepare you to function as a FNP in the humanitarian assistance mission role?

---

---

Other comments: \_\_\_\_\_

---

---

## **QUESTIONNAIRE INSTRUCTIONS**

The following is a list of the ten most commonly diagnosed illnesses/conditions treated by military medical personnel during three recent humanitarian assistance missions. If you were deployed on this type mission, and a patient presented to your clinic with signs/symptoms of these diagnoses, please rate your ability to care for this patient based on your education/training at USUHS by placing an "X" on the line to the right of the appropriate number.

### **RATING SCALE:**

- 1 - Had thorough education and clinical experience at USUHS; would require no supervision.
- 2 - Had thorough education but no clinical experience at USUHS; may need some supervision.
- 3 - Had little education or clinical experience at USUHS; definitely need supervision.
- 4 - Had no experience at USUHS, but have seen it in practice; may need review and supervision.
- 5 - Had no experience or training at USUHS or in practice, not comfortable treating this patient .

## DEFINITIONS OF ASPECTS OF CARE:

**Assess/diagnose** - By reviewing history and conducting physical exam, can identify this health care condition.

**Treat** – Provide total health care necessary to return the patient to previous level of wellness.

**Provide education** – Provide information to patient/family to explain disease process, medication and treatments, signs and symptoms of worsening of condition, and need for follow up care.

**Refer** – Can recognize complications and know when to refer to higher level of care.

**Prevention** – Provide information/interventions to prevent recurrence or spread of disease.

ILLNESS/CONDITION	ASPECT OF CARE	RATING
<b>Upper respiratory infection</b>	Assess/diagnose	1 __ 2 __ 3 __ 4 __ 5 __
	Treat	1 __ 2 __ 3 __ 4 __ 5 __
	Provide education	1 __ 2 __ 3 __ 4 __ 5 __
	Refer	1 __ 2 __ 3 __ 4 __ 5 __
	Prevention	1 __ 2 __ 3 __ 4 __ 5 __
<b>GI – (Abdominal Pain, Diarrhea, GERD)</b>	Assess/diagnose	1 __ 2 __ 3 __ 4 __ 5 __
	Treat	1 __ 2 __ 3 __ 4 __ 5 __
	Provide education	1 __ 2 __ 3 __ 4 __ 5 __
	Refer	1 __ 2 __ 3 __ 4 __ 5 __
	Prevention	1 __ 2 __ 3 __ 4 __ 5 __
<b>Musculoskeletal</b>	Assess/diagnose	1 __ 2 __ 3 __ 4 __ 5 __
	Treat	1 __ 2 __ 3 __ 4 __ 5 __
	Provide education	1 __ 2 __ 3 __ 4 __ 5 __
	Refer	1 __ 2 __ 3 __ 4 __ 5 __
	Prevention	1 __ 2 __ 3 __ 4 __ 5 __

<b>Headache</b>	Assess/diagnose	1 __ 2 __ 3 __ 4 __ 5 __
	Treat	1 __ 2 __ 3 __ 4 __ 5 __
	Provide education	1 __ 2 __ 3 __ 4 __ 5 __
	Refer	1 __ 2 __ 3 __ 4 __ 5 __
	Prevention	1 __ 2 __ 3 __ 4 __ 5 __
<b>Parasitic Infections (Scabies, Worms)</b>	Assess/diagnose	1 __ 2 __ 3 __ 4 __ 5 __
	Treat	1 __ 2 __ 3 __ 4 __ 5 __
	Provide education	1 __ 2 __ 3 __ 4 __ 5 __
	Refer	1 __ 2 __ 3 __ 4 __ 5 __
	Prevention	1 __ 2 __ 3 __ 4 __ 5 __
<b>Anemia</b>	Assess/diagnose	1 __ 2 __ 3 __ 4 __ 5 __
	Treat	1 __ 2 __ 3 __ 4 __ 5 __
	Provide education	1 __ 2 __ 3 __ 4 __ 5 __
	Refer	1 __ 2 __ 3 __ 4 __ 5 __
	Prevention	1 __ 2 __ 3 __ 4 __ 5 __
<b>Skin (Infections, Rash, Lacerations)</b>	Assess/diagnose	1 __ 2 __ 3 __ 4 __ 5 __
	Treat	1 __ 2 __ 3 __ 4 __ 5 __
	Provide education	1 __ 2 __ 3 __ 4 __ 5 __
	Refer	1 __ 2 __ 3 __ 4 __ 5 __
	Prevention	1 __ 2 __ 3 __ 4 __ 5 __

**GU  
(STD, UTI, Vaginitis)**

Assess/diagnose 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Treat 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Provide education 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Refer 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Prevention 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

**Fever**

Assess/diagnose 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Treat 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Provide education 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Refer 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Prevention 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

**Ear Infection**

Assess/diagnose 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Treat 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Provide education 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Refer 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

Prevention 1 \_\_ 2 \_\_ 3 \_\_ 4 \_\_ 5 \_\_

## APPENDIX C

### Cover Letter for Participation in Study



(date)

Dear USUHS FNP Graduate,

Attached you will find a questionnaire to evaluate the preparation of family nurse practitioners at USUHS for their role in humanitarian assistance operations. This study is being conducted as part of my thesis requirement as a current student at USUHS.

Please complete all three portions of the questionnaire, the demographic data, the deployment data, and the survey, and mail it back to me as soon as possible. The instructions for the survey are included on the first page of the survey.

All names and addresses will be removed from the printed responses before they are evaluated and the data entered in to the software program for analysis. Each response will be assigned a code number for an identifier within the program, with no reference to name or address of the respondent. The printed final results and thesis will not have any reference to any subject by name or address. If any questionnaires are returned by postal service, they will be handled in the same manner. The responses will be down loaded onto 3 ½ inch floppy disks and kept in a locked file cabinet in the author's home for five years, and then destroyed. All paper copies of responses will be destroyed as soon as the data has been entered into the computer software program and double checked for accuracy. This will ensure both privacy and confidentiality of responses.

Informed consent to participation in this study is implied by your decision to complete and return the questionnaire.

Thank you,

Captain Susan Lee  
FNP Class of 2001  
USUHS  
Bethesda, MD

APPENDIX D

Approval Letter from Institutional Review Board - USUHS



UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES

4301 JONES BRIDGE ROAD  
BETHESDA, MARYLAND 20814-4799



March 28, 2000

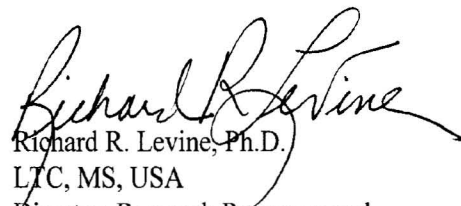
MEMORANDUM FOR SUSAN J. LEE, GRADUATE SCHOOL OF NURSING

SUBJECT: IRB Approval of Protocol **T061BE-01** for Human Subject Use

Your research protocol entitled "*Preparation of Family Nurse Practitioners for Their Role in Humanitarian Assistance Operations*," was reviewed and approved for execution on 3/28/2000 as an **exempt** human subject use study under the provisions of 32 CFR 219.101 (b)(1) and (2). This approval will be reported to the full IRB scheduled to meet on 13 April 2000.

The purpose of this study is to evaluate the preparation of family nurse practitioners (FNPs) in the Graduate School of Nursing at USUHS to provide health care in the humanitarian assistance setting. The IRB understands that this study involves surveying 40 GSN graduates regarding five aspects of care and their assessment of their preparation to provide these aspects of care.

Please notify this office of any amendments you wish to propose and of any untoward incidents which may occur in the conduct of this project. If you have any questions regarding human volunteers, please call me at 301-295-3303.

  
Richard R. Levine, Ph.D.  
LTC, MS, USA  
Director, Research Programs and  
Executive Secretary, IRB

Cc: Director, Grants Administration