THESIS APROVAL FORM

MEDICAL READINESS OF AIR FORCE MEMBERS NOT ON DEPLOYMENT FOR SHORTFALL DEPLOYMENTS

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Report Documentation Page

Form Approved
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
MAY 2001	**N/A**	**-**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
MEDICAL READINESS OF AIR FORCE MEMBERS NOT ON DEPLOYMENT FOR SHORTFALL DEPLOYMENTS	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
MARGUERITE T. MITCHELL, BSN	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)	8. PERFORMING ORGANIZATION REPORT NUMBER
Uniformed Services University of the Health Sciences	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT

After the Cold War the military deployment rate has increased dramatically despite the 39% decrease of armed forces personnel. One of the goals established in the Global Engagement: A Vision for the 21st Century Air Force document, is that all active duty airmen will be required to maintain a high level of medical readiness. Presently only Air Force members on deployment status are routinely screened for medical readiness. This descriptive research concentrated on the Air Forces core competency of Rapid Global Mobility. The goal of this study was to assess a sample population for the percent of medical readiness for a shortfall mobilization, describe pertinent discrepancies if any, and to determine if there was a significant differences in medical readiness by gender, rank or age. The hypothesis is that 100% of active duty Air Force personnel, not on deployment status, who meet worldwide qualifications, will be medically ready for a less than 72-hour notice deployment. A total of 300 outpatients medical records were randomly chosen and reviewed, 100 from each of the three different major commands. Only 64% of the sample population was medically ready for a shortfall deployment. Thirty-two percent of the sample required further evaluation. If documentation was made as to whether the members still met worldwide qualifications after each outpatient visit the overall readiness percentage could be greatly improved.

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			
unclassified	**unclassified**	**unclassified**	**SAR**	**78**	

DISCLAIMER STATEMENT

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DEDICATION AND ACKNOWLEDGEMENTS

To God, my parents, my daughter Angelique (3/8/86-3/31/99) and my son Zachary, I dedicate the creation of this thesis. Without the Grace, love, encouragement and support received the completion of this course and thesis would not be possible.

Acknowledgement goes to those who greatly contributed to the initiation, process and completion of this study, especially the staff of the Graduate School of Nursing research department; the chair and members of the thesis committee, Dr. Sylvia, Lt Col Graziano and Maj Novak, the personnel of the medical readiness office specifically SSgt Troy Himes, the Public Health office specifically, 1Lt Hamm, Sra Evans Immunizations Clinic, outpatient records room section specifically SSgt John Pollock and the administrative staff of the group commanders specifically Paula Willis. Their support, input and perseverance to ensure accuracy and completeness of information and instructions regarding medical readiness of active duty Air Force personnel and the ease of obtaining data and approvals were greatly appreciated.

ABSTRACT

After the Cold War the military deployment rate has increased dramatically despite the 39% decrease of armed forces personnel. One of the goals established in the Global Engagement: A Vision for the 21st Century Air Force document, is that all active duty airmen will be required to maintain a high level of medical readiness. Presently only Air Force members on deployment status are routinely screened for medical readiness. This descriptive research concentrated on the Air Force's core competency of Rapid Global Mobility. The goal of this study was to assess a sample population for the percent of medical readiness for a shortfall mobilization, describe pertinent discrepancies if any, and to determine if there was a significant differences in medical readiness by gender, rank or age. The hypothesis is that 100% of active duty Air Force personnel, not on deployment status, who meet worldwide qualifications, will be medically ready for a less than 72-hour notice deployment. A total of 300 outpatients medical records were randomly chosen and reviewed, 100 from each of the three different major commands. Only 64% of the sample population was medically ready for a shortfall deployment. Thirty-two percent of the sample required further evaluation. If documentation was made as to whether the members still met worldwide qualifications after each outpatient visit the overall readiness percentage could be greatly improved.

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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

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CHAPTER I: INTRODUCTION

Background

The purpose of this thesis was to evaluate a sample of Active Duty Air Force (USAF) personnel who are not on mobility, to determine medical readiness requirements for shortfall deployments. In the USAF, only active duty personnel who have been designated as being on deployment status are monitored closely for their level of medical, legal and administrative readiness. These individuals participate in deployment exercises where they must process through a deployment line to assess critical aspects of readiness. The exercises are performed to ensure that the individuals designated for deployment will be ready to travel and support whatever mission arises that requires their expertise. Of personnel assigned to a mobility position, deficiencies discovered during practice as well as actual deployments indicate individuals are not 100% medically ready. Published historical data demonstrates deficiencies exist.

In 1994, 68 members of an Air Force aviation unit were evaluated for vision readiness. Seventy-five percent had not had a professional eye exam within two years of the study, 25% would not have been ready for mobility, 22% did not meet visual acuity standards and 4% were found to have ocular disease (Erneston & Murchland, 1994). In 1995, a study was conducted of 2,723 Army Individual Ready Reserve soldiers notified for deployment during Desert Shield and Desert Storm. Twenty-nine percent did not meet weight standards, 12 % had orthopedic conditions that disqualified them from deployment, 10% were not mentally fit for deployment, 8% had other medical or substance abuse findings that disqualified them from deployment. Five percent of evaluated personnel were found to be pregnant (Rothberg, Koshes, Shanahan, and

Christman, 1995). Although there are medical readiness deficiencies in deployment personnel who are being closely monitored, the non-deployment population has not been closely evaluated as to the level of their medical readiness. With the changes seen around the world, the USAF has had to support wartime, peacetime, humanitarian and other short-notice missions. Because of the increase in the multiple missions, it is vital for individuals not on deployment status to be ready to support such missions.

Problem

Since the end of the Cold War, despite a decrease in the number of personnel on active duty, the operations tempo has continued to increase. After the retreat of Saddam Hussein at the end of Operation Vigilant Warrior in October 1994, the concept of the Air Expeditionary Force (AEF) was born to respond to this increased operations tempo (Robinson, 1996). Since the formation of several AEF units, the USAF has been able to rapidly deploy forces from the continental United States to augment forward-deployed troops, and effectively engage the enemy and/or provide humanitarian support in a matter of hours instead of weeks or months. During 1997 airmen supported peacekeeping operations in Bosnia, participated in humanitarian fire-fighting operations in Indonesia and non-combatant evacuation operations in Albania and Sierra Leone (Haug, 1997). Airmen have also participated in 53 joint and multilateral exercises worldwide. In support of Southwest Asia Operations Northern and Southern Watch, a typical day consisted of 8500 Air Force men and women launching 150 sorties over Iraq (Peters, 1998). On July 7, 1997 there was the first ever no-notice AEF deployment consisting of Navy and Air Force aviation units from Florida, Utah, Texas, Louisiana and Japan ("First no-notice", Air Force News, 1997). The deficiencies of previous deployments stress the need for the Air Force Medical

Service (AFMS) to maintain current and accurate medical records of all active duty members as the likelihood of high operations tempo continues to escalate within the readiness arena.

Potential Solution to the Problem

To help support the Air Force mission for rapid deployments, it is vitally important that all primary care providers keep medical readiness a priority when examining active duty personnel. During each outpatient visit, providers should document whether or not the individual client remains qualified for deployment. If an individual temporarily does not meet medical readiness qualifications, then a statement should be documented in the medical records to reflect the individual's status for deployment. If the active duty patient requires a profile because of a temporary or permanent condition that would disqualify him/her from overseas or any type of deployment, then the profile must be completed and placed in the individual's medical record. Personnel, who have a profile because of a temporary condition, should be followed closely with appropriate follow-up appointments until that person has regained medical readiness status. If a medical evaluation board is warranted to determine whether an individual can still continue on active duty, a statement of a pending medical evaluation board should be documented in the medical record. Although active duty personnel are not as closely monitored, as are deployment personnel, the individual's supervisor should be notified if one of their active duty troops is temporarily disqualified from deployments. This final suggestion may require a change in the reporting system and the need for each squadron's Unit Deployment Manager to monitor all active duty personnel within their unit, not only those on deployment status.

Background and Significance

In The State of the Air Force by Dr. Widnall, Secretary of the Air Force (1995) many key issues were addressed. The Air Force mission to defend the United States through control and exploitation of air and space was restated to remind the listeners of the Air Force's requirements in the defense of the United States. Dr. Widnall also noted that in the past several years personnel have been cut by one-third, fighter forces by nearly half and the bomber force by two-thirds. Outside the Continental United States, although personnel strength had dropped by one-half, there was a four-fold increase of airmen on temporary duty overseas since the fall of the Berlin Wall. For example, during 1995 75,000 tons of relief was delivered to Bosnia, and 15,000 tons to Rwanda and Zaire. In Bosnia, there were 18,000 sorties flown. In the Persian Gulf, there were three times as many missions flown since Desert Storm compared to the number flown during the war itself. During the fall of 1994, within ten days of Iraqi provocation, 122 combat aircraft augmented the 67 already deployed, and 1,000 additional sorties were flown in support of Vigilant Warrior. Also in support of Vigilant Warrior, within 48 hours from notification, four bombers flew nonstop from the United States to deliver 55,000 pounds of bombs within audible range of Iraqi forces. This resulted in an immediate retreat by Saddam Hussein and his troops. Dr. Widnall cited all of these operations to stress the vital part the Air Force men and women play in rapidly meeting all the missions required in a changing world.

In 1996, General Shalikashvili, Chairman, Joint Chiefs of Staff authored Joint Vision 2010, which called for precision engagement. This core competency identifies the Air Force as the vital link for joint military contingencies (as cited in "Precision engagement", Air Force News, 1997). Other core competencies which are fundamental to what the Air Force provides in defense of the

nation include: (a) air and space superiority, (b) global attack, (c) rapid global mobility, (d) information superiority and, (e) agile combat support.

This study concentrated on the core competency of rapid global mobility. Rapid global mobility is and will be the Air Force's most reliable combat force multiplier. Though a number of forward-deployed forces continue to decline, the need for immediate response to areas outside the Continental United States will continue to rise. Rapid global mobility is one of the primary keys the Air Force has to take the joint military services into the 21st century. At the most manageable level in support of rapid global mobility, medical readiness of personnel needs to be at its utmost level of efficiency.

The development of the AEF has brought the future of rapid global mobility into the present. The concept was born after General Jumper, United States Central Command Air Force saw Saddam Hussein retreat in face of rapidly deployed forces within 48 hours from the Continental United States in support of Vigilant Warrior (Robinson, 1996). After its birth in 1996, the AEF deployed to Bahrain, Qatar and Jordan making the first combat sorties within 72 hours of deployment notification ("The Air Expeditionary Force", Air Force Issues, 1997). From December 1995 the United States and allied nations deployed peacekeeping forces to Bosnia in support of Operation Joint Endeavor. In a span of three months, Air Force mobility forces flew 3,000 missions, carried over 15,600 passengers and delivered over 30,100 short tons of cargo ("Global Mobility", Air Force Issues, 1997).

In support of the Air Expeditionary Force concept, it is each squadron's, group's or wing's responsibility to make sure any individuals deemed not ready for deployment be replaced by an active duty person within the same career field, regardless of their deployment status. If an

individual cannot be replaced quickly, the wing commander must notify the major command commander so another person can be assigned from another wing. This is not something a wing commander would want to have happen. As more units are established as Air Expeditionary Forces there will be a need for all active duty personnel, regardless of their deployment status to be tasked to support these various missions as they arise.

Historical Link of Problem to Nursing

The primary focus for Nightingale's research during the Crimean War was to decrease morbidity and mortality of the soldiers (Burns & Grove, 1997). Military nursing's primary function is to ensure the health and welfare of fighting men and women to support mission completion. Advanced practice nurses are at the forefront of keeping medical readiness of active duty personnel as a priority while empowering each airman to personally take charge of their own medical readiness requirements. In linking the health belief model with medical readiness, the individual should be the first step to the maintenance of readiness (Rosenstock, 1990).

Importance of Problem to Nursing Practice

Multiple deterrents to the deployment process include unavailable medical records, medical records not current, immunizations, or medical evaluations not completed or outdated. The present and future protection and defense of the United States requires that military troops have the ability to rapidly deploy when needed. As the Air Force is being called on to support rapid deployments, the level of medical readiness of their personnel becomes vital in the completion of any and all missions requiring rapid mobility of troops. Primary care managers (PCMs) are the first line in elevating the level of readiness. All PCMs should, in every outpatient encounter with active duty members make sure the medical record is current in regards to physical

examinations, any medical problems that would prevent deployment, and a statement of whether or not that person still meets deployment qualifications.

Purpose of the Study

The purpose of this study was to evaluate the percent of active duty Air Force members, not on deployment status, who would be medically ready for less than 72-hour notice deployment. Although active duty personnel not on deployment status are not monitored as closely as those on mobility for medical readiness, it is not unusual for any of the active duty personnel to be tasked for deployment when the need arises. With increasing operations tempo in the Air Force there may be a gap in the level of medical readiness for the active duty population as a whole.

Research Questions

The questions this study addressed were: (a) How medically ready are active duty Air Force members not on deployment status for less than 72 hour deployments, (b) if there are medical deficiencies, what are the predominant ones, and (c) is there a significant difference in medical readiness between genders, (d) is there a significant difference in medical readiness between enlisted versus officer ranks and, (e) is there a difference in medical readiness between age ranges. The hypothesis was that 100% of active duty Air Force personnel, not on deployment status, who meet deployment eligibility, will be medically ready for a shortfall (less than 72-hour notice) deployment.

Selection of Variables

In this descriptive study, the research variables were items required for Air Force personnel to be considered medical ready for deployment missions. A checklist of these variables was used to review outpatient medical records of active duty personnel (see Appendix A). Items that can

be accomplished either on the deployment processing line or within 72 hours were considered as a completed requirement. However, out of date or incomplete items were noted to help evaluate prominent deficiencies. These variables were taken from and were in accordance with: (a) Department of Defense Directive (DoDD) 6490.2 Joint Medical Surveillance, (1997), (b) DoD Instruction 6490.3 Implementation and Application of Joint Medical Surveillance for Deployments, (1997), (c) Department of Defense Directive 6205.3, (1993), (d) Air Force Instruction (AFI) 48-123 Medical Examination and Standards, (2000) and, (e) AFI 48-101 Aerospace Medical Operations, (1994). More specifically, the following items were checked for medical readiness:

1. Documentation of chronic diagnoses and conditions on Air Force Form 1480A or DD Form 2766 Adult Preventive and Chronic Care Flowsheet.
2. Documentation of any hospitalizations and surgeries.
3. Known allergies.
4. Current prescription medications.
5. Immunizations documented on a separate Standard Form 600 or Air Force Form 1480B.
6. Up to date permanent profile if applicable.
7. Current G6PD, Hemoglobin S and HIV antibody lab tests.
8. Optometry requirements, if applicable.
9. Medical Evaluation Board pending, if applicable.
10. Current Tuberculosis test.
11. Demographic data of the outpatient location, last four digits of the social security number and first and last initial for retrieval purposes.

12. Rank, gender and age demographics for crosstabulation during data analysis.

Conceptual/Theoretical Framework

The Rosenstock's health belief model (Rosentstock, 1990) was used in this study as a recommendation for providers to incorporate the model into daily practice to empower airmen to take personal responsibility to ensure their own medical readiness through problem identification. In accordance with the model, individuals are not likely to take a health action unless they: (a) believe that they are susceptible to the disease or condition in question, (b) believe the disease would have serious effects on their lives if they contract it, (c) are aware of certain actions that can be taken and believe that there is a perceived benefit in taking these actions to reduce exposure to the disease or condition, and (d) believe that barriers to taking the preventive health action is minimal compared to the risk of the disease or condition itself.

The empowerment of each active duty member may be done in many ways. Improving their understanding of Air Force's mission of rapid global mobility could elevate the individual's realization that the potential is there for them to deploy. Once that realization is understood then individuals could be instructed on why medical readiness is important for their own well being and health. This could include instructions on the prevalence of disease and non-battle injuries versus battle-related injuries and the likelihood of contracting those diseases in third world as well as war-torn countries. Eventually the individual can be instructed in actions they can take to ensure medical readiness is less threatening than the disease or injury they could succumb to if and when deployed.

Definitions

The following definitions are relevant to this study and are first, conceptually then operationally defined as to how they were measured in this study.

1. Air Force Form (AF FM) 1480A/DD Form 2766 Adult Preventive and Chronic Care Flowsheet.

Conceptual: a list of all illnesses, risk factors, allergies, medications and hospitalizations or surgeries.

Operational: Air Force Form (AF FM) 1480A/DD Form 2766 Adult Preventive and Chronic Care Flowsheet found at the front of each active duty outpatient medical record with sections for documentation of illnesses, risk factors, allergies, prevention, current medications, hospitalizations and surgical procedures.

2. Allergies.

Conceptual: a significant antigen-antibody reaction to one or several antigens that results in mild to life threatening symptoms.

Operational: documentation regarding antigen-antibody reactions an individual has from certain medications, vaccinations and/or foods that would cause mild or life threatening reactions.

3. Chronic Disease.

Conceptual: long lasting, deep-seated unhealthy condition.

Operational: health related condition(s) that requires more than two outpatient visits per year or requires monthly, bimonthly or quarterly monitoring through laboratory or other diagnostic tests.

4. Deployment/Mobility Status.

Conceptual: the state or quality of being mobile.

Operational: individuals designated by the squadron's Unit Deployment Manager under the guidance of the group commander. Medical records should be flagged to indicate status. Mobility personnel are required to participate in regularly scheduled deployment exercises and must meet all requirements for actual deployment missions.

5. Glucose-6-Phosphate Dehydrogenase (G6PD).

Conceptual: an enzyme normally found in red blood cells, an individual that is deficient is at risk for hemolytic anemia if exposed to oxidant metabolites of certain drugs, specifically antimalarial drugs usually given to deployed troops either before, during or after deployment.

Operational: each chart will be checked to see if there was a lab test done to determine if the airman has G6PD deficiency.

6. Hemoglobin S.

Conceptual: an abnormal hemoglobin formed by certain individuals which could cause red blood cells to form a sickle shape during periods of increased stress on the system. The syndrome associated with hemoglobin S is sickle cell anemia the result of damage to red blood cells, ischemia and vaso-occlusive problems.

Operational: outpatient records will be checked to determine if the individual was checked for this abnormal hemoglobin. An active duty member with this abnormal hemoglobin syndrome is at increased risk of death if deployed in an area where a major medical center is not available to manage a sickle cell crisis. A crisis can occur during periods of hypoxia if the person

experiences shock or flies in an unpressurized aircraft. However, an individual with only the trait can be deployed.

7. Human Immunodeficiency Virus (HIV) Antibody.

Conceptual: after being exposed to HIV the immune system will form a substance called antibodies in attempts to fight the virus. This antibody can be detected six months after exposure.

Operational: medical records will be reviewed for the Air Force's annual requirements for HIV antibody testing.

8. Hospitalization and Surgeries.

Conceptual: the period of being in a hospital as a patient; manually or instrumental operating upon injuries or defects by a surgeon.

Operational: overnight hospital stays for medical or surgical care, same day surgical procedures and emergency room visits.

9. Immunization.

Conceptual: the substance(s) used to bring an individual to a state of being temporarily or permanently able to resist an infection.

Operational: all immunizations required not only for the civilian population but also for military personnel or overseas travel.

10. Medical Evaluation Board.

Conceptual: a group formed to determine if a military individual is able to continue on active duty with a newly diagnosed condition or due to a physical or mental abnormality.

Operational: documentation in medical records, a recommendation made by a primary care provider for a review of an individual's records to determine if that person can continue on active

duty. If due to a newly diagnosed illness or disability the person cannot continue on active duty, a ruling is made for a medical discharge, and for the percent of disability to be given upon discharge.

11. Medications.

Conceptual: any preparations or substances used in the treatment of disease.

Operational: medication that are either prescribed or used for 90 days continuously or on a frequent recurrent basis requiring pharmacy refills.

12. Optometry Prescription.

Conceptual: a medical order to correct abnormal vision.

Operational: documentation found in the outpatient medical records stating the individual's requirement for corrective lens. For deployment an individual requires two pairs of corrective lenses as well as two gas mask inserts.

13. Pregnancy.

Conceptual: the state of carrying an unborn child within a female's body.

Operational: given that female personnel cannot deploy during pregnancy, female personnel medical records will be examined for documentation of pregnancy status.

14. Physical Profile Serial Report (AF Form 422).

Conceptual: a concise biographical description.

Operational: documentation on Air Force Form 422 of any duty limitations to include pregnancy, orthopedic injuries or an inability to take certain immunizations. It may include postoperative convalescent periods.

15. Shortfall Deployment.

Conceptual: unexpected and sudden movement into battle formation.

Operational: when military individuals are required to travel from their permanent duty station to another location either in the Continental United States or outside of the Continental United States within 72 hours of receiving notification of such deployment.

16. Specialty Clinic.

Conceptual: outpatient treatment facilities, which provide care and management of specific physical or mental disorders, for example orthopedic, physical therapy, oncology or mental health.

Operational: documentation should appear in an individual's outpatient record if a referral was made to another clinic for specific care and treatment. If not annotated this referral reference would require further review prior to deployment.

17. Treatments/Therapies.

Conceptual: to give medical attention to an individual to alleviate or cure a disease or body system dysfunction.

Operational: any medical or surgical procedure performed as a one time basis or as a scheduled, recurrent procedure to alleviate or cure a disease or body system dysfunction, (e.g., physical therapy manipulation, osteopathic manipulation therapy, etc.)

18. Tuberculosis Test.

Conceptual: an intradermal skin test of which the mycobacterium tuberculosis antigen is injected to detect if a person has been infected with the tuberculosis bacteria.

Operational: the Air Force requires a yearly tuberculosis test; medical records will be

checked for completion of that requirement. Not having a recent skin test would require the test be done and read prior to deployment which must be done in 48 to 72 hours.

Assumptions and Limitations

The assumptions of this study were that active duty military personnel are always at the peak of medical readiness and that personnel desire a high level of medical readiness due to their military status. Another assumption is that, as samples were taken from three different major commands, the results would be generalized to an active duty Air Force population. The two limitations expected prior to performing this study were that of generalizability and the availability of all data required for assessing medical readiness. Due to the different medical readiness systems that are in place for the Army, Navy, Marines and non-active duty military units, it is difficult to determine if the results of this study could be generalized to other military services. Another limitation is the ability to actually determine if individuals who require prescription lenses have two pair of glasses and two gas mask inserts, or if hospitalizations have taken place but was not documented in the outpatient medical record. The outpatient medical record is the only source of data for this study. However, this is consistent with actual practice and is one of the primary medical sources that are evaluated on the deployment line at the time of practice and actual deployments.

CHAPTER II: REVIEW OF THE LITERATURE

Introduction

Since the end of the Cold War, the military forces have moved towards leaner, more agile forces. Each service has its own system in place to ensure its personnel meet all the medical requirements for any and all contingency operations within the United States and overseas. Medical requirements for deployments refer to medical readiness. Presently the Air Force has a percentage of personnel designated as mobility, or deployment status. There is usually a primary and an alternate designated for deployment within each career field. When orders are received for individuals or units to deploy, there may be only 72 hours for those individuals to pack, process through a deployment line and board an aircraft.

Time and efficiency is of vital importance in making sure all personnel are present for duty, and that they meet medical readiness standards. If an individual does not meet those standards they are disqualified for deployment and their alternate must then be notified to fill that personnel's position. In turn if the alternate does not meet requirements, another member who may not be on deployment status will be tasked for that mission.

The Air Force conducts exercises to monitor medical and other readiness standards of individuals on mobility. Although group numbers from these exercises are not published, locally identified discrepancies that result in airmen being rejected or requiring additional steps to bring the individual(s) to being 100% qualified are reported to the wing level. Deficiencies that occur in records beg the question: What is the level of medical readiness of active duty personnel not on mobility? With the decrease in personnel and the increase in the number of deployments in which the Air Force has been engaged since the end of the Cold War, there is a higher

probability for individuals not on mobility to be tasked. It is not uncommon for individuals not on mobility, to be tasked to relieve a forward-deployed member in their same career field for less than 180 days. The taskings for these rotations are as varied as the jobs performed in the Air Force.

A review of the literature was done to assess: (a) the prevalence of medical readiness deficiencies, (b) trends, if any, of specific types of deficiencies, (c) recommendations, if any, to reduce or eliminate these discrepancies, and (d) prior studies of non-mobility personnel. The literature review was also done to identify the known roadblocks to a smooth, efficient deployment process during actual deployments.

Medical Readiness Deficiencies

Research on Vision Readiness

Erneston and Murchland (1994) conducted a study to determine the prevalence of active duty Air Force members within an aviation squadron, who did not meet vision readiness guidelines. The study also hoped to check the accuracy of the eye exams done during annual physicals. They speculated that individuals, who are trying to avoid the wearing of glasses, might tend to squint during the eye exam, which would distort the results. This research was undertaken after an optometrist noted an unusual number of airmen in need of optical materials prior to being deployed during the Gulf War. Some subjects had civilian prescription glasses, but did not have the required two military glasses and/or gas mask inserts. The criteria used to determine if the airmen met vision standards were from Air Force Regulation (AFR) 160-43 (as cited in Erneston & Murchland, 1994). The requirements of AFR 160-48 were that rated officers (pilots or navigators) have 20/20 vision or be correctable to 20/20 in both eyes. Enlisted

personnel, who are usually part of the flight crew, have various standards, but at the minimum vision should be close to 20/20 in both eyes with or without correction. Personnel who are mission essential, but not on flying status, must meet standards of 20/40 vision in the better eye with no less than 20-degree central field of vision.

From October 2, 1991 through March 26, 1994, 68 members of the Erneston & Murchland (1994) study were randomly selected from a squadron that was willing to participate in the study. The study was conducted at Seymour Johnson Air Force Base, Goldsboro, North Carolina. The individuals were from a variety of specialties but still within the aviation community. The specialties included pilots, tanker aircraft boom operators, flight engineers, crew chief and maintenance personnel. Each person was given a complete optometry examination. The tests given consisted of entrance visual acuity with or without corrective lenses, measurement of phorias, ocular motility, intraocular pressures, refraction, visual field assessment, pupillary function, biomicroscopy, and ophthalmoscopy. Of the 68 individuals 75% (n=51) had not had an eye exam in two years. Twenty-five percent, (n=17) would not have met mobility standards if they had to deploy at that time. Reasons for not meeting Air Force guidelines included substandard vision, and not having two pairs of military glasses and/or gas mask inserts. Twenty-two percent, (n=15) of the sample did not meet minimum requirements and four percent, (n=3) were found to have ocular disease. The results also found that several members had documentation of having 20/20 vision with certain refractive errors during their annual physical exams. When those individuals were tested with the documented refractive errors, they were not able to see 20/20. The refractive errors were much different than what was documented in their records from their last physical exam findings. The authors indicated the findings support the

speculation that squinting or some other means were used to improve acuity when their eye exams were done along with their physical exam. Although the Erneston and Murchland (1994) study was done in 1993, and only addressed one criterion of medical readiness, it supports the speculation that a problem does exist. The personnel used in this study would have a higher probability of being deployed over other specialties in the Air Force because of their flying or mission essential status. Discrepancies in visual acuity can have devastating results, whether it is the pilot, the navigator, and part of the flight crew or the mechanic who maintains the aircraft. The study suggests how important one aspect of medical readiness is and why it is not only crucial to the individual but can affect mission requirements.

Research on Army Ready Reserves

With the shrinkage of personnel on active duty for all the military services, the use of the reserve and National Guard has become critical to mission completion. Rothberg et al. (1995) looked at the number of individuals who were rejected from mobility or discharged after they were processed for mobilization during Desert Shield and Desert Storm. The sample was one of convenience from an Army post in the southwestern United States and represented less than 10% of the Individual Ready Reserve component. Two thousand seven hundred and twenty-three soldiers who received notification to report for active duty and presented to Fort X for processing were included in the sample. The study was conducted from January 5 to February 15, 1991. The criteria used for readiness were in accordance with Army Regulation 40-501 Standards of Medical Fitness, 600-9 the Army Weight Control Program, 600-85 Alcohol and Drug Abuse Prevention and Control Program and, 635-40 Physical Evaluation for Retention, Retirement or Separation (as cited in Rothberg et al. 1995). The individuals were checked for medical fitness,

verification of family care plans and other situations or conditions that would hinder their deployment. The other conditions checked included weight, mental illness and alcohol and/or drug dependency. Specialty exams were provided from orthopedics, psychiatry, neurosurgery and others when needed. After the soldiers were processed they were assigned to a company for refresher training in weaponry and the military career field they represented. At that time they were screened for cannabis and cocaine.

Twenty-nine percent (n=196) of the 2,723 soldiers in the Rothberg et al. (1995) study were overweight, 12% (n=82) had various orthopedic conditions that disqualified them, 18% (n=122) had various mental, medical or substance abuse conditions and 5% (n=37) were pregnant. A total of 677 (25%) were rejected and not able to be deployed. The possibility of soldiers gaining weight, elective pregnancy, or using illegal drugs to avoid being deployed was not addressed. The sample size seemed adequate, however there was no mention whether those results could be generalized to the Individual Ready Reserve population. Rothberg et al. made two recommendations to change policies, which would allow closer management of the Individual Ready Reserves so as to avoid future rejections. These recommendations included assessing one's weight and physical fitness, and drug screening on a regular basis instead of waiting until being called to active duty. This project identified deficiencies seen during an actual deployment process. Not meeting weight standards and various medical conditions that prevented mobilization could be similar discrepancies found in active duty Air Force personnel. The soldiers in the Rothberg et al. sample were different from active duty personnel because of their reserve status. In the Individual Ready Reserve, personnel do not report for monthly or yearly

duty like their Army Reserve and National Guard counterparts. Therefore, as a group they may be minimally monitored for readiness and retention qualifications.

Medical Team Deployment Observations

Popper et al. (1997) studied 213 primary and alternate members of a medical team not previously on mobility status, but tasked for deployment. The subjects consisted of 78 officers and 135 enlisted active duty Air Force members from Wright-Patterson Air Force Base, Dayton, Ohio. The authors stated that since the end of the Soviet threat, the United States has been engaged in multiple contingencies like Desert Shield, Desert Storm, Urgent Fury and Restore Hope, requiring troops be deployed. With personnel and budgetary constraints in the face of the increase in the operational tempo, the military is being examined more closely with respect to how efficient the process is and how medically ready these troops are to support deployment missions. The authors noted that the medical community carries with it unique problems for readiness. Due to the many "hallway" consults, prescriptions, and treatments, any changes in medical personnel's health often were not properly documented in their records. This resulted in delays in the processing line and many man-hours used to update medical records.

The study used the guidelines stated in Air Force Instruction 48-123 (as cited in Popper et al., 1997) that included the following items as a determination of medical readiness for deployment to a remote or isolated location:

1. A current physical examination.
2. A medical record review to determine if any significant medical problems exist that would be difficult to manage at the gaining base or site.
3. Completion of AF Form 422 (record of profile status) indicating qualification.

4. Annotation of the Standard Form 600 (standard medical record documentation sheet) of the above actions.

The focus of the study was on deployment to remote or isolated locations, since the Air Force qualifications would be less stringent if the location had fixed medical assets in place. The study provided guidelines needed for wartime or humanitarian operations in war-torn or third world countries. This study found currency of level of physical examinations at 59% (46/78) for officers and 54% (73/135) for enlisted personnel. Four percent (3/78) of officers and 39% (52/135) of enlisted personnel exams were outdated. There were no physical examinations recorded for 26% (20/78), of the officers and 6% (8/135), of the enlisted records evaluated. Six percent (n=12) would have been at a medical risk if deployed. Popper et al. (1997) felt the discrepancies were possibly due to inadequate provider follow-up, noncompliance by the patient, improper profiling, and/or individuals not identified as requiring a Medical Evaluation Board. Because these individuals were being processed for an actual tasking, the commander decided not to update non-current physicals. Instead a short form physical exam was created to identify current conditions and a pharmacological review was done to ensure adequate supplies of prescription medications were taken with the members. The authors stated more would have been disqualified if they were processed at a location where a major medical facility was not available. The total man-hours used to complete this process including delays were 200 technician hours and 75 provider hours. However, this process would not have met the mission if the team needed to be deployed within 72 hours.

Other problems noted by the authors was that some of the physicians, nurses and Reserve Officer Training Course graduates, who were new arrivals to active duty, did not have a copy of

their commissioning physical in their records. This was due to poor communication between the accession agency and the active duty base. Confidentiality also proved to be a hindrance in trying to determine mental status or pending family advocacy processes. Often a statement appeared in the medical record that the person was seen in the behavioral health clinic without noting deployable status. Other specialty clinics, like orthopedics and oncology, were also found to maintain separate files without an annotation of the visit(s) in the primary outpatient medical records (Popper et al., 1997).

This study identified a unique situation in the medical readiness arena, the problem of "hallway" medicine. Hallway medicine refers to the practice of staff members approaching providers, often in the hallway of the hospital or clinic, to discuss medical problems and in turn receiving prescription or treatment orders without any documentation in the medical record. Other important points made were the differences in requirements for retention, for deployment to an industrial versus third-world location, and wartime versus peacetime operations. The authors assert there should be one standard with the exception of individuals who may require permanent profiles. Any profile should be kept current and the individual may be limited to only continental United States assignments (code C profile). Another significant factor that was brought to light was the common practice of separate files being maintained by specialty clinics. Separate or "shadow files" are difficult to maintain accurately. Original documents should be part of the primary outpatient medical record. Any copies become the responsibility of the individual provider for security and maintenance. All of these factors impact deployment. Overseas deployment brings with it additional emotional, physical and environmental burdens.

Without the reassurance a complete and accurate medical record brings, the added stress of mobility could easily exacerbate a condition not identified prior to deployment.

Recommendations for Medical Readiness Maintenance

Occupational Medicine Methodology

Popper (1987) discussed the use of occupational medicine methodology as a means to assess Air Force personnel's level of fitness for duty and readiness status. Popper stated the health and fitness programs the Air Force has in place do not effectively measure an individual's aerobic and anaerobic abilities, or readiness to perform certain types of activities required during deployment. The implementation of workers fitness and risk evaluation (WFRE) in the civilian setting is often met with technical, ethical and legal stumbling blocks. Yet to be able to predict an individual's performance or risk and to implement certain interventions to enhance performance and decrease risk, should be a priority for the military. Expectations and standards for a military member holding a similar job as their civilian counterpart are very different. The primary reason for this difference is that the military member must be prepared to defend the United States. Use of WFRE would not meet with the same ethical and legal stumbling blocks as those encountered in the civilian setting.

Popper (1987) presented scientific theory, which recommended the Air Force use the WFRE as a better means to assess the health and fitness of its members. He pointed out that no test is 100% sensitive and specific, and a backup test should be in place if an individual fails the test. However, the Air Force does not have an alternative test if a person fails the bicycle ergometry. Popper also stated that the ergometry test only gives an estimate of aerobic function. He stated the WFRE would look at requirements of different jobs, such as activities during deployment,

and would assess each individual's level of performance to predict if that person would be able to do those specific tasks. Popper's recommendation was to have standards required to do certain jobs as the basis for medical readiness. Although the article was not a research project, it still addressed the fact that a problem existed in maintaining medical readiness of our airmen. Popper's recommendation to be able to predict performance or risk using the WFRE seems appropriate and may be effective in ensuring a higher level of fitness for the tasks demanded of military personnel. The author also discussed the different standards regarding age and gender and even conflicting standards that are provided by Department of Defense instructions. His recommendation was that there should be specific standards based on the performance required for specific jobs regardless of age or gender. Popper stated that individuals should be interchangeable especially with readiness issues if they are required to perform the same deployment tasks for their career field.

Medical Readiness Model

McRae-Bergeron et al. (1999) assessed the state of well being of personnel who were involved in multiple deployments and/or on standby. The authors cited a one-third cut in the military force and a four-fold increase in deployments since the beginning of 1998, and suggested that the medical community needed to look at the mental and emotional risks multiple deployments have on deployment personnel. The long-term objective of this research was to help the Air Combat Command (ACC) maintain the medical personnel's health and well being while still keeping them medically ready for duty. The goals of the study were to look at interpersonal, intrapersonal and extrapersonal stresses, and to examine the health or state of well being after overseas deployment. The study looked at a critical care medical module called "Coronet

Bandage". This unit was attached to ACC units. Military personnel in this unit were tasked to provide medical care at a moments notice where and whenever that need arose. This unit established and delivered initial surgical stabilization and/or resuscitative care prior to the arrival of an air transportable hospital and before air evacuation occurred.

A convenience sample in the McRae-Bergeron et al. (1999) consisted of 763 first-echelon personnel who deployed with "Coronet Bandage" and were assigned to ACC medical treatment facilities in the continental United States. The sample was divided into two groups. Group I had 636 members assigned to 11 ACC medical treatment facilities and 127 in Group II to 4 ACC medical treatment facilities. Group I participation rate in medical readiness training was 78%, and 75% for Group II. The 127 personnel in Group II had recently returned from being deployed to Saudi Arabia and Guyana. The medical readiness model of health assessment was used to measure five elements of health: (a) various dimension of social support, (b) global judgement of life satisfaction, (c) mood, (d) depression and, (e) anxiety. This model was adopted from the community-as-client model widely used in public health (as cited in McRae-Bergeron, May, Foulks, Sisk, Chamings and Clark, 1999). A 24-statement demographic data tool and an optional discussion statement were given to each individual to complete. Beck's Depression Inventory, Zung's Self-Reported Depression Scale, Beck's Anxiety Inventory, Satisfaction With Life Scale and Norbeck's Social Support Questionnaire (as cited in McRae-Bergeron et al., 1999) were the research instruments used.

A power analysis indicated that 636 participants provided a power of 0.80 and an effect size of 0.12. Groups I and II were considered fairly similar except that Group II had 75% overseas deployment experience versus 21% in Group I (McRae-Bergeron et al., 1999). The main findings

designated by the authors as increased stress markers, of which more than 27% responded as potential stresses were:

1. Not enjoying things to dissatisfaction or boredom with everything.
2. Not sleeping well to waking up several hours earlier than usual and not being able to go back to sleep.
3. Indigestion or discomfort in the abdomen.
4. Feeling nervous.
5. Inability to relax.
6. Being irritated or annoyed more than usual to getting irritated all the time.
7. Being critical of self to blaming self for everything bad that happens.
8. Getting tired more easily to being too tired to do anything.

Group II had lower stress markers, but not significantly lower than Group I. Two unique markers of stress seen, in more than 30% in both groups, were 5 to more than 15 pounds weight loss without dieting and the fear of dying. Even after returning from overseas it was unexplainable why the fear of dying did not show a great decrease in Group II (McRae-Bergeron et al. 1999). One of the reasons given for the stress was the uncertainty of the objectives in peacekeeping missions, especially when all of the subjects' training prepared them for wartime scenarios. Another area of uncertainty for the members was the lack of knowledge of their specific mobility status. McRae-Bergeron et al. recommended that commanders could help alleviate these stresses by acknowledging the distinct differences between peacetime and wartime missions and by defining the expectations of each type of mission. The authors also recommended that commanders precisely state each individual's mobility status. Other

recommendations included primary prevention through realistic peacetime medical readiness training and for leaders to provide frequent and clear channels of communication.

McRae-Bergeron et al. (1999) presented a different perspective to medical readiness. They pointed out the anxieties related to being on deployment, and not knowing when you will again be called to go. They also addressed the personnel's continued feelings of stress even after return to their home base. The article reinforced that a person with an unidentified medical or mental condition could be at greater risk to themselves, the unit and the mission if allowed to deploy. Deployment is plagued with multiple stress factors, any of which to an unstable person could be fatal. A potential problem could exist, that in the heat of a rapid deployment process, reviewers on the deployment line may forego the additional time required to ensure accuracy and mobilize this individual.

Summary

The review of the literature reinforced that a problem does exist in maintaining medical readiness for not only those on mobility status but non-mobility personnel as well. There were sound recommendations presented not only for assessing performance levels and risks, but also ways to improve performance and reduce risk associated with medical readiness. The literature also pointed out the need for a high level of medical readiness at all times. The period before, during and after deployment is very confusing and stressful and can affect individuals' sense of well being. However, there are ways to help reduce confusion, by preventing delays, avoiding last minute disqualification on the deployment line, and by minimizing the need for immunizations and/or physical exams on the deployment line. This will require providers

making up-to-date documentation, acknowledging in the record if the person is still deployable and reinforcing the importance of medical readiness to every active duty individual encountered.

This study will add to the body of knowledge in assessing readiness for shortfall deployments. This information will also contribute to nursing practice in the military setting by stressing the importance of keeping medical readiness as a priority when seeing all active duty personnel regardless of their deployment status. There is a gap in the knowledge of medical readiness status of active duty Air Force personnel not on deployment status.

CHAPTER III: METHODS

Introduction

This study evaluated the level of medical readiness of active duty Air Force members who are not on deployment status, for a less than 72 hours deployment. The study focused on the following research questions: (a) How medically ready are active duty Air Force members not on deployment status for less than 72 hour deployments, (b) if there are medical deficiencies, what are the predominant ones, (c) is there a significant difference in medical readiness between genders, (d) is there a significant difference in medical readiness between enlisted versus officer ranks and, (e) is there a difference in medical readiness between age ranges. The hypothesis is that 100% of active duty Air Force personnel, not on deployment status, who meet deployment eligibility, will be medically ready for a shortfall (less than 72-hour notice) deployment.

Research Design

The study used a descriptive research design, as there have been limited studies done to address the level of medical readiness of the Air Force active duty population not on deployment. Scheduled and unscheduled inspections performed in the Air Force are primarily performed on individuals who have been designated for deployment. Yet if the individuals designated on deployment are for some reason disqualified, commanders must then look to the remaining active duty pool of personnel to fill a deployment position. At that time records are reviewed for medical readiness standards. Through a descriptive design, the author was best able to evaluate medical readiness status and identify specific trends of deficiencies within the sample population. Through statistical crosstabulations comparisons were made between officer versus enlisted personnel, male and female airmen and among the different age ranges. A total of 300

outpatient medical records were reviewed; 100 records from three different outpatient medical records section within three different major commands. The three different commands were used to help generalize the findings to an active duty Air Force population within the Air Force as a whole. An Air Mobility Command base in Maryland, an Air Combat Command base in Virginia and an Air Education and Training Command in Oklahoma were used for data collection.

Protection of Human Rights

The medical records used for data collection existed in the outpatient record section of each base. The last four digits of the social security number and the first and last initial were used for identification. This data was placed under lock and key available only to the researcher. The last four social security numbers and first and last initial were used during data collection for retrieval purposes. Once the data collection was completed only the sequence number was used to identify each medical record reviewed. After data collection and analysis was completed the identifying information was destroyed.

Written approvals are included in Appendixes C, D, E and F. Once approval was granted from the Uniformed Services University of the Health Science's Institutional Review Board (IRB), the researcher contacted and made appointments with each medical group commander, or their representative. The study was then explained to the commander and their representatives and permission was obtained to use each base's outpatient records section for data collection. Necessary approvals from there IRBs were obtained. For the data collection process, the researcher contacted the noncommissioned officer in charge of outpatient medical records for sample selection.

Sampling and Setting

A sample of active duty USAF personnel's medical records was taken from the outpatient medical records section at each medical group. Review of the records was accomplished within the medical record section to allow for easy retrieval of records for patients going to medical appointments. In preparation for data collection, a table of random numbers from one to nine was developed by the author (see Appendix B). The numbers represented the number of shelving units within each outpatient record rooms where records are stored. To determine which records were pulled, the researcher placed the tip of a pen on the list without looking. The number that the pen landed on was the shelving unit from which the researcher started to pull records. The specific shelf within the shelving unit used was either the same number that was chosen or the very top, bottom or middle depending on whether that shelf was used before or not. For example if number nine was chosen, shelving unit nine was used, starting with shelf number nine. However, if the shelving unit did not have nine shelves the researcher would start with the very top, very bottom or middle shelf. Once the shelving unit and shelf was chosen the researcher started from one end and moved the to other end of the shelf going chart by chart and pulled only the active duty Air Force members who were not on deployment status. The process was repeated at the start of each day of data collection until 100 charts were reviewed for each base. Data collection had to be completed on several different days during duty hours only. The charts that were not used were those of dependents, retirees, active duty members with a deployment designation or a "C" code identifier indicating those individuals are limited to continental United States deployments only. Using the checklist (see Appendix A), each record was reviewed by the researcher for completion of each item required for medical readiness. The

review of records looked for the level of medical readiness for a shortfall deployment. Therefore, an item that was not completed or current, but could be completed or updated within 72 hours, was considered completed. Items deemed to take more than 72 hours to obtain or update, were considered not completed and that individual would be considered not medically ready.

The time period for data collection was from July 2000 through January 2001. Each base required eight to 12 hours. The total time for pulling records and chart review was 40 hours. The average time used for actual chart review was one hour for every 20 records.

Measurement Methods

The Medical Readiness Checklist, created to determine medical readiness, is composed of the items the Air Force instructions require for deployment. These items are checked during the deployment process and can be found in outpatient records. A pilot study using ten records was performed to assess effectiveness of the checklist created. Under Subject Number only the last four of the social security number was used along with the first and last initials. This was done for retrieval purposes only and is not included in the final publication. Only the sequence number is used for publication if needed. As each record was reviewed, a “Y” for “yes” or “N” for “no” was placed in the box under each heading. A “yes” meant that item was in the record or could be obtained within 72 hours. A “no” meant that item was not available in the record or it could not be obtained within 72 hours. Items that were not applicable were coded as “N/A”.

Preliminary Data Analysis

A pilot study was completed to assess intrarater reliability of the researcher. Ten charts were reviewed for 20 variables in each chart, at two different sessions, two weeks apart. Of the 220 possible total areas of agreement between the first and second review sessions, 202 areas were in

agreement. This resulted in an intrarater reliability of 92%. In further review, the areas of disagreement were those of immunizations. During the first data collections certain immunizations were shown as not being up to date, then at the second data collections those immunizations were found to be current. During the two-week period between data collections there was an actual deployment in progress of individuals not presently on deployment status. This may have accounted for an intrarater reliability of only 92%. The pilot study also determined if there were any difficulties that occurred during the data collection. One of the demographics to identify career fields was dropped as a variable as it was often difficult to determine a member's career field just by using the outpatient medical record. Instead, whether the member was an officer or an enlisted member was used.

CHAPTER IV: STUDY FINDINGS

Introduction

The purpose of this descriptive study was to evaluate the level of medical readiness of a population of active duty Air Force members not on deployment for a 72-hour deployment. This chapter will present the findings from the 300 outpatient medical records that were assessed for medical readiness. Once the data were collected, a percentage was calculated from the 300 records of the active duty members who were medically ready versus those deemed not medically ready for a shortfall deployment. A percentage was also calculated of those individuals who warranted further evaluation before deployment determinations could be made. Those requiring further evaluation lowered the overall percentage of medical readiness as further evaluation may find them to be still medically ready for deployment despite certain conditions that were found in their outpatient records.

Characteristics of Study Sample

The study sample consisted of 300 outpatient medical records randomly chosen from an Air Education and Training Command (AETC), an Air Combat Command and an Air Mobility Command base. One hundred records were reviewed from each outpatient medical records section. The 300 medical records reviewed consisted of the following demographics as shown in Table 1.

Table 1

Sample Characteristics (N = 300)

Males	Females	Enlisted	Officers	Ages 18-25	Ages 26-35	Ages 36+
230	70	255	45	104	104	92

Primary Data Analysis

Question one: How medically ready are active duty Air Force members not on deployment status for less than 72-hour deployments? The data analyses of the 300 records showed 193/300 (64%) were medically ready for a 72-hour deployment.

Question two: If there are medical deficiencies, what are the predominant ones? Twelve percent of the medical records reviewed did not have a copy of their immunizations. Those records were included as not being up to date and would need to be completed on the deployment line. This, however, did not remove that individual from being medically ready, only medical conditions requiring further evaluation would remove individuals from the medically ready status until the evaluation was completed. The members that required further evaluation occurred at a rate of 32%. The discrepancies that occurred 40% or more in frequency are listed in Table 2.

Table 2

Trends of Deficiencies With a Greater Than Forty Percent Rate

Discrepancy	Frequency	Percentage
*Yearly influenza	274	91.3
IPPD/Cxr if +ppd	252	84
+Typhoid	243	81
HIV test not current	242	80.7
+Yellow Fever	186	62
+Meningococcal	171	57

Note. *At the time of data collection flu vaccines were delayed due to production shortage. +Vaccines would be required depending on country of deployment operations and is not mandatory for all deployments.

A more accurate assessment of immunization status would have been found in individuals' immunization record SF 601 DD Form 2005, which was not available during data collection. The top ten conditions that required further evaluations are noted in Table 3.

Table 3

Ten Major Medical Conditions That Warranted Further Evaluation (N =145)

Condition	Frequency	Percentage
Musculoskeletal	46	32
Genitourinary	20	14
Cardiovascular	16	11
Psych	11	7
Pulmonary	9	6
Vision	8	5
Neuro	8	5
Gastrointestinal	6	4
Heme-Oncology	5	3
Endocrine	5	3

Question 3: Is there a significant difference in medical readiness between genders (see Table 4)?

Table 4

Significance of Medical Readiness Between Genders

Medically Ready	Male	Female	Total
Yes	155	39	194
No	3	7	10
Need Further Evaluation	72	24	96
Total	230	70	300

The the chi-square value was 13.455 and the p-value between males and females was .001, which showed a significant difference in medical readiness. In further review a comparison of medical readiness showed the males had a 67% versus 54% for the females of readiness, the difference of those not medically ready was only 1% for the males versus 10% for the females. The rate requiring further evaluation was 31% for the males versus 36% for the females.

Question 4: Is there a significant difference in medical readiness between enlisted versus officer ranks (see Table 5)?

Table 5

Significance of Medical Readiness Between Enlisted and Officer Ranks

Medically Ready	Enlisted	Officer	Total
Yes	165*	28	193
No	8	2	10
Need Further Evaluation	82	15	97
Total	255	45	300

The chi square value was .249 with a p-value .883, which did not show significant difference between enlisted and officer ranks in respect to medical readiness.

Question 5: Is there a difference in medical readiness among age ranges (see Table 6)?

Table 6

Significance of Medical Readiness Among Age Groups

Medically Ready	Ages 18-25	Ages 26-35	Ages 36+	Total
Yes	77	66	50	193
No	9	5	3	10
Need Further Evaluation	25	33	39	97
Totals	104	104	92	300

The chi square value was 9.364 with a p-value of .053, which shows marginally there was no significant difference among the age groups with respect to medical readiness.

A final analysis was completed to determine how the results from the sample would compare to the expected findings in the active duty Air Force population. The standard error of this percentage was calculated using the following formula:

$$\sqrt{P\frac{(1-P)}{N}}$$

P=100% what was expected of the Air Force population

N=300 the sample size

$100(100-1)/300 = \sqrt{33} = 5.7$
Population Value = Sample Value $\pm 2(5.7)$

Therefore, the population value in comparison to the sample value of medical readiness of 64% can be expected to fall $\pm$ 11.4% of the sample percentage.

CHAPTER V: CONCLUSIONS AND RECOMMENDATIONS

Introduction

Since the end of the Cold War, the military forces have moved towards leaner, more agile forces. Each service has its own system in place to ensure its personnel meet all the medical requirements for any and all contingency operations within the United States and overseas. Medical requirements for deployments refer to medical readiness. Presently the Air Force has a percentage of personnel designated as mobility, or deployment status. There is usually a primary and an alternate designated for deployment within each career field. When orders are received for individuals or units to deploy, there may be only 72 hours for those individuals to pack, process through a deployment line and board an aircraft. The present practice of the Air Force is to frequently evaluate readiness of those members who are designated for deployment. However, there is no regular practice to evaluate the Air Force members not on deployment status. Yet if the primary and alternate mobility members are disqualified on the deployment line, a member from the active duty pool within the same career field will be assigned for that deployment. This is not an unusual occurrence.

This study focused on the Rapid Global Mobility core competency of the Air Force. Three hundred outpatient medical records of active duty Air Force members not on deployment status for a 72-hour deployment were reviewed to assess the level of medical readiness of a population within the Air Force. This chapter presents conclusions from the study data, generalizability of the data analysis and recommendations and suggestions for future studies.

Conclusions

The standard error of the sample mean to the active duty Air Force population was found to be $\pm 2(5.7)$. This indicates the percentage of medical readiness in the active duty Air Force population of members not on deployment status would fall between 53% and 75%. These percentages were still lower than the expected 100% of readiness desired in the active duty population. However, 48% of the sample required further evaluation before a deployment status could be given. Those who required further evaluation could have a significant effect on the overall percentage of individuals eligible for deployment. Some of the conditions that required further evaluation were musculoskeletal in nature. If there was an injury within the last year there was often no documentation to address whether the individual was back to full functioning capacity or would require further treatment. Other conditions included chronic low back pain, degenerative disc disease, hypertension, cardiovascular which was either a valvular or rate problem, that after diagnosis and treatment did not have a statement of whether the individuals should have a Medical Evaluation Board to address retention and deployment status or whether they were medically fit for deployment.

Another very significant finding was the yearly HIV and TB skin tests were not up-to-date. A positive HIV result would prevent deployment and should be kept current on each member regardless of his or her deployment status. Although the tests can be completed on the deployment line, the results would not be back in a timely member to determine medical fitness for deployment.

In regards to significant differences between gender, rank or age, only one significant difference was found. Causes for females to be disqualified for medical readiness included the

similar conditions for men, with additional conditions unique to women like pregnancy and follow up for abnormal pap results, which could make the difference more significant. No significant difference was found between enlisted versus officer ranks or among the four different age groups of 18-25 year olds, 26-35 year olds, 36 and older age groups. The p-value of the age groups showed marginally no significance, which may indicate this group may show some significant differences in another study.

Study Findings Compared to Previous Studies

In comparison to the study done by Rothberg et al. (1995), of the 2,723 soldiers 75% were found to be medically ready compared to 64% found in this study. In Rothberg et al. the major medically disqualifying conditions were found to be orthopedic conditions at a rate of 18%, and mental, substance and medical abuse for 5%. In comparison to this study orthopedic conditions were found to be higher at 32% and mental and substance abuse conditions when combined to be 11%. However, in the Rothberg et al. study any soldier that required reevaluation had the evaluation completed during the deployment process, which accounted for a higher percentage of medical readiness and lower percentages for disqualifying conditions compared to this study.

Expected Generalizability of Results

It was anticipated that the results might be generalized to an Air Force outpatient, active duty population regardless of major command. The study reviewed medical records of active duty personnel not on deployment, from three different major command bases: Air Mobility Command, Air Combat Command, and Air Education and Training Command to better enable generalizability of the results. Generalization of these findings to other service personnel will depend on what system of medical readiness maintenance each service has in place and the

effectiveness of that system (Peters, 1998). This study may prompt other studies to look at the level of medical readiness and means to improve identified problems.

Recommendations

Due to the fact that only the outpatient medical records are reviewed during the deployment process, providers and support staff in the outpatient clinic setting should ensure the chart reflects very vital aspects of the individual's health in respect to medical readiness. One suggestion is to have some type of stamp or documentation after each outpatient visit to address whether or not the member still meets medical readiness requirements. Either the providers can make that documentation part of their note or the member's status could be communicated to their ancillary staff. To not hinder timeliness or efficiency a stamp may be more convenient. Then the staff or the provider can stamp on the Standard Form 600 "Member Meets Medical Requirements for Deployment ____Yes, ____No". With the use of a stamp individuals who have been recently injured, receiving treatment, newly diagnosed with a chronic condition or are placed on medications that will be required to be taken for life to control a certain condition would address deployment status. The convenience of this method is that a provider who just finished examining that member would have a better assessment of medical readiness than someone who is just reviewing the record on the deployment line. This would also prevent that individual from being removed from the deployment line for reevaluation as that was already completed at the last clinic visit.

Another recommendation is for the immunization clinic, public health or medical readiness section to include all active duty members into a database that would print out or alert that section when a yearly test is due. This process is already in place for annual and biannual dental

appointments in the military setting. To support this process a command support incentive could be instituted to encourage all active duty members to take care of all their medical readiness requirements on a yearly basis during their birth month. This practice is already being instituted with Putting Prevention Into Practice (U. S. Department of Health and Human Services, Public Health Service, Office of Public Health and Science, and Office of Disease Prevention and Health Promotion, 1998). However, this program only addresses health prevention, not deployment readiness issues such as immunizations, TB skin test or HIV tests.

A final recommendation is that of provider education on Air Force Instruction 48-123 (United States Air Force, 2000). The instruction could include conditions that would warrant a medical evaluation board, the importance of documentation of conditions and whether the individual is still qualified for worldwide deployment. The importance of follow-up of any injuries or new diagnoses until the individual has returned to a medically ready status for deployment could also be included in the instructional session.

Although similar jobs are held in the military that are found in the civilian arena, the mission of the Air Force is to be ready at any time to support and defend our nation. This specifies that all members should make sure they have done everything possible to ensure readiness for deployment; medically, administratively and financially. This would be promoted best with the utilization of Rosenstock's (1990) Health Belief Model to help each individual member not only recognized the potential for illness or injury during deployment, but the means they have at their disposal to prevent that exposure on a regular basis.

In summation, the responsibility of medical readiness is not just those of the commanders and providers, but ultimately the individual. In all aspects, the goal of deployment readiness should be proactive in approach not reactive.

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APPENDIXES

APPENDIX A: Medical Readiness Checklist

APPENDIX B: Random Table

APPENDIX C: USUHS IRB Approval Letters

APPENDIX D: Altus Air Force Base Approval Letter

APPENDIX E: Andrews Air Force Base Approval Letter

APPENDIX F: Langley Air Force Base Approval Letter

APPENDIX A

MEDICAL READINESS CHECKLIST

Medical Readiness Checklist (Are the following documented/updated if applicapble)																										
Subject Number	AF FM 1480A Y/N	Disease Y/N/NA	Hosp/Surg/ER Y/N/NA	New DX/TX Y/N/NA	Allergies	Medications Y/N/NA	Profile Y/N/NA	MEB Pending Y/N/NA	Pregnant Y/N/NA	HIV Antibody	G6PD	Hemoglobin S	Tetanus-diphtheria q10mo	OPV x1	Influenza - yrly	Yellow Fever - q10yrs	Typhoid (a) q3yrs (b) q5yrs (c) q2yrs	HepA x2 6mo apart	PPD/IPPD q2yrs	Anthrax x6 then yrly	Meningococcal for SWA q5yrs	Medically Ready? Y/N	M/F	Age	Enlisted/Officer	Comments
1																										
2																										
3																										
4																										
5																										
6																										
7																										
8																										
9																										
10																										
11																										
12																										
13																										
14																										
15																										
16																										
17																										
18																										
19																										
20																										

Typhoid (a) Typhoid ^{B} = .50cc q3yrs
Ty2Ta (Oral typhoid) = 4caps q5yrs
Typhoid Vi = .50cc q2yrs

APPENDIX B

RANDOM TABLE

1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8
7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9
8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6
5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7
6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4
3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5
4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2
1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3
2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1
9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7
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5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7
6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4
3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5
4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2
1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3
2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1
9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7
6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8
7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5
4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6
5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3
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7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9
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7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9
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6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4
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1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3
2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9	1	2	3	4	5	6	7	8	9
8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1	9	8	7	6	5	4	3	2	1

APPENDIX C

USUHS IRB APPROVAL LETTERS

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799
Notice of Project Approval
Original

Protocol Information:

Sponsor ID: T061BT

Project Number: **T061BT-01**
Principal Investigator: **Marguerite T. Mitchell, MAJ.**
Department: GSN - Graduate School of Nursing
Sponsor: Uniformed Services University of the Health Sciences
Project Type: USUHS - Graduate Nursing Students
Title: **Medical Readiness of Active Duty UFAF Members Not on Deployment for Shortfall Deployment**

Project Period: 08/18/2000 - 07/17/2002
Current Activity Period: 08/18/2000 - 07/17/2002

Assurance and Progress Report Information:

Name	Approval Type	Status	Approval Date	Due Date	Forms Rcvd
IRB	ER - Exempt Review	A - Approved	08/18/2000	N/A	N/A
Ext Human	TBD - To Be Determined	T - To be submitted			N/A
Ext Human	TBD - To Be Determined	T - To be submitted			N/A
Ext Human	TBD - To Be Determined	T - To be submitted			N/A

Remarks:

This Notice of Project Approval establishes that the Office of Research has reviewed and apppoved your project. However, research involving human subjects at Langley Air Force Base, Malcolm Grow and Altus Air Force Base may not begin until the Office of Research receives site approvals from each site. Funding for th project will be provided separately through Lynn Miller in the Graduate School of Nursing.

Note: Your approved thesis will serve as your final report.

I have reviewed the project described above and approve the research for this project. However, this action does not imply that the appropriate assurances have been obtained nor should work begin on this project until all appropriate assurances are obtained. No funding is provided for this activity period.

Questions regarding this award should be directed to Mary Kay Gibbons at 301-295-9817 in the Office of Research.

Michael N. Sheridan, Ph.D.

Acting Vice-President for Research

cc:
Lynn Miller
File

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

July 28, 2000

MEMORANDUM FOR MAJ MARGUERITE T. MITCHELL, USAF, NC, DEPARTMENT OF GRADUATE SCHOOL OF NURSING

SUBJECT: IRB Approval of Protocol **T061BT-01** for Human Subject Use

Your research protocol entitled ***"Medical Readiness of Active Duty USAF Members Not on Deployment for Shortfall Deployment,"*** was reviewed and approved for execution on 7/28/2000 as an **exempt** human subject use study under the provisions of 32 CFR 219.101 (b)(4). This approval will be reported to the full IRB scheduled to meet on 17 August 2000.

The purpose of this study is to evaluate the percent of active duty Air Force members, not on deployment status, who would be medically ready for less than 72-hour notice deployment. The IRB understands that this study involves a review of 300 medical records at three major command bases: Langley AFB, Malcolm Grow, and Altus AFB. Data to be collected consists of items pertaining to the Medical Readiness Checklist. The IRB further understands that at the completion of the study all data which identifies which medical records were reviewed will be destroyed.

To complete your file for this study, please provide this office with copies of your study approval letters from each data collection site (Langley AFB, Malcolm Grow, and Altus AFB) as they are received.

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

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

Cc: Director, Research Administration

Printed on Recycled Paper

UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

August 18, 2000

MEMORANDUM FOR MAJ MARGUERITE T. MITCHELL, USAF, NC,
GRADUATE SCHOOL OF NURSING

SUBJECT: IRB Approval of Protocol **T061BT-01** for Human Subject Use

Your research protocol entitled ***"Medical Readiness of Active Duty USAF Members Not on Deployment for Shortfall Deployment,"*** was reviewed and approved for execution on 7/28/2000 as an **exempt** human subject use study under the provisions of 32 CFR 219.101 (b)(4).

This approval was reviewed by the full IRB which met on 17 August 2000, and in its discussions the Board wanted to reiterate to you that this study is not to begin until our office has received copies of the appropriate site approvals.

The purpose of this study is to evaluate the percent of active duty Air Force members, not on deployment status, who would be medically ready for less than 72-hour notice deployment. The IRB understands that this study involves a review of 300 medical records at three major command bases: Langley AFB, Malcolm Grow, and Altus AFB. Data to be collected consists of items pertaining to the Medical Readiness Checklist. The IRB further understands that at the completion of the study all data which identifies which medical records were reviewed will be destroyed.

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, Research Administration

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UNIFORMED SERVICES UNIVERSITY OF THE HEALTH SCIENCES
4301 JONES BRIDGE ROAD
BETHESDA, MARYLAND 20814-4799

November 28, 2000

MEMORANDUM FOR MAJ MARGUERITE T. MITCHELL, USAF, NC,
GRADUATE SCHOOL OF NURSING

SUBJECT: IRB Approval of Protocol **T061BT-01** for Human Subject Use

Your research protocol entitled ***"Medical Readiness of Active Duty USAF Members Not on Deployment for Shortfall Deployment,"*** was reviewed and approved for execution on 7/28/2000 as an **exempt** human subject use study under the provisions of 32 CFR 219.101 (b)(4).

This approval was reviewed by the full IRB which met on 17 August 2000, and in its discussions the Board wanted to reiterate to you that this study is not to begin until our office has received copies of the appropriate site approvals.

To date, our office has received the appropriate site approvals from Wilford Hall Medical Center (WHMC) and Malcolm Grow Medical Center (MGMC). You may now begin your study at these sites only. As you receive other site approvals please forward them to our office for approval as well.

The purpose of this study is to evaluate the percent of active duty Air Force members, not on deployment status, who would be medically ready for less than 72-hour notice deployment. The IRB understands that this study involves a review of 300 medical records at three major command bases: Langley AFB, Malcolm Grow, and Altus AFB. Data to be collected consists of items pertaining to the Medical Readiness Checklist. The IRB further understands that at the completion of the study all data which identifies which medical records were reviewed will be destroyed.

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

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

Printed on Recycled Paper

APPENDIX D

ALTUS AIR FORCE BASE APPROVAL LETTER

STAFF SUMMARY SHEET

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	97 AMW/ CCE	Coord	Awaiting DJS guidance from MDG Thad Sibt / Capt / 29 AUG 00	6	97AMW/JA	Coord	[illegible] Lt 9/26/00
2	97 AMW/ DS	Coord	[illegible] LtCol 20 OCT (20)	7	97MDSSKC	Coord	[illegible], LtCol, [illegible]
3	97 AMW/ CV	Coord	Gordon Col 23 oct See Note	8	97MDG/CC	Coord	Cotta Col 13 Oct 00
4	97 AMW/ CC	Sig	Peterson B/G 16 NOV	9			
5				10			

SURNAME OF ACTION OFFICER AND GRADE	SYMBOL	PHONE	TYPIST'S INITIALS	SUSPENSE DATE
Col Swanegan	97 MDG/CC	5205	pkw	

SUBJECT	DATE
Request for Approval for Thesis Data Collection Site	10 Aug 00

SUMMARY

1. Maj Marguerite Mitchell is working on her thesis for the Family Nurse Practitioner Program through Uniform Services University of the Health Sciences (USUHS). Part of her thesis involves collecting data from outpatient records of active duty Air Force members not on deployment. Altus AFB is one of the sites she has chosen for data collection. At Tab 1 is a proposed indorsement from 97 AMW/CC giving Maj Mitchell permission to use the medical treatment facility here at Altus for one of her collection sites.

2. Tab 2 is the approval letter from USUHS for her research topic. Tab 3 is a copy of her thesis proposal.

3. RECOMMENDATION: 97 AMW/CC sign indorsement at Tab 1 granting Maj Mitchell's request.

[illegible]
FOR:
ALBERT M. SWANEGAN II, Col, USAF, NC
Commander

3 Tabs
1. Proposed AMW/CC Indorsement
2. USUHS Ltr, 28 Jul 00
3. Thesis Proposal

Col Cotta

Chuck -

I support, but need to ensure individual privacy is protected. Thanks

(16)

AF FORM 1768, SEP 94 (FF V4) (FORM FLO2) PREVIOUS EDITION WILL BE USED.

3 August 2000

MEMORANDUM FOR 97 MDG/CC

FROM: Major Marguerite Mitchell
18801 Bent Willow Cr., #1224
Germantown MD 20874

SUBJECT: Request for Approval for Thesis Data Collection Site

1. This memorandum is to request your approval to conduct data collection from the 97th Medical Group's outpatient medical records for my thesis. I am presently a student at Uniformed Services University of the Health Science (USUHS), Bethesda MD, in the Family Nurse Practitioner Program. My thesis is a descriptive study on the level of medical readiness of active duty Air Force members not on deployment, for a shortfall (72-hour notice) deployment.

2. The last four of the patient's social security numbers will be used along with their last and first initials. This information will be used during the data collection process for retrieval purposes only. Once the data collection process is completed, the list of last fours and initials will be destroyed. Only the sequence number will be used for publication purpose, if required. During the data collection process only I, as the primary investigator, will have access to that information.

3. Per our phone conversation, I have attached USUHS Institutional Review Board's approval letter (Atch 1). A pilot study will be done on ten outpatient records. Thereafter, 100 charts will be reviewed. I have also attached a copy of my thesis proposal (Atch 2).

4. If you have further questions or concerns, please feel free to contact me at 240-988-5221.

MARGUERITE T. MITCHELL, Maj, USAF, NC
Family Nurse Practitioner Student

Attachments
1. USUHS Approval Letter
2. Thesis Proposal

1st Ind, 97 MDG/CC

MEMORANDUM FOR MAJOR MARGUERITE T. MITCHELL

Approved/~~Disapproved~~.

ALBERT M. SWANEGAN II, Col, USAF, NC
Commander

2d Ind, Maj Mitchell, 3 Aug 00, Request for Approval for Thesis Data Collection Site

97 AMW/CC 11 Aug 00

MEMORANDUM FOR MAJOR MARGUERITE MITCHELL

Approved/~~Disapproved~~

QUENTIN L. PETERSON, Brig Gen, USAF
Commander

DEPARTMENT OF THE AIR FORCE
97th Air Mobility Wing (AETC)
Altus Air Force Base, Oklahoma

26 Sep 2000

MEMORANDUM FOR 97 MDSS/CC

FROM: 97 AMW/JA

SUBJECT: Access to Medical Records for USUHS Research

1. I have reviewed the above-referenced request and concur with the recommendation to allow Maj. Mitchell access to the requested information subject to certain restrictions.

2. Maj. Mitchell is researching her master's thesis through USUHS. She has requested access to 100 randomly selected active duty medical records to obtain certain statistics for her study.

3. AFI 44-102 allows USUHS students access to medical records to government medical records for research purposes as long as the release and use of that information does not conflict with existing law. The concern with this type of release of information is the Privacy Act. As long as the records and information containing social security numbers, names, birth dates, addresses, or phone numbers do not leave the records room of the clinic there are no Privacy Act issues.

4. Having coordinated with Maj. Mitchell, she has assured this office that these safeguards have already been put in place in her study and implemented at other bases.

5. According to the staff summary sheet Col. Swanegan was unable to sign this request and the Sheet was signed for him. As Col. Cotta has assumed command since the time of this request, it should be coordinated through him before being sent on to the Wing Commander.

6. I recommend you allow Maj. Mitchell access to the records subject to the above mentioned restrictions.

7. If you have any questions, please contact Lt. Zuniga at extension 7294.

MICHAEL A. RODGERS, Lt Col, USAF
Staff Judge Advocate

APPENDIX E

ANDREWS AIR FORCE BASE APPROVAL LETTER

MEMORANDUM FOR Major Marguerite Mitchell, NC
Dept. Nurse Practitioner
4301 Jones Bridge Rd.
Bethesda, Md 20814-4799

28 Aug 00

SUBJECT: Proposed Clinical Investigation Research Protocol –Human exempt

1. Your protocol entitled "Medical Readiness of Active Duty USAF Members not on Deployment for Shortfall Deployment" was reviewed and approved as a human exempt study under the provisions of 32 CFR 219.101 (b)(4).

2. Your research study has been assigned the number FMG1999014E. You may begin the study upon receipt of this letter. Please remember that any subject's personal identification needs to be coded during the data collection in order to protect their privacy and any indirect linkage must be destroyed after data collection is complete.

3. Any abstracts or papers published during the study should be sent to the IRB.

4. Please notify the IRB for any amendments to the study that you wish to propose or any adverse events or outcomes that may occur during this study.

5. Please provide all materials to TSgt Thule Huff, Reserve Affairs Liaison; 89 MDG/SGATR; 1050 West Perimeter Rd; Andrews AFB, Md 20762-6600. Please call 240-857-6062 or FAX 240-857-4093 or email hufflth@mgmc.af.mil if you have any questions; or Lt. Col. Janice M. Rusnak at 240-857-8831.

6. We wish you the best in your research efforts. Thank you for your cooperation with the above IRB regulations, and for participation in research at the 89th Medical Center.

Sincerely,

Janice Rusnak, Lt. Col, USAF
Chairman IRB

APPENDIX F

LANGLEY AIR FORCE BASE APPROVAL LETTER

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 1ST FIGHTER WING
LANGLEY AIR FORCE BASE VA

08 December 2000

MEMORANDUM FOR MAJOR MARGUERITE T. MITCHELL, USAF, NC
USUHS GRADUATE SCHOOL OF NURSING STUDENT

FROM: 1 MDG/SGOBO
45 Pine Road
Langley AFB VA 23665-2080

SUBJECT: Research Approval

1. Congratulations! Your research protocol entitled "**Medical Readiness of Active Duty USAF Members Not on Deployment for Shortfall Deployment**" was reviewed and approved for data collection at Langley Air Force Base Clinic, Langley Virginia on 30 November 2000. Approval to conduct your study was based on the '**exempt' status obtained from Wilford Hall Medical Center's Institutional Review Board (IRB) which serves as our hospital's research review board and by the approval of Langley Air Force Base Hospital's Medical Executive Committee and Research Function Group.**

2. Please ensure that you maintain protocol standards as noted per 'IRB Protocol #1FWH2001002DE, dated 30 October 2000". If you have any questions regarding data collection of this study at our facility, please notify me at (757) 764-9602 or DSN 574-9602.

Quannetta T. Edwards

QUANNETTA T. EDWARDS, COLONEL, USAF, NC
Women's Health Care Nurse Practitioner
Consultant for Nursing Research/Research Function Group
BSN, MSN, MS, DNSc
Women's Health Care Clinic
1MDOS/SGOBO

Global Power For America