NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

VERIFICATION OF THE NEED FOR HOSPITAL CORPSMAN FOLLOW-ON/REFRESHER TRAINING

by

Barbara H. Fletcher

June 2000

Thesis Co-Advisors: Alice Crawford
Bernard J. Ulozas

Approved for public release; distribution is unlimited.

DTIC QUALITY INSPECTED 4

20000818 092

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instruction, 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, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188) Washington DC 20503.

1. AGENCY USE ONLY *(Leave blank)*	2. REPORT DATE	3. REPORT TYPE AND DATES COVERED
	June 2000	Master's Thesis

4. TITLE AND SUBTITLE: Verification of the Need for Hospital Corpsman Follow-On/Refresher Training

5. FUNDING NUMBERS

6. AUTHOR(S) Fletcher, Barbara H.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Naval Postgraduate School
Monterey, CA 93943-5000

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)
N/A

10. SPONSORING / MONITORING AGENCY REPORT NUMBER

11. SUPPLEMENTARY NOTES
The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government.

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited.

12b. DISTRIBUTION CODE

13. ABSTRACT *(maximum 200 words)*

The Navy's Medical Department, in fulfilling its mission, requires an enormous amount of skilled manpower. Hospital Corpsmen account for a significant percentage of this population. Due to the variety of the needs of the Navy, Hospital Corpsmen are frequently assigned to jobs outside their respective skill areas, i.e., Security, Maintenance, and Administration. The resulting periods of nonutilization of corpsmen skills may lead to various levels of skill degradation. Upon reassignment to another operational unit or Medical Treatment Facility, retraining basic core competencies is necessary to reestablish and ensure a high degree of operational readiness. This study suggests the need to improve Hospital Corpsmen competency-based, follow-on training because of the perceptions of both corpsmen and supervisors that skill degradation does exist. Based on this analysis, this thesis concludes that command competency-based training, as practiced, does not work. Recommendations are submitted for improvement in areas of training, professional development, mentoring programs, and instructional technologies.

14. SUBJECT TERMS
Leadership, Training, Recruitment, Skill Degradation

15. NUMBER OF PAGES
124

16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	18. SECURITY CLASSIFICATION OF THIS PAGE	19. SECURITY CLASSIFICATION OF ABSTRACT	20. LIMITATION OF ABSTRACT
Unclassified	Unclassified	Unclassified	UL

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std.

239-18

THIS PAGE INTENTIONALLY LEFT BLANK

Approved for public release; distribution is unlimited.

VERIFICATION OF THE NEED FOR HOSPITAL CORPSMAN FOLLOW-ON/REFRESHER TRAINING

Barbara H. Fletcher
Lieutenant, United States Navy
B.S., Wayland Baptist University, 1992
Master of Science in Health Care Administration, June 1995
Master of Arts in Organizational Leadership, June 1997

Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF SCIENCE IN MANAGEMENT

from the

NAVAL POSTGRADUATE SCHOOL
June 2000

Author: Barbara H. Fletcher

Barbara H. Fletcher

Approved by: Alice Crawford

Alice Crawford, Thesis Co-Advisor

Bernard J. Ulozas, Thesis Co-Advisor

Reuben T. Harris, Chairman
Department of Systems Management

THIS PAGE INTENTIONALLY LEFT BLANK

ABSTRACT

The Navy's Medical Department, in fulfilling its mission, requires an enormous amount of skilled manpower. Hospital Corpsmen account for a significant percentage of this population. Due to the variety of the needs of the Navy, Hospital Corpsmen are frequently assigned to jobs outside their respective skill areas, i.e., Security, Maintenance, and Administration. The resulting periods of nonutilization of corpsmen skills may lead to various levels of skill degradation. Upon reassignment to another operational unit or Medical Treatment Facility, retraining basic core competencies is necessary to reestablish and ensure a high degree of operational readiness. This study suggests the need to improve Hospital Corpsmen competency-based, follow-on training because of the perceptions of both corpsmen and supervisors that skill degradation does exist. Based on this analysis, this thesis concludes that command competency-based training, as practiced, does not work. Recommendations are submitted for improvement in areas of training, professional development, mentoring programs, and instructional technologies.

THIS PAGE INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

I. INTRODUCTION 1

A. BACKGROUND 1

1. Readiness 1

2. Dual Mission 2

3. Budget for Health Care 4

B. HOSPITAL CORPSMAN TRAINING AND DUTIES 6

C. TRAINING PROBLEMS 8

1. No Standardized Requirements 8

2. Assignment - Manpower Issues 9

D. PURPOSE OF THE STUDY 10

E. SCOPE OF THE STUDY 10

F. RESEARCH QUESTIONS 11

1. Primary Question 11

2. Secondary Questions 11

G. BENEFITS OF THE STUDY 11

H. ORGANIZATION OF THE STUDY 12

II. LITERATURE REVIEW 13

A. INTRODUCTION 13

B. BACKGROUND 13

1. Skill 15
2. Nonutilization 15
3. Skill Degradation 16
4. Department of Defense Training 19
C. TRAINING EVALUATION 21
1. Types of Training Evaluations 23
2. Levels of Training Evaluation 24
3. Return on Investment 27
D. EVALUATING SKILL DEGRADATION IN HOSPITAL CORPSMEN 29
III. METHODOLOGY 31
A. OVERVIEW 31
B. SURVEYS 31
1. Approach 31
2. Supervisors and Corpsmen Surveys 33
3. Procedures 34
4. Survey Sample 34
C. INTERVIEWS 36
D. LIMITATIONS 40
IV. ANALYSIS OF RESULTS 41

A. DEGRADATION OF CORPSMAN SKILLS 41

1. Manning Shortages 41

2. Training 44

3. Lack of Leadership (Hospital Corpsman Perceptions, Only) 50

B. HOSPITAL CORPSMAN PATIENT CARE SKILLS 51

C. ADDITIONAL FINDINGS 58

V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS 63

A. SUMMARY 63

B. CONCLUSIONS 66

C. RECOMMENDATIONS 67

1. Development of Comprehensive Follow-on Training 67

2. Professional Development 67

3. Mentoring Program 68

4. Existing Computer Technology and Usage 69

D. AREAS FOR FUTURE RESEARCH 70

APPENDIX A. BUREAU OF MEDICINE AND SURGERY COMPETENCY-BASED HOSPITALMAN SKILLS BASIC (HMSB) 73

APPENDIX B. SUPERVISORS TRAINING SURVEY 77

APPENDIX C. HOSPITAL CORPSMAN TRAINING SURVEY 79

APPENDIX D. TOTAL COMMAND SURVEY RESPONSES 83

APPENDIX E. SUPERVISOR'S SURVEY RESPONSES 85

APPENDX F. HOSPITAL CORPSMEN SURVEY RESPONSES 89

APPENDIX G. COMPARISON OF T-TEST RESULTS 93

LIST OF REFERENCES 97

BIBLIOGRAPHY 101

INITIAL DISTRIBUTION LIST 103

LIST OF FIGURES

Figure 1. Navy Medicine's Dual Mission 3

Figure 2. Defense Health Program 5

THIS PAGE INTENTIONALLY LEFT BLANK

LIST OF TABLES

Table 1. Sample Population by Date and Location of Interview 39

Table 2. "A" School Perceptions 45

Table 3. Command Training Perceptions 46

Table 4. Perceptions of Patient Care Skills by Group 52

Table 5. Mean Responses by Question Per Group 57

THIS PAGE INTENTIONALLY LEFT BLANK

ACKNOWLEDGMENTS

I wish to express my sincere thanks to the officers, civilian supervisors, and enlisted personnel who participated in this study. They took the time out of their busy schedules to fill out surveys and respond candidly to interview questions. They are the true authors of this thesis.

I would like to thank my advisors, Dr. Bernard J. Ulozas of the Naval Training Systems Center and Professor Alice Crawford of the Naval Postgraduate School, Systems Management Department. Their tireless efforts in proofreading my work and guiding my research provided the greatest value of my graduate education. I would also like to thank the Academic Associates and Professors who helped me succeed in my studies with words of encouragement and support; Bill Gates, Ken Thomas, Gail Thomas, Julie Filizetti, Mark Eitelberg, and Stephen Mehay. They represent the true essence of what professors are supposed to be. I especially would like to thank Alice Crawford, whom I've learned so much from. Her patience, encouragement, listening skills, and best of all, her friendship, have encouraged me to "Be All That I Can Be". When I grow up I want to be "Just Like Her."

Finally, I would like to thank my family, especially my mother, Helen M. Fletcher who passed away during the thesis process. She believed in me and provided endless support and love throughout my life, career, and stay at the Naval Postgraduate School. She will be missed enormously.

THIS PAGE INTENTIONALLY LEFT BLANK

I. INTRODUCTION

A. BACKGROUND

Navy Medicine's primary mission and most important responsibility is to provide combat-ready medical personnel to support the operational forces of the Navy and Marine Corps team. Hospital Corpsmen are the cornerstone of the medical team, which is made up of doctors, nurses, and administrators. Therefore, it is imperative that they receive appropriate readiness training to accomplish the mission. This thesis addresses the issues of effectiveness and efficiencies of current Hospital Corpsman follow-on competency-based training.

1. Readiness

Operational readiness is the primary reason for the existence of military medicine. Everything the services do has a direct relationship to their ability to optimize and maintain a service member's health and fitness. This, then, is the primary function of Navy Medicine, in addition to providing a full spectrum of medical services when members deploy.

The Department of Defense (DoD) defines medical readiness as:

> The ability to mobilize, deploy and sustain field medical services for any operation requiring military services; to maintain and project the continuum of healthcare resources required to provide for health of the force; and to operate in conjunction with beneficiary health care. (Department of Defense Medical Readiness Strategic Plan, March 1995)

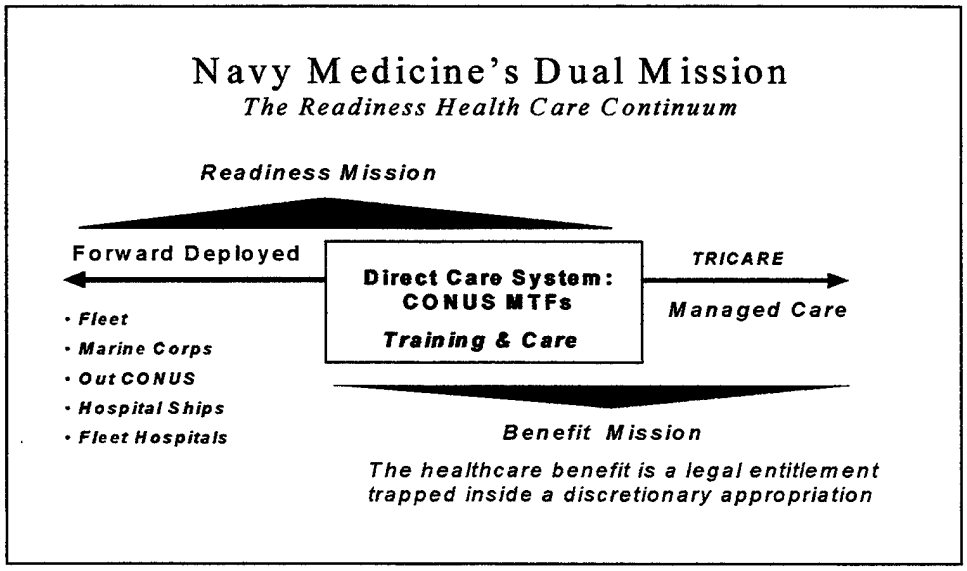
In other words, medical readiness is positioning the right people, with the right training, with the right equipment, in the right place at the right time. One thing that can be done to ensure high readiness is to examine periodically the effectiveness of acquisition and follow-on training of medical personnel. This research examines skill maintenance for Hospital Corpsmen after they leave "A" school training.

2. Dual Mission

Navy Medicine's primary mission is twofold: maintaining mission readiness for forward-deployed units, and maintaining a direct-care system for all eligible beneficiaries. In hearings before a 1994 Congressional committee, the Surgeon General of the Department of Defense described the nation's military health care system as follows:

> The military health system is one of the largest medical systems in the world. It has the dual mission of providing for the combat readiness of our military personnel in peace and war, and providing for the health care of military dependents and military retirees and their dependents. Overall, our military health care system takes care of the health needs of over 8.3 million beneficiaries, 1.7 million of whom are currently in uniform. In order to accomplish its dual mission, the DoD operates 133 hospitals and 504 outpatient clinics worldwide. About 110,000 active duty and 53,000 civilian personnel are employed in the system (U.S. Senate, 1994, pp. 1-2).

Figure 1 illustrates Navy Medicine's dual mission.



Source: Chief of Naval Operations (N931).

Figure 1. Navy Medicine's Dual Mission

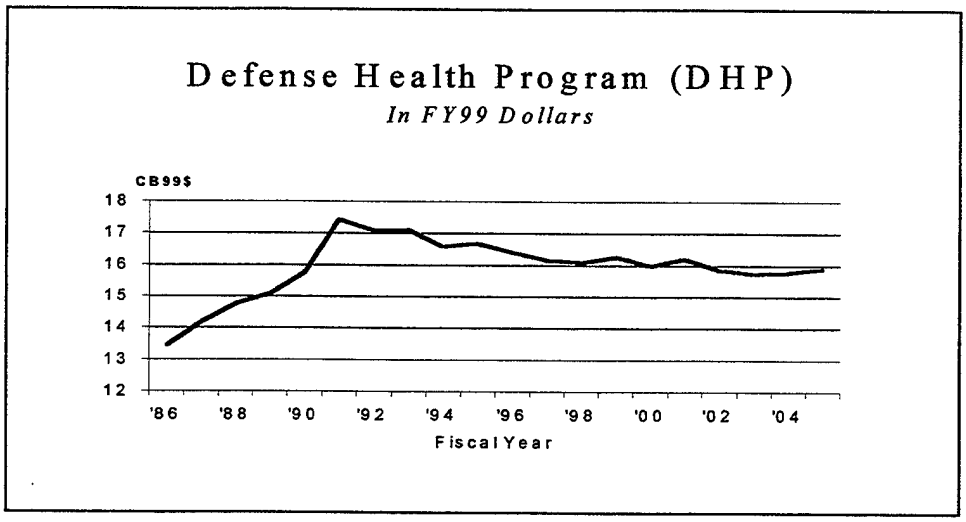
The dual mission is important with regards to the effectiveness and efficiency of follow-on competency-based training. The Navy adopted a model called the Total Health Care Support Readiness Requirement (THCSRR) that determines the precise number of billets required to support the training of medical personnel. THCSRR works for the ideal situation, but does not deal with manning problems faced by day-to-day operations to provide medical services to beneficiaries. Training becomes the least important issue when the commands are barely managing to accomplish the daily mission.

3. Budget for Health Care

As the military becomes smaller and defense budgets shrink, pressure to justify and reduce the costs of training grows (GAO/T-NISD-94-160 Report). This pressure is leading the services to modify their customary training methods. But as long as maintaining readiness and preparedness remains a high priority, the military cannot afford wholesale, indiscriminate reductions in training activities and resources. Thus, the fundamental problem facing the military is how to reorganize the training function to reduce costs, while preserving quality and maintaining effectiveness.

Traditionally, military expenditures have not been a source of great concern of the Department of Defense; however, over the past twelve years, Congress has been increasingly determined to reduce the federal deficit. Since 1985, the biggest deficit reductions have been realized through reducing the defense budget (GAO/T-NISD-99-260 Report). As a result of these cuts, the Defense Health Program (DHP), which incorporates medical training, as Figure 2 shows, has seen a inconsistent decline in funding since 1991.

Since the end of the Cold War, the size of the Department of Defense Active and Reserve Component Medical End Strength force structure has been a source of debate (Synder, 1998). The myriad studies and analyses completed since the end of the Cold War all have pointed in two distinct directions: downsizing the Medical End Strength and the Direct Care System or, maintaining



Source: Chief of Naval Operations (N931).

Figure 2. Defense Health Program

it at its current size. Despite the many competing political pressures to keep the medical Health Services System the size it was during the Cold War, the shrinking DoD budget has necessarily limited the amount of money spent on military medicine.

As a result, the possible spillover effects are a lack of appropriate follow-on competency-based training for Hospital Corpsmen, a lack of retention among first-term Hospital Corpsmen, which according to the Hospital Corpsman Enlisted Community Manger as of September 30, 1999 was 33 percent, and a shortage of senior Hospital Corpsmen in the future throughout the military chain of command, since senior personnel are grown not recruited.

B. HOSPITAL CORPSMAN TRAINING AND DUTIES

Hospital Corpsmen (HM) are a critical component to accomplishing Navy Medicine's mission. Their professional needs must be satisfied for Navy Medicine to be aligned and competitive. Their work environment must be challenging and supportive, providing clear objectives and valuing the contributions of all. Their commitment must be reinforced by effective communication, teamwork, respect, and outstanding leadership (Department of Defense Medical Readiness Strategic Plan, 1995).

Hospital Corpsmen assist Navy medical professionals in providing health care to active duty personnel and their families. They may function as clinical or specialty technicians. Initially, a Hospital Corpsman attends "A" school, which is a 14-week course that provides limited education and training in the basic subjects and procedures of nursing and emergency medical care. The course consists of four units: medical fundamentals, emergency medical care, nursing procedures, and clinical experience. Upon graduation from "A" school, a Hospital Corpsman goes through a five-week field medical training course. A corpsman assigned to Fleet Marine Force (FMF) provides medical care for personnel in the field, and technical and administrative assistance to support the mission and functions of Marine Corps units. The FMF corpsman duties fall into the following categories: procurement and distribution of supplies and equipment for field use and combat areas, maintenance of treatment facilities, first aid and emergency medical

surgery, medical evacuations, and maintenance of sanitation requirements in the field.

Although additional medical training is received when corpsmen attend Field Medical Service School, the real training and sharpening of medical skills are acquired while stationed at Medical Treatment Facilities (MTFs) or operational units while going through follow-on competency-based training.

In accordance with Bureau of Medicine and Surgery (BUMED) directives, each MTF, ship, or operational unit Staff Education and Training Department can develop its own training programs for maintaining corpsman basic skills as long as their training programs, at a minimum, include the five basic core competencies. The five basic core competencies are: medication administration, intravenous therapy, venipuncture for blood collection, suturing, and patient assessment. Appendix A shows complete requirements for follow-on, competency-based training. Basic, but required, medical skills are practiced on a daily basis, which leads to Corpsmen becoming proficient and confident in their abilities to provide routine and emergency care.

Subsequently, corpsmen may serve as pharmacists, medical technicians, food service personnel, nurse's aides, physicians or dentist's assistants, battlefield medics, X-ray technicians, or pharmacy technicians. Additionally, an HM's work falls into several additional duty categories: first aid and minor surgery, patient

transportation, patient care assessment, medical records, laboratory work, and food service inspections.

Military training is an extensive, resource-intensive activity using considerable manpower, equipment, consumables, facilities, and installations. With the constant turnover of personnel and limited resources, training must be linked to organizational objectives, performance, and cost effectiveness. It is not enough to measure what a sailor knows, but how job performance impacts organizational effectiveness must also be measured.

C. TRAINING PROBLEMS

1. No Standardized Requirements

Unfortunately, no standardized requirements or competency-based guidelines exist for Medical Treatment Facilities to maintain and/or enhance their corpsmen's basic knowledge and skills following "A" school. In accordance with BUMED directives, each MTF Staff Education and Training Department can develop its own training program for maintaining corpsmen's basic skills as long as the program includes, at a minimum, the five basic core competencies. Thus, non-standardized training exists throughout the four types of Hospital Corpsman duty assignments, which are naval hospitals, Fleet Marine Force (FMF) units, ships, and Overseas Continental United States (OCONUS) Medical Treatment Facilities. Training departments may fail to adequately emphasize the five core competencies, or they may prioritize them differently (Brummitt, 1999).

Without a uniform approach to accomplishing the basic core competency requirements, there can be no consistency in the results. This extends to different levels of proficiency training, which may lead to some skill degradation with each permanent change of station (PCS) duty assignment.

2. Assignment - Manpower Issues

In order to accomplish the mission, the military must include the proper quantity and quality of personnel. The development of personnel plans to accomplish this mission begins with the Chief of Naval Operations Manpower Sponsor (N122), and ends with the Chief, Bureau of Naval Personnel (BUPERS). BUPERS works in close coordination with various agents of the office of the Surgeon General to derive the optimal personnel plans needed to meet Navy Medicine's primary mission while complying with all legislation and directives. The primary mission of the Navy Medical Department is as follows:

> To ensure the health of our sailors and Marines so that they are physically and mentally ready to carry out their worldwide mission. To strive to continually provide this same level of quality health care services to the families of active duty members and to all others entrusted to our care (Department of Defense Medical Readiness Strategic Plan, 1995).

Upon graduation from Hospital Corpsman "A" school, Hospital Corpsmen serve their first tour of duty at one of four HM duty assignments where they should receive some form of follow-on training for maintaining the minimum five basic core competencies. These skills are crucial to their individual development

as Hospital Corpsmen. Hands-on, real-life experience with a variety of people and ailments in actual patient care environments keeps a corpsman's basic skills sharp. Without such practice, corpsmen will not be able to give sailors top quality care in active operations.

Unfortunately, many corpsman spend their tours working in non-patient care billets, such as Supply, Operating Management, or Administration. At their next assignments, these same corpsmen may be the only medical personnel available for service members. Will they be prepared to render proficient patient care?

D. PURPOSE OF THE STUDY

The purpose of this thesis is to examine the perceptions of Hospital Corpsmen and their supervisors concerning the training effectiveness of Hospital Corpsman "A" school and follow-on competency-based training programs. In essence, this study determines the extent to which follow-on/refresher education and training are needed.

E. SCOPE OF THE STUDY

This thesis analyzes information from questionnaires and in-dept interviews with Hospital Corpsmen and their direct supervisors, generally Leading Chief Petty Officers (LCPOs), and their second-level supervisors, Division Officers from the following commands: Naval Hospital Bremerton, Naval Hospital Oak

Harbor, Naval Hospital Camp Pendleton, Medical Clinic China Lake, the USS Essex (LHD 2), and a Fleet Marine Force Unit Camp Pendleton. The analysis provides insights into the effects of current education and training programs and policies for Hospital Corpsmen in the Navy.

F. RESEARCH QUESTIONS

This thesis addresses the following questions:

1. Primary Question

Is there a degradation of basic knowledge and skills for Hospital Corpsmen between "A" school graduation and performance as corpsmen at their first duty assignments?

2. Secondary Questions

The two secondary questions are:

Is there a difference in perceptions about HM skill degradation between supervisors and Hospital Corpsmen?

Are there particular skill areas that degrade more than others by the time the HM is in the job?

G. BENEFITS OF THE STUDY

This research may help redefine education and training options for the Hospital Corpsman rating, which could result in greater skill proficiencies and enhanced military readiness levels. It may also serve as an example for other DoD organizations seeking to improve their existing medical training systems.

H. ORGANIZATION OF THE STUDY

Chapter II reviews the background of skill degradation, training evaluation, and return on investment. Chapter III addresses the methods used to gather and analyze the data. The results are examined in Chapter IV. Chapter V presents a summary of the findings, draws conclusions, and offers recommendations for future research.

II. LITERATURE REVIEW

A. INTRODUCTION

Recent concern about fleet readiness has made the maintenance of personnel skills and job proficiency an important issue throughout the Armed Forces. The Navy's Medical Department, in fulfilling its mission, requires an enormous amount of skilled manpower. A significant percentage of this population is accounted for by Hospital Corpsmen. Due to the variety of the needs of the Navy, Hospital Corpsmen are frequently assigned to jobs outside their respective skill areas, i.e., Security, Maintenance, and Administration. The resulting periods of nonutilization of corpsman skills may lead to various levels of skill degradation. Upon reassignment to another operational unit or Medical Treatment Facility, retraining of basic core competencies is necessary to reestablish and ensure a high degree of operational readiness.

The purpose of this chapter is to review pervious studies on the concepts of skill loss, deterioration, and degradation due to nonutilization of learned skills, as well as procedures and requirements necessary to evaluate training programs effectively.

B. BACKGROUND

With any organization, civilian or military, a substantial portion of the budget is spent on training and personnel development programs. The reasons

organizations make these investments are numerous, with perhaps the strongest being to enable employees to deal with the impact of increasingly complex and sophisticated technological changes. Both the organization and the trainee maintain an interest as well as an investment in the outcome of training programs. The employer, in this case the United States Navy, wants to ensure that there is a desired change in work performance leading to positive benefits including higher productivity, increased morale, increased quality assurance, decreased absenteeism, and fewer safety mishaps.

The main benefit of Hospital Corpsman "A" school is that it provides medical personnel, Hospital Corpsman (HM), who assist Navy medical professionals in providing health care to active duty personnel, their families, and retirees. They may function as clinical or specialty technicians. Hospital Corpsman "A" school is a 14-week course that provides limited education and training in the basic subjects and procedures of nursing and emergency medical care.

At times, however, corpsmen are temporarily billeted to non-patient care jobs not requiring them to use their general knowledge and basic skill sets. These actions are not meant to be permanent but are outcomes of the needs of the Navy. It is reasonable to suggest that temporary assignment to non-patient care jobs may lead to skill degradation, low morale, and attrition.

Studies of skill loss, deterioration, degradation, and forgetting show that losses in proficiency are influenced by a number of variables including the level at which the skill was originally learned, the length of period of nonutilization, the types of activities engaged in during periods of nonutilization, and job conditions that fail to provide training and/or practice of skills learned (Annett, 1968). A general understanding of skill degradation must begin with a definition of terms and more explanation of issues relevant to training.

1. Skill

The word "Skill" has been defined by a variety of sources. The Oxford New English Dictionary defines skill as "practical knowledge in combination with ability." (Welford, 1968) Another source, The Dictionary of Psychology presented a more useful definition "Skill consists in the ability to bring about some end result with maximum certainty and minimum outlay of energy and time." (Drever, 1965)

Further, several skills may be utilized to complete a single task, and/or several tasks may be essential to complete a job. Thus, a skill will be strongly related to performance as defined by "How well an individual accomplishes his or her job." (Salvendy and Seymour, 1973)

2. Nonutilization

Applied to an already learned and effectively employed skill (Mikas, 1982), the term nonutilization will be used to express a period of disuse of a skill. Periods

of nonutilization occur whenever personnel are assigned outside their skill specialty and when they perform skills infrequently on the job. During this period the skills are not being used or practiced. These periods of nonutilization are caused by involuntary actions such as reassignment to a non-patient care area or job.

3. Skill Degradation

The condition resulting from nonutilization of a skill that has already been learned is called skill degradation. Skill degradation basically refers to a decline of proficiency in performing a skill. Skill degradation can occur under job situations where the information about the adequacy of performance is either absent or inaccurate, because of low levels of initial training, or non-use of skills for some period of time following training.

In a study conducted in 1961 sponsored by the United States Air Force Aeronautical Systems Division, the researchers performed a review of skill degradation among military personnel. This was the first effort related to long-term skill retention relevant to military tasks. It consisted of a comprehensive review of classical literature on long-term skill retention. This study discussed original learning conditions, retention conditions, and recall conditions. The following is a summary of the significant points of the research:

1. Motor tasks are retained better than verbal tasks and continuous tasks are retained better than discrete procedural tasks.

2. Practice facilities skill retention.

3. Skill losses occur over time. The retention varies in each situation.

4. Retention is a direct function of the quality and amount of original learning.

5. Skill is lost over time and is retained in proportion to rehearsal (Naylor and Briggs, 1961).

In 1977, Annett conducted another comprehensive study on skill loss. This study, which focused on perceptual motor skills, looked at the rate at which skill is lost or forgotten during extended periods without practice and the ease with which unpracticed skills may be refreshed by retraining. The study included numerous reviews beginning with Ebbinghaus (1885), up to and including work in 1975. Annett found that most of the studies were concerned with artificial laboratory tasks using students or servicemen, and that there was a lack of a method for comparing performance and retention on different types of tasks. The following is a summary of the significant points of this study:

1. Well-learned skills are generally well-trained over periods of a year or more with regular practice.

2. Procedures such as emergency drills seem particularly sensitive to skill loss through disuse.

3. A deteriorated skill is readily relearned in a fraction of original learning time.

4. Retention is generally a function of the degree of original learning.

5. There are problems in exercise of skill after a long period of no-practice. Recalling an unpracticed skill may be stressful, and retention may be affected by stress (Annett, 1977).

According to a study by Taylor and Thalman (1977), skill deterioration in the Navy is complicated and difficult to understand. Only by subtracting what is retrained from what was originally learned, can one estimate how much information was lost, and Navy jobs are not learned all at one time. Some skills develop out of the learner's previous background, experience, and knowledge; some are learned formally in schools; and some are learned during on-the-job training. Moreover, the majority of Navy personnel are highly trained, but as high as 25 percent of enlisted personnel are assigned outside their skill areas, resulting in various levels of skill deterioration, and a requirement for retraining upon return to their occupational specialties. The resulting skill deterioration caused by nonutilization poses a significant problem to the Navy (Taylor and Thalman, 1977).

A 1982 study, sponsored by the Navy Personnel Research and Development Center in San Diego, focused on variables contributing to skill loss in the Navy. Findings from this study showed that the most important cause of skill deterioration is nonuse, i.e., nonutilization. The length of nonutilization controls the rate of skill deterioration. Skill degradation can occur when there are infrequent opportunities to practice or perform a learned skill, or when feedback is absent or inadequate. The researchers concluded that although nonutilization is a likely cause of skill deterioration, it is difficult to identify and evaluate skill loss, or assess or predict skill deterioration in the Navy due to the mission of the Navy, which is to maintain, train

and equip combat-ready Naval forces capable of winning wars, deterring aggression, and maintaining freedom of the seas (Hurlock and Montague, 1982). Everything naval personnel train for in time of peace is done with but one object in mind: to become efficient and qualified for his or her duties in time of war.

Unfortunately, the literature provides little information that has direct application to the problem of skill degradation in the Navy. Most of the reported findings in the literature investigating skill loss, deterioration, and degradation caused by nonutilization are based on simple experimental tasks under highly controlled conditions. Further, the absence of quantitative measures makes it difficult to evaluate the effectiveness of retraining. (Hurlock and Montague, 1982)

4. Department of Defense Training

Like many organizations, the Department of Defense (DoD) struggles to maximize the "fit" between personnel and the work environment. The better the fit, the more likely it is that the services will be effective in accomplishing the mission. Currently, DoD maintains three essential types of training: unit training, civilian training, and formal training and education for military personnel (GAO/NSIAD-96-93). Unit training consists of military mission-type training performed at the unit level under the control of the unit commander. Civilian personnel training and education consists of various courses offered to civilian personnel to enhance their job functions.

DoD has the following six categories of formal training and education programs for military personnel.

- Recruit training: includes introductory physical conditioning and basic military indoctrination and training.
- One-station unit training: a program that combines recruit and specialized skill training into a single course (Army, only).
- Officer acquisition training: includes all types of education and training leading to a commission in one of the services.
- Specialized skill training: provides officers and enlisted personnel with initial job skills or new or higher levels of skill in their current military specialty or functional area.
- Flight training: provides the flying skills needed by pilots, navigators, and naval flight officers. It does not include formal advanced flight training, which is provided by the services' advanced flight training organizations.
- Professional development education: includes educational courses conducted at the higher-level service schools or at civilian institutions to broaden the outlook and knowledge of senior military personnel or to impart knowledge in advanced academic disciplines (GAO/NSIAD-96-93).

To determine the existence of skill degradation, or other performance problems, DoD must be concerned with evaluation in all of its categories of training. With appropriate evaluation, DoD can decide whether to continue with a certain type of training strategy, identify strengths and weaknesses in the training process and recommend improvements, and determine if objectives are being met.

C. TRAINING EVALUATION

In determining the causes of skill degradation, one must determine, first, if the objectives of the original training course were accomplished. One way to determine if the objectives of the training course were met is through evaluation of the training program. Evaluation is the process of determining the value and effectiveness of a learning program. It uses assessment and validation tools to provide data for the evaluation (Muchinski, 1997).

With the introduction of the Information Age and the increasing number of training programs, training and development personnel are becoming more and more accountable for the effectiveness of their programs (Oliver, 1998). Many training professionals agree that evaluation is important to successful training, but few conduct complete and thorough evaluations. Nonetheless, organizations are asking, "What is the value of training, and how effective are all these training programs?" (Oliver, 1998)

In a study of 13 members of a national organization of trainers, researchers at the University of Southern California School of Education concluded that corporations and other businesses are failing to determine the effectiveness of their employee training programs. "Though employee training costs U.S. businesses an estimated $30 billion to $100 billion a year, business leaders are not determining if they're getting their money's worth" (Clark and Austenfeld, 1997). With these huge investments in human capital, one would expect businesses to feel concerned

with the results of their investment. Surprisingly, in all but one of the training programs Clark and Austenfeld studied, no realistic efforts were made to evaluate the programs.

One reason that many businesses fail to evaluate training effectiveness is that management often is uninformed as to evaluation procedures. Indeed, many organizations inherently believe that training of any kind is a benefit and, therefore, doesn't need to be measured (Clark and Austenfeld, 1997). Other businesses simply will not dedicate resources to effectively evaluate training programs. This doesn't make sense, considering that in every other facet of business—production, for example, sales and marketing, the results of investment are scrutinized and reviewed to ensure that the investment is paying off in profits and efficiency. As managers are made more aware of the huge dollars invested in human capital, they must conduct some sort of evaluation of effectiveness in order to maximize profits and efficiency (Oliver, 1998). In understanding skill degradation, we must consider the concepts and processes that impact knowledge and skills.

The trainee, also, is interested in evaluation because it can lead to changes in a training program that will better meet the trainee's needs. Trainees' criteria for evaluation can be grouped into three categories:

- Occupational: "Did the training help me perform my job more effectively and improve my promotion opportunities?"

- Personal: "Did the program give me greater confidence in my abilities and skills?"
- Emotional: "Did I enjoy the program?" (Muchinski, 1997)

1. Types of Training Evaluations

a. Internal and External Evaluations

Evaluations can be internal or external. Internal evaluations examine the training program itself, specifically the analysis, design, development, and implementation stages. The primary purpose is to determine whether the instructional development effort has accomplished what was intended. External evaluations are used to determine whether the learners have mastered the objectives of the training program. The various instruments used to collect the data are questionnaires, surveys, interviews, observations, and tests. The methodology used to gather the data should be a specified step-by-step procedure. It should be designed and executed to ensure the data are accurate and valid (Phillips, 1997).

b. Quantified or Unquantified Evaluation Data

Evaluation data can be quantified or unquantified (descriptive or verbal). The data can be gathered from opinion surveys, production rates, promotion and test scores, etc. These two approaches each have advantages and disadvantages. An emphasis on measurement can sometimes narrow and distort

the evaluation excises. Evaluations should in most cases go beyond numerical criteria and involve judgment as well (Phillips, 1997).

2. Levels of Training Evaluation

One of the most widely used models for evaluating training programs was proposed by Donald L. Kirkpatrick. He first published a series of articles in 1959 describing a four-stage evaluation model. The model maintains that there are four criteria, Reaction, Learning, Behavior, and Results, to measure the effectiveness of a training course. He and other researchers have been refining the model ever since. His latest revision was published in 1998 and stands as an invaluable how-to guide for developing a realistic method of evaluation. In his 1998 book, Kirpatrick includes detailed case studies of current companies, e.g., The GAP, Cisco Systems, and Motorola, which have evaluated their training programs using the four levels. Paul Bernthal, manager of research at Development Dimensions International, states that Kirkpatrick's classic model has weathered well. The simplicity and common sense of Kirklatrick's model imply that conducting an evaluation is a standardized, prepackaged process that encourages trainers to understand the difference between proof and evidence of training results (Journal of Training and Development, February 1999).

Kirkpatrick stresses the need to plan the evaluation process as the training is being planned, as well as to consider all levels at the outset, even though only

levels one and two may be used ultimately (Kirkpatrick, 1998). An explanation of Kirkpatrick's Four Levels of Training Evaluation follows.

a. Level 1: Reaction

Kirkpatrick's first level of training evaluation, Reaction Criteria, is the participants' reactions to the program. Reaction criteria measure the trainees' impressions and feelings about the training. Most commonly, this comes in the form of a questionnaire filled out upon completion of a training program. There is no reason a survey or questionnaire can not be used throughout stages of a training program, as well as long after the training has been completed. This level helps capture the participants' reaction to training in relation to job performance and utilization. Questionnaires have some limitations. A survey or questionnaire that is too long or difficult to complete may not be filled in thoroughly by participants, which affects the validity of the responses. If the questionnaire uses a rating scale, the participant is limited to those responses provided. Another common problem inherent with reaction data at the completion of training is that of a "Happy Sheet." The survey asks questions related to whether the trainee enjoyed the training, rather than what the trainee may have learned or would like to see done differently. Whether the donuts and coffee were fresh doesn't accurately determine the effectiveness of the training program.

b. Level 2: Learning

The second level of evaluating training is Learning Criteria. This evaluates how participants change attitudes, improve knowledge, and/or increase skills as a result of attending the training program. It addresses the question: Did the participants learn anything? An example would be a final exam at the end of training or the use of pre- and post-tests, either written or performance-based. One problem with post-tests is that, while they measure the level of change at the conclusion of training, they can not necessarily measure how much of that learning is transferred to performance. Both Reaction and Learning Criteria refer to assessments internal to the training program itself.

c. Level 3: Behavioral

The third level of Kirkpatrick's training evaluation is Behavioral Criteria. Behavioral Criteria refer to actual changes in the performance once the trainee enters or returns to the work environment. For example, if the objective of the training program were to increase quality, then the evaluator would measure the defect rate before and after training. The difficulty here is finding a good measurement of change. Three questions an evaluator must answer are:

- Did a real change occur?
- Is the change attributable to the instructional program?
- Will the changes likely occur with a different or new sample of subjects? (Kirkpatrick, 1998)

d. Level 4: Results

The fourth level of training evaluation is Results Criteria. Results Criteria refer to the economic value of the training program to the organization. Results Criteria normally will compare a group that received training with a control group that did not. In 1989, Cascio developed a procedure to apply utility analysis to the assessment of training outcomes. Utility analyses are based on a careful assessment of the costs associated with developing training, training materials, training time, and production losses (Kirkpatrick, 1998).

Level 3 and Level 4 are considered *external* criteria, external to the training program itself. Behavior and Results evaluations are rarely conducted in training evaluations because management is unwilling to allocate financial and personnel resources to complete this stage (Muchinsky, 1997). The training program is normally fully funded, but the evaluation of the training program is not. As pointed out in the introduction, this is unwise considering the vast number of dollars being spent on human capital. All the other facets of business are measured completely by profit and efficiency, yet training programs are generally ignored.

3. Return on Investment

In response to competitive economic pressures to increase the efficiency and effectiveness of training and performance-improvement programs, measuring return on investment (ROI) has become an important and critical issue for most

organizations. In record numbers, organizations all over the globe are implementing some type of process to show the true contribution of performance-improvement programs. The return-on-investment process is one of the most effective ways for training and development personnel to increase their influence on the organization, enhance program results, and measure the contribution of programs in terms that senior management can understand (Phillips, 1997).

As defined by Phillips (1997), ROI compares monetary value of the results with cost of the program and is usually expressed as a percentage. The most appropriate formula to evaluate training investments uses net program benefits divided by cost. This method compares the program's benefits to its cost. The ratio is usually expressed as a percent. In formula form, the ratio is:

$$\text{ROI}(\%) = \frac{\text{Net Program Benefits}}{\text{Program Costs}} \times 100$$

Although formulas for computing ROI are straightforward, processes for isolating effects of learning and then converting the data to monetary values can be complex. With any type of evaluation system or program, there are shortcomings, deficiencies, or assumptions (e.g., evaluations are definitive, credible, and effective). Too often, trainers jump into using a model without taking the time to assess their needs and resources, or to determine how they will apply the results. When they regard the four-level approach as a universal framework for all evaluations, they tend not to examine whether the approach itself is shaping their questions and their results (Bernthal, 1999).

D. EVALUATING SKILL DEGRADATION IN HOSPITAL CORPSMEN

Skill degradation among Navy personnel due to the nonutilization of learned skills is a serious problem with no easy solution. Existing studies concerned with proficiency maintenance rarely exist in a form readily usable by the Navy. The need to diminish skill degradation is obvious. To the extent an individual loses his or her skills, performance decreases and as a consequence, the organization is negatively affected. This research hypothesizes that skill degradation is a problem for Navy HMs after they leave "A" school.

Evaluating training effectiveness is a complex phenomenon that can probably only be explained by considering individual, situational, organizational, and other environmental variables. Yet, some evaluation procedures are required to determine whether or not skill degradation exist among HMs. This thesis examines perceptions of corpsmen and their supervisors to evaluate the effectiveness of "A" school training and maintenance of skills in subsequent duty assignments. The next chapter describes the data collected and the methods of analysis.

THIS PAGE INTENTIONALLY LEFT BLANK

III. METHODOLOGY

A. OVERVIEW

This research identifies possible reasons for knowledge and skill degradation of Hospital Corpsman (HM) between "A" school graduation and performance as corpsmen at their first Medical Treatment Facility (MTF), operational unit, or ship. After considering the various methods of data collection for research, the researcher chose surveys, follow-up focus groups, and individual interviews as the best methodology for this project.

B. SURVEYS

1. Approach

The survey method used a non-experimental approach to describe and compare relationships among the data collected. Although non-experimental designs are generally weaker with respect to validity than are true experimental designs, this survey method allows the research to be carried out in a natural setting, thereby making generalizations to other populations more meaningful and possibly increasing the validity (Peter, 1994).

The survey is based on Fowler's (1995) five basic characteristics of questions and answers that are fundamental to a good measurement process. The five basic characteristics are:

- Questions need to be consistently understood.
- Questions need to be consistently administered or communicated to respondents.
- What constitutes an adequate answer should be consistently communicated.
- Unless measuring knowledge is the goal of the question, all respondents should have access to the information needed to answer the question accurately.
- Respondents must be willing to provide the answer called for in the question.

With regard to designing questions to measure subjective states, Fowler states:

> Because there are no standards against which to evaluate the correctness or rightness of answers, standardization of the stimulus of the question is particularly critical in measuring subjective states. For this reason, designing questions that can be administered in a consistent way and that mean the same thing to all respondents, to the extent possible, is high on the list of strategies for creating good measurement of subjective states.
>
> Equally important is standardizing the response task. That means clearly defining the dimension or continuum respondents are to use in their rating task and giving them a reasonable way to replace themselves, or whatever else they are rating, on that continuum.

Fowler suggests that answers to subjective questions have no absolute meaning, but are relative. The position of the answers relative to each other is where the relevant information is found. In general, surveys should ask the things that respondents are able to report reliably.

In developing the surveys, for this research, a group of academic and general content professionals reviewed the survey and provided comments that

were incorporated where appropriate. The survey incorporates questions that elicit ordinal responses. Examples of these variables include questions that may be answered on a scale ranging from "Excellent" (assigned a numerical value or 5) to "Poor" (a value of 1). This scale, known as a Likert scale, is believed to work especially well when the objective is to elicit attitudinal information about a particular variable of interest. (Rea and Parker, 1992, p. 74) Upon completion, the surveys were field tested to check for clarity, relevance, and completion time, and changes were made where appropriate.

2. Supervisors and Corpsmen Surveys

a. Supervisors Survey

The survey contained three specific categories of questions representing different elements of Hospital corpsman "A" school and present command training programs. Each category had questions in which the participant rated the levels of knowledge, skills, and training experiences for the Hospital Corpsman they supervise on a 5-point Likert scale. The survey also included items to obtain additional background information. Appendix B shows the Supervisor's survey.

b. Corpsmen Survey

The survey contained three specific categories of questions representing different elements of Hospital corpsman "A" school and present command training programs. Each category had questions in which the participant rated their knowledge, skills, and training experiences in being a Hospital

Corpsman on the same 5-point Likert scale used by the supervisors. The survey also included items to obtain additional background information. Appendix C shows the Hospital Corpsman survey.

3. Procedures

The surveys were distributed to participants during the week of December 7, 1999 and collected up to February 29, 2000. Each survey packet consisted of a letter of introduction and a survey form. The letter of introduction explained the purpose of the research as well as the need to be as candid and objective as possible. Raw data summaries appear in Appendices D, E, and F. All survey packets were sent out via email to the commands described in the next section.

4. Survey Sample

The data set for this thesis consisted of active duty Hospital Corpsmen and their supervisors from the following commands: three Continental United States Medical Treatment Facilities (Naval Hospital Bremerton, Naval Hospital Camp Pendelton, and Naval Hospital Oak Harbor); two operational units (Fleet surgical Team Japan and Fleet Marine Force Camp Pendelton); one stand-alone medical clinic (Medical Clinic China Lake); one Overseas Continental United States Medical Treatment Facility (Naval Hospital Cuba); and one ship (the USS Essex LHD 2).

Hospital Corpsman participants were randomly selected by supervisors with approximately half working in a patient care environment and half not working in a non-patient care environment.

Medical Treatment Facilities were selected based on their size and location. The surveys were given to 430 Hospital Corpsman and 144 supervisors. A one-way analysis of variance (ANOVA) was performed on the average responses of the survey from each command to determine if command data should be aggregated or treated separately. Results of the ANOVA (F=2.37, df=7, p-value=0.071916) indicated that there were no significant differences between the groups, so the data could be aggregated and then analyzed. (Refer to Appendix D for the total command responses.)

The survey response rates for the groups were 70 percent for the supervisors and 68 percent for Hospital Corpsmen, with an overall response rate of 68 percent or 392 of 574 sent out. The breakdown of supervisor respondents by paygrade was 14 percent E-5/E-6 (N=14), 11 percent E-7/E-9 (N=11), 40 percent O-3 and below (N=40), 20 percent O-4 and above (N=21), and 15 percent Civilian (N=15). The breakdown of Hospital Corpsman respondents by paygrade was 14 percent E-5 (N=37), 35 percent E-4 (N=105), 51 percent E-3 and below (N=149).

The survey responses, for both surveys, were categorized in three sections, Section I: Hospital Corpsman Basic Skills, Section II: Command Training, and Section III: Job Confidence Levels. The responses on the five-point scale were combined into two categories. Responses from Section I are either "Excellent" to "Good" or "Fair" to "Poor." Data for Section II are combined into "Completely Trained" to "Somewhat Trained" or "Barely Trained" to "Not at all trained." The

data for Section III were combined into the two categories of "Very Confident" to "Somewhat Confident" or "Barely Confident" to "Not Confident at all." (Refer to Appendix E for supervisors' survey responses and Appendix F for corpsmen survey responses).

C. INTERVIEWS

Since the survey did not include an exhaustive list of possible training deficiencies, focus group and telephone interviews were conducted. The interviews gave participants an opportunity to voice their observations, perceptions, and, concerns regarding current Hospital Corpsman training programs, as well as adding qualitative understanding to quantitative results obtained from the surveys. The interview questions were open-ended and allowed the respondents to discuss any matter that they felt related to the issue at hand.

Two interviews were conducted at the following commands Fleet Marine Force 21st Area Camp Pendleton and the USS Essex, and three interviews were conducted at Naval Hospital Camp Pendleton over a one-week period of 14-19 February 2000. Additional telephone interviews were conducted at Naval Hospital Cuba and Fleet Surgical Team Japan over a four-day period of 13-16 March 2000.

The interview questions for the non-supervisory corpsmen are shown below:

- What attracted you to the Hospital Corpsman rating?
- How well did "A" school training prepare you for your current position?

- In what areas has your "A" school education and training been inadequate for your current position?

- What training opportunities are available at your command for competency-based training? Competency-based training refers to the five basic competencies, which are: medication administration, intravenous therapy, venipuncture for blood collection, suturing, and patient assessment.

- How well has the competency-based training program at your command prepared you in the knowledge required for your current position?
- How confident are you that you can successfully perform the duties of your current position?

The interview questions for the supervisors follow:

- Is technical training provided at Hospital Corpsman "A" school adequate?

- Is the Hospital Corpsman trained to meet the job requirements of your workplace?

- After initial competency-based training, how often at your command is competency-based refresher training offered?

- What method, such as hands-on, computer-based, or class lectures, is used for competency-based refresher training?

- Is competency-based training at your command keeping up with technological advances in patient care?

- Do Corpsmen at your command receive adequate hands-on, competency-based training with regard to patient care?

- What procedures are used at your command to evaluate recent graduates of Hospital Corpsman "A" school?

- What factors are used at your command to evaluate fleet Hospital Corpsman competency-based proficiencies?

- Aside from formal training at "A" school, what other means at your command are used for developing corpsmen?
- What other means at your command are used to identify training requirements?
- What reports are utilized for training feedback to HM "A" school?

It is important to point out that some of the survey questions, for both groups, did not produce useful responses for inclusion in this study. Specific questions used are noted in the discussion of the results in the next chapter.

Prior to each interview, the interviewer made a brief introduction explaining the purpose of the interview and the scope of the research. The interviewees were asked to state their rank, billet, and how long they have been a Hospital Corpsman or a supervisor. The interviewer also requested permission to tape the interviews.

A total of seven focus groups and 17 telephone interviews were conducted to assess the impact of "A" school and command training programs with each interview lasting no more than thirty minutes. The participants were not given an advance copy of the questions. Table 1 shows the sample population by date and location of the interviews.

Table 1. Sample Population by Date and Location of Interviews

DATE	Command	NUMBER OF SUPERVISORS INTERVIEWED	NUMBER OF HMs INTERVIEWED
February 2000	Camp Pendelton	20	38
February 2000	USS Essex	6	12
February 2000	21st Delmar, CP	5	15
March 2000	Cuba*	3	8
March 2000	Japan*	2	4

Note: Seven focus groups and 17 telephone interviews were conducted for inclusion in this thesis.

(*) Indicates interviews conducted by telephone.

Upon completion of the interviews, the data were transcribed from the audiocassettes and then content analyzed to identify trends and recurrent themes related to the topic of skill degradation and command training associated with being a Hospital Corpsman.

It is important to note that this study was performed in a natural setting, not in a laboratory. Performing the study in a natural setting decreases the likelihood of the results being affected by conditions that may be found in a contrived environment. It would seem reasonable that the results of this research could be

generalized to basic medical technicians, civilian and military, in other similarly sized facilities. Being able to generalize the research findings to a larger population enhances the value of the findings for management practitioners and policymakers.

D. LIMITATIONS

There were several limitations in this study that need to be addressed. First of all, it is possible that there might have been some biases with some of the military supervisors since the researcher is a Medical Service Corps officer and was associated with some of the participants. This may have influenced the participants' response rate as well as their responses on the survey.

Another drawback of this research was the incomplete surveys. Some respondents overlooked or failed to answer each question. There were a total of 24 incomplete surveys, 18 Hospital Corpsman and six supervisors, which had to be discarded. The discarded surveys had 30 percent or more of the questions not answered.

A final limitation is the use of reaction criteria to measure skill degradation. While the data collected for this research create an important starting point to determine whether corpsmen are maintaining skill proficiency, ideally, learning and behavior criteria would be measured. Thus, this research is considered exploratory.

IV. ANALYSIS OF RESULTS

The primary objective of this thesis is to compare the perceptions of supervisors and Hospital Corpsman (HM) to determine if there is a difference with regard to degradation of HM basic knowledge and skills between "A" school graduation and performance as a corpsman at their first duty assignment. A discussion of the survey and interview data is presented below.

A. DEGRADATION OF CORPSMAN SKILLS

Analysis of the data is organized around each of the research questions beginning with the primary question. The interview and survey data were used to answer this question. Content analysis revealed three themes that categorized corpsmen feelings about skill degradation: manning shortages, training, i.e., inadequate training combined with professional development, and lack of leadership, (corpsmen perceptions, only). Each theme is supported with quotations that exemplify the opinions of the Hospital Corpsman and supervisors interviewed.

1. Manning Shortages

All corpsmen interviewed were attracted to the Hospital Corpsman rating because of the training opportunities and the desire to work in the medical field. Eighty percent of those interviewed expressed frustration in believing that they are

not being used for the purpose for which they were trained. Many believe that the underlying cause of the problem was staffing/manning shortages.

This theme was derived from the responses to questions asking respondents what attracted them to the Hospital Corpsman rating, how confident they are that they can successfully perform the HM duties, and whether there is anything that is preventing them from being all that they can be as a Hospital Corpsman. Hospital Corpsman responses suggest a strong perception that manning shortages keep them working out of their rating, which causes a level of skill degradation. Their frustration with the situation is reflected in the quotes that follow.

> We are not being used for the purposes for which we were trained. We're in non-patient care billets/jobs, Administration, Security, and Maintenance. Basically, we are the "Jack-of-All trades."

A corpsman who is getting out of the Navy answered:

> I understand the needs of the Navy and that I may have to do things that I really don't want to do, but this is bullshit that in the past four years I've done a rotation in Security, Maintenance, and now the Education and Training Department. If I got transferred from here and was placed on the ward dealing with patients, I could probably damage or kill someone and I don't think the Navy really gives a damn.

Another corpsman further explained:

> When I received orders to the hospital after "A" school, I was so excited and could not wait to start. To my surprise, the Leading Chief Petty (LCPO) placed me in the Education Department, which was supposed to be for nine months, I was very disappointed. Three and a half years later, I'm still in the same department, doing the same thing, mainly answering the telephone. I have six months left in the Navy and am really considering getting out.

A senior HM summarized this portion of the interview with the following statement:

> It is a disservice to the HM who thought that he or she would be working in patient care after graduating from Hospital Corpsman "A" school, the supervisor who gets frustrated having to retrain the HMs who have been working Security or Administration for the last year (which is reflected in the HM's evaluation), and the patient who might be adversely affected by an HM who is assigned to the ward but who is currently in the process of getting retrained. This is totally unfair. If the recruiter would have told me that I would have spent half of my time working in security vice working as a Hospital Corpsman, I would have joined the Army or the Air Force. I didn't become a Hospital Corpsman to work security, cut grass, paint hallways, or be a duty driver.

Another corpsman expressed his thoughts concerning manning issues:

> Under- and over-utilization of personnel is the primary cause for most of our problems. There is no personnel system in place to rotate personnel throughout the hospital fairly. If you do a good job, you screw yourself.

For some Hospital Corpsman leaving the Navy within a twelve-month period, the lack of uniformity in the utilization and rotation of corpsmen, was the primary reason for their decision to leave the Navy. Supervisors expressed some of the same thoughts about the manning shortages.

A nurse explained:

> There is a manning shortage among doctors, nurses, and physician assistants, which makes it hard for us, (supervisors) to spend any type of quality time with our corpsmen.

Another supervisor said:

> We are doing more with less, which makes it extremely difficult for us to supervise corpsman in maintaining their level of proficiency --especially if they are working in non-patient care billets/jobs.

2. Training

One of the most consistent themes that developed during all of the discussions and interviews was that of training. This theme emerged from a combination of responses from HMs and their supervisors to questions regarding all aspects of training, i.e., "A" school, command training with respect to competency-based, computer-based, hands-on training, and civilian opportunities. The questions that received similar responses asked the respondents how well "A" school training prepared them for their current position; how well the competency-based training program at the command prepared them in the knowledge required for the current position; how often at the command competency-based refresher was training offered; and if Corpsmen at the command receive adequate hands-on, competency-based training with regard to patient care.

The survey data showed that both supervisors and corpsmen give a neutral rating to Hospital Corpsman "A" school for training Hospital Corpsmen with the basic skills in a 14-week period. The data shown in Table 2 reflect the overall mean responses to survey Section II, question 1. Both means are close to the mid-point, or "Somewhat Trained" on the five-point scale.

Table 2. "A" School Perceptions

Section II: Survey Question	Means		
	Supervisors	HMs	Total Commands
1. How well did "A" school train you/your personnel to be Hospital Corpsman?	3.07	3.19	3.21

Note: Supervisors includes Military and Civilian groups, Hospital Corpsmen (HMs) includes all HM groups, Total Commands includes both Supervisor and HM groups from each command.

Additionally, the majority of supervisors, 80 percent, and corpsmen, 72 percent, interviewed expressed concern that Hospital Corpsman follow-on training and professional development is random, at best, and is left largely up to the individual Medical Treatment Facilities (MTFs).

Further, the survey data show that both supervisors and corpsmen give another neutral rating to command training by evaluating their corpsmen or themselves as "Somewhat Trained" with ratings clustering around three on the five-point scale (shown in Table 3). Nevertheless, both groups see the need for considerable improvement as revealed in the interview data discussed below.

Table 3. Command Training Perceptions

Section II: Survey Questions	Means		
	Supervisors	HMs	Total Commands
3. How well did the command training program prepare your personnel in the technical skills required to perform their current position?	3.09	2.91	2.96
4. How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care?	3.05	3.05	3.01

Note: Supervisors includes Military and Civilian groups, Hospital Corpsmen (HMs) includes all HM groups, Total Commands includes both Supervisor and HM groups from each command.

Most Hospital Corpsman articulated the need for a more formal training system, which would be beneficial not only to them personally, but to the entire Navy and Marine Corps team. Their dissatisfaction with the current situation with respect to training is reflected in the quotes that follow.

One corpsman asked:

> The Hospital Corpsman rating is the largest enlisted rating in the Navy so why isn't there some type of formal development?

Another corpsman explained:

> The main reason why there is no professional development within the Hospital Corpsman rating is that we are treated like worker bees and worker bees are not considered professionals. Treat and respect corpsman as the professionals they are, not as worker bees.

Another corpsman added:

> What is competency-based training? When are we supposed to get it? I've been here three years and haven't received any type of training except basic C.P.R.

A majority of corpsmen expressed their concerns about having to pay for refresher training courses such as the individual who said:

> Why do we have to pay for Civilian refresher training courses? Administrators, nurses, and doctors don't have to pay for their continuous education courses. What is wrong with this picture?

The supervisors, too, recognize that there exists a significant need for standardized follow-on education and training for all Hospital Corpsman, as shown by the mean responses in Table 3 above. Currently, HM "A" school graduates are not being assigned immediately in jobs requiring them to use their general knowledge and basic skill sets. Additionally, there are no standardized requirements or competence-based guidelines for MTFs to maintain and enhance the basic knowledge and skills of their corpsman. This results in HMs going through different types of proficiency training, which may lead to skill degradation.

One senior supervisor explained her thoughts concerning training:

> I would be the first to admit that our command could do more concerning training of all personnel especially concerning the HMs. But with the manning shortages and drowning from the extra collateral duties we all have to perform, there's not enough quality time in the standard workday to get training done. If we start training after working hours and on the weekends, morale--the little we have--would go right down the toilet.

Another supervisor gave this reply about core competencies:

> Basic core competencies are a waste of time. They're not relevant to what corpsman do on a daily basis. If MTFs are required to implement some type of program or requirements, they should be as realistic as possible to the job of the corpsman.

Another supervisor expressed her thoughts on the topic of training:

> Hospitals like Bethesda, San Diego, or Bremerton have staff dedicated to competency-based, follow-On training, and have formalized programs for mentoring and completion but smaller facilities are required, unrealistically, to accomplish the same thing. They don't have the staff, equipment, time, or patient population to accomplish this.

One Supervisor stated:

> We don't have enough time to do anything but the bare minimum with training and encouraging HM about the importance of maintaining their proficiencies.

Not only do supervisors acknowledge the lack of training and professional development, but several supervisors were in agreement that the old functions of directing and controlling every aspect of HM activities need to be replaced with coaching and mentoring programs. Work and job redesign efforts should be aimed at team building to enhance positive working relationships and increase involvement in work group activities.

A senior nurse provides this mixed response on her thoughts concerning training as:

> With any profession you have staff that requires more training and refresher than others. You must remember that Corps School only

> exposes the HM to all areas of clinical responsibility. The graduate is not proficient in any area; they need practice in all skills. The program is intense and fast paced and very comprehensive, way too much to have any one area of proficiency. All HMs need follow-on experience, whether by a formalized or informal process. There should be a system of documentation of competency regardless of technique.

It is important to point out that during the discussions, interviews, and direct observations by the researcher with regards to competency-based training, it was clear from the feedback that command follow-on competency-based training does not work. Supervisors and corpsmen both believe that the underlying reason why competency-based training does not work is a lack of understanding of the program. A majority of supervisors and corpsmen had difficulty understanding the concepts and the usefulness of competency-based training. Judging by the commands studied, competency-based training consisted of an initial formalization of some basic concepts with no "official" follow-on training. Any type of follow-on training was left to the discretion of the department to which the corpsman is assigned and to the individual corpsman.

A final thought concerning training given by a junior supervisor summarized it nicely:

> Formal training has to come from the top, starting with the CO ending with the HMs. The Director of Nursing services (DNS) and the Director for Administration (DFA) have to start working side by side and stop taking ownership of the HMs. It's not the DNS's corpsman, it's not the DFA's corpsman, it's the Navy's corpsman.

3. Lack of Leadership (Hospital Corpsman Perceptions, Only)

According to Bolman and Deal, in Reframing Organizations: "Around the world, middle managers say organizations would thrive if only senior management provided strategy, vision, and 'real leadership'." (Bolman and Deal, 1991, p. 403) Many of the corpsman interviewed relayed similar thoughts with regard to the chain of command. What exactly was the role of the chain of command in their development? Perceived lack of direction, vision, and leadership can result in a lack of motivation.

This theme was derived from responses from HMs, only, to a question asking respondents how well competency-based training program at their command prepared them in the knowledge required for their current position. In almost every case, the interviewees stated that the problems involving training were directly related to a lack of leadership on the part of people in charge, i.e., Leading Petty Officers, Chief Petty Officers, and Division Officers.

Surprisingly, 95 percent of the corpsmen interviewed indicated their beliefs that senior leaders within the chain of command are not the least bit concerned with HM careers or development. The comments discussed in this section reflect another dimension of HM frustration, which they believe is related to skill degradation.

An E-5 related the concerns of many of the group:

> It is the responsibility of the senior leadership, i.e., CPOs, Division Officers, and the Director for Nursing Services (DNS), to ensure that junior corpsmen are getting what they need to advance in the Hospital Corpsman rating.

Another corpsman interviewed indicated:

> The Navy uses us up and then discards us as if we were some type of disposable product. No one cares about his or her career. There are no mentors or programs that encourage mentoring.

Another corpsman, while talking about leadership, had this to say:

> LPOs, CPOs, supervisors, and Division Officers have no time for our concerns. They only are concerned when it effects them. Everyone is out for himself or herself so why should I care.

One HM leaving the Navy within 12 months explained:

> The over-whelming main reason for my decision to leave the Navy is the lack of leadership up and down the chain of command. How can you be a part of an organization that doesn't believe in you or is just worried about their next promotion? Nurses get promoted on the backs of the corpsman and we barely get a "Thank-You."

B. HOSPITAL CORPSMAN PATIENT CARE SKILLS

Secondary research questions were addressed through analyses of the survey data. To answer the first secondary question "Is there a difference in perceptions about Hospital Corpsman patient care skills between supervisors and Hospital Corpsmen?" the average response to questions 1-11 on Section I of the survey, as shown in Table 4, was compared for all of the corpsman and supervisor groups.

Table 4. Perceptions of Patient Care Skills by Group

Perceptions	Means					
Section I: Hospital Corpsman Basic Skills	Mil Sup	Civ Sup	HMs	HMs<120	HMs>120	Other
1. Take, record, and report vital signs.	3.72	2.80	3.85	4.09	3.38	2.73
2. Perform a patient head to toe assessment.	2.70	2.53	3.28	3.49	3.23	2.82
3. Prepare, maintain, and record intravenous therapy.	2.87	2.35	3.26	3.50	3.18	2.81
4. Prepare, administer, and record oral medications.	2.90	2.80	3.40	3.52	3.21	2.90
5. Understand the concepts and principles of safe medication administration.	3.06	2.60	3.56	3.81	3.26	2.69
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	2.83	2.27	3.16	3.40	3.05	2.76
7. Perform basic emergency care for non-trauma medical emergencies.	2.92	2.42	3.39	3.57	3.23	3.16
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.19	2.53	3.67	3.93	3.37	3.29
9. Prepare, administer, and record intramuscular and subcutaneous medications.	3.17	2.13	3.63	3.75	3.23	2.81
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	3.06	2.07	3.36	3.33	3.22	3.18
11. Perform Healthcare Provider Basic Life Support in with American Heart standards.	3.33	2.87	3.56	3.70	3.25	2.89
** Overall Grand Mean:	3.07	2.49	3.46	3.65	3.24	2.91

Note: The groups include Military Supervisors (Mil Sup), Civilian Supervisors (Civ Sup), Hospital Corpsman (HM) includes all groups Hospital Corpsman Placed in a Patient Care Billet Less than 120 Days (HM<120), Hospital Corpsman Placed in a Patient Care Billet Greater than 120 Days (HM>120), and HMs assigned to Non-Patient Care Billets, i.e., Security, Maintenance, and Administration (Other).

An ANOVA was performed to determine if any statistically significant differences existed among all supervisors and all Hospital Corpsmen. Each of the eleven questions was compared to each other. The results were significant ($F=23.25$, $df=21$, $p<.01$).

In addition to the ANOVA, two-tailed t-tests were run to compare the means of all of the groups. The results of all those comparisons are shown in Appendix G; only those comparisons that resulted in statistically significant results are discussed here.

While perceptions of military supervisors were not statistically significant as compared to corpsmen, the comparison of the perceptions of civilian supervisors and all corpsmen resulted in $t(df=2, N=306)= 9.69$, $p<.01$. An examination of the means in Table 4 above shows that, on average, civilian supervisors rate the overall skills at 2.49, which is between the rankings of "Good" and "Fair." In contrast, the corpsmen rated their skills at 3.46, a differential of +.97, which is somewhat below "Very Good." It is not surprising that corpsman might rate their skills more highly than did their supervisors. One could conclude that Hospital Corpsman have a strong positive belief in their abilities to perform Hospital Corpsman basic skills, and that their beliefs are slightly stronger than their supervisors.' It is also interesting that while corpsmen give a neutral rating to "A" school and command training (as discussed earlier), they nonetheless give positive ratings to their patient care skills. This, of course,

considers all corpsmen. When corpsmen are broken out into the groups shown in Table 4, some differences in their self-evaluations become apparent. These are discussed below.

The comparison of the perceptions of military supervisors and civilian supervisors was statistically significant at $t(df=2, N=101)= 9.22$, $p<.01$. Further examination of the means in Table 4 above shows that, on average, civilian supervisors rate the overall skills at 2.49, which is between the rankings of "Good" and "Fair." On the contrary, military supervisors rated the overall skills at 3.07, a differential of +.58 between the two groups. It was surprising that civilian supervisors would rank the corpsman harsher than their military counterparts. According to the literature on military verses civilian relationships, civilian personnel working with military personnel have a tendency to sympathize with them, in a sense give them the benefit of the doubt due to their deployable status, especially with junior enlisted personnel (Cohen, 1985).

Further comparisons were done among the different corpsmen groups. The most noticeable was the comparison of the perceptions of Hospital Corpsman who had been placed in a patient care billet less than 120 days and Hospital Corpsman who had been placed in a patient care billet greater than 120 days. This comparison was statistically significant at $t(df=2, N=229)= 5.27$, $p<.01$. An examination of the means in Table 4 above shows that, on average, corpsmen with

less than 120 days before going into a patient care billet, rate their overall skills at 3.65, which is somewhat below the ranking of "Very Good."

Alternatively, corpsmen with greater than 120 days before going into a patient care billet, rated their skills at 3.24 (slightly above the ranking of "Good"), a differential of +.41. These results were not surprising to the researcher since, according to observations and discussions from the focus groups, it seemed that the corpsmen who were placed in patient care within 120 days had positive attitudes and better morale than corpsmen who were placed in patient care later. It appears that the sooner a corpsman is placed in patient care billet, the better he or she feels about their abilities.

The data collected from the surveys for the HM Other group, i.e., Hospital Corpsman who were working in non-patient care billets, indicated that these corpsmen were generally dissatisfied. The comparisons on Section I questions between corpsmen in patient care billets verses those not in patient care billets was significant at $t(df=2, N=229)=6.81$, $p<.01$. Additionally, it is important to point out that the HM Other group rated 8 out of 11 questions on HM basic skills in the "Fair" category on a 5-point scale. The overall mean for the group was 2.91, as shown in Table 4.

To answer the second part of the secondary research question: "Are there particular skill areas that degrade more than others by the time the corpsmen are in the jobs?" two-tailed t-tests were conducted, to compare responses to all questions

in Section I of the survey, i.e., question 1 versus question 2, question 1 versus question 3, and so on. The comparisons were made combining the responses of all of the corpsmen and all of the supervisors. The results of all comparisons are shown in Appendix G. None of the comparisons reached statistical significance. However, the trends shown in Table 5 are interesting.

The data, while not significant, show a relationship between the length of nonutilization periods and the amount of skill degradation. It appears that the longer the skill is not practiced, the greater the loss, deterioration, and degradation. Or, looking at the data from the opposite perspective, the skills that were rated above average, ("Overall Grand Mean" for each group) shown in Table 5, were used (practiced) on a daily basis by corpsman in a duty status. Hospital Corpsman stand duty three to five times a month, including one weekend, performing various basic patient care skills in emergency room procedures: taking, recording, and reporting vital signs; understanding the concepts and principles of safe medication administration; maintaining patient safety, privacy, education, and comfort while providing medical care; preparing, administering, and recording intramuscular and subcutaneous medications; and performing healthcare provider basic life support within American Heart standards i.e., Code Blue drills.

The skills that were consistently rated below average were skills that are performed in a patient care environment under direct supervision. If corpsmen were not assigned to, or had limited time in these patient care areas, the skills were

not practiced on a regular basis resulting in the below-average ratings, shown in Table 5.

Table 5. Mean Responses by Question Per Group

	Means	
Section I: Hospital Corpsman Basic Skills:	**Supervisors**	**HMs**
1. Take, record, and report vital signs.	3.58 *	3.85 *
2. Perform a patient head to toe assessment.	2.67	3.28
3. Prepare, maintain, and record intravenous therapy.	2.82	3.26
4. Prepare, administer, and record oral medications.	2.88	3.40
5. Understand the concepts and principles of safe medication administration.	2.99 *	3.56 *
6. Identify the signs and symptoms, and emergency perform basic care for cardio-vascular emergencies.	2.74	3.16
7. Perform basic emergency care for non-trauma medical emergencies.	2.82	3.39
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.09 *	3.67 *
9. Prepare, administer, and record intramuscular andsubcutaneous medications.	3.02 *	3.63 *
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	2.91	3.36
11. Perform Healthcare Provider Basic Life Support in with American Heart standards.	3.26 *	3.56 *
* Overall Grand Mean:	2.98	3.46

Note: Supervisors include both groups, Military and Civilian. Hospital Corpsman (HM) includes all groups, E3 and Below Placed in a Patient Care Billet Less than 120 Days (E3<120), E3 and Below Placed in a Patient Care Billet Greater than 120 Days (E3>120), E4 and E5 Placed in a Patient Care Billet Less than 120 Days (E4/E5>120), E4 and E5 Placed in a Patient Care Billet Greater than 120 Days (E4/E5<120), HMs assigned to Non-Patient Care Billets, i.e., Security, Maintenance, and Administration (Other).

* Denotes Mean Above Average or Overall Grand Mean.

Additionally, it is important to point out that although responses appeared to differ between the two groups concerning HM Basic Skills, both groups rated the same skills above and below average.

C. ADDITIONAL FINDINGS

During the interviews, discussions, and direct observation by the researcher, an underlying theme concerning morale emerged. The morale of Navy personnel takes on added importance in today's environment, more now than ever because of a strong economy and abundant job opportunities outside of the military.

Morale of the work force is thought to influence retention behavior in any organization. That is, workers with high morale are generally thought to be more loyal to the organization, therefore having a lower probability of quitting, whereas low morale is expected to boast the opposite effect (Mowday, Porter, and Steers, 1982). A person's morale remains a key issue and concern in any environment but especially within the military due to the frequency of deployments, the nature of deployments, and the ability to spend time with family and friends. Attention to, and maintenance of, a sailor's morale is critical to sustain quality sailor performance and sustainability and, consequently, successful mission accomplishment.

Of the corpsmen interviewed, 88 percent said morale was a problem. There were several statements made concerning morale but one corpsman summed it up with the following statement:

> Morale "sucks" and the leadership doesn't care. My Division Officer stated that morale was a personal choice. It wasn't up to her or the Navy to provide it. Responsibility lives solely with the individual. What a copout.

Additional statements addressed concerns about "A" school and Tricare. The most important point made concerning "A" school training was the lack of training with regards to Military Sick call. Currently, Military Sick call is not being taught in Hospital Corpsman "A" school.

One corpsman stated:

> Military sick call is 80 percent of what HMs do, so why isn't it taught in "A" school?

A Division Officer interviewed pointed out:

> Why isn't there some type of standardized follow-on training for Military Sick call? As a Divo, I go through countless hours training HMs on the basics of military sick call.

A senior Chief Petty Officer (CPO) added:

> "A" school training is out dated. When was the last time "A" school training was revamped.

A corpsman described "A" school the following way:

> "A" school training was about memorization, how well you memorized the modules, not if you understood anything you were suppose to learn.

The remarks concerning Tricare focused on the perceptions of how Tricare is drastically changing the Military Healthcare System. A supervisor said:

> Tricare has changed the way Navy Medicine does business. It's strictly an HMO not concerned with the welfare of military personnel. It is changing the mindsets of military health care providers, from the doctors to the Hospital Corpsman.

Another supervisor explained:

Tricare has forced the Navy into all types of cutbacks:

> Cutbacks in Patient Care, personnel, training, and patient care billets for military personnel. When will the cutbacks stop and what will these cutbacks lead to?

A group of supervisors added:

> Tricare employees are working in jobs that were originally designated for Hospital Corpsman, that's why HMs are working in non-patient care areas. There are only so many patient care billets.

The question was asked of each group that if they had the opportunity to start from the beginning, in a sense a clean sheet of paper, what would they do differently. Overwhelmingly, 95 percent of the respondents replied they would have not have joined the Navy, if they had known then what they know now.

For supervisors, the majority stated that they would try harder with getting the corpsmen involved in all aspects of training with regard to patient care,

competency-based proficiencies, and long-term professional development even if the corpsmen are assigned to non-patient care areas.

The next chapter provides a summary, conclusions, and recommendations for Hospital Corpsman competency-based training.

THIS PAGE INTENTIONALLY LEFT BLANK

V. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

A. SUMMARY

The purpose of this thesis is to identify factors that influence the perceptions of Hospital Corpsman and their supervisors concerning skill degradation. Research literature relevant to skill loss, deterioration, and degradation was reviewed. The findings support the fact that losses in skill proficiency are influenced by the following factors: the lengths of periods of nonuse, i.e., nonutilization, the types of activities engaged in during nonutilization, and job conditions that fail to provide enough practice to maintain or to improve skill levels during periods of nonutilization. Unfortunately, the literature provides little information that has direct application to the problem of skill loss, deterioration, and degradation in the Navy.

The methodology used in this research is as follows. A survey was administered to Hospital Corpsman and their Supervisors at eight commands to determine perceptions of Hospital Corpsman basic skills, "A" School and Command training, and confidence in performance.

Focus group interviews were performed to supplement the survey responses with qualitative data. Common themes were developed to provide additional insight into what corpsmen and their supervisors thought caused skill degradation among Hospital Corpsman.

In answering the primary research question the interview data were used, which revealed three themes that categorized corpsmen feelings about skill degradation. The themes were: manning shortages; training, i.e., inadequate training combined with professional development; and lack of leadership, (corpsmen perceptions, only).

Pertaining to the theme concerning manning shortages, 80 percent of the corpsmen interviewed believed that they were not being used for the purposes for which they were trained. They feel that the underlying cause of the problem is staffing and manning shortages. The supervisors interviewed expressed similar thoughts concerning manning shortages. The supervisors stated that they are doing more with less personnel, which makes it extremely difficult for them to supervise corpsman in maintaining their levels of proficiency, especially corpsman working in a non-patient care jobs.

The theme that emerged most consistently during the discussions and interviews pertained to training. The data showed that both corpsmen and supervisors articulated the need for a formal command, competency-based training system.

Regarding the theme concerning lack of leadership, corpsmen stated that the problems involving a lack of competency-based training were directly related to a lack of leadership on the part of the personnel in charge, i.e., Leading Petty Officers, Chief Petty Officers, and Division Officers. They said that there is no

accountability in ensuring that command competency-based training, is in fact, accomplishing its objectives.

Despite the differences in the themes, all were felt to contribute to some level of skill degradation among Hospital Corpsmen.

In answering the secondary questions, the results of the surveys were analyzed and the following findings emerged:

- Military supervisors do not evaluate corpsmen patient care skills differently than corpsmen rate themselves.
- Civilian supervisors rate corpsmen skills lower than corpsmen rate their own patient care abilities.
- The civilian supervisors rated the corpsmen skills lower than did their military counterparts.
- A strong relationship was found between Hospital Corpsman with less than 120 days and more than 120 days. That is, if corpsmen were placed in patient care billets less than 120 days upon reporting to the command, their responses to the survey concerning their patient care skills were significantly higher than corpsmen who were placed in patient care billets greater than 120 days upon reporting to the command.
- The comparison of the perceptions of supervisors and all corpsmen was not statistically significant although the corpsmen overall means were slightly higher than their supervisors.
- Corpsmen working in patient care billets rated their skills higher than corpsmen working in non-patient billets, on a 5-point scale. Additionally, anecdotes from the focus group interviews suggest that nonutilization of HM basic skills on a daily basis does lead to some type of skill degradation among corpsmen.

- Opportunities to practice basic skill sets during performance of duty assignments do relate to perceptions of higher confidence in the ability to perform those skills.

- Indications of low morale emerged from some of the focus groups.

B. CONCLUSIONS

Taking into account the findings, several conclusions become apparent. The principle conclusions, of the study, are discussed below.

The first conclusion one can draw from the findings is that the need for competency-based training is not being met. Hospital Corpsman command competency-based training, as practiced, is not effective. Although there were similarities in the training, each command used in this study implemented competency-based training differently. Furthermore, both supervisors and corpsmen displayed a poor understanding of what command competency-based training is, in addition to being confused about the actual intent of and the usefulness of command competency-based training. Overall, there is an apparent need for standardized command competency-based and refresher training for the Hospital Corpsman rating.

A second conclusion is that skill degradation, generally, was higher for those corpsmen working in non-patient care jobs. Corpsmen working in non-patient care jobs had fewer opportunities to practice their basic skill sets than their peers, corpsmen working in patient care jobs.

A final conclusion is that there were several other factors that may have contributed to skill degradation among Hospital Corpsman, i.e., morale issues, the lack of Military Sick call training in "A" school, and Tricare, the military's Healthcare Maintenance Organization (HMO).

C. RECOMMENDATIONS

The Navy, if it is to maintain acceptable levels of readiness, must be concerned with providing either refresher training or frequent and regular practice of basic skills. The following recommendations, developed from the study, proposed to decrease the levels of skill degradation and to further improve the development of Hospital Corpsmen:

1. Development of Comprehensive Follow-on Training

There should be a standardized structured process with regards to basic follow-on training at each Medical Treatment Facility, ship, and operational unit. This could satisfy a major requirement of the DoD Medical Skills instruction as discussed in Chapter I (Department of Defense, Medical Readiness Strategic Plan, 1995).

2. Professional Development

Closely related to the Hospital Corpsman career path is the issue of professional development, i.e., the lack of refresher training courses available within the Navy and the availability of refresher training courses available in civilian institutions, at the cost to the individual. There are two elements of

professional development that need to be addressed. The first deals with improving the capabilities of the corpsman. The second involves using professional development as an enticement to encourage Hospital Corpsman to remain in the service. Many Hospital Corpsman interviewed indicated there is no type of "official" professional development available for the enhancement of their careers.

3. Mentoring Program

Senior supervisors and corpsman should adopt some form of mentorship activity. Mentorship has been identified as an extremely effective way of teaching specialized skills. Throughout history, it has been used as a method to teach individuals a special trade. Mentors are older, more experienced individuals who advise and shepherd new people in the formative years of their careers. They are professionally paternalistic and serve in a godparent role (Muchinski, 1991). The difficulty with adopting a policy of mentoring is that it is inefficient (a mentor can usually instruct only one person at a time) and it is time consuming.

Despite these possible drawbacks, the idea of mentoring has been recognized as valuable by many modern-day corporations and other organizations. Mentoring can be beneficial to Hospital Corpsman who are just starting out and experiencing difficulties, as well as providing a number of functions from social network, to educational and self-development networks, to advisory groups.

The results of this study indicate that most corpsmen did not feel they had anyone looking out for them or cared about their development as health care professionals. Some Corpsmen who are leaving the Navy stated that they were never called in by the Command Master Chief or their Division Officer to discuss their decisions to leave or what the Navy could do to keep them. If people really are the Navy's most valuable assets, they should be treated as such.

4. Existing Computer Technology and Usage

Given the availability of distance learning technologies, including the Internet and courseware-authoring software, distance learning should be a part of the learning environment at all commands where Medical Department personnel are assigned. Recent trends favor accomplishing some required training through distributed learning methods.

Distributed learning consists of formal, institutional-based learning activities where the instructor and student are separated from each other geographically. The primary objective of distributed learning is to extend the learning environment to students at remote locations. It can be accomplished through a variety of media, including paper-based instruction, interactive multimedia instruction, video, and the Internet. Distributed learning is a method of instruction occurring more frequently in corporate, military, and educational environments.

A major benefit of distributed learning is the increased training and education opportunities for the organization personnel. Distributed learning will also provide flexibility in scheduling training, particularly for deploying units. The flexibility affords one key advantage in that it allows for more training than could be accomplished during the unit's work-up cycle. A fundamental benefit of distributed learning is that it could allow the Navy to deliver health care education and training to multiple locations without having to create or maintain infrastructure for individual courses at each location or sending instructors to these locations.

D. AREAS FOR FUTURE RESEARCH

Although research is needed to further explore factors that may cause or prevent skill degradation in the Navy, it is important to take advantage of what is already known. The current environmental factors associated with Hospital Corpsman follow-on competency-based training are unlikely to change soon. Performance measurements suitable for assessing skill loss, deterioration, and degradation for naval personnel are costly and cannot be recommended as a general practice for the Navy. Therefore, other less-direct techniques are needed to examine conditions of training, of the job, and of job rotation, which will indicate where skill degradation of basic skills is likely. Then, adjustments in personnel management practices can be implemented.

This thesis also recommends further research in order to collect data focusing on assignment issues. Future research could conduct a study similar to the one described here, which focuses on the utilization of first-term Hospital Corpsmen. The results of that study would be used to provide additional data on the extent to which first-term corpsmen are actually being assigned to corpsmen billets and using their training.

Finally, research should be conducted on the most efficient ways to use distance learning for command training. To maintain readiness and continue to meet future operational requirements, the Navy must take advantage of all learning strategies and technologies. The Navy cannot afford to continue to do business as usual, and must aggressively take advantage of capabilities technology has to offer.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX A. BUREAU OF MEDICINE AND SURGERY COMPETENCY-BASED HOSPITALMAN SKILLS BASIC (HMSB)

SKILL #1 Medication Administration:

Listed below are the minimum objectives that a HMSB student will complete before receiving written verification of competency in venipuncture. References related to objectives include **MED ADMIN l DOSAGE** CALC/ ORAL MEDS l OTHER ROUTES lessons from the BHCS Student Handbood. Procedural and anatomic guides can be found in the 1997 **Lippincott Nursing Drug Guide** (appendix G), under NURSING in the CD server of the Telelibrary.

- Define medical abbreviations, symbols, and terms correctly.
- Discuss guidelines for administering medications to children, elderly, disorientated, or non-compliant patients.
- Calculate medication dosage including liquid weights and measures, IV flow rates, and those based on a patient's weight with 100% accuracy.
- Demonstrate safe and effective medication administration via the oral, sublingual, topical, rectal, and parenteral routes in accordance with Command Policy.
- Discuss factors related to selection of injection site for intramuscular (IM), subcutaneous (SQ), and intradermal (ID) medication administration.

SKILL #2 Intravenous Therapy:

Listed below are the minimum objectives that a HMSB student will complete before receiving written verification of competency in IV therapy. References related to

the objectives are located in Chapter 4 of the **Lippincott Manual of Nursing,** under NURSING in the CD server of the Telelibrary.

- Discuss the goals of intravenous therapy.
- Describe types, composition, and uses of various types of IV fluids.
- Relate advantages, disadvantages, and caregiver responsibilities for administration of IV fluids via infusion control devices.
- Discuss types, uses, and precautions of intermittent IV infusions.
- Demonstrate appropriate selection and preparation of a vein based on prescribed use and type of IV therapy.
- Demonstrate correct selection of catheter based on prescribed use and type of IV therapy.
- Discuss and identify signs, symptoms, and preventive measures of complications of IV therapy.
- Demonstrate safe and successful venipuncture for IV therapy.

SKILL #3 Venipuncture for Blood Collection:

Listed below are the minimum objectives that a HMSB student will complete before receiving written verification of competency in venipuncture for blood collection. References related to the objectives can be found in the Blood Specimen Preparation, Instruction Guide (MLT Curriculum).

- Discuss factors involved in patient safety and preparation for venipuncture.
- Describe the process of vein selection for venipuncture.
- Demonstrate venipuncture using the vacutainer holder according to procedure guidelines.
- List the tube order for multi-draws.

SKILL #4 Suturing:

Listed below are the minimum objectives that a HMSB student will complete before receiving written verification of competency in suturing. References related to the objectives can be found in the **Hospital Corpsman 3&2 Rate Training Manual, Chapter 4** (NAVEDTRA 10669-C) and Suture Techniques in A **Practical Approach to Emergency Medicine** (Stine & Marcus) in Emergency medicine in the CD Server of the Telelibrary.

- Define primary and secondary wound closure.
- List contraindications to wound closing.
- List use of various types of suture materials including absorbable suture, non-absorbable suture, and suture needles.
- Describe preparation of patient for wound closure.
- List the general principles of wound suturing.
- List the indications and contraindications for interrupted (simple), subcuticular, and continuous (running) sutures.
- Demonstrate aseptic wound preparation for closure.
- Demonstrate wound closure using interrupted (simple) sutures.
- Demonstrate safe and effective use of anesthetic for wound closure.

SKILL #5 Patient Assessment:

Listed below are the minimum objectives that a HMSB student will complete before receiving written verification of competency in patient assessment. Reference related to the objectives can be found in Chapter 33, Emergency Assessment, Emergency

Nursing in the **Lippincott Manual of Nursing Practice,** in the CD Server in the Telelibrary.

- Discuss the rational for performing a primary patient assessment.
- Demonstrate a competent primary assessment on a compromised and uncompromised patient.
- Demonstrate appropriate care according to primary assessment outcome.
- Discuss the rationale for performing a secondary patient assessment.
- Obtain accurate vital signs using manual and electronic equipment.
- Demonstrate a competent secondary assessment on a compromised ~ uncompromised patient.
- Demonstrate appropriate care according to secondary assessment outcomes.
- Demonstrate complete and accurate documentation of primary & secondary assessment findings, care, and referral data.

APPENDIX B. SUPERVISORS TRAINING SURVEY

Directions: Listed below are various subjects and skills, that are associated with being a Hospital Corpsman upon completion of "A" school. For each question, circle a single number on the level of proficiency in performing that skill or knowledge of the subject for the HMs you supervise at your command. E- Excellent, VG- Very good, G- Good, F- Fair, and P- Poor.

Example: If you rate your HMs as very good at taking, recording, and reporting vital signs, circle "4."

		E	VG	G	F	P
1.	Take, record, and report vital signs	5	4	3	2	1
2.	Perform a patient head to toe assessment.	5	4	3	2	1
3.	Prepare, maintain, and record intravenous therapy.	5	4	3	2	1
4.	Prepare, administer, and record oral medications.	5	4	3	2	1
5.	Understand the concepts and principles of safe medication administration.	5	4	3	2	1
6.	Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies	5	4	3	2	1
7.	Perform basic emergency care for non-trauma medical emergencies.	5	4	3	2	1
8.	Maintain patient safety, privacy, education, and comfort while providing medical care	5	4	3	2	1
9.	Prepare, administer, and record intramuscular and subcutaneous medications.	5	4	3	2	1
10.	Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	5	4	3	2	1
11.	Perform Healthcare Provider Basic Life Support associated with American Heart standards.	5	4	3	2	1

Directions: Listed below are questions concerning your observations of the HMs you supervise at your present command. For each question circle a single number with regard to the level of training. CT- Completely trained, WT- Well trained, ST- Somewhat trained, BT- Barely trained, NT- Not at all trained.

		CT	WT	ST	BT	NT
1.	How well did "A" school train your personnel to be Hospital Corpsman?	5	4	3	2	1
2.	How well did "A" school train your personnel for their current position?	5	4	3	2	1

3.	How well did the command training program prepare your personnel in the technical skills required to perform their current position?	5	4	3	2	1
4.	How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care areas?	5	4	3	2	1

Directions: Listed below is a question concerning your level of confidence in being a Hospital Corpsman. VC- Very Confident, C- Confident, SC- Somewhat Confident, BC- Barely Confident, NC- Not Confident at all.

		VC	C	SC	BC	NC
1.	How confident are you that the HMs you supervise can successfully perform The duties of their current position?	5	4	3	2	1

The following are questions that will only be used to learn additional background information about those who completed this survey. **Please circle the appropriate response.**

1. How long have you been in the Navy?
   a. Less than 4 years
   b. 4 - 8 years
   c. More than 8 years

2. What is your paygrade?
   a. E-5 - E-6
   b. E-7 - E9
   c. Civilian
   d. O-3 and below
   e. O-4 and above

3. How long have you been supervisory position?
   a. Less than 180 days
   b. 180 - 360 days
   c. 1 - 3 years
   d. 3 - 5 years
   e. 5 - 8 years
   f. More than 8 years

Please return completed survey to the designated place.

APPENDIX C. HOSPITAL CORPSMAN TRAINING SURVEY

Directions: Listed below are various subjects and skills, that are associated with being a Hospital Corpsman upon completion of "A" school. For each question, circle a single number reflecting your proficiency in performing that skill or in knowledge of the subject. E- Excellent, VG- Very good, G- Good, F- Fair, and P- Poor.

Example: If you rate yourself as very good at taking, recording, and reporting vital signs, circle "4."

		E	VG	G	F	P
1.	Take, record, and report vital signs.	5	4	3	2	1
2.	Perform a patient head to toe assessment.	5	4	3	2	1
3.	Prepare, maintain, and record intravenous therapy					
4.	Prepare, administer, and record oral medications.	5	4	3	2	1
5.	Understand the concepts and principles of safe medication administration.	5	4	3	2	1
6.	Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	5	4	3	2	1
7.	Perform basic emergency care for non-trauma medical emergencies.	5	4	3	2	1
8.	Maintain patient safety, privacy, education, and comfort while providing medical care.	5	4	3	2	1
9.	Prepare, administer, and record intramuscular and subcutaneous medications.	5	4	3	2	1
10.	Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	5	4	3	2	1
11.	Perform Healthcare Provider Basic Life Support associated with American Heart standards.	5	4	3	2	1

Directions: Listed below are questions concerning your training experiences at HM "A" school and your present command. For each question circle a single number with regard to the level of training. CT- Completely trained, WT- Well trained, ST- Somewhat trained, BT- Barely trained, NT- Not at all trained.

	CT	WT	ST	BT	NT
How well did "A" school train you to be a Hospital Corpsman?	5	4	3	2	1
How well did "A" school train you for your current position?	5	4	3	2	1
How well did the command training program prepare you in the technical skills required to perform your current position?	5	4	3	2	1
How well did your present command training program prepare you to take on greater responsibility with regard to patient care aspects?	5	4	3	2	1

Directions: Listed below is a question concerning your level of confidence in being a Hospital Corpsman. VC- Very Confident, C- Confident, SC- Somewhat Confident, BC- Barely Confident, NC- Not Confident at all.

	VC	C	SC	BC	NC
1. How confident are you that you can successfully perform the duties of your current position?	5	4	3	2	1

The following are questions that will only be used to learn additional background information about those who completed this survey. **Please circle the appropriate response.**

1. How long have you been a Hospital Corpsman?
   a. Less than 2 years
   b. 2 - 4 years
   c. More than 5 years

2. What is your paygrade?
   a. E-3 and below
   b. E-4 and above

3. How long after "A" graduation before you were in a position/job of patient care?

a. Less than 30 days
b. 30 - 45 days
c. 45 - 60 days
d. 60 - 90 days
e. 90 - 120 days
f. Greater than 120 days

4. In your current job, circle the primary job you are doing?

a. Patient Care
b. Barracks Duties
c. Chow Hall Duties
d. Maintenance
e. Administration
f. List Other Duties:

5. If your primary job involves Non-Patient Care, What percentage of your time, are you spending in non-patient care duties?

a. Less than 10%
b. 10% - 20%
c. 20% - 30%
d. 30% - 40%
e. 40% - 50%
f. 50% - 60%
g. 60% - 75%
h. More than 75%

Please return completed survey to the designated place.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX D. TOTAL COMMAND SURVEY RESPONSES

Total Command Survey Responses Per Questions 392

Total Surveys: 68% (392/574)

	Mean	E - G %	F - P %	Percent
Section 1: Hospital Corpsman Basic Skills				
1. Take, record, end report vital signs	3.84	0.85	0.15	100%
2. Perform a patient head to toe assessment	3.12	0.71	0.29	100%
3. Prepare, maintain, and record intravenous therapy.	3.15	0.70	0.30	100%
4. Prepare, administer, and record oral medications.	3.29	0.72	0.28	100%
Understand the concepts and principles of safe Medication administration.	3.42	0.77	0.23	100%
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	3.05	0.68	0.32	100%
7. Perform basic emergency care for non□trauma medical emergencies.	3.24	0.74	0.26	100%
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.55	0.79	0.21	100%
9. Prepare, administer, and record intramuscular and subcutaneous Medications.	3.46	0.78	0.22	100%
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	3.24	0.73	0.27	100%
11. Perform Healthcare Provider Basic Life Support associated with American Heart Standards.	3.48	0.82	0.18	100%
Totals/Grand Mean:	**3.35**	**0.75**	**0.25**	**100%**

	Mean	CT – ST %	BT – NT %	Percent
Section 2: Command Training				
1. How well did "A" school train your personnel to be Hospital Corpsman?	3.21	0.82	0.18	100%
2. How well did "A" school train your personnel for their current position?	2.80	0.65	0.35	100%
3. How well did the command training program prepare your personnel in the technical skills required to perform their current position?	2.96	0.70	0.30	
4. How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care?	3.05	0.71	0.29	
Totals/Grand Mean:	**3.01**	**0.72**	**0.28**	100%

	Mean	VC – SC %	BC – NC %	Percent
Section 3: Confidence Level				
1. How confident are you that the HMs you supervise can successfully perform the duties of their current position?	3.60	0.82	0.18	100%
Totals/Grand Mean:	**3.60**	**0.82**	**0.18**	100%

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX E. SUPERVISOR'S SURVEY RESPONSES

Total Supervisor's Survey Responses Per Question **101**
Total Surveys: 70% (101/144)

	Mean	E - G %	F - P %	Percent
Section 1: Hospital Corpsman Basic Skills				
1. Take, record, end report vital signs	3.58	0.87	0.13	100%
2. Perform a patient head to toe assessment	2.67	0.60	0.40	100%
3. Prepare, maintain, and record intravenous therapy.	2.82	0.66	0.34	100%
4. Prepare, administer, and record oral medications	2.88	0.63	0.37	100%
5. Understand the concepts and principles of safe medication administration	2.99	0.68	0.32	100%
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies	2.74	0.60	0.40	100%
7. Perform basic emergency care for non□trauma medical emergencies	2.82	0.60	0.40	100%
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.09	0.71	0.29	100%
9. Prepare, administer, and record intramuscular and subcutaneous Medications	3.02	0.71	0.29	100%
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	2.91	0.65	0.35	100%
11. Perform Healthcare Provider Basic Life Support associated with American Heart Standards.	3.26	0.82	0.18	100%
Totals/Grand Mean:	**2.98**	**0.69**	**0.31**	**100%**

	Mean	CT - ST %	BT – NT %	Percent
Section 2: Command Training				
1. How well did "A" school train your personnel to be Hospital Corpsman?	3.07	0.86	0.14	100%
2. How well did "A" school train your personnel for their current position?	2.90	0.77	0.23	100%
3. How well did the command training program prepare your personnel in the Technical skills required to perform their current position?	3.09	0.79	21	100%
4. How well did your present command training program prepare your Personnel to take on greater responsibility with regard to patient care?	3.05	.72	0.28	100%
Totals/Grand Mean:	**3.03**	**0.79**	**0.21**	100%

	Mean	VC - SC %	BC – NC %	Percent
Section 3: Confidence Level				
1. How confident are you that the HMs you supervise can successfully perform the duties of their current position?	3.37	0.84	0.16	100%
Totals/Grand Mean:	**3.37**	**0.84**	**0.16**	100%

MILITARY SUPERVISOR'S SURVEY RESPONSES

Military Supervisor's Survey Responses Per Question **86**
Total Surveys: 60% (86/144)

	Mean	E - G %	F - P %	Percent
Section 1: Hospital Corpsman Basic Skills				
1. Take, record, end report vital signs.	3.72	0.93	0.07	100%
2. Perform a patient head to toe assessment.	2.70	0.63	0.37	100%
3. Prepare, maintain, and record intravenous therapy.	2.87	0.70	0.30	100%
4. Prepare, administer, and record oral medications.	2.90	0.64	0.36	100%
5. Understand the concepts and principles of safe medication administration.	3.06	.71	0.29	100%
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	2.83	0.65	0.35	100%
7. Perform basic emergency care for non□trauma medical emergencies.	2.92	0.63	0.37	100%
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.19	0.74	0.26	100%
9. Prepare, administer, and record intramuscular and subcutaneous medications.	3.17	0.78	0.22	100%
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	3.06	0.72	0.28	100%
11. Perform Healthcare Provider Basic Life Support associated with American Heart Standards.	3.33	0.86	0.14	100%
Totals/Grand Mean:	**3.07**	**0.73**	**0.27**	**100%**

	Mean	CT - ST %	BT – NT %	Percent
Section 2: Command Training				
1. How well did "A" school train your personnel to be Hospital Corpsman?	3.15	0.92	0.08	100%
2. How well did "A" school train your personnel for their current position?	2.99	0.83	0.17	100%
3. How well did the command training program prepare your personnel in the technical skills required to perform their current position?	3.29	0.88	0.12	100%
4. How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care?	3.19	0.78	0.22	100%
Totals/Grand Mean:	**3.15**	**0.85**	**0.15**	100%

	Mean	VC - SC %	BC - NC %	Percent
Section 3: Confidence Level				
1. How confident are you that the HMs you supervise can successfully perform the duties of their current position?	3.48	0.88	0.12	100%
Totals/Grand Mean:	**3.48**	**0.88**	**0.12**	100%

CIVILIAN SUPERVISOR'S SURVEY RESPONSES

Civilian Supervisor's Survey Responses Per Question 15
Total Surveys: 10% (15/144)

	Mean	E - G %	F - P %	Percent
Section 1: Hospital Corpsman Basic Skills				
1. Take, record, end report vital signs.	2.80	0.53	0.47	100%
2. Perform a patient head to toe assessment.	2.53	0.47	0.53	100%
3. Prepare, maintain, and record intravenous therapy.	2.53	0.47	0.53	100%
4. Prepare, administer, and record oral medications.	2.80	0.60	0.40	100%
5. Understand the concepts and principles of safe medication administration.	2.60	0.53	0.47	100%
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	2.27	0.33	0.67	100%
7. Perform basic emergency care for non□trauma medical emergencies.	2.27	0.47	0.53	100%
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	2.53	0.53	0.47	100%
9. Prepare, administer, and record intramuscular and subcutaneous Medications.	2.13	0.33	0.67	100%
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	2.07	0.27	0.73	100%
11. Perform Healthcare Provider Basic Life Support associated with American Heart Standards.	2.87	0.60	0.40	100%
Totals/Grand Mean:	**2.49**	**0.47**	**0.53**	**100%**

	Mean	CT - ST %	BT – NT %	Percent
Section 2: Command Training				
1. How well did "A" school train your personnel to be Hospital Corpsman?	2.60	0.53	0.47	100%
2. How well did "A" school train your personnel for their current position?	2.40	0.47	0.53	100%
3. How well did the command training program prepare your personnel in the technical skills required to perform their current position?	1.93	0.27	0.73	100%
4. How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care?	2.27	0.40	0.60	100%
Totals/Grand Mean:	**2.30**	**0.42**	**0.58**	100%

	Mean	VC - SC %	BC – NC %	Percent
Section 3: Confidence Level				
1. How confident are you that the HMs you supervise can successfully perform the duties of their current position?	2.73	0.60	0.40	100%
Totals/Grand Mean:	**2.73**	**0.60**	**0.40**	100%

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX F. HOSPITAL CORSPMEN SURVEY RESPONSES

Total Hospital Corpsman Survey Responses Per Question **291**
Total Surveys: 68% (291/430)

	Mean	E - G %	F - P %	Percent
Section 1: Hospital Corpsman Basic Skills				
1. Take, record, end report vital signs.	3.85	0.82	0.18	100%
2. Perform a patient head to toe assessment.	3.28	0.75	0.25	100%
3. Prepare, maintain, and record intravenous therapy.	3.26	0.72	0.28	100%
4. Prepare, administer, and record oral medications.	3.40	0.75	0.25	100%
5. Understand the concepts and principles of safe medication administration.	3.56	0.80	0.20	100%
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	3.16	0.71	0.29	100%
7. Perform basic emergency care for non□trauma medical emergencies.	3.39	0.79	0.21	100%
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.67	0.81	0.19	100%
9. Prepare, administer, and record intramuscular and subcutaneous medications.	3.63	0.81	0.19	100%
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	3.36	0.76	0.24	100%
11. Perform Healthcare Provider Basic Life Support associated with American Heart Standards.	3.56	0.82	0.18	100%
Totals/Grand Mean:	**3.46**	**0.78**	**0.22**	**100%**

	Mean	CT - ST %	BT - NT %	Percent
Section 2: Command Training				
1. How well did "A" school train your personnel to be Hospital Corpsman?	3.19	0.79	0.21	100%
2. How well did "A" school train your personnel for their current position?	2.76	0.61	0.39	100%
3. How well did the command training program prepare your personnel in the technical skills required to perform their current position?	2.91	0.67	.33	100%
4. How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care?	3.05	0.71	0.29	100%
Totals/Grand Mean:	**2.98**	**0.69**	**0.31**	100%

	Mean	VC- SC %	BC – NC %	Percent
Section 3: Confidence Level				
1. How confident are you that the HMs you supervise can successfully perform the duties of their current position?	3.68	0.81	0.19	100%
Totals/Grand Mean:	**3.68**	**0.81**	**0.19**	100%

HMs PLACED IN PATIENT CARE BILLETS LESS THAN 120 DAYS

Hospital Corpsmen Survey Responses Per Question 150
HMs Placed in Patient Care Billet - Less Than 120 Days
Total Surveys: 78% (150/192)

	Mean	E - G %	F - P %	Percent
Section 1: Hospital Corpsman Basic Skills				
1. Take, record, end report vital signs	4.09	0.91	0.09	100%
2. Perform a patient head to toe assessment	3.49	0.83	0.17	100%
3. Prepare, maintain, and record intravenous therapy.	3.49	0.81	0.19	100%
4. Prepare, administer, and record oral medications	3.53	0.79	0.21	100%
5. Understand the concepts and principles of safe medication administration.	3.81	0.90	0.10	100%
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	3.40	0.77	0.23	100%
7. Perform basic emergency care for non□trauma medical emergencies.	3.57	0.87	0.13	100%
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.93	0.91	0.09	100%
9. Prepare, administer, and record intramuscular and subcutaneous Medications.	3.75	0.87	0.13	100%
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	3.33	0.76	0.24	100%
11. Perform Healthcare Provider Basic Life Support associated with American Heart Standards.	3.70	0.89	0.11	100%
Totals/Grand Mean:	**3.65**	**0.85**	**0.15**	**100%**

	Mean	CT -ST %	BT- NT %	Percent
Section 2: Command Training				
1. How well did "A" school train your personnel to be Hospital Corpsman?	3.16	0.80	0.20	100%
2. How well did "A" school train your personnel for their current position?	3.01	0.72	0.28	100%
3. How well did the command training program prepare your personnel in the technical skills required to perform their current position?	2.99	0.69	0.31	100%
4. How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care?	3.05	0.69	0.31	100%
Totals/Grand Mean:	**3.05**	**0.73**	**0.28**	100%

	Mean	VC-SC %	BC – NC %	Percent
Section 3: Confidence Level				
1. How confident are you that the HMs you supervise can successfully perform the duties of their current position?	4.11	0.95	0.05	100%
Totals/Grand Mean:	**4.11**	0.95	0.05	100%

HMs PLACED IN PATIENT CARE BILLETS MORE THAN 120 DAYS

Hospital Corpsmen Survey Responses Per Question 79
HMs Placed in Patient Care Billets - More Than 120 Days
Total Surveys: 41% (79/192)

	Mean	E - G %	F - P %	Percent
Section 1: Hospital Corpsman Basic Skills				
1. Take, record, end report vital signs.	3.38	0.81	0.19	100%
2. Perform a patient head to toe assessment.	3.23	0.78	0.22	100%
3. Prepare, maintain, and record intravenous therapy.	3.18	0.77	0.23	100%
4. Prepare, administer, and record oral medications.	3.18	0.80	0.20	100%
5. Understand the concepts and principles of safe medication administration.	3.29	0.84	0.16	100%
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	3.05	0.75	0.25	100%
7. Perform basic emergency care for non□trauma medical emergencies.	3.23	0.82	0.18	100%
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.37	0.85	0.15	100%
9. Prepare, administer, and record intramuscular and subcutaneous Medications.	3.23	0.78	0.22	100%
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	3.22	0.80	0.20	100%
11. Perform Healthcare Provider Basic Life Support associated with American Heart Standards.	3.25	0.84	0.16	100%
Totals/Grand Mean:	**3.24**	**0.80**	**0.20**	**100%**

	Mean	CT - ST %	BT - NT %	Percent
Section 2: Command Training				
1. How well did "A" school train your personnel to be Hospital Corpsman?	3.04	0.73	0.27	100%
2. How well did "A" school train your personnel for their current position?	2.82	0.68	0.32	100%
3. How well did the command training program prepare your personnel in the technical skills required to perform their current position?	2.71	0.61	0.39	100%
4. How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care?	2.62	0.56	0.44	100%
Totals/Grand Mean:	**2.80**	**0.65**	**0.35**	100%

	Mean	VC -SC %	BC - NC %	Percent
Section 3: Confidence Level				
1. How confident are you that the HMs you supervise can successfully perform the duties of their current position?	3.43	0.76	0.24	100%
Totals/Grand Mean:	**3.43**	**0.76**	**0.24**	100%

HMs WORKING IN NON-PATIENT CARE BILLETS

Hospital Corpsmen Survey Responses Per Question 62
HMs Working in Non-Patient Care Billets "Other Duties" Surveys
Total Surveys: 21% (62/291)

	Mean	E - G %	F – P %	Percent
Section 1: Hospital Corpsman Basic Skills				
1. Take, record, end report vital signs.	2.73	0.55	0.45	100%
2. Perform a patient head to toe assessment.	2.82	0.52	0.48	100%
3. Prepare, maintain, and record intravenous therapy.	2.81	0.42	0.58	100%
4. Prepare, administer, and record oral medications.	2.90	0.47	0.53	100%
5. Understand the concepts and principles of safe medication administration.	2.69	0.53	0.47	100%
6. Identify the signs and symptoms, and perform basic emergency care for cardiovascular emergencies.	2.76	0.53	0.47	100%
7. Perform basic emergency care for non□trauma medical emergencies.	3.16	0.56	0.44	100%
8. Maintain patient safety, privacy, education, and comfort while providing medical care.	3.29	0.52	0.48	100%
9. Prepare, administer, and record intramuscular and subcutaneous Medications.	2.81	0.44	0.56	100%
10. Identify signs and symptoms and perform basic emergency care to control external and internal hemorrhage.	3.18	0.69	0.31	100%
11. Perform Healthcare Provider Basic Life Support associated with American Heart Standards.	2.89	0.61	0.39	100%
Totals/Grand Mean:	**2.91**	**0.53**	**0.47**	**100%**

	Mean	CT – ST %	BT - NT %	Percent
Section 2: Command Training				
1. How well did "A" school train your personnel to be Hospital Corpsman?	3.03	0.73	0.27	100%
2. How well did "A" school train your personnel for their current position?	2.50	0.37	0.63	100%
3. How well did the command training program prepare your personnel in the technical skills required to perform their current position?	3.05	0.74	0.26	100%
4. How well did your present command training program prepare your personnel to take on greater responsibility with regard to patient care?	3.34	0.79	0.21	100%
Totals/Grand Mean:	**2.98**	**0.66**	**0.34**	100%

	Mean	VC - SC %	BC– NC %	Percent
Section 3: Confidence Level				
1. How confident are you that the HMs you supervise can successfully perform the duties of their current position?	2.87	0.52	0.48	100%
Totals/Grand Mean:	**2.87**	**0.52**	**0.48**	100%

APPENDIX G. COMPARISON OF T-TEST RESULTS

t-Test: Two Factor Assuming Unequal Variance

	Military	*HMs*
Mean	3.233333	3.386667
Variance	0.047233	0.122133
Observations	3	3
Pearson Correlation	0.588088	
Hypothesized Mean Difference	0	
Df	2	
t Stat	0.938776	
P(T<=t) one-tail	0.223473	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.446946	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	Military	*Civilian*
Mean	3.233333	2.496667
Variance	0.047233	0.046433
Observations	3	3
Pearson Correlation	0.801097	
Hypothesized Mean Difference	0	
Df	2	
t Stat	9.220418	
P(T<=t) one-tail	0.005779	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.011559	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	Military	*HMs < 120*
Mean	3.233333	3.156667
Variance	0.047233	0.104433
Observations	3	3
Pearson Correlation	0.594684	
Hypothesized Mean Difference	0	
Df	2	
t Stat	0.50873	
P(T<=t) one-tail	0.330754	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.661508	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	Military	*HMs > 120*
Mean	3.233333	3.603333
Variance	0.047233	0.282533
Observations	3	3
Pearson Correlation	0.707522	
Hypothesized Mean Difference	0	
Df	2	
t Stat	1.571507	
P(T<=t) one-tail	0.128336	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.256672	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	HM-Other	*Supervisors*
Mean	2.92	3.126667
Variance	0.0031	0.045033
Observations	3	3
Pearson Correlation	-0.69824	
Hypothesized Mean Difference	0	
Df	2	
t Stat	1.408	
P(T<=t) one-tail	0.147226	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.294452	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	Civilian	*HMs*
Mean	2.496667	3.386667
Variance	0.046433	0.122133
Observations	3	3
Pearson Correlation	0.955208	
Hypothesized Mean Difference	0	
Df	2	
t Stat	9.698282	
P(T<=t) one-tail	0.005233	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.010465	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	Civilian	*HMs > 120*
Mean	2.496667	3.603333
Variance	0.046433	0.282533
Observations	3	3
Pearson Correlation	0.989773	
Hypothesized Mean Difference	0	
Df	2	
t Stat	5.940719	
P(T<=t) one-tail	0.013592	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.027185	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	Civilian	*HMs < 120*
Mean	2.496667	3.156667
Variance	0.046433	0.104433
Observations	3	3
Pearson Correlation	0.957597	
Hypothesized Mean Difference	0	
df	2	
t Stat	8.510498	
P(T<=t) one-tail	0.006764	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.013527	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	Military	*HM-Other*
Mean	3.233333	2.92
Variance	0.047233	0.0031
Observations	3	3
Pearson Correlation	-0.64873	
Hypothesized Mean Difference	0	
Df	2	
t Stat	2.11196	
P(T<=t) one-tail	0.084542	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.169085	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	Civilian	*HM-Other*
Mean	2.496667	2.92
Variance	0.046433	0.0031
Observations	3	3
Pearson Correlation	-0.97519	
Hypothesized Mean Difference	0	
df	2	
t Stat	2.650929	
P(T<=t) one-tail	0.05885	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.1177	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	HM-Other	*HMs > 120*
Mean	2.92	3.603333
Variance	0.0031	0.282533
Observations	3	3
Pearson Correlation	-0.9968	
Hypothesized Mean Difference	0	
Df	2	
t Stat	2.016112	
P(T<=t) one-tail	0.090664	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.181328	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	HM-Other	*HMs < 120*
Mean	2.92	3.156667
Variance	0.0031	0.104433
Observations	3	3
Pearson Correlation	-0.99762	
Hypothesized Mean Difference	0	
df	2	
t Stat	1.082362	
P(T<=t) one-tail	0.196115	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.392229	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	HMs > 120	*HMs < 120*
Mean	3.603333	3.1566667
Variance	0.282533	0.1044333
Observations	3	3
Pearson Correlation	0.988903	
Hypothesized Mean Difference	0	
Df	2	
t Stat	3.559753	
P(T<=t) one-tail	0.035327	
t Critical one-tail	2.919987	
P(T<=t) two-tail	0.070654	
t Critical two-tail	4.302656	

t-Test: Two Factor Assuming Unequal Variance

	HMs	*HM-Other*
Mean	3.478182	2.912727
Variance	0.045633	0.03742
Observations	12	12
Pearson Correlation	0.00452	
Hypothesized Mean Difference	0	
df	11	
t Stat	6.812238	
P(T<=t) one-tail	1.45E-05	
t Critical one-tail	1.795884	
P(T<=t) two-tail	2.91E-05	
t Critical two-tail	2.200986	

LIST OF REFERENCES

Annett, John, *Feedback and Human Behaviour*, Penguin, Harmondsworth, August 1968.

Annett, John, *Skill Loss: A Review of the Literature and Recommendations for Research.* Coventry, England University, Warwick, September 1977.

Bernthal, Paul, *Practical Strategies for Evaluating Training,* Journal of Training and Development, February 1999.

Bolman, Lee G., and Deal, Terrence E., *Reframing Organizations,* Jossey-Bass Inc., San Francisco, CA, 1992.

Brummit, Richard L., Conference Call with LT B. H. Fletcher on November 3, 1999 at the Naval Postgraduate School, Monterey, CA.

Cascio, Wayne F., Applied Psychology in Human Resources Management, Prentice Hall, New York June 1989.

Clark, R. and Austenfeld, R., Business Wire, University of Southern California, 1997.

Cohen, E. A., *Citizens and Soldiers: The Dilemmas of Military Service,* New York: Cornell University Press, 1985.

Department of Defense, Medical Readiness Strategic Plan 1995-2001, March 1995.

Drever, J., *A Dictionary of Psychology,* Penguin Reference Books, 1965.

Ebbinghaus, H., *Uber das Gedachtnis - 1885*, English Translation, Teacher's College, New York, 1913.

Fowler, Floyd J., *Improving Survey Questions: Design and Evaluation,* Sage Publications, Thousand Oaks, CA, August 1995.

General Accounting Office, GAO/T-NISAD-96-93 Report, DOD Training: Opportunities Exist to Reduce the Training Infrastructure, March 1996.

DOD Training Can Do More to Help Command Programs Implement Best Practices, August 1999.

Hurlock, R. E., and Montague, W. E., *Skill retention and Its Implications for Navy Tasks: An Analytical Review,* Navy Personnel Research and Development Center, San Diego, CA, April 1982.

Kirkpatrick, Donald, *Evaluation of Training Programs,* American Society for Training and Development, Madison Wisconsin, 1959.

Kirkpatrick, Donald, *Evaluating Training Programs: The Four Levels, Second Edition,* Berret-Koeher Publications, NY, 1998.

Mikas, Mirko M., *An Approach to Reduced Skill Loss of the Unrestricted Line Officer in the Venezuelan Navy,* Master's Thesis, Naval Postgraduate School, Monterey, CA, March 1982.

Mowday, R. T., Porter, L. W. and Steers, R. M., *Organizational Work, and The Personal Factors in Employee Commitment, Absenteeism, and Turnover,* Psychological Bulletin, Vol. 80, No. 2, pp. 151-176, 1982.

Muchinski, Paul M., *Psychology Applied to Work,* Fifth Edition. Brooks/Cole Publishing, Pacific Grove, CA, 1997.

Naylor, J. C, and Briggs, G. E., *Long Term Retention of Learned Skills: A Review of the Literature,* U.S. Air Force Aeronautical Systems Division Technical Report 61-390, August 1961.

Oliver, Judith, *Measure People Training to Get the Best For Your Money,* Management Today (UK), 1998.

Peter, John, *Survey Research Methods*, Sage Publications, January 1994.

Phillps, Jack J., *Handbook of Training Evaluations and Measurement Methods,* Third Edition, Gulf Publishing Company, Houston, TX, 1997.

Rea, Louis M. and Parker, Richard A., *Designing and Conducting Survey Research,* Jossey-Bass Inc., San Francisco, CA, 1992.

Salvendy, G. and Seymour, W. D., *Prediction and Development of Industrial Work Performance,* Wiley Publications, NY, 1973.

Synder, Richard W., *Painful Reductions Proposed in G.O.P. Budget*, New York Times Article, March 1998.

Taylor, J. E., and Thalman, D. M., *An Examination of Skill Deterioration and Retraining in the United States Navy,* Master's Thesis, Naval Postgraduate School, Monterey, CA, 1977.

Welford, A. T., *Fundamentals of Skill,* Manuals of Modern Psychology, 1968.

THIS PAGE INTENTIONALLY LEFT BLANK

BIBLIOGRAPHY

Arima, J. K., and Neil, D. E., *Skill Deterioration and Its Management,* Naval Postgraduate School, Monterey, CA, 1978.

Burk, J., *"The Decline of Mass Armed Forces and Compulsory Military Service,"* Defense Analysis 8, No. 1, 1992, pp. 45-59.

Fink, Arlene, *How to Sample in Surveys*, Sage Publications, Thousand Oaks, CA, 1995.

Goldstein, Irwin L., *Training In Organizations: Needs Assessment, Development, and Evaluation,* Brooks/Cole Publishing Company, Pacific Grove, CA, 1993.

Gujarati, Damodar N., *Basic Econometrics*, Third Edition, Mcgraw-Hill, Inc., New York, NY, 1995.

Kalton, Graham, *Introduction to Survey Sampling: Quantitative Applications in the Social Sciences*, Sage Publications, Beverly Hills, CA, 1983.

Kirkpatrick, Donald, *Evaluating Training Programs: The Four Levels*, Berret-Koeher Publications, NY, 1994.

Levy, Paul S., and Lemeshow, Stanley, *Sampling of Populations: Methods and Applications,* Third Edition, John Wiley & Sons, Inc., NY, 1999.

Peterson, Robert A., *Constructing Effective Questionnaires*, University Press, January 2000.

Phillps, Jack J., R*eturn on Investment in Training and Performance Improvements Series,* Gulf Publishing Company, Houston, TX, 1997.

Sallant, Pricsilla, and Dillman, Don. A., *How to Conduct Your Own Survey,* John Wiley & Sons, Inc., NY, 1994.

Senge, D. P., *The Fifth Discipline: The Art and Practice of Learning Organization,* Doubleday-Currency, New York, NY, 1990.

Winkler, J. D., Steinberg, P. S., *Restructuring Military Education and Training: Lessons from RAND Research,* United States Army, Arroyo Center, Washington, DC, 1997.

INITIAL DISTRIBUTION LIST

1. Defense Technical Information Center 2
   8725 John J. Kingman Rd., STE 0944
   Ft. Belvoir, VA 22060-6218

2. Dudley Knox Library 2
   Naval Postgraduate School
   411 Dyer Rd.
   Monterey, CA 93943-5101

3. Dr. Bernard J. Ulozas 1
   556 West Palm Valley Dr.
   Oviedo, FL 23765

4. Alice Crawford (Code SM/Cr) 1
   Naval Postgraduate School
   Monterey, CA 93943-5103

5. Commanding Officer.....1
   Naval Hospital Corps School
   Great Lakes, Illinois 60088-5257

6. Richard Brummitt 1
   Naval Hospital Corps School
   Great Lakes, Illinois 60088-5257

7. Commanding Officer.....2
   Bureau of Medicine and Surgery
   2300 E Street, NW
   Washington, D.C. 20372-5300

8. Commanding Officer.....1
   Bureau of Naval Personnel
   5720 Integrity Drive
   Millington, TN 38055-0000

9. LT Barbara H. Fletcher 3
   2354 Seymour Ave.
   Bronx, New York 10469-5618