



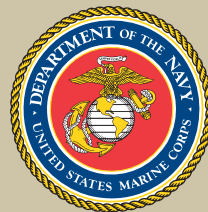
FORCE HEALTH PROTECTION

A HEALTHY AND FIT FORCE
PREVENTION AND PROTECTION
MEDICAL AND REHABILITATIVE CARE





This publication is dedicated to the brave service members of the United States Armed Forces and to honor the memory of their fallen comrades.



executive summary

THIS DOCUMENT PRESENTS A VISION for Force Health Protection (FHP) as the focus of healthcare programs that protect America's fighting forces. FHP is a "total life-cycle" health support system supporting the concepts described in Joint Vision through an integrated and focused approach to protect and sustain the Department of Defense's most important resource – its Service members and their families – throughout the entire length of service commitment. FHP's three interrelated pillars (promoting and sustaining **a healthy and fit force**; **preventing** injuries and illness and **protecting the force** from health hazards; sustaining world-class **medical and rehabilitative care** to the sick and injured anywhere in the world and the infrastructure activities that underpin them) determine the nature of medical operations both in garrison and on the battlefield.

FHP TAKES FULL ADVANTAGE OF SERVICE STRENGTHS while also supporting joint standards, doctrine, and operations. This requires maximizing the effectiveness of the Services' medical elements through jointly coordinated, comprehensively planned, and mutually supportive medical operations paralleling the Military Health System "Balanced Scorecard". FHP provides life-cycle health support to members when they enter into the military and continues for the duration of their military careers. It supports Service members with a full spectrum of health services that:

- emphasize fitness, preparedness, and preventive measures;
- improve the monitoring and surveillance of forces in military operations;
- enhance soldiers' and commanders' awareness of health threats before they can affect the force; and
- support the healthcare needs of the fighting forces and their families across the continuum of medical services.

FHP IS A SPECIFIC DIRECTIONAL FOCUS. To support FHP concepts, medical assets must be configured to support health promotion, health hazard assessment, implementation of countermeasures, and the provision of **essential care** of the injured and ill in theater and their rapid evacuation to **definitive medical care** outside of the theater of operations. Medical capabilities must possess the kind of agility and flexibility required in the 21st century security environment. The ability to leverage innovative emerging technologies, coupled with logistical and information superiority, enhance the capability of our operational medical forces. These operational medical forces must be smaller, rapidly deployable, effective, and technologically advanced. This requires intense, concerted effort by all Services and must be implemented jointly.

In 1997, eleven Joint Staff-sponsored functional medical working groups identified the steps necessary to achieve FHP's objectives. Those groups identified gaps in the existing medical force capabilities to support FHP initiatives. They also produced a road map that depicted timelines and milestones for FHP implementation. The events of September 11, 2001, the ongoing **Global War on Terrorism (GWOT)**, and Department of Defense's transformation efforts, have prompted this first revision of the FHP Strategy and Vision Document. While this document is not directive in nature, it has and will continue to set the tone for developing and revising health service support doctrine, policies, and planning guidance. The Military Health System must continue to support the evolving national military strategy and the emerging strategies and tactics of the 21st century. FHP is Department of Defense's vision and strategy for military health service support – full dimensional protection for all Service members, all the time.





table of contents

CHAPTER 1 - INTRODUCTION	09
Overview	09
The Strategic Context of Force Health Protection	09
Force Health Protection and Military Medicine	10
Conclusion	11
CHAPTER 2 - FHP: THREE PILLARS, ONE INFRASTRUCTURE, ONE PROGRAM	13
A Healthy and Fit Force	13
Prevention and Protection	14
Medical and Rehabilitative Care	14
Infrastructure Support Services	15
Cultural Change and Force Health Protection	15
CHAPTER 3 - A HEALTHY AND FIT FORCE	19
Overview	19
Body	19
Physical Fitness	19
Injury and Disease Prevention	20
Nutrition	21
Dental Health	21





Mind 22

Supportive Environment 22

Conclusion 23

CHAPTER 4 - PREVENTION AND PROTECTION 25

Overview 25

Tenets of Prevention and Protection 26

 Control of Disease and Non-Battle Injury is a Command Responsibility 26

 Identifying Health Threat 26

 Implementing Countermeasures 27

 Risk Communication 27

 Joint Health Surveillance 27

Specific Consideration For Prevention and Protection 28

 Prevention of Infectious Diseases 28

 Protection Against Environmental and Occupational Injury and Illness 29

 Prevention of Non-Battle Injuries 30

 Prevention of Mental Health Casualties 31

 Prevention of Chemical, Biological, Radiological and Nuclear Casualties 32

 Prevention of Battle Injuries 32

TABLE OF CONTENTS

Key Casualty Prevention Capabilities 32

Conclusion 33

CHAPTER 5 - MEDICAL AND REHABILITATIVE CARE 35

Overview 35

First Response 35

Forward Resuscitative Surgery 36

Theater Hospitalization 36

En Route Care 37

Conclusion 38

CHAPTER 6 - FHP INFRASTRUCTURE AND SUPPORT 41

Overview 41

Training 41

Logistics 42

Information Management/Information Technology 44

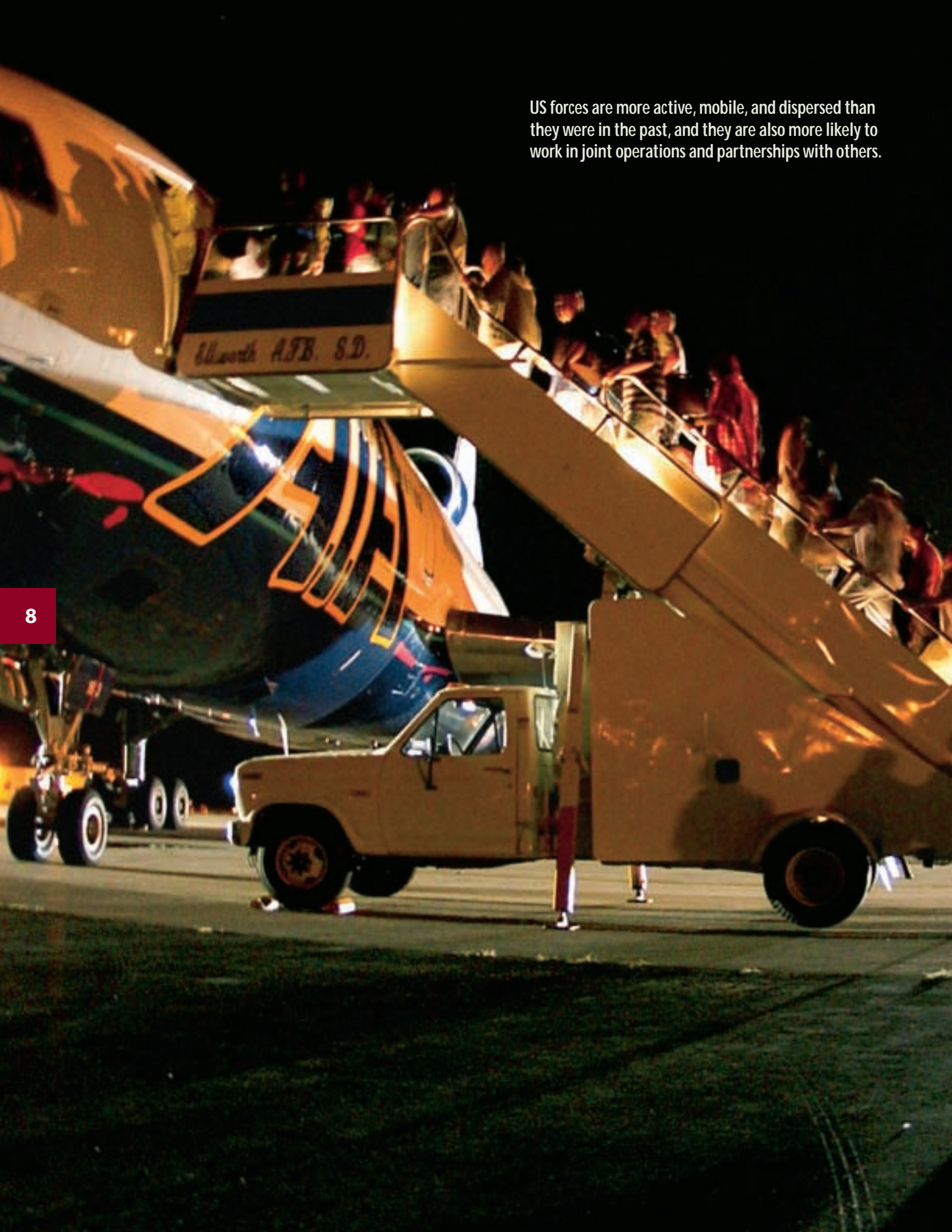
Leveraging New Technology Through Research, Development, and Technology Insertion 45

APPENDIX A: ABBREVIATIONS 49

APPENDIX B: GLOSSARY 51



US forces are more active, mobile, and dispersed than they were in the past, and they are also more likely to work in joint operations and partnerships with others.



chapter 1

Introduction

OVERVIEW

THE END OF THE COLD WAR AND THE ONSET OF THE GLOBAL WAR ON TERRORISM have resulted in a significant change in the way the US military addresses the issue of health service support for its operational forces. Remote sustained deployments have increased in number and frequency, and we are satisfying those requirements with a smaller force. To meet these operational requirements, we are relying more heavily on a deployed force comprised of both active and reserve components, with an increasing proportion of the deployed Service members coming from the reserves. In short, US forces are more active, mobile, and dispersed than they were in the past, and they are also more likely to work in joint operations and partnerships with others. The well being and fitness of US forces for duty is more important and more complicated than ever.

THIS DOCUMENT PROVIDES A FOUNDATION for *Force Health Protection (FHP)*, a unified strategy that describes the integrated preventive and clinical programs that are designed to protect the “Total Force.” The goal of FHP is to provide a fit and healthy force, protected from disease and injury, when and where the mission requires it, while simultaneously adapting the medical forces to be more technologically advanced, smaller, and more mobile. FHP represents a significant departure from conventional combat medicine because it:

- institutes programs to develop and support healthy and fit Service members and families,
- emphasizes prevention of injury and illness and protection of the force, while maintaining an exceptional casualty management system, and
- employs concepts that call for only essential care in the theater and evacuation to definitive care outside the theater of operations.

THE STRATEGIC CONTEXT OF FORCE HEALTH PROTECTION

THE US MILITARY HAS CONFRONTED AND SURMOUNTED formidable challenges in the past decade. However, we now face an extraordinary new set of challenges as a result of that success.

AT THE END OF THE COLD WAR we faced significant reductions in budgets and forces. US forces have incurred a more active operational tempo and also have become more flexible, smaller, and more lethal thanks to technological progress. Jointness and interoperability allow America’s military forces to satisfy the need for greater flexibility in military planning and operations with those smaller forces and budgets. A significant new challenge is to protect and maximize the performance of the limited numbers of highly trained individuals using every possible FHP method. Avoiding all preventable losses of combat and support personnel is critical to mission success.





THE CHALLENGES FACED IN THE 21ST CENTURY from asymmetric threats have never been more evident, and the role of the military health system in countering these threats is critical. The historical combat service support role of the medical community has evolved to include unprecedented involvement in a “defensive weapon system” against this threat both at home and abroad. This requires innovative changes in medical doctrine, organization, and training, as well as material and technological solutions. Despite those challenges, the resounding message echoing from the recent past is that America’s fighting forces are the best they have ever been. To build on the military’s present superiority, joint planners have formulated new doctrine – Joint Vision 2010 (JV 2010), JV 2020, and now simply, “**Joint Vision**” – which expand on several key ideas to provide an integrated, cohesive, and future-oriented platform for continued improvement in US military capability. One key idea is the shift from a threat-based to a capabilities-based planning construct. The focus is not limited to who might threaten the US, where, or when, but more on **how** the United States might be threatened and what medical capabilities are needed to counter the threats. The top three priorities—win the War on Terrorism, enhance jointness/interoperability, and transform to maintain military superiority – have significant implications for US medical forces. To understand and embrace those implications, joint medical planners have created this document.

FORCE HEALTH PROTECTION AND MILITARY MEDICINE

THE MOST VALUABLE, MOST COMPLEX WEAPON SYSTEMS the US military will ever field are its soldiers, sailors, airmen, and Marines. These human weapon systems require life-cycle support and maintenance just as we have always done for other less complex mechanical weapon systems. “Force Health Protection” (FHP) is that life-cycle health maintenance program for the human weapon system.

FHP ENCOMPASSES A FULL SPECTRUM of operational medical concepts designed to establish benchmarks for the Military Health System in response to the challenges of Joint Vision. It endorses several fundamental changes in the way military medicine supports America’s warfighters, and it builds on the technological and doctrinal progress implicit in Joint Vision.

THE US MILITARY INCREASINGLY INTEGRATES ITS OPERATIONS with other organizations and nations. Joint Vision makes that integration apparent, and FHP provides further context for inter-organizational medical and preventive operations. This integration implies increasing contact between the US military, US civil agencies, foreign governments, and **non-governmental organizations (NGOs)**, all of which influence the development and execution of FHP operations.

FHP IS ABOUT MUCH MORE THAN CLINICAL MEDICINE. First and foremost, FHP involves enhanced methods of preventing casualties before, during, and after a military operation. It does this through a **full spectrum of health services** that

- emphasize fitness, preparedness, and preventive measures;
- improve the monitoring and surveillance of threats and forces engaged in military operations;
- enhance Service members’ and commanders’ awareness of health threats before they can affect the force; and
- support the healthcare needs of the fighting forces and their families across the continuum of medical services.

FORCE HEALTH PROTECTION

CHAPTER 1 ★ INTRODUCTION

IN THIS WAY, FHP HAS AND CONTINUES TO BE A CATALYST for a fundamental reorientation of military medical forces – away from acute-care services that emphasize post-casualty intervention and toward proactive, preventive services that strive to prevent casualties. **Preventing casualties** is the primary focus of FHP.

IN ADDITION TO ITS FOCUS ON PREVENTION, FHP provides a major shift in the care and management of casualties. The linchpin of the concept is delivery of essential care in theater and expeditious evacuation to definitive care outside the theater of operations. Supporting this new concept is a transportable theater hospital capability deployed in proximity of a major transportation hub to allow easy access to evacuation assets. First responders and forward resuscitative surgery (FRS), complemented by enhanced evacuation capabilities, provide uninterrupted care from point of injury or illness to definitive care.

FHP BUILDS ON ANOTHER JOINT VISION CONCEPT as well. Information Dominance – one of the key enablers of Joint Vision – is a driving force in FHP, which uses information to assess health threats, improve preventive measures, speed evacuation, and reduce the battlefield footprint of the medical force to its minimum essential level.

THUS, FHP IS ABOUT PREVENTING HEALTH THREATS from affecting our military forces. It is designed to improve existing health; proactively address health threats; and, finally, provide care for any illness or injury that does occur. FHP is described below in terms of three “pillars,” but ***the individual medical support concepts are so inextricably linked that successful FHP development must proceed in a way that the pillars rise in a balanced and planned manner.***

CONCLUSION

FORCE HEALTH PROTECTION REPRESENTS A SIGNIFICANT CHANGE over past health service support concepts. Dramatic adjustments to military medicine have occurred and the future promises even more change. The shift from acute care to preventive care is of historic proportion, as is the swift acceptance and use of advanced medical technologies. Those technologies in turn, serve as enablers for other exciting opportunities – the provision of critical care during patient evacuation; real-time medical surveillance and global monitoring to improve commanders’ awareness of health threats and conditions; and support services that are transformed by technology to become more responsive, better targeted, and less costly.



Throughout military history, diseases and non-battle injuries have been responsible for more casualties than injury or illness inflicted by enemies.



chapter

2

FHP: Three Pillars, One Infrastructure, One Program

FORCE HEALTH PROTECTION broadens and deepens the interrelationship between military medicine and the fighting force it supports. Once confined largely to acute post-casualty care, military medicine is now reshaping roles in all aspects of health protection to include military medicine's role as a "defensive system" against weapons of mass destruction. To understand these roles, this chapter and the rest of this document explore in greater detail the three interrelated pillars: *A Healthy and Fit Force*, *Prevention and Protection*, and *Medical and Rehabilitative Care*, and the *infrastructure activities* that underpin them.

FORCE HEALTH PROTECTION		
HEALTHY & FIT FORCE <ul style="list-style-type: none">• Periodic Health Assessment• Individual Medical Readiness• Health Promotion• Stress Management• Pre/Post Deployment Health Assessment	PREVENTION & PROTECTION <ul style="list-style-type: none">• Immunizations & Countermeasures• Safe & Healthy Working Conditions• Protective Equipment• Assess/Mitigate Hazards• Health & Environmental Surveillance• Risk Communication	MEDICAL & REHABILITATIVE CARE <ul style="list-style-type: none">• Scalable, Modular, Joint Medical Capabilities• First Responder• Forward Surgery• Theater Hospitalization• En Route Care• Definitive Care
JOINT CENTERED, BALANCED APPROACH: PREVENTIVE AND CURATIVE		

A HEALTHY AND FIT FORCE

A HEALTHY AND FIT FORCE IS THE NECESSARY PRECONDITION for all other elements of FHP. Its importance cannot be overstated. The most important weapon system in the US military is its people. The health and fitness of each individual is the basic guarantor of military success at all levels of engagement.

PHYSICAL FITNESS TRAINING, health promotion programs, family support services, occupational health programs, periodic health assessments, stress management, and managed health care programs for all DoD beneficiaries are the building blocks for a healthy and fit force. Each of those elements must be in place and operating smoothly both during peacetime and in contingencies. Each must be fully engaged both with Service members and their beneficiaries. Chapter 3 of this document covers healthy and fit force programs in more detail, and it defines their inter-relationship with other pillars and infrastructure services.





PREVENTION AND PROTECTION

MILITARY FORCES EXPERIENCE AN INCREDIBLY WIDE RANGE of environmental conditions, facing threats that are far more diverse and insidious than those faced by the traditional land armies of the Cold War.

PREVENTION OF INJURY AND ILLNESS and protection of the force from health hazards concentrates on countering two types of threats. The first type, environmental and occupational health hazards, is composed of a complex bundle of environmental, individual and operational factors that cause **disease and non-battle injury (DNBI)**. Throughout military history, DNBI has been responsible for more casualties than injury or illness inflicted by enemies. Because deadly infectious diseases have been weaponized, military medicine must be able to distinguish between naturally occurring disease cases and those caused by our enemies. The second threat is that posed directly by the enemy, which previously was considered to produce smaller numbers of more serious casualties. This will not be the case, however, if a chemical, biological, or nuclear weapon is successfully used against US forces.

TO REDUCE THE DNBI THREAT, FHP calls for improved global medical intelligence; a system for conducting and maintaining continuous surveillance of the force and the DNBI threat; and actively applied countermeasures, including immunizations, chemoprophylaxes, and environmental preventive measures. The success of these measures, in turn, directly depends on the active involvement of commanders and Service members at all levels.

TO COUNTER THE SECOND THREAT, the enemy or terrorist threat, Joint Vision calls for active application of “systems of military systems” to reduce enemy capabilities before casualties can be inflicted. Also, geographic dispersion of forces and improved personal protective and concealment systems will prevent injuries while maintaining the lethality of US forces.

SUCCESSFUL CASUALTY PREVENTION also requires an understanding of the changing nature of deployed forces. The old notion that deployed military forces are primarily composed of healthy, young, single males is only partly valid today. Based on an increased presence of reserve components, civilian contractors, and greater diversity of skills filled by female Service members, today’s deployed forces are older, often have families, are more representative of the civilian population, and are much more diverse. FHP must accommodate that change. Chapter 4 of this document discusses Prevention and Protection in greater detail.

MEDICAL AND REHABILITATIVE CARE

THE THIRD PILLAR OF THE FHP STRATEGY builds on the traditional strengths of military medicine: using new technologies and mobility to achieve a lighter, faster, more responsive medical capability. The major components of the provision of medical and rehabilitative care to the sick and injured anywhere in the world comprise a continuum of essential care to stabilize the casualty in theater, beginning with the ability of the “first responder” to support basic prevention and begin caring for casualties as quickly and as close to the point of injury as possible.

CHAPTER 2 ★ FHP: THREE PILLARS , ONE INFRASTRUCTURE, ONE PROGRAM

LINKED TO FIRST RESPONDER TECHNIQUES to locate casualties are pre-hospitalization treatments designed to initiate life- and limb-saving essential care and FRS designed to triage, resuscitate, and prepare casualties for evacuation to theater hospitals. Theater hospitals must be more modular in design and consist of robust “core” capabilities and, when required, mobile “breakout” segments.

FINALLY, ALL THE COMPONENTS ARE FUSED TOGETHER into a continuum of essential care by a critical care capable evacuation system able to maintain essential care during all phases of evacuation, supported by improved communication and evacuation management systems to permit rapid, flexible, condition-specific evacuation.

THIS STRATEGY ENABLES PLANNERS to reduce the lift requirements for medical forces into theater but increases the casualty evacuation requirements out of theater. Chapter 5 of this document discusses medical and rehabilitative care more completely.

INFRASTRUCTURE SUPPORT SERVICES

INFRASTRUCTURE SUPPORT – the *research and development (R&D)*, health surveillance, information systems, logistics, and training that provide the foundation of FHP – also must undergo dramatic changes in response to Joint Vision. R&D is increasingly linked to operational capabilities identified by the combatant commanders. Comprehensive deployment medical and environmental surveillance provides actionable information to commanders and other decision-makers in appropriate timelines. Information systems must be tailored to satisfy the requirement that medical forces in theater be smaller, lighter, and more flexible than most medical settings.

LOGISTICS SERVICES, meanwhile, increasingly use commercial practices to reduce expensive inventory investments, speed resupply, and more rapidly respond to evolving military situations. This provides the ability to have *total asset visibility (TAV)* during both peace and conflict.

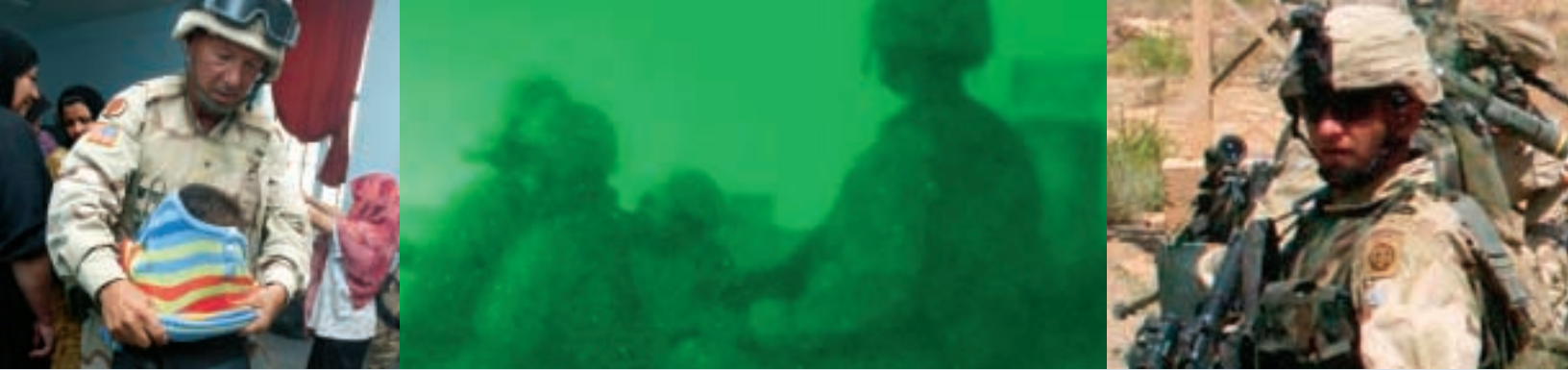
FINALLY, TRAINING REQUIRES more intensive, flexible, and technologically enabled packages to provide full situational training to providers and preventive forces at all levels of care.

ALL INFRASTRUCTURE SUPPORT SERVICES must become more joint and more responsive as military needs continue to evolve. Infrastructure support services are discussed further in Chapter 6.

CULTURAL CHANGE AND FORCE HEALTH PROTECTION

FHP IS NOT JUST ABOUT A MEDICAL TEAM CARING FOR THE FORCE. It equates to force sustainment, and force sustainment equates to the commander’s ability to achieve assigned national security objectives. To succeed, the concepts of FHP must be understood and implemented by commanders, Service members, planners, and even the public. FHP offers a suite of tools, techniques, and guidelines, but success requires





the involvement of much more than just the medical force. Medical personnel play a key role in all elements of FHP, and they will continue to deliver world-class medical care, but the pillars of FHP go beyond their capabilities alone. FHP proposes a true partnership of line and medical elements, with medics in the lead for FHP training, educating, monitoring, and providing medical services; and with commanders and Service members providing command implementation, enforcement, commitment and engagement.

CULTURAL CHANGE WITHIN THE MILITARY MEDICAL SYSTEM continues to be necessary as FHP implementation matures. One look at today's medical force structure reveals its dominant paradigm: post-casualty acute medical care with limited emphasis on preventive and monitoring services. Consequently, a great deal of work remains to be done within the medical community during the maturation of the FHP program. Comprehensive FHP will continue to require adjustments in force structure, concepts of employment, information systems, and other domains.

THERE IS A FINAL AREA OF NEEDED CULTURAL CHANGE in order to instill the tenets of FHP: the infrastructure to support all three pillars of FHP must continue to mature and focus on the battlefield of the future. While all infrastructure elements have changed considerably in preceding years, most of that change has occurred in the context of Cold War era doctrine and military operational concepts. As the doctrine and operational concepts continue to change, rethinking of infrastructure requirements is necessary. Moreover, as the state-of-the-art in clinical practice continues to evolve rapidly, infrastructure services must also be transformed. Changes in practice from intervention to prevention, from locally determined to benchmarked best practices, and from invasive to non- or minimally-invasive measures change infrastructure support requirements. Cultural change poses the most significant challenge of all in achieving FHP goals. Technological means exist today to meet most FHP requirements, and technical solutions for the remaining requirements are on the horizon. Likewise, military leaders will accomplish the organizational and structural changes as integral components of Joint Vision. But changing the cultural values and ideals of medical professionals, the forces they support, and the public requires concerted effort and clear description of the benefits of, and need for, FHP.



Fit and healthy personnel are more productive, more resistant to illness, less prone to injury and the adverse influence of stress, and better able to quickly recover should illness or injury occur.



chapter 3

A Healthy and Fit Force

OVERVIEW

THE FIRST PILLAR OF FORCE HEALTH PROTECTION is to support warfighting commanders with a healthy and fit force. Promoting wellness and ensuring quality of life to strengthen the human component of US forces for better performance and protection against disease and injury provides a healthy and fit force that is mission-ready, combat resilient, and reliable. Fit and healthy personnel are more productive, more resistant to illness, less prone to injury and the adverse influence of stress, and better able to quickly recover should illness or injury occur. Creating a healthy and fit force starts at entry to the Service. Maintaining such a force requires both a commitment from individual Service members and commanders plus a sustained effort from the entire spectrum of military health services before, during, and after deployment through to retirement.

PERSONNEL IN A HEALTHY AND FIT FORCE maintain and improve the health of their bodies and minds in a supportive environment. Developing a healthy “body” requires attention to physical fitness, injury prevention, disease prevention, nutrition, and dental health. Service members with a healthy mind maintain their cognitive, behavioral, emotional, and spiritual health. Finally, a supportive environment equips individuals to achieve health goals by careful inclusion of occupational and environmental health as well as aspects of community and family relationships.

DEPARTMENT OF DEFENSE LEADERS HAVE ESTABLISHED HIGH STANDARDS for the fitness of operational forces. Commanders must plan to have the members of their units attain and maintain those standards. Medical forces must focus their resources on supporting commanders’ efforts to build a fully fit force. Implementation of these concepts must ensure that combatant commanders will have an operational force with an unsurpassed level of fitness capable of the highest overall military capability and effectiveness.

BODY

Physical Fitness

THE FIVE COMPONENTS OF PHYSICAL FITNESS include cardiovascular strength, muscular strength and endurance, flexibility, body composition, and agility. Meeting ambitious goals about the ability of military members to engage in vigorous activity and demonstrate a high level of capability in all five physical fitness components requires:

- adoption of scientifically based, mission-oriented, physical fitness standards and objectives;
- positive recognition and incentives for meeting the standards and objectives;
- inclusion of training on the importance of exercise in the physical fitness curriculum of all military schools;
- scheduling or authorizing military Service members time to participate in physical fitness training during the duty day;
- facilities, equipment, and environments for safe and appropriate individual and unit fitness programs;





- when operationally feasible, ensure accessibility and scheduling for physical training at deployed locations; and
- establishing strategies emphasizing prevention of exertional illness and injury, early intervention for exertional illness and injuries (i.e., preventing further occurrence or progression to more serious injuries), development of a continuum of injury care emphasizing safe and efficient return to duty, and reconditioning when appropriate.

USE OF DATA FROM PHYSICAL EXAMS and periodic health assessments; individual medical readiness assessments; illness, injury, and disability reports; self- and deployment assessments of health; and the results of physical fitness testing provide a basis for analyzing trends in the level of physical fitness readiness of the operational force.

Injury and Disease Prevention

EFFECTIVE INJURY AND DISEASE PREVENTION STRATEGIES reduce the incidence and prevalence of injury and disability and keep personnel available for mission duty. Prevention of injury and illness requires commanders and Service members to emphasize safety, modify risky behavior, and to use preventive medicine tools and resources, with the goal of reducing or minimizing the impact of injury and illness on mission effectiveness. Success depends upon commanders who understand and execute their responsibility to safeguard and promote the health and readiness of their units.

REACHING THE GOAL of reduced injury and illness incidence to maintain the highest possible level of effectiveness requires:

- identification of injuries and illness having the greatest effect on training and mission readiness for application of specific prevention strategies;
- comprehensive injury and disease surveillance, safety programs, and data analysis to provide policymakers, commanders, and Service members with recommendations to minimize the impact of preventable injury and disease;
- support of technological advances such as improved telemedicine capabilities, development and administration of immunizations, prophylactic countermeasures, biological and chemical dosimeters, screening tools for identifying injury-prone members, fitness training and equipment available to Service members in all locations, and integrated medical intelligence systems; and
- reduction in use of tobacco products and abuse of alcohol and drugs, including nutritional supplements and over-the-counter medications.

These will strengthen the ability of line commanders to meet unit health responsibilities.

DOD'S LEADERS NEED ACCURATE INCIDENCE AND PREVALENCE RATES of injuries, hospitalizations, disabilities, and deaths within each Service to better determine the most effective and efficient allocation of resources required for Force Health Protection. Performance metrics in support of illness and injury prevention must be based on comprehensive health surveillance at all levels – unit, Service, and DoD-wide – of reported injuries and illness, environmental and occupational hazards, and their relation to readiness.

FORCE HEALTH PROTECTION

CHAPTER 3 ★ HEALTHY AND FIT FORCE

Nutrition

A HEALTHY AND FIT OPERATIONAL FORCE will eat foods that maximize performance, maintain long-term good health, and sustain morale. Individual food choices and eating behaviors are powerfully influenced by the food preferences of others in the community, unit, and immediate family. Attaining the goal of military members eating the types and amounts of foods meeting operational needs and in line with US dietary recommendations requires:

- influencing food preferences to ensure that mission needs will be met without sacrificing morale;
- developing a food-related logistics support system with features such as automated recipes for popular and healthy dishes, a well-trained food preparation staff, and a supply system providing enough healthy ingredients;
- education of commanders, Service members, and food service staff about mission-specific nutrient requirements and strategies that will ensure healthy eating habits;
- discouraging the use of unproven nutritional remedies, performance enhancers, body-building drugs, and fad diets and supplements;
- implementing scientifically based weight control programs meeting physical fitness principles; and
- researching and analyzing the optimal nutrient, fluid, and body composition requirements for special unit operations and the body's use of nutrients.

METRICS USED TO MONITOR PROGRESS include the use of medical system models and data to capture and track consumption information and body composition measurements. Physiological indicators and self-reported survey data provide additional sources to evaluate progress.

Dental Health

DENTAL HEALTH AND FITNESS is an important component of overall personal health. The discomfort and pain of dental disease can cause serious interference with Service members' ability to focus on mission-essential tasks. Poor dental health delays mobilization and deployment of individual Service members. Meeting goals for reduction in the need for treatment of tooth decay, disease, and prosthodontics is accomplished through strategies including:

- using vaccines and pharmacological agents to minimize oral disease and fluoridation of all DoD installation water supplies
- stressing the importance of frequent and effective dental care including routine, periodic dental health assessments of all Service members, active and reserve
- identifying individuals at high risk for dental emergencies, reducing member use of tobacco, performing periodic oral cancer screenings, and promoting the use of oral protective devices during contact sports.

STANDARDIZED DoD DENTAL SYSTEMS are used to measure disease and treatment levels. These dental classification systems must be continuously monitored for accuracy in describing overall dental status and adequacy for predicting future dental status.





MIND

A FIT AND HEALTHY MIND integrates cognitive, behavioral, emotional, social, and spiritual health and supports individual Service members in adjusting to the rigors and stresses of Military Service with its long hours, realistic training and frequent deployments. Personnel who have strong coping skills and healthy personal and family relationships are better able to focus on mission requirements when necessary. The goal associated with a healthy mind is to encourage a culture of lifelong learning that will strengthen personal, interpersonal, and on-the-job competence; integrate spiritual health; develop resiliency; and eliminate dependence on or abuse of alcohol, nicotine, and drugs.

THIS STRATEGY INVOLVES:

- identifying high-risk individuals early,
- providing psychosocial programs to improve self-management skills and develop appropriate behaviors,
- de-stigmatizing mental health care
- increasing awareness of individual strengths and group capabilities,
- shifting the focus from tertiary care to primary prevention, and
- using community resources.

TRAINING EFFORTS should provide increased emphasis on life skills training for all military members, including conflict and anger management, code of conduct compliance, and ethics and values adherence at accession and throughout careers. Implementation of specific types of training that will aid mission accomplishment include training in stress and performance, combat and battle fatigue, substance abuse, depression avoidance, recognition of suicidal risk factors, family violence prevention, and family separation and couples communication.

ANALYSES OF HEALTH APPRAISAL DATA and outcome data to compare with Service and civilian community data should be used to benchmark progress.

SUPPORTIVE ENVIRONMENT

A SUPPORTIVE ENVIRONMENT ENCOMPASSES COMMITMENT from the community of individuals, families, units, installations, and infrastructure systems as well as occupational and environmental health programs supporting the military mission. These provide a support structure enabling Service members to perform their mission without being distracted by concerns about the safety, security, and well being of their families or themselves. A supportive environment strategy embraces military culture encouraging risk recognition, help-seeking behavior, focused risk reduction and health hazard countermeasures, and delivery systems with an array of services supporting individual, family and community needs.

FORCE HEALTH PROTECTION

CHAPTER 3 ★ HEALTHY AND FIT FORCE

A SUPPORTIVE ENVIRONMENT ALSO INCLUDES occupational and environmental health maintenance. This requires identification and control of physical, chemical, and biological risk factors to minimize exposure to hazards, maintaining health and safety at work sites and in the general environment. A key primary prevention component common to both is the ability to objectively monitor worksite and general environmental risks and exposures. Exposure-monitoring results provide an objective basis for preventive medicine and clinical medicine physicians and nurses to perform routine medical surveillance for early discovery of adverse effects of exposure.

CREATING A SUPPORTIVE, SAFE, AND HEALTHY ENVIRONMENT, and supporting commanders with operationally significant exposure risk assessments requires:

- developing reliable community climate assessment survey tools and integrating support services and appropriate training to address survey findings;
- promoting physical and emotional health at home, in the community, and in the workplace;
- training the forces to recognize, evaluate, and control exposure to hazards. This requires emphasis on total hazard exposure monitoring and development of scientific technologies for measuring and recording exposures in conjunction with training of individuals to assess and respond to potential risks;
- promoting constant attention to safe practices and hazard reduction at all stages of training and operations;
- continuing to work with the developers of military materiel to identify and control the health hazards that can be associated with the robust, powerful, high-technology weapons and equipment of the next century; and
- educating Reserve Component Service member employers about the value of these individuals to national security goals and the need to support them in their military duty.

CONCLUSION

ESTABLISHING THE FIRST PILLAR OF FHP, the healthy and fit force, takes deliberate and concerted effort by Service members, commanders, and the healthcare team. The human component of operational forces must maintain a constant high state of health readiness. To achieve and maintain this high level of readiness requires a strong and healthy mind and body in a supportive environment, as well as the ability to continuously assess, improve, and report the medical readiness of forces. Promoting wellness and preventing illness and injury are key components of a healthy and fit force. FHP provides a life-cycle health support system upon entry into the Service and supports the Service member and family throughout their career.



Prevention of BI and DNBI casualties require the full commitment of individual Service members and unit commanders.



chapter 4

Prevention and Protection

OVERVIEW

THE SECOND PILLAR OF FORCE HEALTH PROTECTION is the prevention of injury and illness and protection of the force from natural, environmental, occupational, operational, industrial, behavioral, and nuclear-biological-chemical warfare health threats.

CASUALTY PREVENTION, a force-multiplying tool for commanders, is essential throughout the health life cycle of Service members. Before deployment, good health requires control of environmental and occupational threats to prevent injury and illness and help maintain a healthy and fit force. During deployment, the enemy and the “total” environment both generate threats to the forces. The enemy threat produces most **combat-related** casualties commonly called **battle injuries (BI)**, while the total environment threat produces DNBI casualties. DNBIs historically have accounted for the preponderance of all casualties and three-quarters or more of battlefield hospital admissions (69 percent in Vietnam, over 95 percent in World War II and Somalia).

PREVENTION OF BI AND DNBI CASUALTIES require the full commitment of individual Service members and unit commanders. Medical unit support for preventing DNBIs will include conducting health threat assessments, recommending appropriate countermeasures to address potential threats, and health surveillance to continually assess the threat and the effectiveness of countermeasures.

PREVENTION of DNBI casualties historically has focused on reducing or eliminating the risk of food, water, waste, and insect-borne illnesses, and heat and cold injuries during deployments. However, OPERATION DESERT SHIELD/DESERT STORM demonstrated the need to place a much greater emphasis on environmental, industrial and occupational exposures, combat stress, and non-battle injuries. Furthermore, recent events stress the importance of providing effective medical preparation and response to potential chemical and biological attacks, both at home and abroad.

THE JOINT FORCE MUST BE CAPABLE of conducting and sustaining operations across the global theater of war while ensuring the security of the homeland. Personnel must be protected wherever they are located, from point of origin, during transit, while in a theater of operations, and during redeployment. Force Health Protection is a key component of full dimensional protection, which exists when the joint force can accomplish its mission with an acceptable degree of risk in any environment. Early warning, enhanced intelligence collection and assessments, offensive countermeasures, individual and collective protection, and threat avoidance are all essential to full dimensional protection.

CASUALTY PREVENTION IS A CONTINUOUS LIFE-CYCLE PROCESS conducted during pre-deployment, deployment, and post-deployment phases. Comprehensive, continuous military health surveillance, including collection, analysis, and recording of objectively determined exposure levels, is necessary to counter these non-enemy threats, which can dramatically affect the health of military personnel. Adherence to several fundamental tenets of casualty prevention will lower DNBI rates and sustain the health and fitness of the fighting force. These tenets and the medical capabilities required for successful implementation are described in the following sections.





TENETS OF PREVENTION AND PROTECTION

Control of Disease and Non-Battle Injury is a Command Responsibility

VIRTUALLY ALL DNBI PREVENTION is accomplished through the actions of individual Service members and commanders to control or eliminate hazards. Medical personnel assist commanders and individuals to identify potential health threats, develop courses of action, and determine the risks and countermeasures. Commanders must decide how they will use the advice as part of their overall operational risk management assessment, and ensure that their units execute required actions.

TO ENHANCE DNBI PREVENTION, the Services must develop and employ realistic training scenarios leading to DNBI casualties if preventive measures are ignored or violated.

PREVENTIVE MEDICINE competencies and training must elicit continuous command interest. Combatant commanders must ensure preventive medicine personnel, supplies and equipment are maintained to support prevention responsibilities, and they must assure that their Service members are appropriately trained in preventive measures. Additionally, they should maximize the use of joint training to exploit existing tri-service environmental health, occupational medicine, and preventive medicine expertise.

PREVENTIVE MEDICINE TRAINING must become integral to all predeployment preparations. Wide dissemination of preventive medicine knowledge gained during deployment is invaluable in sustaining the health of the force and in preparing for future deployments. Creation of a universally accessible repository of DNBI data enables access to valuable lessons learned, which must be considered for future deployments. These data should be used to develop models and scenarios for various deployments to assess health threats and establish prevention and protective measures.

Identifying Health Threats

JUST AS COMMANDERS NEED A DETAILED UNDERSTANDING of the enemy threat, they also need a comprehensive understanding of the health threat faced by their personnel. The health threat varies substantially from location to location and with the nature of the mission. Health threats include a wide range of naturally occurring infectious organisms, potential exposure to toxic environmental and occupational contaminants, heat and cold injuries, other types of injuries, chemical and biowarfare agents, and stressors of various kinds.

PRIOR TO AND DURING DEPLOYMENTS, medical personnel collect data on endemic diseases; disease-carrying insects; chemical, biological, and radiological contaminants in water, air, and soil; climatological conditions; enemy weapon system capabilities; and many other potential hazards in order to characterize the health threat.

DATA COLLECTED ON KEY HEALTH THREATS must be rapidly synthesized to provide a complete operational picture of potential health threats and DNBI experience on a near real-time basis. Technological

CHAPTER 4 ★ PREVENTION AND PROTECTION

innovation will drive the ability to provide enhanced detection and reporting capability for environmental contaminants, diseases, pathogens, disease vectors, and chemical and/or biological agents far forward in order to enhance decision superiority.

Implementing Countermeasures

ONCE A COMPREHENSIVE ASSESSMENT of the health threat has been developed, medical personnel recommend appropriate countermeasures to avoid or mitigate the threat. These countermeasures include avoiding certain areas of concern when selecting bed-down sites, if possible; providing personnel with appropriate vaccinations and chemoprophylaxis; using insect repellents and barriers; controlling insects that can transmit diseases; using appropriate personal protective equipment; emphasizing safety and injury avoidance techniques; implementing combat stress controls; and assuring basic hygiene and sanitation. Commanders assess the health threats and recommended countermeasures as part of their operational risk management process and make decisions on how to counter the health threat in consultation with their command surgeons.

Risk Communication

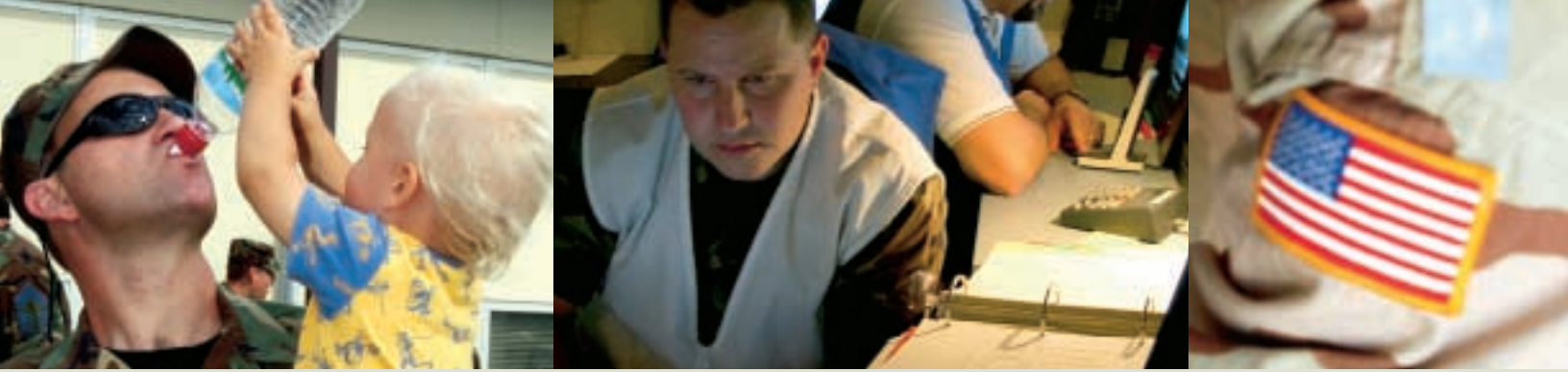
RISK COMMUNICATION AND COMMAND EMPHASIS are essential to casualty prevention. The medical staff must ensure that the range of preventable threats is prioritized and commanders are made aware of the risks that could affect operations. All health risks and appropriate countermeasures must be clearly and appropriately communicated to Service members, as well as to the chain of command. Rumors must be quickly addressed with factual information effectively delivered to those involved. Commanders should receive feedback throughout the deployment cycle from preventive medicine staff regarding preventable threats and countermeasures.

HEALTHCARE PERSONNEL should be given all available information to enable them to deliver high-quality care to individuals during deployment and upon their return from theater. It is essential that the Department of Defense, the Department of Veterans Affairs, and civilian healthcare providers be alerted to possible diseases and hazardous exposures that may have affected deployed personnel. Candid information concerning actual and probable DNBIs and health hazards resulting from a deployment should be provided to all appropriate individuals.

Joint Health Surveillance

Health surveillance is the routine, standardized tracking of disease and injury incidence in meaningful rates, as well as health hazards, with initial analyses and response conducted at the unit level, and data-driven corrective actions taken at all levels. Military health surveillance requires standardization of methods, rates, data, and communication across Services. Effective surveillance prevents casualties through early detection and warning, and relies on collection and recording of healthcare, personnel, environmental, and operations





data. Good analysis requires data to be accurate and linked to appropriate information systems to enable integration of those data. Data collection must begin at the lowest echelon possible and be supported by appropriate automation infrastructure.

SPECIFIC CONSIDERATIONS FOR PREVENTION AND PROTECTION

Prevention of Infectious Diseases

INFECTIOUS DISEASE THREATS, based upon current medical intelligence, must be identified during the predeployment period. Furthermore, enhanced DNBI predictive models based on historical data, type of deployment, location of deployment, duration of deployment, and level of support are highly recommended. Diseases such as acute respiratory infection and diarrheal diseases are of great concern, particularly when many troops are brought together in staging areas. It is important to monitor health to gauge the predeployment health status of units and to identify preexisting (baseline) health characteristics of individuals. **Unit health status is a measure of unit readiness.** The identification of preexisting health characteristics ensures that individuals who should be classified as non-deployable are identified before deployment. Infectious diseases should be prioritized and monitored according to the threat each poses to the fighting force and the achievement of the force's mission. Countermeasures, including vaccines and chemoprophylaxis, when appropriate, should be employed according to this established risk management process.

DURING DEPLOYMENT, vigilant monitoring of DNBI rates (e.g., sick calls, outpatient treatment, reportable diseases, and hospital admissions) in relation to the numbers of disease vectors and existing local pathogens is required for effective planning and refinement of appropriate countermeasures to infectious disease. Throughout the deployment cycle, potential and emerging infectious diseases need to be addressed in a timely manner. Appropriate infectious disease countermeasures must be meticulously implemented, particularly in the following areas:

- Food sanitation
- Water quality
- Waste disposal
- Immunizations and chemoprophylaxis
- Personal protection measures (e.g., hand washing, insect repellents, and uniform impregnation with preventive compounds, etc.).

INFECTIOUS DISEASE resulting from deployment may not be immediately apparent upon an individual's return, and previously deployed individuals might develop chronic conditions after return. Returning Service members require debriefings, self-assessments, and clinical evaluations to screen for infectious diseases potentially acquired during a deployment. Preventive medicine professionals should debrief all individuals potentially exposed to a significant infectious disease.

FORCE HEALTH PROTECTION

CHAPTER 4 ★ PREVENTION AND PROTECTION

SERVICE MEMBERS RETURNING FROM THEATER must participate in medical debriefings to ensure they are aware of the infectious disease threats to which they may have been exposed, what specific countermeasures they should continue, and when and where they should access medical care if they develop illness in the post deployment phase.

Protection Against Environmental and Occupational Injury and Illness

COLLECTION AND ANALYSIS of objectively measured levels of total chemical, biological, and physical exposures are required to determine the risk of the total exposure load. Environmental and occupational exposure testing and monitoring is a continuous process throughout the deployment life cycle. While these threats may be more easily controlled in garrison, they must nevertheless be addressed to identify preexisting (baseline) exposure characteristics of individuals and ensure that the force remains healthy and fit. Also, units that can identify and control environmental and occupational exposures in pre-deployment situations can carry that knowledge with them during deployments. Analysis of the operational environment is the key to determining environmental hazards.

ASSESSMENT PROGRAMS should concurrently employ sound environmental and molecular epidemiological practices. For example, the collection of baseline blood or urine specimens from individuals deployed to high-risk areas may be appropriate. Monitoring different types of health threats should be prioritized according to likely or particularly hazardous exposures. Occupational health specialists must identify potential exposures to toxic agents during predeployment phases and identify and execute all appropriate interventions. Use of intelligence information is an important aspect of those assessments.

ENVIRONMENTAL THREATS are likely to vary considerably according to each deployment. Continuous reassessment of environmental threats helps ensure that commanders understand current risks and applicable countermeasures. Assessment methods require constant refinement and improvement to diagnose threats accurately and develop preventive interventions. To assess any threat accurately, vigilant objective documentation of all toxic agents with linkage to health outcome data is required, for both real-time and retrospective analyses. Immediate analysis and feedback are essential to rapid threat intervention. Joint epidemiological activities require use of standardized data collection, with centralized analysis and storage.

BIOMONITORING, as a tool to assess deployment exposures, is a growing field that may be of value to commanders in the future. While applications are limited today, new tools may become available to assess exposures and health effects possibly related to toxins present during deployment. In many circumstances it is essential that post-exposure biomonitoring be compared with a pre-exposure baseline. Exposure to environmental toxins may have short- or long-term health effects. Long-term medical surveillance must be conducted with follow-up care provided to individuals experiencing chronic conditions potentially related to environmental exposures.





CASUALTY PREVENTION also requires increased emphasis on the health and safety of aircrews, weapons system crews, and other Service members whose peak performance is critical to future military success. Preventable losses of combat and support personnel will depend on the ability of combatant commanders to ensure that occupational safety and health measures are rigorously adhered to. While occupational safety is a commander's responsibility, the medical community plays a crucial role in reducing preventable losses by developing mishap prevention measures, life support R&D, techniques and principles of adaptation to climate, altitude, and other environmental stresses, and materiel or doctrinal development to support operator and crew protection and performance.

Prevention of Non-Battle Injuries

FORCE HEALTH PROTECTION CALLS FOR THE IDENTIFICATION of all hazards likely to impede the attainment of mission objectives or result in hospitalization or recurrent injury. This identification should use all available sources of health intelligence to determine high-risk threats. Personnel at high risk of suffering NBIs include individuals:

- with preexisting conditions (such as illnesses, injury profiles, past injuries, inadequate physical conditioning);
- participating in high-risk activities (e.g., sports with a high rate of physical contact); or
- participating in unfamiliar activities (e.g., manual material handling in preparation for deployment).

OTHER RECOGNIZED HAZARDS to personnel health include:

- motor vehicle accidents,
- heat and cold injuries,
- fatigue and stress illness, and
- physical over-training.

BOTH COMMON AND DEPLOYMENT-SPECIFIC THREATS can be addressed by training provided before and during deployment, adequate lighting and work conditions for assigned tasks, proper clothing and equipment, attention to the principles of ergonomics, and amelioration of fatigue or stress experienced by personnel.

PHYSICAL OVER-TRAINING, lack of physical fitness, and participation in sports are major contributors to NBI. To minimize injuries resulting from over-training or a lack of physical fitness, a baseline fitness program for *gradual* conditioning must be implemented. Sports that involve a high risk of injury should be limited or their threat otherwise minimized through use of protective equipment. Occupational hazards are another major cause of injury. These hazards can be minimized through the use of ergonomically appropriate lifting and packing techniques, enforcement of work-rest cycles, and training to avoid injuries using ergonomic principles.

FORCE HEALTH PROTECTION

CHAPTER 4 ★ PREVENTION AND PROTECTION

PREDICTION OF PROBABLE NBIs requires historical clinical data on deployed personnel. For this reason, data from a deploying person's initial clinical evaluation must be made available to preventive medicine teams upon deployment. These evaluations can provide valuable physiological data, which are useful in future epidemiological evaluations. Historical NBI data should be used to develop casualty prevention simulation models for operational training exercises.

NBIs CAN SIGNIFICANTLY IMPAIR the achievement of mission objectives. To prevent this, a risk management plan must emphasize general safety practices aimed at greatly reducing NBIs during the deployment cycle.

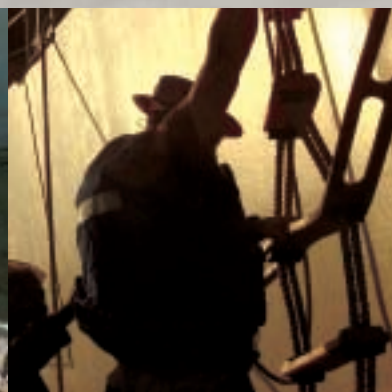
Prevention of Mental Health Casualties

MENTAL HEALTH PROBLEMS and appropriate medical intervention throughout all phases of deployment are critical to mission success. Individuals identified at high risk for developing mental health problems are often associated with dual-Service member families, use of psychoactive medications, frequent disciplinary problems, and domestic problems. Units at high risk include those anticipating a highly intense combat mission, a chemical, biological or nuclear warfare threat; a long deployment; and units that have recently had a change in command. Several factors may signal a developing mental health problem. Four key indicators are increased use of health services, use of medication, disciplinary problems, and increased absences.

MENTAL HEALTH INTERVENTION may be critical to mission success. A command climate that encourages behavioral or mental health support and counseling is essential to unit cohesiveness and mission readiness. Preventive interventions for individuals and units include:

- voluntary and command-referred counseling,
- family support services,
- support from family and friends through available media,
- activation of an existing spouse support network,
- personnel input into rest and relaxation (R&R) policies and schedules, and
- critical incident stress debriefings.

HISTORICALLY, post deployment mental health interventions for personnel returning from theater have not been adequately emphasized. Readjustment problems have been intensified by rapid transport and redeployment which do not provide adequate transition time for adjustment between combat and reintegration with home and family environments. To change this, the stigma of mental health interventions must be minimized. Educational briefings aimed at mitigating the stress and anxiety that often follow a unit's return from theater are suggested. Those briefings may address personal finances, combat stress prevention, repatriation issues, general mental health issues (e.g., stress indicators and stress reduction), R&R suggestions, and positive information regarding the accomplishment of mission objectives.





Prevention of Chemical, Biological, Radiological, and Nuclear Casualties

FOR SOME TIME, *chemical, biological, radiological, nuclear, and high explosives (CBRNE)* weapons have posed a threat to US military forces. In this era of asymmetric and unconventional warfare, the US homeland has become a battle space. These weapons are relatively inexpensive, effective even with primitive delivery systems, and can terrorize out of proportion to the actual impact of the attack. The **Military Health System (MHS)** must support CBRNE defense. This “defense in depth” includes an integrated system to deter, prevent, mitigate damage, and rapidly respond to an attack. Comprehensive CBRNE defense begins with excellent intelligence, police, and political actions to prevent the development and deployment of CBRNE weapons and terrorist threats, and to control their spread once used. In addition, a defensive shield must be continuously provided which includes advanced environmental sensing capabilities and full protective equipment. MHS components of this defensive shield include providing surveillance for early detection of an attack; using immunizations and chemoprophylaxis to reduce vulnerability to bioterrorism, radiological, nuclear and chemical threats, supervising or performing chemical decontamination of patients; assessing health threats in the environment, and providing trained healthcare personnel, risk communication, and expert consultation. Surveillance and detection measures must be integrated with personal and collective protection. The US goal is to increasingly move from detect-to-treat to a detect-to-warn capability.

Prevention of Battle Injuries

ALTHOUGH DISEASE AND NON-BATTLE INJURIES have historically caused most hospital admissions from the battlefield or other deployed operational settings, battle injuries have led in deaths and remain very significant because of their severity. Military medicine provides support for prevention of BI casualties by anticipating and preparing to counter the adverse medical effects of the enemy’s operational threats. Typical support includes research on strategies to protect against the health risks of conventional threats (e.g., the best body armor, eye protection, etc.), emerging threats (e.g., lasers, microwaves, etc.) and medical countermeasures against chemical, biological, radiological or nuclear weapons effects. In addition, military medicine contributes to BI defense by maintaining a healthy, protected, productive force capable of high performances under adverse conditions. Issues such as fatigue and alertness; training and physical fitness; mental health and morale; and motivation are all influenced and supported by FHP activities.

KEY CASUALTY PREVENTION CAPABILITIES

THE US MILITARY IS TRANSITIONING to a capabilities-based force centered on transformed forces and capabilities provided by the Services. The joint force develops adaptive capabilities focused primarily on joint warfighting applicable across the entire range of military operations. The danger and uncertainty of the strategic environment necessitate the development of a broad array of capabilities built upon existing and emerging air, land, maritime, information and space strengths. FHP modules must be interchangeable and interoperable, able to support highly mobile and dispersed joint forces rapidly projected anywhere on the globe.

FORCE HEALTH PROTECTION

CHAPTER 4 ★ PREVENTION AND PROTECTION

CASUALTY PREVENTION capabilities must be able use predictive and anticipatory intelligence, including space-based technology, to provide a detailed knowledge of the battle space environment and health threats prior to deployment. Medical personnel must be able to effectively communicate risks, recommend appropriate countermeasures, and provide commanders with information necessary for conducting operational risk management assessments and tools for risk communication. Once personnel are deployed, casualty prevention capabilities must be able to collect and rapidly assess essential information on potential environmental and occupational exposures and stressors. Handheld capabilities for presumptive testing must be backed up by integrated deployed laboratory capabilities that can provide timely confirmation in support of the commander's decision cycle.

PREVENTIVE MEDICINE TEAMS must be highly deployable, light, rugged, and have user-friendly sampling and analysis equipment to maximize their ability to do immediate exposure assessments. Preventive medicine units require three kinds of equipment: automated information support systems, equipment designed for rapid detection and on-the-spot evaluation of environmental and biological threats, and protective devices. Access to essential deployable computer systems with environmental exposure data, unit locations, and movement information is critical. FHP modules must not only be interchangeable and interoperable, but also designed for immediate synchronization in interagency and multinational environments. Joint forces must have embedded technologies, common doctrine, and adaptive organizational structures to provide synergistic joint support to warfighters.

WE MUST CONTINUE to improve individual protection to provide immunity to natural and biowarfare threats of greatest concern. Advances in technology must promote development of vaccines that are protective against multiple disease agents and safer than current vaccines. Protection against industrial chemicals, chemical, and radiological agents must also be enhanced through development of better chemoprophylaxis and personal protective equipment, as well as technology for assessing areas of contamination and avoiding them whenever possible. Data on patient encounters must be captured immediately in electronic format and made available to provide the earliest possible warning for disease outbreaks and potential chemical, biological, radiological attacks.

CONCLUSION

THE SECOND PILLAR, Prevention and Protection, protects the healthy and fit Service member from natural, environmental, occupational, industrial, and operational threats. DNBI historically account for the majority of battlefield hospital admissions. DNBI prevention is accomplished through actions by individual Service members and commanders. Medical personnel identify potential threats, develop courses of action, and advise commanders of the risks and threat countermeasures. A productive casualty prevention program is an operational force multiplier.



FHP defines first response as initial essential stabilizing medical care rendered to ill or injured casualties at the point of initial injury or illness.



chapter

5

Medical and Rehabilitative Care

OVERVIEW

PROVISION OF EXCELLENT MEDICAL AND REHABILITATIVE CARE to the sick and injured anywhere in the world requires operational strategies that include a limited forward presence with a lighter platform that is capable, flexible, and mobile. In support of these strategies, the third pillar of FHP, Medical and Rehabilitative Care, supports the warfighting commanders through essential care in theater and rapid evacuation to definitive care without sacrificing quality of care. FHP integrates new and emerging technologies with operational health service support and more flexible casualty management to provide exceptional healthcare throughout all phases of deployment. Casualty management includes seamless clinical information flow ahead of and with the patient, designed to amplify far-forward care as well as serving as a real-time and preserved medical record for care-givers at higher, more definitive levels of care.

MEDICAL AND REHABILITATIVE CARE prior to evacuation to *continental United States (CONUS)* includes the following capabilities: first response, **forward resuscitation surgery (FRS)**, theater hospitalization, and en route care. Each is discussed in a section below.

FIRST RESPONSE

THE MOST CRITICAL TIME for treatment of severe battlefield trauma is within the first few minutes after injury. FHP defines first response as **initial essential stabilizing medical care** rendered to ill or injured casualties at the point of initial injury or illness. It involves several tiers of “first responders,” which vary among the Services. Collectively, these include self-aid, combat lifesaver, combat medic, field corpsman, independent duty corpsman, and perhaps physician assistant, and physician. Highly proficient first responders are challenged to render aid rapidly to those who will benefit the most among highly dispersed and mobile forces in an austere, violent and potentially chemically, biologically, or radiologically contaminated environment.

THE FIRST RESPONDER is envisioned as the **primary** health-care provider in frontline combat situations. The mission of first responders continues to be threefold. Their primary responsibility is the provision of **immediate clinical care and stabilization** in preparation for casualty evacuation to the next level of care.

IN ADDITION TO TREATING COMBAT INJURIES, they treat Service members for common acute **minor illnesses**.

Finally, a strong understanding of, and commitment to, **preventive measures**, including field sanitation, preventive medicine, and combat and operational stress control, enables:

- first responders to monitor implementation of individual and unit prevention responsibilities,
- advice to commanders about required prevention techniques, and
- identification of preventable health threats using, for example, new techniques for detecting chemical, biological, radiological, and environmental threats.





FORWARD RESUSCITATIVE SURGERY (FRS)

FRS HAS ITS CONCEPTUAL ROOTS in innovative programs implemented by surgeons during World War II. Through the incorporation of new, advanced technologies and more sophisticated surgical practices, FRS has been continuously improved. Today's forward surgical capabilities make intense use of technology and surgical practice to increase initial surgical efficiency and reduce unnecessary loss of life. Intrinsicly linked to the FRS concepts are requirements for logistic and blood product support, including varying resupply, storage, and distribution capabilities.

THE GOAL OF FRS is to achieve the most efficient use of life-and-limb-saving surgical procedures to attain clinical stability. Such surgical capability must be available to the trauma patient who might also be a **chemical, biological, radiological, nuclear and high yield explosives (CBRNE)** casualty. The stabilized combat patient could then be evacuated to a definitive surgical facility removed from the area of conflict. FRS focuses on producing a limited window of clinical stability for this type of casualty to use a comprehensive medical evacuation system to reduce lethality of battlefield injuries. It seeks to exploit the most advanced surgical technologies in a staged continuum of care to achieve this goal. Properly designed, equipped, and employed, FRS can provide a decreased forward medical footprint, while enhancing the capability to sustain life and limb.

THEATER HOSPITALIZATION

EVOLVING NATIONAL SECURITY OBJECTIVES and rapidly emerging technological opportunities are reshaping US military forces and the strategies designed to meet those objectives. The fighting forces are expected to organize into smaller, less hierarchical, units that operate at greater distances from the enemy and employ technological innovations to achieve dominance through agility, precision, and potency. Providing in-theater medical support to these dispersed and highly mobile forces has challenged the military medical community to reengineer the delivery of casualty care.

THEATER HOSPITALS WITH MODULAR CONFIGURATIONS are used to provide in-theater support. Theater hospitals deploy as modules that provide incremental, increasingly less austere levels of medical capability as forces arrive in theater. Theater hospitals must be fully linked with evacuation, medical reporting, and medical situational awareness systems to operate as integral components of a continuum of care extending from the first responder level to definitive care sites in the CONUS.

FHP's STRATEGY is to provide health services support consistent with the battlefield situations in which the 21st century warfighters operate. This concept envisions a highly flexible and tailorable theater hospital capable of providing essential care to, and preparation of, patients being evacuated out of theater for definitive care. The theater hospital will be incrementally transportable with limited mobility and positioned in theater near a transportation hub for easy access to strategic evacuation.

THE THEATER HOSPITAL must be composed of functional elements capable of independent operation: a small initial response element capable of providing forward crisis-oriented care, the core theater hospital, and

CHAPTER 5 ★ MEDICAL AND REHABILITATIVE CARE

a mobile breakout element capable of enhanced stand-alone hospitalization for a short duration. This configurable theater hospital concept gives a single hospital the ability to support any number of different situations with various operational modalities and platforms while reducing the medical footprint.

THE BATTLEFIELDS OF THE 21ST CENTURY may include the CBRNE threat. The nature of such a threat is polymorphic. While some (chemical, nuclear, high explosive) will not be a challenge to detect, the bio-warfare threat and radiological exposure may be more insidious in manifestation. As a defensive weapon system, theater medical capability must include the ability to detect, warn and treat forces so exposed. Rapid, definitive diagnosis is extremely important and necessary for both patient care and avoiding the spread of contamination. In some circumstances it may be necessary to quickly augment theater hospital capabilities and capacities if a decision is made to not evacuate certain categories of patients as a means of controlling spread of contamination.

EN ROUTE CARE

EN ROUTE CARE INVOLVES the medical treatment of injured and ill Service members during evacuation between levels of care. New technology enables a dramatic expansion of en route care in FHP doctrine. Achieving the levels of care needed to support Joint Vision requires significant enhancement in medical equipment, clinical capability using transportation platforms of opportunity, patient and medical equipment [**patient movement items (PMI)**] program management and regulating systems, and clinical and operational training. FHP has established goals for delivering en route care to ensure that patients receive uninterrupted care from point of injury or initial illness until the patient arrives at a definitive care facility.

HISTORICALLY, joint medical doctrine dictated definitive and convalescent care in theater to maximize a soldier's ability to return to duty with evacuation as the last resort. In contrast, current deployable medical forces provide essential care within the theater of operations in preparation for early evacuation utilizing a clinically capable joint medical evacuation system. En route care teams will use state-of-the-art, lightweight, critical-care equipment to evacuate stabilized patients from a theater. The logistic and clinical requirements to support these stabilized (not necessarily stable) patients demand expanded medical resources (PMI program) on standardized evacuation platforms. En route care teams must be flexible and able to use a variety of transportation modes to safely transport stabilized trauma patients who might have also been exposed to CBRNE weapons. In some cases, their recuperative ability may be lessened making it more difficult to stabilize them.

FIRST RESPONDER, First Resuscitative Surgery and Theater Hospitalization medical personnel must ensure that patients are properly prepared for evacuation, anticipating and addressing problems that may develop during evacuation, to the fullest extent that clinical capabilities, patient load, and operational scenarios allow. En route care teams must be able to sustain the level of care initiated prior to evacuation without interruption and to prevent patients' conditions from deteriorating during evacuation.





CONCLUSION

FHP PROVIDES A MAJOR DOCTRINAL SHIFT in the care and management of casualties. FHP focuses on delivery of essential care in theater and evacuation to definitive care outside the theater of operations as soon as practicable. The theater hospital provides another doctrinal shift. The theater hospital is transportable but not designed to deploy in proximity of the fighting forces. The hospital should be deployed to a location near a major transportation hub to allow easy access to evacuation assets. First responders with the warfighters must provide initial essential care; and FRS, in close proximity to the fighting forces, provides life, limb, and eyesight saving surgical procedures to attain clinical stability prior to evacuation to definitive care. The clinically capable joint evacuation system must support movement of casualties from point of injury or illness to essential stabilizing care and early evacuation to definitive care outside the theater of operations.



FHP is the broadest reformulation of military medical needs in more than 50 years.



chapter 6

FHP Infrastructure and Support

OVERVIEW

The goal of FHP is full dimensional protection of the force, achieved through a physically and mentally fit force trained for modern combat, protected from disease and injury, and supported by mobile, technologically advanced medical teams. FHP has re-engineered the military's approach to combat medicine – expanding beyond acute care services and toward proactive, preventive services that improve the health of Service members and identify and address medical threats before casualties occur. FHP incorporates highly capable far-forward casualty care; a smaller, more mobile, and flexible medical presence with a reduced bed capacity; and expedient preparation and evacuation of patients from the theater. These capabilities rest on several supporting functions that, taken together, form the infrastructure of operational military medicine. The functions are:

- training,
- logistics,
- information management and/or information technology supporting comprehensive health care and surveillance, and
- R&D and technology insertion.

WITH AN EMPHASIS ON PREVENTION, reliance on new technologies, and a shift away from in-theater hospitalization, FHP offers a substantially different approach to military health. In fact, FHP is the broadest reformulation of military medical needs in more than 50 years. Not surprisingly, then, the FHP program requires correspondingly broad changes in infrastructure.

TRAINING

MILITARY MEDICAL READINESS is founded upon training military health-care providers in the art of operational military medicine. As FHP develops, medical readiness becomes much more than the readiness of medical personnel. It includes fitness, preventive medicine, safety, and self-care preventive responsibilities of individual Service members and commanders. The training challenge spans the depth and breadth of several fields of knowledge. It includes an understanding of how home-station and combat environments affect Service members health and the related preventive and clinical interventions; hazard exposures and regional diseases; baseline clinical competence, including mass casualty management; clinical knowledge and skills specific to combat-unique injuries and illness; and familiarity with platform-specific roles, supplies, and equipment.

TRAINING NEEDED TO SUPPORT FHP REQUIRES A SHIFT IN FOCUS to health and wellness, protection from hazards, and innovative methods of health care delivery. Innovative methods of training and maintaining combat-related skills also must be developed. Accomplishment of joint medical training





standards and combat trauma skills requires partnerships with medical trauma centers from both civilian and federal healthcare environments. Emphasis on common doctrine and joint training underpinning the pillars of FHP provides the foundation for military operations and medical support.

Readiness training in support of FHP must include the following:

- Required, regularly scheduled and command emphasized hands-on medical training for medical and aeromedical personnel that is realistic, periodic, and focuses on the circumstances and the specific platform;
- Military-civilian medical training partnership initiatives with combat-specific curriculum and experience that focus on combat-unique injuries and field clinical approaches, including methods to address the psychological toll caused by combat stress and dealing with death and serious injury;
- FHP training for Service members and commanders that emphasizes a healthy and fit force and prevention and protection in institutional, hands-on, and distributed learning modalities for all Service schools;
- Maximum use of virtual reality, CD-ROM, and interactive computer-based training;
- Medical scenarios in military exercises to acquaint commanders with the risks associated with medical threats;
- Training in **information management/information technology (IM/IT)** systems such as the electronic medical record and epidemiological surveillance tools, and in analytic techniques for surveillance data; and
- Training in natural, environmental, occupational, industrial, and operational hazards that may be encountered in military settings, and in their mitigation using scientific principles, engineering, and operational risk management.

LOGISTICS

Joint Medical Logistics (JML) concepts and initiatives provide a 21st century platform for worldwide medical logistics support. JML concepts lead to a medical logistics system characterized by:

- application of best commercial practices;
- increasingly sophisticated information systems and electronic commerce processes, real-time demand analysis, modeling, and decision support;
- total asset visibility; and
- truly joint logistics organizations.

JML SEEKS TO INTEGRATE the tactical, operational, and strategic levels so requirements, plans, and battle-field information are seamless throughout the combat service support structure. Initiatives are designed to eliminate Service-specific overlaps and create an integrated, joint logistics support process. Joint clinical review and approval of medical assets, as is available for the Joint Deployment Formulary, will enhance

CHAPTER 6 ★ FHP INFRASTRUCTURE AND SUPPORT

performance. The more modular, highly tailorable logistics units accomplish their medical commodity management mission using joint staffing. New information technology systems are critical in performing joint functions on a global scale.

THE ADOPTION OF LEADING COMMERCIAL BUSINESS PRACTICES by the DOD medical logistics community represents a significant shift in how it operates. Logisticians once managed large inventories at multiple levels within the military supply system. By focusing on real-time distribution and supply chain management systems, medical logisticians are better able to achieve faster and more efficient responses to FHP needs. This concept of focused logistics leverages information, logistics, and transportation technologies to provide a rapid response to all emerging military needs. These distribution systems are geared to move required quantities of materials rapidly from manufacturers to end users with a minimum of stops along the way. Additionally, enhancements in better tracking systems tailoring of supply packages, and advances in miniaturization of medical equipment are meeting changing military requirements.

TO FULLY IMPLEMENT THIS NEW FOCUS, several supporting technologies must come into play. Real-time global communications systems, communicating interactively with all participants in the supply chain, must be in place and available for global deployment. Medical logistics organizations require a vertically integrated data system linking long-range goals and objectives with day-to-day processes.

JML TAKES THE INFORMATION INFRASTRUCTURE of the medical logistics community and provides a template for modernization. By providing a process-aligned template for system modernization, the program ensures the comprehensive upgrading needed to synchronize readiness needs with medical logistics business realities. These information systems are built on private-sector architectures and make full use of electronic commerce capabilities rather than DOD-proprietary data communication formats. Systems must be based on joint requirements, common operating environment compliance, and full interoperability between the tactical, operational, and strategic levels and the commercial sector.

DISTRIBUTION AND SUPPLY CHAIN MANAGEMENT TECHNOLOGY supporting joint medical operations is critical. Medical logisticians must not operate their own distribution networks, but be integrated with other military and civilian distribution systems to achieve maximum responsiveness. Those networks must provide constant, real-time visibility of en route assets and permit on-the-fly adjustment or redirection to reflect changing operational needs. Reliance on commercial sources must not be limited to CONUS-based firms, but must be extended to include the use of foreign sources of supply and support services. By definition, foreign sources of support also include coalition or multinational partners, who may provide valuable adjuncts to US force health protection capacity.

OTHER LOGISTICS SUPPORT, such as maintenance and contracting services, also will rely on a hybrid of military and commercial capabilities. The dominant concept for maintenance and sustainment of medical forces in theater is the same as that for wounded Service members – minimal equipment repair capability in theater, supported by robust equipment evacuation and replacement. Modularity, embedded diagnostics, and





enhanced reliability works to support this concept and improve the operational readiness of the medical force. Continued development of new or modified medical practices and protocols, coupled with right-sized inventories and just-in-time supply practices, significantly reduces the medical logistics “tail.” Further, the ability to minimize life support requirements-generators, environmental control units, and power distribution systems-reduces the need for fossil fuels through minimizing power requirements and use of alternative power sources. These initiatives contribute greatly to reduction of the medical footprint.

ALTHOUGH GENERALLY REGARDED AS A SUBSET of the medical logistics system, the military continues to operate its own medical blood products management system, consisting of collection, storage, and distribution capabilities. The blood management system is integrally linked with the CONUS-based blood system as well as potential overseas sources such as deployed military populations and Red Cross assets.

ORGANIZATIONAL AND CULTURAL CHANGE IS OCCURRING AS WELL. All medical logistics support should be fully integrated with elements of all four Services working together and joined in a single logistics support structure. Flexible responses to unfolding operational scenarios means that operation of the medical logistics support organization rests with joint commanders rather than any one parent Service, and it will also mean that joint support should be available from the first to the last day of a military operation.

TWO OVERARCHING PRINCIPLES EXIST within the complete reengineering of the logistics readiness system: first is to increase joint medical logistics interoperability at all levels, and second is the need to create an integrated data environment to link those joint activities in peace and war.

INFORMATION MANAGEMENT/INFORMATION TECHNOLOGY

THE US MILITARY IS CONFRONTED with a fast-paced, technology-enhanced environment with requirements to rapidly integrate and transform data into information and knowledge. Advancements in technology have expanded the scope and capabilities of military forces, and IM/IT have become key elements for maintaining an effective joint theater of operations. To support this fast-paced battle space, the joint medical community must have interoperable communications and the ability to share large amounts of information.

IM/IT SHOULD NOT BE VIEWED AS A STAND-ALONE SYSTEM but rather as the glue to bond all FHP components by providing needed information. To support the enhanced theater of operations, FHP must push the envelope of medical information and technologies to ensure a seamless continuum of health services. Medical functional doctrine must project IM/IT integration into the operational environment and provide a seamless, interoperable communications infrastructure across all Services, other government agencies (e.g., Department of Veteran Affairs and Department of Health and Human Services), coalition forces, and the industry supporting the force.

FHP SYSTEMS must be based on joint technical architecture, common operating environment compliance, and on the Defense Information Infrastructure. They must have full interoperability among Services at the tactical, operational, and strategic levels.

CHAPTER 6 ★ FHP INFRASTRUCTURE AND SUPPORT

TOTAL VISIBILITY OF PATIENTS, medical units, environmental and operational situations, medical materiel, and healthcare capabilities provides the information linkage to maintain momentum required in medical operations. Full implementation of the **computerized patient record (CPR)**, to include patient care data collected in the field supported by joint information architecture, enhances healthcare services throughout the operational continuum. Electronic tracking of patient and unit movement enhances the efficiency of medical evacuation systems, ensures patient accountability, and improves the matching of patient needs to healthcare capabilities.

THE AVAILABILITY OF TIMELY ELECTRONIC PATIENT RECORDS and environmental assessment results enables sophisticated analysis of health threats and monitoring of health hazards and outcomes. These health surveillance capabilities provide a foundation for FHP by identifying problems, enhancing selection of appropriate countermeasures, monitoring the extent of needed interventions, and evaluating the effectiveness of protective interventions and preventive programs.

LEVERAGING NEW TECHNOLOGY THROUGH RESEARCH, DEVELOPMENT, AND TECHNOLOGY INSERTION

THE EXPLOITATION OF SUPERIOR TECHNOLOGY enhances joint health services support. The ability to leverage technologies that supports military health requirements and applications enables “war zone medicine” to be practiced with outcomes of lower morbidity and mortality. The benefits of these modernization efforts not only enhance outcomes, but also can generate a significant reduction of the medical footprint in a theater of operations. Advances in research, development, and technology insertion efforts can help achieve these goals by focusing on technologies that help to prevent illness, reduce injuries or the severity of injury, speed up the evacuation of casualties out of theater, and enhance general medical capabilities.

THE RAPID INTERPLAY OF BIOSCIENCES (genomics/proteomics, bioinformatics, biometrics, nanotechnology, robotics) and information sciences combine to reshape most existing technologies in the next quarter century. This “fusion” of scientific disciplines and technologies enables critical advances for operational warfighter and peacetime health care capabilities. Science and technology efforts in these areas warrant significant augmentation and acceleration to counteract and deter new and asymmetric threats that are simultaneously available to our adversaries.

WHILE USUALLY THOUGHT OF as encompassing materiel solutions to medical requirements, research and technology can also provide training, organizational, and doctrinal solutions. Researchers in epidemiology, physiology, engineering, health services, and operational methods often provide conceptual, as opposed to materiel, solutions to important FHP activities. Improved understanding of disease, injury, and environmental processes allows development of operational methods and practices that protect health and enhance performance and productivity. The quickest, least expensive ways to leverage technology may not rely on materiel solutions at all. R&D efforts must be increasingly focused on the development and fielding of non-materiel technology solutions.





THE REDUCTION OF CASUALTIES CAN BE ACHIEVED through both medical and non-medical programs. Nonmedical programs with significant medical input include initiatives such as improved body armor, enhanced laser protection, injury prevention devices such as orthopedic braces, chemical, biological, radiological weapons protection, exposure protection, and operational and training techniques.

PREVENTIVE MEDICAL INITIATIVES include vaccines and other counter measures for endemic diseases and biological threats; R&D on warfighter processes and training to reduce injuries; improve sanitation, and minimize mental health problems; and R&D on medical and environmental surveillance, biomarkers, and long-term outcomes of low exposures to battlefield hazards. Development of remote sensing for natural or manmade chemical, biological, radiological, or physical exposure hazards will enable commanders to address potential threat risks before Service members are exposed. Development of health-based 24-hour exposure standards are required to ensure the risks of exposures are neither over- or underestimated. Other research required includes the scientific connection of militarily significant medical outcomes with the objectively determined exposure levels to better predict casualty levels and future health risks for commanders. The use of improved hemostasis techniques and hemostatic agents represents significant new technologies designed to reduce mortality. R&D for whole blood substitutes with efficacious coagulant properties and drugs that reduce post trauma organ damage may decrease organ and tissue loss and improve outcomes.

MEDICAL EVACUATION OF PATIENTS on dispersed battlefields creates new challenges requiring changes in both doctrine and material. In addition to increasing the speed and range of evacuation platforms, state-of-the-art, lightweight, and integrated en route care equipment is needed. That equipment must be operable on all evacuation platforms. En route care equipment should be standardized throughout the system ensuring rapid equipment exchanges, forward resupply, common operator training and enhanced maintenance capability. As technology advances are realized in both medical and nonmedical research, the ability of the medical community to enhance its capabilities is limitless. Basic biomedical research programs and technology insertions provide a foundation for medical capability superiority in support of FHP. Medical superiority is a significant force multiplier and forms a foundation of force health readiness. During operational deployments, medical superiority ensures that health risks are not a limiting factor for commanders, enhances combat effectiveness, improves morale, and minimizes casualties keeping Service members fully engaged in their operational mission.

OTHER IMPORTANT AREAS for R&D include improved modeling and simulation to estimate the types, numbers, and distribution of casualties of all kinds—combat casualties as well as those due to disease and non-battle injuries and **weapons of mass destruction (WMD)** events. Forecasts to estimate the treatment and evacuation needs of those casualties, their logistical support requirements, and other aspects of medical planning must be improved and include scenarios to model a wide range of deployments, operational settings, and geographic locations. Present models, such as the Time/Task/Treater File used to model logistics support requirements, will be enhanced or re-designed to include more realistic, more flexible planning methods.

FORCE HEALTH PROTECTION

CHAPTER 6 ★ FHP INFRASTRUCTURE AND SUPPORT

LEVERAGED TECHNOLOGY provides important non-materiel solutions to medical requirements as well. Technology supports and causes changes in doctrine, training, leadership tasks and styles, organizations, and Service member systems (such as career management). Although materiel solutions form an important part of the R&D focus for FHP, research into training techniques and systems, metrics for health and force protection, and improved understanding of low-level health effects and threshold issues are all equally important to the overall success of the FHP program.





Appendix A

abbreviations

BI – battle injury

CBRNE – chemical, biological, radiological, nuclear, and high explosives (weapons)

CONUS – Continental United States

CPR – computerized patient record

DoD – Department of Defense

DNBI – disease and non-battle injury

FHP – Force Health Protection

FRS –forward resuscitative surgery

GWOT – Global War on Terrorism

IM/IT – information management/information technology

JML – Joint Medical Logistics

JV – Joint Vision

MHS – Military Health System

NBI – non-battle injury

NGO – non-governmental organization

PMI – patient movement items

R&D – research and development

R&R – rest and relaxation

TAV – total asset visibility

WMD – weapons of mass destruction





Appendix B

glossary

Acute-care services – Medical services provided for patients with conditions generally having a rapid onset and follow a short course or require immediate attention. Most battlefield care rendered after wounding, illness, or injury onset is acute care service. The objective of acute care service is to treat symptomatic manifestations. Other forms of care – rehabilitative, definitive, comprehensive care, for example – have as their objectives the comprehensive elimination of all symptoms and their consequences. Acute care service is delivered after symptomatic onset, which differentiates it from preventive care that is delivered before symptoms appear.

Battle injury (BI) – Damage or harm sustained during or as a result of battle conditions.

Biomonitoring – Sampling, surveillance, or monitoring of exposures or biological functions using human biological samples. The purpose of biomonitoring is to assess biologic interaction or response to environmental exposures and collect epidemiological information. Biomonitoring may assist FHP personnel, commanders, and planners to systematically assess and manage the health and wellness of an operational force, to plan FHP preventive services and medical interventions, and to equip and train forces to meet emerging health threats.

Buddy-aid – Acute medical care (first-aid) provided by a non-medical service member to another.

Care-in-the-air – See entry under “En route care.”

Chemoprophylaxis – The use of medications or drugs to prevent adverse health consequences of an anticipated hazardous chemical or infectious exposure.

Combatant commander – A commander of a joint, specified, or unified command or task force with responsibility for operational and tactical execution of military operations supporting defined national security objectives. They command joint military forces to determine requirements and develop and execute military plans.

Computerized patient record (CPR) – A partial or comprehensive electronic record of patient conditions, physiological indications, treatments, and treatment responses using digital or automated data collection, storage, dissemination, and manipulation methods. A CPR may consist of a single record in one physical data storage location, or it may consist of multiple physical records joined logically across a variety of storage or collection devices, including biomonitoring devices (see above) used in military operations.

Definitive Care – Care rendered to conclusively manage a patient’s condition. This normally leads to rehabilitation, return to duty, or discharge from the Service.





Disease and non-battle injury (DNBI) – Injury or degradation of functional capability sustained by personnel and caused by factors other than those directly attributed to enemy actions.

Disease incidence – The rate of new cases of a given disease in a specific location, population, or operational setting.

En route care – Continuation of the provision of care during evacuation between levels of care with no clinically attributed compromise of the patient's condition.

Epidemiology – The study of the causes, distribution, and control of diseases and injuries in populations.

Essential care – Medical treatment and care provided within the theater of operations. This includes resuscitative care and en route care as well as care to either return the patient to duty (within the theater evacuation policy) or begin initial treatment required for optimization of outcome, and/or stabilization to ensure the patient can tolerate evacuation to the next level of care.

Evacuation – Removal of a patient by any of a variety of transport means (air, ground, or sea) from a theater of military operations, or between levels of acute care service, for the purpose of preventing further illness or injury, providing additional care, or providing disposition of patients from the military healthcare system.

Focused logistics – The tenant of Joint Vision that allows full spectrum supportability across the range of possible missions encountered. The fusion of information, logistics, and transportation technologies to provide rapid crisis response; to track and shift assets even while en route; and to deliver tailored logistics packages and sustainment directly at the strategic, operational, and tactical levels of operations.

Force Health Protection – The medical portion of Force Protection. All measures taken by commanders, leaders, individual Service members, and the Military Health System to promote, improve, conserve, or restore the mental and physical well being of Service members across the range of military activities and operations. These measures enable the fielding of a healthy and fit force, prevention of injuries and illness and protection of the force from health hazards, and provision of excellent medical and rehabilitative care to those who become sick or injured anywhere in the world.

Forward Resuscitative Surgery – Surgery performed as close to the point of injury as possible based on current operational requirements.



GLOSSARY

Hazardous materials – Substances such as industrial or military byproducts, nuclear waste, military weapons, or infectious materials that are potentially harmful to the health and well being of people or damaging to the environment.

Infectious disease – Diseases caused by pathogenic microorganism, and capable of transmission to persons.

Joint Vision – The Chairman of the Joint Chiefs of Staff's strategic roadmap for addressing the broad range of challenges in future joint operations.

Non-battle injury (NBI) – Injuries caused during or incident to military operations to military personnel that are not directly related to combat.

Operational tempo – The rate, frequency, and intensity of military operations.

Preventive service – Healthcare services provided prior to the onset of symptoms, illnesses, or injuries and designed to prevent, ameliorate, or lessen injury or illness. Primary prevention addresses disease or injury before it begins, secondary prevention addresses disease or injury after onset but before symptoms begin, and tertiary prevention addresses prevention of the consequences of disease or injury.

Radioprophylaxis – Prevention of or preventive treatment for radiation induced injury or illness.

Resuscitative care – Emergency medical treatment required to prevent immediate loss of life or limb and to ensure the stabilized patient could tolerate evacuation to the next level of care.

Self-aid – Minimal preventive or acute medical care provided by the patient him- or herself.

Technology insertion – Systematic modernization or enhancement of devices or systems through ongoing capabilities upgrades. Technology insertion provides an alternative to military-specific acquisition of military systems.

Trauma – Serious or life-threatening injury to the body.

Wellness – A physiological and mental state characterized by full function consistent with a person's optimal potential.





Major contributions to this publication were made by the DoD Force Health Protection Council, Joint Chiefs of Staff Logistics Directorate (J4) Health Service Support Division, the Joint Preventive Medicine Policy Group, the Joint Readiness Clinical Advisory Board, and the Deployment Health Support Directorate.

