



**STRATEGY
RESEARCH
PROJECT**

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**MEDICAL SUPPORT IN MILITARY OPERATIONS
OTHER THAN WAR**

BY

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USAWC STRATEGY RESEARCH PROJECT

MEDICAL SUPPORT IN MILITARY OPERATIONS OTHER THAN WAR

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ABSTRACT

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The use of our forces in Military Operations Other than War (MOOTW), especially in the humanitarian assistance context, has been an ongoing debate. The medical support to these operations by the Department of Defense (DOD) Health Service Support (HSS) system has also received some criticism. One of the arguments is that HSS personnel are not trained and equipped to carry out these missions. The DOD HSS system's mission is to provide peacetime and combat casualty care to essentially healthy, young military adults. The focus of this paper is the challenges that the HSS system must face in order to plan and execute MOOTW missions properly. The paper will examine the doctrine that provides guidance for the planning and execution of those missions. It will also look at the medical aspects of recent operations, particularly those in the Balkans, Haiti, and Somalia. Particular attention will be paid to issues such as command and control relationships, coalition operations, variations in medical care, mission expansion, and operating under austere conditions. Finally, recommendations for improvement will be made based on these evaluations.

TABLE OF CONTENTS

ABSTRACT	iii
LIST OF TABLES.....	vii
MEDICAL SUPPORT IN OPERATIONS OTHER THAN WAR	1
MILITARY OPERATIONS OTHER THAN WAR	2
DEPARTMENT OF DEFENSE HEALTH SERVICE SUPPORT (HSS) SYSTEM.....	2
OPERATION PROVIDE PROMISE.....	3
OPERATION PROVIDE PROMISE LESSONS LEARNED.....	4
OPERATION UPHOLD DEMOCRACY.....	10
OPERATION UPHOLD DEMOCRACY LESSONS LEARNED (28 TH CSH).....	11
OPERATION UPHOLD DEMOCRACY LESSONS LEARNED (47 TH CSH).....	12
OPERATION UPHOLD DEMOCRACY LESSONS LEARNED (FH 5)	14
SOMALIA OPERATIONS	17
SOMALIA LESSONS LEARNED	17
CONCLUSIONS AND RECOMMENDATIONS	19
ENDNOTES.....	23
BIBLIOGRAPHY.....	27

LIST OF TABLES

TABLE I. OUTPATIENTS, ADMISSIONS, AND OPERATIONS BY UNIT COMMAND ..	6
TABLE II. PATIENT DEMOGRAPHIC DATA.....	7
TABLE III. OUTPATIENT VISITS BY COMBINED USAF/UNPROFOR PRIMARY DIAGNOSTIC CATEGORIES	9
TABLE IV. DIAGNOSES FOR HUMANITARIAN ASSISTANACE VISITS	15
TABLE V. FLEET HOSPITAL INITIAL VISITS.....	15
TABLE VI. AGE AND SEX OF PATIENTS IN HA VISITS (INITIAL VISITS)	16
TABLE VII. OUTPATIENT VISITS AND ADMISSIONS FOR ORH AND OCH.....	18

The United States military has provided substantial humanitarian assistance and disaster relief to distressed people both at home and abroad. Humanitarian assistance and disaster relief missions are included under the umbrella of Military Operations Other Than War (MOOTW). These missions are generally conducted in areas affected by war, ongoing regional conflicts, or by natural disasters such as earthquakes, tropical cyclones or hurricanes.

Relief organizations may be overwhelmed by the demands of some disasters. The U.S. military is perhaps the most experienced and best-equipped organization to respond rapidly to complex humanitarian crises. Often, the support is in the form of security, food and supply delivery, or medical care. Medical support is usually most crucial in these circumstances.

By doctrine, health service support (HSS) units are deployed primarily to provide care to the troops. Some missions may take place in a multinational setting. Under these conditions, the HSS units may be additionally tasked to provide care to coalition troops, non-military personnel or to refugees. The use of the military in support of these missions has been the subject of debate.¹

HSS personnel are primarily trained and equipped to provide combat casualty care. While some HSS personnel have experience in the conduct of MOOTW, many DOD health care personnel do not. Nor have they had sufficient training to acquire that new skill. In MOOTW, patients and conditions are different from those in combat casualty care. The patients may present with a variety of medical problems, wide age ranges, and differences in culture, language, and religion.

HSS personnel may be employed in a coalition setting where the medical capabilities differ widely among coalition forces. The mission may be under the lead of another nation. The command and control relationships may be complex. This has been the experience for U.S. HSS units in many missions that were non U.S.- led. In these settings, MOOTW may present unique challenges to HSS personnel of both U.S. and coalition forces.

As the new world order takes shape, the U.S. military will more than likely be called upon to provide humanitarian or peacekeeping support to people in foreign territories. The challenges that our HSS personnel must face in order to plan and execute these missions properly must be addressed. The focus of this paper will be on these challenges. Particular attention will be given to the training of HSS personnel in preparation for those missions, command and control relationships in multinational settings, the benefits of early medical planning for these missions, the variety in medical conditions encountered in MOOTW, expanding medical missions during these operations, and the execution of these missions under austere conditions.

MILITARY OPERATIONS OTHER THAN WAR

MOOTW are an evolving entity that will create new and challenging tasks for DOD HSS. MOOTW have been conducted since the times of the Romans. The occupation of Trieste in 1945 marks the beginning of the U.S. military's involvement in modern MOOTW. MOOTW can be defined as "a wide range of activities where military capabilities are used for purposes other than the large-scale combat operations usually associated with war."² MOOTW include conflict prevention, arms control and counter proliferation activities, peace support operations, peace building, humanitarian aid operations, and non-combatant evacuation operations.³

Since the end of the Cold War, the trend has been toward globalization. This "turn in the road" has brought with it political, economic, and military uncertainty, and social unrest in the former Soviet Union states, and in other regions of the world.⁴ These world changes mean the U.S. will more than likely continue to be engaged in MOOTW. The National Security Strategy (NSS) and National Military Strategy provide the basis for MOOTW engagements as a means of achieving national security and foreign affairs objectives. President Clinton's "engagement and enlargement" strategy of 1995-1996 gives further support to the NSS. Enlargement emphasizes U.S. values, while MOOTW engagements strengthen those values.⁵

The "keystone" document that gives guidance to joint and multinational operations is Joint Publication (JP) 3-0, *Doctrine for Joint Operations*.⁶ This document provides valuable guidance for a wide range of joint and multinational operations, including MOOTW. Another document is JP 3-07, *Joint Doctrine for Military Operations Other Than War*.⁷ In order to appreciate the role of DOD HSS in the conduct of MOOTW, it is essential to examine the DOD Medical System and the doctrine that supports it.

DEPARTMENT OF DEFENSE HEALTH SERVICE SUPPORT (HSS) SYSTEM

JP 4-02, *Doctrine for Health Service Support in Joint Operations*, states that the mission of HSS in joint operations is to "minimize the effects of wounds, injuries and disease on unit effectiveness, readiness and morale."⁸ A vigorous preventive medicine program and a stratified health care system, termed echelons of care, are in place in order to accomplish that mission. Thus, the main objective of HSS is to conserve the fighting strength of the operating forces. This objective is achieved through the employment of HSS from a single service or through the employment of joint forces with attached HSS from the component services. There are no standing joint HSS forces. In the employment of joint forces, it takes the integration of the component commands' HSS assets, and an optimum collaborative effort in order to be successful. The commander who effectively applies HSS principles and utilizes the echelons of

care gains the advantages of retaining key and experienced personnel in theater, as the general health, survival, recovery, and rapid return to duty of personnel are enhanced. Economy of effort is achieved as replacements, medical evacuations, and extra logistical supports are minimized. JP 5.00.2, *Joint Task Force Planning Guidance and Procedures*, provides valuable guidance for medical planning in a joint or multinational setting.⁹

MOOTW are usually joint operations, conducted collaboratively with other militaries, government agencies, non-governmental organizations (NGOs), or private volunteer organizations (PVOs). Whether MOOTW are conducted on U.S. soil or on foreign territories, the provision of HSS is usually a major part of the operation. HSS must be well coordinated with all involved agencies and officials. In a foreign setting, the geographic combatant commander must coordinate the HSS effort with many top officials and agencies, including the respective U.S. Embassy. Support can also include the provision of HSS to humanitarian and civic action programs (HCA). In this setting, the geographic combatant commander must ensure that the mission statements of the HSS units support the humanitarian assistance (HA) operation. Coordination with the Joint Force Surgeon or the component command surgeon is essential to ensure that HSS units have the capability and are legally allowed to do the mission. Each host nation's (HN) needs will vary with situation. Doctrinal guidance is available for use in the assessment of HN needs.¹⁰

OPERATION PROVIDE PROMISE

In April 1992 the United Nations Protection Force (UNPROFOR) was established to stop the fighting and assist in humanitarian relief efforts in the former Yugoslavia. This force included units from 37 countries and eventually numbered approximately 47,000 military personnel, UN and NATO civilian employees, and contractors. The U.S. deployed Joint Task Force PROVIDE PROMISE to provide UNPROFOR logistic and other support, including HSS.¹¹

The U.S. medical mission was to provide Echelon III care in support of the U.N. peacekeeping forces. During the early phase of the conflict, Echelon III care had been obtained through civilian contract. The conflict escalated in Bosnia-Herzegovina in July 1992. By October 1992, European Command (EUCOM) directed U.S. military HSS units to provide Echelon III care to UNPROFOR troops, UN civilian employees, and contract personnel attached to UNPROFOR. The evacuation policy was set at 30 days.¹²

The HSS for UNPROFOR was a multinational endeavor. Echelon I care was organic to each unit, and included battalion aid stations, combat medics, combat lifesavers, combat stress support, and buddy aid. Echelon II care, and a large part of preventive medicine in Croatia, were

tasked to the British. In addition, they were to provide some intratheater medical evacuation support. The French were responsible for air evacuation for Bosnia. UN contractors provided that support in Croatia. Forward Surgical Teams were the main emphasis for Echelon II support. Echelon III was provided at Camp Pleso, Zagreb.

Medical units from the U.S. Army (212th and 502nd MASH); U.S. Air Force (48th Air Transportable Hospital, and 60th and 74th Medical Groups); and U.S. Navy (Fleet Hospitals 5 and 6) operated the hospital in Zagreb in 6-month rotations. Personnel from the 212th MASH arrived on 15 November 1992 for the first rotation.

Personnel from the Air Force's 48th Air Transportable Hospital (ATH) rotated from October 1993 to March 1994. The mission at the 48ths was expanded to provide care for adult and children refugees from the Croatian, Bosnian, and Macedonian sectors where the fighting was worse. In addition, they were to extend care to UN personnel and their families. Liaison with refugee camps and several relief agencies was established to accomplish those additional tasks.

Fleet Hospital (FH) 6 relieved the 48th ATH in March 1994. FH 6 expanded its care to include some Echelon IV care. This evolved as a result of increased land mine related injuries in the region. That level of care was a collaborative effort between FH 6 and Zagreb Hospital, which had CT scanners and advanced surgical specialties, such as neurosurgery.

OPERATION PROVIDE PROMISE LESSONS LEARNED

Expanding medical mission: The initial mission was to provide care to UNPROFOR forces. As the operation evolved, the HSS units' tasks were expanded to include care of UN and NATO personnel, their families and refugees. The decision to expand the tasks was a collaborative effort between the UN, the U.S. State Department, and the JTF commander. In some instances, the medical staff took the initiative to extend care as they provided support to local physicians, conducted outreach visits to refugee camps, and extended clinic hours.

- Requirements change in MOOTW and appropriate adjustments must be made. Due to the complexity of the chain of command in UN- led operations, the senior medical officers representing each level of command must coordinate their efforts, so that medical personnel are not confused when the requirements change.

Differences in capability: Many coalition forces lacked organic combat stress support service. As a result, many affected troops sought U.S. assistance. While the U.S. Army, Air Force, and Navy combat stress personnel did their best, problems with language and cultural differences made it challenging for both provider and patient.¹³

- Differences in medical capability among coalition units may place extra burdens on U.S. HSS units.
- Differences in capabilities can delay medical evacuation and repatriation, and prolong care in theater.

Variety in medical conditions: In a coalition setting, HSS personnel must be prepared to provide care outside that normally provided to U.S. units. Coalition troops, civilian employees, and refugees may present with chronic medical problems, and reflect different age ranges, languages, cultures, and religions. In addition, HSS personnel must be prepared to treat more female patients. These variations can challenge HSS personnel of both U.S. and coalition partners.

The variety of care rendered in this operation was well documented. As presented in the tables below, foreign civilians and refugees accounted for a very small fraction of admissions to U.S. facilities. The staff anticipated demand for gynecological services, and FH 6 took care of many female patients. Although complete data on that experience is not available, limited capability for gynecological services was available. Demand for gynecological services at the Army or Air Force hospitals apparently was low.¹⁴ The ATH staff set aside five acute-care beds for the treatment of refugee adults and children, but the need for pediatric care was very low. FH 6 apparently took care of many patients with infectious diseases. Although complete data on that experience is not available, conditions seen included tuberculosis, malaria, chicken pox, and hepatitis.¹⁵ Mental health conditions such as depressive illnesses, suicidal behavior, psychoses, and alcohol intoxication represented about 2% of cases managed at the hospital.

Tables I through III, adapted from Military Medicine, summarize the types of care rendered and patient demographics.¹⁶ The data collection for these tables began at the 48th ATH. Not all subsequent medical units continued that process. Table I provides an overview of outpatient visits (OPVs), admissions, and surgical operations performed at the 212th MASH, the 502nd MASH, and the 48th ATH.

	Command			Row Totals
	212 th MASH 11/15/92 to 4/26/93 (188 days)	502 nd MASH 4/27/93 to 10/4/93 (160 days)	48 th ATH 10/5/93 to 3/20/94 (166 days)	
Patients (seen for first time)	1,178	1,425	2,009	4,612
Initial visits	1,404	2,008	3,357	6,769
Follow-up visits	216	464	2,318	2,998
Total visits	1,620	2,472	5,675	9,767
Admissions	338	317	349	1,004
Operations	206	144	188	538

TABLE I. OUTPATIENTS, ADMISSIONS, AND OPERATIONS BY UNIT COMMAND

The total admissions were approximately 1,004, comprising 882 different patients. The remainder were repeat admissions. Less than half (408) of the admitted patients required surgery. The number of operations performed was 538. The average age on admission was 29.2 years. About 90% of hospitalized patients were military males, from U.S. or coalition forces. About one-half (476) of the women treated were military personnel. Only 37 of the 4,612 were 16 years old or less, 10% were older than 40 years, fewer than 2% were older than 50 years and only 6 individuals were older than 60 years. This data emphasizes the variety and frequencies of patient conditions seen in this operation. For the most part, the population that received the greatest amount of care was young military adults. HSS personnel did their job in conserving the strength of the troops, which doctrinally is the primary mission.

Table II shows that personnel from non-U.S. developed nations accounted for slightly more than two-thirds of all admissions and operations, whereas U.S. forces and UNPROFOR personnel from developing nations jointly accounted for the remaining one-third. Non-U.S. developed nations included several European, Latin American, and Middle Eastern countries, where the life expectancy is 65 years or more. Developing nations included several African and Asian countries where the life expectancy is less than 65 years.¹⁷ The difference in utilization was probably due to proximity to the MASH in Zagreb, or to differences in capability among

coalition HSS. Personnel from the non-U.S. developed world accounted for about 59% of OPVs, slightly less than expected. The British and French, who made up the largest segment of that group, had their own primary care and surgical services available. U.S. forces contributed to the largest segment of OPVs, since the hospitals were the only U.S. medical units available for their use.

Treated	<u>Patients</u>		<u>Outpatients</u>		<u>Admissions</u>		<u>Operations</u>	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
	(of 4,612)		(of 9,767)		(of 1,004)		(of 538)	
Males	4,136	90	8,495	87	927	92	500	93
Females	476	10	1,272	13	77	8	38	7
Military	3,503	76	7,415	76	876	87	487	91
Nonmilitary	1,109	24	2,352	24	128	13	51	9
Citizenship								
U.S.	1,002	22	3,073	31	157	16	100	19
Other Developed world	3,081	67	5,795	59	704	70	381	71
Developing world	457	10	799	8	131	13	44	8
Unknown	72	<2	100	1	12	1	13	1

TABLE II. PATIENT DEMOGRAPHIC DATA.

Outpatient visits totaled approximately 9,767 over 18 months. There were 4,612 entries for sick or injured patients. Only 85 of the 4,612 were "war related injuries." This data supports the assumption of few combat casualties. Of the 85 injured patients, 80 were male and 5 were female, 72 military and 13 civilians. About 70% of the patients from the developing world were thirty years of age or older. Some troop contributing nations tended to have older individuals in their militaries. This is useful information for U.S. medical planners drafting HSS plans for future similar operations.

Length of hospital stay (LOS): The mean LOS was 6.40 days.¹⁸ In some instances, the LOS for critically ill or seriously injured patients from developing countries was longer than patients with the same level of illness from developed countries. Due to lack of capability in the casualties' home nation, they remained in the U.S. hospital instead of being evacuated home. In addition, since their home nation lacked medical evacuation resources, repatriation processing further prolonged their hospital stays. Some soldiers from developed countries experienced prolonged length of stays. At FH 6, one Russian was treated for tuberculosis for 41 days; two Russian soldiers with mine injuries were treated for 100 and 134 days respectively; and one Ukrainian soldier with Hodgkin's disease was treated for 48 days.¹⁹ The prolonged stays reflected the uncertainty of appropriate care availability in those soldiers' home countries. The differences in lengths of stay were found to be significantly different for U.S., developing world, and developed world patients. Although the differences were marked, this apparently was not a great resource challenge.

- A defined evacuation policy is probably more applicable to combat casualty care than to MOOTW.

Intratheater medical evacuation: The medical evacuation system suffered degradation following the departure of the British medical battalion in late summer 1993. It had provided Level II care and transport of casualties from dispersed UNPROFOR units to the Level III U.S. hospital. The medical battalion's ground ambulance units were not replaced. The RAF had provided some helicopter support. The decision to discontinue use of their helicopters for medical evacuation apparently was made following a House of Commons discussion that it was "too dangerous to use helicopters for the transmission of personnel."²⁰ The U.N. contracted out some air and ground vehicles, but these were not configured for medical evacuation. In addition, the Serbs controlled the air spaces, often interrupted communication lines and disrupted medical evacuation missions.²¹

- In MOOTW, The medical evacuation system may not be robust. When disruptions occur, HSS personnel, the chain of command, and appropriate agencies or officials must coordinate efforts to restore the evacuation process.

Intertheater medical evacuation: This is also a potential problem with casualties from nations that lack appropriate resources to complete the care of injured/ill soldiers at home. In UNPROFOR, this resulted in prolonged hospitalization in theater for some, which in turn caused difficulties inpatient tracking, as well as ethical and treatment concerns. In many instances, an appropriate agency or facility to accept transfer was difficult to locate in the home country.

Casualties from the more advanced nations experienced fewer problems, since resources in their home countries were available to care for them.

- U.S. HSS units may face ethical conflicts between the theater evacuation policy, and continuing the care of individuals without home country treatment resources.

Table III gives a breakdown of the various types of conditions seen as outpatients. The largest number of visits were for injury, medical, and respiratory categories.

Diagnostic Category	Outpatient Visits (N)	Total (%)
Injury (combined war and non-war related)	3,742	38.3
Medical	1,888	19.3
Respiratory	1,333	13.7
Dental	726	7.4
Dermatological	508	5.2
Gastrointestinal	466	4.7
Surgical	457	4.7
Ophthalmological	364	3.7
Other	87	0.9
Sexually transmitted diseases	84	0.9
Psychiatric	54	0.6
Unknown	24	0.2
Substance abuse	23	0.2
Heat/cold injuries	6	0.1
Fever of unknown origin	5	0.1
Totals	9,767	100.0

TABLE III. OUTPATIENT VISITS BY DIAGNOSTIC CATEGORIES.

OPERATION UPHOLD DEMOCRACY

Operation UPHOLD DEMOCRACY (OUD) was the U.S. response in support of the return of democracy to Haiti. The U.S.- led Multinational Force (MNF) for Haiti consisted of approximately 20,000 personnel from about 25 nations. It was established in September 1994, and transitioned to the United Nations Mission in Haiti (UNMIH) in March 1995.²² Medical units from the U.S. and other nations provided the HSS for OUD. Units from the Army (28th CSH, and the 47th Field Hospital), Navy (USNS *Comfort*, Fleet Hospital 5, Fleet Hospital Jacksonville), USMC (Alpha Surgical Company, II MEF), and the Army XVIII Airborne Corps (Ft Bragg), were among the participating U.S. HSS units.²³

The 28th CSH was directed to begin planning in support of OUD approximately two weeks prior to deployment.²⁴ The medical mission was to deploy a 52- bed slice of the CSH, to support OUD, and provide care to over 20,000 U.S. and MNF troops.²⁵

The 28th CSH deployed on 25 September 1994 for Port Au Prince, Haiti. Its medical staff included 4 general surgeons, 2 orthopedic surgeons, 2 anesthesiologists, 1 oral surgeon, 3 internists, 2 family practitioners, 2 emergency physicians, 1 radiologist, 2 psychiatrists, and 1 ob-gyn specialist. There was nursing staff for one 12-bed ICU/Recovery Room, two 20-bed wards, one operating room and one central supply unit. The other elements of the task force were:

- 1 Company from the 261st Area Support Medical Battalion
- 1 Team from the 32nd Medical Logistics Battalion
- 1 Team from the 248th Medical Detachment (Veterinary and Preventive Medicine)
- 2 Teams from the 528th Combat Stress Detachment
- 6 UH-60s from the 56th Evacuation Battalion
- 1 Epidemiology Team from Walter Reed Army Medical Center
- 1 Linguist Team

The 47th Field Hospital was alerted to deploy to Haiti on 8 December 1994. Transition from the 28th CASH to the 47th Field Hospital took place on 24 January 1994. Their mission was to deploy a 52-bed slice of the Field Hospital in support of OUD. Their task was to provide HSS to all MNF units in the Joint Operation Area; "authorized care" to coalition / UN, International Police Monitor (IPM), embassy personnel, and detained personnel supporting the MNF effort; humanitarian assistance and emergency medical treatment to the Haitian people; and technical assistance in support of the restoration of the Haitian health care system.²⁶

Fleet Hospital 5 (FH 5) was deployed in February 1997 in support of OUD. In January 1997, FH 5 personnel were tasked to relieve Alpha Surgical Company of Second Medical

Battalion, and to provide Echelon II+ medical support for the U.S. Support Group, Haiti (USGH); the United Nations Support Mission in Haiti (UNMIH), and humanitarian assistance.²⁷ The mission included 24-hour emergency care, trauma care, and dental care. Specific services or specialties included internal medicine, anesthesiology, general surgery, orthopedic surgery, family practice medicine, radiology, pharmacy, laboratory, and preventive medicine.²⁸

OPERATION UPHOLD DEMOCRACY LESSONS LEARNED (28TH CSH)

Buildings of opportunity: A light industrial complex in Port Au Prince was the predetermined site for the hospital. Two warehouses were designated for setting up the hospital, and berthing the hospital staff. These were initially laden with garbage, and human and animal waste. Compounded by the heat and humidity, this posed a challenge for the 28th staff to clean, prepare, and appropriately configure those spaces. Once functional, an added challenge was the disposal of biological and human waste.

- In austere conditions, HSS personnel must be prepared to deal with conditions in which the medical infrastructure is destroyed or is virtually non-existent due to conditions of war, politics, economics or natural disasters.

Tropical diseases: Dengue fever was quite common. Initially, cases were evacuated to CONUS due to limited beds. The 714th Medical Detachment, Fort Bragg, provided additional Preventive Medicine services. Of 106 febrile patients referred to the 28th CSH, 24 were confirmed serologically as dengue.²⁹ Heat injuries, upper respiratory tract infections and food-borne gastrointestinal illness were quite common during the first few weeks.³⁰ Three patients initially treated in the field for presumed "bronchitis" developed adult respiratory syndrome soon after hospitalization for pneumonia. They were successfully managed and were later evacuated to CONUS. Anthrax and rabies were reported among some Haitians, but there were no U. S. cases. Although there was robust preventive medicine support, several troops acquired tropical infections in the early phase of the operation. As veterinary and preventive medicine services became more aggressive, marked improvements in the troops' general health was attained.³¹ Preventive medicine is a doctrinal requirement, is crucial to the success of HSS in MOOTW, and must be included early in the medical planning. Some have criticized DOD HSS for insufficient preventive medicine capability in past operations.³² In this operation, preventive medicine service was robust, and provided sanitation, food inspections, vector surveillance, laboratory, and education, and other services in order to control and to prevent diseases.

- Tropical diseases may pose a challenge even to prepared HSS units.

Expanding the medical mission: Medical treatment to the local population was limited and sporadic and not part of the initial mission statement. The 28th CSH personnel were later tasked to provide treatment to civilian contractors, vacationing U.S. citizens, media, and International Police Monitors (IPMs). This presented a new challenge for the Patient Administration Department, since they were not experienced in the evacuation of civilian patients to non-U.S. destinations.³³ Doctrine teaches that HSS units must be flexible and be prepared to respond appropriately to changing requirements. In addition, coordination with appropriate agencies and officials can make all the difference for a successful mission. The 28th personnel were quite successful in meeting these challenges.

- Changing requirements are almost a given in MOOTW.

Telemedicine: Telemedicine capability was successfully employed in this operation. Dermatology and radiology consultations via linkage to Walter Reed worked quite well. This eliminated the need for medical evacuation of some patients. The movement of information instead of patients had become a reality. It saved medical evacuation risks, costs, and the loss of key personnel from the theater of operation.

OPERATION UPHOLD DEMOCRACY LESSONS LEARNED (47TH FH)

Roles and mission: Upon arrival in Haiti, the medical staff was confused as to the “medical rules of engagement.”³⁴ The staff felt that the Operations Order did not clearly articulate who was eligible for care at the FH. As a result, the staff treated many non-military personnel and locals. Missionaries, and non-governmental agencies brought in orphans, family members, and others. The MNF J3 was the designated approving authority for care of those whose eligibility was questionable. Following a collaborative effort between the MNF Surgeon, the FH commander, and the MNF SJA, a definitive eligibility list was established and published. Based on this, care at the FH was authorized for the following:

1. U.S., MNF, IPM, UNMIH forces, and DOD contractors supporting the operation.
2. Persons injured by U.S., MNF, IPM, and UNMIH personnel executing official duties.
3. Individuals requiring immediate intervention to save life, limb or eyesight.
However, to the fullest extent possible, non-eligible persons were to be taken to the nearest Haitian medical facility.
4. Individuals designated by the MNF Commander to further mission or national goals.

Agencies that sought care dropped to almost none and the medical mission was carried out with fewer problems.

- A thorough mission analysis by HSS personnel prior to deployment will prevent or minimize confusion as to the roles and missions of the operation.

Early planning: Hospital personnel were not included in the early planning, and the FH experienced some difficulties. As a result, important medical intelligence was not obtained. In addition, the staff felt that their resources were inadequate for the mission. While adequately staffed for Echelon III support, they lacked adequate support personnel, ambulances, and medical staff for the Echelon I and II tasks they were expected to perform.³⁵ The 47th staff had a short window to analyze the mission and to plan for the appropriate resources.

- Problems related to poor early planning tend to recur as replacement units rotate in. As with all operations, early coordination, communication, and intelligence exchange between commands and HSS staff are essential for a successful mission.

Preventive Medicine: The 47th FH provided robust preventive medicine and veterinary services. Frequent sanitation inspections, vector surveillance, spraying, and education resulted in a very low DNBI rate.³⁶ The 47th pharmacy service also played a vital role in disease prevention, by providing large amounts of vaccines and immunoglobulins to many multinational troops (especially those from developing countries, where many had no prior immunizations). The FH admitted about 244 soldiers and civilians from February to May 1994. The top three admitting diagnoses were fever of unknown origin, gastrointestinal illnesses, and pneumonia.³⁷

- In many tropical countries there is a wealth of deadly illnesses. Without appropriate preventive measures, the risk of becoming infected can be quite high. Preventive medicine in these environments may be the most essential medical service.

Command relationships: In a multinational force setting, this can present some difficulties. The 47th Commander and the Multinational Force (NMF) Surgeon did not have clear communication lines and worked on separate agendas. It became more confusing when the UN-NIH surgeon established his office. The entire chain was not connected properly. The medical staff was often confused as to the chain of command.³⁸

- Command relationships in non-U.S. led missions may be complex, and present challenges to U.S. HSS units.

OPERATION UPHOLD DEMOCRACY LESSONS LEARNED (FH 5)

Early planning: FH 5 planners began pre-deployment preparations within five days of receipt of the deployment order. A significant part of the preparation was a site visit to Haiti, during which the planners assessed the equipment/supply needs, staffing requirements, medical evacuation protocols, environmental threats and security risks. FH 5 personnel provided care to about 500 Joint Service personnel at U.S. Support Group, Haiti, and to about 1,500 UNMIH personnel. About 210 humanitarian assistance missions were completed. Over 22,000 Haitian nationals received care. Over 120 general and orthopedic surgical cases, predominantly humanitarian in nature, were done at selected local public hospitals. Aside from clinical activity, FH 5 was deeply engaged in the development of Haiti's health care infrastructure.³⁹

- Thorough mission analysis and very early planning are key to mission success.

Variety in medical conditions: Variety in care with respect to age ranges, various tropical illnesses, and a large female population was quite remarkable. Data was analyzed for 10,215 patients seen at HA sites, and for 353 military, U.N. personnel and Haitian nationals seen at the FH. A summary of that data is in Tables IV through VI, adapted from Gauker et al.⁴⁰

Table IV shows the top five conditions treated at HA sites. Worms was most commonly diagnosed, followed by anemia and scabies. These accounted for about 25% of cases treated. At the FH, the experience was slightly different (Table V), with injury and poisoning accounting for 23% of visits; while musculoskeletal, gastrointestinal, respiratory, infectious/parasitic infections accounted for approximately 60%. About 87% of injuries were diagnosed as lacerations/abrasions or sprains/strains. The age range of patients is seen in Table VI. For this paper, only the HA sites were summarized. Compared to other operations, the age range of patients treated in OUD was quite wide. Children age 1 to 10 years accounted for 31% of visits. Females outnumbered males in most age groups, except for infants of 9 to 11 months and the geriatric group older than 90 years.

- In MOOTW HSS personnel may have to provide care to patients of varied ages and medical conditions, including many females. This is in contrast to the almost homogeneous group seen in combat scenarios.

ICD-9 Classification (brief title)	No. of Diagnoses	Percent of Total
Infectious/parasitic	3,886	25.01
Signs and symptoms	2,052	13.21
Digestive	2,011	12.94
Blood/blood-forming	1,573	10.12
Respiratory	1,433	9.22
Others	4,583	29.41
Grand total	15,538	100.00

TABLE IV. DIAGNOSES FOR HUMANITARIAN ASSISTANCE VISITS.

ICD-9 Classification (brief title)	Frequency	Percent of Total
Injury and poisoning	68	23.13
Musculoskeletal	44	14.97
Digestive	38	12.93
Respiratory	31	10.54
Infectious/parasitic	26	8.84
Other	87	29.59
Total	294	100.00

TABLE V. FLEET HOSPITAL INITIAL VISITS.

Age	F	M	Not specified	Total
1-11 months	332	304	14	650
1-10 years	1,618	1,425	22	3,065
11-20	914	438	8	1,360
21-40	2,174	770	17	2,961
41-60	703	345	5	1,053
61-100	258	168	0	426
Not specified	208	140	77	425
Grand total	6,207	3,590	143	9,940

TABLE VI. AGE AND SEX OF PATIENTS IN INITIAL HA VISITS.

Medical Evacuation: FH 5 staff experience some difficulties with patient evacuation.⁴¹

Patient Administration staff discovered that the automated *Global Patient Movement Requirements Center* (GPRMC) system was not easily accessible. In its absence, FH 5 personnel utilized commercial means to evacuate patients to CONUS, as had previous HSS units. However, FH 5 soon established the appropriate medical evacuation protocols through the GPMRC. Due to lack of understanding, the U.S. Support Group Haiti Comptroller (J-8) and the Logistics officer (J-4) disapproved its use. After the FH 5 patient affairs officer clarified the issue to them, use of the GPRMC became standard operating procedure.⁴²

- A reliable medical evacuation system is critical in MOOTW, especially under austere conditions. When it is disrupted, alternative means may have to be utilized. Proper coordination and communication between HSS personnel and appropriate authorities or agencies must occur in order to establish a reliable system.

Equipment/supplies: Prior to deployment, some important medical, surgical, and anesthesia equipment was noted to be outdated and of questionable reliability. Some equipment was borrowed from the parent hospital in order to elevate the standard.⁴³ Because of early planning, FH 5 personnel were able to identify shortfalls, and make appropriate adjustments prior to deployment.

Supply/delivery process: The supply system was slow, especially with routine deliveries. It took up to three months for routine consumable items to be delivered. Emergency items were delivered by FedEx or UPS, through the Emergency Supply Operations Center of the Defense Personnel Support Center, Philadelphia. When commercial airlines were utilized for delivery, clearance through local customs added an extra hurdle. Utilization of consumables was high, given the number of patients treated. Some supply requirements were initially underestimated, especially vaccines.⁴⁴

- In MOOTW, conditions in the region can greatly affect the supply / delivery process. When the requirements change, personnel may have to be flexible and creative to adjust to the new requirements.

SOMALIA OPERATIONS

US involvement in Somalia took place in three phases: (1) Operation PROVIDE RELIEF, a humanitarian assistance (HA) missions; (2) Operation RESTORE HOPE, a combined HA and limited military action; and (3) UNITED NATIONS OPERATIONS IN SOMALIA (UNOSOM) II, a peace enforcement and nation-building mission.⁴⁵

The 86th Evacuation Hospital, the 42nd Field Hospital, and the 46th CSH provided the medical support for those operations. USS *Tripoli* provided limited hospital support during the early phase of Operation RESTORE HOPE.⁴⁶ The hospitals were located at Mogadishu International Airport, and later at the American Embassy compound.⁴⁷ The hospital units rotated at three to six month intervals. The U.S. medical mission was to provide comprehensive care to U.S. forces. Coalition and Somali casualties were to receive care only on an emergency basis.⁴⁸

SOMALIA LESSONS LEARNED

Expanding the medical mission: The situation changed from humanitarian assistance to combat casualty care. A summary of the care given at the hospitals is in Table VII, adapted from Davis et al.⁴⁹ Outpatient visits were fewer than anticipated. The increased surgical caseload corresponds with an outbreak of hostilities in Mogadishu. This was marked by the June 5 killing of 24 Pakistani soldiers. This incident was followed by a series of clashes involving U.S. Rangers and other units; and an engagement in which 18 Americans were killed and 75 wounded. Surgical casualties consisted of U.S. troops, Somalis, coalition troops and individually from NGOs. U.S. personnel constituted approximately 90% of patients admitted, while foreign troops were 10%.

Rotation	Number of Outpatient Visits	Number of Admissions				Total Admissions
		Surgery	Int Medicine	Psychiatry	Ob/Gyn	
86 th EVAC (Jan 1993 - May 1993)	4,194	384	540	14	33	971
42 nd FH (May 1993 - Aug 1993)	2,906	132	203	12	14	361
46 th CASH (Aug 1993 - Mar 1994)	4,903	330	187	19	32	568
Total	12,723	846	930	45	79	1900

TABLE VII. OUTPATIENT VISITS AND ADMISSIONS FOR ORH.

In general, the HSS mission was clear in terms of the humanitarian assistance aspect. The medical staff anticipated high demand for routine primary care and a low demand for combat casualty care. Their assumptions were correct up to the end of the first rotation, when hostilities broke out. The HSS planners initially were uncertain as to the potential level of combat U.S. troops might face. As a result, they did not plan support for heavy combat casualties. HSS assets were appropriately augmented as the hostilities continued.

- An expanding mission requires reassessment of the medical support requirements.

Delivery of HSS: In Somalia, the MTFs were at risk. This was complicated by the outbreak of hostilities, during which the CSH often received sniper fire, and ground transportation of casualties to Mogadishu International Airport became unsafe. In addition, the nation's medical infrastructure was non-existent. This provided a further challenge for the medical personnel.

- Austere conditions and anarchy can severely affect the delivery of medical care.

Preventive medicine: Overall, the health of the forces was excellent.⁵⁰ Preventive medicine services did well in keeping heat injuries, diarrheal illnesses, and malaria rates very low. There were 38 confirmed cases of malaria. This was due to individual break in prophylactic measures.⁵¹ In such an environment, with a wealth of tropical diseases, and a very high risk for infection, it is crucial to employ personnel equipped with disease surveillance and rapid diagnostic capabilities. A U.S. Army Problem Definition Assessment Team for disease

surveillance/investigation, and a U.S. Navy Joint Forward Laboratory for rapid diagnosis provided a joint effort and were significant assets in preventing and treating epidemic diseases.

- Again, preventive medicine is a key capability during MOOTW in tropical settings.

CONCLUSION AND RECOMMENDATIONS

From the experiences in the Balkans, Haiti, and Somalia, it is obvious that HSS can be challenging for the U.S. as well as other nations. Some of the problems encountered are new, while others are common. Most can be fixed, but some have a tendency to recur.

Medical deployment in a coalition setting is complex and can be confusing both for U.S. and coalition partners. Coalition forces have different health care systems. In addition, there may be differences in language, culture, and operational concepts. These factors can affect the delivery of care. Commanders and HSS personnel must be aware of these differences and be prepared to coordinate HSS efforts to overcome them.

HSS in MOOTW may involve diverse populations with wide age ranges, varied medical conditions, cultures, and multiple languages. This is especially challenging for HSS personnel who have been trained and equipped to provide peacetime and combat casualty care mostly to young military adults. Some critiques have even questioned the wisdom of employing DOD HSS units in support of HA operations.⁵² Their argument is that HSS units are not appropriately resourced for these operations. The primary mission of DOD HSS is to maintain the health of the troops. When the U.S. military participates in HA missions, our doctrine requires organic HSS. As the operation changes, HSS units must adjust to those changes, and may have to provide care to people who were not included in the initial mission.

As recent operations have demonstrated, preventive medicine is perhaps the most crucial medical capability in MOOTW. In a multinational setting, the U.S. may be the only partner with that capability. The employment of preventive medicine to areas such as Haiti and Somalia was key in the maintenance of healthy troops in austere environments. Recently, preventive medicine units have been augmented by forward deployable laboratory systems, which offer disease surveillance, rapid diagnosis, and investigation of infectious disease outbreaks.

Austere conditions are almost a given in MOOTW. It is essential for commanders and HSS planners to be aware of this, since processes such as medical evacuations, supply/delivery, and even the delivery of health care itself can be directly affected. Poorly developed baseline HN health systems may be further degraded by regional hostilities,

destruction of health care infrastructure by war, economic downturn, or natural disasters. The provision of HSS under these conditions is an obvious challenge.

Mission analysis, and roles and missions must be thoroughly understood prior to deployment. If not, HSS personnel may be confused as to who is eligible for care; command and control relationships; and by changing or expanding missions. Good coordination and communication between commanders and medical planners, review of current doctrine, and analysis of the operations order by HSS personnel are essential for a successful mission.

Command and control relationships in non-U.S. led missions can be complex and present a challenge. Many missions are U.N.- led. The U.N. Secretary General has a U.N. force commander reporting to him. U.S. troops may be placed under the operational control of the U.N. force commander. Command relationships in that setting may be difficult. However, HSS personnel must still know and utilize the chain of command.

HSS personnel must be familiar with current doctrine. As MOOTW have become more common, related and supporting doctrine has changed. These newer documents provide the best guidelines for the conduct of MOOTW and address issues such as joint or multinational operations, and coordination with non-military agencies or officials. Many of the issues or problems experienced in recent operations are addressed in this newer doctrine.

The sources for data and analysis of previous missions are multiple. There is no single point a planner can go to for information. Some useful sources include the Center for Army Lessons Learned (CALL) information center. The Air Force's CALL is also available. The Navy also has CALL, in addition to a Navy Lessons Learned Center. The U.S. Joint Forces Command Joint War Fighting Center uses the Joint Universal Lessons Learned (JULLS) system. There is a UN Lessons Learned Unit. All these can be accessed via the Internet; some may require user identification and a password. Although a wealth of information can be obtained from these sources, it is very time consuming. A centralized source is absolutely needed. Some medical journals provide useful patient demographics, diagnoses and treatment information that medical planners can use. That type of data is scarce; HSS personnel must be encouraged to keep good records of patient encounters during an operation.

The use of telemedicine in MOOTW can minimize use of evacuation assets, and reduce medical evacuation cost by moving information instead of patients. The loss of key personnel from the theater can also be minimized. Telemedicine can also be a good tool for moving medical record data.

Training is absolutely essential for successful planning and execution of MOOTW. TRADOC Pamphlet 525-50 notes, "The Army Medical Department's most glaring training

shortfall is the exclusion of medical units in training exercises and programs.”⁵³ This can be extrapolated to the other services. The organization of HSS for MOOTW is a relatively new concept. The training of HSS personnel in the required new skill is therefore lacking. A new emphasis on training of medical personnel in MOOTW concepts and execution is therefore imperative.

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ENDNOTES

¹ Trueman W. Sharp, Ray Yip, and John Malone, "U.S. Military Forces and Emergency International Humanitarian Assistance: Observations and Recommendations from Three Recent Missions," Journal of the American Medical Association, 272, no. 5 (3 August 1994): 386-390.

² NATO, "Military Operations Other than War," in Allied Joint Doctrine, (Allied Joint Publication -01(A): chap. 23, September 1998), 1-6.

³ Ibid.

⁴ Ronald J. Bath, et al., Roads to New Strength: Preparing Leaders for Military Operations Other Than War, National Security Program Paper, 94-02 (Cambridge: Harvard University, John F. Kennedy School Government, 1994), 1-5.

⁵ William J. Clinton, A National Security Strategy of Engagement and Enlargement. (Washington, D.C.: The White House, July 1994), 13-14.

⁶ Joint Chiefs of Staff, "Military Operations Other Than War," in Doctrine for Joint Operations, Joint Pub 3-0 (Washington: U.S. Joint Chiefs of Staff, 1 February 1995), V-1 - V-13.

⁷ Joint Chiefs of Staff, Doctrine for Military Operations Other Than War. Joint Pub 3-07 (Washington: U.S. Joint Chiefs of Staff, 16 June 1995), IV-1 - IV-14.

⁸ Joint Chiefs of Staff, Doctrine for Health Service Support in Joint Operations. Joint Pub 4-02 (Washington: U.S. Joint Chiefs of Staff, 26 April 1995), I-1.

⁹ Joint Chiefs of Staff, Doctrine for Joint Task Force Planning Guidance and Procedures. Joint Pub 5-00.2 (Washington: U.S. Joint Chiefs of Staff, 13 January 1999), II-18 - II-20.

¹⁰ Joint Chiefs of Staff, Doctrine for Health Service Support in Joint Operations. Joint Pub 4-02 (Washington: U.S. Joint Chiefs of Staff, 26 April 1995), IV-1 - IV-7.

¹¹ Larry K. Wentz, "Bosnia-Setting the Stage: Lessons From Bosnia: The Implementation Force Experience," date unavailable, available from http://call.army.mil/call/spc_prod/lessons/bosch02.html; Internet; accessed 2 February 2001.

¹² Lois M. Davis, et al., Army Medical Support for Peace Operations and Humanitarian Assistance (Washington, D.C.: Rand, 1996), 18.

¹³ Ibid., 25.

¹⁴ Robert J. Reed et al., "The Field Hospital at Zagreb: Tri-Service Medical Care in a Peacekeeping Operation," Military Medicine 163, no. 6 (June 1998): 314-419.

¹⁵ Davis, 34.

¹⁶ Robert J. Reed et al., 314-419.

¹⁷ Ibid., 416.

¹⁸ Ibid., 418.

¹⁹ Davis, 39.

²⁰ Hansard, "House of Commons Hansard Debates," House of Commons Daily Debates, 18 October 1994, available from <<http://www.parliament.the-stationery-office.co.uk/pa/cm/cmhansrd.html>>; Internet; accessed 19 February 2001.

²¹ Davis, 27.

²² John Pike, "Operation UPHOLD DEMOCRACY". Military Analysis Network, 21 May 2000, available from <[http://www.fas.org/man/dod-101/ops/uphold democracy.html](http://www.fas.org/man/dod-101/ops/uphold%20democracy.html)>. Internet; accessed 21 December 2000.

²³ U.S. Army Center for Army Lessons Learned, "Haiti Initial Impression Report, Volume 3, Medical Operations," CALL Newsletter no. unavailable (Fort Leavenworth, KS, 27 June 1995), available from <<http://call.army.mil/call/iir/htivol3~/maintoc.html>>; Internet; accessed 6 February 2001.

²⁴ Virgil T. Deal, Corps Level Medical Support in Haiti September 1994 Through January 1995. A Personal Experience Monograph. (Carlisle Barracks: U.S. Army War College, 22 May 1997), 1.

²⁵ Ibid., 3.

²⁶ U.S. Army Medical Lessons Learned, "The Field Hospital (FH) was not Included in the Initial Planning," in Operation UPHOLD DEMOCRACY: Lesson no. 2171, July 1995; available from <<http://enterpriseconsultancy.cs.amedd.army.mil/lessonlearned/archived/LL002171.html>>; Internet; accessed 2 February 2001.

²⁷ B.G. Brannman, D.C. Covey, and J.P. Meneses. Fleet Hospital Five, After Action Report, August 1997.

²⁸ Ibid.

²⁹ Michael R. Sardelis, "Operation UPHOLD DEMOCRACY: Preventive Medicine Operations, Proceedings of the 1995 DOD Pest Management Workshop," November 1994; available from; <<http://www.afpmb.org/pubs/present3.html>>; Internet; accessed 21 December 2000.

³⁰ Ibid.

³¹ Ibid.

³² Trueman W. Sharp, Ray Yip, and John Malone, 386-390.

³³ Deal, 9.

³⁴ U.S. Army Center for Army Lessons Learned, "Haiti Initial Impression Report, Volume 3, Medical Operations."

³⁵ Ibid.

³⁶ Ibid.

³⁷ Kirk J. Frank, "Pharmacy Service in Support of Operation Uphold Democracy," U.S. Army Medical Department Journal, September–October 1996, available from <http://das.cs.amedd.army.mil/journal/J9656.html>; Internet; accessed 23 February 2001.

³⁸ Michael A. Pasquarella, "After Action Report for Medical Support of Operation UPHOLD DEMOCRACY 1995," Surgeon Section, 26 March 1995; available from <http://web.infoave.net/~tgarigan/lessonslearned/haiti95.html>; Internet; accessed 21 December 2000.

³⁹ Ibid

⁴⁰ Eleanor D. Gauker et al., "A Descriptive Analysis of Patient Encounter Data from the Fleet Hospital Five Humanitarian Relief Mission in Haiti," Military Medicine, 165, no. 5 (May 2000): 337-345.

⁴¹ B.G. Brannman, D.C. Covey, and J.P. Meneses.

⁴² Ibid.

⁴³ Ibid.

⁴⁴ Ibid.

⁴⁵ Institute for National Strategic Studies, "Somalia Operations: Lessons Learned. The Operational Context," date unavailable, available from <http://www.ndu.edu/inss/books/allardch2.html>; Internet; accessed 15 January 2001.

⁴⁶ Davis, 51-56.

⁴⁷ Leonard M. Randolph, and Matthew W. Cogwell, "Medical Dimensions of Joint Humanitarian Relief Operations," Joint Forces Quarterly 11 (Spring 1996): 91-97.

⁴⁸ Ibid.

⁴⁹ Davis, 65-66.

⁵⁰ U.S. Army Medical Lessons Learned, "Somalia-Operation RESTORE HOPE D+70," in Summary Report-Operation RESTORE HOPE, Medical Lesson no. 2149, February 1993, available from; <http://enterpriseconsultancy.cs.amedd.army.mil/lessonlearned/archived/LL002149.html>; Internet; accessed 2 February 2001.

⁵¹ U.S. Army Medical Lessons Learned, "Somalia-Operation RESTORE HOPE D+70," in Summary Report-Operation Restore Hope, Disease Surveillance/Investigation, Lesson no. 2121, March 1993, available from; <http://enterpriseconsultancy.cs.amedd.army.mil/lessonlearned/archived/LL002121.html>; Internet; accessed 2 February 2001.

⁵² Trueman W. Sharp, Ray Yip, and John Malone, 386-390.

⁵³ Department of the Army, Military Operations: Operational Concept for Combat Health Support, TRADOC Pamphlet 525-50 (Fort Monroe: U.S. Department of the Army, 1 October 1996), 1-14.

BIBLIOGRAPHY

- Allard, Kenneth. Somalia Operations: Lessons Learned. Washington, D.C.: National Defense University Press, 1995.
- Anderson, Mary B. Do No Harm: How Aid can Support Peace-or War. Lynne Rienner: Bolder, Colorado: 1999.
- Arnold, Steven L. "Somalia: An Operation Other Than War." Military Review 73 (December 1993): 26-35.
- Baker, Michael S., and Paula A. Ryals. "The Medical Department in Military Operations Other Than War, Part 1. Planning for Deployment." Military Medicine, 164, no. 8 (August 1999): 572-579.
- Bath, Ronald J., Richard D. Crosby, III, David E. McCracken, Jesse M. Perez, Wes Wolfe, and Mary J. Zurey. Roads to New Strength: Preparing Leaders for Military Operations Other Than War. National Security Program Paper. Cambridge: Harvard University, John F. Kennedy School Government, 6 May 1994.
- Brannman, B.G., D.C. Covey, and J.P. Meneses. Fleet Hospital Five, After Action Report. August 1997.
- Clarke, Walter S., and Jeffrey I. Herbst. Learning from Somalia: The Lessons of Armed Humanitarian Intervention. Boulder, CO: Westview Press, 1997.
- Clinton, William J. A National Security Strategy of Engagement and Enlargement. Washington, D.C.: The White House, July 1994.
- U.S. Army Center for Army Lessons Learned. "Haiti Initial Impression Report, Volume 3. Medical Operations." CALL Newsletter no. unavailable. Fort Leavenworth, KS: 27 June 1995. Available from <http://call.army.mil/call/iir/htivol3~/maintoc.html>. Internet. Accessed 6 February 2001.
- Davis, Lois M., Susan D. Hosek, Michael G. Tate, Mark Perry, Gerald Hepler and Paul S. Steinberg. Army Medical Support for Peace Operations and Humanitarian Assistance. Washington, D.C: Rand, 1996.
- Deal, Virgil T. Corps Level Medical Support in Haiti September 1994 Through January 1995. Personal Experience Monograph. Carlisle Barracks: U.S. Army War College, 22 May 1997.
- De Waal, Alex, and Jennifer Learning. "Somalia: No Mercy in Mogadishu. The Human Cost of the Conflict and the Struggle for relief: Public Health Effects of Conflict." 26 July 1992. Available from http://www.prusa.org/research/health_effects/humsom.html. Internet. Accessed 25 February 2001.

- Eisele, Manfred. "The comprehensive Report on Lessons Learned from United Nations Operations in Somalia (UNOSOM)." United Nations Lessons Learned Unit. April 1992-March 1995. Available from <<http://www.un.org/Dpts/dpko/lessons/somalia.html>>. Internet. Accessed 1 February 2001.
- Frank, Kirk J. "Pharmacy Service in Support of Operation Uphold Democracy." U.S. Army Medical Department Journal. September–October 1996. Available from <<http://das.cs.amedd.army.mil/journal/J9656.html>>. Internet. Accessed 23 February 2001.
- Gauker, Eleanor D., Dana C. Covey, Kristee E. Emens-Hesslink, Nancy L. Moya, and Paula J. Konoske. "A Descriptive Analysis of Patient Encounter Data from the Fleet Hospital Five Humanitarian Relief Mission in Haiti." Military Medicine, 165, no.5 (May 2000): 337-345.
- Hansard (House of Commons Daily Debates). "House of Commons Hansard Debates." Column 178-181. 18 October 1994. Available from <<http://www.parliament.the-stationery-office.co.uk/pa/cm/cmhansard.html>>. Internet. Accessed 19 February 2001.
- Hirsch, John L., and Chester A. Oakley. Somalia and Operation RESTORE HOPE: Reflections on Peacemaking and Peacekeeping. Washington: United States Institute of Peace Press, 1995.
- Institute for National Strategic Studies. "Somalia Operations: Lessons Learned. The Operational Context." Available from <<http://www.ndu.edu/inss/books/allardch2.html>>. Internet. Accessed 15 January 2001.
- NATO. "Military Operations Other Than War." In Allied Joint Doctrine. Allied Joint Publication-01 (A). September 1998.
- Pasquarella, Michael A. "After Action Report for Medical Support of Operation UPHOLD DEMOCRACY 1995." Surgeon Section. 26 March 1995. Available from <<http://web.infoave.net/~tgarigan/lessonslearned/haiti95.html>>. Internet. Accessed 21 December 2000.
- Pike, John "Operation UPHOLD DEMOCRACY." Military Analysis Network. 21 May 2000. Available from http://www.fas.org/man/dod-101/ops/uphold_democracy.html>. Internet. Accessed 21 December 2000.
- Randolph, Leonard M., and Matthew W. Cogwell. "Medical Dimensions of Joint Humanitarian Relief Operations." Joint Forces Quarterly 11 (Spring 1996): 91-97.
- Reed Robert J., Janet Martino, Scott M. Eystone, and William M. Pugh. "The Field Hospital at Zagreb: Tri-Service Medical Care in a Peacekeeping Operation." Military Medicine, 163, no. 6 (June 1998): 314 - 419.

- Sardelis, Michael R. "Operation UPHOLD DEMOCRACY: Preventive Medicine Operations. Proceedings of the 1995 DOD Pest Management Workshop." November 1994. Available from <<http://www.afpmb.org/pubs/present3.html>>. Internet. Accessed 21 December 2000.
- Sharp, Trueman W; Yip, Ray; and, John D. Malone. U.S. "Military Forces and Emergency International Humanitarian Assistance: Observations and Recommendations from Three Recent Missions." Journal of the American Medical Association 272, no. 5 (3 August 1994): 386-390.
- Tannen, Kenneth J., John J. Ciesla, and Mustapha Debboun. "Deployment Preventive Medicine Support: The Balkan Experience." Date unavailable. Available from <http://enterpriseconsultancy.cs.amedd.army.mil/lessonlearned/Reports/balkan/Mil_PM_Suppc.html>. Internet. Accessed 15 January 2001.
- Ternus, Mona P. "Aeromedical Evacuation in the Balkan Theater." Summer 1999. Available from <<http://www.aum.edu/home/academics/schools/nursing/AEpaper.html>>. Internet. Accessed 24 January 2001.
- Turner, Delores Martha Hughesdon. The Experience of Chief Nurses in Military Operations Other than War. Thesis. Air Force Institute of Technology. Wright-Patterson Air Force Base. 2 October 1998.
- U.S. Army Medical Lessons Learned. "Somalia-Operation RESTORE HOPE D+70." Summary Report-Operation Restore Hope, Medical: Lesson no. 2149. February 1993, Available from <<http://enterpriseconsultancy.cs.amedd.army.mil/lessonlearned/archived/LL002149.html>>. Internet. Accessed 2 February 2001.
- U.S. Army Medical Lessons Learned. "Somalia-Operation RESTORE HOPE D+70." In Summary Report-Operation Restore Hope, Disease Surveillance/Investigation: Lesson no. 2121. March 1993. Available from <<http://enterpriseconsultancy.cs.amedd.army.mil/lessonlearned/archived/LL002121.html>>. Internet. Accessed 2 February 2001.
- U.S. Army Medical Lessons Learned. "The Field Hospital (FH) was not Included in the Initial Planning." In Operation UPHOLD DEMOCRACY: Lesson no. 2171. July 1995. Available from <<http://enterpriseconsultancy.cs.amedd.army.mil/lessonlearned/archived/LL002171.html>>. Internet. Accessed 2 February 2001.
- U.S. Army Medical Lessons Learned. "United States Military Health Care Operations in Multinational Missions." Date unavailable. Available from <<http://enterpriseconsultancy.cs.amedd.army.mil/lessonslearned/archived/multimiss.html>>. Internet. Accessed 2 February 2001.
- U.S. Department of the Army. Military Operations: Operational Concept for Combat Health Support. TRADOC Pamphlet 525-50. Fort Monroe: U.S. Department of the Army, 1 October 1996.

- U.S. General Accounting Office. Humanitarian Intervention: Effectiveness of U.N. Operations in Bosnia: Briefing Report to the Honorable Robert S.Dole, Senate. Washington, D.C.: U.S. General Accounting Office, April 1994.
- U.S. Joint Chiefs of Staff. Doctrine for Health Service Support in Joint Operations. Joint Pub 4-02. Washington: U.S. Joint Chiefs of Staff, 26 April 1995.
- U.S. Joint Chiefs of Staff. "Military Operations Other Than War." In Doctrine for Joint Operations. Joint Pub 3.0. Washington: U.S. Joint Chiefs of Staff, 1 February 1995.
- U.S. Joint Chiefs of Staff. Doctrine for Joint Task Force Planning Guidance and Procedures. Joint Pub 5-00.2. Washington: Joint Chiefs of Staff, 13 January 1999.
- U.S. Joint Chiefs of Staff. Doctrine for Military Operations other Than War. Joint Pub 3-07. Washington: U.S. Joint Chiefs of Staff, 16 June 1995.
- Wentz Larry K. "Bosnia-Setting the Stage: Lessons From Bosnia: The Implementation Force Experience." Date unavailable. Available from <http://call.army.mil/call/spc_prod/lessons/bosch02.html>. Internet. Accessed 2 February 2001.