

Journal of Special Operations Medicine

A Peer Reviewed Journal for SOF Medical Professionals

Check out "What's New" on pg 27. CALL will be calling on you for your input into the SOF Lessons Learned.



THIS EDITION'S FEATURE ARTICLES ARE:

- CME--Hazards of Dietary Supplement Use
- Medical Cooperative Assistance Programs (MEDCAP) In Direct Support of Kinetic Operations: A Template for Integration of Civil Medical Operations as a Force Multiplier During Combat Operations.
- Hypertension and the SOF Warrior
- Role of Medicine in Supporting Special Forces Counter-Insurgency Operations in Southern Afghanistan
- Running a Local National Medical Clinic for Special Forces/Special Operations Medical Personnel

Dedicated to the Indomitable Spirit & Sacrifices of the SOF Medic

Report Documentation Page

Form Approved
OMB No. 0704-0188

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

1. REPORT DATE 2007		2. REPORT TYPE		3. DATES COVERED 00-00-2007 to 00-00-2007	
4. TITLE AND SUBTITLE Journal of Special Operations Medicine, Volume 7, Edition 1				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Joint Special Operations University, 357 Tully Street, Alison Building, Hurlburt Field, FL, 32544				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

COVER

ISSN 1553-9768

The Winter 07 cover is a collage of pictures taken during the MARSOC activation ceremony and passing of the flag held at Camp Lejeune, 24 Feb 2006.



From the Editor

The Journal of Special Operations Medicine (JSOM) is an authorized official military quarterly publication of the United States Special Operations Command (USSOCOM), MacDill Air Force Base, Florida. The JSOM is not a publication of the Special Operations Medical Association (SOMA). Our mission is to promote the professional development of Special Operations medical personnel by providing a forum for the examination of the latest advancements in medicine and the history of unconventional warfare medicine.

Disclosure Statement: The JSOM presents both medical and nonmedical professional information to expand the knowledge of SOF military medical issues and promote collaborative partnerships among services, components, corps, and specialties. It conveys medical service support information and provides a peer-reviewed, quality print medium to encourage dialogue concerning SOF medical initiatives. The views contained herein are those of the authors and do not necessarily reflect the Department of Defense. The United States Special Operations Command and the Journal of Special Operations Medicine do not hold themselves responsible for statements or products discussed in the articles. Unless so stated, material in the JSOM does not reflect the endorsement, official attitude, or position of the USSOCOM-SG or of the Editorial Board.

Content: Content of this publication is not copyrighted. Published works may be reprinted provided credit is given to the JSOM and the authors.

Articles, photos, artwork, and letters are invited, as are comments and criticism, and should be addressed to Editor, JSOM, USSOCOM, SOC-SG, 7701 Tampa Point Blvd, MacDill AFB, FL 33621-5323. Telephone: DSN 299-5442, commercial: (813) 828-5442, fax: -2568; e-mail JSOM@socom.mil.

The JSOM is serial indexed (ISSN) with the Library of Congress and all scientific articles are peer-reviewed prior to publication. The Journal of Special Operations Medicine reserves the right to edit all material. No payments can be made for manuscripts submitted for publication.

Distribution: This publication is targeted to SOF medical personnel. There are several ways for you to obtain the Journal of Special Operations Medicine (JSOM). 1) USSOCOM-SG distributes the JSOM to all our SOF units and our active editorial consultants. 2) SOMA members receive the JSOM as part of membership. Please note, if you are a SOMA member and are not receiving the subscription, you can contact SOMA through www.somaonline.org or contact MSG Russell Justice at justicer@earthlink.net. SOMA provides a very valuable means of obtaining SOF related CME, as well as an annual gathering of SOF medical folks to share current issues. 3) For JSOM readers who do not fall into either of the above mentioned categories, the JSOM is available through paid subscription from the Superintendent of Documents, U.S. Government Printing Office (GPO), for only \$30 a year. Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954. GPO order desk -- telephone (202) 512-1800; fax (202) 512-2250; or visit <http://bookstore.gpo.gov/subscriptions/alphabet.html>. You may also use this link to send a email message to the GPO Order Desk—orders@gpo.gov. 4) The JSOM is online through the Joint Special Operations University's new SOF Medical Gateway; it is available to all DoD employees at <https://jsou.socom.mil/medical/>. On the left you will have several tabs; you must first "log-in" using your SS#, DOB, and name; then go to "publications." Scroll down until you get to the JSOM and click on the picture. From this site, you can link straight to the Government Printing Office to subscribe to the JSOM. We are working with the JSOU to have a SOCOM-SG medical site; we will keep you posted as that progresses. 5) The JSOM can also be emailed in PDF format; if you would like to be added to the PDF list please send your request to JSOM@socom.mil.

Do your CMEs!!!! Remember, our continuing education is for all SF medics, PJs, and SEAL corpsmen. In coordination with the Uniformed Services University of Health Sciences (USUHS), we offer CME/CNE to physicians, PAs, and nurses.

The JSOM remains the tool that spans all the SOF services and shares medical information and experiences unique to this community. The JSOM continues to survive because of the generous and time-consuming contributions sent in by physicians and SOF medics, both current and retired, as well as researchers. We need your help! Get published in a peer-review journal NOW! See General Rules of Submission in the back of this journal. We are always looking for SOF-related articles from current and/or former SOF medical veterans. We need you to submit articles that deal with trauma, orthopedic injuries, infectious disease processes, and/or environment and wilderness medicine. More than anything, we need you to write CME articles. Help keep each other current in your re-licensure requirements. Don't forget to send photos to accompany the articles or alone to be included in the photo gallery associated with medical guys and/or training. If you have contributions great or small... send them our way. Our e-mail is: JSOM@socom.mil.

Enjoy this edition of the journal, send us your feedback, and get those article submissions in to us now!

Maj Michelle DuGuay Landers

Meet Your JSOM Staff

EXECUTIVE EDITOR

Warner Dahlgren Farr, MD
warner.farr@socom.mil



Colonel “Rocky” Farr was the distinguished honor graduate of his Special Forces 18D class in 1968. He served as a recon team member with the 5th SFG(A) in SOG-Studies and Observations Group. He attended the DLI (German) and joined Detachment A, Berlin Brigade, an early special mission unit. He became the SF instructor at the ROTC Detachment, Northeast LA University and completed his BS. As a SFC, he taught in the 18D course and was selected for MSG. COL Farr was accepted to the Uniformed Services University of the Health Sciences and while a medical student, he was the medical platoon leader for the 11th SFG(A). He received his MD in 1983 and has completed residencies in aerospace medicine, and anatomic and clinical pathology. He commanded Company F (ABN), 3rd BN, Academy BDE, Academy of Health Sciences as Course Director of the Special Operations Medical Sergeant’s Course; and advisor to the 12th SFG(A). He was Chief, Department of Pathology, Blanchfield Army Community Hospital, and Flight Surgeon, 50th Medical Company (Air Ambulance), 101st ABN Division (Air Assault). COL Farr was the Division Surgeon of the 10th Mountain Division (Light Infantry) until becoming Deputy Commander of the U.S. Army Aeromedical Center. He attended the Air War College before becoming the Deputy Chief of Staff, Surgeon, U.S. Army Special Operations Command; Command Surgeon, U.S. Army Special Forces Command; and Command Surgeon, U.S. Army Civil Affairs and Psychological Operations Command. He became the Command Surgeon of the U.S. Special Operations Command in Tampa, FL in July 2006. He has numerous operational tours to include Bosnia, Kosovo, Kuwait, Vietnam, Cambodia, and Afghanistan.

MANAGING EDITOR

Michelle DuGuay Landers, RN
duguaym@socom.mil



Maj Landers joined the Army Reserve in 1987 and served as a nurse in a Combat Support Hospital unit for three years before switching services in 1990 to become an Air Force C-130 Flight Nurse. She is currently an IMA reservist attached to the SOCOM/SG office where she has been in charge of management, production, publication, and distribution of the JSOM since its inception in Dec 2000. Maj Landers has a Bachelors in Nursing and a Masters in Business Administration/Management. Her 20 year nursing career includes being a flight nurse in both the military and private sector, 15 years of clinical experience in emergency and critical care nursing as well as being an EMT and a legal nurse consultant. She also served as the military liaison to her Disaster Medical Assistance Team (DMAT). Prior to the SG office, Maj Landers’ experience at US-SOCOM includes an assignment in the Center for Force Structure, Resources, Requirements, and Strategic Assessments.

Contents

Winter 07

Volume 7, Edition 1

From the Command Surgeon	3
COL Rocky Farr	USSOCOM
Enlisted Corner	6
SOCM Glenn Mercer	USSOCOM
Component Surgeons	8
COL Joe Carvalho	USASOC
Col Timothy Jex	AFSOC
CAPT Jay Sourbeer	NAVSPECWARCOM
CAPT Stephen McCartney	MARSOC
Research & Development	15
USSOCOM Biomedical Initiatives Steering Committee	
Mr. Bob Clayton	
Training & Education	17
CPT Steve Briggs, SP, APA, MPAS-C	
Care Coalition	23
SOCOM Gives Special Care To Its Own	
What's New	27
Correspondence	29
<i>Letters to the Editor & Apologies to the Readers</i>	

FEATURE ARTICLES

Hazards of Dietary Supplement Use	30
Anthony E. Johnson, MD; Chad A. Haley, MD; John A. Ward, PhD	
Medical Civilian Assistance Programs (MEDCAP) in Direct Support of Kinetic Operations: A Template for Integration of Civil Medical Operations as a Force Multiplier During Combat Operations.	39
Robert F. Malsby III, DO, FS, DMO; Bart M. Territo, PA-C	
Hypertension and the SOF Warrior	44
George W. Horsley, NREMT-P, PA-C	
Role of Medicine in Supporting Special Forces Counter-Insurgency Operations in Southern Afghanistan	48
Sean Keenan, MD	
Running a Local National Medical Clinic for Special Forces/Special Operations Medical Personnel	51
Samuel J. Blazier, 18Z; Ronald A. Leach, PA-C; George Perez, 18D; Bruce W. Holmes, 18D; Robert S. Blough, 18D; Sean Keenan, MD	

Abstracts from Current Literature	58
Book Review	61
Reviews by MAJ Kathleen Farr, Command and General Staff College (SG 3A)	
Odysseus in America: Combat Trauma and the Trials of Homecoming	
Jonathan Shay	
Guns, Germs, and Steel: The Fates of Human Societies	
Jared Diamond	
Previously Published	65
Handling The Wounded in a Counter-Guerrilla War: The Soviet/Russian Experience in Afghanistan And Chechnya	
LTC (Ret) Lester W. Grau and Dr. William A. Jorgensen D.O.	
Medical History	74
Early Special Forces Medical Training 1952 – 1971	
LTC Louis T. Dorogi	
Upcoming Events	82
Upcoming SOF Related Medical Conferences and CME Courses	
Special Forces Medical Reference Guide	84
Need to Know	91
A Case of Blastocystis Hominis and HIV in a Coalition Soldier	
Johnny Wayne Paul, PA-C	
Med Quiz	93
Picture This...	
CPT Karen T. Guerrero	
Human Performance Forum	100
SOCM Glenn Mercer	
Dedication	100
LTC John L. Buono, PA-C (Ret)	
Submission Criteria	106

From the Command Surgeon



WARNER D. "Rocky" FARR
COLONEL, U.S. ARMY
Command Surgeon
HQ USSOCOM

It is hard to believe that I have been in this assignment for nearly seven months already! The office has worked on and accomplished many things but we still have much work to do! To see some of the efforts that involved our office, please read Military Medical Technology Magazine (Volume 10, Issue 8; go to www.military-medical-technology.com <<http://www.military-medical-technology.com/>>) which featured our office in the December 2006 issue.

The Special Operations Medical Association (SOMA) meeting here in Tampa in December had the best lessons learned sessions I ever saw. I offer my congratulations on a great job to all of the SOMA organizers: Al Moloff, Bob Saum, Russ Justice, and Sammy Rodriguez. Most of my column this month will feature some of the slides from my briefing on SOF Medicine. It was great to see all the folks who came; they did a lot of work and networking. It was also great to have MARSOC in attendance for the first time.

At the start of the conference GEN Brown briefed the participants about GWOT. I had a productive component surgeons meeting, which then rolled into the senior enlisted medical advisor's meeting. Plan to come to SOMA 2007; details (which may be different than usual) will follow.

I am determined to get all our lessons learned written down and published so we can all profit from them – not just have them uttered at SOMA and then mostly forgotten. We are starting an effort to publish them as supplemental issues of the Journal of Special Operations Medicine (JSOM). I will also send folks

around to visit units to pick their brains as an effort of the Center for Army Lessons Learned (CALL) at Fort Leavenworth, KS. Mike Reinhardt, with help from the Institute of Surgical Research's Danny Gay, will lead this effort. The ISR collects data as they go out and perform TCCC pre-deployment training. Although they want out of the training business, they are still in the research and data collection business. Please welcome them when they come and, by all means, talk to them. This is how everyone learns.

We also conducted the kickoff meeting for the new edition of the SOF Medical Handbook during SOMA. Dr. Les Fenton is the managing editor. We plan to have it on the street, in hard copy, within two years. It will be no thicker than the present one (waterproof paper can be thinner these days) and the compact disc edition will follow with additional material in it.

As a member of the Tactical Combat Casualty Care (TCCC) Committee, I attended the meeting in Atlanta in December. The new (6th) edition of the Pre-hospital Trauma Life Support Handbook is out in the military as well as the civilian editions. TCCC remains our guiding way to do trauma on the battlefield. The committee now has representation from all the Services and is busy deciding which way it needs to proceed. There should be a website up soon. Realize that anyone can say "I teach TCCC." However, there isn't anyone enforcing any standard so beware of civilian programs claiming to have the answer. I fully support internal TCCC pre-deployment programs that meet a unit's needs.

WE DON'T CALL FOR REINFORCEMENTS. WE MAKE THEM.

Command Surgeon's Medical Update FOR Special Operations Medical Association

Briefer: COL Rocky Farn
 USSOCOM Command Surgeon

Date: 28 November 2006

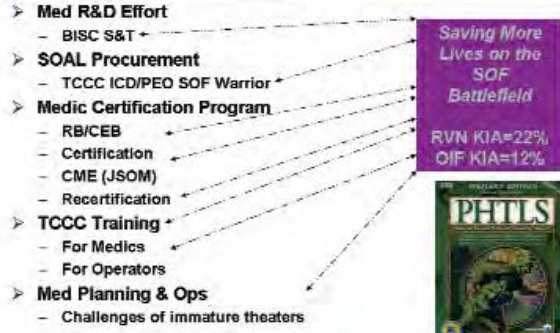
Special Forces
 SPECIAL FORCES

U.S. ARMY

UNCLASSIFIED SOCOM SURGEON Right Place, Right Time, Right Adversary



Command Surgeon's Office Saves Lives



UNCLASSIFIED SOCOM SURGEON Right Place, Right Time, Right Adversary



USSOCOM Mission

USSOCOM leads, plans, synchronizes, & as directed, executes global operations against terrorist networks.

USSOCOM trains, organizes, equips & deploys combat ready special operations forces to combatant commands.

Join the U.S. Army Special Forces

UNCLASSIFIED SOCOM SURGEON Right Place, Right Time, Right Adversary



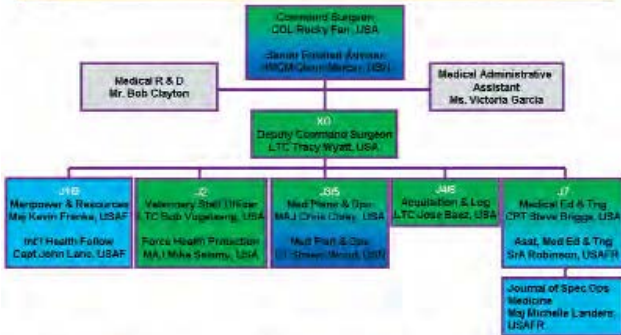
Command Surgeon's Mission

- USSOCOM Command Surgeon's Office:
- Plans & synchronizes medical support for global operations against terrorist networks.
 - Provides support to & oversight for the medical joint doctrine, organization, training, & equipping of special operations medical & non-medical forces & assists in deploying healthy, combat ready special operations forces to combatant commanders.

UNCLASSIFIED SOCOM SURGEON Right Place, Right Time, Right Adversary



Command Surgeon Organization



UNCLASSIFIED SOCOM SURGEON Right Place, Right Time, Right Adversary



How much medicine in SOCOM?

Answer: More Than Elsewhere.

"In almost every small wars operation, the number of commissioned medical & dental officers & enlisted corpsmen will be considerably in excess of that required for a corresponding force in a major war."

NAVMC 2890—SMALL WARS MANUAL, U.S. MARINE CORPS (1940)

UNCLASSIFIED SOCOM SURGEON Right Place, Right Time, Right Adversary



UNCLASSIFIED

USSOCOM Surgeon's Focus

1. Command Medic Certification Program.
 - Establish standards for training of SOF medical personnel & provide oversight (SOCOM Dir 40-2).
2. Strategic Medical Policy, Planning, & Oversight.
 - Provide medical planning staff support to the CSO
 - Provide functional expertise to Components & TSOCs.
3. Research, Development, & Acquisition.
 - Equipment to support SOF peculiar medical requirements (SOCOM Dir 40-1).

UNCLASSIFIED

SOCOM SURGEON

Right Place, Right Time, Right Addressing



UNCLASSIFIED

Command Medic Certification Program

Our Medics Are Different

"Special care should be taken in selecting the hospital corpsmen to accompany the force. In many cases, an enlisted corpsman will be required to make the diagnosis & administer the medication normally prescribed by a medical officer."

NAVMC 2890—SMALL WARS MANUAL,
U.S. MARINE CORPS (1940)



UNCLASSIFIED

SOCOM SURGEON

Right Place, Right Time, Right Addressing



UNCLASSIFIED

Command Medic Certification Program (Background)

- CG eliminated the civilian National Registry Emergency Medical Technician—Paramedic (NREMT-P) requirement for SOF medics in 2003.
- Directed development of a requirements-based, interoperable standard: SOF Advanced Tactical Practitioner (ATP) w/recertification, equal to NREMT.
- Program evaluates & certifies SOF medics to joint interoperable standard: USSOCOM Dir 40-2—*Joint Special Operations Medical Education & Training*.
- External Boards & External Testing Critical to Certification & Joint Special Operations Medical Training Center (JSOMTC) Accreditation.
- "60 Minutes" Factor.

UNCLASSIFIED

SOCOM SURGEON

Right Place, Right Time, Right Addressing



UNCLASSIFIED

Command Medic Certification Program (System)

1. Requirements Board (RB) Develops Training Objectives.
2. Curriculum Evaluation Board (CEB) Writes External Exam.
3. External Certification Exams given at JSOMTC & Kirtland.
4. Initial Certification Card Issued by SG Office.
5. Continuing Medical Education Requirement (Journal of Special Operations Medicine (JSOM) based).
6. SOFMSSP Training @ JSOMTC w/feedback.
7. Recertification Card Issued by SG office.
6. System Reviewed by Schools' Accrediting Body.



UNCLASSIFIED

SOCOM SURGEON

Right Place, Right Time, Right Addressing



UNCLASSIFIED

Command Medic Certification Program

- Journal of Special Operations Medicine.*
- Updates from Component Surgeons.
- CME for physicians, PA's, nurses & medics.
- Available Online @ JSOU.
- Articles:
 - Case reports from SOF first responders
 - Treatment of Suicide bombing victims
 - Veterinary aspects of SOF MEDCAPs
- NOBODY else does this!



UNCLASSIFIED

SOCOM SURGEON

Right Place, Right Time, Right Addressing



UNCLASSIFIED

Tactical Combat Casualty Care

- TCCC update message DTG is 301444Z Mar 06 – Directs & Reemphasizes the following:
 - Components directed to ensure deploying units receive training (6 months prior).
 - Change to equipment for medical & non-medical combatants.

All USSOCOM Combatants

COMBAT PILL PACK
 GATFL OXACIN 400 MG*
 (* replacement pending)
 MELOXICAM 15 MG
 TYLENOL 500 MG BILAYER CAPLETS (2)
 COMBAT APPLICATION (CAT) Tourniquet
 HEMICON DRESSING
 QUIK CLOT (POWDER)
 NASOPHARYNGEAL AIRWAY

USSOCOM Combat Medics

HEXTEND
 VELDRO IV STRAPS
 INJECTABLE PHENERGAN
 PYNG FAST INTERNAL INTRAOBSCURED DEVICE
 ERTAPENEM
 BLIZZARD RESCUE BLANKET
 TECHTRACE READY HEAT BLANKET
 THERMOLITE HYPOTHERMIA PREVENTION SYSTEM
 CAP
 TRANSMUCOSAL FENTANYL LOZENGES 400 UG
 (Unit purchase due controlled substance issues)
 PULSE OXIMETERS

- Acquisition Program

UNCLASSIFIED

SOCOM SURGEON

Right Place, Right Time, Right Addressing



2. Strategic Medical Policy, Planning & Oversight

- Medical planning staff in the CSO.
- Provides expertise to Components, TSOCs. Assist/Advise SOC Medical Planners & Surgeons. Augment Medical Planners during Contingencies.
- Provide Preventive Medicine, Medical Logistics, Personnel, & Evacuation Expertise & Advocacy.
- Liaison between SOC & OGAs.
- SOF Peculiar Policies.
 - Level 1 Blood Use
 - Health Surveillance
 - Classification of Medical/Personnel Information



3. Research, Develop, & Acquisition

- **Biomedical Initiatives Steering Committee (BISC)**
Serves as the principal biomedical R&D body to USSOCOM.
- Some examples are...
 - Refractive eye surgery
 - Tactical Combat Casualty Care (TCCC)
 - US Navy dive computer
 - CV-22 & ASDS biomedical support
 - Hemostatic bandage development
 - O₂ carrying fluids
 - SOF Medic Handbook
- Acquisition through SOAL's PEO SOF Warrior



Medtech Tactical Combat Casualty Care



2005-09 CAUSES OF DEATH IN COMBAT CASUALTIES IN OIF AND OEF
Review Casualties Sustained in OIF/OEF to Determine Cause of Death for Fatalities and Discuss What TCCC Measures Might Have Prevented Them.



2005-12 EFFICACY OF OXYGEN ADMINISTRATION IN THE CASEVAC PHASE OF TACTICAL COMBAT CASUALTY CARE
Compare Data From Combat Casualties to Data From Civilians With Comparable Injuries to Determine Efficacy of Oxygen Therapy. Provide Recommendations for Changes in SOF Medical Protocols.



Biomedical Initiatives Steering Committee New Initiatives

MEDTECH PROJECTS	PROJECT OBJECTIVE	FY OF FUNDS
2008-05 INTRAVENOUS PERFLUOROCARBON AND RECOMPRESSION THERAPY AFTER THE ONSET OF SEVERE DECOMPRESSION SICKNESS (DCS)	The goal of this project is to determine if PFC can be used to mitigate decompression sickness. This will greatly enhance the management of DCS when normal recompression aids are not available and serve as a guide to the development of more effective adjunct therapies. Deliverable is a research report addressing the above issues.	FY07 FY08
2008-02 IDENTIFY THE EFFECT OF MODAFINIL UPON SLEEP LATENCY, SLEEP ARCHITECTURE, AND SLEEP EFFICIENCY (A CONTINUATION OF 2004-14) SOF PERFORMANCE ENHANCING DRUG PROTOCOLS	Evaluate the positive and negative effects of several fatigue countermeasures on crew behavior under actual conditions. This assessment includes comparisons of modafinil (3, 100 mg doses), dextroamphetamine (3, 5 mg doses), (3, 200 mg). Deliverables are a research report and drug protocol suitable for publication in the peer-reviewed literature, with specific recommendations to be presented for the approval of use by the Surgeon General for use by aviators.	FY07 FY08



- *“Unconventional Warfare (UW) ... remains uniquely Special Forces’. It is the soul of Special Forces: the willingness to accept its isolation and hardships defines the Special Forces soldier. Its training is both the keystone and standard of Special Forces Training: it has long been an article of faith, confirmed in over forty years of worldwide operations, that “If you can do the UW missions, you can do all others.” The objective of UW and Special Forces’ dedication to it is expressed in Special Forces’ motto: De Oppresso Liber (to free the oppressed).”*

- Robert M. Gates, Remarks at dedication of OBS Memorial, 12 June 1992

ENLISTED CORNER



SENIOR ENLISTED MEDICAL ADVISOR (SEMA)
SOCM GLENN MERCER

The office is ramping back up after a brief holiday leave period. Since the last edition we have had some nominal movement on our current core projects and working issues. The highlight events of the quarter took place in December, around or during the SOMA. Briefly, a collective meeting between the Component Surgeons and JMEAC took place. Albeit a brief event, there was business that was accomplished.

For several years the issue of medical lessons learned and unit after actions reports (AARs) that contain combat mission needs has been a discussed item; this has been substantiated in the JMEAC minutes, not to mention the NCO SOF Truths (some four years worth). Considering that the December event was the first time we achieved a technical voting quorum it was the ideal time to get traction on the solution.

After several presentations from the SOCOM J7 and a unanimous vote it was decided that the infrastructure and repository solution to the problem was the SOF Lessons Learned Reporting System (SOFLLRs). This division of the J7 is relatively new to USSOCOM; however, they are staffed by permanent party personnel and positional contractors in Tampa and at the components. Before we validated the system all of the voters “test drove” the system from their home stations. This yielded no discrepancies in either interface or SIPR protocol. Additionally these results were successful after the transition from the SOCOM portal to SOFNET interface. Bottom line; if you can access RED you can

enter a report, even from the JSOTFs. Detailed briefings on system use are available by file transfer protocol (FTP) from the SOFLLRs page directly.

Now that this is the system of record, it is up to us to populate it with our lessons. For years there have been at least three different attempts at collating medical lessons with varying degrees of success; not to mention the four Service-specific systems that were established and running. During my test drive I actually found a SODARS report I had submitted more than a decade ago so I can attest to the presence of written material that I believed had been used for bird cages. To date we have had nine entries from the Force with a very quick turnaround; two of them were fragments from SODARS. This system, as are all data bases, is only as good as the effort put into it.

I’ll wrap up with some pending and recent personnel changes. The new MARSOC Senior Enlisted is now under orders and will be onboard in February this year after a seven month gap. The JSOMTC has recently changed Navy leadership with HMCS Sine relieving MC Brown as the Navy SEA. Additionally SWTG (A) gets its first rated CSM when Michael Cunningham checks onboard during the quarter. These fills with the resident continuity at the Components gives us a constellation of senior, experienced NCOs in place for the next two years. Concurrently, all of our Surgeons are relatively synchronized with their tours.



Joe Carvalho, MD
COL, USA
Command Surgeon

USASOC



USASOC Medical Officer Selections

My office has the distinct pleasure of identifying qualified applicants and selecting Army Medical Department (AMEDD) officers for Army Special Operations Forces (ARSOF) positions each year. Having just completed a cycle of officer selections, I want to wish an early welcome to the AMEDD officers inbound to support USASOC medicine for the next few years. In addition to the exceptionally fine medical service, medical specialist, veterinary and dental corps officers coming our way, we look forward to another outstanding contingent of Medical Corps (MC) officers this summer. As is typical for our community, the majority of MC assignments involve family medicine specialists. Additionally, a lone orthopedist will join a smattering of internists and emergency medicine specialists due to join us in 2007.

My philosophy on MC officer selections is that USASOC first and foremost needs exceptional physicians who are well grounded in their area of expertise. As a practical matter, this means I would prefer a staff physician over one who is completing his/her first residency. ARSOF units involve the most complex operations with the highest-level implications than any other unit on the battlefield. As such, USASOC cannot afford to have their medical officers second-guessing their clinical skills while performing their newly acquired operational responsibilities. In my estimation, the stakes are too high to tolerate early missteps or gnawing self doubt.

Secondly, but of near-equal importance, USASOC MC officers must be tactically and administratively proficient to function effectively as special staff officers. I certainly don't want the unit to have to chain their "Doc" to a HMMVW to keep him/her safe. Finally, we screen our MC candidates for attributes of a cooperative, quick thinking, and adaptive individual who is articulate in both writing and speaking skills.

Does this sound like the perfect physician? Well, it should since USASOC has priority in selecting MC officers among those eligible for operational assignments each year, and we generally hit home runs with our selections. I fully expect this year's physician group to prove to be nothing short of stellar. Although putting the final touches on placing the right officer in the right unit can sometimes get tricky, it is not due to the officers we've selected *per se*. Among our volunteers each year, everyone is a proven top performer and we rarely misfire with those we select. The USASOC Deputy Chief of Staff, G1, recognizes that we can best identify the special skills required of a medical special staff officer and we've developed a great working relationship with their office and with the AMEDD folks representing us at Human Resources Command (HRC) in Alexandria, VA.

Because I place so much emphasis on our medical officers being good physicians, I recently discontinued our office's practice of funding medical students and non-ARSOF MC Officers for Airborne, Aviation

Medicine, Military Freefall, Combat Diver Qualification, Diving Medical Officer, and the Diving Recognition and Treatment Courses. I firmly believe medical school and Graduate Medical Education (GME) years are best spent honing one's skills as a physician. To be fair, I don't discriminate against MC officers who lack these qualifications when reviewing their packets for a USASOC assignment. Once we've selected our inbound group of MC officers, we work hard to get them Airborne and Aviation Medicine Course training before they sign into their gaining unit. This practice has worked well in the past, and I expect it to continue to work well into the future.

The following is a synopsis of our selection process from year-to-year: My office takes calls, emails, and letters from interested parties at any time. Of note, we receive queries from attending staff physicians, from those in residencies and internships, from medical students, and even from individuals not yet in medical school. Whenever an individual contacts us, we have the appropriate POC answer any questions and we start an applicant file. I'm not involved at this level, so the prospective applicants can be candid with their questions and comments. We ask that they provide us a copy of their Officer Record Brief (with DA photo), curriculum vitae (if applicable), and a letter of any information they feel would help us in the selection process. In general, we look for the skills each officer brings, what units they are interested in, and what assignment constraints they may have due

to joint domicile or Exceptional Family Member Program issues. Of course, applicants may update any of these three items at any time.

Beginning in July of each year we make contact with our units' executive officers to determine which planned medical officer vacancies will exist for the following fiscal year summer. We also begin to advertise USASOC opportunities within USAFORSCOM and at each of the hospitals throughout USAMEDCOM. For our units that conduct internal assessments and selections, we work closely with them to ensure they have visibility of all eligible candidates. Our goal is for these units to make their selections before November of each year, so the nonselected officers retain GME and other ARSOF assignment options.

Shortly following the AMEDD GME selections, my office reviews each candidate with the unit surgeons, and develops a finalized list of selectees by late December - well before the general AMEDD assignment meeting is held. This gives the officers not selected for ARSOF assignments ample time to lobby for specific hospital, administrative, or conventional operational jobs.

Again, I offer my congratulations to our inbound medical officers on their selection to be part of an outstanding community of Special Operations Soldiers, Sailors, Airmen, and Marines. We look forward to having you join us in the months ahead and wish you every success during your tour as a USASOC officer.

Sine Pari!

COMPONENT SURGEON

AFSOC



Timothy Jex, MD
Col, USAF
Command Surgeon



During the week of 22 January 2007, we will hold our second annual AFSOC/SG Conference here at Hurlburt Field, FL. The primary focus of this year's conference will be increasing the cross-talk and flow of communication among our various medical units. As I conducted site visits around the Command during the last several months, the brilliant, innovative solutions to problems that in many cases aren't unique to that unit have impressed me incredibly. At the same time I was a little discouraged that more of these solutions were not shared with the rest of the AFSOC medical community. In many cases, issues

that some have struggled with have already been solved elsewhere. Because much of that responsibility falls back on us at HQ to disseminate these "best practices," we will do a better job of that, but very clearly more direct communication among the units will pay huge dividends. I intend to prime that pump at the SG Conference, but in the meantime I ask each of you to sustain the dialogue on a permanent basis and place greater emphasis on your role as a member of this elite AFSOC medical community and your responsibilities to that greater community.

I look forward to seeing all of you and as always, stay safe!



Jay Sourbeer, MD
CAPT, USN
Command Surgeon



Naval Special Warfare has been doing a tremendous job in the War on Terror and the SEAL medic is assisting in this effort. Petty Officer Jonathan (his full name is being withheld due to his current operational status) is the 2006 SOMA Medic of the Year and he recently received this award for multiple actions on the battlefield. These summaries not only describe his character, but exemplify and validate his combat medic training. His professionalism is emphasized in the following excerpts.

PO Jonathan was assigned as the Lead Medic and Combat Advisor while conducting combined operations in Iraq. During a patrol his unit came under attack from enemy small arms fire and an Iraqi soldier was hit and lying exposed on the pavement 30 meters away. Despite effective enemy fire, PO Jonathan fearlessly ran through the frontal fire with another SEAL to rescue the wounded Iraqi soldier.

Once they arrived at the relative safety and cover of the adjacent structure PO Jonathan briefly conducted care under fire. Despite his efforts the Iraqi was lethally wounded and he was pronounced dead at the scene. As PO Jonathan began to rejoin the fight he was contacted by heavy enemy fire directly in the Casualty Collection Point. With rounds striking the courtyard walls around him, a second Iraqi soldier sustained a GSW to the head in an exposed area. For the second time, without regard to his own safety, PO Jonathan

quickly extracted the wounded man to cover inside a structure and initiated Tactical Combat Casualty Care. While other members of the patrol began CASEVAC procedures, PO Jonathan calmly administered advanced medical care and stabilized the patient. Subsequently, the CASEVAC platform made its way to the unit and extracted the wounded man and delivered them to the FOB after a 15 minute drive through enemy territory.

During a second combat operation in this AO, a patrol member was effectively engaged when he received multiple secondary missile wounds to the right side of his face from a large caliber round striking his automatic weapon. PO Jonathan received the "man down" call over the tactical net and responded with the C2 element to the elevated position. Finding that his teammate was still exposed to active sniper fire, he raced across the open space and pulled him close to the minimal cover provided by a retaining wall. After alerting the C2 that he had an Immediate CASEVAC need, PO Jonathan and a teammate carried the patient through exposed areas under covering fire from tracked armor and from other members of the patrol.

During this extraction PO Jonathan recognized that the patient's airway was becoming occluded from the method of carry and re-organized the transport efforts to the waiting Armored Personnel Carrier. Additionally he intervened after a patient handoff to

prevent a nasal trumpet from being inappropriately placed in a contraindicated site, preventing airway compromise and further injury to the wounded man. He continued to conduct tactical field care until they reached the surgical team at the FOB.

PO Jonathan's exceptional performance in combat operations, use of sound tactics, and demonstrated technical skill were instrumental in the success

of the Naval Special Warfare Task Unit. His heroism and courage under fire were essential to saving the lives of wounded teammates and Iraqi Army soldiers, despite grievous wounds and a persistent enemy force.

This professionalism and dedication to duty exemplifies the standards maintained by SEAL Medics and is an example for others to aspire to.





MARSOC



Stephen F. McCartney, MD
CAPT, USN
Command Surgeon



The United States Marine Corps Special Operations Command (MARSOC) celebrated its first anniversary 24 February 2007. From an embryonic initial staff at its activation, MARSOC now has over half of its allowed end strength of over 2500 personnel. It has sent various missions downrange to diverse geographical locations as well as the January deployment of a full up Marine Special Operations Company (MSOC) with the 26th Marine Expeditionary Unit (MEU) from Camp Lejeune.

The MARSOC Surgeon's Office, as predicted, is busy sourcing and supplying the medical capabilities to support these many diverse missions. The challenge is immense as the Navy's overall inventory of our needed Special Amphibious Reconnaissance Corpsmen (SARC) is at a flat 40%. Of these, many are gainfully employed in Big Blue Navy in key senior leadership positions as Command Master Chiefs (CMC) or Senior Enlisted Leaders (SEL). That being said, at year's end MARSOC's SG Office has on-board one third of its allowed Navy medical personnel. We look forward to 2007 with the anticipated arrival of more critical medical assets (I am superstitious, so I won't mention numbers here!).

The recent DoD/USSOCOM tasking to increase quotas for Special Operations medical training (SOCM) at Fort Bragg is a tremendous boost for both MARSOC (as well as our brethren at NAVSPECWARCOM). Our SARC requirements for the future will

come from "growing" them, not from an existing inventory which we could draw from.

One great piece of news I will enthusiastically share with you is the incoming arrival of MARSOC's first Master Chief, HMCM William R. Cherry, USN. He is extremely well known and respected in the SARC/IDC community as their specialty leader in previous years prior to his redeployment to Blue Navy. I had the pleasure of hearing great things about HMCM Cherry whilst still at III MEF in Okinawa. We met last July at COMNAVAIRPAC in Coronado, California. His expertise, wealth of knowledge, and reputation will take MARSOC's SG Office ahead while keeping me honest and out of trouble (I hope). Welcome aboard HMCM Cherry! HMCS Raul Morales, USN, has been graciously serving TAD to MARSOC for five months and will support HMCM Cherry's transition into the Command. My thanks to USSOCOM for the support, as well as to HMCS Morales for his tremendous efforts and great work done for us here. Bravo Zulu!

The SOMA 2006 Conference was an outstanding event for MARSOC. I thank Colonel "Butch" Anderson, MC, USA, for his invitation for me to be part of a most enlightening panel discussion on "Controversies in Special Operations Medicine." We had a small contingent of officers and enlisted personnel in attendance. It was my first SOMA Conference and I want to thank HMCM Glenn Mercer (SEAL), USN and Colonel Rocky Farr, USSOCOM Command Surgeon, for all of

their support and complimentary remarks made during their presentation(s) in support of MARSOC. We will meet and exceed the predictions made regarding MARSOC as the newest but key and integral member of Special Operations Forces. Thanks also to my US-ASOC, AFSOC, and WARCOC Component Surgeons for your collegueship. I look forward to working more with you all this year and share what the MARSOC Surgeon's Office has learned along the way. I look forward to the SOMA 2007 Conference,

and, if the agenda permits, we can present our experiences, both operational and those used to build an organization from "toothpicks and toenails".

My team's philosophical approach to building the MARSOC SG Office has been accurate thus far and may be of interest to many: *"Our perceived weaknesses will be our ultimate strengths."*

Happy New Year and God Bless America.



USSOCOM Biomedical Research and Development Update

Robert Clayton, The Geneva Foundation, USSOCOM Medical R&D Coordinator

In addition to my duties as the R&D coordinator, I support the Special Operations Acquisition and Logistics–Technology Directorate (SOAL-T) and the Special Operations Acquisition Executive (SOAE) on the Human Research Protection Program (HRPP). The USSOCOM must comply with DOD Directive 3216.2, “Protection of Human Subjects and Adherence to Ethical Standards in DoD-Supported Research,” when sponsoring any research and development project. Consequently USSOCOM must conduct or sponsor all research in accordance with an approved protocol that is approved by an institution to which a Federal Agency granted the authority to conduct research or studies that involve humans as research subjects. This authority is referred to as an assurance.

I mention this because I receive numerous calls from vendors that want to get their products into the hands of the SOF operators and medics. First I ask them “Is your product FDA approved?” If the answer is yes, they can follow procedures to apply for a National Stock Number (NSN) or to apply for a General Services Agency (GSA) bin number. If the product is not FDA approved, the vendor must apply to the FDA for approval of the product in order for it to be used.

Recently two events occurred that caused concern as to the safety of products distributed into the hands of SOF medics. The first occurred during the Special Operations Medical Association (SOMA) conference this year when one of the vendors passed out an unknown number of bandages for “field trials.” After the SOMA conference the same vendor contacted me about USSOCOM supporting additional field trials. However, USSOCOM does not conduct field trials. We sponsor laboratory research for the safety and efficacy of products that SOF medical personnel will use. The vendor was not straightforward with me when I asked him if the product he had distributed was FDA approved, and I suspect that he did not volunteer this information when he distributed the field trial samples at SOMA. In fact, this product was undergoing stage II clinical trials required to collect

data for submission to the FDA for an approval. At this time **THIS PRODUCT IS ONLY APPROVED FOR VETERINARY USE**. All devices used by SOF on humans must be FDA approved whether used for training scenarios or in combat operations. This requirement also applies to aid rendered to coalition forces, host nation forces, detainees, and enemy prisoners of war.

The second event seems to be a recurring one. Everyone seems to have a dietary supplement they purport to be the solution for SOF to maintain the stamina, vigilance, and strength to perform at the max 24/7. Reportedly the SEALs and the 5th Group “tested” a particular product under some anecdotal protocol. Of course the vendor could not identify the test subjects nor could he provide any data resulting from the study. A bit of in-house research resulted in information that is counterproductive to the purpose of the R&D efforts devoted to the development of devices that stop or control bleeding. The content of the supplement that was “tested” contains a compound that inhibits blood clotting. The bottom line is why do we spend a lot of R&D (time, money, and effort) to control or stop blood loss caused by various types of trauma when operators are unknowingly ingesting supplements that are based upon a sales pitch and not science? If any one has the answer to this question please let me know and I will buy you an adult beverage at the next SOMA. (This offer applies to the first correct response only; chances of winning are better if you play the lottery than try and answer this question).

Biomedical Initiatives Steering Committee (BISC)

The Biomedical Initiatives Steering Committee (BISC) conducted the first quarter meeting at the Johns Hopkins Applied Physics Laboratory in Laurel, MD on 15 November 2006. The purpose of the BISC is to bring the Component Surgeons and now the Senior Enlisted Advisors together to map out the research and development strategies for Special Operations

Forces. The BISC was formally chartered in 1994 to address the modernization of all medical issues within the SOF mission areas. The primary research areas are Diving Related Studies, Performance Enhancements, Combat Casualty Care, Medical Informatics, and Graduate Research Studies. Since its creation and the events that occurred on September 11, 2001, the BISC expended a great deal of effort to provide SOF with advanced technologies, especially those items needed in far forward trauma care. Over the past two years the BISC allocated approximately 1.5 million dollars to provide advanced hemostatic dressings, tourniquets, and tailored protocols to units preparing to deploy in support of OIF/OEF. While we hope this effort has saved lives, the BISC receives very little feedback on the use of these devices. In order to gather this feedback, the BISC is funding a lessons learned project to capture information regarding what worked, what did not work, tricks of the trade, and other pearls to pass to the next generation of SOF medics. The lessons learned also will provide valuable information for the BISC to determine how to focus its research and development, training, and doctrine.

In addition to the lessons learned project, the BISC funded the following projects in FY07:

- The History of the Development of the SOF Medic: A Perspective from Vietnam to the Global War on Terrorism
- Factor VIIa for Penetrating Brain Injury
- Intravenous Perfluorocarbon and Recompression Therapy after the Onset of Severe Decompression Sickness (DCS)
- A Comparison of Flight Proficiency and Risk Taking Behavior in Aviators Given Dextroamphetamine or Modafinil During Extended Operations
- Test and Evaluation of the Welch Allyn Propaq LT for use by SOF
- ADRAC DCS Risk Prediction Upgrade-Staged In-Flight Decompression

Since last June the membership of the BISC has changed significantly. Each SOF Component has a

BISC representative whose function is to review their Service's requirements and to provide the BISC with Task Statements for research topics. A Task Statement is usually a two page description of the need, related background, and a desired solution. In a nutshell, the process begins with the Task Statement. Once the BISC accepts the Task Statements, the USSOCOM MEDTECH Program Manager (PM) sends out requests for pre-proposals. Once the pre-proposals are received, they are reviewed, screened, and, if applicable, presented to the BISC for review and approval. Once the BISC approves the pre-proposal, the PM requests that the proposing organization submit a full proposal with any clarifications requested by the BISC. The full proposal is again reviewed and put before the BISC, which recommends a funding prioritization. The BISC accepts out of cycle Task Statements and unsolicited proposals. Depending on the topic, applicability, and status of funding, these may be held for future selection.

The current BISC members are:

USSOCOM -- COL Rocky Farr, *Chairman*
USASOC -- COL Joseph Carvalho, *voting member*
MARSOC -- CAPT Stephen McCartney, *voting member*
AFSOC -- Col Timothy Jex, *voting member*
NAVSPECWARCOM -- CAPT Jay Sourbeer, *voting member*
JSOC -- LTC Bret Ackerman, *voting member*
JSOMTC -- COL Kevin Keenan, *advisor (non voting member)*

SOF Medical Handbook Update

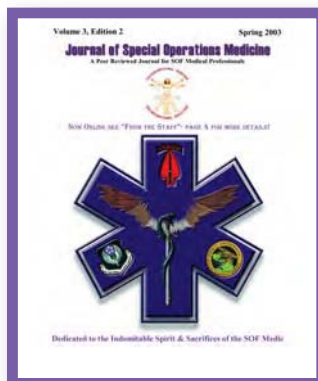
The second edition of the SOF Medical Handbook (SOFMHB) is underway. COL Farr received the kickoff briefing on 1 December and all assignments have been made. The new edition will incorporate the gap assessment of the first edition and the collective comments from the field. The SOFMHB is scheduled to be off the presses in March of 2008. In order to keep the second edition a manageable size, we will publish an extended version in an electronic format after release of the second edition. I will post updates in future issues of the Journal as the effort progresses.



CPT Steve Briggs, SP, APA, MPAS-C
Chief of USSOCOM Education and Training

The United States Special Operations Command update on the Command Medical Certification Program

March, 2003, I arrived at the United States Special Operations Command (USSOCOM) to learn that only a couple months before, the USSOCOM Chief of Staff signed an interim policy memorandum that effectively would suspend our involvement with the National Registry of Emergency Medical Technician Paramedic (NREMT-P) certification; effective date was 15 April 2006. The new interim policy allowed for either the NREMT-P level standard or the new Special Operations Forces (SOF) Standard (not yet established), effectively giving the USSOCOM Surgeon three years to come up with a plan for training and certifying our medics. MSgt Robert McCumsey was the senior medical training NCO at the time and had formulated a plan to build a command certification program that was both credible and accredited. Bob had modeled the certification program along the lines of the National Registry. When I arrived, the certification program was off and running (Where to? No one really knew). During this time, the USSOCOM Surgeon's office was in the process of soliciting volunteers for one of our two boards, Requirements Board and Curriculum Examination Board (RB and CEB). After only a few days in the office, I was asked to write a "training" article for the Journal of Special Operations Medicine (JSOM).



The JSOM's Spring 2003 edition, contained a brief introduction to me and my commitment to keep an open ear and mind to the needs of the Special Operation Force's Medic. From day one I found myself under fire, this time the enemy was one like I had never encountered -- that of the bureaucracy of staff work and the joint relationship of subordinate commands. The new US-

SOCOM Department of Emergency Medical Services (EMS) and Public Health was surging out of the station full steam ahead. There were many people who felt we should not move away from the NREMT-P program and others who said we couldn't legally establish our own certification program. Many questioned our logic and expressed concern that our departure from the NREMT would hurt the SOF medics' training during their clinical rotations.

In the Fall edition, MSG Mike Brochu (Senior Enlisted Medical Advisor), introduced our newly formed RB and CEB. I wrote how the future of the new certification program would compare to the Beatle's song "A Long and Winding Road" and stated that it would be similar to some of the roads we've all traveled in the past:



laden with obstacles, boulders, pot holes, different grades, and unexpected delays. What a cliché. What I failed to see was those individuals who would be standing along the road changing the road signs, like Wile E. Coyote. Also in this edition, the roles of the RB and CEB were defined as advisory panels to the USSOCOM Surgeon's Office, and the overall success of the Command's medical certification process. It was also mentioned that during this time of uncertainty, there were still civilian organizations and relationships that we needed to maintain our affiliation with. There are agencies that grant certification and accreditation to our training facilities and serve to enhance the training that our medics receive; agencies like the Association for Assessment and Accreditation of Laboratory Animals (AAALAC) and the Committee on Accreditation of Educational Programs for the Emergency Medical Services Professions (CoAEMSP).

In the same edition we introduced the new 2003 Tactical Combat Casualty Care (TCCC) guidelines, which would become the focus of the new USSOCOM Surgeon, CAPT Butler.

The Winter 2004 Edition of the JSOM went to press during the holiday season. Meanwhile, the President and the Department of Defense (DOD) directed USSOCOM to lead the charge in the Global War on Terrorism (GWOT). I expressed that an integral part of this charge on the GWOT would be our Special Operation Forces medics.



We informed our readers that we had convened the RB and identified the critical tasks required for all SOF medics to be able to operate in a joint interoperable environment and with the same standards. The critical tasks were then turned over to the CEB so they could produce a draft copy of all the necessary terminal and supporting objectives that would enable SOF medics to carry out each of these critical tasks.

In the Summer 2004 Edition we gave an update on our progress. The Critical Task List (CTL) was approved with a few changes by the component Surgeons: imminent death procedures were eliminated, due to a change in DOD policy; there were differing opinions as to the degree of clinical medicine that should be included in the CTL. The majority of the Surgeons agreed with the RB's recommendation to include limited (sick call) clinical medicine. However, they did not want to call it "sick call" and settled on calling it "Diagnosis and Initial Management of Specific Medical Emergencies." This was the genesis of the Tactical Medical Emergency Protocols (TMEPs). The CTL was further broken down into the following categories: *Basic Sciences, Joint Operational Medicine, Basic Dental Emergency Procedures, Environmental Injuries, Pharmacology, Emergency Cardiac Care, Clinical Medicine, Clinical Skills, and Trauma.* In this edition, we also introduced all the volunteers of both

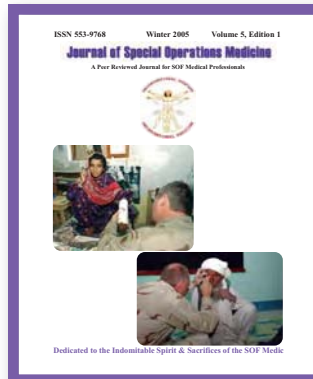


the RB and CEB. The notion and long-term goal of building bridge programs with colleges was introduced. That which is, to enable our medics the opportunities to ascend to higher medical professions if they so desire. This follows the Commander's guidance to grant our warriors civilian certification and opportunities for advancement. We are planning and look forward to setting up bridge programs that will allow our folks to attend and earn degrees in nursing, physician assistant, and doctorate programs.

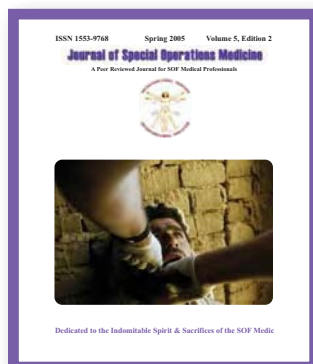
In the Winter 2005 Edition several ongoing training initiatives were discussed. The Surgeon's main focus was on the TCCC Transition Initiative. In addition, the CEB was working on creating an EMT-P certification examination. The first generation USSOCOM/SOF EMT-P cards were redesigned and the new SOF certification card and certificates were published. Focus was then shifted to the JSOM where everyone was encouraged to take the time to write articles and to share experiences and valuable medical lessons learned. What we desire, both then and now, are articles/updates on relevant clinical and tactical medicine; and articles that pose medical challenges. We also petitioned the readers for some medically relevant pictures that we could use as a "picture puzzler" (i.e., dermatology, ECG, or radiograph). The emphasis was, and continues to be, that the journal is only as good as those who participate.

The Spring 2005 Edition discussed the USSOCOM Commander's briefing on eight medical issues that were identified as high priority in order to support the GWOT. First, the CTL was established and requested approval for implementation into the training cycle for all SOF medics.

Second, was a decision as to whether or not to allow SOF Pararescuemen (PJs) to continue training at Kirtland, New Mexico or to mandate that they be trained at the Joint Special Operations Medical



The Spring 2005 Edition discussed the USSOCOM Commander's briefing on eight medical issues that were identified as high priority in order to support the GWOT. First, the CTL was established and requested approval for implementation into the training cycle for all SOF medics.



Second, was a decision as to whether or not to allow SOF Pararescuemen (PJs) to continue training at Kirtland, New Mexico or to mandate that they be trained at the Joint Special Operations Medical

Training Center (JSOMTC).

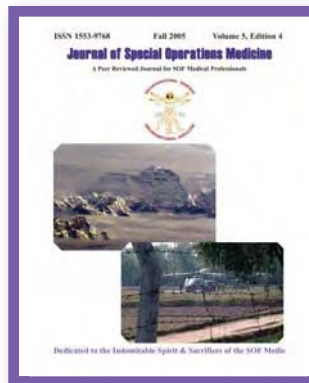
We also briefed him with a course of action for SOF medical sustainment training, and requested funding for the RB and CEB meetings, the certification/testing process, and the JSOM. The Surgeon also briefed the Commander regarding issues over a location for basing a USSOCOM medical webpage and concerns over the Dean and Senior Enlisted Advisor (SEA) billets at the JSOMTC. General Brown agreed with all of our recommendations. He signed the memorandum we presented to implement the CTL. He approved having two different schoolhouses, an East/West concept (Kirtland AFB, NM and Ft Bragg, NC), with all sustainment training to be conducted at the JSOMTC (Ft Bragg, NC). In addition, he gave his approval and support for the other issues presented to him.

There was still some grumbling going on from deep within our own ranks and from those still hanging on to the hope of keeping paramedic-level ties with the National Registry. Some expressed concerns about calling our medics “paramedics,” as well as the perception that we were keeping the NREMT-P curriculum as our standard, versus our military requirements and differing “scope of practice” as set by Joint Mission Essential Task List (JMETLs). Our solution to this misperception was a simple name change. Thus, the name Advanced Tactical Practitioner (ATP) was born. The USSOCOM office felt pretty good; we now had the Commander’s signature (memorandum) to go forth and make it happen. We sent the memorandum to both schools and quickly ran into a major hurdle: implementation at the Air Force’s Air Education and Training Command (AETC). With further staffing we were able to get an agreement that they would unofficially implement it in January 2006 and have it officially implemented by the summer.

In the same edition we published the 09 March Memorandum, signed by General Brown, that directed the implementation of the CTL and TMEPs.

As the Fall 2005 Edition rolled off the press, the USSOCOM Command Medic Certification Process was in full gear. The USSOCOM Medical Training Department (all two of us) was fully engaged with quite a few projects and issues. The TCCC initiative was in full swing and many SOF units were receiving some “just in time” or “out the door” medical training. Additionally, there were many units requesting “civilian combat training” by third parties. The Commander asked us to look into

the different sites and civilian companies to evaluate why our service members were looking outside the



military for medical training. During this time we said farewell to MSgt McCumsey, as he retired. With some minor delays and personnel changes, the Command Medic Certification Program surged along as we commenced our plan for creating and Beta Testing our new Advanced Tactical Practitioner Examination.

In April 2006, the CEB produced a test bank of questions and five beta-tests to be incorporated into the testing process for the new USSOCOM Medical Certification Program. About this same time, USSOCOM was welcoming the Marine Special Operations Command (MARSOC) on board. With MARSOC came new medical, manning, and training issues. By the time the Summer 2006 edition was circulating, we had given our first beta exam to JSOMTC Class 4-06. We had not made the headway we had hoped for with AETC and Kirtland, and were looking forward to testing them in September. Simultaneously, the latest update to USSOCOM Directive 40-2 was out in print. In this edition of the journal, we published the letter from CoAEMSP to COL Keenan that granted the JSOMTC with accreditation from CoAEMSP and the Commission on Accreditation of Allied Health Education Programs (CAAHEP) till May 13, 2010. This action validates the quality of the direction that we are going. They were well pleased with both our external explanation and our feedback mechanism. Something must have been in the fall air ... as over night there was a change in the spirit of cooperation and acceptance of the USSOCOM Medical Certification Program. There was now a symbiotic relationship between the USSOCOM Surgeon’s Office and the schoolhouses. The JSOMTC needed and welcomed our “externally promulgated exam” (ATP Exam) to maintain



CoAEMSP/CAAHEP accreditation and Kirtland agreed to administer a Beta Exam in October. The “USSOCOM Command Certification Program” was now official. Official, yet there was still some uncertainty.

There was a new sheriff in town . . . COL Warner D. Farr. AETC was not fully on board, there was still the issue of a lack of funding, and the creation of multiple tests and a credible testing procedure was still in the works. Another concern was how to get timely and accurate testing results back to both the students and schoolhouses.

This summer COL Farr met with the CEB as the Board was reviewing test questions, TMEPs and the TMEP drug list. In preparation, he asked me if there was anything I specifically wanted him to address. This Board was now experiencing its third regime change and there was a little reservation as to any course correction that may be forthcoming.

COL Farr expressed that the Board was on the right path and explained that he was all about building systems. He pledged to put forth an effort to consolidate all our training requirements into a single package and present it to the Command for support. From this point forward, the program was to be known as the *USSOCOM Medic Certification Program*. COL Farr also expressed to the Board that he appreciated the immense amount of dedication, effort, and patriotism they had contributed.

A year ago I couldn't tell you the future status of the certification program and many of us who had a lot of time involved with the process didn't know what course lay ahead. So, to put everything in perspective and up to date; I will tell you that we are moving ahead with the USSOCOM Medic Certification Program. There have been some changes since the original vision and Spring 2003 Edition of the JSOM. First, the Interim Policy has long expired. The requirement and standard is for all SOF medics to be ATP certified. This means that all SOF medics must attend training at either the JSOMTC or Kirtland schools. Medics who attended either of the schoolhouses prior to the ATP testing and certified by the NREMT will be grandfathered. Their ATP certification will concurrently expire when their NREMT expires. Medics that pass the ATP examination will be certified for a period of two years. All SOF medics will be required to attend the JSOMTC

for a period of two weeks to be recertified.

It will be up to the RB/CEB, the Joint Medical Enlisted Advisory Committee, and the Component Surgeons to advocate the requirements to and through Command channels so that all of our SOF medics are trained to a Joint Mission Essential Task List (JMETL) and interoperable level. Additional and Service-specific training will be the responsibility of each of the components (Services). There are currently, and in the future will be, civilian accrediting agencies that will serve a symbiotic value. These agencies will grant accreditation or provide certification to the USSOCOM Medic Certification Program that will only enhance the training opportunities and quality of our medics.

The CTLs, TMEPs, and TCCC will all change over time in keeping up with the latest technology and requirements. We have accepted that our military training facilities do not have the capacity to train all SOF medicine. Therefore civilian Combat Trauma Training (CTT) has been incorporated along with TCCC to ensure all SOF operators receive refresher medical training prior to deploying to combat zones. The latest TCCC guidelines were published in the 6th Edition of the PHTLS manual. In order to maintain a certain standard across the board, we have established some guidelines and policies that will standardize training for CTT and ensure that our SOF operators are receiving the appropriate level of training, and simultaneously not putting them in any unnecessary harm or unwanted publicity.

During the 2006 SOMA Conference, I was able to address the Joint Medical Enlisted Advisory Counsel (JMEAC) and give them a presentation about the USSOCOM Medic Certification Program. The presentation included the testing measures that we are utilizing and the value it will add to identify it, and how well our SOF medics are learning in the different categories of instruction. This will allow us to provide feedback to both the students and the schoolhouses to help focus the training where it is needed.

USSOCOM will continue to lead the fight on the GWOT but there will be changes along the way. The USSOCOM Medic Certification Program will also change to meet the needs of both the medics and the missions. We've changed the ATP certification cards and certificates, for the second time, to include MARSOC. We've put together a student study guide to help facilitate a focused preparation for taking the ATP examination. Our current test bank is a consolidation of over 8,000 vetted NREMT questions of which, over 600 have been rewritten and incorporated in our ATP exam to reflect our SOF missions and pro-



files. There was a considerable amount of concern when we started off on this venture. The concern was, why change a product (the Special Operations Combat Medic [SOCM]), that everyone already thought was good.

Our intent is not to make drastic changes to the program but to ensure that the caliber of the medic coming from the basic course both meets the Command's needs and receives the best training possible. Very little change has actually taken place at the JSOMTC. Kirtland, however, has adopted the CTL and the "joint interoperable standard" has been estab-

lished. The process will continue to be fine tuned on an annual basis. As we make progress, we will attempt to keep you abreast of the changes. USSOCOM-SG Training & Education has developed a JSOM Training Supplement that was sent out with this JSOM edition to inform you of the changes in the TMEPs and associated TMEP drug list. In addition, some articles about organizations and topics that are relevant to SOF training were added.

If you have any questions, please don't hesitate to contact me at 813-826-5065 (DSN-299) or briggss@socom.mil.



TCCC UPDATE

Dom Greydanus

INTRODUCTION AND BACKGROUND

Managing combat trauma on the battlefield presents an array of challenges seldom found in the civilian sector. Limited resources can be rapidly overwhelmed. Hostile gunfire and darkness often exacerbate harsh environments. Medics frequently become enemy targets, forcing injured Soldiers to care for themselves. Furthermore, ongoing tactical missions can cause long delays to casualty evacuation. These conditions demand specialized tools and training for combat medics and non-medical operators alike.

The Tactical Combat Casualty Care (TCCC) project initiated by the Naval Special Warfare Command and continued by the U.S. Special Operations Command (USSOCOM) developed a new set of tactically appropriate battlefield trauma care guidelines in 1996. These guidelines focus primarily on the most common causes of preventable death on the battlefield and the most protective measures that can be reasonably performed on the battlefield to prevent these deaths. The guidelines were first included in the Prehospital Trauma Life Support (PHTLS) Manual in 1998 and are now included in the sixth edition of the Prehospital Life Support Manual. The TCCC guidelines found in the PHTLS Manual are updated and revised as necessary by the Committee on Tactical Combat Casualty Care at the Naval Operational Medical Institute in Pensacola, FL. This committee includes representatives from all of the uniformed services in the U.S. military, including combat medics, trauma surgeons, emergency medicine physicians, operational medicine physicians, anesthesiologists, intensivists, and medical educators.

TCCC was established as the standard of care for Special Operations Forces (SOF) combat medic training in March 2005 (CDR USSOCOM letter of 9 March 2005: Critical Task List (CTL) for Special Operations Combat Medic Training). TCCC equipment and training became mandatory for all deploying SOF units in March 2005, requiring ALL deploying SOF units to obtain TCCC training for both their medics as well as their non-medical operators, since the first responder to a wounded warrior on the battlefield is often NOT a medic (USSOCOM message. date/time/group 222016 March 2005: Tactical Combat Casualty Care Training in Special Operations). All U.S. combatants should possess a basic TCCC operator level skill set that will allow them to accomplish critical life-saving care such as hemorrhage control and airway clearance for their wounded teammates.

The primary mechanism for training and equipping SOF units in TCCC has been the TCCC Transition Initiative (TI), which was a SOF Medical Technology Development Program funded by USSOCOM and executed by the U.S. Army Institute for Surgical Research (USAISR). A description of the organization and execution of the TCCC TI has been published previously (Butler FK, Holcomb JB. The Tactical Combat Casualty Care Initiative. AMEDD April 2005;33-37). General Brown, in his letter to the U.S. Army Surgeon General, August 17, 2005, stated, "The TCCC Transition Initiative developed and executed by the U.S. Army Institute of Surgical Research to meet this challenge has been one of the most successful biomedical research efforts in the history of this command and has produced remarkable advances in our force's readiness to successfully manage battlefield trauma" (USSOCOM letter of 17 August 2005: Letter of Commendation for TCCC Transition Initiative). As of December 14, 2006, 535 medics and 3,837 operators had been trained at the USAISR.

THE NEED FOR ORGANIZED TCCC FEEDBACK: COMBAT EVALUATION

The practice of medicine seeks wherever possible to base its treatment strategies, medications, and equipment on evidence provided by well controlled scientific studies. The practice of TCCC does not lend itself well to this sort of study because of the nature of events on the battlefield and the ethical and logistical difficulties of collecting data and conducting research in that environment. This fact, however, does not relieve those responsible for making decisions about TCCC techniques and technology from basing their decisions on the best information that can be brought to bear on the topic. This includes keeping abreast of the trauma literature to identify studies that have bearing on the recommendations included in the TCCC guidelines and determining if changes in the guidelines are warranted based on these studies. It also includes gathering the best possible information in the form of published articles that deal with TCCC as well as gathering case reports and case series from interviews or from slide presentations of combat medics and other first responders who have gained experience with TCCC equipment and techniques in battle.



“Reprinted with permission of The Tampa Tribune.”

<http://www.tbo.com/news/nationworld/MGBY15HQ5WE.html>

SOCOM Gives Special Care To Its Own

By RICHARD LARDNER The Tampa Tribune

Published: Dec 26, 2006

TAMPA - Jim Lorraine was vacationing in upstate New York last year when he got a call from the chief of staff at U.S. Special Operations Command.

Three weeks later, Lorraine had a new job, and injured Special Operations personnel had an advocate to help them navigate the often confusing world of medical care, veterans benefits, and career options.

Lorraine, a former Air Force Lieutenant Colonel, runs SOCOM's Care Coalition, a support network formed in August 2005 by Army GEN Bryan Brown, SOCOM's top officer. With a staff of five, Lorraine keeps tabs on nearly 1,300 commandos wounded in Iraq and Afghanistan, making sure they have what they need to recover.

The coalition's database includes any Special Operator who appears on a casualty report, even those with minor injuries. Though most troops are able to return to duty, the more seriously wounded can face enormous physical challenges and thickets of red tape.

“We try to make government a little smaller,” said Lorraine, a critical care nurse who worked as SOCOM's Deputy Command Surgeon before retiring 18 months ago.

The assistance provided to SOCOM's Care Coalition extends to service members' families, who often travel long distances to be near loved ones receiving care at Walter Reed Army Medical Center in Washington or other hospitals. No request is too small, with help getting airline tickets, lodging, and babysitters being common requests.

DIPLOMATIC TOUCH

Other situations are more complex. A Special Forces Soldier named Roland - Lorraine declined to identify him further - had both legs amputated after his military vehicle hit an improvised explosive device.

While Roland was recuperating at Walter Reed, a visitor promised to get him a job with an unnamed gov-

ernment organization in San Antonio. Roland was “stoked,” Lorraine said, because the job would allow him to use his military knowledge and he could live near Brooke Army Medical Center, which specializes in amputee care.

Roland mentioned his stroke of luck to Brown when the General stopped by to see him. GEN Brown asked Lorraine to look into the offer. Not only did the visitor lack the authority to make it, Lorraine discovered, the job didn't exist.

Instead of bringing Roland bad news, coalition staff contacted the organization's leaders and encouraged them to create the position. They did. Roland competed for the job and was hired. “Everything was done on the up and up,” Lorraine said. “They got a great kid.”

Formation of the coalition was GEN Brown's idea. Each of the military branches has a similar support apparatus, but GEN Brown wanted a network reflecting the Command's unique status.

Special Operations troops spend most of their time deployed “outside the fence,” Lorraine said, and they run greater risks than conventional forces.

While “twice as likely to be injured or killed,” commandos are the “least likely to look outside” the Special Operations community for help, he said. “Now they can call one point, and we will take care of soup to nuts versus trying to find the right organization,” Lorraine said.

A CALL TO THE GENERAL

Lorraine may be the director, but Brown, a four-star general who joined the Army in 1967, is the coalition's emotional force and, when need be, its hammer.

In February, Nancy Kuhns, wife of a Navy SEAL stationed in Alaska, took her sick daughter from their home on Kodiak Island to the Mayo Clinic in Scottsdale, Ariz. Upon arriving, she learned that their

military insurance, TriCare Prime, would cover only one visit with a Mayo doctor, not nearly enough to diagnose her teenage daughter.

While Kuhns waited in her hotel room, her husband called different Navy offices looking for answers but getting none.

Kuhns dug out GEN Brown's home telephone number, given to her and others when the General and his wife, Penny, visited the SEAL detachment on Kodiak Island a year before. Call us, the Browns had told them, if you run into problems no one else seems willing or able to solve. She dialed the number and left a message. Less than 15 minutes later, GEN Brown called back.

Kuhns was stunned. The seemingly intractable problems began to melt away.

"We had been so frustrated," Nancy Kuhns said. "Our child was suffering, and that's so hard."

The Kuhns would spend more than a month in Scottsdale. When her daughter needed further testing at a special clinic in Seattle that did not take insurance, Care Coalition staff contacted the Veterans of Foreign Wars, which paid the \$1,200 fee.

"Our daughter has lived most her life with her daddy gone," Nancy Kuhns said. "It was good for her to see that the people higher up really care about her father."



**SOF WOUNDED WARRIOR
ADVOCACY & REFERRAL**

FAMILY READINESS

Compliment and Support
Component Family Programs



(813)828-6037

1-877-672-3039

ussocom.care.coalition@socom.mil

http://socom.mil/Care_Coalition

LEAVE NO ONE BEHIND



CARE COALITION



“Our SOF Warriors have seen first hand, the enormous price of freedom... it is essential to protect our heroes and their families”

General Bryan D. Brown
Commander, USSOCOM

MISSION:

Our mission is to provide Special Operations Warriors and their families a model advocacy program in order to enhance their quality of life and strengthen special operations readiness.



What We Offer All Special Operations Forces

Advocacy

- Personnel
- Pay and Entitlements
- Health Care

Education/Support

- Benefits
- Medical and Physical Evaluation Boards
- Retention/Transition Assistance

Unified Assistance

- Working in Conjunction with DoD, Service, and Veteran's Organizations
- Benevolent Organizations



1-877-672-3039
(813)828-6037

ussocom.care.coalition@socom.mil

http://socom.mil/Care_Coalition



CALL's call for SOF Lessons Learned

The integration of knowledge and valuable experience from observations, insights, and lessons (OIL) and historical research of on-going GWOT combat operations and military training exercises are integral elements of improving our SOF warfighting capabilities. We are determined to get all our medical lessons learned (LL) documented and published so we can all profit from them. We want to have them archived and made easily available across the force. We are starting an effort to publish them as supplemental issues of the Journal of Special Operations Medicine (JSOM). I have some folks who will be coming around to visit units to pick brains also. This will be an effort of the Army Center for Lessons Learned (CALL) at Fort Leavenworth, Kansas. The individual leading the effort for collecting, analyzing, and integrating these SOF medical lessons learned is

Mike Rinehart (mike.rinehart@us.army.mil), with assistance from the Institute of Surgical Research's (ISR) Danny Gay (Daniel.gay@amedd.army.mil), both retired Special Forces senior NCOs. The ISR has been collecting data as they go out and do TCCC pre-deployment training and although they want out of the training business, they are still in the research and data collection business. Much of the data collected by these two gentlemen will be made available on the CALL (NIPRnet/SIPRnet) websites (<http://call.army.mil/>) along with the newsletters, handbooks, bulletins, and vignettes they are currently producing, all accessible through your Army Knowledge Online (AKO) account. CALL is trying to get the word out as the "simply posting it - and they will come" approach has had dubious success. Please welcome them in when they come by.

Justin Barr's History Project

Editor's Note: If you were at SOMA this year you heard COL Farr introduce Justin Barr and tell you about the project he is working on. Many of you met with him throughout the conference to share with him your perspectives on SOF medicine. For those of you who were not at SOMA this year, Justin has put together a summary of his project and we highly encourage you all to contact him.

While extolled in popular literature and media, Special Operations has received little rigorous academic study; this paucity is especially true when considering the medical support of such units. My project seeks to fill a void in the existing documentation by chronicling the formation and evolution of Special Operations medicine.

Special Operations units are truly that – special, and their medical care is no exception. In particular, the Army Special Forces Medic, created as a physician substitute who functions with an unprecedented degree of autonomy in the American medical

profession, provides an interesting case study. Armed with the skills and authority to prescribe controlled substances, perform surgery, and establish and run hundred-bed hospitals, these men inspire examination of not only their role in military medicine, but their prototypical position in forging the concept of physician-extended in the United States, eventually leading to the creation of the physician's assistant. The highly specialized generalist of the 18D emerged in Special Operations medicine, with other elite units forming their own medical detachments and training medics/corpsmen to meet the needs of their specific mission.

The final publication seeks to: 1) examine the origins of Special Operations medicine by tracing its roots back to the OSS and other guerilla movements of World War II; 2) investigate the specific history of the SF medic – its *raison d'être*, its overarching mission, and especially the training early medics received and how this training evolved with the position; 3) examine SF and CIA operations in Laos from 1959 to 1960 as a formative event in the creation and formation of the SF medic; 4) trace the experience of SF medics in Vietnam, not only to recount their story but also determine the efficacy of their training along with how this prolonged combat experience modified instruction; 5) present the post-Vietnam SOF story (as much as possible without divulging classified information) to see how the SF medics have adapted and show how other SOF medical units evolved to their present position

This work has necessarily limited itself to unclassified information, but even so many details remain undocumented, especially from the 1950s and early 1960s and the post-Vietnam era. Interviews with key participants shall illuminate the elided information from these crucial, formative time-periods. I would appreciate any information, in the form of interviews or otherwise, for any time period, on the history of SOF medicine in preparation of this manuscript. My contact information:

Justin Barr
USUHS Historian
jbarr@usuhs.mil
work: 301-295-3168
cell: 314-629-3174

The Vietnam SAR database is now online at www.pjsinnam.com

Robert LaPointe

Every Search and Rescue (SAR) managed by the JRCC in Saigon is listed in this database. The database lists approximately 2500 missions flown during the Vietnam War. Each mission has fields for information about SAR name, type of aircraft shot down, downed aircraft serial number, date downed, date rescued, unit which conducted the SAR, type of SAR aircraft, call sign of SAR aircraft, area of the SAR, latitude/longitude of SAR area, names of the pilots, PJs, and FEs who flew on the SAR aircraft, names of the survivors, and if it was a water SAR, if a water landing was accomplished, medical treatment administered, hoist was used, number of saves, type of save (combat or noncombat), and an area for general notes about the SAR. Most of the records in the database contain information from the majority of fields listed above.

Now anyone can type an individual's name into the appropriate database search block and find out what missions he flew, when he flew them, who he flew with, and who he rescued. The database may also be used to disprove false claims of individuals attempting to claim they few on air rescue missions in the Vietnam War.

This database took over ten years to complete and then another year trying to get it to work properly on a website. It does have areas that I would like to improve in the future to make searches easier for the user. I could have waited another year, or probably longer trying to get it to work perfectly. Instead I have decided to put it online now because a good database available now is better than a perfect database sometime in the future. So for the many critics that I am certain who will complain, learn HTML, MS-Access, and MS-SQL and then examine the current code, and send me better code that actually works to improve the site; or . . . (well, I leave it to you to figure out the . . .) If anyone can create a custom query which will search every field in the database (perhaps an "all value") please send me the code to try out. What I would like to do is delete all of the pilot, FE, PJ, and survivor name search blocks and just have a single block titled "Name" which searches the entire DB and returns all records which contain any information matching the query. This should be easy but has defied success to date.

The PDF copies of the "JRCC Save Logs" are primary source documents that most likely have not

been looked at by anyone since the end of the Vietnam War. The USAF Office of History, the Air Force Historical Research Agency (AFHRA), the Air Force Museum, Joint Task Force Full Accounting (now called Joint POW/MIA Accounting Command JPAC), the USAF PJ School, and the Air Combat Command History Office all denied having this document or even knowing of its existence. These agencies believed this several hundred page document was lost in a flood that destroyed hundreds of thousands of pages of Vietnam War air rescue records. Read where I found it and how it has now come to be added to the official records available to all at AFHRA.

I would like to thank all of the agencies listed above and the AFSOC History Office for their help in my many visits to each of their facilities to collect the data that is now in the database. It was a project that had me travel from Alaska to Alabama, Washington DC, Ohio, New Mexico, and Hawaii. To say it was interesting to meet all the persons working at these agencies and the great help they provided this amateur historian would be an understatement.

Also a special thanks to Mr. Ron Thurlow. He is a retired USAF F-4 WSO who imputed thousands of data fields into the database. Without his hundreds of hours of volunteer work, you all would be waiting many more years to use what is online today.



Apologies to CAPT McCartney, MARSOC Command Surgeon. In the Fall Edition his title was incorrectly listed as CAPT USMC. It should have read CAPT USN.

Hazards of Dietary Supplement Use

Anthony E. Johnson, MD; Chad A. Haley, MD; John A. Ward, PhD

OBJECTIVES

1. Summarize the various types of ergogenic aids.
2. Summarize the known adverse effects of the most commonly used dietary supplement as identified in the study.
3. Identify the major sources of information cited by Soldiers prior to consuming dietary supplements according to the study.

ABSTRACT

Introduction: An ergogenic aid is any agent used to enhance energy production and/or utilization with the intent to improve performance in a particular sport or activity. Dietary supplements are consumed for their potential ergogenic effects by Soldiers seeking to improve physical performance. However, these agents are not regulated by the United States Food and Drug Administration (FDA). The long-term health effects of these unregulated dietary supplements are unknown. The purpose of this study is to establish the incidence of dietary supplement use in a U.S. Army combat unit and to present a brief review of the literature on the documented adverse reactions related to dietary supplements use. **Methods:** 750 Rangers from the U.S. Army 1st Ranger Battalion were administered an anonymous, self-reported, survey concerning recreational and competitive athletic participation, participation in weight training, ergogenic supplement use, and sources of nutritional information. All surveys were administered by the battalion surgeon. The data was analyzed using the Pearson's Chi-square with continuity correction method of analysis. **Results:** 294 Rangers (39.5%) completed the questionnaire. One hundred and nine (37%) of the responders admitted to using at least one dietary supplement. The average age of the respondent was 23 years. Dietary supplement use was associated with participation in recreational athletics and weight training. Protein supplements were the most common supplement, followed by creatine and thermogenics respectively. Less than 1% used anabolic steroids. The most commonly cited source for nutritional information concerning ergogenic supplements is another Soldier, followed closely by fitness magazines. Less than 10% cited the unit surgeon or local nutritionist. **Conclusions:** Dietary supplement use in the surveyed unit is similar to rates reported for other athletic organizations. As the long-term health effects are unknown, the decision to consume dietary supplements should be carefully deliberated. Unit surgeons are uniquely situated to advise these Soldiers.

	Example
Mechanical	<ul style="list-style-type: none">• Light weight orthotics• Custom Footwear
Psychological	<ul style="list-style-type: none">• USMA Center for Performance Enhancement²
Physiological	<ul style="list-style-type: none">• U.S. Army World Class Athlete Program³• U.S. Olympic Training Center³
Pharmaceutical	<ul style="list-style-type: none">• Prescription stimulants⁴
Neutraceutical	<ul style="list-style-type: none">• Dietary supplements

Table 1. Summary table of types of ergogenic aids used by the U.S. military.

INTRODUCTION

An ergogenic aid is any agent used to enhance energy production and/or utilization.¹ These agents are used to enhance performance in a particular sport or activity. Use of ergogenic aids in the U.S. military is not new. (Table 1)

Nutraceutical or dietary supplement use by athletes has received appreciable attention recently.^{3,5-10} However, dietary supplement users vary across a wide spectrum.^{1,6,11-19} Nor is the use of nutraceuticals limited to purely athletic endeavors. Many novel nutraceutical therapeutic strategies have been reported in the treatment in the various disorders to include: pediatric irritable bowel syndrome,²⁰ ulcerative colitis,² osteoarthritis,²²⁻²³ and pain management.²⁴

The myriad uses for dietary supplements has added to the confusion regarding the efficacy and, more importantly, the safety of over-the-counter dietary supplements consumed by the general public.²⁵ The Dietary Supplement and Health Education Act in 1994 was enacted, in part, to standardize the manufacture and marketing of dietary supplements.²⁶

The ability to enhance physical performance is as attractive to Soldiers as their competitive amateur or professional athlete counterparts. The Committee on Military Nutrition Research recommended the further study of nutritional supplementation for the military, especially the forward deployed personnel.²⁷ However, the incidence of dietary supplement use in the active duty population is not known. The purpose of this study is to establish the incidence of dietary supplement use in a U.S. Army combat unit and to present a review of the literature on the documented adverse reactions related to dietary supplements use.

METHODS

After appropriate IRB approval, 750 active duty service members assigned to the U.S. Army 1st Ranger Battalion were administered an anonymous, two-page, self-response survey under the supervision of the Ranger Battalion Surgeon during a one week period from July – August 1999. The survey was modeled after similar surveys used by the National Collegiate Athletic Association.⁷ Random error was controlled by using the single intake model which minimized day to day variability and the large sample size. Systemic error, chiefly in the form of under-reporting, was anticipated. The questionnaire was a qualitative, rather, than quantitative survey.

We collected data on age, participation in competitive athletics, participation in recreational athletics, participation in weight training, ergogenic use, type of agent used, as well as the sources of informa-

tion on nutrition and supplements. Participation in the different types of exercise by users vs. non-users of dietary supplements was compared with a 2x2 contingency test (Pearson's Chi Square with continuity correction). Ninety-five percent confidence intervals (95% CI) were calculated for the frequency of competitive athletics and weight training in the supplement users using the modified Wald equation as there were fewer than five who did not participate in those forms of exercise. Age between users vs. non-users of dietary supplements was compared with a Mann-Whitney rank sum test.

RESULTS

Of the 750 Soldiers, 39.2% responded to the survey. Reasons for non-participation were: (1) time constraints due to the high operational tempo of the surveyed unit, (2) training, (3) leave. Of the 294 Rangers responding to the survey, 37% (n=109) admitted to using dietary supplements. The average age of the dietary supplement user, as well as the non-user, was 23 years. There was no significant difference in age between users and non-users ($p > 0.05$). There was no significant difference in participation in competitive athletics between users and non-users ($p > 0.05$). More users (89.9%) than non-users (71.4%) participated in recreational athletics. There was a significant difference in participation in recreational athletics between users and non-users ($p < 0.001$). There was a significant difference in participation in weight training between users and non-users ($p = 0.001$). More users (96.3%) than non-users (82.2%) participated in weight training. (Figure 1) The vast majority of Rangers had participated in competitive athletics (96.3% of supplement users vs. 92.4% of non-users). This difference in competitive athletic participation was not significant ($p < 0.80$).

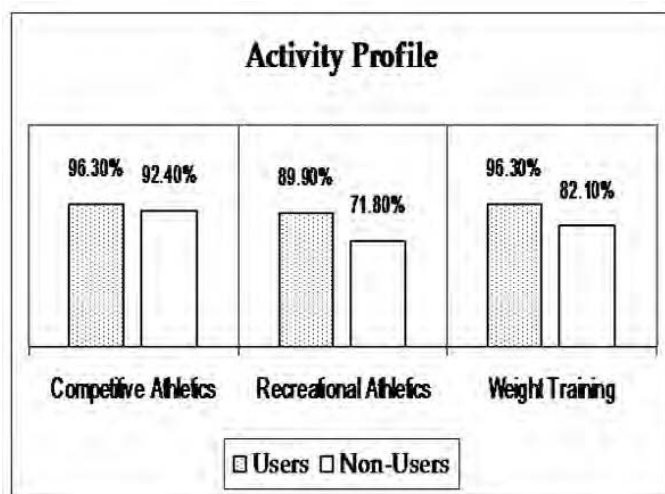


Figure 1. Graphical depiction of the participation rates in competitive and recreational athletics events as well as regular weight training between ergogenic supplement users and non-users.

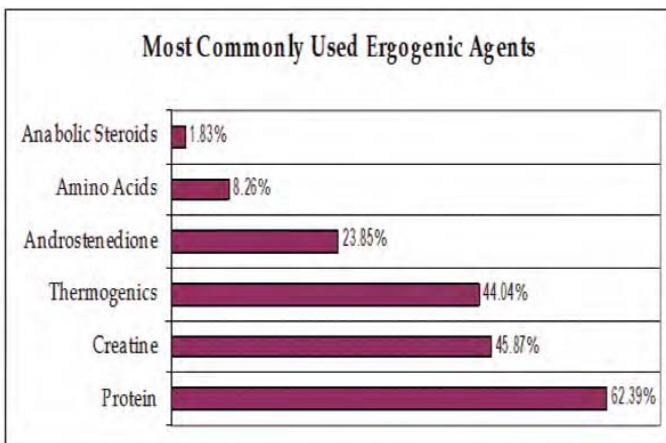


Figure 2. Chart depicting the most commonly used ergogenic aids. Thermogenics include herbal products whose main active ingredients are caffeine, ephedra, Mahung, etc.

The most commonly used dietary supplement was whole protein supplements such as whey protein; used by 62.3% of the dietary supplement users. (**Figure 2**) Creatine and thermogenics were used by 45.8% and 44% of the users respectively. Anabolic steroids used was reported by less than 2% of the users (n=2).

Other Soldiers were the most commonly cited reference for their nutrition information, used by 59% of the Soldiers overall. (**Figure 3**) Fitness magazines were a close second (46%), followed by the internet (18%). The unit surgeon was the least cited source of information at 6% followed by nutritionist at 8%.

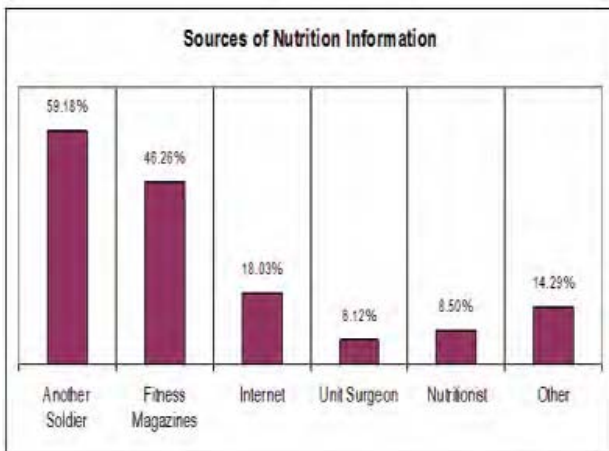


Figure 3. Graphical depiction of the common sources of product information cited by the Rangers. Other includes personal trainer and medical journals.

DISCUSSION

The dietary supplement industry is a multi-billion dollar industry.^{18,26,28} (**Figure 4**) The marketing of dietary supplements is mostly based on generalized, scientifically unproven claims.^{3,26} It has been estimated

that 89 brands of supplements currently exist offering over 300 products. Over 78% of these products claim to contain unique ingredients that promise various results loosely based on science. Only 59% of the 235 unique ingredients found in the products being advertised have any toxicological data on file.⁵⁷ The long-term health effects of these products have not been methodically evaluated. However, as dietary supplements are not marketed for the purpose of treating any ailment, they are considered food products. Thus they are not under the same high level of scrutiny of the Food and Drug Administration provided to products designated as medications.^{5,26,58} In documented cases of adverse side effects associated with dietary supplement use, the burden of proof rests with the government and not with the manufacturer to demonstrate a causative link.⁵⁹⁻⁶¹ However, several authors have reported adverse outcomes associated with dietary supplement use. (**Table 2**) For this reason, the major athletic governing bodies (International Olympic Committee (IOC), National Collegiate Athletic Association (NCAA), and Amateur Athletic Union (AAU)) have banned or strictly govern dietary supplement use. Until the efficacy, safety, and long-term health effects of these substances can be firmly established, care should be used with dietary supplement use.

Our data supports that the Soldiers participating in this survey consume ergogenic supplements at rates similar to other athletic populations.^{1,5,58,66,67} (**Table 3**) Our results are also in line with the literature in that supplement use is inversely correlated to nutritional knowledge.⁶⁸⁻⁷⁰ Other athletes and fitness magazines (whose profits are partially generated by dietary supplement advertisements) are the most common source of information cited by amateur athletes.⁵⁷

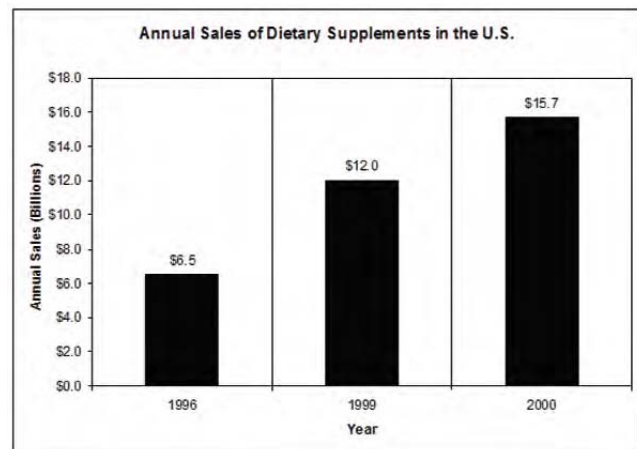


Figure 4. Graphical depiction of annual sales growth of dietary supplements in the United States.^{18,26,28}

Table 2. Review of documented adverse effects and the top selling dietary supplement brands sold in the U.S.⁵⁶

AGENT	ACTIVE INGREDIENT(S)	TRADE NAMES	DOCUMENTED ADVERSE EFFECTS
Creatine	<ul style="list-style-type: none"> • Creatine Monohydrate 	<ul style="list-style-type: none"> • Creatine Fuel Chews (Twinlab Inc. NY, NY) • Creatine Monohydrate 100% (Higher Power, Boise, ID) • Cell Tech (MuscleTech, Mississauga, Canada) • Micronized Creatine (AST Sports Science, Golden, CO) 	<ul style="list-style-type: none"> • Electrolyte disturbances²⁹⁻³¹ • Renal Damage^{29,32} • Transient elevation in transaminase^{31,33} • Increased post-exercise compartment pressures³⁴⁻³⁵
Amphetamine Derivatives	<ul style="list-style-type: none"> • Ephedrine • Pseudoephedrine • Phenylpropanolamine • Phenteramine • Ma-Huang 	<ul style="list-style-type: none"> • Hydroxycut (MuscleTech, Mississauga, Canada) • Muscle Milk (CytoSport, Benicia, CA) • Ripped Fuel (Twinlab Inc. NY, NY) • ProBURN (Prolab, Chatsworth, Ca) 	<ul style="list-style-type: none"> • Acute Myocardial Infarction³⁶⁻³⁷ • Arrhythmias³⁶⁻³⁹ • Myocarditis^{36,37} • Severe Hypertension³⁶ • Stroke⁴⁰ • Hyperthermia⁴¹ • Rhabdomyolysis⁴¹
Chromium	<ul style="list-style-type: none"> • Chromium Picolinate 	<ul style="list-style-type: none"> • Higher Power Chromium Picolinate (Higher Power, Boise, ID) • Optimum Chromium Picolinate (Optimum Nutrition, Aurora, IL) • AdvaLean (Advanced Performance Nutraceuticals, Denver, CO) • Chromic Fuel (Twinlab, NY, NY) • Ripped Fast (Universal Nutrition, New Brunswick, NJ) 	<ul style="list-style-type: none"> • Transient decrease renal function⁴² • Transient decrease hepatic function⁴² • Possible disposition to iron deficiency anemia⁴³
Protein		<ul style="list-style-type: none"> • Optimum 100% Whey Protein (Optimum Nutrition, Aurora, IL) • N-Large II (Prolab, Chatsworth, Ca) • Myoplex (EAS Inc, Golden, CO) • NitroSyn Protein (I Force Nutrition, South Windsor, CT) • Nitro-Tech (MuscleTech, Mississauga, Canada) 	<ul style="list-style-type: none"> • Dehydration⁴⁴⁻⁴⁵ • Exacerbation of gout⁴⁴⁻⁴⁵ • Decreased calcium stores⁴⁴⁻⁴⁶ • Decreased renal function⁴⁴⁻⁴⁵ • Decreased hepatic function⁴⁴⁻⁴⁵

Table 2 continued. Review of documented adverse effects and the top selling dietary supplement brands sold in the U.S.⁵⁶

AGENT	ACTIVE INGREDIENT(S)	TRADE NAMES	DOCUMENTED ADVERSE EFFECTS
Amino Acids		<ul style="list-style-type: none"> • Animal Nitro (Universal Nutrition, New Brunswick, NJ) • Amino 2222 Tabs (Optimum Nutrition, Aurora, IL) • Amino Fuel (Twinlab, NY, NY) • Amino 2000 (Prolab, Chatsworth, Ca) 	<ul style="list-style-type: none"> • Dehydration⁴⁴⁻⁴⁵ • Exacerbation of gout⁴⁴⁻⁴⁵ • Decreased calcium stores⁴⁴⁻⁴⁵ • Decreased renal function⁴⁴⁻⁴⁵ • Decreased hepatic function⁴⁴⁻⁴⁵
Androstenedione		<ul style="list-style-type: none"> • 19-Nor Androstack II (SciFit Nutrition, Oakmont, PA) • Priobolan Acetate (Promatrix, Franklin, NJ) • Anabolic Complex (TKE Fitness, Corinth, MS) • Maximum Testosterone (Maximum International, Deerfield Beach, FL) • Androblast (Medlean, Duxbury, MA) 	<ul style="list-style-type: none"> • Atherosclerosis⁴⁷⁻⁴⁸ • Priapism⁴⁹ • Positive urine screen for anabolic steroids³² • Gynecomastia⁵⁰ • Premature physeal arrest⁵⁰⁻⁵¹ • Decreased HDL⁴⁹ • Prostate hypertrophy⁵²⁻⁵³ • Increased testosterone production in females⁵⁴ • Increased estrogen production in males⁵⁵

Table 3. Tabular review of dietary supplement use in the U.S. athletic population.

<i>Review of Dietary Supplement use by the U.S. Athletic Population</i>
13% of 8th grade students admit to dietary supplement use ¹⁴
30% of high school football players use creatine ⁶²
71% of NCAA Division 1 football players use creatine ¹⁶
22% of high school athletes admit to use of current or recent use of dietary supplements ⁶³
34% of competitors at the 2000 Summer Olympic games used dietary supplements ⁶⁴
38% of female and 29% of male competitors who admitted to dietary supplement use also used herbal supplements ²⁶
92% of female and 90% of male athletes on the U.S. 2000 Summer Olympic Team used some form of dietary supplements ⁶⁵
Some athletes participating in 2000 Summer Olympic Games admitted to using 18 to 20 different dietary supplements ¹⁸

A major limitation of our study is the low response rate. The low response rate suggests a level of systematic error as this may have been a result of self-exclusion of Soldiers with higher usage in a form of under-reporting as well as an identification bias.⁷¹⁻⁷⁴ However, no statistical method can fully correct reporting deficiencies, and some studies suggest such efforts may confound the findings.⁷⁵

We attempted to control other known biases. Recall bias was limited in the usage of yes or no questions rather than quantification of the supplements consumed. Also, the surveys were administered anonymously in order to minimize the social desirability bias. After a pre-survey block of instruction, the unit surgeon stepped out of the room, no personal identification data was solicited, and the surveys were placed into a box as the participants exited the room. The proctor was available to answer questions as necessary. The other factors identified for the low response rate can be directly related to the unit's high operational tempo. As a result, our survey effectively surveyed the Soldiers in the recuperative phase of the training cycle. A study of the Soldiers in the active phase of the training cycle may reveal a different pattern of supplement use. Since the goal of supplement use is to optimize performance in demanding situations, further study in this area is warranted. While our goal is to establish the usage rates of dietary supplements in this U. S. Army unit, each military unit has its own inherently unique culture. Similar studies in different sub-populations to include combat support and service support units as well as our sister services are required.

CONCLUSIONS

The use of various forms of ergogenic aids is not new to the U.S. military. Dietary supplements, however promising, are promoted based on loose science and marketed with little scrutiny. There is legitimate reason for concern for caregivers of dietary supplement users as the long-term health effects of these compounds are unknown, use of supplements is inversely correlated with nutritional knowledge, and knowledgeable sources are the least utilized resource of information for supplement use. Dietary supplements complicate peri-operative considerations.⁷⁵⁻⁷⁶ Supplements also pose preventative medicine issues as there is a tendency for supplement users to partake in other high risk behaviors.²⁸ Active duty personnel, especially elite ground troops, are attracted to dietary supplements at rates similar to competitive athletes. Further study in this field is necessary.

The unit surgeon, as the chief advisor to the unit commander for healthcare issues and the most readily

available medical professional to the Soldiers, is uniquely situated to best counsel our Soldiers on the potential hazards of dietary ergogenic supplement use but is an under-utilized resource according to our study. Unit surgeons should familiarize themselves with the various forms of dietary supplements available so that they advise the troops accordingly.

REFERENCES

1. Seehusen, D., and Glorioso, J. (2002). Tamoxifen as an Ergogenic Agent in Women Body Builders. *Clinical Journal of Sports Medicine*, 12: 313-314.
2. Lamkin, F. (1999). West Point's Performance Enhancement Center. In *Assembly*.
3. Silver, M. (2001). Use of Ergogenic Aids by Athletes. *Journal of the American Academy of Orthopedic Surgeons*, 9: 61-70.
4. 'Friendly fire' Pilots: Air Force Pushes 'go pills': Lawyers Say Amphetamines Led to Accidental Killing. (2003). *CNN*.
5. Earnest, C. (2001). Dietary Androgen Supplements: Fact vs. Fiction. *The Physician and Sports Medicine*, 29(5): 63-76.
6. Earnest, C., Morss, G., Wyatt, F., Jordan, A., and Colson, S. (2004). Effects of a Commercial Herbal-Based Formula on Exercise Performance in Cyclists. *Medicine and Science in Sports and Exercise*, 36(3): 504-509.
7. Green, G., Uryasz, F., Petr, T., Bray, C. (2001) NCAA Study of Substance Use and Abuse Habits of College Student-Athletes. *Clinical Journal of Sports Medicine*, 11: 51-56.
8. Johnson, W., Landry, G. (1998) Nutritional Supplements: Fact vs. Fiction. *Adolescent Medicine*, 9: 501-513.
9. Juhn, M. (1999). Oral Creatine Supplementation: Separating Fact from Hype. *The Physician and Sports Medicine*, 27: 47-56.
10. Keith, R., and Bartok-Olson, C.: Use of Nutrient-Related Supplements in Female Collegiate Cyclists. *Medicine and Science in Sports and Exercise*, 28(5): S38, 1996.
11. Sport Supplement Dangers. In *Consumer Reports*, pp. 40-42. Edited, 40-42, 2001.
12. Barteel, R. (2002) Predicting the Use of Dietary Supplements Marketed as Nutritional Ergogenic Aids Among Adolescent Athletes. *Medicine and Science in Sports and Exercise*, 34(5): S235.
13. Bohlken, R., Rogers, M., Hammer, S., Beets, M., and Sporleder, L.(2003). Effects of Creatine and Ginseng/Astragalus Botanical Extract on Strength in Resistance-Training in Older Adults. *Medicine and Science in Sports and Exercise*, 35(5): S217.
14. Hill, J., Dziewaltowski, D., and Estabrooks, P. (2003). Incidence of Ergogenic Aid Use Among Eighth Grade Youth. *Medicine and Science in Sports and Exercise*, 35(5): S327.
15. Kaufman, D., Kelly, J., Rosenberg, L., Anderson, T., and Mitchell, A. (2002). Recent Patterns of Medication Use in the Ambulatory Adult Population of the United States. The Slone Survey. *Journal of the American Medical Association*, 287(3): 337-344, 2002.
16. Massad, S., Shier, N., Koceja, D., and Ellis, N.(1995). High School Athletes and Nutritional Supplements. *International Journal of Sports Nutrition*, 5: 232-245.
17. O'Dea, J. (2003). Consumption of Nutritional Supplements Among Adolescents: Usage and Perceived Benefits. *Health Education Research*, 18(1): 98-107.

18. Pipe, A., and Ayotte, C. (2002). Nutritional Supplements and Doping. *Clinical Journal of Sports Medicine*, 12: 245-249.
19. Terjung, R., Clarkson, P., Eichner, E., Greenstaff, P., Hespel, P., and Israel, R. (2000). The American College of Sports Medicine Roundtable on the Physiological and Health Aspects of Oral Creatine Supplementation. *Medicine and Science in Sports and Exercise*, 32(3): 706-717.
20. Salvatore, S., Heusckel, R., Davies, S., Walker-Smith, J., and Murch, S. (1998). N-Acetyl Glucosamine - A Novel "Neutraceutical" Therapy for IBD. *Journal of Pediatric Gastroenterology and Nutrition*, 26(5): 563.
21. Kanauchi, O., Iwanaga, T., and Mitsuyama, K. (2001). Germinated Barley Foodstuff Processing. A Novel Neutraceutical Therapeutic Strategy for Ulcerative Colitis. *Digestion*, 63(Supplement): 60-67.
22. Donohoe, M.: Efficacy of Glucosamine and Chondroitin for Treatment of Osteoarthritis. *Journal of the American Medical Association*, 284(10): 1241, 2000.
23. McAlindon, T.; LaValley, M.; Gulin, J.; and Felson, D.: Glucosamine and Chondroitin for Treatment of Osteoarthritis: A Systematic Quality Assessment and Meta-Analysis. *Journal of the American Medical Association*, 284(10): 1469-1475, 2000.
24. Curatolo, M., and Bogduk, N. (2001). Pharmacologic Pain Treatment of Musculoskeletal Disorders: Current Perspectives and Future Prospects. *Clinical Journal of Pain*, 17(1): 25-32.
25. Burke, D., Chilibeck, P., Parise, G., Candow, D., Mahoney, D., and Tarnopolsky, M. (2003). Effect of Creatine and Weight Training on Muscle Creatine and Performance in Vegetarians. *Medicine and Science in Sports and Exercise*, 35(11): 1946-1955.
26. Gradjean, A., and Ruud, J. (2002). Dietary Supplements and Athletics. *Current Opinion in Orthopaedics*, 13: 122-127.
27. Committee on Military Nutrition Research: Military Strategies for Sustainment of Nutrition and Immune Function in the Field. Edited, Washington, DC, Food and Nutrition Board of the Institute of Medicine, 1999.
28. Stephens, M., and Olsen, C. (2001). Ergogenic Supplements and Health Risk Behaviors. *The Journal of Family Practice*, 50(8): 696-699.
29. Pecci, M., and Lombardo, J. (2000). Performance-enhancing Supplements. *Physical Medicine and Rehabilitation Clinics of North America*, 11: 949-960.
30. Persky, A., Brazeau, G., and Hochhaus, G. (2003). Pharmacokinetics of the Dietary Supplement Creatine. *Clinical Pharmacokinetics*, 42(6): 557-574.
31. Poortmans, J., and Francaux, M. (2000). Adverse Effects of Creatine Supplementation: Fact or Fiction. *Sports Medicine*, 30(3): 155-170.
32. Catlin, D., Leder, B., Ahrens, B., Starcevic, B., Hatton, C., Green, G., and Finkelstein, J. (2000). Trace Contamination of Over-the-Counter Androstenedione and Positive Urine Tests for Nandrolone Metabolite. *Journal of the American Medical Association*, 284(2): 2618-2621.
33. Vanderberie, F., Vandeneynde, B., and Vandenberghe, K. (1998). Effect of Creatine Supplementation on Power Output on Endurance Capacity and Sprint Power in Cyclists. *International Journal of Sports Medicine*, 8: 2055-2063.
34. Robinson, S. (2000). Acute Quadriceps Compartment Syndrome and Rhabdomyolysis in a Weight Lifter Using High Dose Creatine Supplementation. *The Journal of the American Board of Family Practice*, 13(2): 134-137.
35. Schroeder, C., Potteiger, J., Randall, J., Jacobsen, D., Magee, L., Benedict, S., and Hulver, M. (2001). The Effects of Creatine Dietary Supplementation on Anterior Compartment Pressure in the Lower Leg During Rest and Following Exercise. *Clinical Journal of Sports Medicine*, 11: 87-95.
36. Bruno, A., Nolte, K., and Chapin, J. (1993). Stroke Associated with Ephedrine Use. *Neurology*, 43: 1313-1316, 1993.
37. Haller, C., and Benowitz, N. (2001). Adverse Cardiovascular and Central Nervous System Events Associated with Dietary Supplements Containing Ephedra Alkaloids. *New England Journal of Medicine*, 343: 1833-1838.
38. Haller, C., Jacob, P., and Benowitz, N. (2004). Enhanced Stimulant and Metabolic Effects of Combined Ephedrine and Caffeine. *Clinical Pharmacology and Therapeutics*, 75(4): 259-273.
39. Haller, C., Jaycob, P., and Benowitz, N. (2002). Pharmacology of Ephedra Alkaloids and Caffeine after Single-Dose Dietary Supplement Use. *Clinical Pharmacology and Therapeutics*, 71(6): 421-432.
40. Foxford, R., Sahlas, D., and Wingfield, K. (2003). Vasospasm-Induced Stroke in a Varsity Athlete Secondary to Ephedrine Ingestion. *Clinical Journal of Sports Medicine*, 13: 183-185.
41. Bailes, J., Cantu, R., and Day, A. (2002). The Neurosurgeon in Sport: Awareness of the Risks of Heatstroke and Dietary Supplements. *Neurosurgery*, 51(2): 283-287.
42. Cerulli, J., Grabe, D., and Gauthier, I. (1998). Chromium Picolinate Toxicity. *Annals of Pharmacology*, 32: 428-431.
43. Lukaski, H., Bolonchuk, W., and Siders, W. (1996). Chromium Supplementation and Resistance Training: Effects of Body Composition, Strength, and Trace Element Status of Men. *American Journal of Clinical Nutrition*, 63: 954-965.
44. Krcik, J. (2001). Performance-Enhancing Substances: What Athletes are Using. *Cleveland Clinic Journal of Medicine*, 68: 283-302.
45. Lawrence, M., and Kirby, D. (2002). Nutrition and Sports Supplements. Fact or Fiction. *Journal of Clinical Gastroenterology*, 35(4): 299-306.
46. Fielding, R., and Parkington, J. (2002). What Are the Dietary Protein Requirements of Physically Active Individuals? New Evidence on the Effects of Exercise on Protein Utilization During Post-Exercise Recovery. *Nutrition in Clinical Care*, 5(4): 191-196.
47. Banka, C., Orlinska, U., and Samad, F. (2004). Androstenedione and Atherosclerosis: A Double Edged Sword. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 24(5): E-43.
48. King, D., Sharp, R., Brown, G., and Vukovich, M. (2000). Effects of Androstenedione in Young Men [Letters]. *Journal of the American Medical Association*,

- 283(6): 741-743.
49. Kachhi, P., and Henderson, S. (2000). Priapism After Androstenedione Intake for Athletic Performance Enhancement. *Annals of Emergency Medicine*, 35(4): 391-393.
 50. DeCree, C. (1999). Androstenedione and Dehydroepiandrosterone for Athletes. *The Lancet*, 354(9180): 779-780.
 51. Palusinski, R., and Barud, W. (2000). Effects of Androstenedione in Young Men [Letters]. *Journal of the American Medical Association*, 283(6): 714-743.
 52. Habenicht, U., Schwartz, K., Neumann, F., and El Etreby, M. (1987). Induction of estrogen related hyperplastic changes in the prostate of the cynomolgus monkey by androstenedione and its antagonization by the aromatase inhibitor 1-methyl-androsta-1,4-diene-3,17-dione. *Prostate*, 11: 313-326.
 53. Krieg, M., Nass, R., and Tunn, S. (1993). Effect of ageing on endogenous levels of 5-alpha-dihydrotestosterone, testosterone, estradiol, and estrone in epithelium and stroma of normal and hyperplastic human prostate. *Journal of Clinical Endocrinology and Metabolism*, 77: 375-381.
 54. Kicman, A., Bassindale, T., Cowan, D., Dale, S., Hutt, A., and Leeds, A. (2003). Effect of Androstenedione Ingestion on Plasma Testosterone in Young Women: A Dietary Supplement with Potential Health Risks. *Clinical Chemistry*, 49(1): 167-169.
 55. Schweikert, H., Wolf, L., and Romalo, G. (1996). Oestrogen Formation from Androstenedione in Human Bone. *Obstetrical and Gynecological Survey*, 51(2): 106-107., Retrieved 31 August 2004 from <http://www.bodybuilding.com>.
 57. Philen, R., Ortiz, D., Auerbach, S., and Falk, H. (1992). Survey of Advertising for Nutritional Supplements in Health and Body-Building Magazines. *The Journal of the American Medical Association*, 268: 1008-1011.
 58. Eliason, C., Myszkowski, J., Marbella, A., and Rasmann, D. (1996). Use of Dietary Supplements by Patients in a Family Practice Clinic. *Journal of the American Board of Family Practice*, 9(4): 249-253.
 59. HHS Issues New Warning Letters. In *Natural Products Industry Insider*. Edited, Washington, 2003.
 60. Two Men Sentenced for Their Involvement in Counterfeit Nutritional Product Scheme. (2004). In *United States Attorney's Office District of Connecticut Press Release*.
 61. Teman, A., and Hainline, B. (1991). Eosinophilia-Myalgia Syndrome: Athletes Should Discard L-Tryptophan. *The Physician and Sports Medicine*, 19(2): 81-86.
 62. LaBotz, M., and Smith, B. (1999). Creatine Supplementation use in NCAA Division 1 Athletic Program. *Clinical Journal of Sports Medicine*, 9: 167-169.
 63. Kayton, S., Cullen, R., Memken, J., and Rutter, R. (2002). Supplement and Ergogenic Aid Use by Competitive Male and Female High School Athletes. *Medicine and Science in Sports and Exercise*, 34(5): S193.
 64. Corrigan, B., and Kazlauskas, R. (2003). Medication Use in Athletes Selected for Doping Control at the Sydney Olympics (2000). *Clinical Journal of Sports Medicine*, 13: 33-40.
 65. Nelson, J., Gradjean, A., and Ryan, E. (2002). Dietary Supplement Use by U.S. Athletes Participating in the 2000 Summer Games. *Medicine and Science in Sports and Exercise*, 34(5): s59.
 66. Williams, M. (1992). Ergogenic and Ergolytic Substances. *Medicine and Science in Sports and Exercise*, 24(9): S344-348.
 67. Williams, M. (1994). The Use of Nutritional Ergogenic Aids in Sports: Is it an Ethical Issue. *International Journal of Sports Nutrition*, 4: 120-131.
 68. Barr, S. (1986). Nutrition Knowledge and Selected Nutritional Practices of Female Recreational Athletes. *Journal of Nutrition Education*, 18(4): 167-173.
 69. Barr, S. (1987). Nutrition Knowledge of Female Varsity Athletes. *Journal of the American Dietetic Association*, 87(12): 1660-1664.
 70. Cho, M., and Fryer, B. (1974). Nutritional Knowledge of Collegiate Physical Education Majors. *The Journal of the American Dietetic Association*, 65: 30-34.
 71. Giuffre, M. (1997). Designing Research Design - Part Two. *Journal of PeriAnesthesia Nursing*, 12(5): 358-362.
 72. Giuffre, M. (1997). Designing Research Survey Design - Part One. *Journal of PeriAnesthesia Nursing*, 12(4): 275-280.
 73. Magkos, F., and Yannakoulia, M. (2003). Methodology of Dietary Assessment in Athletes: Concepts and Pitfalls. *Current Opinion in Clinical Nutrition and Metabolic Care*, 6: 539-549.
 74. Tottenn, V., Panacek, E., and Price, D. (1999). Basics of Research (Part 14). Survey Research Methodology: Designing the Survey Instrument. *Air Medical Journal*, 18(1): 26-34.
 75. Ferro-Luzzi, A. Individual Food Intake Survey Methods.
 76. Bahrke, M., and Morgan, W. (2000). Evaluation of the Ergogenic Properties of Ginseng: An Update. *Sports Medicine*, 29(2): 113-133.
 77. Sabar, R., Kaye, A., and Frost, E. (2001). Perioperative Considerations for the Patient on Herbal Medicines. *Middle East Journal of Anesthesiology*, 16(3): 287-314.



MAJ AJ Johnson is a 1994 Graduate of the U.S. Military Academy and graduated from UCLA School of Medicine in 1998. He completed his General Surgery internship at Brooke Army Medical Center (BAMC) from 1998 to 1999 prior to serving a GMO tour as the Engineer Brigade Surgeon, 2ID, Camp Howze, Korea from 1999 to 2000. He completed his residency in Orthopedic Surgery at BAMC from 2000 to 2004. He is currently the Chief of Orthopedic Surgery at McDonald Army Health Center, Fort Eustis, the VA team physician All Army Soccer, and the ringside physician for the U.S. Army Transportation Center and School Modern Army Combatives Program.



MAJ Chad A. Haley graduated from Army ROTC at NC State University in 1993 and attend Georgetown Medical School from 1994 to 1998. He did his Surgery Internship at Brooke Army Medical Center from 1998 to 1999. He was the 1st Ranger Battalion Surgeon from 1999 to 2001 and did his Orthopaedic Surgery Residency at BAMC 2001 to 2005. MAJ Haley is the Staff Orthopaedic Surgeon/JSOC Orthopaedic Surgeon and he is currently at the Department of Orthopedic Surgery and Rehabilitation, Womack Army Medical Center as an orthopaedic surgeon dealing with overuse type injuries in Special Operation Soldiers. His previous publications include Cotton Cast Padding vs Waterproof Cast Liner: A Prospective, Randomized Comparison *The American Journal of Orthopaedics*, 2006.



John A. Ward is a research physiologist and a computer and information scientist. His professional interests include cardiovascular physiology, statistical analysis, and data mining in medical information databases. Dr. Ward was an Aviation Electronics Officer, United States Marine Corps from 1963 to 1966. He obtained his B.S. in biology from Wagner College NY in 1963; his Ph.D. in neurophysiology from Purdue University IN in 1971, and an M.S. in computer and information science from Trinity University, TX in 1988.



Medical Civilian-Assistance Programs (MED-CAP) in Direct Support of Kinetic Operations: a Template for Integration of Civil Medical Operations as a Force Multiplier During Combat Operations

Robert F. Malsby III, DO, FS, DMO; Bart M. Territo, PA-C

ABSTRACT

In the Global War on Terrorism (GWOT), the United States continues to deploy combat arms and direct action elements throughout all theaters. Accompanying these units are other supporting elements such as Civil Affairs, Psychological Operations, and Cooperative Medical Assistance (CMA) cells. These supporting elements have been used with good success but their implementation has always been delayed until after combat operations and hostilities have ceased. This time period can be anywhere from weeks to months after a combatant commander has cleared the Area of Operation. This article describes a recent kinetic operation that was conducted in Central Afghanistan and was directed by the Provincial Governor. This incorporated a large multi-national force and included a modular supporting package that was planned and pre-staged to immediately support on-going offensive operations as an “on call” force multiplier. To our knowledge this was the first non-kinetic mission to directly support an on-going kinetic operation and incorporated the direct involvement and primary planning of the local government. We hope to show how implementing an aggressive CMA action, directly on the heels of on-going offensive operations, can provide a combatant commander with rapid information on current enemy activity, and also offer the local populace an immediate sense of security and reassurance that the legitimate government is here with a plan for sustainment.

INTRODUCTION

In the Global War on Terrorism (GWOT), the United States continues to deploy combat arms and direct action elements throughout all theaters. Accompanying these units are other supporting elements such as Civil Affairs, Psychological Operations, and Cooperative Medical Assistance (CMA) cells. These supporting elements have been used with good success but their implementation has always been delayed until after combat operations and hostilities have ceased. This time period can be anywhere from weeks to months after a combatant commander has cleared the Area of Operation.

This article describes a recent kinetic operation that was conducted in a highland valley in eastern Afghanistan and was coordinated and directed by the Provincial Governor. It utilized a large multi-national

force with ten subordinate commands from both conventional and unconventional elements, six countries, and all four Department of Defense service components.

The concept for the non-kinetic portion of this operation was a large modular support package that was planned and pre-staged to immediately support on-going offensive operations as an “on call” force multiplier. This was possibly the first non-kinetic mission to directly support a concurrent kinetic operation. The goal of this presentation is to show how implementing an aggressive CMA action, directly on the heels of on-going offensive operations, can provide a combatant commander with a picture of local public requirements. This can also offer the people an immediate sense of security and reassurance that the legitimate government is here with a plan for sustainment.

This strategy was very effective and can be implemented by other units as a template of how non-kinetic/CMA actions can directly support combat operations and act as a force multiplier for the long term implementation of governmental rule.

DISCUSSION

This CMA project included the full spectrum of medical, dental, veterinary and humanitarian health services. The project was geared towards all genders, ages, and herd species.

BACKGROUND

The area of operation is a valley located in eastern Afghanistan and has been a known training haven for Taliban suicide bombers which had been infiltrating the capital city of Kabul. The valley has a population of approximately 25,000 to 50,000 people and has historically been a hot spot for anti-coalition militia (ACM) activity. The surrounding district has also been used to cache weapons and munitions used in attacks on coalition forces. When coalition forces have entered the valley they have always experienced well coordinated attacks to include improvised explosive devices (IED) and/or ambushes consisting of small arms and rocket propelled grenades (RPG).

Recent reporting indicated that ACM activity had significantly increased over the past year and that they continue to recruit fighters and prepare for future attacks. Without a coalition presence it is likely that the area would continue to be a safe haven and staging area for ACM activities.

Planning and preparation was critical to the success of this mission and began one month earlier. At that time there was no government of Afghanistan (GOA) or Coalition representation in the valley, so a concerted effort was initiated to incorporate a total combat arms, combat support and combat service support plan. This was done with a modular concept with pre-staged and pre-packed chinks arranged with primary emphasis on Class I, III, V and VIII. These chinks were prepped and ready at H-hour and were employed while initial assaulting forces were hitting their objectives.

One major task that had to be accomplished was the presence of a permanent GOA security force that would stay in the valley indefinitely. This was solved by the “firebase in a box” concept; so while offensive and non-kinetic operations were pushing south in the valley, engineering units and construction personnel were fabricating and assembling the new fire-

base that would be the home to an Operational Detachment Alpha (ODA), an element from the Afghan National Army (ANA), and an element of the Afghan National Police (ANP).

For this mission the battalion medical section was split, pushing the Battalion Surgeon forward with the CMA element and maintaining a level I trauma capability with the Battalion PA at the forward logistical element (FLE). This plan proved valid due to the close proximity of on-going kinetic operations. During this time period there were several battlefield casualties at the firebase site that required implementation of our new Special Operations Forces (SOF) tactical medical set, as the new firebase was under construction and non-operational. The split-team concept of medical provider coverage should always be considered and planned for when MEDCAP missions are in such close proximity to kinetic actions.

This CMA action was a coalition that incorporated representatives from multiple coalition partners. This cooperative project incorporated a 29 personnel MEDCAP package that is the largest to date in this theater. The Afghan National Police (ANP) assisted and provided both outer and inner perimeter security. The ANP were attentive throughout the CMA project and displayed a significant degree of professionalism. Female care was provided by one female USA pediatrician, one female USA nurse, one female USN independent duty corpsman (IDC), and one female coalition nurse. Our female providers were well received by the villagers.

This project was unique in that it was presented as an activity identified and initiated by the Provincial Governor, supported by coalition forces and in direct support of on-going kinetic operations. The goal was to provide acute and preventative medical, dental and veterinary services to enhance the standing of the government of Afghanistan (GOA) and foster a positive relationship between the Coalition, the Provincial Government and the local population.

SERVICES PROVIDED

A total of 4179 local nationals were treated during the seven days of MEDCAP operations. 456 animals were treated. Humanitarian assistance items were also distributed to include radios, food, and clothing.

OBSERVATIONS AND RECOMMENDATIONS

The initial two MEDCAPs were slow to set up and initiate because the CMA element relied solely on the ANP to select and guide them to the site. This

MED-CAP Days	Local Nationals	Deworm	Dental	Animals
1	402	151	19	42
2	785	415	25	52
3	597	314	34	52
4	881	346	39	250
5	463	160	23	0
6	824	317	17	60
7 (ANA clinic)	227	102	25	0

proved to be frustrating on both occasions because the ANP initially took us to the wrong sites. This situation was mitigated by sending our own reconnaissance (RECCE) team out during the MEDCAP. The element would RECCE the next day's site and establish communications with the local health care providers and village elders. This made all other MEDCAPs operate efficiently with smooth and minimal set-up times.

Female Attendance: There was an initial delay in females presenting to the MEDCAPs, especially in the village at the central/core of the valley. This delay was solved by an aggressive public relations (PR) campaign by our PSYOPS element and a second MEDCAP the following day at the same village. This produced the desired effect and female numbers greatly increased. Though security and operational security (OPSEC) was a concern with an advertised second day, this was mitigated by having two ODAs and our PSYOPS element secure and hold this facility overnight. The humanitarian assistance (HA) items were a significant draw for the female population as well.

Veterinary turnout: Initial turnout was low and did not increase until the second and third day, but then fell off in the central part of the valley. Participation fluctuated from village to village. This was believed to be due to site location and an initial hesitation by the local populace that was under Taliban control for so long. However, numbers improved in the heart of the valley on day two because of an aggressive PR campaign, and village security helped to alleviate local fears of reprisal.

Low initial turnout in the valley central: The initial four MEDCAPs that were done in the northern part of the valley were well advertised by the Governor on the local radio, and with a strong Northern Alliance influence in these areas turnout was good. In the central part of the valley numbers were initially low due to Taliban influences and hesitation from recent combat

operations. Also, advertisement was limited in the area due to the recent kinetic actions. Advance notice to the villagers is important to maximize project attendance but this needs to be in conjunction with a thorough reconnaissance of the location and a robust security package. The PSYOPS element utilizing loud speakers on the day of the MEDCAP was also beneficial to patient turnout. OPSEC regarding the actual dates of the MEDCAP was maintained during preliminary meetings with the elders by not divulging these dates, and by only giving them the number of days the MEDCAP will operate.

Site control and access points: Identifying and enforcing a single male and single female entrance point as well as a single exit point to the MEDCAP area facilitated patient flow and allowed for enhanced security of the site. The inner perimeter was manned by ANP under the supervision of ODA and Provincial Reconstruction Team (PRT) personnel. Most of the people were kept outside of the compound and were allowed into the MEDCAP area in a controlled fashion by groups of five to ten. This reduced patient flow into the compound proper at any one time and greatly facilitated patient flow, crowd control, and security within the treatment area.

Interpreters: Interpreters were in short supply and was a significant impact on the number of patients that could be evaluated. No place was this more evident than at the female security/screening station. There was a female U.S. Soldier present to conduct searches and screening, but no female interpreters to assist. This also degraded the ability to gather medical information from the local populace, as females standing in line wanted to discuss their concerns and issues. This was alleviated by requesting and getting a dedicated female interpreter who worked with our female screener. It is recommended that this be incorporated in all MEDCAP standard operating procedures (SOP) from now on and has shown to be very beneficial in medical information gathering.

ANA/ANP soldiers: The ANA and ANP soldiers assigned to this operation worked well and remained at their stations throughout the MEDCAP. This has been a problem in the past where the ANA/ANP tended to lose focus and wander off in groups. The ANA and ANP soldiers involved with this project worked well and maintained their focus. One motivation that helped with this was the announcement at the beginning of the mission that there would be a dedicated and exclusive ANA/ANP clinic on the last day of the operation. During previous MEDCAPs there were problems with ANA and ANP leaving their posts to

jump in line for either medical care or HA hand-outs. By promising them a dedicated clinic and HA products, and more importantly delivering on this promise, security and ANA/ANP professionalism were greatly enhanced.

PSYOPS HA DROPS

During the first MEDCAP the PSYOPS HA distribution was done during the MEDCAP. This proved to be detrimental to clinic operations and effectively shut down the clinics as all the patients ran to the HA truck to receive these products. This problem was solved by holding the HA drop to the very last and only after the MEDCAP element had packed up and loaded their vehicles. This provided substantial time for the PSYOPS element to organize and prepare the crowd for an orderly distribution.

LEVEL I DEDICATED FACILITY

During this operation the new SOF Tactical Medical Equipment Set was deployed, which proved valuable for the treatment of battlefield casualties. The previously planned structure for patient care was reallocated due to contingent circumstances. Therefore, there was no dedicated structure or overhead cover to manage casualties. A small portion of a structure being utilized for other services was all that was available. This was less than optimal and hindered management of casualties, but was the only solution given the situation on the ground. It is recommended that a dedicated portable structure (i.e., drash tent) with appropriate lighting and independent power generation

is part of the resource planning, and should be owned, maintained, and deployed by the medical section. Sole ownership of this equipment will greatly enhance the capability to manage battlefield casualties under austere conditions.

CONCLUSION

This mission, in support of these kinetic operations, greatly enhanced the legitimacy of the GOA in the area. Positive comments were made by numerous villagers as to the impact of coalition forces, both kinetic and non-kinetic. These MEDCAPs provided an excellent opportunity to promote the local provincial government and to establish a better understanding of the needs of the local populace.

As the forward edge of the battle area (FEBA) moved further south the MEDCAP element would follow directly behind, conducting these clinics in villages that had just been liberated 12 to 24 hours earlier.

It is believed that this was the first MEDCAP mission to directly support an on-going kinetic operation. Implementing an aggressive CMA action directly on the heels of offensive operations can provide the combatant commander with rapid information on current enemy activity, and also offer the local populace an immediate sense of security and reassurance that the legitimate government is here with a plan for sustainment and assistance. Recommend this strategy be implemented as the template of how non-kinetic/CMA actions can directly support combat operations and act as a force multiplier for the long term implementation of governmental rule.



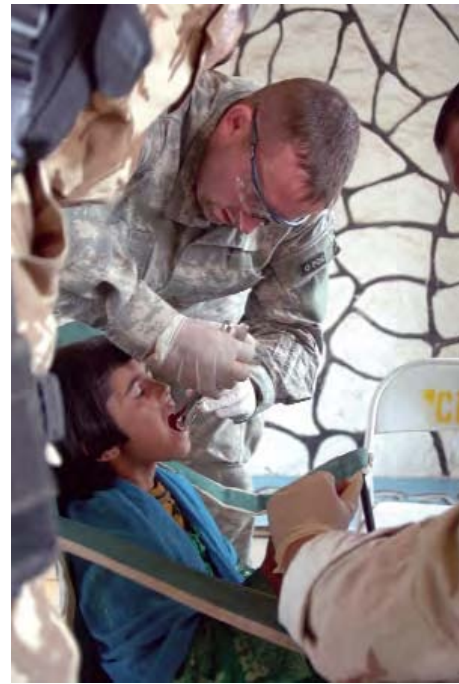
CPT Mohammed of the UAE examines a child.



MCPO (IDC) Wilson examines a four-year-old child.



MAJ Manea (Romanian SOF) interviews a village elder with the assistance of an interpreter.



CPT Miller performs a dental extraction on a local girl.

MAJ Robert Malsby is residency trained and board certified in Family Medicine and received his training at Martin Army Community Hospital, Ft Benning, Georgia. Dr. Malsby received his medical degree from the Kirksville College of Osteopathic Medicine in Kirksville, Missouri and has additional skill identifiers as a Flight Surgeon and Diving Medical Officer. He is a veteran of multiple tours to Operation Enduring Freedom, and is currently Battalion Surgeon for 3rd Battalion, 3rd Special Forces Group (Airborne), Ft. Bragg, North Carolina.



CPT Bart Territo graduated the Special Forces Qualification Course as a Special Forces Medical Sergeant in 1988. He served as an ODA medic in 2nd Battalion, 20th Special Forces Group (Airborne) and 1st Battalion, 3rd Special Forces Group (Airborne). CPT Territo graduated the Interservice Physician Assistant Program in 2001. He is a veteran of multiple tours to both Operation Iraqi Freedom and Operation Enduring Freedom, and is currently serving as the Battalion Physician Assistant for 3rd Battalion, 3rd Special Forces Group (Airborne), Ft. Bragg, North Carolina.



LTC Ferris de-worms an Afghan horse.

Hypertension and the SOF Warrior

George W. Horsley, NREMT-P, PA-C

ABSTRACT

Many Soldiers regard hypertension is an innocuous disease. It is something that happens to civilians and older people; something that can be taken care of at home station. These are dangerous assumptions. There are Special Operations Forces Soldiers whose hypertension is not adequately controlled resulting in permanent end organ damage. This refresher on hypertension is integrated into a case study of one such Soldier.

There are approximately 7000 Special Operations Forces (SOF) personnel in the Central Command (CENTCOM) area of responsibility (AOR) at any given time. These forces are made up of personnel from all branches of the Armed Forces, including the reserve components. Many of these SOF operators performing their duties have been deployed back to back to the AOR in places that are often devoid of the traditional support mechanisms such as troop medical clinics and other echelons of medical care. While many of the medical providers at the team/platoon level have primary care training, they are understandably often more concerned with trauma care. This high operational tempo, coupled with the prevailing attitude in SOF that if the operator interacts with the medical community he may be “benched” creates a void where some of our operators may not be receiving good preventative care. The population of America currently is around 300 million. Approximately 60 million of those 300 million are at risk of life-altering consequences of poorly controlled high blood pressure.¹ Because we in SOF have a much younger and healthier population, one out of every five operators do not have hypertension (HTN); however, if only one in fifty operators had untreated HTN, that would be one too many.

HTN is a disease that is insidious. The Merriam-Webster dictionary provides two meanings for insidious and both are appropriate. First, it can mean “awaiting a chance to entrap” and second, it can mean “having a gradual and cumulative effect.”² Entrapment by hypertension could be readily understood by the millions of Americans who visit their local dialysis center weekly or the many people that wait for sighted assistance to go grocery shopping. Where we can mitigate hypertension’s insidiousness is in this latter definition. It is generally understood that long-standing HTN can, over time, have cumulative effects

on the eyes and kidneys and lead to stroke and coronary artery disease.³ According to the American Heart Association, approximately 69% of people who have a first heart attack, 77 % of who have a first stroke, and 74% who have congestive heart failure, have a blood pressure greater than 140/90 mmHg.⁴ Cumulatively, these diseases represent some of the greatest costs both financially and in terms of suffering in our nation. Consider that the United States spent \$1.9 trillion on healthcare in 2004, comprising 16% of our gross national product.⁵ Compare that to the Global War on Terror which has cost approximately \$349 billion total to date.⁶

The importance of these staggering figures is that much of this expense and suffering is avoidable with good early primary care. As primary care givers, we have a unique opportunity to intercede early in these destructive processes. We have the opportunity to check routine blood pressures for patients regardless the reason they are seeing us. One would think that the whole world knows about the dangers of HTN, but the facts show differently. Even though there has been an increased effort to educate the public and medical communities in recent decades, between 1999 and 2000, studies that were conducted demonstrated that 63.4% of people with high blood pressure didn’t know they had it. This was especially true in the black community where HTN is more prevalent and begins at an earlier age than whites.^{7,8,9,10} Considering approximately 20 percent of the Armed Forces are black, this is relevant data.¹¹

It is easy not to prioritize HTN in SOF. We consider ourselves too young, too healthy, and too busy in the deployed environment. The idea that HTN is not going to kill anyone for the short period of the deployment and that it can wait to be handled by a primary care manager (PCM) is a dangerous presumption. The current environment of multiple

deployments combined with the increased joint operations and with people of various backgrounds, sets the stage for many service members not being regularly cared for by an established primary care manager in the traditional sense. In some cases the documented amount of time between visits with any healthcare provider is five years between periodic exams.

In our role as SOF medical operators, it is vital to the long term health of America's heroes that we pay attention to the long term health issues of our team mates. Routine blood pressures should occur on every patient encounter. They should be consistent and according to an established protocol, such as that published by Perloff, et al.¹² It is important that blood pressures be obtained on patients that have been seated for at least five minutes, have not smoked or ingested coffee within the last 30 min, and with a cuff that is appropriately sized (bladder width within the cuff should encircle at least 80% of the arm).⁸ The pressure should be obtained twice and averaged. If an elevated blood pressure is found, have the patient return at least one more time for another blood pressure check. Three and five day blood pressure checks are a common primary care tool for the diagnosis of HTN, but it is important that consistency be maintained. This means that, if possible, all three to five blood pressures be obtained by the same person using manual equipment and the same technique each time.

An important element to the discussion is a definition of HTN. The most commonly accepted standard for diagnosis of HTN is published by the U.S. Joint National Commission on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. The most current report available is the 7th report and is known as the JNC7 (Figure 1). It establishes by committee what is considered normal vs. abnormal. This report is a departure from the previous six reports in that it is more aggressive in the diagnosis and treatment of HTN.

BP Classification	SBP mm Hg	DBP mm Hg
Normal	<120	and <80
Prehypertension	120–139	or 80–89
Stage 1 hypertension	140–159	or 90–99
Stage 2 hypertension	160	or 100

Figure 1 JNC 7 Classification of Blood Pressure for Adults

Once the diagnosis of HTN is made it is important that a full evaluation be performed. If that is not possible at your level of care, you should consult up to the next level of care until the proper examination is completed. There are times when a proper exam will not be possible because of the mission or operational tempo. In these rare circumstances, it is important to be the patient's advocate and have the exam completed at the next possible opportunity. It is important to remember that the SOF medical asset is being relied upon to ensure quality medical care for the team. Having been an 18D, I think I understand the role and capability of the SOF medic. There are times to practice "teamhouse" medicine, but when you have the support infrastructure available that enables you to practice to the "gold standard" you should endeavor to do so. Resist the temptation to refill medications without proper evaluation and consideration. It is not unreasonable to think that a service member could have a prescription without having undergone a proper evaluation, so it is imperative that a review of the chart occur along with a good review of history.

A proper exam should be obtained for several purposes. It is useful to establish a pre-treatment baseline to uncover correctable secondary forms of HTN, determine presence or extent of target end organ damage, and to determine if other risk factors for developing atherosclerotic cardiovascular disease are present.¹³ Routine laboratory tests recommended before initiating therapy include a 12-lead ECG, urinalysis, blood glucose, hematocrit, serum potassium, creatinine (or the corresponding estimated glomerular filtration rate [eGFR]), calcium, and a lipoprotein profile (after 9 to 12-hour fast) that includes HDL and LDL cholesterol (HDL-C and LDL-C) and triglycerides (TGs).¹⁴

CASE STUDY

Keeping the previous information in mind, the following is a case study. A 35 year-old active duty Air Force major presented to our forward deployed troop medical clinic for medication refill. The service member stated that he had taken all of his Atenolol and needed a refill. The service member had a permanent change of duty station to the CENTCOM AOR so he brought his permanent outpatient record with him. A detailed history uncovered that the service member had only recently been diagnosed with HTN. A review of the service member's medical record failed to reveal any laboratory testing of any kind. When asked, the service member stated he was pretty sure he did not undergo any laboratory testing in conjunction with his diagnosis

of HTN. An initial review of the service member's outpatient record demonstrated that in November of 1998 an orthopedic physician assistant recommended that the service member be referred for a five day blood pressure check. Further review of the chart did not turn up any evidence, nor was the patient able to remember those checks ever being performed. In fact, the first evidence of someone asking the patient about HTN was in an entry dated March of 2006. In that entry, the provider wrote that the service member stated no one had ever previously discussed HTN with him. Evidence of six opportunities for intervention went without follow-up in the service member's chart. This is an unfortunate problem that occurs for a myriad of reasons. This is why each service has developed some type of preventative health screening. Unfortunately, persons performing these screenings may not know what constitutes HTN. At the service member's preventative health assessment in 1995, he had a blood pressure of 147/93mmHg, but in 1996 there was no blood pressure or pulse recorded for that year. Even in his most recent preventative health assessment (2005) his blood pressure was 129/91mmHg. None of these presentations were followed-up. Another example of failure to follow-up was in September 1999, when the service member went to the clinic asking for his cholesterol to be checked. The provider documented a family history of coronary artery disease, diabetes mellitus, and a blood pressure of 130/90 mmHg. I understand that during the time frames mentioned, different standards may have applied, and I in no way point these items out to bring discredit to anyone. I point these out to illustrate how you must perform your own history and physical exam including a thorough chart review. In the SOF patient population you can not assume that an appropriate evaluation has been performed, and just refill someone's medication.

In light of the evidence that the service member probably had long standing hypertension and not having Composite Health Care System (CHCS) access to check for laboratory results, a full exam was performed. The laboratory results were utilized to estimate the service member's glomerular filtration rate (GFR) utilizing the modification of diet in renal disease (MDRD) equation. The service member's GFR was calculated to be 73.07. This was considerably below the predicted value which could indicate kidney dysfunction and the urinalysis demonstrated trace protein. Normally, there should be no evidence of protein in urine. This finding can also indicate kidney dysfunction brought on by longstanding hypertension.

Proteinuria with loss of renal function, should at the very least prompt further testing, and may require an evaluation by a nephrologist, and possible a renal biopsy.¹⁵

HTN is insidious, not innocuous. If we take the figure of one in fifty operators having untreated HTN that would mean that there are 140 Special Operators out in the AOR today that are losing a little more kidney function, losing a little more vision, and moving a little closer to a stroke or heart attack. By performing annual medical screenings on our teammates and getting vitals with every medical intervention, we can make a difference. This is especially true with those that are at increased risk because of life style choices, race, or family history. As demonstrated, you can be young and have HTN. SOF operators deserve the very best, so we should give it to them every opportunity we can.

REFERENCES

1. Kotchen TA: Trends in prevalence, awareness, treatment and control of hypertension in the United States, 1998-2000. *JAMA*. 2003; 290: 199-206.
2. Retrived from <http://www.merriam-webster.com/dictionary/insidious>.
3. Williams, Gordon: Hypertensive vascular disease Chp 246 *Harrison's Principles of Internal Medicine* 15th edition McGraw Hill.
4. American Heart Association, Statistical Fact Sheet on Hypertension; National Heart Lung and Blood Institute unpublished estimates of ardiovascular Health Study, Framingham Heart Study, COHORT, and OFSPRING studies.
5. National Center for Health Statistics Health, United States, 2006 With Chartbook on Trends in the Health of Americans Hyattsville, MD: 2006.
6. National Priorities Project Cost of War calculator. Retrived 10 December 2006 from http://nationalpriorities.org/index.php?option=com_wrapper&Itemid=182.
7. NHANES 1999-2002, MMWR, Vol. 54, No. 1, Jan. 14, 2005, CDC.
8. McPhee MD, Massie MD: Systemic Hypertension Chp 11 *Current Medical Diagnosis and Treatment* 2006 McGraw Hill.
9. Tomson et al: Race and End-stage Renal Disease in the U.S. Medicare Population: the disparity persists. United States Renal Data System. Retrieved December 2006 from http://www.usrds.org/2005/pres/02U_asn_05_race_and_esrd_the_disparity_persists.pdf.
10. Calhoun DA, Oparil S. Racial differences in the pathogenesis of hypertension. *Am J Med Sci*. 1995;310:S86-S90.
11. Segal D R, Segal M W: America's Military Population. *Population Journal*, Vol 54 No. 4, Dec. 2004, Population Reference Bureau.
12. Perloff D, Grim C, Flack J, et al. Human blood pressure determination by sphygmomanometry. *Circulation*. 1993; 88: 2460-2470.
13. Williams G H: Approach to the patient with hypertension Chp. 35 *Harrison's Principles of Internal Medicine* 15th

edition McGraw Hill.

14. Chobanian AV et al: Seventh Report of the Joint National Committee on Prevention, Detection, evaluation, and Treatment of High Blood Pressure. *Hypertension*. 2003;42: 1206.)
15. Watnick MD, Morrison MD: Kidney Chp 22 pg 897. *Current Medical Diagnosis and Treatment 2006* McGraw Hill.



CPT George W. Horsley joined the Army April 1987. After the Basic Airborne and Ranger Indoctrination Program, he went to the B/2 Ranger BN, Fort Lewis WA, as an infantryman from Oct 1987 to Dec 1990. During this time, he participated in Operation Just Cause. He attended the Special Forces Medical Sergeants course and was assigned to the 3rd BN 10 SFG(A) at Fort Devens, MA, as a team medic and Group Medical Sergeant. While with 10th Group, he participated in Operation Provide Comfort II. He left active duty and joined A/2/19 SFG(A) in the Rhode Island National Guard. He then attended Physician Assistant School at Fort Sam Houston, TX, where he obtained a Masters in Physician Assistant Studies. He then became the battalion Physician Assistant for 2nd BN 19th SFG (A) in 2001. CPT Horsley was mobilized with his group for Operation Enduring Freedom (OEF) in Dec, 2001 and was assigned to A Company to perform duties as a B team medic. He remained with 2/19 until early 2006 when he was assigned

to the Special Operations Detachment Global in the Rhode Island National Guard. In late 2006, he was again mobilized in support of OEF and is currently attached to SOCCENT with duties in Qatar and MacDill.



Role of Medicine in Supporting Special Forces Counter-Insurgency Operations in Southern Afghanistan

Sean Keenan, MD

ABSTRACT

The purpose of this article is to present the experiences of Task Force 31 during two rotations in support of Operation Enduring Freedom with the use of host nation (HN) medical care as a strategy to support our counter-insurgency plan in the Afghanistan theater. This policy, which consists of providing routine and basic preventive medical (sick call-type) HN care, is in direct contrast to the Rules of Eligibility, essentially only providing emergency care to local nationals. Our medical “rules of engagement” many times clash with the conventional methods of approaching medical care of local national patients, and this article seeks to explain why our strategy is valid in our Area of Operations (AO).

Note: This article does not seek to present a global strategy for the application of health care, but rather an explanation of the use of medical care in our overall strategy of fighting the counter-insurgency.

OUR AREA OF OPERATIONS

Southern Afghanistan is a primitive collection of underdeveloped towns with the exception of some key cities throughout the region. Hospitals are only located in the larger cities (Kandahar, Lashkar Ghar, Qalat, Farah, Herat), and many are under-staffed and under-resourced. The lines of communication throughout the region are primitive at best, with paved roads only connecting the larger towns and district centers. The anti-coalition militia (ACM), the catch-all phrase for the insurgents, denies free passage on many of the main roads connecting towns and provinces throughout this region. Local health care in small towns many times consists only of a small clinic or pharmacy with a “provider” more interested in selling medications than actually diagnosing and treating medical conditions.

Non-governmental organizations (NGOs), who in other underdeveloped countries contribute significantly to the reconstruction of medical organizations and clinics in small towns, do not venture into many of these areas due to the dangerous security situation. The overriding goal of the Afghan Ministry of Health is to have a clinic within three hours walking distance to every citizen, but, in some areas, this access is not currently available. There is no quality assurance of the staffing of these clinics with qualified

providers or supplying these clinics with basic necessary items to provide care. As a result, many of the towns in these areas have little or no basic medical care, and certainly no access to surgical or preventive medical care, largely contributing to reported infant mortality of 160.23/1000 live births (third highest in the world), and life expectancy of only 43.16 years.¹

COUNTERINSURGENCY STRATEGY

A counterinsurgency is an operation where the military forces of one or many countries seek to bolster a fledgling local national government against a force of insurgents who seek to destroy that government.

In order to bolster and support that new government, our Special Forces Task Force relies on both kinetic and non-kinetic operations. Kinetic is the typical use of military force to close with and destroy the insurgent forces in order to ultimately physically separate them and their influence from the local populace. Non-kinetic operations include bolstering the local governmental agencies and services, and in many cases, providing much needed or absent services to the people in the hopes of “winning the hearts and minds” of the local populace and undermining ideological support for the insurgency, while gaining support for the legitimate Afghan government.

Special Forces teams are uniquely qualified to establish self-sustaining base camps in remote or hostile areas. A key element to this struggle is the establishment of rudimentary host nation medical care, in areas where adequate civilian care is absent or insufficient.

SPECIAL FORCES MEDICINE AS A TOOL FOR COUNTER-INSURGENCY OPERATIONS

Special Forces medics, unlike most other Special Operations medical providers, are trained specifically to operate autonomously at these remote locations.

Though they have a defined scope of practice, their training comprises a wide range of medical, dental, veterinary, and preventive medicine topics. They are trauma specialists, but also trained in the medical care of children, adults, and geriatric patients. At many of our firebases, due to the solid background of training and acquired experience, many of our medics are, de facto, the highest trained medical providers in these communities. The mature provider, aware of both his scope of practice and limitations, has the potential for enormous effects in these communities. The clear definitions of scope of practice of our American subspecialties of medicine are much less clear in these situations. This is not a license for medics to do whatever they think they can, but a realization that any care provided is much better, and in many cases may prove to be lifesaving, when no other care is available. This point should not be lost on the reader, and the potential for long-lasting benefit to the host nation community is great.

Though ultimately our forces and those of the International Security Assistance Force (ISAF) seek to establish a secure and self-sustaining nation, there are major security issues in our AO. Medical care provided by the regular military assets of our NATO partners are specifically resourced to care for the sick and wounded of the Coalition forces. Due to the limited nature of the planning and resourcing of medical assets, there is a need to limit the care provided to local nationals. As such, the regular military medical assets have established various medical rules of eligibility (MROE) for caring for local nationals. In general, local national patients cannot be cared for in Coalition medical facilities except for emergency care, defined as a condition that is life, limb, or eyesight-threatening, and when there is bed space available at the major Level Three facilities (as a surrogate measure of limited resources available).

In regards to dedicated local national care, traveling Medical Civic Action Program (MEDCAP) teams have been developed by the larger conventional medical support structure to provide additional benefits to

host nation personnel. The experienced provider, however, will only have to participate in a few MEDCAPs, no matter how large the package and how specialized the providers, to appreciate the relative futility of showing up to a town one time and providing care. A much more effective strategy is identifying those areas that are truly underserved and providing basic services on a more regular basis, much as we do at our firebase clinics.

Many times, our medical care strategies clash with conventional medical rules of eligibility due to the operational constraints placed on each medical unit. Guidance to conventional medical units specifically prohibits these units from seeing local nationals except when they present in extremis, literally dying at their front gate. Additionally, there are some prohibitions from using medical supplies to treat local nationals, though there are funds available through Commander's Emergency Relief Program (CERP) funding that can be allocated to locally purchase medications to be used on local nationals. The use of local national medical supplies is not only cost-effective, but bolsters the local economy and provides confidence and patient education in host national medications. Admittedly, these local national medications may not look as legitimate as such things as the American decongestant capsule (generic Deconamine – a common cold symptomatic treatment) which is a highly sought-after commodity in community trading circles for its multi-colored appearance.

The non-kinetic operations of our Task Force do not intend to supplant or undermine local providers and medical operations, rather, to build confidence and support for the elected governments, and legitimate government operations. Additionally, with judicious use of medical care and application of basic comprehensive care, the local population will begin to see a true investment in their community. As an important by-product of these operations, security will be enhanced as the locals build a partnership with the Special Forces teams and their attached Afghan National Army (ANA) units.

Another benefit of running these clinics is the unparalleled level of experience and training received by our medics. The breath of trauma and infectious disease exposure alone is unlike anything seen in clinics in the United States. Many children present to our clinics who have never received medical evaluation or care in their lives. Malnutrition, childhood illness, and genetic abnormalities present in their "raw" forms. Cases sent through our electronic consultation service routinely receive praise for the unbelievable presentations

that walk in off the streets. Our medics are trained in pain control and procedural sedation skills and many are facile in the use of ketamine, opiates, and benzodiazepines for procedural sedation, without which many of our procedures would not be possible. Severe burns, abscesses, and blunt trauma are commonplace, while exposure to pediatric patients is universal.

A couple of our clinics even rival the experience of big city “knife and gun clubs” in the United States.

With the rotation of our medical officers (Battalion Surgeon, Battalion Physician’s Assistant, and augmentee providers), our Special Forces medics take advantage of an experience comparable to medical proficiency training (MPT) rotations in the United States. Compared with peacetime limitations on training, the daily experiences in these clinics are unmatched. Properly regulated, the medic finds a superb learning experience to build on an already solid background of education. This training experience, comparable to joint/combined exchange training rotations during peacetime, provides the Special Forces medics with as much benefit to their personal training as the benefit received by the patient themselves.

CONCLUSION

Though not a blueprint for conventional forces’ application of medical assets in this Global War on Terrorism, our use of Special Forces medical assets is vital to our overall counter-insurgency strategy. I seek to explain the operational relevance of our seemingly permissive “rules of eligibility” with regards to the provision of local national healthcare in this austere and hostile environment. Over two rotations in

support of Operation Enduring Freedom, at 14 fire-base clinics, we have evaluated close to 50,000 patients, a significant portion of the population in southern Afghanistan in these remote villages. A companion article to this one by MSG Samuel Blazier et al. seeks to provide a brief “how to” guide to applying our strategy with relevant examples that can be used by the individual medic.

ACKNOWLEDGEMENTS

I wish to acknowledge the multiple discussions I have had with my physician colleagues in this theater of operations and especially the Special Forces Medical Sergeants for teaching me more about the application of host nation medical care than they probably realize.



MAJ Keenan received his commission in 1991 from the U.S. Military Academy, then graduated from the Uniformed Services University in Bethesda, MD in 1995. He served as the Battalion Surgeon for 1/1 SFG(A) in Okinawa, Japan from 1996 to 1999.

After completion of his Emergency Medicine residency at BAMC, Ft Sam Houston, TX, he served as Staff Emergency Physician, Womack AMC, Ft Bragg, NC, for two years. He then was assigned to his present position as the Battalion Surgeon of 1st Battalion, 3rd Special Forces Group (Airborne). He is on his fourth wartime deployment in support of Special Operations forces, and second consecutive as the Task Force 31 Surgeon.

REFERENCES

1. <https://www.cia.gov/cia/publications/factbook/geos/af.html>.

Running a Local National Medical Clinic for Special Forces/Special Operations Medical Personnel

Samuel J. Blazier, 18Z; Ronald A. Leach, PA-C; George Perez, 18D; Bruce W. Holmes, 18D; Robert S. Blough, 18D; Sean Keenan, MD

ABSTRACT

The purpose of this article is to present a strategy for establishing and running a local national medical clinic in support of our counter-insurgency strategy, practiced by our Special Forces Task Force in support of Operation Enduring Freedom. In the course of multiple rotations to Afghanistan, we have acquired a feasible strategy to take advantage of the non-kinetic operations of a local national medical clinic. This article seeks to identify mission essential tasks and provides examples from Special Forces Teams (Operational Detachment – Alpha, or ODA) throughout our area of operations (AO) in different settings.

BACKGROUND

As covered previously in MAJ Keenan’s article, “Role of Medicine in Supporting Special Forces Counter-Insurgency Operations in Southern Afghanistan,” we believe that the utilization of host national medical clinics is a valid and integral part of our non-kinetic strategy of fighting a counter-insurgency operation. Through the use of our medical talents, each firebase utilizes medical care of local nationals to help achieve the overall goal of peace and stability in their respective AO.

There are some key tenets and tasks that an individual medic should consider which are outlined below. Additionally, we seek to share the varied experiences of our seasoned medics, some of whom have spent three rotations in Afghanistan, to provide examples to practical application of these principles. We realize that individual experiences vary considerably, but given that we believe this strategy should be considered by any ODA wishing to make a significant impact on the local population while fighting counter-insurgency operations, the examples provided may help to speed the preparation and planning, and provide some insight to medical personnel wishing to incorporate this strategy.

BACKGROUND AND AREA ASSESSMENT

In order to fully take advantage of this non-kinetic experience, the individual Special Forces medic should seriously consider establishing, operating, and managing a local medical clinic designed to address (or

augment) medical care for the local populace. The rapport gained by providing a local medical clinic is the forefront of a Special Forces team in their AO. Having rapport with the local populace has been a staple for Green Berets since their inception. Looking back on the stories of Vietnam and the “G-Hospitals” a recurring theme is the provision of more sophisticated medical care to an underserved population.

The Special Forces Medic should first conduct an assessment of the area to determine the local medical capabilities, and availability of medical personnel – both host-nation and Coalition assets. The assessment should include HN medical supplies and pharmacy services available. This will vary widely depending on the firebase location, but our experience in rural Afghanistan is the complete lack of some basic services and adequate medical supply. The Special Forces Medic should establish and build rapport with the local medical personnel, and determine if they have the resources needed to carry out their responsibilities. There may be an opportunity to assist local clinics or hospitals, by physically assisting and advising, or with the procurement of local supplies and medications.

There are numerous “established” programs that a team may be able to utilize. Two programs that we have taken advantage of are the Commander’s Emergency Relief Program (CERP) funding, primarily Civil Affairs project funds, or enabling earmarked host-nation funding to reach these remote projects and clin-

ics (via the Afghan Ministry of Health). There may be national or regional programs that can be promoted by the Special Forces teams in remote areas that are not being serviced as intended. Especially with a fledgling government in a primitive environment, such as Afghanistan, outreach by the central governmental organizations may be sporadic to the rural areas. An example of this is the national vaccination programs which seek to vaccinate all children in the country. By supporting and enabling the local medical clinic, it is legitimizing the local clinic and its personnel, which furthers the rapport process benefiting the ODA.

The ODA can also conduct a “mini-Medical Civic Action Program” (mini-MEDCAP) locally to introduce themselves into the area and to show support for the local populace. These visits are usually in conjunction with tactical operations into formally denied areas. As for medical care, it is far from definitive and should serve more as an advertisement for the firebase clinic or local national establishments of which remote towns may be unaware until these planned encounters. Many medics carry small boxes or kit bags to take advantage of medical targets of opportunity while out on patrols. Medical interactions with the local populace are a very safe and valuable, non-threatening encounter that should be considered as an augmentation to many tactical scenarios. These can sometimes be planned in conjunction with tactical Civil Affairs assessments and project nomination site surveys. The firebase medical clinic, however, is key to our counter-insurgency strategy.

ESTABLISHING AND RUNNING A FIREBASE MEDICAL CLINIC

The location of a permanent structure for a firebase clinic should be planned carefully. The Special Forces Medic should establish a clinic in a safe area and the clinic should be run purely by the team. An ideal location is outside the inner perimeter but still attached to the firebase. The firebase clinic should be accessible to indigenous personnel, yet have adequate security. Firebase clinics need a controlled access point, and the personnel entering the control point should be scanned with a metal detector or be searched physically by a host nation soldier or security. This is necessary to protect both the local civilians as well as the Special Forces personnel. From this controlled access point they should go into a waiting area that is over-watched by the host nation soldiers or security personnel. This holding area provides an excellent opportunity for interaction with the waiting patients whether for patient education, psychological opera-

tions (PSYOP) presentations, or civil affairs interaction.

Many firebases choose to have two separate medical facilities: the local national clinic (the outer clinic) and the “American” clinic (the inner clinic). The local national clinic is rudimentary and has basic exam tables and screening equipment. The bulk of its medications can be local national medications supplied by CERP funding.

The inner or “American” clinic contains the traditional Class VIII supplies, monitors, and everything needed for procedures and more complicated patients. A technique is to screen the vast majority of patients at the local national clinic, and bring the sickest patients or those needing more advanced care to the inner clinic.

The Special Forces medic working in this clinical setting finds a tremendous opportunity to train ODA members, ANA medics, and interpreters to assist in medical procedures. This not only helps the medic with his daily duties, but provides vital hands-on training to first responders. Simple duties such as wound care and IV practice is a daily occurrence. This on-the-job training is a vital supplement to classroom or pre-deployment medical training for our own Soldiers. The confidence derived from this training pays enormous dividends during tactical combat casualty care.

SCOPE OF PRACTICE

What we are seeing in these clinics is that the Special Forces Medic has historically been the most medically qualified person in the majority of the remote AO's. With that in mind here are several points to consider:

First, medics must be cautious not to overstep their bounds in terms of scope of practice. It is important for Special Forces Medics to remain within their medical training and comfort level to avoid getting in over their heads, provide excellent care, and ultimately avoid unnecessary scrutiny from the larger medical establishment. The operational expectations placed on SF medics requires a broad scope of practice, however this should not be misconstrued as a license to practice freely. The mature medic understands his limitations, and must know when they should pass a patient to a higher medical level. The SF Medic will only provide care within his scope of practice, ultimately regulated by the Battalion and Group Surgeons. This level of trust and communication for consultations must be established early in the deployment and practiced regularly.

An understanding of the medical operational environment is essential. Each medic should be thoroughly familiar with military and civilian evacuation chains, understanding there may be a very non-permissive military or non-existent civilian evacuation system in place. This is a continual problem which should be considered early

in the treatment of medical problems, and the medics will soon get an understanding of not only their capabilities, but necessary limitations. In other words, there must be an appreciation for not “biting off more than they can chew.” After working in the environment, a medic quickly realizes there are some problems best left not addressed, especially chronic problems or problems so overwhelming that intervention will only delay inevitable deterioration or death. Every provider in this austere environment goes through a period of adjustment from the way they were taught to the way they will practice – effectively modifying the “standard of care.” A provider should always remember the axiom, “First, do no harm.”

Second, at times the Special Forces Medic has so many people that come for treatment that he cannot physically screen, assess and treat them all. The Medics must develop a system to triage patients and refer to the local HN clinic as appropriate. This legitimizes the local clinic and local medical personnel which serves to increase the rapport in the AO, while dissuading the local populace from an over-reliance on the medical care provided by the temporary firebase, eroding the incentive for local national health care development.

MEDICAL SUPPLIES

The established SF local national clinic, as mandated by policy, should maximize the use of locally purchased medications. As discussed earlier, the Civil Affairs augmentees and Task Force Commander have access to Commander’s Emergency Release Program (CERP) funding. This source of funding is specifically to be used on projects to bolster local economies and for projects designed to build civil infrastructure. The use of these funds is encouraged to purchase local national medications. This will serve a number of purposes. It bolsters the economy by the spending of money in the community, it discourages an over-reliance on American products and medications, and it legitimizes the local medications provided on the economy. Funding should be allocated early, and, in remote areas, medications and supplies can be purchased in larger cities then shipped to remote firebases. We have found that a small amount of money goes a long way with supplying basic primary care medications.

CULTURAL OBSTACLES

An obstacle that is presented when we are attempting to honor local and cultural customs is that there are significant cultural and religious prohibitions to males examining (or even searching) female patients.

An example is a female who was brought to a local clinic with a possible broken tibia and fibula. The SF Medic was not allowed to touch the female at all, making it impossible to properly examine the patient. The Medic was allowed only to place a splint over the clothing of the patient.

Additionally, many females will not venture outside their home or neighborhood to even visit our clinics. Though not impossible to attract and treat female patients, the population served at our clinics is definitely skewed away from female patients. Ideally, the busier clinics would benefit significantly by having female medics available to examine and treat female patients. This is a continual limitation to our ability to reach the entire population and exploit this opportunity. Given the Afghan culture, the largest gains in interacting with the local populace may be through the females patients, but this is a necessary limitation overall in our application of medical care due to our male-dominated force structure.

PATIENT POPULATION AND TREATMENT CHALLENGES

Patient demographics are greater than 50% pediatric with many of those pediatric cases being less than two years of age. This necessitates Broselow Kits (or similar weight-based treatment aids), pediatric references, pediatric medications, and good lines of communications with pediatric and higher medical consultation.

Burns are a prominent injury at most firebases. The current evacuation environment is fairly restrictive on what burn patients will be accepted. Standards of evacuation on the civilian side are not necessarily the same here. Each medic should be familiar with burn care and procedural sedation since much of the wound care will necessarily be handled at the firebase clinic. Only those severe cases (30-40% BSA burns and greater) are generally accepted for medical evacuation (MEDEVAC). In general, however, Coalition medical assets are poorly equipped to handle burn cases and are very reluctant to offer higher medical treatment. In fact, burn injuries and closed head trauma are the most contentious cases when presented for MEDEVAC to higher levels of care.

Caution needs to be exercised in medications and treatment plans. Our experience is that local national (LN) patients seldom take the medication as directed, may sell the medications you have given them, or may take dangerously large doses despite what you consider to be adequate education. Also, follow-up is sometimes non-existent, so common treatments such

as daily wound dressing changes actually become weekly. The medic should prepare for this contingency and treatment plans will frequently be modified to be even more comprehensible than you first plan for. We recommend the KISS (keep it simple, stupid) principle be foremost in every treatment and follow-up plan provided.

LN CLINIC HOW-TO EXAMPLES FROM RC-SOUTH, AFGHANISTAN:

The following are specific examples from some individual firebases that seek to illustrate how different clinics operate in our area of operations. There are recurrent themes individual medics will find valuable. The following examples are provided by our team medics and physician's assistant:

FIREBASE TYCZ, AFGHANISTAN

We have two medical treatment facilities (MTFs) for Firebase Tycz. The first MTF is located outside of the main firebase perimeter and is primarily used for local national sick call. This is done for security reasons. This clinic is mostly stocked with locally purchased medical supplies and only equipped with a hand washing station and powered by a small generator during hours of operation.

The second MTF is a dedicated trauma room within the firebase, and better equipped for handling extensive wound care. This MTF is also well equipped with a fluid warmer, surgical sterilizer, suction, ProPaq monitor, portable X-ray (SF Battalion organic), and large oxygen bottles. Our main trauma MTF is open 24 hours a day, seven days a week, for all trauma cases that may occur. The incidences of trauma cases are quite high in our immediate area. During the process of conducting host nation sick call, interesting cases or those patients requiring more extensive procedures/evaluation (i.e., procedural sedation/X-ray evaluation) are taken to the primary MTF within the firebase for more extensive care and monitoring. These patients are necessarily searched two more times by our firebase guard.

Our clinic schedule is modified by our operational tempo. If we were out on a mission, the clinics would be closed until we return. Another unique feature at our firebase is a radio station that is used to advertise our services as well as broadcasting preventive medicine messages to help educate the populace. This is all included in our PSYOP plan arranged by the Task Force.

We have one pick-up truck specifically dedicated for the aid station and functions as our ambu-

lance. We transport patients in and out of the firebase; from the initial check point to the outside clinic and eventually to our trauma clinic, inside the inner perimeter. Additionally, we transport serious MEDEVAC patients to the helicopter landing zones using the truck. We also hired a security guard/clinic worker specifically for the clinical support. He ensures all patients are searched at the initial check point, and again at the fire base entry control point, and also coordinates support from fellow guards during hours of operation. We have taught him basic wound care, the operation of technical equipment such as the sterilizer and the Propaq, and other various simple skills to maintain the clinics. Having this clinic worker also helps keep some continuity between team medics within the different units that rotate through this firebase.

We established and maintain good rapport with a local national doctor, who has X-ray capabilities and minimal laboratory testing in the local bazaar. We were able to refer patients (ANA, ASG, and local civilians) to get X-rays and labs prior to receiving our own X-ray machine from our Battalion Medical Section. On many occasions, we have had meetings with him to discuss many issues regarding health care in the local province. We have had a positive impact on the local populace as he spreads the word that the Americans are here to help the people of Afghanistan, which is an integral part in counter-insurgency operations. The population of the town is large enough that we are not "stealing" his patients from him, and he refers some of the more critical patients to our clinic for advanced trauma care.

On many occasions, we have been faced with the task of treating civilians that have been severely injured by a variety of means common to Afghanistan (land mines, gunshot wounds, burns, etc.). In most cases, the local populace comes straight to the firebase for primary treatment, however, they can be referred from the local doctors in the surrounding area, which are more than likely less trained and equipped to be able to handle these cases. Within the number of trauma cases that we have treated at the firebase, a small percentage may require medical evacuation to a higher level of care that cannot be provided by the Special Forces Medic. Therefore we must carefully assess and triage all casualties and decide if the case warrants MEDEVAC to higher echelons of care. Once that step is completed, the medic must choose between submitting a 9-line MEDEVAC request or the option of sending the patient via ground evacuation (taxi). These decisions are based on the availability of air assets, illumination from the current moon phase, and the possibility of other ODAs that may be in contact with the

enemy, thereby taking away vital assets from operational needs in our AO.

Currently, we are using CERP funds to purchase local medicines from the surrounding pharmacies to supply our host nation clinic. This serves a dual purpose. First, the use of CERP funds helps stimulate the local economy and growth. Second, the purchase of local medicines lessens the burden upon our own logistical supply train. We find that we can supply a large amount of primary medications (pain control, antibiotics, topical medications, etc.) for a relatively small cost. Though subject to local availability, these medications are usually readily available and relatively easy to procure, once the appropriate funding has been projected and ordered.

FIREBASE ANACONDA, AFGHANISTAN

There is a single LN clinic built into the corner of the firebase (FB) perimeter wall. Access to this clinic is regulated through an Afghan security guard (ASG) check point outside the FB perimeter. Once patients have been searched they are brought to a holding still outside of the clinic and FB perimeter wall. The clinic is operated for LN sick call 3 days a week and available for emergency care on a case-by-case basis.

During this rotation the clinic has been primarily operated by the team's one Special Forces Medical Sergeant (18D) with the assistance of a Special Operations Combat Medic (SOCM)-trained Civil Affairs medic, the former 18D Team Sergeant, and team members as needed for trauma or mass casualty situations.

The medic triages patients in the holding area. Those acutely ill, injured, or otherwise in obvious medical distress are brought into the clinic as first priority. Patients triaged with minor complaints are directed to seek care from the local clinic. This helps legitimize the host nation community clinic, and reduces primary reliance on the firebase LN clinic. This triage process usually results in a manageable number of LN patients – approximately 10 per clinic day seen and treated. The clinic layout is ideal in that it has six equally stocked separate “bays” that can isolate both patients with infectious diseases, as well as give female patients more privacy.

FB Anaconda has the advantage of a motivated and very capable female Category II interpreter. Her presence has helped facilitate the examination and treatment of female patients. This is a luxury that many firebases do not have, but we take full advantage of her presence to overcome the significant cultural hurdles of the treatment of female patients in this culture. She has been trained to perform basic physical exams, which the male medics and providers are unable to perform. This

interpreter alone doubles our effectiveness in reaching the local populace.

The use of LN purchased medications is maximized. These meds are purchased through CERP funds as well as Civil Affairs operational funds (OPFUNDS) when available. The local pharmacist provides basic medications and can acquire scarce items when he travels to Kandahar.

In addition to the clinic operations, the team conducts civil-military operations (CMO) missions within the immediate area of operations. We have found the recently issued Special Forces Tactical (TAC) Set sick-call box, once fully stocked, is an ideal CMO/mini-MEDCAP set.

The value of HN medical treatment is substantial towards encouraging local community cooperation and timely intelligence gathering. Unfortunately, our higher level medical facilities for reasons of capacity, cost, and expertise regularly decline to accept LN patients unless there are life, limb, or eyesight threatening conditions – and even then, only if the injuries are a direct result of coalition actions. This reluctance sometimes proves to be an obstacle to care due to our limited capabilities and our remote location.

FIREBASE LANE, AFGHANISTAN

Firebase Lane has two medical clinics – one within the inner SF compound and another LN-exclusive clinic co-located with a school. The clinic is within line-of-sight of the entry control point (ECP) to the main firebase.

The local national clinic is supplied with primarily host nation medications, and various humanitarian supplies, and has very little in the way of high-end medical equipment (monitors) or procedure capability. This clinic is run three days weekly based on patient attendance, and, more importantly, medic availability. The clinic security is provided by Afghan National Army (ANA) soldiers. There are no legitimate local medical options for the population in the immediate area, and therefore, we are unable to divert minor complaints back to a host nation provider at a local clinic.

The medical team for this clinic consists of a single Special Forces Medical Sergeant and a paramedic-trained U.S. Army National Guard Soldier. This paramedic, however, has other primary duties which are non-medical.

All procedures and acute trauma are handled in the inner clinic within the SF compound. Patients during sick call are triaged, and those requiring more definitive treatment or procedures are held until after sick

call when they are then searched and moved to the inner firebase clinic, unless acuity of illness dictates they be treated urgently.

As the only legitimate medical clinic within the area, the FOB Lane clinic typically sees upwards of 60 LN patients per day. The demographics are almost exclusively children or male adults, much like the rest of our clinics. With no female interpreter or medic available, local customs prevent women from seeking medical attention in this clinic – thus illustrating the desirability of having female personnel available to assist in clinic operations.

CONCLUSION

The areas where we find the most benefit to establishing clinics are those necessarily remote from host nation civilian medical care. At other firebases near larger population centers, the clinic operations play an important, but lesser role in host nation interaction for our counter-insurgency strategy. By doing a thorough assessment and keeping some basic principles in mind, the Special Operations Medic can quickly utilize our strategy for employing medical care directly into the larger goals of counter-insurgency operations. Done properly, running a host nation clinic in rural Afghanistan is an unparalleled unconventional warfare medical experience and directly contributes to our success on the battlefield.



MSG Blazier has been in Special Forces for 16 years. He has served as a senior medic on ODAs in 2nd Battalion, 3rd SFG(A), Battalion Medical NCOIC of 2nd Battalion, 3rd SFG(A), Civil Affairs medic and team sergeant in 96th Civil Affairs Battalion, Phase I and VI instructor for SF Qualification Course at Camp Roe, staff member at TMC 14, and most recently as the Battalion Medical NCOIC for 1st Battalion, 3rd Special Forces Group (Airborne). He is currently serving on his third combat deployment to Afghanistan in support of Operation ENDURING FREEDOM.



CPT Leach has served several years as an SF Medical Sergeant with the 1st SFG(A), prior to attending PA school. He then served two OIF deployments with conventional Army units as a Physician Assistant prior to returning to the SOF community as the Battalion PA for 1st Battalion, 3rd Special Forces Group (Airborne). He is currently serving in support of OEF in Southern Afghanistan.



SFC(P) Perez has served on active duty for 18 years. First trained as an 18C, then as an 18D in 2004, he has deployed to Afghanistan four times. He has been based out of southern Afghanistan on three consecutive rotations. He has been a member of ODA's 351, and 344, and is currently a member of 1st Battalion, serving as a Senior ODA SF Medic.



SFC(P) Holmes has served on active duty for 13 years. He graduated from the 18D course in May, 2002, and was the Distinguished Honor Graduate from his ANCOC medic course. He has been Senior ODA SF Medic for the last four years. He has rotated to Afghanistan on four separate combat deployments.



SSG Blough joined the Army as an 11B (infantryman) in 2000. In 2002 he began the Special Forces Qualification course to become an 18D. He was assigned to 3rd SFG in October of 2004. He has been deployed to Afghanistan twice in support of Operation Enduring Freedom.

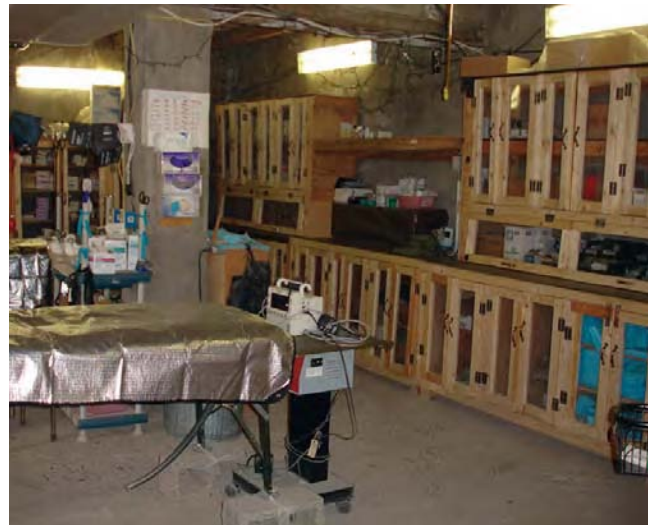


MAJ Keenan received his commission in 1991 from the U.S. Military Academy, then graduated from the Uniformed Services University in Bethesda, MD in 1995. He served as the Battalion Surgeon for 1/1 SFG(A) in Okinawa, Japan from 1996 to 1999. After completion of his Emergency Medicine residency at BAMC, Ft Sam Houston, TX, he served as Staff Emergency Physician, Womack AMC, Ft

Bragg, for two years. He then was assigned to his present position as the Battalion Surgeon of 1st Battalion, 3rd Special Forces Group (Airborne). He is on his fourth wartime deployment in support of Special Operations forces, and second consecutive as the Task Force 31 Surgeon.



The “outer” local national clinic has rudimentary treatment and exam facilities and is stocked with host nation medications.



The “inner” clinic contains team equipment and is prepared for major trauma and other procedures.



Greater than 50% of our patients are pediatric.



Interpreters are invaluable as medical assistants and providing detailed patient instructions.



SFC Perez works on a trauma patient.



Burns, especially in children, are a significant part of our patient population.

ABSTRACTS FROM CURRENT LITERATURE

Admission Physiology Criteria After Injury on the Battlefield Predict Medical Resource Utilization and Patient Mortality

Eastridge, Brian J. MD; Owsley, Jimmie MD; Sebesta, James MD; Beekley, Alec MD; Wade, Charles PhD; Wildzunas, Robert PhD; Rhee, Peter MD; Holcomb, John MD

Journal of Trauma-Injury Infection & Critical Care. 61(4):820-823, October 2006.

ABSTRACT

Background: Medical resources and resource allocation including operating room and blood utilization are of prime importance in the modern combat environment. We hypothesized that easily measurable admission physiologic criteria and injury site as well as injury severity calculated after diagnostic evaluation or surgical intervention, would be strongly correlated with resource utilization and in theater mortality outcomes. **Methods:** We retrospectively reviewed the Joint Theater Trauma Registry for all battlefield casualties presenting to surgical component facilities during Operation Iraqi Freedom from January to July 2004. Data were collected from the composite population of 1,127 battlefield casualty patients with respect to demographics, mechanism, presentation physiology (blood pressure, heart rate, temperature), base deficit, admission hematocrit, Glasgow Coma Score (GCS), Injury Severity Score (ISS), operating room utilization, blood transfusion, and mortality. Univariate and multivariate analyses were conducted to determine the degree to which admission physiology and injury severity correlated with blood utilization, necessity for operation, and acute mortality. **Results:** Univariate analysis demonstrated a significant ($p < 0.05$) association between hypothermia ($T < 34$ [degrees]C) and the subsequent requirement for operation and mortality. In addition, the outcome variable total blood product utilization was significantly correlated with base deficit ($r = 0.61$), admission hematocrit ($r = 0.51$), temperature ($r = 0.47$), and ISS ($r = 0.54$). Using multiple logistic regression techniques, blood pressure, GCS, and ISS together demonstrated a significant association ($p < 0.05$) with mortality (area under ROC curve = 95%). Multiple linear regression established that blood pressure, heart rate, temperature, hematocrit, and ISS had a collective significant effect ($p < 0.05$) on total blood product utilization explaining 67% of the variance in this outcome variable. **Conclusion:** Admission physiology and injury characteristics demonstrate a strong capacity to predict resource utilization in the contemporary battlefield environment. In the future, such predictive yield could potentially have significant implications for triage and medical logistics in the resource constrained environment of war and potentially in mass casualty and disaster incidents in the civilian trauma setting which will likely have mechanistic similarity with war related injury.

Tactical Surgical Intervention With Temporary Shunting of Peripheral Vascular Trauma Sustained During Operation Iraqi Freedom: One Unit's Experience

Chambers, Lowell W. MD; Green, D J. MD; Sample, Kenneth MD; Gillingham, Bruce L. MD; Rhee, Peter MD, MPH; Brown, Carlos MD; Narine, Nalan MD; Uecker, John M. MD; Bohman, Harold R. MD

Journal of Trauma-Injury Infection & Critical Care. 61(4):824-830, October 2006.

ABSTRACT

Background: Rapidly restoring perfusion to injured extremities is one of the primary missions of forward military surgical teams. The austere setting, limited resources, and grossly contaminated nature of wounds encountered complicates early definitive repair of complex combat vascular injuries. Temporary vascular shunting of these injuries in the forward area facilitates rapid restoration of perfusion while allowing for deferment of definitive repair until after transport to units with greater resources and expertise. **Methods:** Standard Javid or Sundt shunts were placed to temporarily bypass complex peripheral vascular injuries encountered by a forward U.S. Navy surgical unit during a six month interval of Operation Iraqi Freedom. Data from the time of injury through transfer out of Iraq were prospectively recorded. Each patient's subsequent course at continental U.S. medical centers was retrospectively reviewed once the operating surgeons had returned from deployment. **Results:** Twenty-seven vascular shunts were used to bypass complex vascular injuries in twenty combat casualties with a mean injury severity score of 18 (range 9-34) and mean mangled extremity severity score of 9 (range 6-11). All patients survived although three (15%) ultimately required amputation for nonvascular complications. Six (22%) shunts clotted during transport but an effective perfusion window was provided even in these cases. **Conclusion:** Temporary vascular shunting appears to provide simple and effective means of restoring limb perfusion to combat casualties at the forward level.

Expanding the Role of the Nurse Practitioner in the Deployed Setting

MAJ Julie Dargis, NC USA; LTC (R) Theresa Horne, NC USA; LTC Sophie Tillman-Ortiz, NC USA; LTC Diane Scherr, NC USA; MAJ Edward E. Yackel, NC USA

Military Medicine, 171,8:770,2006

ABSTRACT

Today's military is experiencing rapid advances in technology and in manpower utilization. The Army Medical Department is redesigning the structure and function of deployable hospital systems as part of this effort. The transformation of deployable hospital systems requires that a critical analysis of manpower utilization be undertaken to optimize the employment of Soldier-medics. The objective of this article was to describe the use of nurse practitioners as primary care providers during deployment. The lived experiences of five nurse practitioners deployed to Operation Iraqi Freedom are presented. Data gathered during the deployment and an analysis of the literature clearly support expanded and legitimized roles for these health care professionals in future conflicts and peacekeeping operations.

Imported Malaria and Conflict - 50 Years of Experience in the U.S. Military

Porter, William D.

Military Medicine, Volume 171, Number 10, October 2006, pp. 925-928(4)

ABSTRACT

Over the last 50 years, members of the U.S. military have faced the threat of malaria in diverse geographical locations and operational situations, resulting in considerable morbidity and mortality. However, because malaria may be transported out of endemic areas and into areas that are free of malaria, the threat does not end with redeployment. Since the Korean Conflict, outbreaks of imported malaria have followed every major deployment of U.S. military forces to malaria endemic areas. By examining unique aspects of these outbreaks through the years, many similarities can be drawn. Repeated observations demonstrate that preventive efforts are only effective at reducing the impact of imported malaria when commanders are informed about the risks of malaria. Commanders must also understand the preventive resources that are available while deployed, and the potential for morbidity and mortality from malaria.

Chagas' Disease — Can We Stop the Deaths?

James H. Maguire, M.D., M.P.H.

New England Journal of Medicine Volume 355:760-761 August 24, 2006 Number 8

ABSTRACT

Nearly 100 years since its discovery by the Brazilian physician Carlos Chagas, the protozoan parasite *Trypanosoma cruzi* remains perhaps the most common cause of myocarditis worldwide. The lethality of Chagas' heart disease is undisputed, as the survival curves presented by Rassi et al. in this issue of the Journal illustrate with chilling clarity (pages 799–808). More than 10 million Latin Americans carry the parasite, and at least 1 million of them will die unless scientific and political breakthroughs lead to new strategies and tools for diagnosis, treatment, and increased access to medical care.

Development and Validation of a Risk Score for Predicting Death in Chagas' Heart Disease

Anis Rassi, Jr., M.D., Ph.D., Anis Rassi, M.D., William C. Little, M.D., Sérgio S. Xavier, M.D., Ph.D., Sérgio G. Rassi, M.D., Alexandre G. Rassi, M.D., Gustavo G. Rassi, M.D., Alejandro Hasslocher-Moreno, M.D., Andrea S. Sousa, M.D., Ph.D., and Mauricio I. Scanavacca, M.D., Ph.D.

New England Journal of Medicine Volume 355: 799-808 August 24, 2006 Number 8

ABSTRACT

Background: Chagas' disease is an important health problem in Latin America, and cardiac involvement is associated with substantial morbidity and mortality. We developed a model to predict the risk of death in patients with Chagas' heart disease. **Methods:** We retrospectively evaluated 424 outpatients from a regional Brazilian cohort. The association of potential risk factors with death was tested by Cox proportional-hazards analysis, and a risk score was created. The model was validated in 153 patients from a separate community hospital. **Results:** During a mean follow-up

of 7.9 years, 130 patients in the development cohort died. Six independent prognostic factors were identified, and each was assigned a number of points proportional to its regression coefficient: New York Heart Association class III or IV (5 points), evidence of cardiomegaly on radiography (5 points), left ventricular systolic dysfunction on echocardiography (3 points), non-sustained ventricular tachycardia on 24-hour Holter monitoring (3 points), low QRS voltage on electrocardiography (2 points), and male sex (2 points). We calculated risk scores for each patient and defined three risk groups: low risk (0 to 6 points), intermediate risk (7 to 11 points), and high risk (12 to 20 points). In the development cohort, the 10-year mortality rates for these three groups were 10 percent, 44 percent, and 84 percent, respectively. In the validation cohort, the corresponding mortality rates were 9 percent, 37 percent, and 85 percent. The C statistic for the point system was 0.84 in the development cohort and 0.81 in the validation cohort. **Conclusions:** A simple risk score was developed to predict death in Chagas' heart disease and was validated in an independent cohort.

Changes in Metabolic and Hematologic Laboratory Values With Ascent to Altitude and the Development of Acute Mountain Sickness in Nepalese Pilgrims

Mark B. Shah, MD; Darren Braude, MD; Cameron S. Crandall, MD; Heemun Kwack, MD; Lisa Rabinowitz, MD; Thomas A. Cumbo, MD; Buddha Basnyat, MD; Govind Bhasyal

Wilderness and Environmental Medicine: Vol. 17, No. 3, pp. 171–177.

From the Department of Emergency Medicine at the University of New Mexico, Albuquerque, NM (Drs Shah, Braude, Crandall, Kwack, Rabinowitz); The Johns Hopkins University/Sinai Hospital Program in Internal Medicine, Baltimore, MD (Dr Cumbo); and the Himalayan Rescue Association, Kathmandu, Nepal (Dr Basnyat and Mr Bhasyal)

ABSTRACT

Objective: During August of each year, thousands of Nepalese religious pilgrims ascend from 2050m to 4500m in one to three days. Our objectives were to evaluate the incidence of acute mountain sickness (AMS) among this large group of native people, to explore changes in serum electrolytes as subjects ascend to high altitude, and to attempt to determine whether decreased effective circulating volume is associated with the development of AMS. **Methods:** This was a prospective study with two parts. In the first part, demographic, physiologic, and laboratory data were collected from a cohort of 34 pilgrims at both moderate (2050m) and high altitude (4500m). Changes that occurred with ascent were compared in subjects who did and did not develop AMS. The second part was a cross sectional study of a different group of 57 pilgrims at the high-altitude site to further determine variables associated with AMS. **Results:** In the cohort of 34 subjects, Lake Louise score, heart rate, respiratory rate, blood urea nitrogen (BUN), BUN:creatinine ratio, and pH increased at high altitude, whereas oxygen saturation, bicarbonate, creatinine, and PCO₂ decreased. Sixteen of these 34 subjects (42%) were diagnosed with AMS; these patients had a statistically significantly lower hematocrit, oxygen saturation, and self-reported water consumption than those without AMS. Of the 57 subjects enrolled in the cross sectional study, 31 (54%) were diagnosed with AMS. These pilgrims had higher heart rates and BUNs than did their non-AMS counterparts. **Conclusions:** Fifty-two percent of the subjects developed AMS. With ascent to altitude, subjects showed some evidence of decreased effective circulating volume, though there were no clinically significant changes. The data did not show whether decreased circulating volume is a significant risk factor in the development of AMS at high altitude.

Mal de Debarquement presenting in the Emergency Department

Paul T. DeFlorio MD and Robert Silbergleit MD

Journal of Emergency Medicine, Volume 31, Issue 4, November 2006, Pages 377-379. Received 27 June 2005; accepted 7 April 2006. Available online 12 October 2006.

Clinical communication

ABSTRACT

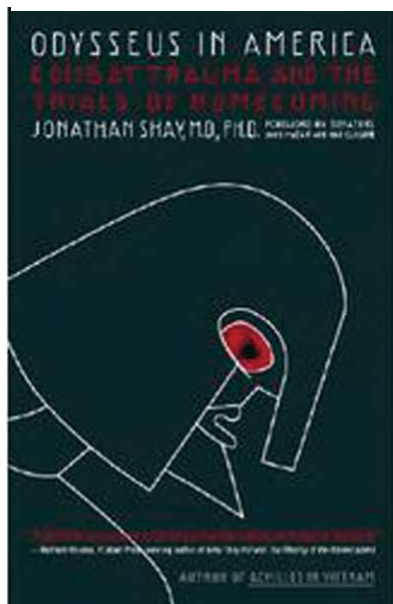
Mal de débarquement (MDD) is a common, benign, and self-limited syndrome suffered by many people after disembarkation from an oceangoing vessel. It is characterized by a continuing sensation of being on an unsteady pitching and rolling deck, even after a return to solid ground. Symptoms typically dissipate over several hours or days, but can linger for weeks. There is no effective treatment for MDD, no work-up is required, and patients can be reassured that the symptoms are transient. We present a case of MDD in a previously healthy 22-year-old male, and discuss the approach to MDD in the emergency department setting.

Book Review

Reviews by MAJ Kathleen Farr, Command and General Staff College (SG 3A)

Odysseus in America: Combat Trauma and the Trials of Homecoming

By Jonathan Shay. New York: Scribner, 2002. 329 pages.



It has been over thirty years since America's Vietnam veterans returned home physically. But, in the words of one veteran, psychologically and socially "many of us aren't home yet." In this remarkable book, Jonathan Shay weaves the stories of veterans' homecomings with the tales of Odysseus and his travels after the Trojan War to help us understand the problems combat Soldiers face when they return to civilian society. He brings his message of healing and prevention to life using poetry, philosophy, and the words of servicemen and women who have struggled to come home. Shay's goal is "a flourishing, good human life for veterans, their families, and their communities."

Odysseus in America is a sequel to Shay's best-selling book *Achilles in Vietnam*, in which he used Homer's *Iliad* to illustrate how war inflicts psychological injury on combat Soldiers. For over fourteen years, he has worked as a staff psychiatrist treating Vietnam combat veterans with severe, chronic post-traumatic stress disorder (PTSD). His experience is skewed toward those with the most flagrant and recalcitrant symptoms, but he balances his work with the voices of those who have adjusted to reentry. Shay notes early on that he writes in a "personal voice" and is an "unashamed moralist." I was concerned that the book would read like a sermon, but I found the language and tone to be professional and scholarly. While Shay is a passionate advocate for the prevention and

treatment of PTSD, he supports his arguments and never confuses his personal opinion with fact. Some of Shay's ideas – for example, the importance of ethical leadership, trust between leaders and Soldiers, and development of cohesion through realistic training – are not new, but the context, clarity, and presentation of those ideas are.

Shay divides *Odysseus in America* into three parts. In Part I: Unhealed Wounds, he uses Homer's classic tale of Odysseus and his ten-year struggle to return home as an allegory for the problems facing America's combat veterans as they return to and reintegrate with civilian society. While mostly focused on the issues faced by Vietnam veterans, Shay includes stories of veterans from other wars. I found the poetry of Soldiers from World War I particularly moving, as it brought back memories of my great-uncle Phil, a shadow of a man who lost a leg, and if the family stories are true, a fiancée during The Great War. He rarely spoke and never smiled, and seemed to live in a world of his own. How I wish he could have participated in the healing practices recommended by Dr. Shay.

Shay defines simple PTSD as "the persistence into civilian life of adaptations necessary to survive battle." Complex PTSD is simple PTSD plus the destruction of the capacity for social trust that triggers maladaptive behavior: thrill-seeking, sexual promiscuity, unpredictable violence, substance abuse, and obsessions. Shay illustrates these behaviors with lines from Homer's *Odyssey*, skillfully interweaving the experiences of Soldiers living millennia apart.

In Part II: Restoration, Shay focuses on how veterans heal their mental and emotional wounds and recover from psychological injuries. The Veterans Improvement Program (VIP), where Shay works, uses Judith Herman's three-stage recovery program. The first stage is sobriety, safety, and self-care. Before healing can start, the patient must be free of substance abuse and commit to living without violence to self or others. Second, he or she must develop a personal narrative that puts their war experience into context. This al-

lows the Soldier to grieve for all they have lost. Third, the Soldier bonds with “people, communities, ideals, and ambitions.”

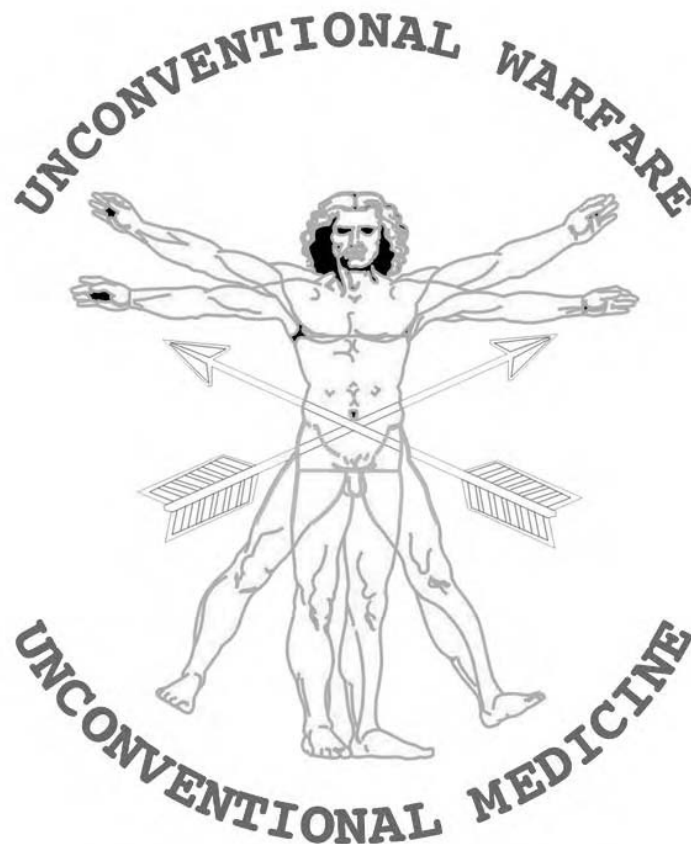
Because complex PTSD results from the destruction of the capacity for social trust, healing requires reestablishing that bond with a larger community. Shay advocates the military unit association as one community that can safely nurture mutual support and obligation, two conditions that appear essential for recovery from PTSD. Connections with a Soldier’s unit association can also help him or her develop their personal narrative.

In Part III: Prevention, Shay discusses three requirements for preventing psychological trauma in combat: cohesion, training, and leadership. He condemns the individual rotation policy, particularly prevalent in Vietnam, and argues forcibly for ethical and moral training of Soldiers and their leaders. While his arguments are not new – indeed, much of the training he proposes is already part of the curriculum at the Army’s Command and General Staff

College – he presents them cogently and with a tempered passion anchored in his obvious concern for Soldiers who have suffered on behalf of their country.

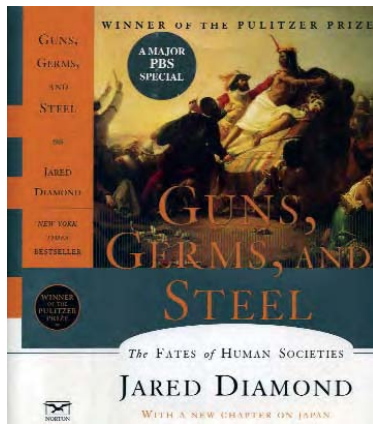
This is a book for military leaders, political leaders, medical professionals, and for veterans and their families. While I would like to recommend it to all Soldiers, the language and concepts are complex. This is not a book for a young Soldier, unfamiliar with the classics, who has yet to see combat. However, he or she may very well find it rewarding, if occasionally obtuse, after returning from combat. It is better suited to those military and political leaders who can make a difference in how the military trains, deploys, and leads those young Soldiers.

In summary, Shay’s insightful understanding of combat-related psychological trauma, informed by the stories of Homer’s flawed hero Odysseus, support a coherent plea to learn from the past. We must revise our military institutions so they support, rather than harm, the psychological well-being of future Soldiers.



Guns, Germs, and Steel: The Fates of Human Societies

By Jared Diamond. New York: W. W. Norton & Company, 1997; reprinted 2003, 2005. 518 pages.



Guns, Germs, and Steel: The Fates of Human Societies is a historical account of human civilization and the factors that contributed to its development, spread, and inequities. The author's premise is

that geography and environment, rather than race or intelligence, were the primary factors that contributed to the advance of societies.

The author, a professor of geography (formerly professor of physiology) at the University of California in Los Angeles, bases his conclusions on material drawn from evolutionary biology, geography, archeology, history, linguistics, and botany. *Guns, Germs, and Steel* won the Pulitzer Prize, the Phi Beta Kappa Award in Science, and the Rhone-Poulenc Prize.

Diamond argues that the ability to produce excess food through the domestication of plants and animals is the first requirement for societies to flourish. Societies that produced enough food to move out of the hunter-gatherer mode advanced faster than those that did not. According to Diamond, about 11,500 years ago global drought and climate change diminished the food resources of existing hunter-gatherer societies. People in the Fertile Crescent responded by cultivating plants, rather than foraging for them. The ability of this society to domesticate plants gave them an advantage that allowed their society to develop and spread.

Only certain geographic areas, however, contained plants and animals that could be domesticated. Diamond believes that this geographic "luck of the draw" led to the divergent evolution of human societies based on location of origin, not race. Eurasian societies in particular had access to such plants and animals and thus were able to generate food in excess of need through farming. This in turn enabled some members of those societies to spend time developing

skills such as writing, governing, building, bartering, and making weapons, all of which helped them conquer less advanced societies. Societies with access to domesticated animals that could be ridden gained still greater advantage. In war, mounted societies had an enormous advantage over foot-bound societies.

A somewhat surprising advantage to living in close proximity to domesticated animals was the development of new diseases and immunity to them. While diseases such as smallpox killed many people, those who developed immunity survived and passed on that immunity to future generations.

Societies also benefited from the spread of information and technology, which is facilitated by geography. People and ideas spread faster on continents on an east-west access than on continents on a north-south access where latitude-related climate changes limit transfer of crops and animals. Geographic constraints such as mountains and narrow choke points also limit expansion. Eurasian societies benefited from the spread of technology such as metallurgy and gunpowder, allowing them to develop advanced weapons.

Diamond illustrates these concepts with the history of Pizarro's conquest of the Incas. Pizarro's society had the advantage of horses, technology (weapons and written texts describing how Cortez conquered the Aztecs), and immunity to certain diseases. The Incas, on the other hand, had llamas – which cannot be ridden, were isolated from the transfer of knowledge by mountains and their location on a north-south continent, and lacked immunity to the diseases that Europeans brought with them. The first two advantages enabled Pizarro to capture the Inca leader Atahualpa, but disease decimated the people.

Diamond expands his theme with other examples from around the globe. He argues that the advantages and disadvantages conferred by geography continue to influence the experiences of today's societies, particularly those in Africa.

The special attraction of this book is that Diamond draws from so many disciplines to support his arguments. For the most part, he does so clearly and convincingly. Some gaps remain, such as the question of why, given similar geographic advantages, it was Europeans rather than Chinese who spread around the

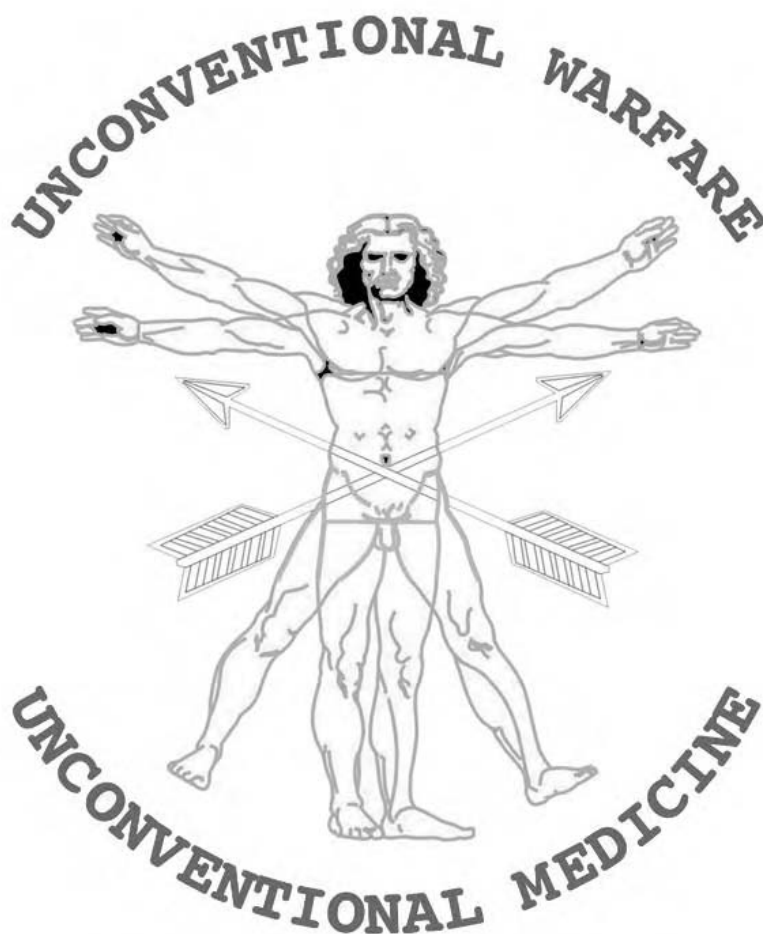
globe. In the afterword to the 2003 edition, Diamond argues that Europe's fragmented societies promoted competition and innovation while China's unified society did not. He acknowledges that many social scientists disagree with this argument and concludes, rather lamely, "It remains a challenge for historians to reconcile these different approaches to answering the question 'Why Europe, not China.'"

Despite the occasional broad brush stroke of analysis, *Guns, Germs, and Steel* is a thought-provok-

ing treatise on human geography. I recommend it for anyone interested in broadening his or her understanding of human societies and the factors that have led to today's societal inequities.

REFERENCE

1. Diamond, Jared (2005) *Guns, Germs, and Steel: The Fates of Human Societies*. New York: W. W. Norton & Company, 456.





Handling the Wounded in a Counter-Guerrilla War: The Soviet/Russian Experience in Afghanistan and Chechnya

Lester W. Grau, LTC (Ret) and William A. Jorgensen, DO

Republished with authors permission

The views expressed in this article are those of the authors and do not reflect the official policy or position of USSOCOM, the Department of Defense, or the U.S. Government

The Soviet Union intervened in the Afghanistan Civil War on Christmas Day 1979 to restore a weak and faltering communist government that was rapidly slipping out of control. The Soviets expected little resistance and apparently had no plan for staying longer than three years. They were there for nine years, one month, and eighteen days. Soviet Army medical personnel were also there for the duration fighting disease and wounds. While they were there, they improved casualty-handling and surgical support. Consequently, during the latter part of the war, they saved many lives that would have been lost earlier. They applied many of these lessons to the war in the breakaway Republic of Chechnya. Many of their lessons learned can be applied to other modern forces fighting on rugged and urban terrain.

and critical wounds increased two times. Land mines were the primary reason for this increase in serious and critical wounds. The number of wounded from land mines increased by 25-30% over the course of the war.² Chart 1 reflects this change.

During the early years of the war, the *mujahideen* guerrillas had rifles but few mortars and land mines. As the war progressed, the guerrillas captured or received these weapons and consequently the type and nature of wounds changed. Improved Soviet medical evacuation during the war allowed more critically wounded to survive. This is reflected in Chart 2 which shows the number of war dead and wounded for the Soviet 40th Army by year.

Type of Wounds	1980	1981	1982	1983	1984	1985	1986	1987	1988
% Bullet	62.2	54.7	50.4	46.0	34.1	36.6	31.8	26.5	28.1
% Shrapnel	37.2	45.3	49.6	54.0	65.9	63.4	68.2	73.5	71.9
% Multiple & combination	16.0	21.1	29.5	47.6	65.4	72.8	68.8	65.8	59.4
% Serious & critical	23.1	27.7	31.1	47.1	52.4	51.4	50.2	50.1	45.2

Chart 1: Type and severity of wounds as a percentage of total hostile fire and mine wounds³

SOVIET WOUNDED

Of the 620,000 Soviet personnel who served in Afghanistan, 14,453 were killed or died from wounds, accidents, or disease. This is 2.33% of those who served. A further 53,753 (or 8.67%) were wounded or injured.¹ In the early part of the war, there were twice as many Soviet soldiers wounded by bullets as shrapnel, but by the end of the war, there were 2.5 times more Soviet soldiers wounded by shrapnel than by bullets. The proportion of multiple and combination wounds increased four times over the course of the war while the number of serious

Author's Note: *The figures in this chart add up to 13,833 war dead instead of the 14,453 dead mentioned earlier in the article. This is because the chart represents the war dead of the 40th Army—the principle Soviet military force in Afghanistan. The KGB lost 572 dead, the Ministry of Internal Affairs lost 28 dead, and other ministries and departments lost 20 dead during the war (Krivosheev, 402). The lower losses in 1979 and 1989 reflect that the Soviet invasion of Afghanistan began on 25 December 1979 and that the Soviet forces had withdrawn by 15 February 1989. The original chart gives no wounded figures for the one week of Soviet involvement in 1979. The figure for 40th Army wounded totals 50,734. Wounded includes combat and non-combat wounds, crippling and trauma.*

Year	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Dead	86	1484	1298	1948	1446	2343	1868	1333	1215	759	53
Wound	3813	3898	6024	4219	7786	8356	7823	5008	3663	144	

Chart 2: Soviet 40th Army war dead and wounded⁴

As the chart indicates, the ratio of dead to wounded improved over time from roughly 1:3 to 1:5 with a 1: 3.6 ratio overall. The Russians state that the U.S. ratio of dead to wounded during the Vietnam war was 1:5.⁵ Despite the increased severity of wounds, more wounded survived. Changes in Soviet Army medical procedures apparently improved survivability.

The location of wounds were also a function of the improvement in guerrilla armaments. Chart 3

Location of Wound	1980	1988
Cranium and brain	4.9%	8.5%
Backbone and spinal cord	0.1%	0.9%
Face and jaw	1.4%	1.9%
Eyes	1.3%	3.2%
Otolaryngologic	1.8%	3.4%
Chest	11.6%	6.3%
Stomach and pelvis	7.8%	4.6%

Chart 3: Location of wounds by percentage over time⁶

shows the location of the wounds and their percentage for the first and last full years of the war. The chart is incomplete and the source provided general figures of upper extremities 25.4%, lower extremities 37.9% and thoracic and abdominal wounds 1.7% without reference to any change over time. Still, the chart shows an increase in injuries consistent with shrapnel from mines over time and a decrease in wounds to the chest, stomach, and pelvis. The decrease is probably due to enforced wearing of flak jackets plus the partial issue of improved flak jackets.

Chart 4 shows the percentage of wounds by lo-

Wound site	Great Patriotic War	Vietnam	Afghanistan	Chechnya-1995
Head and Neck	19.0	21.0	15.7	24.4
Chest	9.0	5.0	12.2	8.6
Stomach	5.0	18.0	7.1	2.3
Pelvis			3.8	1.6
Arms	30.0	20.0	26.3	27.3
Legs	37.0	36.0	34.9	35.8

Chart 4: Percentage of wounds by location in various wars⁷

cation for the Great Patriotic War (Soviet Union versus Germany during World War II -- Soviet wounded), Vietnam (U.S. wounded), Afghanistan (Soviet wounded), and the fighting in Chechnya (Russian wounded). Differences in the percentage of wounds by location is a reflection of the type terrain that each war was fought on, the training and skill of the combatants, and the type

and degree of individual protection available.

Practicing medicine in Afghanistan's rugged mountains and extreme climate provided some real challenges to Soviet medical personnel. The dry climate, high summer temperature, and impure water added to the difficulties. Serious disease hospitalized 67.09% of all Soviet soldiers in Afghanistan.⁸ Soldiers died of sunstroke. Helicopters could not always reach the altitude where the troops were fighting. Soldiers who were lightly wounded high in the mountains had to be evacuated or their wounds would turn serious. Soldiers who were seriously wounded while high in the mountains usually died. Since the helicopters could not reach the wounded, soldiers had to be carried down to an altitude and place where the helicopters could land. The carrying party required security, so 13 to 15 men could be tied up in evacuating one wounded Soldier.⁹ Often, doctors accompanied ambush parties and patrols into the mountains.¹⁰

Author's Note: The U.S. Army sends medics to accompany patrols and ambush parties, but not doctors. The Soviet practice probably reflects the lower state of training of Soviet medics and the need to provide immediate care when high-altitude medical evacuation was not possible.

MEDICAL SUPPORT

Soviet table of organization and equipment (TO&E) medical personnel were assigned at maneuver company level and higher. There was a medic and assistant medic at company. A physician's assistant or newly commissioned doctor commanded the maneuver

battalion medical section which handled initial treatment and evacuation. The regimental medical post had a medical platoon consisting of two or three doctors, a dentist, two physician's assistants, a technician, a pharmacist, nurses, a cook, a radio operator, orderlies, and drivers. The regimental medical post served as a dressing station and provided immediate surgery, transfu-

sions, treatment for lightly wounded, and evacuation to the division medical battalion.¹¹

The basic medical service unit is the division's medical battalion. This battalion could run a field hospital which could handle up to 400 patients every 24 hours, conduct surgery, and run a 60 bed recovery facility. The battalion has three or more surgeons, a therapist, a doctor of internal medicine, an epidemiologist, and a toxicologist. The Soviet medical system was designed to treat the sick and wounded at the lowest pos-

The 650th central military hospital (500 bed) and an infectious disease hospital (500 bed) were in Kabul. Another 500-bed infectious disease hospital was in Bagram and a 150-bed infectious disease hospital was located in Kunduz. A 200-bed infectious disease hospital for the highly contagious was located to the east in Jalalabad. A 200-bed field hospital was located in Puli-Khumri and a 175-bed field hospital was located south in Kandahar. A 300-bed hospital at Shindand served the western corridor.¹⁴

Injury	1980	1981	1982	1983	1984	1985	1986	1987	1988	Total
Gunshot wound	29.2	26.2	33.9	39.9	39.9	38.9	43.9	29.1	51.5	36.3
Other trauma	43.2	38.6	26.3	21.4	21.4	14.3	18.0	13.0	14.0	17.9
Burns	41.3	30.8	66.6	37.4	37.4	32.2	40.4	66.6	52.5	42.6
Total wounded	33.1	29.4	34.7	36.7	36.7	31.9	36.9	24.2	38.7	32.3

Chart 5: Percentage of wounded treated in 40th Army facilities requiring intensive care by category of injury¹⁵

sible level and ground-evacuate the serious cases through the various echelons to where they could be effectively treated.¹²

The Soviets deployed three motorized rifle divisions (5th, 108th, 201st) and an airborne division (103rd) to Afghanistan. Each of these divisions had a medical battalion. The Soviets also deployed two separate motorized rifle brigades (66th and 70th), a sepa-

These extra hospitals were needed. The Soviets discovered that the number of wounded requiring intensive care was significantly higher than expected due to the increasing number of wounded who survived due to rapid evacuation to supporting hospitals. Chart 5 shows the percentage of wounded requiring intensive care by type of wound. It shows that although the number of shrapnel wounds increased during the war, a sig-

Complications	Medical company or medical battalion	Garrison military hospital	Central military hospital
Shock	46.7	40.3	13.6
Loss of blood	18.1	16.9	8.3
Damage to central nervous system	10.1	8.5	6.9
Suppurative wound	4.6	6.2	19.6
Anaerobic infection	0.6	0.8	1.1
Fat embolism	1.4	1.2	0.7
Asphyxiation	1.7	1.5	0.8
Multiple system failure		3.2	7.5
Post operative complications	16.8	21.4	41.5

Chart 6: Percentage of wounded with complications upon admission to emergency or trauma care by type of complication and site of treatment¹⁶

rate air assault brigade (56th), two separate motorized rifle regiments (191st and 860th), and a separate airborne regiment (345th) each with a medical company.¹³ In addition, the Soviets deployed eight hospitals into Afghanistan and two on the Soviet-Afghan border.

nificant percentage of gunshot wounds required intensive care.

A significant proportion of the wounded required emergency procedures and trauma care. Chart 6 shows admission data on the percentage of those

wounded admitted to emergency care or trauma units with complications requiring anesthesiology or resuscitation.

MEDICAL EVACUATION

Afghanistan was not a conventional war and Soviet medical evacuation procedures changed to meet the demands of the counter-guerrilla environment. Ground evacuation was used, but helicopter evacuation was used more often. The regimental medical post was frequently bypassed as wounded were evacuated directly from the battalion aid station to the division field hospital or one of the army hospitals. Over the course of the war, the number of wounded treated at regimental or brigade medical posts decreased from 18% of the total to 2.5%.¹⁷ Instead, during major Soviet offensives, 90% of Soviet wounded were immediately evacuated by helicopter (74% in 1981 up to 94.4% in 1987). In 1980, 48% of the wounded were evacuated to the division field hospital or an army hospital within three hours of being wounded. By 1987, this had improved to 53.1%. In 1980, an additional 33% of the wounded arrived at the division field hospital or an army hospital within three to twelve hours of being wounded. By 1987, this had improved to 41.9%. In 1980, 19% of the wounded took over 12 hours to arrive at the division field hospital or an army hospital. By 1987, this was down to 5%.¹⁸

Prior to Afghanistan, the Soviet Army planned to evacuate the bulk of its sick and wounded by ground transportation. However, ground evacuation was difficult due to Afghanistan's mountainous terrain, lack of a developed road network, the likelihood of ambush along the few roads and the long distances between regimental staging areas and medical facilities. The Soviet Army used aerial evacuation to move 68% of the wounded between 1980-1988 (Figure 1). Over 25,000 casualties were evacuated by helicopter during combat and over 152,000 sick and wounded were moved by air during some stage of medical treatment.¹⁹

The Mi-8MB²⁰ "Bisector" medical evacuation helicopter was outfitted specifically for medical evacuation, but due to their limited availability, combat and transport helicopters also frequently flew wounded to hospitals. The fixed-wing, propeller-driven, light medical transport AN-26M²¹ "Savior" moved sick and wounded within Afghanistan and into the Soviet Union. The fixed-wing, propeller-driven medium medical transport IL-18²² "Orderly" moved sick and wounded from Afghanistan to the Soviet Union (Figure 1).²³ Patients were moved within the Soviet Union on

the heavy jet military transport IL-76MD²⁴ "Scalpel" or the wide-bodied TU-154 passenger jet. These aircraft could be rigged to carry stretchers and provide in-flight emergency medical care.

During the first half of the war, patients were evacuated by air from several hospitals in Afghanistan to the Soviet Union, but during the second half of the war, almost all patients were evacuated from the 650th Central Hospital in Kabul. During 1980 to 1988, Soviet aircraft transferred approximately 40,000 patients (42.1% wounded and 57.9% sick) between the various hospitals in Afghanistan. Another 78,000 patients (26% wounded) were flown to the 340th Regional Military Hospital in Tashkent, Turkestan Military District of the Soviet Union for treatment. Over 40% of the Soviet wounded were treated and recovered in the Soviet Union. Some of the wounded required specialized surgery or prosthetics. These patients were handled in specialty military hospitals in the western (European) Soviet Union. Up until 1987, these patients staged through the Tashkent hospital. From 1987, they were flown directly to these specialty hospitals from Kabul. Over 9,000 of these special-treatment cases were handled, 90% of whom required special surgery.²⁶

Seriously wounded patients were evacuated from Kabul to the Soviet Union for treatment based on the severity and type of wound. Kabul hospital held 96.8% of patients with eye wounds, 78.6% of patients with neck and spinal wounds, and 74.9% of patients with brain and cranial wounds for three days before air evacuation. Twenty-two percent of patients with stomach wounds and 14.3% of patients with pelvic wounds were evacuated to the Soviet Union on the same day that they were wounded, while the remainder waited five to seven days. One third of the patients with thoracic-abdominal wounds were evacuated within 24 hours of being wounded, while the rest waited for up to ten days. Forty-six percent of the patients with a puncture wound to the chest were evacuated within three days. During these evacuation flights to the Soviet Union, 25% of the patients required intensive care while another 20% required symptomatic care. In 1987, when the IL-76 flight originated from Kabul instead of Tashkent, 9% of the severely wounded reached specialty hospitals within five days of being wounded and 32% reached these hospitals within ten days. Prior to this, only 1% reached these hospitals within five days and 5.4% within ten days.²⁷

The Soviets experienced some problems with

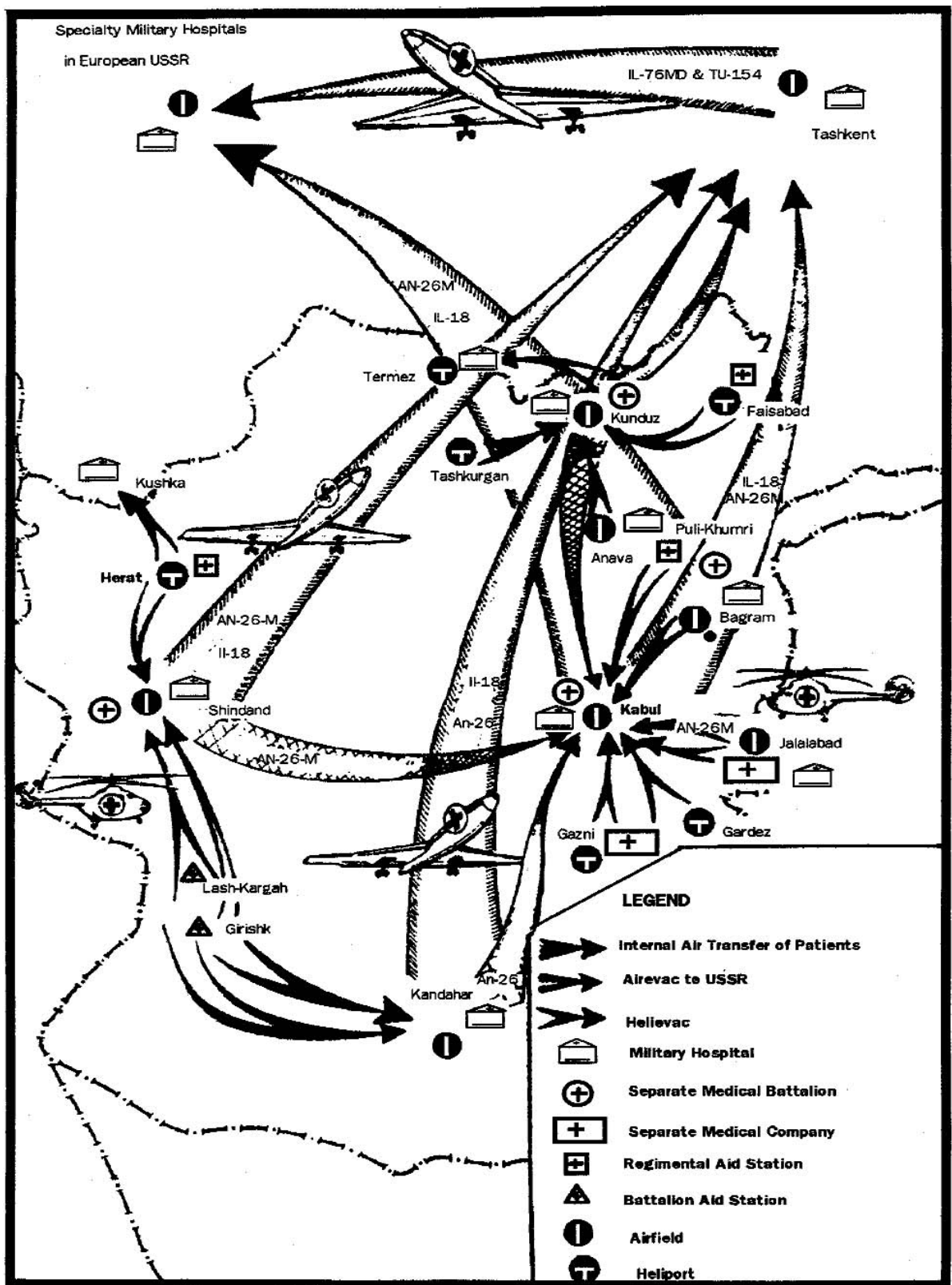


Figure 1: Soviet air evacuation of sick and wounded during the Afghanistan War.²⁵

air evacuation. There wasn't enough room in the Mi-8MB medical evacuation helicopter and they carried outmoded Soviet medical supplies, rather than the better supplies from the west. There were not enough medical evacuation helicopters in theater, and so many wounded were evacuated on the first available cargo or attack helicopter without being stabilized prior to flight. Medical aircrews were not readily available and had to be trained. Airfields didn't have the right type of retractable ladders to allow the easy loading and unloading of litters.²⁸

The value of aerial evacuation is shown by a Soviet study of 318 fatalities examined by the pathologists in the morgue of the Turkmenistan Military District Hospital in Tashkent from 1986 to 1988. Their statistics show that 37.4% of the dead were evacuated by transport, attack, or medical helicopter; 35.6% by a BMP, BTR, or BRDM armored personnel carrier; 11.6% by field ambulance; 8.2% by cargo truck, and 2.8% by fixed wing aircraft.²⁹ A much higher percentage of these dead were evacuated by ground than was usual. Perhaps more of these wounded would have survived if they had been evacuated by medical helicopter.

SPECIAL SURGICAL TEAMS

The Soviets formed special surgical teams to support projected military operations. The personnel on these teams came from the central military hospital and from medical units not already supporting the upcoming operation. The chief medical officer of the 40th Army usually headed these teams which were integrated into medical battalions close to the combat zone. These teams normally consisted of three thoracic-abdominal surgeons, a neurosurgeon, a traumatologist, a heart surgeon, three anesthesiologists, five nurse anaesthetists, two surgical nurses, five assistant surgical nurses, and blood transfusion specialists. The senior medical officer formed the reinforced medical battalion into a triage group and a specialty surgery group which performed thoracic, abdominal, neurosurgical, trauma, vascular, and also general surgery.³⁰

During these specially supported operations, 90% of the wounded received first aid within 30 minutes and then 88.3% were evacuated by helicopter to the reinforced medical battalion. This intensive medical support reduced lapsed time between being wounded and receiving qualified, specialized surgical care so that 31% of the wounded were in surgery within an hour, another 38.7% within two hours, another 13% within three hours, another 5.7% within four hours, and another 4% within six hours. Thus, 92.4% of the wounded were in surgery within six hours of being

wounded.³¹ The overall Soviet statistics for the war state that 98% of the wounded received first aid within thirty minutes and that 90% were seen by a doctor within six hours and 88% were in surgery within twelve hours of being wounded.³² (The 98% figure seems very optimistic, since one of the big problems during and after combat is physically finding the wounded. And the quality of the first aid and pre-hospital care was not always the best. Autopsies disclosed that 10% of the fatalities resulted from errors in pre-hospital care with 10.6% of these errors attributed to faulty first aid.)³³ The special surgical teams and medical reinforcements cut the time of getting patients into surgery by half.

In triage, resuscitation and treatment for shock began immediately. X-rays and laboratory work was also accomplished. Depending on the severity and location of the wound, patients in triage were bandaged, treated for shock, or sent to one of the specialized surgical areas. Patients were assigned to a specialized surgical area based on their most dominant and life-threatening wound. General anesthesiology was used in 70% of the operations. Analysis of the wounds treated by one of these special teams in support of an operation shows the following: individual head wounds 9.7%; individual chest wounds 3.7%; individual stomach wounds 4.5%; individual wounds to the upper extremities 19.4%; and individual wounds to the lower extremities 36.2%. Combination wounds were 26.5% of the total of which combination wounds to the chest and stomach were 3.6%; combination wounds to the chest, stomach, and head were 6.7%; and combination wounds to the internal organs and extremities were 16.2% (these figures probably reflect the high number of wounded due to land mines). Priority for treating combination wounds was based on which was most life-threatening, which were usually wounds to the stomach and head.³⁴

Moving the medical support forward saved time and lives. Over the course of two years, the use of these special surgical teams reduced fatalities among the moderately wounded from 4.3% to 2%.³⁵

CONTEMPORARY FIGHTING IN CHECHNYA

Initial Russian Army performance in Chechnya was remarkably poor. Probably the best performance by any part of that army was provided by the medical personnel who cared for the wounded. Three weeks prior to the Russian incursion, the Russian Army established and trained special emergency medical treatment detachments in each military district. Four of these deployed to Chechnya to support the maneuver units.³⁶

The initial combat in Chechnya differed from

the fighting in Afghanistan since the first two months were spent fighting for control of the capital city of Grozny. Consequently, regiments were concentrated for city fighting, instead of dispersed throughout the countryside as in Afghanistan. The Russians in Chechnya utilized their normal evacuation system designed for conventional war and most often employed ground medical evacuation as the quickest and safest form of evacuation. Each maneuver company was reinforced with a physician's assistant and each maneuver battalion had a medical doctor plus the ambulance section. Surgeons, anesthetists, and additional nurses manned the regimental medical post.³⁷ Wounded were normally evacuated to the regimental medical post by armored ambulance (BTR-80). Patients requiring more extensive medical care were evacuated by medevac helicopter and medevac aircraft.³⁸ Air evacuation was not used nearly as much as in Afghanistan, particularly after the Chechens shot down several medevac helicopters.

City fighting produced a different set of casualty figures. Red Cross statistics for limited conflicts usually reflect 23% wounded from mines, 26% from bullets, 46% from shrapnel, 2% from burns and 3% miscellaneous. In the city fighting of Grozny, however, there was a higher percentage of burn wounds and the majority of wounds were caused by mortar fire. The majority of those who were killed or died from wounds were hit in the head and chest by sniper fire (particularly among the civilians who did not have flak jackets and helmets). Whereas the normal ratio of wounded to killed is 3:1 or 4:1, this was reversed in the Grozny city fighting where three were killed for every wounded. Snipers also presented a problem for medical evacuation and frequently the wounded could not be evacuated until nightfall.³⁹

CONCLUSIONS

Soviet and Russian medical doctors emphasized the following points when discussing Soviet wounded and medical evacuation procedures in Afghanistan:

- As guerrillas became better armed, the proportion of gunshot to fragment wounds changed with mines becoming one of the more serious threats to the force.
- Mines and shrapnel produced multiple and combination wounds which were more difficult to treat.
- Shock and loss of blood were significant complications in treatment of wounded.
- Air evacuation is the preferred method of evacuation in counter-guerrilla wars. In

counter-guerrilla wars, the distance to supporting medical units increases, the evacuation route is subject to ambush and the terrain usually slows down ground evacuation.

- Preparation for medical air evacuation needs to start in peacetime. More, better-designed and equipped Mi-8 medical evacuation helicopters are needed. The AN-72 twin-turboprop STOL (short take off and landing) light transport aircraft needs to be put into service as a medical evacuation asset and stationed in every military district.⁴⁰ TO&E slots need to be established for medical aircrew, so that they are trained and ready to deploy immediately when needed.⁴¹
- The medical company located with maneuver regiments and brigades needs to be taken out of the medical evacuation process in counter-guerrilla war. Wounded need to be evacuated directly from the field to a hospital with no intermediate station other than the battalion medical section which stops the bleeding, treats for shock and coordinates the air evacuation.⁴² Presumably, the medical companies would still handle sick, who are a major problem in counter-guerrilla war.
- Special surgical teams need to be set up prior to the start of any major military operation and located as far forward as possible.

Preliminary Russian lessons from the city fighting in Chechnya emphasized the following points:

- Medical points need to be located close to the fighting to provide prompt, life-saving care to the wounded.
- Ground evacuation using armored ambulances is normally best when units are concentrated in a constricted area.
- Maneuver units need medical reinforcement, both within the units and a augmentation to the normal field medical units.
- Burns, shrapnel wounds, and sniper wounds are far more common in city fighting. Snipers produce a high percentage of head and neck wounds.
- Medical units directly supporting units fighting in a city need to be protected and

dug in. When possible, the entire hospital should be underground in basements connected by trenches.

From the authors' perspective, the Soviets needed to do a better job on first aid and initial emergency field surgery. The wounded needed to be stabilized prior to medical evacuation. Air evacuation should have been on specially-equipped medical evacuation helicopters with on-board medical personnel. The evacuation plan and preparation for commitment of medical teams will vary depending on the type of combat, terrain, and climate. In Bosnia, wounded and injured Russian soldiers are currently treated in U.S. medical facilities. In a future, larger-scale combined operation involving Russian and U.S. forces, medical support issues will have to be worked out in advance. Although there are similarities in U.S. and Russian medevac procedures, there are enough differences in the two medical systems to justify deploying medical support packages from both sides and letting each side treat its own wounded. This has been shown time and again, even within the United States Armed Forces when Army, Air Force, and Navy wounded are treated by another branch.

REFERENCES

- Krivosheev, G. F. (1993). Grif sekretnosti snyat . [The Secret Seal is Removed]. Moscow: Voenizdat, 401-405. The authors thank Robert Love of FMSO for his help in translating specialized medical terminology and SPC Marcin Weisiolek for his help with Figure 1.
- Nechaev, E. A., Tutokhel, A. K., Gritsanov, A. I. , and Kosachev I. D. (1991). "Meditsinskoe obespechenie 40-I armii: Tsifry i fakty" [Medical support of the 40th Army: Facts and Figures]. *Voenno-meditsinskiy zhurnal Military Medical Journal*, hereafter *VMZ*, August, 4.
- Ibid, 6.
- Aleksandr Lyakhovskiy. (1995). Tragediya I doblest' Afgana [The Tragedy and Valor of the Afghanistan]. *Veterans*, Moscow: Iskona, appendix 14.
- Brusov, P. G., Khрупkin, V. I. (1996). "Sovremennayognestrel' naya travma" [Modern Bullet and Shrapnel-Induced Trauma]. *VMZ*, February, 26. Russian source of U.S. statistics is unknown.
- Nechaev, E. A. Tutokhel, A. K., Gritsanov, A. I., and Kosachev I. D., 4.
- Brusov, P. G. and Khрупkin, V. I., 26. No citation for the source of Vietnam wounds is given.
- Grau, Lester W. and Jorgensen, William A. (1995). Medical Support in a Counter-Guerrilla War: Epidemiologic Lessons Learned in the Soviet-Afghan War, *U.S. Army Medical Department Journal*, May/June, 41-49.
- Gromov, Boris. (1994). Ogranichenny kontingent [Limited Contingent]. Moscow: Progress, 185-186.
- Grau, Lester W. The Bear Went Over the Mountain: Soviet Combat Tactics in Afghanistan, Washington: NDU Press, 1996, 194.
- Soviet Studies Research Centre, The Sustainability of the Soviet Army in Battle, The Hague: SHAPE Technical Centre, September 1986, 286-296.
- Department of the Army, FM100-2-2 The Soviet Army Specialized Warfare and Rear Area Support, Washington: USGPO, 1984, 13-20 to 13-21.
- Soviet operational maps in Mr. Grau's collection.
- Kuvshinskiy, V. D. (1992). Tekhnicheskoe obsluzhivanie I remont- meditsinskoy tekhniki v khode voennykh deistviy" [Technical Service and Repair of Medical Equipment in the Course of Military Activity], *VMZ*, 4-5 1992, 44.
- Levshankov, A. I., Udarov, B. S., Polushin, Yu. S. and Bogomolov, B. N. (1992). Okazanie reanimatologicheskoy pomoshchi- ranenym v Afghanistane [Reanimation Care of the Wounded in Afghanistan], *VMZ*, April-May, 23.
- Ibid, 24
- Chizh, I. M and Makarov, N. I., (1993). Opyt meditsinskogo obe-specheniya lokal'nykh voyn I problem evakuatsii ranenyykh I bol'nykh po vozdykhu [The Experience of Medical Support to Local Wars and the Problems of Air Evacuation of the Sick and Wounded], *VMZ*, January 1993, 23.
- Nechaev, E. A., Tutokhel, A. K., Gritsanov, A. I. , and Kosachev, I. D., 4.
- Chizh, N. M. and Makarov, N. I., 22.
- NATO designation of the Mi-8 helicopter is HIP.
- NATO designation of the AN-26 is CURL.
- NATO designation of the IL-18 is COOT.
- Nechaev, E. A., Tutokhel, A. K., Gritsanov, A. I., and Kosachev, I. D., Figure 1, 5.
- NATO designation of the IL-76 is CANDID.
- "Meditsinskoe obespechenie 40-i armii (Tsifry i fakty)" [Medical Support of the 40th Army (Facts and Figures)], *VMZ*, August 1991, 5.
- N. M. Chizh and N. I. Makarov, 23.
- Ibid.
- Ibid.
- Velichko, M. A., (1992). "Nedostataki v okazanii meditsinskoy pomoshchi ranenym v dogospital'nom periode: patologo-anatomichekiespekty" [Limitations in Medical Care to the Wounded in the Prehospitalization Phase: Pathologico-anatomic Aspects], *VMZ*, April-May, 42. The remaining 4.4% are unaccounted for.
- Nemytin, Yu. V., (1991). "O spetsializirovannoy meditsinskoy pomoshchi ranenym v usloviyakh Afghanistana" [Special Medical Aid to the Wounded in Afghanistan], *VMZ*, January, 17.
- Ibid.
- E. A. Nechaev, A. K. Tutokhel, A. I. Gritsanov, and I. D. Kosachev,, 4.
- Velichko, M. A., 40-41. These figures may reflect first aid given by buddies and squad mates. Perhaps they also reflect the state of basic first-aid training in the Soviet Army at that time.
- Ibid.
- Ibid. 18.
- Novichkov, N. N., Snegovskiy, V. Ya., Sokolov, A. G., and Shvarev V. Yu. (1995). Rossiyskie vooruzhennyye sily b chechen-skoim konflikte: analiz, itogi, vyvody [Russian Armed Forces in the Chechen Conflict: Analysis, Results and Outcomes], Moscow: Holweg Infoglobe-Trivola, 1995, 131.
- Ibid, 132.

Early Special Forces Medical Training 1952 – 1971

LTC Louis T. Dorogi



From humble beginnings in 1952, SF medical training evolved into an extensive program to meet the demands of SF missions and the challenges of the war in Vietnam.

The origins of Special Forces medical training can be traced back to the experiences of the Office of Strategic Services in World War II. Much of the strength of the OSS lay in its ability to tailor its forces to the specific exigencies of the mission. But from the small Jedburgh teams (three-man operational teams) to the larger 32-man teams, an inherent weakness remained: No medical support was routinely available within the organizational structure.

COL Aaron Bank, who was largely responsible for the Special Forces concept, recalls that among his most vivid memories of the OSS was the absence of any organic medical capability, often resulting in needless death and suffering among OSS operatives. The need for medical support became a prime consideration when Bank had the subsequent opportunity to shape the future Special Forces tables of organization and equipment.¹

The formation of the initial Special Forces group in the summer of 1952 was a logical outgrowth of the military planning of the Cold War era. In case of general or limited war, the captive nations of Eastern Europe, as well as other nations under Communist dominance, presented a fertile resistance potential for military exploitation.

The ongoing Korean War merely focused on the necessity to organize the required forces to accomplish long-range penetration of enemy territory and organize guerrilla resistance when possible. The planning carried out at Department of the Army-level reached fruition with the approval for the organization of unconventional-warfare capabilities under the aegis of the Office, Chief of Psychological Warfare, headed by BG Robert A. McClure.

Many of the assigned staff personnel had OSS experience as well as first-hand experience with resistance and guerrilla elements during World War II. Men such as COL (later BG) Russell W. Volckmann no doubt drew on vast experience with Filipino guerrilla groups in formulating global unconventional-warfare plans, while others, such as Bank, synthesized their OSS insight in reviewing the requirements for the force structure necessary to carry out the unconventional-warfare mission.

As a special staff section under the Department of the Army, Office of the Chief of Psychological Warfare (OCPW) directed the establishment of psychological-warfare training at the Army General School at Fort Riley, Kansas. This was quickly followed by the transfer of the 1st Radio Broadcasting and Leaflet Group from Fort Riley to Fort Bragg to form the nucleus of the future Psychological Warfare Center.²

Bank arrived in April 1952 to take interim command of the first contingent of “psy-warriors” coming from Fort Riley and, by May 16, 1952, the Psychological Warfare Center became operational. COL Charles H. Karlstad soon took over the command as Bank left to become the first commander of the initial Special Forces group, the 10th.³

INITIAL MEDICAL SUPPORT

With a highly favorable response from a large number of volunteers, the newly activated SF unit was quickly able to select the best-qualified personnel. The medical portion of the 10th Group tables of organization and equipment listed no particular requirements for the single enlisted medic required for each detachment. With the authorized grade of E-7 in each opera-

tional detachment, medical personnel input was to consist of only “damned good medics!” as expressed in the words of its first group commander.⁴

The importance of selecting the “effective” man for Special Forces duty was underscored by the psychological studies conducted soon after the formation of the 10th Special Forces Group. There was an acute need for selection criteria to ascertain probable performance in an operational setting, well prior to actual deployment, to assure mission success. Once a team was deployed on an operation, it was too late to worry about its personnel composition.

Exhaustive studies combined standard psychological-measurement techniques with “effectiveness” criteria generated by Special Forces. The findings highlighted a need for older, mature personnel possessing the necessary physical stamina and showing a preference for non-routine, outdoor work, as well as specific rejection of detailed busywork. Other indices developed by the studies showed that there was a higher probability of effectiveness among those with a past willingness to assume family and community responsibility and among those who didn’t ascribe any particular glamour or excitement to their occupation.⁵

The work for organizing the medical-support activities and future medical training and qualification of the enlisted volunteers fell to 1LT Robert E. Elliott of the Medical Service Corps. Arriving on July 18, 1952, Elliott was the first Army Medical Department, or AMEDD, officer assigned. Within a brief but furiously paced period, he designed a training program to fit the needs of the Special Forces medic.

Through coordination with the Medical Field Service School at Fort Sam Houston, Texas, 28 personnel were sent in November of 1952 to attend the Chief Medical Aidman’s course, a course specifically designed for Special Forces. It was the prototype for what eventually became the mid-level course in the 1970s for the Special Forces medic — the 300F-1 Course. Later, selected personnel were sent to the Navy Corpsman School.⁶

Other AMEDD officers rapidly followed, with CPT Dan Black, Medical Corps, becoming the first physician assigned. He was soon to receive a full complement of Medical Service Corps officers; 1LTs. Valentine A. Larsen, Donald E. Bristow, and Vernon H. Newgard. Initially, there were no requirements for the medical officers to be parachute-qualified. This, however, was quickly changed. Newgard became the first AMEDD officer to graduate from the Psychological

Warfare Officer Course, despite being enrolled two weeks after the beginning of the course.⁷

Most of the Medical Service Corps officers were initially assigned to non-medical duties, with some assigned primary duties as Infantry (MOS 31542). The enlisted medics participated in a continuous training program to upgrade their medical proficiency, in addition to performing their regular garrison medical duties. The prevailing philosophy was that the enlisted personnel were, in essence, independent aidmen and *physician substitutes* in a general-warfare situation. The restrictions that applied to stateside medicine would not be valid in a guerrilla situation — especially when evacuation from behind enemy lines was out of the question. The lives of team members would depend on the enlisted medic who was on-site.

The training covered procedures, such as appendectomies, which were normally anathema to anyone other than physicians. The primary focus was on emergency medical training, with some obvious limitations — training had to be didactic rather than applicatory. Hence, procedures such as emergency appendectomies were explained exhaustively and re-emphasized to provide a preliminary basis for the medics, in case they were faced with the decision to operate.

The medical cadre of the 10th Group felt no hesitation in channeling the training towards these hitherto sacrosanct areas because of a firm conviction that operational necessity dictated the approach. Elliott realized that the initial reluctance on the part of physicians to provide this type of training would be quickly overcome once they were familiar with the operational concept of Special Forces units. Obviously, there were limits to the training, but he felt the focus on progressively sophisticated medical training was fully justified.

BAD TÖLZ

By the late summer of 1953, the 10th Group was alerted for overseas movement. Commensurate with the activation of the 77th Special Forces Group at Fort Bragg in September 1953, the 10th departed to Bad Tölz, Germany, Nov. 10, 1953.⁸ Its relocation closer to anticipated operational areas no doubt heightened the feeling of necessity for increased medical proficiency.

Accompanying the 10th as its surgeon was 1LT Bill E. Freeland, Medical Corps. He was a bear of a man, nearly 300 pounds,⁹ and thoroughly dedicated to ensuring the medical preparedness of Special Forces. Freeland implemented an effective program of on-the-job training to establish and maintain medical proficiency. At selected U.S. military hospitals and



SF medics demonstrate the proper way to rappel with a patient on a stretcher.

dispensaries in Germany, Special Forces medics received a variety of experiences.

Training programs in locations such as Munich, Ansbach, Hohenfels, and Grafenwohr lasted about two months. Some of the training was at dispensary-level, while a number of Special Forces medics received more

sophisticated training in surgical procedures. Subsequently, there was little uniformity in the training program, except for limited assurance that each SF medic received the same level of training. The value of the training, however, was in the subordination of many stateside medical restrictions to the training needs of the medics. With the cooperation of the supporting medical facilities, the “hands on” training was far superior to that which medics received stateside. The stateside emphasis on purely didactic training was supplanted by more realistic applied training in Germany.¹⁰

With the passage of the Lodge Act of 1954, the enlistment in the U.S. armed services of aliens from virtually all the captive nations of Eastern and Central Europe provided linguistic and area familiarity with many of the intended operational areas of the 10th Group. The facilities of Flint Caserne at Bad Tölz became strapped with increasing training requirements. Qualification of newly assigned personnel, not only in parachute, but in specialty skills, as well as Special Forces training, occupied much of the unit’s efforts. The extensive medical training created a burden for the unit, but at the same time provided an opportunity to practice instructional skills that were need for working with guerrilla units.¹¹

OKINAWA

By 1957 the formation in Okinawa of the 1st Special Forces Group, the third active group, foreshadowed increasing personnel-procurement problems that were to plague all Special Forces units in the future. With units spread from Europe to the Pacific, there was no central medical guidance from the Psychological Warfare Center.

As of that time, no medical officer had been designated as the Center surgeon to oversee the medical training and needs within the Special Forces.

There was no hard-and-fast rule for conformity in the training of medics beyond the common training received at Fort Sam Houston. Each Special Forces group had a surgeon authorized, who prescribed medical training for the unit as he saw fit.

In Okinawa the 1st Group faced an even more acute problem. The only AMEDD officer initially assigned to 1st Group was CPT Sigurd Bue, Medical Service Corps, who was given non-medical duties as the group S-2 officer.¹² Enlisted personnel conducted the group medical program. The unit was without a physician for two years until the arrival of MAJ (later COL) Valentine B. Sky, Medical Corps, in December of 1959.¹³

The geographic spread of Special Forces units assured that parochial needs and interests of each group were met. It assured little, if any, focus on the common needs for standardization of training, beyond that offered at Fort Sam Houston. At the same time, other factors contributed to growing personnel problems — the post-Korean War cutback in available military assets, standard attrition of trained medical personnel, and a replacement system that failed to provide a proper input of trained and experienced medical replacements.¹⁴ That need for standardized, realistic training was eventually addressed by the Surgical Research Laboratory at Fort Bragg.

SURGICAL RESEARCH LAB

There are no formal documents attesting to the initial formation of the Surgical Research Laboratory.¹⁵ Its ad hoc genesis is rooted in the desire of a Womack Army Hospital surgeon, CPT John L. Bond, Medical Corps, to provide additional surgical practice for hospital physicians. In the summer of 1959, Bond secured the necessary administrative approval from hospital authorities to establish a small surgical research facility in the “old hospital” area across Ardennes Road from Womack. Lacking sufficient manpower to maintain the facility, he negotiated an informal arrangement with the surgeon of the nearby 77th Special Forces Group. In return for access to the facility, the 77th detailed SFC Ralph C. Drouin to maintain the laboratory. The first NCOIC, Drouin, was an extraordinarily well-qualified medic, possessing not only the requisite medical skills, but an equal ability to “locate” needed medical supplies and equipment in the absence of available funding.¹⁶

In September 1959 the first class of four Special Forces medics attended the Surgical Research Laboratory. Drouin later recalled: “The initial training was more or less played by ear. By using certain

medics, Dr. Bond and myself, we tried different procedures to see how well the enlisted men would pick up on these procedures ... see how much they could handle and just what we could give them.”¹⁷

The Special Forces medics learned how to perform a venous cut-down and administer proper IV fluid therapy. Medics acting in a surgical capacity would perform the necessary debridement, primary or delayed primary closures, insert necessary drains, and take turns assisting each other or in operating the anesthesia apparatus on loan from Womack.¹⁸

The early training program for Special Forces was flexible: much of the instruction was predicated on the desires of the group surgeon and the interests of the medics. Though there was a lot of discussion, there was little attempt to establish a comprehensive program. This changed rapidly as reports were received from Laos and returning SF medics described their Laotian experiences. The benefit was mutual to say the least. The arrangement allowed both the hospital physicians as well as Special Forces medics an opportunity for hands-on training.

The need for more advanced medical training was clear. Subsequent Special Forces requests for establishment of such a course at Fort Sam Houston were rejected. Returning from Fort Sam Houston after failing to secure the necessary approval for the course, the 7th Special Forces Group surgeon (the 77th was renamed the 7th in June 1960), CPT William B. Radcliffe, realized: “We would have to take full responsibility for advanced training ourselves, and (I) set myself to take the task of developing the best program possible — by Special Forces, for Special Forces, right on post at Fort Bragg.”¹⁹

The opportunity to establish the needed training course arose when the next contingent of eight medics was selected for pre-mission training before going to Laos. Radcliffe obtained permission to establish an uninterrupted five-week training cycle for them at the Surgical Research Laboratory. He constructed a course of instruction which centered on as much hands-on training as could be provided. Training included debridement, endotracheal intubation, suture techniques, and limb amputations. It was followed by other procedures such as preparation and sterilization of surgical packs, induction of general anesthesia, operating-room routines, sterile techniques, and post-operative care.

Students learned new medical diagnostic techniques, as well as laboratory and pharmacological skills, via extensive seminars.²⁰ Of special significance was the instruction; the bulk of it was given by enlisted

medics under the technical supervision of Doctors Radcliffe and Bond. Limitations on the availability of medical officers necessitated this approach. The actual management of the Laboratory fell to SFC E. Grant Madison in May of 1960. With a cadre of six medics detailed from the 7th SF Group, the facility expanded. By December of 1960, the 7th SF Group became the sole user of the laboratory, as a consequence of waning interest by the hospital and the departure of Dr. Bond from military service.²¹

The Surgical Research Laboratory was from its inception a 7th Group activity supervised by its surgeon, but with the rapid expansion of counter-insurgency forces directed by the Kennedy administration, the training mission of the facility shifted. In late 1961, with the activation of the Special Forces Training Group, the laboratory became the central training facility for advanced medical training for all Special Forces medics.

ADVANCED MEDICAL TRAINING SCHOOL

With the need to revise and streamline all Special Forces training, the newly constituted Medical Training Committee of the Training Group took over the task of revising medical training. The laboratory was promptly renamed the Special Forces Advanced Medical Training School (AMTS). Even while the AMTS was being organized, there were external pressures for moving all medical training to Fort Sam Houston.

Preliminary discussions with representatives from the Office of the Surgeon General and personnel from the Medical Field Service School gave strong indications that the AMTS at Fort Bragg was in jeopardy. The relocation concept, for the time being, was quickly abandoned after a brief visit by the Surgeon General to the Special Warfare Center.²²

LTG Leonard D. Heaton seemed suitably impressed with the training at the AMTS, and upon his return to Washington, wrote CPT David G. Paulsrud, the Center surgeon, the following: “I also want to congratulate you on the excellent program of instruction which you have instituted there, and after seeing at first-hand the enthusiasm and competence of all of you, I have no doubt that these men will be fully capable of meeting the tremendous challenge that awaits them. You are indeed engaged in a most critically important mission and I congratulate you on your extraordinary achievements. I am firmly convinced that this course of instruction should continue at Fort Bragg and not be moved to Fort Sam Houston. This decision was very easy to make after my visit to your surgical

laboratory and classrooms. Please be assured of my continuing support and accept my expressions of great respect and gratitude for what you and the members of your staff are accomplishing for all of us.”²³

The strong support by Heaton, as well as the establishment of the Center surgeon’s office, presaged subsequent changes to the training cycle of Special Forces medics. After an initial five weeks of branch training at Fort Bragg, medics took eight weeks of basic medical training (MOS 910) at Fort Sam Houston. This was followed by 10 more weeks of further didactic medical training in the Special Forces Aidman (Airborne) course (MOS 911.2). At selected CONUS hospitals, Special Forces medics received on-the-job training for the next nine weeks as part of the applicatory phase of the 911.2 Course (later the 300F-1 course).

Returning to Fort Bragg, the medics underwent an eight-week intensive Advanced Medical Training Course at the AMTS. Successful completion led to more branch training, namely a grueling two-week field training exercise covering the whole spectrum of training received. Those finally completing the training could expect to be assigned to a Special Forces unit.

Once assigned, medics, as well as those with other Special Forces specialties or skills, could expect further cross-training, on the basic and advanced unit level, often followed by more exotic forms of training such as underwater operations or high-altitude, low-opening parachuting.

Understandably, attrition rates were high (30.7 percent), and in 1962, fewer than 100 medics graduated from the AMTS.²⁴ The following year the number of graduates more than tripled (305), but the attrition rate increased to 40 percent.

300F-1 COURSE

The precursor to the Special Forces mid-level medical training course in the 1970s was the Medical Aid Procedures Course (8-R-911.2) offered at Fort Sam Houston. Along with the rapid expansion of counter-insurgency forces in 1962, the course was renamed to reflect its Special Forces student input. From then on it was known as the Special Forces Aidman (Airborne) Course, with only a minor change later in the course number (8-R-F-16 to 300F-1).

For the next three years, the course, though operational, was pending formal approval of the course content by the Continental Army Command. In 1963 the course content was modified to reflect the impact of Vietnam on the operational duties of Special Forces medics. Vietnam requirements dictated the addition of veterinary subjects, as well as practice-teaching in basic

medical subjects. The teaching role assumed paramount importance for future SF medics.²⁵

It is interesting to note that a non-Special Forces physician had perhaps the most significant impact on the Special Forces Aidman (Airborne) Course. LTC (later COL) Roger A. Juel, Medical Corps, was first associated with Special Forces training in 1959 by providing some on-the-job training opportunities in Okinawa for medics from the newly activated 1st Group.

Juel was able to observe firsthand the apparent lack of uniformity in the qualifications of those medics and noted that one of the greatest drawbacks was the lack of diagnostic capability among the SF medics. The apparent lack of adequate preparation in this respect produced what he called “an awful lot of empiric medicine. If the patient got well, the treatment got credit, where this is not always true.”²⁶

He also noted one of the other problems that was to become a significant hindrance in the expansion of Special Forces medical assets — the sudden influx of young and inexperienced medics. After his reassignment in 1962 to Fort Sam Houston, Juel took over direction of the Special Forces medical training conducted at the Medical Field Service School. He was able to modify the course content appropriately to resolve many of the shortcomings he noted during his Okinawan tour. Training was made more rigorous; innovative approaches, such as the use of a mock dispensary, gave students a more realistic setting in which to demonstrate overall knowledge gained.

“By use of a mannequin as a patient, the student obtained the patient’s history of illness and/or injury as well as other basic information concerning the patient. A diagnosis was determined, treatment was prescribed, and evacuation as needed ... and each phase of his training was tested, such as anatomy, physiology, pharmacy, nursing, types of evacuation, and medical and surgical treatment. In the detection of weak areas, immediate on-the-spot critique was made and re-teaching was accomplished effectively.”²⁷

From about 1963 on there were a number of variations of training at Fort Bragg which entailed sending graduates of the 300F-1 training to the Clinical Specialist (MOS 91C) Course prior to the AMTS. This was predicated on a reduced attrition rate of 91C graduates attending the last phase of SF training (10 percent vs. 40+ percent).²⁸

VIETNAM FOCUS: 1963-71

The basic features of Special Forces advanced medical training were retained throughout the Vietnam period, virtually without major changes until 1966. In

March of that year the Special Forces Basic Aidman's School (MOS 91A) was opened at Fort Bragg under the control of the Medical Training Committee.

The cumulative effect of the basic training being conducted under Special Forces control was a subsequent reduction the following year in the overall length of the medical training cycle from 37 to 32 weeks. This included a reduction of 91A training from ten to eight weeks and decreasing training at the AMTS by one week to seven weeks. This theoretically signaled the availability of more medics per year for deployment.



A medic from the 1st SFG conducts sick call for Rhade villagers near Ban Me Thout, Vietnam, Mar 1962.

Though not without hurdles, the wisdom of bringing the 91A training to Fort Bragg was borne out by higher academic grades (10 points per man) among graduates of the advanced Special Forces training.

In 1966 further changes increased the workload of the Medical Training Committee — formalization of the Special Forces Advanced Medical Laboratory Procedures Course and assumption of responsibility for operation of its own unit dispensary. Though personnel authorizations seemed adequate, there was a continual problem of securing enough enlisted instructors and retaining them. The overall shortage of Special Forces medical personnel assured that few instructors would last a year before receipt of orders to Vietnam.²⁹

Reorganization of the U.S. Army John F. Kennedy Special Warfare Center (Airborne) in 1968 led to a realignment of functions. The U.S. Army John F. Kennedy Center for Military Assistance was created, sharing equal status with the U.S. Army Institute for Military Assistance, which absorbed the Special Forces Training Group.

All enlisted Special Forces medical training now fell under the Medical Division, Operational Specialties Department, of the Special Forces School and thus no longer under the staff supervision of the Center surgeon. The remaining technical control exercised by the surgeon was inadequate and presaged many of the training problems that were to emerge in subsequent years.

Throughout the year, increased pressure by representatives of the Continental Army Command (CONARC) surgeon's office focused on returning the eight-week Special Forces Basic Aidman's Course (MOS 91A) to Fort Sam Houston. CONARC deemed

the 12-week 91A Course taught at the Medical Training Center adequate for providing the necessary input to the 300F-1 Course, despite insistence to the contrary by the Center and the Institute.

A trial program initiated by CONARC admitted 35 91A students graduating from Fort Sam Houston to the 300F-1 Course. During the first six weeks of the 300F-1 Course, 14 of these students dropped out, while out of 19 students completing 91A training at Fort Bragg, only two were dropped for academic reasons. For the remainder of 1969 and the next calendar year, the status quo prevailed, despite intense review and discourse on the proposed transfer.³⁰

In 1971, by the direction of the Office of the Surgeon General, *all* Special Forces enlisted medical training was transferred to Fort Sam Houston despite the fervent objections of the Center and the Institute. The transfer was to be followed by a reduced training cycle, elimination of a number of Special Forces-essential subjects from the program of instruction and the exclusion of Special Forces-qualified training cadre. There was little doubt at Fort Bragg that the revision would produce a lesser-qualified medic.

The unexpected and belated reprieve of the previous Special Forces medical-training program came when the first graduating class under the new system returned to Fort Bragg and was tested by the Medical Division of the U.S. Army Institute of Military Assistance. The Center Historical Supplement for 1971 noted: "The majority of students failed this examination in the following areas: operating room techniques, surgical procedures (amputations, wound debridement, venous cutdowns, and tracheostomies), sterile techniques, and certain medical subjects peculiar to Special Forces operations. Headquarters CONARC was advised of the situation, with the recommendation that additional post-MOS medical training be authorized on Fort Bragg to fully qualify the trainees as Special Forces enlisted medics prior to their assignment to operational units. Authorization was received to conduct a 4 1/2 week post-MOS medical qualification course."³¹

THE BALANCE SHEET

From their infancy in the 1950s, Special Forces units' reason for being has been to develop, organize, equip, and direct indigenous forces in the conduct of guerrilla warfare. As early as 1961, however, doctrinal recognition could be found for another mission in Army Field Manual 31-21, *Guerrilla Warfare and Special Forces Operations*, namely, to "advise, train, and assist indigenous forces in counter-insurgency operations."³² The former mission required relatively modest medical



SFC Larry Dickinson, a medic from the 46th SF Company examines a child as part of a civic-action program conducted in Thailand, Nov 1967.

assets, with primary focus on well-qualified enlisted medical personnel capable of operating independently.

Juxtaposed against conventional-warfare methods, wherein the more serious medical problems are evacuated to a higher level of medical care, unconventional warfare places an increased demand and responsibility on the lower levels of Special Forces medical support. Medical evacuation for more definitive medical care was not expected to be available. Thus, there was an obvious need for more physician-oriented training for the enlisted Special Forces medic.

Counter-insurgency warfare in Vietnam required a number of changes to accepted tenets of Special Forces medical support. The openness of most counter-insurgency medical efforts, in contrast to the covert medical requirements of unconventional warfare, and the necessary interface with existing medical organizations and facilities, in contrast to UW's virtual isolation from higher echelons of medical care, produced requirements differing from those anticipated by the existing medical doctrine.

A new lexicon of terms evolved, reflecting the medical operational realities of Vietnam. During the Vietnam era the training had become the most lengthy and concentrated, as well as perhaps the most controversial, of the five basic Special Forces skills. The enlisted training cycle was best, with multiple hurdles beginning with the selection process, followed by parachute, medical training, and Special Forces branch training. The total time invested was well over 40 weeks.

Doctrinal focus on the maintenance and improvement of the health of guerrilla units was challenged by the need for health and sanitation improvements among the indigenous civilian populations of Southeast Asia. Special Forces medical training, always extensive and rigorous, responded well to that challenge. From its humble beginnings in 1952, it evolved into a formalized training cycle distinguished by the fact that it was the only form of medical training for enlisted personnel not always fully under the control of Fort Sam Houston.

LTC Louis Dorogi, USAR, is a member of the Medical Service Corps and is currently director of officer

courses, 1033rd U.S. Army Reserve Forces Schools, Portland, Maine. In more than 14 years of active service, he served in a number of Special Operations medical assignments, including medical supply officer for the 7th SF Group, medical supply officer for the Walter Reed Army Institute of Research Field Epidemiological Survey Team in Vietnam, and executive officer and plans, operations, and training officer for the Surgeon Section of the JFK Center for Military Assistance. From 1975 to 1978, he served as historian in the Medical History Unit of the Army Center for Military History.

Notes:

1. In a letter to the author on 24 March 1976, COL Bank described some of the thinking that went into organizing Special Forces teams. Many of the old OSS operatives and veterans were able to translate their knowledge and experiences into shaping the basic operational unit of the Special Forces, the A-team, or Special Forces operational detachment. An initial consideration of placing physicians on each operational detachment was quickly dropped when the planners realized the lack of available assets. Originally only one medically qualified team member was contemplated. Bank wrote: "Based on my OSS experience I was determined to eliminate one major flaw in the conduct and support for unconventional operations. That flaw was in the area of medical aid and support. I would never forget how a neighboring Jed(burgh) team had lost a lieutenant who had been dropped initially in my sector because of lack of trained personnel. ... No medical personnel were in the entire Jed(burgh) operation. I also had noted that many of the guerrillas I had organized had a latent fear of the consequences of getting wounded in action because of the lack of proper and immediate medical support. This in turn affected their efficiency and morale."
2. Headquarters, Psychological Warfare Center, *Psychological Warfare Center Questionnaire*, Fort Bragg, N.C., 5 September 1952.
3. The 10th Special Forces Group (Airborne) was formally activated on 11 June 1952, per General Order 33, Fort Bragg, N.C., dated 18 June 1952. See Unit History Data Card for Headquarters & Headquarters Company, 10th Special Forces Group, 1st Special Forces.
4. Telephone conversation on 12 March 1976 with COL Aaron Bank and letter from COL Bank to the author, dated 24 March 1976.
5. Herbert I. Abelson, *Factors Related to the Effectiveness of Special Forces Personnel*, The George Washington University Human Resources Research Office, HumRRO Control No. A-3513, 5 August 1954.
6. Headquarters, Psychological Warfare Center, Fort Bragg, N.C., "Weekly Activities Report," 15 November 1952. Also see MAJ William L. Posey, "Special Forces Medical Training," (a student paper written for the Communicative Arts Program), Fort Leavenworth, Kan.: Army Command & General Staff College, April 1970, p. 1.
7. Headquarters, Special Warfare Center, Special Orders Number 1119, Paragraph 1, dated 27 October 1952.
8. Historical Data Card, 10th Special Forces Group. The 77th Special Forces Group was initially composed of many personnel from the 10th.

9. According to Dr. Freeland and LT Elliott, the 10th Special Forces Group had to design and construct a suitable parachute harness for Freeland to permit him to become parachute-qualified.
10. Telephone conversation with retired MAJ Robert E. Elliott on 3 March 1977.
11. Beverly Lindsey, "The Center Story: Behind the Iron Curtain," *Veritas* 14 (July-September 1975): 16, and telephone conversation with retired MAJ Robert E. Elliott on 3 March 1977.
12. Telephone conversation with retired COL Sigurd Bue on 23 March 1977.
13. Personnel data card (Office of the Surgeon General) for COL Valentine B. Sky, Medical Corps.
14. "Tough, Triple Volunteers of the Army's 10th Special Forces," *Army, Navy, Air Force Journal*, 1 August 1959, p. 3.
15. Also known as the Surgical Laboratory, Clinical Research Laboratory and Advanced Medical Training School in later years.
16. SFC Drouin was a graduate of the Naval Hospital Corps School, the Independent School for Medical Corpsmen, Dental Technician School, Dental Laboratory School, the Surgical Technician School, and the Pararescue and Survival Schools and the Medical Specialist Advanced Course at Fitzsimons General Hospital.
17. Personal communication from retired SFC Ralph C. Drouin to the author on 24 February 1977.
18. Personal communication from Drouin.
19. Personal communication from William B. Radcliffe, M.D. to the author on 12 September 1976.
20. Personal communication from Dr. Radcliffe and interview with SGM E. Grant Madison on 1 October 1975.
21. CPT William B. Radcliffe, Letter of Commendation, Office of the Group Surgeon, 7th Special Forces Group (Airborne), 1st Special Forces, Fort Bragg, N.C., 16 August 1960. The letter describes in glowing terms SFC Madison's contributions to the operations of the Surgical Research Laboratory. Also, telephone conversation between Dr. John L. Bond and the author, 13 July 1976.
22. Personal letter from Dr. David G. Paulsrud to the author dated 1 November 1976, p. 3.
23. LTG Leonard D. Heaton to CPT David G. Paulsrud, 7th Special Forces Group, Fort Bragg, N.C., 27 April 1962. Personal files of Dr. David Paulsrud.
24. Special Warfare Center, *Historical Report*, 1963, pp. 66-67.
25. Office of the Surgeon, Headquarters, U.S. Army Special Warfare Center, *Army Medical Service Activities* (RCS MED-41 (R4)), Fort Bragg, N.C., 1963, p. 1.
26. Interview with COL Roger A. Juel, Medical Corps, at Fort Sam Houston, Texas, on 17 December 1976, pp. 5-6.
27. Brooke Army Medical Center, *Army Medical Service Activities Report* (RCS MED-41 (R4)), Fort Sam Houston, Texas, 1963, p. 112.
28. The Surgeon General, United States Army, *Annual Report*, FY 1963, pp. 111-112.
29. U.S. Army John F. Kennedy Center for Special Warfare (Airborne), *Historical Supplement*, 1966, p. 63. Headquarters, Department of the Army, Special Forces Training Group (Airborne), *Army Medical Service Activities Report (Annual) 1967*, Fort Bragg, N.C., 5 March 1968, p. 3. Medical Section, JFK Center for Military Assistance, *Army Medical Activities* (RCS MED-41 (R4)), Fort Bragg, N.C., 13 April 1971.
30. Headquarters, Department of the Army, JFK Center for Military Assistance, *Army Medical Activities* (RCS MED-41 [R4]), Fort Bragg, N.C., 1969 and 1970. Surgeon, JFK Center for Military Assistance, "Special Forces Medical Training," Disposition Form to Commanding General, JFK Center for Military Assistance, 14 September 1970.
31. U.S. Army John F. Kennedy Center for Military Assistance, *Spartan Historical Supplement*, 1971, Fort Bragg, N.C., p. 41.
32. Army Field Manual 31-21, *Guerrilla Warfare and Special Forces Operations*, Headquarters, Department of the Army, September 1961, p. 18.



The USSOCOM Surgeon's Office does not endorse any of the listed private contractors who provide medical training nor does the USSOCOM Surgeon's Office vouch for the competence of the instructors providing the training. This listing of education opportunities is simply to help our readers in the event some would like to further their continuing medical education.

Special Operations Medical Association Conference (SOMA) Update

Robert W. Saum, COL, NC, USA, SOMA President

I would like to take this opportunity to thank COL Al Moloff and his dedicated SOMA staff, LTC Bob Harrington, Dr. Dale Hamilton, SGM Russ Justice, MSG Sammy Rodriguez, and Mr. Dave Davis, for orchestrating the great conference in Tampa this past November. The After Action Reports comments reflect their hard work and thoughtful planning for a conference dedicated to sharing knowledge and field practices of the SOF medical community.

Again this year SOMA hosted the James A. Haley VA Medical Center's Annual Blast Injury Conference as a pre-conference with over 400 attendees. This pre-conference will be repeated in 2007.

I give special thanks to the 2006 distinguished speakers: General Bryan Brown, Commander USSOCOM and Dr. Richard Carmona, the 17th Surgeon General of the United States. Both set the tone of the conference with their insights on and vision of the global medical and non-medical issues we face.

Some highlights of the meeting from the member's critique:

- Lessons learned from returning SOF medical Soldiers were most insightful.
- The international speakers were very popular.
- Many of the 879 SOMA conference attendees also attended the Blast pre-conference.
- We plan an update in 2007 on "The Medical Education and Training Center: A Transformation in Joint Training"

Thanks to all of our speakers, attendees, and vendors who made the SOMA meeting outstanding, professional, educational, and an exciting event! All our members will receive notification of SOMA 2007 scheduled for 9 to 14 December, 2007, in Tampa, Florida at the Marriott Waterside Hotel. Their phone number is (813) 221-4900 or (800) 228-9290. If you are a member and have not received a postcard notification of the event, please contact Russ Justice (justicer@earthlink.net) or Dale Hamilton (Dale.Hamilton@med.va.gov).

We look for outstanding speakers for this year's conference. Please contact Robert Harrington (Rharrin256@aol.com) or me (robertsaum@comcast.net). Since we also seek ways to make the SOMA conference better, please send your suggestions to me.

I look forward to seeing you in Tampa this December.

The following is a list of information resources for continuing education

Casualty Care Research Center

Office: (301) 295-6263

Web Site: www.casualtycareresearchcenter.org

CERTAC

Office: (970) 214-9355

Web Site: www.certac.com

Counter Force Training

Office: (888) 660-3442

Web Site: www.counterforcetraining.org

Cypress Creek Advanced Tactical Team

Office: (281) 440-9650 Extension 156

Web Site: www.ccaatt.org

Direct Action Resource Center

Office: (501) 955-0007

Web Site: <http://www.darcl.com>

Gunsite Academy, Inc.

Office: (928) 636-4565

Web Site: <http://www.gunsite.com>

Heckler & Koch, Inc. International Training Division

Office: (703) 450-1900 Extension 293

Web Site: <http://www.tacticalmedicine.com/>

HSS International, Inc.

Office: (909) 336-4450

Web Site: <http://www.hssinternational.com>

Insights Training Center

Office: (425) 827-2552

Web Site: <http://www.insightstraining.com>

Lion Claw Tactical

Office: (757) 321-2059

Web Site: www.lionclawtactical.com

“Medic Up” Tactical Medic Training Course

Office: (909) 340-9201

Web Site: www.medicup.com

National Academy of Tactical Medical Response

Office: (989) 585-4001

Web Site: www.tacticalmedical.com

National Tactical Officer's Association

Office: (800) 279-9127

Web Site: <http://www.ntoa.org>

NWTC, Inc.

Office: (866) 328-2918

Web Site: www.nwtcinc.org

Omega Tactical Consultants

Office: (727) 243-6891

Web Site: www.omegatacticalconsultants.com

Professional Medical Education, Inc.

Office: 1-800-606-9023

Web Site: <http://www.pmeinc.net>

Rescue Training, Inc.

Office: (877) 692-8911

Web Site: <http://www.emtt.org>

Spartan Group International

Office: (877) 977-2782

Web Site: <http://www.spartangroup.com>

SERT Group International

Office: (866) 500-5465

Web Site: <http://thesertgroup.homestead.com>

Specialized Medical Operations, Inc.

Office: (702) 617-1655

Web Site: www.specmedops.com

Special Operations Tactical Training International

Office: (931) 232-6593

Web Site: www.sottint.com

STS Consulting

Office: (413) 531-8699

Web Site: www.tactical-ems.com

Tac1Aid

Office: (978) 499-0492

E-mail: Tac1Aid@hotmail.com

Tactical Element, Inc.

Office: (336) 945-2289

Web Site: www.tacticalelement.cc

Team One Network

Office: (540) 752-8190

Web Site: www.teamonenetwork.com

The Tactical EMS School

Office: (573) 474-2436

Web Site: www.tactical-specialties.com

X-TEMS

Office: (513) 583-3001 Extension 500

Web Site: www.xtems4life.com

K-911 Emergencies, Inc.

Office: (561) 575-2514

Web Site: www.k911emergencies.com

The ResQ Shop

Office: (915) 877-4312

Web Site: www.theresqshop.com

UF - Department of Small Animal Clinical Sciences

Office: (352) 392-4700 Extension 5700

Web Site: www.doce-conferences.ufl.edu/k9

SPECIAL OPERATIONS MEDICAL REFERENCE GUIDE

List compiled by Wayne W. Thompson, MS, MPA

ADMINISTRATION

CDC Emergency Preparedness and Response: Preparation and Planning: <http://www.bt.cdc.gov/planning/>
Health Care Management Tools: <http://erc.msh.org/toolkit/>
Practice Management: <http://www.fpnotebook.com/MAN.htm>
WHO Analyzing Disrupted Health Sectors: http://www.who.int/hac/techguidance/tools/disrupted_sectors/en/index.html
WHO Management of Health Care Delivery: <http://www.who.int/management/en/>

CHEMICAL, BIOLOGICAL, NUCLEAR, AND HAZMAT

Bioterrorism: A Guide for First Responders. Imaginatics Publishing. 2nd Edition. 2004.
Chemical and Biological Terrorism: Research and Development to Improve Civilian Medical Response. Institute of Medicine. Washington, DC. 1999.
Chemical/Nuclear Terrorism: Guide For First Responders. Imaginatics Publishing. 2003.
First Responders Guide to Weapons of Mass Destruction. Jeffrey A. Adams. American Society for Industrial Security. 2001.
HazMat Emergency Response Manual. Alan, B Jones. One-Off Books. 2006.
Hitting America's Soft Underbelly: The Potential Threat of Deliberate Biological Attacks Against the U.S. Agricultural and Food Industry. Peter Chalk.
Military Manuals: Available at <https://ccc.apgea.army.mil/>
Medical Management of Biological Casualties Handbook.
Medical NBC Battle Book. USACHPPM Tech Guide 244.
Field Management of Chemical Casualties Handbook.
Textbook of Military Medicine: Medical Aspects of Chemical and Biological Warfare.
Military Manual: Available at: <http://usamriid.detrick.army.mil>
Medical Management of Biological Casualties Handbook, Sixth Edition, April 2005.
PDR Guide to Biological and Chemical Warfare Response. John G. Bartlett. Thomson PDR. 2002.
Rapid Guide to Hazardous Chemicals in the Environment. Richard P. Pohanish. Wiley. 2nd Edition. 1997.
Special Operations for Terrorism and Hazmat Crimes. Chris Hawley. Red Hat Publishing. 2001.
Weapons of Mass Destruction and Terrorism Field Response Guide. Joseph A. Cocciardi. Jones and Bartlett. 2004.
CDC Emergency Preparedness and Response: Bioterrorism: <http://www.bt.cdc.gov/bioterrorism/>
CDC Emergency Preparedness and Response: Chemical Emergencies: <http://www.bt.cdc.gov/chemical/>
CDC Emergency Preparedness and Response: Radiation Emergencies: <http://www.bt.cdc.gov/radiation/>
Medical Management of Biological Casualties:
<http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/TextbookonBioCas/handbook.htm>
Medical Management of Chemical Casualties:
<http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/RedHandbook/001TitlePage.htm>
Medical Management of Radiological Casualties:
<http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/RadiologicCasualties/radiolog.pdf>
Stanford University Medical Center: Bioterrorism Planning and Treatment:
<http://www.stanfordhospital.com/forPhysiciansOthers/bioterrorism/bioterrorism.html>
Hazardous Plants: <http://www.calpoison.org/public/plants.html> and <http://chppm-www.apgea.army.mil/ento/PLANT.HTM>
Poison Control Centers: <http://www.ipl.org/div/kidspage/poisonsafe/pcenters.html>
Clinician's Bio-security Center, University of Pittsburgh: <http://www.upmc-cbn.org/>
Bio-security Resource Center for Animal Health Emergencies: <http://www.biosecuritycenter.org/>
Center for Food Security and Public Health: (Agro-terrorism, Foreign Animal Diseases, Zoonotic diseases):
<http://www.cfsph.iastate.edu/About/purpose.htm>
Food Safety, Animal and Plant Health: <http://www.ipfsaph.org/En/default.jsp>
Materials Safety Data Sheets (MSDS): <http://www.msdssearch.com/Default.htm> and <http://www.ehs.cornell.edu/>
Toxicology Databases and Profiles: <http://www.atsdr.cdc.gov/toxfaq.html> ; <http://www.atsdr.cdc.gov/toxpro2.html> ; <http://toxnet.nlm.nih.gov/>
Chemical and Biological Defense Information Analysis Center: <http://www.cbiac.apgea.army.mil/>

CONTINGENCY PLANNING

Crisis Management: Planning for the Inevitable. Steven Fink, iUniverse Inc. 2000.
Disaster Recovery Planning: Strategies for Protecting Critical Information Assets. Jon W. Toigo. Prentice Hall. 3rd Edition. 2002.
Jane's Mass Casualty Handbooks - Hospital Emergency Preparedness and Response. Joseph A. Barbera. Jane's Information Group. 2003.
Manager's Guide to Contingency Planning for Disasters: Protecting Vital Facilities and Critical Operations. Kenneth N. Myers. Wiley. 2nd Edition. 1999.
Principles of Emergency Planning and Management. David Alexander. Oxford University Press, USA. 2002.
Special Operations Mission Planning Field Guide. Dennis Krebs, American Society for Law Enforcement Training. Jones & Bartlett. 2004.
Terrorism and Counterterrorism: Understanding the New Security Environment. Russell D. Howard. Dushkin. 2nd edition. 2005.
The Vulnerability of Cities: Natural Disaster and Social Resilience. Mark Pelling Earthscan. 2003.
Business Planning for Pandemic Influenza: <https://programs.regweb.com/metro/cidrap/1/>
Centers for Public Health Preparedness: http://www.asph.org/cphp/cphp_home.cfm
Computer Security Resource Center: <http://csrc.nist.gov/fasp/>
Disaster Pre-planning Resource Guides: http://www.disaster-resource.com/content_page/non_profit.shtml and
<http://www.disaster-ource.com/articles/06nation.shtml>
Disaster Planning and Mitigation for Natural Hazards: <http://www.colorado.edu/hazards/>
Guide to Bioterrorism Pre-Planning and Response: <http://www.interpol.int/Public/BioTerrorism/BioterrorismGuide.pdf>

Hospital Readiness Planning: <http://www.aha.org/aha/issues/Emergency-Readiness/resources.html>
National Strategy for the Physical Protection of Critical Infrastructures and Key Assets: http://www.fas.org/irp/threat/physical_strategy.pdf
National Strategy For Homeland Security: <http://www.whitehouse.gov/homeland/book/>
U.S. DOJ Vulnerability Assessment: <http://www.ojp.usdoj.gov/odp/docs/vamreport.pdf>

DENTAL EMERGENCIES

Assisting Dental Education and Dental Public Health in Developing Countries: A Symposium. Appropriate Health Resources and Technologies Action Group. 1981.
Emergency Dental Care: Diagnosis and Management of Urgent Dental Problems. Donald A. Falace Williams & Wilkins. 1994.
Maxillofacial and Dental Emergencies (Oxford Handbooks in Emergency Medicine. John E. Hawkesford. Oxford University Press, USA. 1994.
Traumatic Dental Injuries: A Manual. Jens O. Andreasen. Blackwell Publishing. 2nd Edition. 2003.
Dental Practices Guidelines and Protocols: <http://www.fpnotebook.com/DEN.htm> and <http://healthweb.org/dentistry/>
Andrew's Diseases of the Skin: Clinical Dermatology. Richard B. Odom. Editor. Harcourt Health Sciences. Philadelphia. 2000.

DERMATOLOGY

Atlas of Cancer of the Skin. Gunter Burg. Churchill Livingstone. New York. 2000.
Emergency Dermatology: A Rapid Treatment Guide. Alan B. Fleischer. Wiley. 2nd Revised Edition. 1997.
Global Dermatology: Diagnosis and Management; According to Geography, Climate, and Culture. Springer. 1994.
Skin Disease: Diagnosis and Treatment. Thomas P. Habif. Editor. Harcourt Health Sciences. Philadelphia. 2001.
Dermatology Atlas: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/GMOManual/clinical/Dermatology/AtlasofDermatology.htm>
Dermatology Practice: <http://www.fpnotebook.com/DER.htm> and <http://www.emedicine.com/derm/index.shtml>
Merck Dermatological Disorders Online: <http://www.merck.com/mmpe/sec10.html>

DISASTER MEDICINE

Advanced Disaster Medical Response Manual for Providers. Susan M. Briggs. Editor. Harvard Medical International Trauma & Disaster. 2003.
Disaster Medicine, Gregory Ciotto. Editor. Mosby. 2006.
Disaster Medicine. David E. Hogan. Lippincott Williams and Wilkins. 2002.
Handbook of Disaster Medicine. J. De Boer. Brill Academic Publishers. 2000.
Medical Response to Terrorism: Preparedness and Clinical Practice. Daniel C. Keyes. Lippincott Williams & Wilkins. 2004.
Center for Disaster Medicine: <http://hsc.unm.edu/som/cdm/index.shtml>
Pre-Hospital and Disaster Medicine: <http://pdm.medicine.wisc.edu/home.html>
Center for Disaster and Humanitarian Assistance: <http://www.cdham.org/>
Disaster Management and Humanitarian Assistance: <http://coe-dmha.org/>
Mass Casualty Management: <http://www.bt.cdc.gov/masscasualties/>; <http://www.bt.cdc.gov/masscasualties/> and http://www.gnyha.org/eprc/general/templatesAPIC_MassCasualtyChecklist.pdf
Medical Shelter Construction: http://www.emsa.ca.gov/dms2/draft_mass_prophy_final.pdf and <http://www.emsa.ca.gov/dms2/toolkit.pdf>
Military Medicine in Disasters: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/MilitaryMedicine/Disaster1.doc>

DIVING MEDICINE

Adjunctive Therapy for Decompression Illness Without a Chamber. Report of the UHMS Adjunctive Therapy Committee. Richard E. Moon, M.D. USSOCOM Arctic Underwater Operations. Louis Rey Editor. Springer. 1985.
Assessment of Diving Medical Fitness for Scuba Divers and Instructors. Ernest S. Campbell. Best Publishing Company. 2006.
Diving Medicine by Alfred A. Bove and Jefferson Davis
Hyperbaric Medicine Practice, Eric P. Kindwall. Best Publishing Company. 1999.
Ice Diving Operations. Walt Hendrick. Fire Engineering Books. 2003.
NOAA Diving Manual, James T. Joiner. Editor. 4th Edition, National Technical Information Service. 2001.
Public Safety Diving. Walt Hendrick. Fire Engineering Books. 2000.
SRT Diver. Mark V. Lonsdale. Specialized Tactical Training Unit. Los Angeles. 1999.
United States Navy Diving Manual, Revision 5. Naval Sea Systems Command. Best Publishing Company. 2005.
Decompression Sickness: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/FlightSurgeonHandbook/11mgmtcds.html> and <http://www.uhms.org/POSITIONPAPERS/Adjunctive%20Committee%20Summary%20December%202002%20Website%20Document.pdf>
Diver's Alert Network (DAN) Medical Emergency Hotline: <http://www.diversalertnetwork.org/>
Diving in Contaminated Waters: <http://www.supsalv.org/pdf/Contaminated%20Water%20Div%20Man.pdf>
Scuba Doc's Diving Medicine Symptoms and Treatment: <http://scuba-doc.com/sitemap.html>
U.S. Navy Diving Manual, Revision 5: <http://www.supsalv.org/manuals/diveman5/divManual5.htm>

EMERGENCY MEDICINE

Emergency Medicine Practice Guidelines: <http://www.fpnotebook.com/ER.htm>; <http://www.emedicine.com/emerg/index.shtml>; <http://www.emedicine.com/med/TRAUMA.htm> and <http://www.lib.uiowa.edu/hardin/md/emerg.html>
Emergency Medicine Reference: <http://www.aha.org/aha/issues/Emergency-Readiness/resources.html> and <http://www.ncemi.org/>
Emergency Department Resources: <http://www.ncemi.org/>
Merck Critical Care Medicine Online: <http://www.merck.com/mmpe/sec06.html>
Merck Various Injuries and Poisoning Online: <http://www.merck.com/mmpe/sec21.html>
Web MD Emergency Medicine: <http://www.emedicine.com/emerg/>
MedWeb Medical Practices/Specialties: <http://www.medweb.emory.edu/MedWeb>

ENVIRONMENTS

- Alpine Operations. Mark V. Lonsdale. Specialized Tactical Training Unit. Los Angeles. 2000.
- The Desert Doc. Tom Myers, MD. (Due in 2007).
- Expeditions: The Expert's Way. John Blashford-Snell. Faber. 1977.
- Expedition Medicine. Royal Geographical Society Staff. Profile Books Limited. 7th Edition. 2004.
- High Altitude Medicine Handbook. Andrew J. Pollard. Radcliffe Medical Press. 2003.
- Jungle Travel & Survival. John Walden. The Lyons Press. 2001.
- Medicine: For Mountaineering and Other Wilderness Activities. James A. Wilkerson. Mountaineers Books. 5th Edition. 2001.
- Wilderness Medicine. Management of Wilderness and Environmental Emergencies. Paul Auerbach. Mosby. 4th Edition. 2001.
- Arctic Medicine Links: <http://www.spri.cam.ac.uk/resources/organisations> and <http://www.iuch.org/>
- Desert Medicine Links: <http://www.desertusa.com/mag99/mar/stories/desertsur.html> and <http://www.survivaliq.com/survival/basic-survival-medicine.htm>
- First Aid for Climatic Injuries: http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/1stAidforSoldiers/Fm211_5.html#REF72h4
- Heat Emergencies and Heat Injury Prevention: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/MOManual/clinical/Heat%20Emerg%20and%20Heat%20Inj%20Prv.html>
- Medical Problems in High Mountain Environments: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/usariem/highmountain.pdf>
- Handbook for Individual Operations and Survival in Cold Weather Areas: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/cold/TC213Table%20of%20Contents.htm>
- Royal Geographic Society Expedition Guides: <http://www.rgs.org/OurWork/Publications/EAC+publications/Expedition+and+Fieldwork+Publications.htm>
- Tropical Medicine Links: <http://hml.org/WWW/tropical.html>
- Weather Information by Location: <http://www.bbc.co.uk/weather/world> and <http://cirrus.spri.umich.edu/wxnet>

ENVIRONMENTAL HEALTH AND SANITATION

- Basic Environmental Health. Annalee Yassi. Oxford University Press, USA. 2001.
- Environmental Health: From Global to Local. Howard Frumkin, MD. Jossey-Bass. 2005.
- Geographic Information Systems (GIS) and Public Health. Ellen K. Cromley. Guilford Press. 2002.
- Geographies of Health: An Introduction. Anthony C. Gatrell. Blackwell Publishing, 2001.
- Guidelines for Drinking Water Quality. World Health Organization. 2nd Edition. Geneva. 1998.
- Low Cost Urban Sanitation. Duncan Mara. John Wiley. 1996.
- Medical Geography. Melinda S. Meade. Guilford Press. 2nd Edition. 2000.
- Food-Borne Disease: A Focus for Health Education. World Health Organization. Geneva. 2000.
- Guidelines for Drinking Water Quality. World Health Organization Geneva. 2nd Edition. 1998.
- Water Resources: Health, Environment and Development. Brian H. Kay. Editor. E. & F.N. Spon. London. 1999.
- Environmental Health in Emergencies: http://www.who.int/water_sanitation_health/hygiene/emergencies/en/
- Environmental Health for Ground Forces: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/GMOManual/clinical/Environmental%20Health%20for%20Ground%20Forces.html>
- Field Hygiene: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/fm2110.pdf>
- Nutrition in Temperate and Severe Climates: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/usariem/nutrigui.pdf>
- Geographic Information Systems and Public Health: <http://www.cdc.gov/nchs/gis.htm>
- USACHPPM Medical Threat Briefings: <http://usachppm.apgea.army.mil/hiomt/WHOEnvironmentalHealthandSanitationinDisasters>: http://www.who.int/water_sanitation_health/hygiene/emergencies/emergencies2002/en/
- WHO Environmental Health and Sanitation in Disasters: http://www.who.int/water_sanitation_health/hygiene/emergencies/emergencies2002/en/
- WHO Water Sanitation and Health Resources: http://www.who.int/water_sanitation_health/resources/en/index.html
- WHO Public Health Mapping and Geographic Information Systems: http://www.who.int/health_mapping/en/

GERIATRICS

- Essentials of Clinical Geriatrics. Robert L. Kane. McGraw-Hill. 5th Edition. 2003.
- Geriatrics At Your Fingertips. David B. Reuben. The American Geriatrics Society. 8th Edition. 2006.
- Merck Manual of Geriatrics. Mark H. M.D. Beers (Editor). John Wiley. 3rd Edition. 2000.
- American Geriatrics Association Links: <http://www.americangeriatrics.org/links/>
- Geriatrics Practice: <http://www.fpnotebook.com/GER.htm>
- Merck Manual of Geriatrics Online: <http://www.merck.com/mrkshared/mmg/contents.jsp>

IMPROVISED MEDICINE

- Ditch Medicine: Advanced Field Procedures for Emergencies. Hugh L. Coffee. Paladin Press. 1993.
- Do-It-Yourself Medicine. Ragnar Benson. Paladin Press. 1997.
- Medical Tests You Can Do Yourself. Herbert Haessler. Contemporary Books. 1997.
- Survivalist Medicine Chest. Ragnar Benson. Paladin Press. 1982.
- The Survival Nurse: Running an Emergency Nursing Station Under Adverse Conditions. Ragnar Benson. Paladin Press. 2000.
- Where There Is No Dentist. Murray Dickson. Hesperian Foundation. 1983.
- Where There Is No Doctor: A Village Health Care Handbook. David Werner. Hesperian Foundation. Revised Edition. 1992.
- Where There Is No Psychiatrist. Vikram Patel. Gaskell, Royal College of Psychiatrists. 2003.
- Where Women Have No Doctor: A Health Guide for Women. Ronnie Lovich. Hesperian Foundation. 1997.
- Where There is no Doctor Online: <http://www.healthwrights.org/books/WTINOnline.htm>
- Where There is no Dentist Online: <http://www.healthwrights.org/books/WTINDentistonline.htm>

Where Women Have No Doctor: http://www.hesperian.org/publications_download.php#wwhnd
A Book for Midwives: http://www.hesperian.org/publications_download.php#midwives

IMPROVISED EXPLOSIVES/RESPONSES

Advanced Anarchist Arsenal: Recipes For Improvised Incendiaries and Explosives. David Harber. Paladin Press. 1991.
The Citizen's Guide to Stopping Suicide Attackers: Secrets of an Israeli Counterterrorist. Itay Gil. Paladin Press. 2004.
Detection and Disposal of Improvised Explosives. (NATO Security through Science Series). Hiltmar Schubert. (Editor). Springer. 2006.
Explosives Identification Guide Second Edition. Mike Pickett. Delmar Publishing. 2005.
Improvised Explosive Devices. James B. Crippin. CRC. 2007.
Improvised Munitions Handbook. Department of Defense. Pentagon Publishing. 2004.
Principles of Improvised Explosive Devices. M. J De Forest. Paladin Press. 1984.
Terrorist Explosive Sourcebook: Countering Terrorist Use of Improvised Explosive Devices. Stephen Turner. Paladin Press. 2005.
Improvised Explosives: <http://www.totse.com>
International Unexploded Ordnance: <http://maic.jmu.edu/ordata/mission.asp>
Landmine Awareness, Handling, Clearance: <http://www.sya.de/demin/demin-en.htm> and <http://www.humanitarian-demining.org/tech.asp>
Military Ordnance: <http://www.ordnance.org/portal/index.php>
Unexploded Ordnance Handling: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Safety/UnexplodedOrdnanceUXO.htm>

INFECTIOUS DISEASE/CONTROL

Control of Communicable Diseases Manual. Heymann D. L. American Public Health Association, 18th Edition. 2004.
Emerging Infections. W. Michael Scheld. (Editor). ASM Press. 2006.
Infections and Inequalities: The Modern Plagues. Paul Farmer. University of California Press. 2001.
Infectious Disease Epidemiology. Kenrad E. Nelson, M.D. Aspen Publishers. 2006.
Principles and Practice of Infectious Diseases. Mandell. 6th Edition. Churchill Livingstone, 2004.
Risky Trade: Infectious Disease in the Era of Global Trade. Ann Marie Kimball. Ashgate Publishing. 2006.
Viruses, Plagues and History. Michael Oldstone. Oxford University Press, USA. 2000.
When Germs Travel: Six Major Epidemics That Have Invaded America and the Fears They Have Unleashed. Howard Markel. Vintage. 2005.
CDC STD Protocols: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/CDC/cdc.htm>
CDC Emerging Infectious Diseases: <http://www.cdc.gov/ncidod/eid/index.htm> Emerging/Infect Diseases
CDC Emergency Preparedness and Response: Disease Surveillance: <http://www.bt.cdc.gov/episurv/>
Communicable Disease Control in Emergencies: http://whqlibdoc.who.int/publications/2005/9241546166_eng.pdf
Epidemiology Online: <http://www.epibiostat.ucsf.edu/epidem/epidem.html>
HIV Practice: <http://www.fpnotebook.com/HIV.htm>
Infectious Diseases Practice Guidelines: <http://www.fpnotebook.com/ID.htm> ; <http://www.lib.uiowa.edu/hardin/md/micro.html> and
http://www.emedicine.com/med/INFECTIOUS_DISEASES.htm
Merck Infectious Diseases Online: <http://www.merck.com/mmpe/sec14.html>
National Center for Infectious Diseases: <http://www.cdc.gov/ncidod/>
National Institute of Allergy and Infectious Diseases: <http://www3.niaid.nih.gov>
Outbreaks and Surveillance: <http://www.who.int/csr/don/en>
Prion Diseases Data and Research: <http://cdmrp.army.mil/nprp/default.htm> and <http://www.priodata.org/>
Rare Diseases: <http://www.rarediseases.org> NORD
Virology Online: <http://www.virology.net/garryfavwebindex.html>
WHO Epidemic/Pandemic Alert: <http://www.who.int/csr/en/>
World Bank - AIDS/HIV Tools and Guidelines: http://www1.worldbank.org/hiv_aids/tools.asp

INTELLIGENCE

Understanding Terrorism and Managing the Consequences. Paul M. Maniscalco. Brady. 2001.
Armed Forces Medical Intelligence Center (UNCLASSIFIED): <http://www.afmic.detrick.army.mil/>
FAS: Intelligence Archive Material: <http://www.fas.org/irp/eprint/index.html>
FBI - Joint Terrorism Task Force – (TITAN Information Project): <http://www.catitan.org/>
Foreign Policy Analysis: <http://www.fpa.org> and <http://www.cfr.org>
Geographic Information Systems, Maps, Other Resources: <http://education.usgs.gov/> and <http://www.nga.mil/portal/site/nga01/>
Global Security: <http://www.globalsecurity.org/index.html>
Homeland Security Digital Library: <https://www.hsdl.org/?auth/login&dest=>
Homeland Security Institute Weekly Newsletter: http://www.homelandsecurity.org/bulletin/current_bulletin.htm
Intelligence Threat Handbook: <http://www.fas.org/irp/threat/handbook/index.html>
A Military Guide to Terrorism in the Twenty-First Century: <http://www.fas.org/irp/threat/terrorism/index.html>
Overseas Travel Security (DSS): <http://www.osac.gov>
Terror Organizations: <http://www.espionageinfo.com/index.html>
Terrorism Information Center/Responder Information Data: <http://www.mipt.org/>
Terrorism Research: <http://www.terrorism.org> and <http://www.investigativeproject.net/>
Threats and Challenges to Maritime Security: <http://www.fas.org/irp/threat/maritime2020/index.html>
World Security Analysis: <http://www.ccc.nps.navy.mil>

INTERNATIONAL HEALTH

Critical Issues in Global Health. C. Everett Koop, MD (Editor). Jossey - Bass, 2002.
Cross Cultural Medicine. Judy Ann Bigby. (Editor). American College of Physicians. 2001.
Health Information for International Travel. Centers for Disease Control. CDC Yellow Book. 2005.
Improving Newborn Health in Developing Countries. Anthony Costello. Editor. Imperial College Press. 1999.
Indigenous Customs in Childbirth and Child Care. Yvonne Lefeber. Netherlands. 1998.

International Public Health: Diseases, Programs, Systems, and Policies. Michael H. Merson. Aspen Publishers. 2001.
Multicultural Medicine and Health Disparities. David Satcher. McGraw-Hill. 2005.
Textbook of International Health. Paul F. Basch. Oxford University Press, USA. 2nd Edition. 1999.

LABORATORY AND RADIOLOGY

The Right Test: A Physician's Guide to Laboratory Medicine. Carl E. Speicher. Saunders. 3rd Edition. 1998.
Differential Diagnosis by Laboratory Medicine. Susan Mesko. (Editor). Springer. 2003.
Mosby's Manual of Diagnostic and Laboratory Tests. Kathleen Deska Pagana. Mosby. 2nd Edition. 2002.
Basic Laboratory and Radiology: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Lab/Lab.htm>
Laboratory Procedures: <http://www.fpnotebook.com/LAB.htm> and <http://www.lib.uiowa.edu/hardin/md/path.html>
Radiology: <http://www.fpnotebook.com/RAD.htm>; <http://www.emedicine.com/radio/index.shtml> and <http://www.lib.uiowa.edu/hardin/md/rad.html>

MASS CASUALTIES

CDC: Bioterrorism and Mass Casualty Preparedness in Hospitals: <http://www.fas.org/biosecurity/resource/documents/ad364.pdf>
CDC Mass Casualties and Events Response: <http://www.bt.cdc.gov/masscasualties/>
Hospitals for War Wounded: A Guide for Set-Up: <http://www.icrc.org/web/eng/siteeng0.nsf/html/p0714>
Weapons of Mass Casualties. (AAOS Monograph) Charles Stewart. Jones and Bartlett. 2005.

MEDIC RESOURCES

Combat Medic Field Reference. Casey Bond. (Editor) Jones & Bartlett. 2005.
Critical Care Paramedic. Bryan E. Bledsoe. Prentice Hall. 2005.
EMS Field Guide: ALS Version. Paul Lesage. Informed Publishing. 15th Edition. 2005.
Emergency Care and Transportation of the Sick and Injured. Bruce D. Browner. Jones and Bartlett Publishers. 8th Edition. 2001.
Essentials of Paramedic Care. Bryan E. Bledsoe. Prentice Hall. 2nd Edition. 2006.
Hazardous Materials Injuries: A Handbook for Pre-Hospital Care. Douglas R. Stutz, Ph.D. Bradford Communications. 3rd Edition. 1992.
Pre-Hospital Care of the Elder Patient. Bruce M. Becker. Prentice Hall. 2003.
Special Operations Forces Medical Handbook. Steve Yevich. That's the Point. Loose Leaf Edition. 2001.
Tarascon Pediatric Emergency Pocketbook. Steven G. Rothrock. Tarascon Publishing. 5th Edition. 2006.
The Streetmedic's Handbook. Owen T. Traynor. Thomson Delmar Learning. 2nd Edition. 2004.
Advanced Hazmat Life Support: http://www.ahls.org/ahls/ecs/main/ahls_home.html
Advanced Medical Life Support: <http://www.naemt.org/AMLS/default.htm>
Advanced Wilderness Life Support: <http://awls.org/index.htm>
Air Force Medical/Dental Protocols for Medics: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Instructions/AirForce/AFMAN44158IDMTProtocols.pdf>
Air Force Paramedic Medical and Procedure Reference: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/Paramedic/PJMedProHndbk2ndEd.doc>
Air Force Special Operations Command Medic Protocols: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/afsoc/48000100.pdf>
Air Force Special Operations Command Medical Operations: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Instructions/AirForce/AFSOCI48101AerospaceMedicalOperations.pdf>
Diver Medical Technician Training: <http://www.nbdhmt.com/dmt.html>
Emergency Pediatric Care: <http://www.naemt.org/PPC/>
EMS for Children: <http://newton.nap.edu/books/0309048885/html>
EMS Resources: <http://www.emsresponder.com>
EMS Role in Disasters: <http://www.emsa.ca.gov/dms2/transformation.pdf>
Emergency Response to Terrorism: <http://www.usfa.dhs.gov/downloads/pdf/ertss.pdf>
First Aid in Armed Conflicts: <http://www.icrc.org/web/eng/siteeng0.nsf/html/p0870>
National Association of EMTs Special Operations Division: <http://www.naemt.org/divisionsAndCommittees/SpecialOperationsDivision/>
National Paramedic Institute: <http://www1.emsjane.com/>
Pre Hospital Medical Protocols: <http://www.ssgfx.com/CP2020/medtech/procedures/protocols.htm>
Pre Hospital Trauma Life Support: <http://www.naemt.org/PHTLS/>
U.S. Department of Justice Emergency Responder Guidelines: <http://www.ojp.usdoj.gov/odp/docs/EmergencyRespGuidelinesRevB.pdf>
SWAT and SWATMEDIC Links: <http://www.specwarnet.net/taclink/> and <http://www.swatmedic.org>

MORGUE/FORENSICS

Identification of Pathological Conditions in Human Skeletal Remains. Donald J. Ortner. Academic Press. 2nd Edition. 2002.
Mass Fatality and Casualty Incidents: A Field Guide. by Robert A. Jensen. CRC. 1999.
Techniques of Crime Scene Investigation. 7th Edition. Barry A. J. Fisher. CRC. 7th Edition. 2003.
CDC Guidelines for Workers Who Handle Human Remains: <http://www.bt.cdc.gov/disasters/tsunamis/handlerremains.asp>
Disaster Victim Identification Guide: <http://www.interpol.int/Public/DisasterVictim/guide/default.asp>
ICRC: Management of Human Remains: <http://www.icrc.org/web/eng/siteeng0.nsf/html/p0858>
Mortuary Science: <http://healthweb.org/browse.cfm?subjectid=55>
Management of Dead Bodies After Disasters: <http://www.icrc.org/web/eng/siteeng0.nsf/html/p0880>

OBSTETRIC AND GYNECOLOGY

Comprehensive Gynecology. (IV Edition). Morton A. Stenchever. Editor. Harcourt Health Sciences. 2001.
Current Obstetric and Gynecologic Diagnosis and Treatment. Alan H. DeCherney. McGraw-Hill. 9th Edition. 2002.
Labor and Delivery: An Emergency Reference. Nancy Martineau. In My Pocket Books. 2nd Edition. 2003.
Obstetric and Gynecologic Emergencies: Diagnosis and Management. Mark D. Pearlman. McGraw-Hill. 2003.

Reduction of Maternal Mortality. WHO and UNICEF. World Health Organization Geneva. 1999.
Antenatal Guidelines or Crisis Conditions: <http://www.icrc.org/web/eng/siteeng0.nsf/html/p0875>
Merck Gynecology and Obstetrics Online: <http://www.merck.com/mmpe/sec18.html>
Military Operational Obstetrics and Gynecology: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/enhanced/EnhancedVersion.htm>
Neonatology: <http://www.fpnotebook.com/NIC.htm>
Obstetrics: <http://www.fpnotebook.com/OB.htm>
Gynecology: <http://www.fpnotebook.com/GYN.htm>
Obstetrics and Gynecology Practice Guidelines: http://www.brooksidepress.org/Products/Military_OBGYN/Home.htm ;
<http://www.emedicine.com/med/OBSTETRICSGYNECOLOGY.htm> and <http://www.lib.uiowa.edu/hardin/md/obgyn.html>
WHO Reproductive Health Care in Emergencies: http://www.who.int/reproductive-health/pages_resources/listing_emergency.en.html

OPHTHALMOLOGY

Emergency Ophthalmology: A Rapid Treatment Guide. Kenneth C Chern. McGraw-Hill Professional. 2002.
Ophthalmology Atlas: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Exams/EditedEyePics/EyeImages.htm>
Ophthalmology Practice Guidelines: <http://www.fpnotebook.com/EYE.htm> and <http://www.lib.uiowa.edu/hardin/md/opth.html>
Merck Eye Disorders Online: <http://www.merck.com/mmpe/sec09.html>

PEDIATRICS

Current Pediatric Diagnosis and Treatment. William W. Hay. McGraw-Hill. 17th Edition 2004
Handbook of Paediatrics in Developing Countries. Vincent C. Harrison. Editor. Oxford University Press. 6th Edition. 2004.
Merck Manual of Pediatric Therapeutics. John W Grae. Lippincott Williams. 6th Edition. 1997.
Paediatrics and Child Health: A Manual for Health Professionals in the Third World. H.M. Coovadia, Oxford University Press. 5th Edition. 2003.
Pediatric Education for Prehospital Professionals. American Academy of Pediatrics. Jones and Bartlett. 2nd Edition. 2005.
Pocket book of Hospital Care for Children: Guidelines for the Management of Common Illnesses with Limited Resources. World Health Organization, Geneva. 2005.
Pediatric Practice Guidelines: <http://www.fpnotebook.com/PED.htm> ; <http://www.lib.uiowa.edu/hardin/md/ped.html> and <http://www.emedicine.com/ped/index.shtml>
WHO Child Health and Development: <http://www.who.int/child-adolescent-health/publications/pubCNH.htm>
WHO Child Health in Emergencies: <http://www.who.int/child-adolescent-health/publications/pubemergencies.htm>
WHO Maternal/Child Health Resources: http://www.who.int/making_pregnancy_safer/publications/en/

PHARMACOLOGY

Basic and Clinical Pharmacology. Bertram G. Katzung. McGraw-Hill. 10th Edition. 2006.
Essential Psychopharmacology: Practical Applications. Stephen M. Stahl. Cambridge University Press. 2nd Edition. 2000.
Pre Hospital Emergency Pharmacology. Bryan E. Bledsoe. Prentice Hal. 6th Edition. 2004.
PDR for Nonprescription Drugs, Dietary Supplements and Herbs: The Definitive Guide to OTC Medications. Thomson PDR. Thomson PDR Publishers. 28th Edition. 2006.
PDR Pocket Guide to Prescription Drugs. Thompson PDR. Thomas PDR Publishers. 7th Edition. 2005.
The Sanford Guide to Antimicrobial Therapy. David N. Gilbert. 34th Edition. 2004.
Tarascon Pocket Pharmacopoeia, 2006. Steven M. Green. Tarascon Publishers. 20th Edition. 2005.
Herbals: <http://www.botanical.com/botanical/mgmh/comindx.html>
Medication References and Pharmacy Practice Guidelines: <http://www.fpnotebook.com/PHA.htm> ; <http://www.lib.uiowa.edu/hardin/md/pharm.html> and <http://www.pdr.net/login/Login.aspx>
Merck Clinical Pharmacology: <http://www.merck.com/mmpe/sec20.html>
Military Medication Reference: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Meds/Medications.htm>
Orphan Drug Program: <http://www.orpha.net>
Physician's Desk Reference (PDR) Online: <http://www.pdr.net/>
WHO Essential Medicines, Medication and Formularies: <http://www.who.int/medicines/publications/en/>

PRIMARY CARE (CIVILIAN, MILITARY, AND DISASTER)

Bate's Guide to Physical Examination and History Taking. Lynn S. Bickley. Lippincott Williams and Wilkins. 8th Edition. 2002.
Current Practice Guidelines in Primary Care: 2006. Ralph Gonzales. McGraw-Hill. 6th Edition. 2005.
Current Medical Diagnosis and Treatment: 2007. Stephen J. McPhee. McGraw-Hill. 46th Edition. 2006.
The Merck Manual of Diagnosis and Therapy. Mark H. Beers. (Editor). Wiley. 2006.
Basic Medical Exam: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Exams/BasicExams.htm>
Merck Manual of Diagnosis and Therapy Online: <http://www.merck.com/mmpe/index.html>
Military Medicine: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/MilitaryMedicine/MilitaryMedicine.htm>
Military Medicine Phone Consultations:
<http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Telephone/PhoneConsultation.htm>
Military Medical Operations:
<http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/MEDOPSBOOKFEB01.ppt>
Navy Flight Surgeon's Handbook:
<http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/FlightSurgeonHandbook/FSH97.html>
Operational Medical Links (Most Specialties): http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Links/web_links.htm
Virtual Naval Hospital: <http://www.vnh.org>

PSYCHIATRY

Diagnostic and Statistical Manual of Mental Disorders: DSM-IV-TR. American Psychiatric Association. American Psychiatric Publishing. 4th edition. 2000.

Early Intervention for Trauma and Traumatic Loss. Brett T. Litz. The Guilford Press. 2003.
 Handbook of Clinical Psychopharmacology For Therapists. John D. Preston. New Harbinger Publications. 4th Edition. 2004.
 Kaplan & Sadock's Pocket Handbook of Clinical Psychiatry. Sadock and Kaplan. Lippincott, Williams & Wilkins. 3rd Edition. 2001.
 Trauma and Recovery: The Aftermath of Violence from Domestic Abuse to Political Terror. Judith Herman. Basic Books. 1997.
 Where There Is No Psychiatrist. Vikram Patel. Royal College of Psychiatrists. 2003.
 American Psychiatric Association Resource Links: http://www.psych.org/public_info/resourcelinks.cfm
 CDC Mental Health Resources: <http://www.bt.cdc.gov/mentalhealth/>
 Depression Analysis and Treatment Tool: http://www.depression-primarycare.org/clinicians/toolkits/materials/forms/phq9/_depress_tool
 Diagnostic and Statistical Manual of Mental Disorders (DSM IV) Online: <http://allpsych.com/disorders/dsm.html>
 Disaster Mental Health Institute: <http://www.usd.edu/dmhi/>
 Disaster Mental Health Publications: http://mentalhealth.samhsa.gov/publications/Publications_browse.asp?ID=181&Topic=Disaster%2FTrauma
 Emergency Mental Health: <http://mentalhealth.samhsa.gov/cmhs/EmergencyServices/>
 Emotional Trauma Pages: <http://www.trauma-pages.com/>
 Psychiatry Practice: <http://www.emedicine.com/med/PSYCHIATRY.htm> ; <http://www.lib.uiowa.edu/hardin/md/psych.html> and
<http://www.fpnotebook.com/PSY.htm>
 VA Disaster Mental Health Services: <http://www.ncptsd.va.gov/publications/disaster/index.html>

PUBLIC HEALTH.

Betrayal of Trust: The Collapse of Global Public Health. Laurie Garrett. Hyperion. 2001.
 Case Studies in Emergency Medicine and Health of the Public. Edward Bernstein. (Editor). Jones and Bartlett. 1996.
 Embodying Inequality: Epidemiologic Perspectives. Nancy Krieger (Editor). Baywood Publishing. 2004.
 Health and Social Justice: Politics, Ideology and Inequity in the Distribution of Disease. Richard Hofrichter. (Editor). Jossey-Bass. 2003.
 Managing Disaster Risk in Emerging Economies. Alcira Kreimer. World Bank. 2000.
 Public Health Management of Disasters: The Practice Guide. Linda Y. Landesman. American Public Health Association. 2001.
 Terrorism and Public Health: A Balanced Approach to Strengthening Systems and Protecting People. Barry S. Levy (Editor). Oxford University Press, USA. 2006.
 American Public Health Association, Public Health Links: http://www.apha.org/public_health/
 American Public Health Association, State Public Health Affiliates: http://www.apha.org/state_local/affiliates/
 Global Public Health: <http://www.globalhealth.org/>
 World Bank - Public Health Surveillance Toolkit: <http://siteresources.worldbank.org/INTPH/Resources/376086-1133371165476/PHSurveillanceToolkit.pdf>

PUBLICATIONS, JOURNALS, NEWSLETTERS, AND RESEARCH

Open Access Reviewed Medical Journals: <http://www.biomedcentral.com/>
 Internet Scientific Medical Journals: <http://www.ispub.com/ostia/index.php?xmlFilePath=journals.xml>
 National Academies Press, Online Books: <http://www.nap.edu/catalog/11063.html>
 Special Operations Technology Online: <http://www.special-operations-technology.com/>
 National Libraries of Medicine Index: <http://locatorplus.gov/cgi-bin/Pwebrecon.cgi?DB=local&PAGE=First>
 Medical Planner's Resource Site: <http://www.geocities.com/CapitolHill/7533/>
 Health on the Net Foundation: <http://www.hon.ch/>
 Merck/Medicus Online Portal: http://www.merckmedicus.com/pp/us/hcp/hcp_home.jsp
 Merck-Source Online Guide: <http://www.mercksource.com>
 Medical Dictionary Online: <http://cancerweb.ncl.ac.uk/omd/>
 Military and Civilian Medical/Reference Sites: <http://www.medtrng.com/medicaloperations.htm>
 The Unofficial Joint Medical Officer's Handbook: <http://www.geocities.com/CapitolHill/7533/hb-toc.htm>

REFUGEE HEALTH

Management of Severe Malnutrition: A Manual for Physicians and Other Senior Health Workers. World Health Organization. Geneva. 1999.
 Patronage or Partnership: Local Capacity Building in Humanitarian Crises. Jan Smillie Kumarian Press. 2001.
 Refugee Health: An Approach to Emergency Situations. G. Hanquet. Editor. McMillan Education. London. 1997.
 The Management of Nutrition in Major Emergencies. WHO: World Food Program. Geneva. 2000.
 Famine Affected Refugees: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/CDC/refugees/entire.htm>
 Multi Service Humanitarian Assistance: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/FM100-23-1/FM100231TableofContents.htm>
 Refugee Handling: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/HumanitarianAssistance/refugees/entire.htm>
 Refugee Medicine: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/CDC/refugees/entire.htm>
 Nutrition in Emergencies: <http://www.who.int/topics/nutrition/publications/emergencies/en/>
 WHO - Management of Severe Malnutrition: <http://whqlibdoc.who.int/hq/1999/a57361.pdf>

SEARCH AND RESCUE

Confined Space Rescue. Chase Sargent. Fire Engineering Books. 2000.
 Technical Rescue Operations: Common Emergencies. Larry Collins. Fire Engineering Books. 2006.
 Disaster Search and Urban Rescue: <http://www.disastercenter.com/search.htm>
 Combat Search and Rescue Procedures: http://www.army.mil/usapa/epubs/pdf/r525_90.pdf
 Combat Search and Rescue: <http://www.au.af.mil/au/aul/school/sncoa/sandr.htm>
 National Institute for Urban Search and Rescue: <http://www.niusr.org/Surgery>
 Technical Rescue Resource Guide: <http://www.techrescue.org/>

SURGERY

Anesthesia: <http://www.lib.uiowa.edu/hardin/md/anest.html>

Surgery Guide: <http://www.steinergraphics.com/surgical/index.html>
Surgery for Victims of War: <http://www.icrc.org/web/eng/siteeng0.nsf/html/p0446>
Surgery Practice: <http://www.fpnotebook.com/SUR.htm> ; http://www.emedicine.com/med/GENERAL_SURGERY.htm and
<http://www.lib.uiowa.edu/hardin/md/surg.html>
War Wounds: Basic Surgical Management: <http://www.icrc.org/web/eng/siteeng0.nsf/html/p0570>
WHO Best Practice Guidelines for Surgical Care in Emergencies: http://www.who.int/surgery/en/ESC_in_disasters.pdf
WHO Surgical Care at the District Hospital: <http://www.who.int/surgery/publications/en/SCDH.pdf>

SURVIVAL (URBAN)

Basic Essentials: Weather Forecasting. Michael Hodgson. Globe Pequot. 2nd Edition. 1999.
Crisis Preparedness Handbook: A Complete Guide to Home Storage and Physical Survival. Jack A. Spigarelli. Cross-Current. 2nd Edition. 2002.
Life After Terrorism: What You Need to Know to Survive in Today's World. Bruce D. Clayton . Paladin Press. 2002.
SAS Urban Survival Handbook. John Wiseman. HarperCollins Publishers. 1997.
Tom Brown's Guide to City and Suburban Survival. Tom Brown. Berkley Trade; 1986.
Survival, Evasion and Recovery: http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/FM_21-76_1/fm21761.pdf
Survival Guide: <http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Safety/Survival.htm>

TACTICAL EMS

Combat Medicine: Basic and Clinical Research in Military, Trauma, and Emergency Medicine. George C. Tsokos. (Editor). Humana Press. 2003.
Tactical Emergency Care: Military and Operational Out-of-Hospital Medicine. Robert A. De Lorenzo. Prentice Hall. 1999.
Tactical Medicine: An Introductory To Law Enforcement Emergency Care. Ian McDevitt. Paladin Press. 2001.
Terrorism Handbook for Operational Responders, Armando S. Bevelacqua. Thomson Delmar Learning. 2nd Edition. 2003.
PHTLS Basic and Advanced Pre hospital Trauma Life Support: Military Version. National Association of Emergency Medical Technicians.
Centers for Tactical Medicine: <http://www.mcg.edu/ems/COM/> ; <http://www.gwemed.edu/opmed/tacmed.htm> ;
<http://www.mcg.edu/ems/COM/Tactical/> and <http://www.casualtycarersearchcenter.org/OPM%20Main%20Page.htm>

TELEMEDICINE

Handbook of Telemedicine. Olga Ferrer-Roca. IOS Press. 1999.
Essentials of Telemedicine and Telecare. A. C. Norris. John Wiley & Sons. 2002.
Telemedicine and Telehealth: Principles, Policies, Performance and Pitfalls. Adam William, MD. Springer Publishing Company. 2002.
U.S. Army Telemedicine: <http://www.tatrc.org/>

TRAINING

Biochemical Organic Radiological Disaster Educational Response System (BORDERS): <http://www.bordersalertandready.com/>
Bio-Security Center, University of Pittsburgh Medical Center: <http://www.upmc-biosecurity.org/>
CE/CME: <http://www.ccebems.org/> ; <http://www.mywebce.com/> and <http://www.medconnect.com/default.asp>
Emergency Management Institute: <http://www.training.fema.gov/EMIWEB/>
Emergency Response to Terrorism: <http://www.usfa.dhs.gov/downloads/pdf/ertss.pdf>
National Counterintelligence Training Center: <http://www.nctc.gov/>
University of Iowa Bio-defense Education Project: <http://www.biodefenseeducation.org/>

TRANSPORT MEDICINE

Certified Flight Paramedic Exam Study Guide. Lauri Montanez (Editor). National Flight Paramedics Association. 2002.
Critical Care Transport Field Guide. UMBC. Jones and Bartlett Publishers. 2001.
Air & Surface Patient Transport: Principles & Practice. Renee S. Holleran. Mosby. 3rd Edition. 2002.
Medical Evacuation in Hostile Environments:
http://www.brooksidepress.org/Products/OperationalMedicine/DATA/operationalmed/Manuals/fm8_10_6/toc.pdf

TROPICAL MEDICINE

Oxford Handbook of Tropical Medicine. Michael Eddleston. Oxford University Press, USA. 2nd Edition. 2004.
Rapid Infectious Diseases and Tropical Medicine. Rachel Isba. Blackwell Publishing Professional. 2003.
Sexually Transmitted Infections and AIDS in the Tropics. O. P. Arya. CABI Publishing. 1998.
Tropical Infectious Diseases: Principles, Pathogens & Practice. R.L. Guerrant. Churchill Livingstone. 1998.
WHO Training in Tropical Diseases: <http://www.who.int/tdr/index.html>

VETERINARY MEDICINE

Animal Management in Disasters. Sebastian E. Heath. Mosby. 1999.
Merck Veterinary Manual. Cynthia M. Kahn. Editor. John Wiley & Sons 9th Edition. 2005.
Where There is no Animal Doctor. Peter Quesenberry. Christian Veterinary Mission. 2000.
Advanced Veterinary Information System: <http://www.aviscollege.com/>
American College of Veterinary Emergency and Critical Care: <http://acvecc.org/>
Animal and Plant Health Inspection Service: http://www.aphis.usda.gov/about_aphis/
Animal Disease Notification Online: http://www.oie.int/eng/info/hebdo/A_INFO.HTM
Animal Production and Health: http://www.fao.org/ag/againfo/programmes/en/aga_prog.html
CJD Resource Centre: <http://www.nibsc.ac.uk/cjd/index.html>
Manual of Diagnostic Tests and Vaccines for Terrestrial Animals: http://www.oie.int/eng/normes/mmanual/A_summry.htm
Merck Veterinary Manual Online: <http://www.merckvetmanual.com/mvm/index.jsp>
Veterinary Public Health and Zoonoses: <http://www.who.int/zoonoses/vph/en/>
World Organization for Animal Health: http://www.oie.int/eng/en_index.htm
World Veterinary Association: <http://www.worldvet.org/>

Need to Know

A Case of *Blastocystis Hominis* and HIV in a Coalition Soldier

John Wayne Paul, PA-C

A 42-year old West African nation army officer who was recently assigned to the coalition, presented to our outpatient clinic with complaints of several months of watery diarrhea, chronic abdominal cramping, weight loss, and increased flatus. He denied fever or blood in his stool, previous medical or surgical history, or taking medication at the time of presentation. His review of systems was otherwise negative.

EVALUATION

The results of tests for CBC, electrolytes, blood urea nitrogen, creatinine, urinalysis and urine culture all were within normal limits. An acute abdominal series showed a non specific bowel gas pattern and a normal chest X-ray. The clinic obtained an HIV test and conducted stool studies.

INITIAL MANAGEMENT

The patient was empirically treated with Lev-aquin 500mg by mouth for three days as well as loperamide pending stool studies based on the traveler's diarrhea protocol.

FOLLOW UP MANAGEMENT

By day three the patient's stool studies revealed *Blastocystis hominis*, a parasitic organism. The patient's symptoms showed some improvement and the patient was additionally treated with metronidazole 750mg TID x 10 days. By day seven, the HIV test was confirmed positive. The coalition returned the patient to his country for follow-up management of the HIV.

DISCUSSION

Common symptoms attributed to *Blastocystis hominis* infection are diarrhea, abdominal cramps, and nausea. In more acute cases, profuse watery diarrhea and fever are present. Other possible associated symptoms include fatigue, anorexia, and flatulence.¹

FREQUENCY AND PREVALENCE OF DISEASE

Epidemiological studies show that *Blastocystis hominis* has a worldwide distribution even with a higher prevalence rate in tropical, subtropical, and de-

veloping countries. Studies indicate that *Blastocystis hominis* is an opportunistic pathogen, in particular to patients suffering from HIV infections.¹ One study done by the Royal Thai Army indicated a 44% prevalence rate in Thai Army soldiers, which was attributed to poor hygiene.²

TRANSMISSION

Blastocystis hominis is transmitted by the fecal contamination of drinking water and foods. Cyst forms of *Blastocystis hominis* are resistant to damage from the external environment and are therefore transmissible through contaminated water. *Blastocystosis* can also be transmitted from animals to humans. *Blastocystis hominis* is frequently found in returning travelers. 77% of Peace Corps workers in Guatemala came down with *B. hominis* over a two year period, as compared with 17% who got Giardia.³ In 2004, a surveillance study consisting of 58 U.S. military personnel on the JTFB in Soto Cano, Honduras, found that 12.1% were infected with *B. hominis*.⁴

PREVENTION⁵

The CDC recommends these measures:

- Wash hands with soap and water after using the toilet and before handling food.
- Avoid drinking water or eating food that may be contaminated.
- Wash and peel all raw vegetables and fruits before eating.
- When traveling in countries where the water supply may be unsafe, avoid drinking unboiled tap water and avoid eating uncooked foods washed with unboiled tap water.
- Bottled or canned carbonated beverages, seltzers, pasteurized fruit drinks, and steaming hot coffee and tea are safe to drink.

TREATMENT⁴

Antibiotic treatment with metronidazole 750mg po TID x 10 days or trimethoprim-sulfamethoxazole (TMP-SMX) is the most commonly

used. Anti-protozoal medication can also be considered. Patients who have prominent intestinal symptoms should be fully evaluated for other infectious causes of diarrhea.⁶ Retired Lt Col Robert D. Peterson, MD, Medical Director for the Coastal Family Health Center in Astoria, OR, notes that he has seen two cases of this in patients with no immunosuppression. One case also had *H. pylori* infection and GERD symptoms. Symptomatic and laboratory supported response was seen with a metronidazole-containing regimen that covered *H. pylori* and the blastocystis.

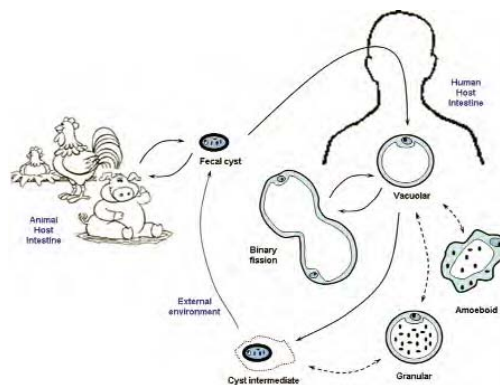
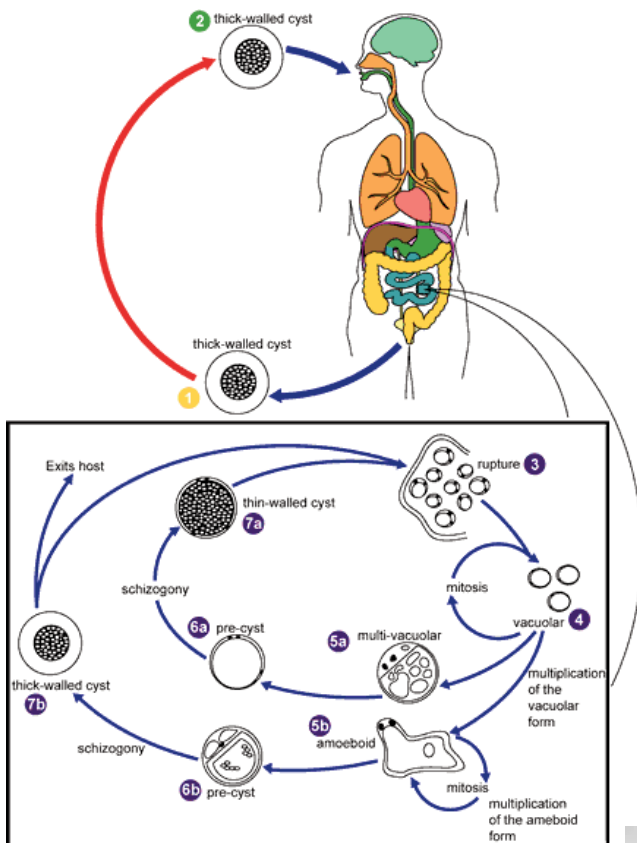
CONCLUSION

Consideration should be given for HIV screening of foreign nationals working with U.S. Special Operations Forces who have signs of opportunistic infections.

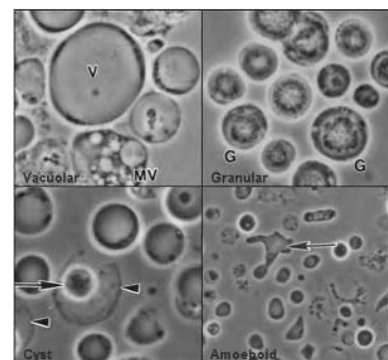
REFERENCES

1. Kasper, D., Braunwald, E., Fauci, A., Hauser, S., Longo, D., Jameson, L. *Harrison's Principles of Internal Medicine* 16th Edition.
2. Taamasri, Paanjit (Aug 2002) Prevalence of *Blastocystis hominis* carriage in Thai army personnel based in Chonburi, Thailand, *Military Medicine*, 167(8).
3. Herwaldt, B. L., de Arroyave, K. R., Wahlquist, S. P., du Pée, L. J., Eng, T. R., and Juranek, D. D. (1994) Infections with intestinal parasites in Peace Corps volunteers in Guatemala. *Journal of Clinical Microbiology*, 32(5): 1376-1378.
4. Kwa, B. H., Aviles, R., Tucker, M. S., Sanchez, J.A., Et al. (Nov 2004) Surveillance for Enteric Parasites among U.S. Military Personnel and Civilian Staff on Joint Task Force Base-Bravo in Soto Cano, Honduras and the Local Population in Comayagua and La Paz, Honduras, *Military Medicine*, 169(11).
5. Retrived 10 Jan 2007 from the *Blastocystis hominis* Infection CDC Webpage. <http://www.cdc.gov/ncidod/dpd/parasites/blastocystishominis/default.htm> 2007.
6. Kasper, D., Braunwald, E., Fauci, A., Hauser, S., Longo, D., Jameson, L. *Harrison's Principles of Internal Medicine* 16th Edition. p. 1204.
7. Retrived 10 Jan 2007 from the *Blastocystis hominis* Webpage: http://en.wikipedia.org/wiki/Blastocystis_hominis.

Blastocystis hominis Life Cycle⁵



Common forms of *Blastocystis hominis*⁷



Question for Johnny? Email j.paul@us.army.mil. He currently works at HQ, USSOCOM for COL Warner "Rocky" Farr as a physician assistant.



Med Quiz

Picture This....

CPT Karen T. Guerrero

A 20 year old active duty Soldier complains of a sudden appearance of a nonpruritic generalized eruption one week after having a streptococcal throat infection. Lesions are on the scalp, trunk, proximal extremities, and genitalia. There are no oral, palmer, or plantar lesions noted.

Question 1:

How would you describe the primary lesion?



Photo # 1

Question 2:

What is your differential diagnosis?



Photo # 2

ANSWERS

Question 1:

Erythematous, well circumscribed papules and plaques with scant fine silvery scale.

Question 2:

Your differential diagnosis for this widespread eruption should include psoriasis, secondary syphilis, pityriasis rosea, and pityriasis lichenoides. A solitary plaque may resemble lichen simplex chronicus. Ill defined lesions such as these on the scalp also include seborrheic dermatitis. The well circumscribed primary lesion with fine silvery hyperkeratotic scale in the distribution noted above is more consistent with guttate psoriasis.

PSORIASIS EPIDEMIOLOGY

Psoriasis occurs in 1% to 3% of the population. The disease has a genetic component likely involving multiple genes with a dominant mode of inheritance and variable penetrance. The disease is lifelong with chronic recurrent exacerbations and remissions precipitated by various environmental, pharmacologic, and psychological stimuli. The extent and the severity of the disease can vary widely. The classic guttate psoriasis presentation occurs during childhood when the first episode is stimulated by streptococcal pharyngitis. Staphylococcus and streptococcal infections were shown to aggravate psoriasis through their toxin production. Streptococcal pyrogenic exotoxin C is a superantigen that has the capacity to stimulate a large number of lymphocytes. Superantigens bypass the normal antigen intracellular processing mechanism and bind directly to major histocompatibility complex molecules leading to an intense and often exaggerated inflammatory cascade. Direct T-cell activation by superantigens may generate a total T-cell population 10 to 100 fold larger than the norm resulting in the release of cytokines that accelerate epidermal proliferation and aid in plaque formation.

The classic psoriasis lesions are distinctive with evolution of erythematous papules to plaques with well-delineated borders and fine, silvery, white adherent scale. Removal of adherent scale will lead to small pinpoint bleeding (Auspitz's sign) which some consider helpful in the diagnosis of psoriasis. Scale can be quite



Photo #3

dense on the scalp and the plaque-like nature of the primary lesion can often be obscured. In intertriginous areas like the axilla, groin, inframammary folds, or gluteal crease (photo #3), maceration may lead to decreased or absent scale resulting in slight erythema. This intertriginous presentation is often misleading and results in the misdiagnosis of tinea cruris or erythrasma. The gluteal crease erythema is a strong indicator and helpful in those difficult to differentiate cases. Patients who you feel may have psoriasis should be examined for this prominent, although often unobserved, diagnostic clue.

Psoriasis has a tendency to develop at the sites of physical trauma known as the Koebner phenomenon. Previous surgery sites, sites of previous burns, pinpoint lesions on razor shaven legs or on the face, or the extensor surfaces of the elbows and knees are common sites where the Koebner phenomenon is seen.

CLINICAL VARIANTS

Psoriasis can be considered a spectrum of different cutaneous manifestations with variations in morphology and location of lesions. The different variants of psoriasis may also coexist in a particular individual. Hallmark morphologic features of all primary psoriatic lesions include erythema, thickening, and secondary scale. There can also be considerable overlap with other papulosquamous skin exanthems leading to misdiagnosis specifically with seborrheic dermatitis when the scalp is involved. One subtle sign that favors seborrheic dermatitis is involvement of the external ear canal as well as the scalp. Most scalp psoriatic patients will not have any auricular involvement as noted here (photo #4).



Photo # 4

The most common presentation is chronic plaque-type psoriasis with chronic well-defined plaques usually found on the extensor surfaces. The guttate variant demonstrated in photos one and two represents the most common presentation in a patient before age 20. The distribution is diffuse and primarily affects the trunk and extremities. Lesions are small ranging from two to five millimeters in diameter. In the guttate variant, throat cultures should be taken to rule out streptococcal infection. A high incidence of positive antistreptolysin O titers has been demonstrated in this patient population. Generalized pustular psoriasis is a serious and even rarely fatal disease where patients present in a toxic, febrile state with leukocytosis. In this vari-

ant, erythema begins in flexural areas with migration to other surfaces. Superimposed on the erythematous lesions are tiny sterile pustules that coalesce into the “lakes of pus.” Erythrodermic psoriasis is another severe but uncommon variant of psoriasis with a diffuse extensive erythema and overlying exfoliative laminated scale. Patients often require hospitalization given the extent of involvement and the associated morbidity. Severe complications include sepsis, high output cardiac failure, electrolyte imbalances from insensible losses, and adult respiratory distress syndrome resulting in death have occurred. Generalized pustular and erythrodermic psoriasis more importantly may be iatrogenically induced in psoriatic patients that are inadvertently or empirically given oral steroids to treat a “generalized dermatitis” or “a non-specific maculopapular rash.” The take home point is to **refrain from empirically treating a papulosquamous eruption with oral or injectable steroids for it may be an atypical psoriatic presentation that could be drastically aggravated once the steroids are withdrawn.**

OTHER ASSOCIATIONS WITH PSORIASIS

Nail involvement has been reported in 10 to 78% of patients and can be a helpful adjunctive diagnostic sign in difficult cases (photo #5). The changes depend on the site of involvement. Psoriasis can affect the nail matrix and the nail bed. Findings can include pitting of the nail plate, leukonychia, or a focal loss of transparency in the nail plate, focal oil spots demonstrating the exocytosis of leukocytes beneath the nail plate, and subungual hyperkeratosis and distal onycholysis with gross separation of the nail plate from the nail bed.



Photo # 5

Psoriatic arthritis may precede, coincide, or follow skin manifestations. Peak occurrence is between ages 20 and 40. The incidence in psoriatic patients is 5 to 30%. The five recognized presentations include asymmetric arthritis, symmetric arthritis, distal interphalangeal joint disease, arthritis mutilans, and ankylosing spondylitis. Treatment should be initiated with either non-steroidal anti-inflammatory agents or disease modifying anti-rheumatic drugs (DMARDs). Non-steroidal anti-inflammatory drugs (NSAIDs) and other physical modalities with physical and occupational therapy can alleviate symptoms associated with mild disease but has no effect on destructive changes. The mechanism of action of NSAIDs is the inhibition of the enzyme cyclooxygenase, which catalyzes the conversion of arachidonic acid to prostaglandins and leukotrienes, both mediators of inflammation. However, NSAIDs may have a potential role in exacerbating skin lesions with increased production of leukotriene B4 and shunting of arachidonic acid metabolites through the lipoxygenase pathway.

DMARDs to include methotrexate, sulfasalazine, or biologically engineered TNF-alpha modulators halt progressive destructive changes. Despite active treatment and coinciding reduction in joint inflammation, psoriatic arthritis may be a progressively deforming arthritis.

PATHOGENESIS

Psoriasis is characterized by hyperproliferation and abnormal differentiation of epidermal keratinocytes, T lymphocyte infiltration, and various endothelial vascular changes in the skin. The proliferation time of psoriatic keratinocytes is more than eight times faster in comparison to normal skin (36 versus 311 days). Daily production of keratinocytes is approximately 28 times greater than the normal epidermis leading to the clinical appearance of

thick plaques. T lymphocytes through the cytokines they release appear to be the principal driver of lesion development and persistence, although endothelial cells, neutrophils, and natural killer T cells may play an adjunctive role. Both T lymphocytes and keratinocytes are stimulated by a cytokine (TGF- β) which leads to an increased production of vascular endothelial growth factor/vascular permeability factor (VEGF/VPF) involved in producing angiogenesis and vascular hyperpermeability. The capillary dilation that results may help nourish the hyperproliferating skin and lead to the characteristic erythematous appearance of psoriatic lesions. Woronoff's ring is a concentric blanching of the erythematous skin at or near the periphery of a healing psoriatic plaque. This is often the first sign that the patient's psoriasis is responding to therapy.

Drugs that can precipitate or exacerbate psoriasis include NSAIDS, lithium, beta blocking agents, calcium channel blockers, captopril, glyburide, granulocyte stimulating factor, interleukins, systemic interferon therapy, lipid lowering agents, terbinafine, and antimalarial agents. Hypocalcemia has been reported to be a triggering factor for generalized pustular psoriasis. Psychogenic stress is also a systemic triggering factor and can be associated with initial presentations or flares of pre-existing disease.

DIAGNOSIS/TREATMENT

Diagnosis is typically made clinically or with identifiable triggers such as prior streptococcal pharyngitis. Biopsy confirmation is recommended for documentations purposes for all service members who do not have obvious psoriasis on a clinical basis. Based on the extent of disease and patient risk factors, treatments can range from topical agents for milder forms to phototherapy or systemic agents for severe psoriasis. The goal of all treatments is to control the disease process and maintain a fully functional, worldwide deployable service member. Many patients do not understand that remission of psoriasis may imply maintenance with a few scattered lesions that respond to intermittent topical therapy. Several of the systemic immunosuppressive medications, systemic retinoids, and immunomodulators have significant adverse effects and toxicities. Risks to benefits of all treatments including topical therapy should dictate therapies and are best applied by the dermatologist or in consultation with them.

Topical treatments currently are the mainstay of psoriasis therapy for most patients with mild to moderate disease. Topical corticosteroids directly modulate many of the cytokines involved in the psoriatic process and may inhibit transcription factors that stimulate cytokine gene transcription. Topical corticosteroids are limited in efficacy if large body surface areas are involved and if lesions themselves are hyperkeratotic preventing adequate absorption of the topicals. A commonly used non-steroidal adjunctive therapy is calcipotriol. This agent binds with vitamin D-selective receptors in various cell types important in the pathogenesis of psoriasis and has been shown to inhibit the hyperproliferation and abnormal differentiation of keratinocytes characteristic of psoriatic lesions.

Management of moderate to severe psoriasis may require systemic agents such as oral retinoids, methotrexate, cyclosporine, and biologically engineered immunomodulators. Methotrexate was the first systemic therapy for patients with moderate to severe psoriasis and is still the most frequently prescribed of these agents. Methotrexate blocks DNA synthesis in rapidly proliferating epidermal cells, inhibits T and B lymphocytes, and disrupts cytokine secretion. Acitretin is the only systemic retinoid marketed for psoriasis in the United States. Patient history and risk stratification must be assessed before starting any systemic medication. One side effect of relevance is that acitretin with the consumption of alcohol is converted to a by-product with a much longer pharmacologic half-life, putting female patients of child bearing age at risk of teratogenicity for several years after stopping the medication. Newer biologic agents have diversified treatment further by targeting the immune or inflammatory pathway that leads to psoriasis. The three biologics that are currently approved by the Food and Drug Administration (FDA) for the treatment of moderate to severe chronic plaque psoriasis are alefacept (LFA3TIP) and efalizumab (anti-CD11a), both of which act via inhibition of T-cell activation, and etanercept, which is a soluble tumor necrosis factor (TNF) receptor antagonist.

The guttate variant as noted in the pictures has been shown to very responsive to narrow band UVB phototherapy with some cases leading to remission of the disease once a therapeutic dose is achieved.

If you are deployed and have concerns about a puzzling skin condition, you can email your clinical photos and a concise morphologic description of the lesion to our Operational Tele dermatology site at derm.consult@us.army.mil or to me directly at Daniel.Schissel@us.army.mil. The lesion you describe just may make its way to the next edition of **Picture This...**

Thanks for all you do.

REFERENCES

1. Weinstein G.D., McCullough J.L., Ross P.A., Cell kinetic basis for pathophysiology of psoriasis. *Journal of Investigative Dermatology* (1985) 85 : pp 579-583. Abstract
2. Detmar M., Brown L.F., Claffey K.P., Yeo K.-T., Kocher O., Jackman R.W., Overexpression of vascular permeability factor/vascular endothelial growth factor and its receptors in psoriasis. *Journal of Experimental Medicine* (1994) 180 : pp 1141-1146.
3. Skov L, Baadgaard O. Bacterial superantigens and inflammatory skin diseases. *Clinical Experimental Dermatology*. 2000;25:56-61.
4. Nagpal S., Lu J., Boehm M.F., Vitamin D analogs: Mechanism of action and therapeutic applications. *Current Medicinal Chemistry* (2001) 8: pp 1661-1679.
5. Papp KA; Guenther L., Boyden B., Larsen FG., Early onset of action and efficacy of a combination of calcipotriene and betamethasone dipropionate in the treatment of psoriasis. *Journal of the American Academy of Dermatology* - 01-JAN-2003; 48(1): 48-54.
6. Krueger G. Psoriasis-recent advances in understanding its pathogenesis and treatment. *Journal of the American Academy of Dermatology* - 01-JUL-2005; 53(Suppl 1): S94-100.
7. James, W.D., Berger T.G., Elston D.M., *Andrews' Diseases of the Skin Clinical Dermatology* (Tenth Edition 2005) p197.



CPT Karen T. Guerrero graduated from the Uniformed Services University of Health Sciences School of Medicine in 2004. She completed her transitional internship at Brooke Army Medical Center at Fort Sam Houston from 2004 to 2005 and is currently completing her dermatology residency at the San Antonio Uniformed Services Health Education Consortium. CPT Guerrero received her bachelor of science degree with honors in biochemistry and molecular biology from the University of California at Santa Cruz in 1997. In the interim years between undergraduate and medical school matriculation, she was involved in biotechnological research that ranged from stem cell research to immunoassay testing.



LTC Daniel Schissel originated "Picture This" for the MED Quiz. He is a 1993 graduate of the Uniformed Service University of the Health Sciences and completed his internship with the family practice department at Fort Bragg in 1994. He then served as the 2/10th Special Forces Group (Airborne) Surgeon and followed on as the 10th SFG(A) Group Surgeon. He completed his residency training in dermatology at the Brooke Army Medical Center in 1999. LTC Schissel is presently station in Heidelberg, Germany as a staff physician and the European Regional Medical Command Dermatology Consultant. He has authored the dermatology section of the new SOF manual, serves on the USSOCOM Medical Curriculum and Examinations Board, and is the U.S. Army Aviation Dermatology Consultant.



Human Performance Forum (HP)

SOCM Glenn Mercer
Moderator
glenn.mercer@socom.mil

This edition's forum is divided into three parts: requirements narrative, mail responses, and a short discussion on a recently developed provisional mission.

From the last issue we had a significant number of responses from the SOF claimancy, the Department of Justice, and the civilian sector. I have selected several of these as primers that are representative of the core HP issues. Both during and after the SOMA conference this year we were asked if we could provide an executive summary of the concepts within the "humans are more important than hardware initial concept document" (HMITH ICD). While that is not possible at this time, we can generate discussion about it using the following anchor point.

PROVISIONAL MISSION

Define and plan the implementation of warrior athlete services. Develop infrastructure and architecture that will suppress, mitigate, and/or prevent the man-hour loss from both acute and chronic musculoskeletal etiologies and pathologies that have been substantiated within SOF.

IMPLIED TASKS

- Sponsor, advocate, and vet methodologies that accomplish the mission
- Synchronize and fuse essential personnel to support HP tenets
- Coordinate service common personnel requirements for both facilities and personnel
- Provide oversight; coordinate essential research and MEDTECH efforts to support
- Identify and document future causes of morbidity that are SOF specific or unique

- Maintain DOD interface and command relationships with Service parents to staff functions that are service common responsibilities IAW Title 10

PART 1

The SOCOM SG staff continues its work on refining concepts of merit for consideration by the Commander. We are concurrently working on distilling the inherent cradle-to-grave issues that are under the Surgeons' purview. Starting with a baseline of health and working north, we can include medical treatment, specialized diagnosis, and the supporting pillars of the professional sports model, (e.g., dietary) As we ascend through a pyramidal model the next human resource utilized by a warrior athlete (WA) would be the athletic trainers and the coaches. It is at this point that the doctrinal lines of responsibility for the WA begin to fragment. This brings us two critical questions:

Do we bear the primary responsibility to mitigate (versus repair) the significant numbers of chronically injured SOF personnel? If so, are we acquiring a new mission in that process? Inevitably, units assessing this question will realize that it is possible to have a complete comprehension of the scope and scale of the problem but may not be empowered or organized to fix it. From this answer a second question emerges: Who or what entity is the executive agent to provide the firing solutions? The most significant point of determination is exactly where the endpoint of the Service support personnel (medical) mission should be. From a conventional task organization viewpoint there is a break between the staff that repairs the Operator, bridging him back to health, and the trainers who are responsible for

delivering the conditioning and task skills. Clearly they are related and inter-dependent; however, defining a Service common breakpoint has not been possible to this point.

The center of gravity of this mission must include and address conditioning. Currently, SOF units use dissimilar conditioning systems and models resulting in wide variances within services and units. At this time the central management of strength and conditioning is not a function of the Surgeon. With that stipulation, the layers of practitioners that support those conditioning systems must find a patient management model that morphs from receivership to active and direct influence of the athleticism of their populations.

PART II FROM EMAIL

Q: *How do the Services perceive what we are presently doing and how, if at all, can they help us?*

A: As previously discussed the Services and their respective bureaus interpret, administrate, and relate readiness in terms of health. It is used as a common denominator for readiness. This can and does have implications on SOF efforts because using health as a line leadership term is but a fraction of the concept of performance. In SOF we express ourselves in terms of requirements and effect. Health (say homeostasis) is assumed. The true litmus test for our questions is: “Are we ready to perform better than our adversaries every day that we are ordered to do so?” Appealing to the Services must first break some existing language barriers. In this area we have made some inroads with heavy involvement on the Joint Planning Teams established by the Assistant Secretary of Defense for Health Affairs. Presently the Component Services are not the primary agents to fix the problem although the DoD task organization indicates they should be involved in the heavy lifting.

Q: *How can we change the mission and the support structure without changing the methods by which we measure fitness?*

A: We can't. Part of the problem if not the plurality is that “fitness tests” have primarily driven us to where we are today. With the exception of a small number of units, most SOF components are still responsible on a semi-annual basis to report the test status of their members. Over time, programming and methodology for fitness became driven by archaic tests. We know much more now about fitness and demand than we did even seven years ago. It is poor

planning to move forward without establishing that our Commanders should have the best tools to report health, fitness, performance, and subsequently, battle-field readiness from the skin-in viewpoint. To do that we need to dissociate ourselves from tests which have also become total force shaping tools for end strength. Present tests establish nothing more than the ability to produce nominal numbers in a minimally applicable forum twice a year. We can do better than this.

SOF REQUIREMENTS

Over the last six months I have been involved in an HP discussion or meeting almost every week. Inevitably, we continue to arrive back at the two anchor points: the requirement and the problems. Using the terminology discussed in our last forum we can expand and use a very broad net, even doctrinal terms to paraphrase what we are challenging right now. For decades we have been acquainted with the Operator who is nearing the end of his service tour who has a suitcase full of acute and chronic problem; many attributable to the performance of duty. If we examine the cradle-to-grave exposure of that Operator we can pinpoint key events, mishaps, and points in time where he was degraded.

Excluding actions of the enemy we have indicted several contributors to this end state. Conditioning is the single greatest repetitive physical stress experienced by an Operator over his career. Conventional wisdom tells us it is intended to keep him ready, if not optimally ready, for use. Statistics developed, examined, and refined over time indicate that this wisdom has major flaws and in the case of a twenty-year Operator, exponentially flawed. As the GWOT requirements continue unabated we have to respond with them, if not be ahead of the curve. Many recent discussions have revealed a developing perception that new ideas translate into a soft gentle approach. In fact, the logic is contrary to this. To be prepared for present day requirements conditioning must be at least equal, if not more demanding than the job that we do on an annual basis. To accomplish this we must leverage the concepts of merit that exist both outside and within our organizations. A tenet of this is having the will to candidly and objectively assess the old models and recognize that they don't meet our requirements anymore. I'll wrap up with a quote I heard from an Operator two years ago. **“If this were a disease, we would have fixed it already.”** Now that is the truth. I look forward to your responses; keep them coming.

Dedication



LTC JOHN L. BUONO (Ret)



WHO KNEW JOHN L. BUONO?

Final tribute by COL Steve Yevich, Ret USSOCOM Command Surgeon

Did I know John Buono? Let me paint you a picture of this rare individual — my comrade, my colleague, and my friend of 37 years.

I first met John in 1969, after Phase I of SF training, when we had just earned our Green Berets. While those were highly charged, personality-forming, and psychologically “curious” times for all of us – *we were all going to die in Vietnam, so what can you possibly threaten us with?* – John was a quiet enigma who required too much introspection for most of us 20-year-old, superficial-thinkers, to spend time sorting out. He was quiet, very quiet. And he was always watching – always watching; always thinking, and analyzing, but seldom speaking.

Did I know John in those days? Nope, too deep a subject. Oh sure, for the good part of 18 months we all lived together, virtually 24/7, barracked in those open bays, eating the same meals at the same mess halls, sitting in the classrooms or team rooms, all crammed into the same few cars, going to the few married classmates’ off-post houses during the weekends, going to the same bars, and sharing each others’ money, drinks, escapades, fights, and even romances... and even moving as a class to 10th Special Forces Group at Ft Devens, MA. **But could anyone claim to know John?**

I contacted some other members of our SF class who spent more direct, shoulder-to-shoulder time with John during those days – Vince Cortese, Stephen Wiggins, Roger Holt – all of them wild men at the time, who dallied on the fine edge between control and chaos. **Did they know John?** Nope, too deep. Their comments:

I remember him well. Wow, how can he be dead from cancer?... He was surely a loner and did have his own ideasI remember that it was a toss up between him and Webber for having the lousiest uniform and looking grubby. ...I don’t recall him lifting at the time or being a physical fitness buff. John was a good guy who you could depend on but not very social. ...I’m not sure Buono was one to let people into his world.... (SPW)

I remember him as an independent, opinionated loner but somewhat charismatic at the same time. Back in the day, I guess I got as close to him as anyone.... (VC)

No one in the class had had contact with John since 1972 – and none expected that John would ever seek them out or even notify them of his whereabouts. No one could claim to be his closest friend; no one expected him to be sentimental; no one could get close to him in the ebullient and effusively emotional manner found in testosterone-pumped, 20 year old males bound by hardship, stress, and continually nagging cognizance of eminent death – all cemented by the brainwashing of the “Code” of the Green Beret.

He was a quiet iconoclast, living at a higher philosophical plane. He did not rely on public approval for his actions. Where we all strove at one time or other to be “STRAC” in our starched jungles and spit-shined boots to gain our seniors’ approval by snappy salutes and orderly marching, John quietly ignored the military puppeteers with his “wash and wear” fatigues and unpolished boots and generally un-soldierly demeanor. He lived to the tune of Napoleon’s other Army – the non-strutting, non-parading one that did the fighting. In fact, he often did not wear his Green Beret. He probably was the ONLY SF graduate who quietly scoffed at the superficial connotation that the Beret carried. He was mentally above it all – watching, thinking, analyzing –with a personal quiet confidence and sense of control to be his own self, regardless of the boisterous and brain-washed majority swirling around him. In fact, even when drinking, he was the sober one that made us introspective, even for a fleeting second, of our immaturity.

John was proud of his Sicilian heritage, which, combined with his quiet, watching ways, made him seem even more of an unfathomable and distant entity. No one messed with John – not that he ever was a bully, or ever tried to project physical strength. Maybe it was the mere undercurrent of some deeper “Sicilian” process going on in his mind that made him dangerous to us. Some wondered what he might have borne witness to while growing up. He was a mystery, as though he had his finger on a dark secret that none of us had the insight to discover.

In 1970, Buddy Richmond and I were the only two in the combined medics’ classes of Phase 3 to get orders for CCN in Vietnam. The assignment was the envy of most of the group, but I remember John’s curious and blunt remark to me when I left Devens: “*I’d like to go to Vietnam, but I’d want to die there.*” That was the last I saw John – or at least the last I ever expected to see of him, as John was not a chit-chat man nor someone who needed sentimental or oft-professed ties of friendship with anyone.

Yet our paths continued to cross.

In 1991, as a plain-clothes doc waiting in the travel section at Walter Reed Medical Center, I coincidentally ran into an E-7 female with the name tag “Buono.” I remarked that her name was unusual enough for me to ask if she had any relatives who were ever in Special Forces in the late ‘60s. She said, “*Yes, my husband is in 5th Special Forces*”!! Imagine my excitement level when I found out that John had gone back into the Army in the ‘70s, had gone to Physician’s Assistant school, and was a Warrant Officer now serving with 5th Group on its way to Kuwait. I gave her all my information, and a note to pass to John for him to contact me. While I hoped for a response, I really didn’t expect one — and I didn’t get one.

But yet, our paths continued to cross.

In 1995, while at CENTCOM, John showed up as the Command’s first Physician’s Assistant – a Lieutenant Colonel now. We had a year overlap together at CENTCOM, both of us sharing the same small cubicle. John was the exact same person I had remembered from 1969 – quiet, thinking, watching, seldom speaking. I did learn two important things about his character. One was that he was an avid weight lifter, and had been such virtually all his life. He kept extremely meticulous records in bound books of his daily workouts, including types and reps – and he kept these records for decades. I saw one record book. The detail and intensity were amazing, but I wasn’t surprised. When I told Wiggins, Cortese, and Holt, they also confirmed that they never knew this, but no one was surprised, as it was in keeping with his private lifestyle. Was this the “dark secret” that gave him the confidence to live at the higher philosophical plane?

The second insight into John was that I found him to be introspective, sensitive, incredibly self-disciplined, and self-critical. As before, he was a non-conformist, but only in that he was his own man and would only agree with the crowd if he personally saw that it was right. He was excruciatingly realistic about life, breaking down all actions in life into their basic motivations and Darwinian responses. It also made him extremely tolerant of others – of their weaknesses, foibles, mannerisms, philosophies, personal life choices, etc. I don't remember ever seeing anger in him when reacting to some typical inflexible military edict that was poorly conceived. Instead, John would react with benign acceptance, and barely a twinge of amusement with the idiocy behind the decision. He accepted life as it unfolded – watching and analyzing, even humored by it, but not critical.

I was reassigned away from CENTCOM in 1996, once more never expecting to see John again, and never expecting communication from him. **Did I know John, now?** Well, I had a few new rays of insight, but, no, John still had deep waters beyond my understanding. That mysterious undercurrent of a “dark secret” was still flowing.

...And our paths continued to cross.

In 1998, I came back to Tampa as the SOCOM Command Surgeon, and there was John, now retired, but serving as the PA at the SOCOM Clinic. I got yet another window's perspective on John. I saw, as a clinician, he was incredibly meticulous and incredibly well-informed. If he did not know a subject, he researched it to the extreme, until he mastered it. There was no detail he would not know; he needed to know everything. But would he ever use knowledge in arrogance? Never. While he often knew more about a medical subject than physicians in the hospital, he would never correct them if they were wrong, and he never had the need to be seen as a fountainhead of medical knowledge – as is wont by many clinicians. In fact, one would never know the depth of his knowledge until one started asking him questions. And, there was one last thing that I got to see: he was very sensitized to people's illnesses and pain. I got to see a caring side of him that was surprising to find, given his realistic viewpoint of life and his philosophical detachment and reserved emotions. While clinicians may sometimes have a momentary concern for their patient's illness, with John, an expression of concern by him was the tip of the iceberg of how much he truly sympathized with the plight of his sick patients.

When John discovered he had multiple myeloma, his reaction was as expected: coldly realistic (“*I have five years to live, at best...*”), unemotional, and very quiet and uncommunicative about his personal situation. He methodically fought the progression of his disease and, like the historically unrecognized Thespians at Thermopylae, when the inevitable neared he accepted his fate and died without fanfare, virtually unrecognized for adhering to a higher philosophical plane of life. When he started on the last downward slope, there were no frantic last minute final farewell calls or letters to anyone. If we could ask him why, he would only have remarked, “*What difference would it have made? There was nothing you could do.*” The quiet realist to the end.

I have never known anyone like John Buono. I don't know anyone who even comes close. He was a philosophical giant among men and, most significantly, he was one who did not need an audience or a platform to espouse his beliefs. He simply lived his philosophy quietly while watching the rest of us thrash loudly around. I know he would be uncomfortable reading these words, as he would view this amount of attention directed at him as being contrary to his intent.

Yes, I knew John L. Buono for 37 years, but **did I really know him?** *No.*

Do I wish I knew John better? *Nah. Digging deep would ruin it all.*

His darker secret? He took it with him, and he'll let me know later.

Journal of Special Operations Medicine

EXECUTIVE EDITOR

Farr, Warner D., MD, MPH, MSS
Warner.Farr@socom.mil

MANAGING EDITOR

Landers, Michelle DuGuay, MBA, BSN
Duguaym@socom.mil

Assistant Editor

Parsons, Deborah A., BSN

Contributing Editor

Schissel, Daniel J., MD (Med Quiz)

CME MANAGERS

Kharod, Chetan U. MD, MPH -- USUHS CME Sponsor

Officers

Landers, Michelle DuGuay, MBA, BSN
Duguaym@socom.mil

Enlisted

Briggs, Steve L., CPT, SP, APA, MPAS-C
Briggss@socom.mil

EDITORIAL BOARD

Ackerman, Bret T., DO
Allen, Robert C., DO
Anders, Frank A., MD
Antonacci Mark A., MD
Baer David G., PhD
Baskin, Toney W., MD, FACS
Black, Ian H., MD
Bower, Eric A., MD, PhD, FACP
Briggs, Steven L., PA-C
Bruno, Eric C., MD
Cloonan, Clifford C., MD
Davis, William J., COL (Ret)
Deuster Patricia A., PhD, MPH
Doherty, Michael C., BA, MEPC, MSS
Flinn, Scott D., MD
Fudge, James M., DVM, MPVM
Gandy, John J., MD
Garsha, Larry S., MD
Gephart, William, PA-S
Gerber, Fredrick E., MMAS
Giebner, Steven D., MD
Giles, James T., DVM
Greydanus, Dominique J., EMT-P
Godbee, Dan C., MD
Hammesfahr, Rick, MD

Holcomb, John B., MD
Kauvar, David S., MD
Kersch, Thomas J., MD
Keenan, Kevin N., MD
Kirby, Thomas R., OD
Kleiner Douglas M., PhD
LaPointe, Robert L., SMSgt (Ret)
Llewellyn, Craig H., MD
Lorraine, James R., BSN
Lundseth, Paul A., MD
Lutz, Robert H., MD
McAtee, John M., PA-C
McManus, John G., MD
Mouri, Michael P., MD, DDS
Murray Clinton K., MD, FACP
Ong, Richardo C., MD
Ostergaard, Cary A., MD
Pennardt, Andre M., MD
Peterson, Robert D., MD
Riley, Kevin F., PhD, MSC
Risk, Gregory C., MD
Tubbs, Lori A., MS, RD
VanWagner, William, PA-C
Wedmore, Ian S., MD, FACEP
Wightman, John M., EMT-T/P, MD
Yevich, Steven J., MD

TEXT EDITORS

Doherty, Michael C., BA, MEPC, MSS
Godbee, Dan C., MD
Parsons, Deborah A., BSN
VanWagner, William, PA-C

Gephart, William, PA-S
Hesse, Robert W., RN
Peterson, Robert D., MD

Submission Criteria

1. Use the active voice when possible. This is our most common editorial problem and often requires extensive re-writes. Use the sequence “subject - verb - object.”
2. Secure permission before including names of personnel mentioned in your piece. Do not violate copyright laws. If the work has been published before, include that information with your submission.
3. Format articles to be single-spaced, eleven point Times Roman font, aligned on the left, and justified on the right.
4. **Important:** Include an abstract, biography, and headshot photo of yourself as part of the article. Also include three learning objectives and ten test questions to be used for continuing education purposes.
5. Use a minimum of acronyms; spell out all acronyms when first used. Remember that your audience is inter-service, civilian, and international.
6. Put the point of the article in the introductory paragraph and restate it in the closing or summary. Subtlety is not usually a virtue in a medical publication.
7. We do not print reviews of particular brands of items or equipment unless that brand offers a distinct advantage not present in other products in the field. The author must specify in the article the unique features and advantages the product offers in order to justify an exception to this rule. The author must also specify whether the article was purchased by him or his unit, or supplied for free by the seller or manufacturer. Finally, the author must disclose any relationship with the manufacturer or seller, whether financial, R&D, or other.
8. Cite all references in chronological order. DO NOT insert footnotes or use roman numerals. Give the full name of the journal, book, or website cited. Use the following style of citation when referencing a **Journal or magazine article** (use for journals that start each issue with page one) - Wilcox, R.V. (1991). Shifting roles and synthetic women in Star Trek: The next generation. *Studies in Popular Culture*, 13(2), 53-65. **Journal or magazine article** (use for journals where the page numbering continues from issue to issue) - Dubeck, L. (1990). Science fiction aids science teaching. *Physics Teacher*, 28, 316-318. **Newspaper article** - Di Rado, A. (1995, March 15). Trekking through college: Classes explore modern society using the world of Star Trek. *Los Angeles Times*, p. A3. **Article from an internet database** - Mershon, D. H. (1998, November-December). Star Trek on the brain: Alien minds, human minds. *American Scientist*, 86, 585. Retrieved July 29, 1999, from Expanded Academic ASAP database. **Book** - Okuda, M., & Okuda, D. (1993). *Star Trek chronology: The history of the future*. New York: Pocket Books. **Book article or chapter** - James, N. E. (1988). Two sides of paradise: The Eden myth according to Kirk and Spock. In D. Palumbo (Ed.), *Spectrum of the fantastic* (pp. 219-223). Westport, CT: Greenwood. **Website** - Lynch, T. (1996). DS9 trials and tribble-ations review. Retrieved October 8, 1997, from Psi Phi: Bradley's Science Fiction Club Web site: <http://www.bradley.edu/campusorg/psiphi/DS9/ep/503r.html> If unsure, please contact us at jsom@socom.mil.
9. Submit high resolution (300dpi) quality photographs with your article. Send photos separately from the document to facilitate high resolution conversion into a publishing format. Images imbedded into word documents do not transfer to publishing programs and lose resolution when pulled out of the word document, resulting in a poor quality image. We prefer that images be sent electronically in a jpeg format. Please name all images as to what they are (i.e., Figure 1, Figure 2, etc.) and designate placement in the article using the filename. If you send original pictures, we will make every attempt to return your pictures, but will not account for lost or damaged items.
10. Send submissions by email (preferred method) to JSOM@socom.mil, or you may send articles on diskette, or CD, by mail to: USSOCOM Surgeon's Office ATTN: JSOM Editor, 7701 Tampa Point Blvd. MacDill AFB, FL 33621- 5323. Retain a copy for yourself.
11. We reserve the right to edit all material for content and style. We will not change the author's original point or contention, but may edit clichés, abbreviations, vernacular, etc. Whenever possible, we will give the author a chance to respond to and approve such changes. We may add editorial comments, particularly where controversy exists, or when a statement is contrary to established doctrine. However, the author must assume responsibility for his own statements, whether in accordance with doctrine or not. Both medical practice and the military doctrine are living bodies of knowledge, and JSOM's intent is not to stifle responsible debate.
12. Special Operations require sensitivity to natives of host countries, occupied regions, and so on. We feel that patronizing terms generally are inappropriate for our pages. Realistic language of operators (including some “four-letter” words) may be tolerated in anecdotal and historical articles, especially when used as direct quotes or when such use is traditional among operators. We will delete or change blatantly offensive use.
13. **All articles written by USSOCOM members must be reviewed and pre-approved by your commander, component surgeon, and PAO prior to submission to the JSOM.**
14. Remember, the JSOM is your journal and serves as a unique opportunity for you to pass your legacy to the SOF medical community.

Take advantage of the opportunity

Special Forces Aidman's Pledge

As a Special Forces Aidman of the United States Army, I pledge my honor and my conscience to the service of my country and the art of medicine. I recognize the responsibility which may be placed upon me for the health, and even lives, of others. I confess the limitation of my skill and knowledge in the caring for the sick and injured. I promise to follow the maxim "Primum non nocere" ("First, thou shalt do no harm"), and to seek the assistance of more competent medical authority whenever it is available. These confidences which come to me in my attendance on the sick, I will treat as secret. I recognize my responsibility to impart to others who seek the service of medicine such knowledge of its art and practice as I possess, and I resolve to continue to improve my capability to this purpose. As an American Soldier, I have determined ultimately to place above all considerations of self the mission of my team and the cause of my nation.



icine. I recognize the responsibility which and even lives, of others. I confess the in the caring for the sick and injured. I mum non- nocere" ("First, thou shalt sistance of more competent medical These confidences which come to me treat as secret. I recognize my respon- the service of medicine such knowledge I resolve to continue to improve my capa- dier, I have determined ultimately to place

Pararescue Creed

I was that which others did not want to did what others failed to do. I asked And reluctantly accepted the fail. I have seen the face of terror; joyed the sweet taste of a mo- and hoped...but most of all, I have forgotten. Always I will be able to a PJ It is my duty as a Pararescue- injured. I will perform my assigned these duties before personal desires and comforts.



be. I went where others feared to go, and nothing from those who gave nothing, thought of eternal lonliessshould I felt the stinging cold of fear, and en- ment's love. I have cried, pained lived times others would say best say, that I was proud of what I was: man to save a life and to aid the in- duties quickly and efficiently, placing

These things I do,
"That Others May Live."

A Navy Poem

I'm the one called "Doc"... I shall not walk in your footsteps, but I will walk by your side. I shall not walk in your image, I've earned my own title of pride. We've answered the call together, on sea and foreign land. When the cry for help was given, I've been there right at hand. Whether I am on the ocean or in the jun- my fellow man, be it Sailors or a Corpsman and you think of call- doing as those before him did. and your life is on the block, Look at



gle wearing greens, Giving aid to Marines. So the next time you see ing him "squid," think of the job he's And if you ever have to go out there the one right next to you...

I'm the one called "Doc".

~ Harry D. Penny, Jr. USM Copyright 1975

UNITED STATES SPECIAL OPERATIONS COMMAND
ATTN: SOCS-SG
7701 Tampa Point Blvd.
MacDill AFB, FL 33621-5323
OFFICIAL BUSINESS



MEDIA MAIL