

AIR WAR COLLEGE

AIR UNIVERSITY

EVALUATING AIR FORCE EXPEDITIONARY NURSING--
ARE WE PREPARED?

by

Leslie M. Claravall, Lt Col, USAF, NC

A Research Report Submitted to the Faculty

In Partial Fulfillment of the Graduation Requirements

7 December 2007

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 07 DEC 2007		2. REPORT TYPE		3. DATES COVERED 00-00-2007 to 00-00-2007	
4. TITLE AND SUBTITLE Evaluating Air Force Expeditionary Nursing--Are We Prepared?				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) Air War College,325 Chennault Circle,Maxwell AFB,AL,36112				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 Same as Report (SAR)	18. NUMBER OF PAGES 45	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

DISCLAIMER

The views expressed in this academic research paper are those of the author and do not reflect the official policy or position of the US government or the Department of Defense. In accordance with Air Force Instruction 51-303, it is not copyrighted, but is the property of the United States government.

Contents

Disclaimer.....	i
Contents.....	ii
Illustrations.....	iii
Introduction.....	1
Background.....	1
How WHMC’s EMEDS Nurses Are Currently Being Trained.....	3
Informal Evaluation of Training in the Field.....	10
Review of Literature.....	14
Analysis.....	23
Recommendations.....	28
Conclusion.....	30
End Notes.....	31
Bibliography.....	35

Illustrations

	<i>Page</i>
Table I. AF Theater Hospital Specialties.....	2
Figure 1. RSV Checklist for 46N3 Medical-Surgical Nurses.....	4
Figure 2. WHMC Pre-Final Deployment Processing Requirements Checklist.....	9
Table II. READI Tool.....	16
Table III. Training Requirements vs. Gaps Based on Readiness Dimensions.....	24

INTRODUCTION

A number of nurses from Wilford Hall Medical Center (WHMC) are being deployed on a cyclical rotation to the Air Force (AF) Theater Hospital at Balad Air Base, Iraq, to care for casualties in the intermediate care ward. To prepare these nurses, they are sent to various training sessions prior to the deployment. However, according to three Chief Nurses and a Flight Commander who have served in Balad's AF Theater Hospital, the observation is that some nurses are better prepared than others. Perhaps training is the issue. If so, is there a right mix and right amount? Is WHMC's training suitable for nurses being deployed to the intermediate care ward at Balad's AF Theater Hospital?

The deployment preparation of these intermediate care nurses is the target of this evaluation. Thus, the aim of this research paper is to establish a common set of ideal training requirements to prepare deploying nurses for the treatment of casualties at an intermediate care facility by assessing 1) what WHMC is doing now to train their nurses, 2) reviewing the literature to discern what other military facilities are doing, and 3) identifying whether WHMC has a training gap. The result of this analysis is the need for more training in "non-traditional" topics such as culture, language, ethics and critical thinking, with recommendations to fill the void.

BACKGROUND

Since September 2004, Wilford Hall medics have deployed from Lackland Air Force Base in San Antonio, TX to staff the AF Theater Hospital in Balad, Iraq, located 60 miles northwest of Baghdad.¹ These medics are physicians, nurses, medical technicians and other healthcare workers from various disciplines who deploy as an Expeditionary Medical Support (EMEDS) team, a "small footprint" concept that is designed to be lighter, leaner, and thus able to

arrive on scene quicker. Such a notion was conceived following Operation Desert Storm when AF officials discovered an immediate need to get medical services closer to the combat zone.² Today, EMEDS is the primary means by which the Air Force Medical Service delivers healthcare in a deployed environment.³ The AF Theater Hospital in Iraq has emerged as a Level-III plus facility. As such, it is the surgical trauma hub for Iraq,⁴ and provides the highest level of specialty healthcare in a war zone.⁵ A Level III facility follows up on the initial life-saving care and stabilization found in level I & II echelons of care, to include definitive neurosurgery and intensive care capability. In-theater Level III hospitals are no longer designed to rehabilitate patients, so patients are then air evacuated to a state-side Level IV rehabilitative facility as soon as possible. As it stands now, at least 24 specialties are offered at the AF Theater Hospital in Balad. These are listed in Table 1 below.⁶

Table 1		
AF Theater Hospital Specialties		
Anesthesia	Nutritional Medicine	Psychology/Social Work/Psychiatry
Ear/Nose/Throat	Occupational Medicine	Radiology
Emergency Medicine	Ophthalmology	Thoracic
Flight Medicine	Oral Maxillofacial	Trauma/Critical Care
Gastroenterology	Orthopedics	Trauma Orthopedics
General Surgery	Physical Therapy	Urology
Infectious Diseases	Preventive Medicine	Vascular
Neurosurgery/Neurology	Primary Care	Women's Health

According to Colonel Rose Layman, former Chief Nurse of the AF Theater Hospital, the medical mission in Iraq is to perform critical medical care for battlefield injuries. This entails an emphasis in three distinct areas: 1) routine and preventive healthcare and return to duty, 2) trauma and specialized medical care, and 3) inter and intra-theater aeromedical evacuation support. Statistically, the hospital cares for an incredible 2,500 patients per quarter or about 10,000 patients per year. Admissions number 2,000/quarter, operating room procedures

5,000/quarter, and air evacuations 2,200/quarter. However, of that total, 66% are Iraqi. Despite this huge percentage, nurses are currently not trained to interact with Iraqis *prior* to deployment. The overall survival rate for US patients to Landstuhl is an amazing 98%!⁷

The bulk of interventions encompass burn care, tube care (chest tubes, J-tubes, nasogastric, traches, etc), multiple IV lines and medications, dressing changes, physical assessments and orthopedic devices. Nursing services support 18 intensive care beds, 40 intermediate care ward beds, 6 operating room tables, a 12-bay emergency room, an AF clinic and 50 Contingency Air Staging Facility beds. Zeroing in on the intermediate care ward, staffing consists of approximately a dozen nurses, each working 12-hours shifts.⁸

How are WHMC's EMEDS nurses currently being trained?

How do nurses from WHMC prepare for the Balad medical mission, specifically for a role as an intermediate care ward nurse at the AF Theater Hospital? According to Callandar,⁹ training involves in-house courses and cooperative arrangements with the civilian community. To immerse and train AF medics in trauma care, the Centers for Sustainment of Trauma and Readiness Skills (C-STARS) program, for example, uses three civilian institutions: Shock-Trauma Center in Baltimore, University of Cincinnati Medical Center, and Saint Louis University Hospital in St. Louis. Centrally funded by the AF, C-STARS offers a twelve-day program designed to update nursing trauma and critical care skills; and awards 96.5 contact hours upon completion of assigned shifts.

Participants apply lessons learned from the program, to include trauma case studies and lectures, equipment skills station, human cadaver lab and high tech human simulator sessions. Indeed, WHMC sends in as many deploying nurses as possible to these civilian facilities every year where they are expected to “jump in” and work actual shifts, performing care on trauma

patients that would not otherwise be seen in their assigned military treatment facilities. Former assistant surgeon general for nursing services and medical force development, Major General Barbara Brannon, endorsed the use of such partnerships and emphasized skills sustainment: “AF medics could not succeed in our expeditionary deployments without targeted training to ensure clinical currency.”¹⁰

Additionally, a Readiness Skills Verification (RSV) program helps keep personnel on track in identifying and acquiring necessary wartime skills that are tailored to a particular Air Force Specialty Code (AFSC). For example, the sample RSV checklist illustrated in Figure 2 below is tailored for the 46N3s, the AFSC for medical-surgical nurses. Some related equipment sets such as the hand-held patient-controlled analgesia pump or atrium chest tube are air evacuation certified and used to subsequently transfer patients out of the area of operations. Consequently, these items are different in theater than at home station and may be a training issue if nurses are not familiarized with them prior to deployment.¹¹

Figure 2

RSV for 46N3

Minimum currency levels have been set for many skills. These "proficiency standards" imply a level of activity sufficient to maintain skills, but do not necessarily denote competency.

Skills Specific to AFSC

Skill Set:	Knowledge/ Performance	Currency	Training Sources	Trainer/Verifier Initials	Verify Date	Member's Initials
1. NURSING ASSESSMENT						
a. PATIENT CARE ASSESSMENT: Obtains patient history and performs a primary/secondary survey. Determines priorities for conducting patient care, triage of patients, patient movement and staff availability. Recognizes, treats and documents changes in patient status	Performance	Q20M	Inservice; MURT; TOPSTAR; Everyday work experience validated by supervisor/instructor; approved off-duty employment; 1-2 wk clinical rotation; Trauma Nurse Care course (TNCC)			
2. IMPLEMENTING PATIENT CARE						
a. AIRWAY MANAGEMENT/BASIC	Performance	Q20M	Everyday work			

LIFE SUPPORT: Recognizes various types of respiratory disorders, identify causes, symptoms, management, and preventive measures. Demonstrates skill in emergency procedures/equipment (defibrillator, cardiac monitor, airway insertion, resuscitation bag, oxygen systems and suctioning). Maintains certification in basic life support

experience validated by supervisor/instructor; 1-2 wk clinical rotation; Approved off-duty employment; TOPSTAR; BLS Course

b.	AEROMEDICAL PATIENT MOVEMENT/PATIENT TRANSPORTS: Coordinates for intra- and inter-theater movements of patients including specialized equipment and supplies (I.e., Heimlich valves, saline instead of air in cuffs)	Knowledge	Q20M	Inservice; TOPSTAR; Everyday work experience validated by supervisor/instructor; 1-2 wk clinical rotation;
		Additional sources:		<u>AE Concepts</u>
c.	INTRAVENOUS (IV) THERAPY: IV access (initiates peripheral IV cannulation); IV drip rates (manually calculate IV drip rates for micro/macro drip tubing); IV medication administration (administers IV drip, piggyback, bolus, and push medications); IV saline locks (initiates, maintains, and discontinues Heparin/Saline Lock).	Performance	Q20M	TOPSTAR; Everyday work experience validated by supervisor/instructor; 1-2 wk clinical rotation; Approved off-duty employment
d.	BLOOD/URINE SPECIMEN COLLECTION AND WAIVED TESTING: Performs venipunctures for blood sampling and blood culture; performs and supervises waived testing for blood/urine diagnostic studies, including glucose monitoring and urine dipstick; ensures instrument calibration.	Performance	Q20M	Point of Care inservices; Everyday work experience validated by supervisor/instructor; 1-2 wk clinical rotation; Approved off-duty employment

Date Reviewed: 30-Dec-05

NAME: _____

RSV for 46N3

Skill Set:	Knowledge/ Performance	Currency	Training Sources	Trainer/Verifier Initials	Verify Date	Member's Initials
e. BLOOD/BLOOD COMPONENT ADMINISTRATION: Initiates, maintains, and discontinues administration of blood/blood components; Identifies causes, symptoms, management, and prevention of anaphylactic reactions	Performance	Q20M	Inservice; TOPSTAR; Everyday work experience validated by supervisor/instructor; Approved off-duty employment; 1-2 wk clinical rotation			
f. MANAGEMENT OF TRAUMATIC INJURIES: Recognizes the various types of shock, identify causes, symptoms, management and identify preventive measures; Stabilizes and provides care for a variety of patients such as: Abdominal, neurological, oral-maxillofacial, head and neck, thoracic, amputees and orthopedic type patients	Performance	Q20M	MURT; TNCC; TOPSTAR; 1-2 wk clinical rotation; Everyday work experience validated by supervisor/instructor; Approved off-duty employment			

g.	WOUND MANAGEMENT: Orthopedic injuries (applies splints and maintains traction; provides cast care); Burns (applies initial wound care; determines extent of burns; manages fluid replacement therapy based upon standard formula); Eye injuries (performs eye irrigations, applies compresses, and shields).	Performance	Q20M	Inservice; MURT; TNCC; TOPSTAR; Everyday work experience validated by supervisor/instructor; Approved off-duty employment
h.	TUBE/CATHETER MANAGEMENT: Inserts nasogastric tube and maintains gastric decompression; Inserts urinary catheter and maintains straight or indwelling; Assist with chest tube insertion and maintains closed drainage system; Assists with central line insertion and maintains central line integrity	Performance	Q20M	TOPSTAR; TNCC; Everyday work experience validated by supervisor/instructor; 1-2 wk clinical rotation; approved off-duty employment
i.	EXPOSURES TO CBRNE AGENTS: Recognizes probable signs of chemical, biological, radiological and nuclear explosive agent exposure and initiates appropriate treatment and/or supportive measures	Knowledge	Q20M	http://www.usamriid.army.mil/education/index.html
		Additional sources:		http://www.swankhealth.com http://www.usamriid.army.mil/education/instruction.html www.anthrax.mil www.smallpox.army.mil http://www.brooks.af.mil/web/eh/files/fm8-284afd.pdf

Date Reviewed: 30-Dec-05

NAME: _____

RSV for 46N3

Skill Set:	Knowledge/ Performance	Currency	Training Sources	Trainer/Verifier Initials	Verify Date	Member's Initials
			MURT; Inservices; USAMRIID/USAMRC ID training programs; AFMAM(1) 44-156 Treatment of Biological Warfare Agent Casualties			

For Readiness Skills Verification Program questions, please contact the Air Force Expeditionary Medical Skills Institute (AFEMSI) office at 210-536-3164 DSN: 240-3164 and/or send correspondence to usafsam.iec.rsvp@brooks.af.mil. For comments or suggested changes to the context of the Readiness Skills Verification skills list, please contact your Surgeon General Consultant or Career Field Manager (CFM) thru your MAJCOM. (Consultant and CFM list can be reached through the AF Clinical Quality Website <https://kx.afms.mil/clinicalquality>) For technical difficulty with accessing skills checklists or the database, contact AFMOA/SGXS staff at DSN: 343-7503 or Comm: 301-619-7503.

Nurses must accomplish numerous other training requirements before they deploy.¹² The first is current certifications in Advanced Cardiac Life Support (ACLS) and Trauma Nurse Critical Care (TNCC), which is endorsed by the Emergency Nursing Association. If certification is expired, nurses must re-certify prior to deployment.

Second, completion of a 3-day Emergency War Surgery Course (EWSC) is paramount. This course combines multiple forms of instruction: lectures on multi-system injuries, hands-on interventions in human and animal cadaver labs, break-out sessions for simulated training, and discussions of case studies showcasing experiences to expect at a Balad deployment. If time doesn't allow an individual to attend the EWSC or if demand is so high that there are not enough EWSC slots, a condensed version of EWSC that is geared toward nurses may be taken instead.¹³ The abbreviated version emphasizes hands-on-skills stations that focus on medical instruments and supplies used in Balad Air Base. Such a course was developed in response to in-theater trauma team leaders' feedback that "nurses and technicians were not always familiar with some of the equipment being used."¹⁴ Proficiency for nurses is not tested in either the full-time or condensed EWSCs.

A third requirement is a one-day visit to the Brooke Army Medical Center Burn Unit for exposure and hands-on dressing changes for burn patients. This is due to the fact that at the AF Theater Hospital in Balad, the majority of casualties who suffer burns result from improvised explosive devices.

Fourth, deliberate rotation through the inpatient unit for 168 hours per year is mandated by the AF Nurse Corps in anticipation for future deployment in an "inpatient" environment such as the intermediate care ward. This practice is aimed to keep nurses proficient "at the bedside."

This training is particularly crucial if the individual works as an outpatient nurse and has little recent, if any, inpatient experience.

A fifth prerequisite is EMEDS training, a one-week course held 20 times a year at Brooks City Base, Texas where 50 to 70 students fill each class.¹⁵ According to Captain Steven Keifer, an EMEDS course instructor, students are exposed to a simulated environment that is as realistic as possible to include scenarios they may actually encounter in Iraq and Afghanistan.¹⁶ WHMC's evaluation report card gave this offering a "B," or above average, for its usefulness.¹⁷

Medical Unit Readiness Training (MURT) is another requirement. MURT is usually offered every 12-15 months in all military treatment facilities. MURT typically encompasses nuclear/biological/chemical (NBC) response training and a comprehensive casualty care exercise. The readiness and education departments coordinate MURT training.

A new checklist for deploying nurses was recently developed to ease planning and scheduling of training requirements. A sample is illustrated in Figure 2 on next page.

59 MDW Pre-Final Deployment Processing Requirements

Member's Name EAVES, RICHARD Readiness Staff Name As of 30 Nov 07 Date: 3 Dec 07

Readiness Staff will place a checkmark in the box next to the available items during the review. If an item is missing during the review, the box next to the missing item will be highlighted. When the missing item is brought to the Readiness Staff, the Readiness Staff will then place a checkmark over the highlighted box. If an item is not applicable, Readiness Staff will annotate N/A in the box next to the appropriate item.

You will need copies of:

- ☐ 2 copies of CAC ID (front and back on the same side of paper on 2 separate pieces of paper)(cannot expire while deployed)
- ☐ 1 copy of Government Drivers License – ALL Deployers (front and back on the same side of paper)(WHMC transportation)
- ☐ 1 copy of State Drivers License (front and back on the same side of paper)(cannot expire prior to deployment)
- ☐ 1 copy of complete out-processing checklist (in addition to original)
- ☐ 2 copies of VRED from VMPF (Virtual Record of Emergency Data) – *One copy should be in your Readiness mobility folder*
- ☐ My Pay Pin # - member must have current LES print out from MY Pay website - <https://mypay.dfas.mil/mypay.asp>

Make sure these items are up-to-date. They should be located in your mobility folder:

- ☐ Mobility Folder
- ☐ Record of Ancillary Training (AF Form 4005)
- ☒ Geneva Convention Card (it is mandatory that your rank matches your exact current rank)(all medical personnel & chaplains)
- ☐ 2 Sets Metal ID/Dog Tags (with "AF" behind SSAN)(SSAN, religion and blood type must match the Geneva Convention card)
- ☐ 5 Blank Baggage Tags in Mobility Folder for Re-Deployment
- ☐ Immunization Records (AFCITA 2766C– issued on the DEPLOYEX line)(most current information)
- ☐ Weapons Card/RIP (AF Form 522)(Officers need M-9 and M-16; Enlisted need M-16)(with in 90 day of in place date)
- ☐ DD Form 2760, Qualification to Possess Firearms or Ammunition
- ☐ AF Form 1297/Temporary Issue Receipt
- ☐ AF Form 245/Employment Locator Card (PRF will provide if not already in mobility folder)
- ☐ QNFT – Quantitative Fit Test Letter (Gas Mask fit test) (36 months expiration)(cannot expire while deployed)
- ☐ MURT – Certificate (includes PRESERVATION OF REMAINS)(within 90 day of in place date)
- ☐ Self-Aid Buddy Care (AETC Personnel – must have separate certificate)(within 90 days of in-place date)(now located at <https://golearn.csd.disa.mil>)
- ☐ LOAC Certificate (must have separate certificate)(12 months expiration)(cannot expire while deployed)
- ☐ Use of Force Certificate (AETC Personnel Only)(must have separate certificate)(12 months expiration)(cannot expire while deployed)
- ☐ Force Protection Certificate- (12 months expiration)(90 days of in-place date) <https://golearn.csd.disa.mil>
- ☐ Information Protection Certificate- (with in 90 days of in place date)(12 months expiration)
- ☐ JPAS Printout (Security Clearance) or complete AF 2583 for members with incomplete/expired security clearance (security clearance has 10 years expiration)(cannot expire while deployed)
- ☐ Medical Ethics and Detainee Operations certificate - (12 months expiration)(with in 90 days of in place date) <https://mhslearn.satx.disa.mil>
- ☐ M16A1/A2 Rifle and M9 Pistol Cert –(with in 90 days of in place date) <https://golearn.csd.disa.mil>
- ☐ CBRNE Defense Training Certificate - <https://afms.csd.disa.mil/kc/login/login.asp>
- ☐ CBRNE Awareness Certificate- (20 months expiration)(2 months prior to MRT)- <https://golearn.csd.disa.mil> —
- ☐ SERE 100 Certificate- (20 months expiration) <https://golearn.csd.disa.mil> —
- ☐ Language and Cultural Familiarization Certificate- <https://golearn.csd.disa.mil> ←
- ☐ Human Relations Certificate- (12 months expiration) <https://golearn.cds.disa.mil>
- ☐ Basic Expeditionary Airman Orientation Course Certificate-(with in 90 days of in place date) <https://afsva.cds.disa.mil/kc.login/login.asp>

You must obtain these items:

- ☐ Credentials (all medical providers)
- ☐ 59MDW/CMR – (all medical providers)(Mr Hilsman, 1E24, 2-6004) – verify medical records completion before departure – CMR initial: _____
- ☐ DD Form 2766 Summary of Health Care – Deployed Medical Record (Sealed Packaged from Deployment Medicine)
- ☐ Record Review Rip (access from virtual MPF or CSS must request through PCIII)(Not a requirement for USAFE)
- ☐ AF Form 55/Occupational Safety and Health Record (six part folder – check with duty section NCOIC or safety monitor)
- ☒ OJT Records (Enlisted) – AFSC functional (or IDMT program manager) overall review documented on 623a – Functional initial: _____
- ☐ CAF Competency Assessment Folder (Officers) – (AF Form 1098 - RSV) (POC: Readiness Training x2539)
- ☐ Reenlistment/Promotion documents(promotion recommendation letter from CSS if reenlisting or being promoted while deployed – check readiness webpage for letter format)
- ☐ Fitness Test Results Printout (access from Air Force Portal or Fitness Monitor)(cannot expire while deployed)
- ☐ ETDC Printout (obtain from Readiness Resources Office BT28)
- ☐ Individual Equipment Issue Memo (Readiness Resources Office BT28 - must have completed copy)
- ☐ 1- M9 Holster & 3- M9 Ammo Pouches (must have **Hand Receipt** - mandatory for anyone deploying with an M9 - BT28)
- ☐ Modified A-1 Bag – must see receipt (GDM's inventory)
- ☐ BW/CW (ATNNA) if applicable – must be on orders to pick up from pharmacy
- ☐ Equipment Letter - applicable to Equipment Custodians only – Obtained from Mr. Jolly

Informal Evaluation of Training in the Field

To identify perceived deficiencies in nurse training, four senior nurses who served at the AF Theater Hospital in Balad were interviewed for their individual assessment on the matter. Those interviewed unanimously agreed upon the following *training needs*: 1) leadership, 2) expectations management including physical, emotional, and psychological preparation and the need for cultural orientation, and 3) more trauma & pediatric experience.

Other issues that were not unanimously mentioned by the above nurses but were deemed essential by some for pre-deployment training were: 4) critical thinking skills, 5) team-focused training, and 6) more relevant training (as opposed to topics now considered outdated).

At a more strategic level, the value of video teleconferencing between theaters was touted as essential in identifying and addressing any other training gaps not previously mentioned. These gaps are due to the dynamic combat environment. I will now explore the issues raised above in order.

1. Leadership

All of the chief nurses at the AF Theater Hospital stressed the need and importance of leadership skills. Specifically, they singled out the role of the Flight Commander on the Intermediate Care Ward. One explained that “because of the reduction in inpatient platforms, many of our field grade nurse corps officers have either never worked on a surgical inpatient unit, or it has been years since they have been in the inpatient setting.” Consequently, these senior nurses are unfamiliar with nursing standards, current technology, clinical practice guidelines, etc.” Moreover, “they must know the standards in order to enforce the standards to assure we have the right processes in place to deliver the highest quality of care in a deployed environment.”¹⁸ Thus, the Flight Commander must be skilled in the provision of care, able to

teach and lead as well as “manage” shift schedules. To offset this gap, nursing providers must be deliberately prepped stateside and selected based on their preparation prior to taking on such an influential role. Indeed, a former Flight Commander of the Intermediate Care Ward at Balad echoes leadership as key to success as it “makes all the difference in the world.”¹⁹

However, timely exchange of information between inbound and outbound leaders is essential to sustain success across change of leadership. According to the Intermediate Care Flight Commander, lack of documented lessons learned in the form of after action reports from previous leadership and deployment groups was especially frustrating.²⁰ The issue is not that they are not available, but they are kept locked up as classified information. Thus, lack of continuity necessitates re-inventing the wheel amidst only three days overlap between Flight Commanders and Chief Nurses where rigid timeframes for orientation are typical. At least a 10-day overlap is sorely needed, and after action reports and continuity binders must be available to capitalize on lessons learned.²¹

2. Expectations Management—Cultural/Ethical Preparation

“Expectations management” prior to arrival is imperative and prepares nurses physically, emotionally, and psychologically for scenarios they will see *ahead* of time so as not to be caught unprepared.²²⁻²³ For example, issues nurses must face at a Balad deployment include caring for prisoners of war (POWs), and confronting death and dying. Because of this, many nurses are being hit with the realization that the “expectant” triage category, never used in civilian settings, is used as required in war which means sometimes people die without heroic medical attention. This is particularly hard to accept when nurses are accustomed to saving American lives “at all costs” back home. The transfer of Iraqi patients from the AF Theater Hospital back to the local community, where their health facility has a lower standard of care, is also a difficult situation

for many nurses to adjust.²⁴ Thus, informing nurses of this reality beforehand will allow them time to better adapt or cope with the situation as opposed to being “surprised or shocked” in the moment.

Iraqi patients have little medical structure available to them in Iraq.²⁵ Military doctors sometimes can only provide comfort measures, and incoming nurses are often caught off guard by this. Examples of patients who are limited to comfort measures are those with greater than 40% burns, necessitating long term care in the local community where supplies are limited.²⁶ Many inbound nurses are caught unprepared to treat the large number of Iraqi pediatric patients they will see.²⁷ Ethics as well as emotional, physical and psychological preparation must also be emphasized pre-deployment.²⁸ Nurses must come to Balad fully prepared in mind, body and soul to succeed.²⁹

3. More Trauma and Pediatric Experience

A pediatric trauma RSV module was identified as another absolute must since 20% of the patients seen at the AF Theater in Balad are Iraqi children casualties.³⁰ Such a module would address pediatric medication doses, age-appropriate interventions, and other required pediatric-competent skills such as IV insertions, etc. With respect to trauma, more emphasis should be placed on “trauma, trauma, trauma”—both adult and pediatric prior to deployment.³¹ *Multi-trauma* patients in Balad make up 80% of the patients seen,” and therefore more clinical practice is needed in the states to offset current inexperience prior to deploying.³²

4. Critical Thinking

Critical thinking is another must have for the deploying nurse.³³ Colonel Julia Nelson observes that nurses really need to be able to put all the pieces together under pressure. Problem solving is another related issue. Nurses are “way too reliant on calling the doctor and having

others solve the problem.”³⁴ Nelson also recommends cultural classes. Nelson explains that if a nurse comes well prepped, confident and capable of caring for very ill patients, (to include Iraqi patients from infants to elderly), then the nurse’s stress level is significantly eased.” She goes on to say that “Balad is not a place for us to teach.”³⁵ Therefore, nurses must come prepared.

5. Team-Focused Training

The need for team training that parallels the team concept modeled by the Army is a worthy requirement.³⁶ The Army’s team of deploying medics trains for four weeks together as compared to the AF where time and resource constraints prevent Airmen from doing the same thing. To illustrate, at any one time, 33% of WHMC is deployed, leaving less staffing to cover the mission in-garrison.³⁷ Consequently, there is little chance to release an entire EMEDS team to train together at one time unless nurse managers and supervisors collectively make this a priority and adjust schedules accordingly.³⁸ I agree that having the EMEDS members train together will mirror the team training benefits gained by the Army. Thus, efforts should be made at senior nursing executive levels to emulate the Army’s team training schedules.

6. More Relevant Training

More familiarity with equipment is a big must.³⁹ Nurses are not fully trained on certain unique equipment that are staples in the Balad medical care environment. This includes air evacuation equipment not routinely used in stateside military treatment facilities, such as the patient controlled analgesia pump and atrium chest tube.⁴⁰ Moreover, many aspects of MURT are no longer relevant in today’s war scenario but are still needlessly consuming training time. Examples are M-16 bayonet charging and the litter obstacle course such as the high crawl/low crawl exercises.⁴¹ Time could be better spent on other training priorities such as familiarization with the air evacuation equipment mentioned previously.⁴²

Video Teleconferencing

The current Chief Nurse of WHMC, Colonel Laura Alvarado, shared her insights regarding her evaluation of nurse training. Alvarado highlights the use of monthly video teleconferencing among senior medical leaders from the Veterans Association Hospital, Brooks Army Medical Center and WHMC for “real time” feedback from the field, namely the theater hospitals in Balad, Iraq and Bagram, Afghanistan. Alvarado further elaborates that “educating nurses” is one of the goals of video teleconferencing, as tools to prepare for casualty care prior to deployment is never 100%.⁴³ Using this forum, case studies surrounding the care of wounded warriors are communicated and evaluated among the participants from state-side and in the area of operation so that issues can be immediately addressed, and so that lessons learned can be disseminated in a timely manner. Such feedback is especially beneficial to improving training for deploying nurses.⁴⁴ In my opinion, video teleconferencing has proven to be an effective bridge between and across theaters for real time communication and makes it an ideal tool to exchange the latest information to better care for casualties in the field.

REVIEW OF LITERATURE

In addition to interviews, I also reviewed Air University library sources and on-line literature that revealed sources on training in preparation for military deployment to the casualty care arena. The most relevant information came from military medical periodicals and online military journals/news. Topics covered across the services included: 1) tools to assess readiness gaps prior to deployment,⁴⁵⁻⁴⁸ 2) lists of recommended training requirements and methodologies,⁴⁹⁻⁵⁶ 3) use of video-conferencing to evaluate training,⁵⁷ 4) registry of battle injuries for which to prepare,⁵⁸⁻⁶⁰ and 5) the impact of leadership on training.⁶¹ The literature also contained research regarding training concerns unique to today’s global war on terrorism:

ethics,⁶² enemy prisoners of war,⁶³ and culture.⁶⁴⁻⁶⁵

Measuring Deployment Readiness

Back in 2004, Thompson and others⁶⁶ performed a study to develop a list of competencies for wartime and operations other than war for 46N3 Medical/Surgical AF nurses. In this study, competency was defined as a combination of the skills and knowledge needed by an individual or by a team to deliver high-quality health care in the operational environment. Their aim was to define the proper competencies needed to serve as a framework for pre-deployment training. Their research culminated with the validation of traditional assessment and interventions skills that represented non-controversial practices.⁶⁷ These skills include competencies in neurological and musculoskeletal assessments, pain management, and triage. However, according to the authors, the applicability of their results to today's EMEDS was limited in that the timing of their study did not coincide with the employment of the current EMEDS concept, which was developed after funding was already obtained for their study.

A related initiative is the Readiness Estimate and Deployability Index (READI), a valid readiness tool for assessing deployment preparedness for Army nurses in terms of clinical and operational nursing and survival skills.⁶⁸ Dremsa and others tailored READI to fit the requirements of AF nurses and it proved to be a reliable and valid self-assessment measure of deployment preparedness.⁶⁹ The end product incorporated six dimensions and corresponding skills from the original Army assessment tool and are listed in Table II below.

Table II	
READI Tool	
<u>Readiness Dimensions</u>	<u>Corresponding Skills</u>
Clinical nursing competency	Bedside clinical nursing skills
Operational competency	Skills critical to operational or field environment
Soldier/survival skills	Self-protection/patient protection skills
Personal/psychosocial/physical readiness	Personal and family preparation
Leadership and administrative support	Skills related to mission/command responsibility
Group integration and identification	Ability to live in close quarters/work with others

Reineck⁷⁰ highlights the importance of using the READI tool with the above readiness dimensions, because the care delivery in the stateside MTF is remarkably different from that provided in a deployed combat hospital. Thus, Reineck explains that field training is key. I agree. Without practice in the field first, casualties are placed at higher risk.

Nature of Injuries

A number of articles listed below illustrate the unique set of injuries prevalent in today's area of operation. With the ongoing wars in Iraq and Afghanistan, medical military personnel are treating high numbers of combat injuries that are far different and more serious than from previous wars. Gawande⁷¹ notes that blast injuries from suicide bombs, land mines and improvised explosive devices (IEDs) have proved particularly difficult to manage as they often combine penetrating, blunt, and burn injuries. Zouris⁷² showed that wounding patterns in US Marines and Sailors stemmed from shrapnel, IEDs, mortar, and landmines as primary causative agents for injury. Landmines were responsible for the highest percentage of amputations. Seventy percent of the injuries involved upper and lower extremities. These injuries required orthopedic specialists, making them the most frequently needed. The second most in demand were general surgeons, who tended to 30% of injuries.

An Army article describing the capabilities of the 48th Combat Support Hospital in Afghanistan concurs that the most common mechanism of injury are land mines, unexploded ordnance and gunshot wounds.⁷³ Of patients seen, 60% sustained multiple trauma while the other 40% had single sites of injury. Next, I will address the training gap.

Training Requirements and Methodologies

Several sources cited below address training required to succeed in the deployed combat environment. DeLorenzo⁷⁴ asserts that the real-life medical experiences in Iraq, although valuable, are inadequate to keep medical forces ready and trained; he prescribes strategies for initial and sustainment training outside the war zone to include in-house medical education, training in civilian institutions, sustainment training, civilian partnerships, short course training, distance education and patient simulators.

From an Army perspective, Bukowski⁷⁵ also observes a lack of casualty play when it comes to pre-deployment medical training; he points out that in the 101st Airborne Division, all medics complete the Tactical Combat Casualty Care (T3) course, which not only addresses primary causes of preventable death, but also focuses on treatment under fire in hostile conditions, using hands-on, high stress, realistic environments that involve high fidelity mannequins and pyrotechnics. Bukowski also notes that the Army Medical Command (MEDCOM) has adopted the T3 concept as the standard for combat medic training and fielded it as Combat Medic Advanced Skills Training.⁷⁶ For increased effectiveness, Bukowski recommends the integration of medical training with the brigade's overall training plan prior to deployment.

Another Army training tactic focuses on team-focused training where the ultimate goal is to train teams to be a team. Champan⁷⁷ explains that “working as a team is vital to success of patient care on the battlefield.” To do this, members participate in an intense 14-day program that improves teamwork as well as clinical skills. To maximize exposure to trauma scenarios, the Army Trauma Training Center works in conjunction with the Jackson Memorial Hospital’s Ryder Trauma Center as a national training center for their Army surgical teams. According to Champan, the faculty focuses on 1) maintaining a high level of stress on trainees during mass casualty exercise by limiting supplies and external support, 2) integrating team members into the trauma resuscitative unit, the operating room, and the trauma intensive care units, 3) providing hands-on training based on scenarios faced in Operations Enduring Freedom and Iraqi Freedom and 4) taking over the operations of the Ryder Trauma Center as a team with the resources available.

According to Griffin,⁷⁸ the Marine Corps puts heavy emphasis on critical thinking skills. He states: “Critical thinking is a core competency of Marine leaders. Thus, fostering the development of critical thinking skills in subordinates is a specified task for all leaders.” Scales⁷⁹ echoes the importance of critical thinking, stating that “stability and support operations in Iraq requires officers trained not only in their military specialty, but also in less traditional areas, such as geopolitics, culture, religion, critical thinking and problem solving.” In my opinion, medical officers are included as they too need to see the bigger picture and better appreciate their contributions to the overall mission. Attributes of critical thinking include: 1) raising vital questions and problems, 2) gathering and assessing relevant information, 3) coming to well-reasoned conclusions and solutions and 4) thinking open-mindedly within alternative

systems of thought, assessing as needed assumptions, implications, and practical consequences, and 5) communicating effectively with others in figuring out solutions to complex problems.⁸⁰

Plenty of literature boast simulation as a particularly effective training tool and is recognized as playing a huge role in reshaping military training. Lieutenant General Joseph Redden,⁸¹ former commander of the Air Force University at Maxwell Air Force Base, Alabama states: “Clearly, we need realistic training. We use simulation to anticipate critical events as realistically as possible before we actually have to act on them in real life.”

General William Looney III,⁸² commander of the Air Education and Training Command, states, “From painting jets to treating mannequins that moan, simulators aren’t just for flying anymore.” He promotes the continuing growth of simulators as one of his command priorities. At WHMC, the *Air Force Times*⁸³ article describes medics simulating a C-17 in flight transporting wounded troops. During simulation, speaker boxes set up around the room “crackle with communications chatter recorded on a recent medical airlift. The only thing missing is the vibrations.” To illustrate the commitment and success of simulated training, WHMC conducted approximately 400 simulations the previous month, an increase from the 40 conducted just 2 years before.⁸⁴

To be more realistic, the Army training centers augment their simulators with an “array of sensory devices designed to simulate a combat environment,” including a sound system with combat sounds, burning vehicles and a crashed helicopter.⁸⁵ It is evident that the Army’s Medical Training Simulation Center succeeds in exposing all the senses to training whereby students are “put into a combat situation where you have the noises, sounds, smells and look of combat with real breathe and bleed simulators.”⁸⁶ Army Lieutenant Colonel Lee⁸⁷ writes that “simulations are a powerful tool for commanders, staffs and leaders at every level,” and that

“they are not the answer to all training issues but represent one of the training multipliers available.”

Intertwined throughout the literature was the importance of leadership. For example, leaders generally have an overwhelming impact on training and were critical to promoting simulation in their units,⁸⁸ managing stress in their subordinates,⁸⁹ assuring their people were culturally aware,⁹⁰ and fostering critical thinking skills in their junior personnel.⁹¹ I will now cover other training issues that were not as heavily emphasized in conflicts prior to the military operations in Iraq and Afghanistan.

Unique Training Concerns

The subject of medical ethics is discussed by Army Colonel Gregg Anders in his article “Medical Ethics in Detainee/Enemy Prisoners of War Care.”⁹² In his introductory paragraph, he writes that “since October 2001, more than 65,000 individuals have been processed as detainees or enemy prisoners of war (EPW) in GWOT,” and that the “US, through its military services, has assumed the medical care of the majority of these individuals.” The issue is that “there may have been a lack of understanding of the ethical requirement.” Consequently, medics and medical providers may be faced with mixed obligations, creating tension and anguish. The perceived conflict, according to Anders, is between allegiance to professional ethics as the EPW’s medical advocate versus duty to nation to preserve the fighting strength of US forces. Attendance in formal ethics courses and the study of hypothetical cases were recommended to prepare medics to cope with similar encounters.⁹³ For example, insurgents coming to the AF Theater Hospital for care are treated differently in that they are blind-folded and have at least one of their extremities restrained. Prior knowledge of this safety intervention is important to prepare nurses for important differences in care.⁹⁴

Tuck addresses a similar dilemma in his article “Medical Management of Iraqi Enemy Prisoners of War.”⁹⁵ In this article, he acknowledges that deployed military physicians “had no formal training in the provision of medical services in a transcultural setting.” Thus, Tuck made recommendations to resolve the unmet training need as “military forces will continue to be deployed into culturally diverse situations.”⁹⁶

Much needed volunteer opportunities abound where all military branches’ non-medics have offered to help transfer patients from litters to gurneys, change bedding, start IVs, or offer compassion and conversation to the casualties.⁹⁷ An F-16 crew chief who volunteered at Balad’s AF Theater Hospital was caught off guard when faced with assisting patients other than Americans. He states: “One minute you might be working with an American Soldier, the next minute a friendly Iraqi, and soon after that, it may be a hostile insurgent. I wasn’t expecting that.”⁹⁸ However, the crew chief learned that the Level III trauma center is expected to provide all patients the same quality of care.

The Marines also view cultural awareness as key to operational success in asymmetric warfare where “cultural awareness is as much a part of situational awareness as the current and forecasted weather is in conducting an estimate of the situation.”⁹⁹ Furthermore, to stress the need of training in culture, Griffin states that the US Army War College referred to the current situation in Iraq as an “emerging era of culture-centric warfare.”¹⁰⁰

Psychological preparation was mentioned by WHMC’s senior nurses as imperative to deployment readiness.¹⁰¹ Other than the aforementioned READI tool’s dimension of physical/psychosocial/personal readiness, not much was found in the literature concerning advanced psychological preparation or training as the main titles. Instead, I found studies that

centered on post-traumatic stress disorders (PTSDs),¹⁰² medical team debriefings,¹⁰³ and the role of leadership in minimizing the impact of stressors on soldiers.¹⁰⁴

A study by Kolkow et al.¹⁰⁵ concluded that “direct and perceived threats of personal harm were risk factors for PTSD...and exposure to wounded or dead patients did not increase risk.” To pre-identify those healthcare workers that would be at risk before deployment, then, Kolkow et al. ascertain that “the threat of personal harm, such as frequent engagement in direct combat or being fired upon by opposition forces, may be the most predictive factor in determining those with subsequent PTSD.” Such information, according to the article, is what differentiates the military personnel from state-side civilians who likewise treat trauma victims. These civilians do not exhibit the elevated levels of PTSD symptoms since they are not exposed to such risks. Thus, training was indicated to offset the risk to deploying healthcare personnel “for protection against subsequent psychological distress after exposure to similar threats.”¹⁰⁶

With respect to medical team debriefings following the treatment of the injured, Knobler et al.¹⁰⁷ assert that such preventive interventions “enhance mental coping, possibly prevent stress reactions, and help in screening individuals in need of further professional interventions for stress reactions.” The article goes on to say that debriefings try to emphasize the normality of reactions that may be experienced. Knobler et al agrees with the aforementioned study that “treatment under fire can be connected with actual danger to the treatment team, increasing the chance of stress reactions,” and “the medical team debriefing can have a preventive effect.” An additional cause of dysfunction and stress are multi-system/multi-trauma encounters where visually disturbing situations may trigger unhealthy reactions unless dealt with soon after the event(s). In my opinion, openly communicating personal concerns with others that share such experiences is valuable, as it affords the opportunity to reassure staff that their reaction is

normal. If concerns are not alleviated at that time, the leader is better able to intervene sooner than if a debriefing was not held.

A third study¹⁰⁸ relating to stressors is one describing “how leadership protects subordinates from the adverse effects of stressful environments by providing structure and support.” Training per se is not mentioned in this article, but a commonality with the previous two articles on psychological stress addresses the requirement for “leadership research on the well-being of soldiers’ needs” so that one can “clearly identify when and where specific leadership behaviors are most important.”¹⁰⁹

Overall, the literature review revealed several recommended training requirements for nurses and other healthcare workers deploying to the area of operation, namely: 1) clinical competency in the field of specialty, 2) familiarity with multi-trauma combat injuries, 3) equipment familiarity, 4) training with civilian trauma institutions and other collaborative opportunities not available at the MTF, 5) simulated training, 6) team training, 7) psychological preparation, 8) cultural education, 9) exposure to ethical dilemmas that may be faced and 10) critical thinking skills. Weaved throughout is the importance of leadership on each of the above. I will now share my analysis regarding the literature on pre-deployment preparation.

ANALYSIS

The review of literature contained a myriad of studies regarding training and preparation for deployment. Many were validated by other sources across the services. The lessons learned contributed by the Army, Navy, Air Force and Marines covered not only training for noncombatants such as nurses, but other areas specific to combatant fields. However, from my perspective, all the lessons gleaned from the literature review can feasibly be tailored to nurses

and are relevant for deployment as they address the very gaps mentioned by the four senior nurses interviewed. To date, many training recommendations are already being implemented by WHMC, while a few are not.

The READI tool's six dimensions, in my view, make an excellent template to categorize the type/topic of training recommended in the literature. Table III illustrates this concept and differs from Table II in that "Corresponding Skills" will be replaced by "Recommended Training Requirements." This table, then, will be used as a checklist to identify what training requirements are being met at WHMC, based on the literature, and which are not. At this time, WHMC has not formally adopted the READI tool to pinpoint and correct gaps to fully achieve competency in any one dimension.

Table III Training Requirements vs. Gaps Based on Readiness Dimensions		
<u>Readiness Dimensions</u>	<u>Recommended Training Requirements</u>	<u>Training Gaps at WHMC</u>
Clinical Nursing Competency	Certifications (ACLS, TNCC, etc) ESWC C-STARS Critical Thinking Trauma Experience Pediatric Experience	None None None References/Scenarios/Practice Multi-system/multi-trauma Iraqi pediatric trauma
Operational Competency	EMEDS Simulation in combat Ethics Culture	None None Online course/case studies Online course/video/case studies
Soldier/Survival Skills	C-4 MURT Small Arms Training	None None None
Personal/Psychological/Physical Readiness	Expectations Management	Psychological prep and situational awareness
Leadership & Administrative Support	Video Conferencing/Training Feedback Overlap on Lessons Learned Stress Management	None Continuity books After action reports Leadership orientation overlap None
Group Integration/Identification	Team training integrated throughout	EMEDS team training, predeployment

Clinical nursing competency will be discussed first. WHMC is not currently meeting the associated training requirement training for this dimension. Nurses are indeed checked on their certifications to include ACLS, TNCC, etc. and are being sent to the ESWC & C-STARS appropriately. However, critical thinking, pediatric, and multi-system trauma experience is lacking. The literature¹¹⁰⁻¹¹⁴ highly supports critical thinking and relevant experience as keys to optimal performance in a deployed setting, particularly with the type of injuries encountered in Iraq. As such, critical thinking and the addition of more multi-trauma (and pediatric) experience than currently offered at WHMC should be included as minimum training requirements for nurses just prior to deploying to Balad's AF Theater Hospital.

Operational competency is the second dimension. Four of four senior nurses agreed that the nurses: 1) were unprepared for the cultural and ethical issues surrounding the care of Iraqi patients (which may include EPWs), 2) did not have an appreciation for the differences in self-care between Americans and the locals, and 3) did not recognize the limited resources available in the hospitals where Iraqi patients were being transferred. All of the above caused some discomfort regarding initiating the delivery of care at Balad. The literature¹¹⁵⁻¹¹⁷ was clear in the importance of educating personnel on ethics and culture prior to deployment to better cope with such situations. Consequently, I feel that ethics and culture should be part of the minimum training requirements at WHMC. Specific computer-based training modules, videos, films or documentaries on ethical and cultural issues specific to Balad would be extremely helpful and are available to fill this gap. In short, I believe cultural and ethical dilemmas should be inserted in the training mix whenever possible. The more nurses see, hear, smell, and touch prior to actually seeing, hearing, smelling, touching what they will encounter, the better!

On the other hand, simulated casualty training at WHMC was identified by Bolenbaucher¹¹⁸ as a strength for the deployment training of nurses. The literature¹¹⁹⁻¹²² exemplified the incredible impact of simulated training on patient care in the deployed setting and its use has increased tremendously in the last 2 years. Therefore, I have added simulated training opportunities as a necessary training requirement under the operational competency dimension.

Soldier/survival skills compose the third dimension. Currently, it appears that WHMC is meeting the expected requirements for this dimension. This category includes C-4, MURT and small arms training. The senior nurses did not mention any deficiencies that would fall under this dimension of readiness other than the need to update MURT's weapons training. I have no additional training recommendations for WHMC as current CBRN training, etc and refreshers for the aforementioned are meeting deployment requirements.

Personal, psychological and physical readiness is the fourth dimension. Neither "personal" nor "physical" readiness was an issue with the senior nurses that I interviewed. I did not identify any training gaps in the personal or physical aspects either. However, the term "expectations management" was used to illustrate the lack of "psychological" preparation on the part of the nurses being sent to Balad. Kolkow et al.¹²³ mentioned that those most at risk for PTSD were those who feared being harmed.

The senior nurses did not mention the threat of physical harm as particularly worrisome (or at least it was not verbalized by the nurses). Thus, if this assumption is correct, the nurses at the AF Theater Hospital in Balad would be at low risk for PTSD. Nonetheless, the senior nurses noted that stress was evident due to the sheer numbers of multi-system casualties seen. Experience and training (covered in the competency dimension) could take them only so far. As

such, the senior nurses felt psychological preparation in terms of “expectation management” was necessary for nurses to better prepare for the deployment environment. In the chart, I used the term “situational awareness” as the training gap listed under the dimension that includes psychological readiness.

Leadership and administrative support is the fifth dimension under the READI tool. The purpose of this paper was to assess the amount and effectiveness of nursing pre-deployment training where four senior nurse were interviewed for their perspective on the matter. I did not specifically ask them what they felt were their own deficiencies. Such an omission weakens my data where objectivity regarding the assessment of leadership preparation specifically is suspect. To assess this dimension “pre-deployment” then, is to do so from the perspective of the deploying nurse. Is the nurse fulfilling a key leadership role? A second question to ask from the deploying nurse’s perspective is “what does he/she expect of their leader/administrator in the deployed setting? Is that nurse aware of how to meet his/her leader’s expectations to fulfill the AF Theater Hospital’s mission?

I feel that leadership makes a difference on whether a deployment is deemed successful as perceived by the nurses that work for them. On the flip side of the coin, it is not uncommon to hold the leader responsible for failures as well. I believe it is imperative to send sound leaders with good critical thinking skills so they can foster the same in their subordinates, or provide a way to be selected in theater to *stay* and be a leader.

In speaking with the senior nurses, I did not sense there was a lack of good tactical leadership for our nurses at Balad’s AF Theater Hospital, and thus I did not identify any training gap under this dimension. In fact, these senior tactical leaders played a key role in the feedback of care delivery through video teleconferencing from Balad to WHMC. Such a technique,

described by Colonel Alvarado, Chief Nurse of WHMC, is described in Lam and Fecura's article "The Trauma Continuum-of-Care Quality Forum Integration Committee System-Wide Video Teleconference"¹²⁴ and has proven highly successful in sharing lessons learned across theaters: namely between WHMC and Brooks Army Medical Center in San Antonio and Balad in Iraq and Bagram in Afghanistan.

Because the senior nurses had mentioned that stress and experience were key issues, I listed stress management and video-teleconferencing as tools for the leaders to have to alleviate stress and provide timely feedback to the nurses working in the field. It appears that the nursing leaders are already trying their best to do this in Balad, as evidenced by their bringing the team together to effect a 98% survival success rate of casualties that make it to the AF Theater Hospital.

Group identification and integration is the final dimension. One senior nurse¹²⁵ praises the teamwork among the nurses and the remainder of the healthcare team during the time of deployment. In contrast, more training as a team *prior* to deployment was identified by another senior nurse¹²⁶ as a deficiency in comparison to how the Army trains their deploying medical team. Indeed, the literature highlights the importance of "training to be a team" at the US Army Trauma Training Center.¹²⁷ In my opinion, the Army does seem to emphasize a sense of team much more than the other services. Furthermore, the literature¹²⁸⁻¹³⁵ is dotted with examples describing the essence and the positive effects of teamwork during simulated training and stress debriefings, and by the provision of feedback by senior leaders. As a result, I feel that the team concept of training is a worthy addition to the dimension of group identification and integration.

In addition to being better able to achieve the mission, teamwork appears to do wonders for morale, camaraderie and is akin to the "wingman" concept of the Air Force. If one doesn't

train “how” to be a team, then it becomes that much more difficult in terms of time and effort to mesh with team members, take care of each other, and be successful. To make this work, nurse managers and supervisors must release their nurses within a set time period prior to deployment so that team-building and training can occur.

RECOMENDATIONS

Based on the review of the literature and analysis of the data, the following are my recommendations about how to improve WHMC’s deployment training program for nurses:

- 1) Begin using the READI tool to assess nurses’ readiness deployment at WHMC.
- 2) Expose nurses to even more multi-trauma experience than WHMC is already offering.
- 3) Get nurses re-acquainted with the steps of the basic nursing process.
- 4) Encourage and develop the use of critical thinking skills. I recommend nurses: read Paul and Elder’s pocket-sized edition of Critical Thinking skills so they can apply questioning techniques to expand the way they think; keep a copy handy for easy reference; apply critical thinking concepts during pre-deployment training scenarios; and continue to develop critical thinking skills for everyday practice in the deployed setting where success would be evidenced by nurses exercising greater autonomy in decision making and more efficient problem-solving that ultimately expedites the delivery of care.
- 5) Offer more simulated training to expose nurses to multi-trauma experience, with actual equipment used at Balad to offset unfamiliarity with said equipment once deployed.
- 6) Include the topics of culture and ethics into WHMC’s training program by incorporating scenarios in already established training (i.e. EMEDs, MURT, etc) by inserting real case studies in self-learning powerpoint presentations, or integrating cultural/ethical situations into discussions during the EWSCs

7) Promote computerized training that encompasses all the above, months ahead of deployment to augment, not replace, simulated training.

8) Have trainers stateside brief “situational awareness” regarding the deployed work environment from the perspective of the deploying nurse. Additionally, expect nurses to increase their situational awareness by taking responsibility to learn all they can about the deployed environment by networking with colleagues who have deployed to Balad, asking questions of instructors who are teaching the pre-deployment courses, reading about lessons learned surrounding a Balad deployment, acknowledging the type of patients that will be seen and reviewing in one’s mind the type of multi-system problems the patient will have and how to intervene in a systematic way, participating in on-line self-study on topics such as the culture awareness that the AF recently posted and included on WHMC’s Pre-Final Deployment Processing Requirements checklist illustrated earlier in Figure 1.

9) Solicit lessons learned from those who have already succeeded in the leader role prior to deployment; and be mindful of methods to alleviate stress using a team approach and promoting the use of debriefings as needed.

10) Push “expectations management” (psychological dimension) from home station to play a part to best prepare the deploying nurse.

11) Train EMEDS team as a group whenever possible.

CONCLUSION

The sheer number of casualties seen at the AF Theater Hospital in Balad and the high survival rate is testimony to the success of the current process and players across the entire spectrum of care, from self-aid and buddy care on the field to the air evacuation of casualties between theaters. However, incorporating the aforementioned recommendations, to include

more pediatric and trauma experience on the clinical side and “non-traditional” topics such as culture, language, ethics and critical thinking is needed. Such additional training, ultimately, will arm the deploying nurse with additional tools to better adjust to the deployed environment and thus, serves to better achieve the mission.

End Notes

- ¹ David Herndon, "Wilford Hall Medics Depart for Iraq," *Air Force Link*, 9 January 2007, <http://www.af.mil/news/story.asp?id=123037105>.
- ² Bruce Callander, "After MASH," *Air Force Magazine* 87, no. 12 (December 2004): [http://www.afa.org/magazine/Dec 2004/1204mash.asp](http://www.afa.org/magazine/Dec%2004/1204mash.asp).
- ³ Ibid., 1.
- ⁴ Jason Lakes, "Air Force Medics Take Control of Combat Hospital," *Air Force Print News Today*, 20 September 2004.
- ⁵ Herndon, "Wilford Hall Medics Depart for Iraq," 1.
- ⁶ Col Rose Layman (former Chief Nurse 332nd Expeditionary Medical Group), interview by the author, 23 August 2007.
- ⁷ Ibid.
- ⁸ Ibid.
- ⁹ Callander, "After MASH," 7.
- ¹⁰ Ibid., 6.
- ¹¹ Col Richard Eaves (former Intermediate Care Flight Commander, 332nd Expeditionary Medical Group), interview by the author, 13 August 2007.
- ¹² Col Laura Alvarado (Chief Nurse, Wilford Hall Medical Center), interview by the author, 10 August 2007.
- ¹³ Rosie Bolenbaucher (59th Medical Wing Trauma Performance Improvement Coordinator), interview by the author, 23 August 2007.
- ¹⁴ David Herndon, "Course Focuses on Trauma Training for Nurses, Medics," *Air Force Print News Today*, 21 August 2007.
- ¹⁵ Jeremy Larlee, "Training Builds Foundation for Deploying Medics," *Brooks City-Base News*, 20 August 2007, <http://www.brooks.af.mil/news/story.asp?id=123065201>.
- ¹⁶ Ibid. 1.
- ¹⁷ Col Eaves interview.
- ¹⁸ Col Julia Nelson (current Chief Nurse 332nd Expeditionary Medical Group), interview by the author, 24 August 2007.
- ¹⁹ Col Eaves interview.
- ²⁰ Ibid.
- ²¹ Ibid.
- ²² Col Layman interview.
- ²³ Col Eaves interview.
- ²⁴ Col Layman interview.
- ²⁵ Col Eaves interview.
- ²⁶ Ibid.
- ²⁷ Ibid.
- ²⁸ Ibid.
- ²⁹ Ibid.
- ³⁰ Col Layman interview.
- ³¹ Col Nelson interview.
- ³² Col Layman interview.
- ³³ Col Nelson interview.
- ³⁴ Ibid.

- ³⁵ Ibid.
- ³⁶ Col Eaves interview.
- ³⁷ Ibid.
- ³⁸ Ibid.
- ³⁹ Ibid.
- ⁴⁰ Ibid.
- ⁴¹ Ibid.
- ⁴² Ibid.
- ⁴³ Col Alvarado interview.
- ⁴⁴ Ibid.
- ⁴⁵ Charles Thompson, Katherine Repko, and Nancy Staggerer, "A Delphi Study to Validate Competencies of Air Force Medical Surgical (46N3) Nurses in Mobilized Environment," *Military Medicine* 168 (August 2003): 618-625.
- ⁴⁶ Margaret Wilmoth et al., "The Readiness Estimate and Deployability Index and Psychometric Properties in Army Reserve Nurses and Medics," *Military Medicine* 172 (September 2007): 800-805.
- ⁴⁷ Theresa Dremsa, Nancy Ryan-Wenger, and Carol Reineck, "Reliability and Validity Testing of a Short Form of the Readiness Estimate and Deployability Index Revised for Air Force Nurses," *Military Medicine* 171 (September 2006): 879-884.
- ⁴⁸ Carol Reineck, "Individual Readiness in Nursing," *Military Medicine* 164 (April 1999): 251-255.
- ⁴⁹ Robert DeLorenzo, "How Shall We Train?" *Military Medicine* 170 (October 2005): 824-830.
- ⁵⁰ Craig Bukowski, "2nd BCT, 101st Airborne Improves Medical Training to Help Save Lives," *Infantry* 95, no. 4 (July-August 2006): 11-15.
- ⁵¹ Cori Champan, "Army Medical Teams Train for Wartime Mission," *Defend America News*, 12 May 2005, <http://www.defendamerica.mil/articles/may2005/a051205tj1.html>.
- ⁵² Sean Griffin, "Critical Thinking: A Weapon for All Wars," *Marine Corps Gazette* 89, no.6 (June 2005): 44-45.
- ⁵³ Harold Kennedy, "Simulation Reshaping Military Training," *National Defense Magazine*, November 1999, <http://www.nationaldefensemagazine.org/issues/1999/Nov/Simulation.htm>.
- ⁵⁴ Patrick Winn, "The Spread of Sims," *Air Force Times*, October 2007.
- ⁵⁵ Scott Gourley, "Medical Simulation Training Center," *Army Times*, August 2006.
- ⁵⁶ Howard Lee, "Virtual, Live and Simulated Training," *Field Artillery* 5 (September-October 2005): 35-37.
- ⁵⁷ David Lam and Stephen Fecura, "The Trauma Continuum-of-Care Quality Forum Integration Committee System-Wide Video Teleconference," *Military Medicine* 172 (June 2007): 611-615.
- ⁵⁸ Atul Gawande, "Casualties of War—Military Care for the Wounded from Iraq and Afghanistan," *New England Journal of Medicine* 351, no. 24 (December 2004): 2471-2475.
- ⁵⁹ James Zouris et al., "Wounding Patterns for U.S. Marines and Sailors During Operation Iraqi Freedom, Major Combat Phase," *Military Medicine* 171 (March 2006): 246-252.
- ⁶⁰ Alan Beitler et al., "Operation Enduring Freedom: The 48th Combat Support Hospital in Afghanistan," *Military Medicine* 171 (March 2006): 189-193.
- ⁶¹ Thomas Britt et al., "How Leaders Can Influence the Impact That Stressor Have on Soldiers," *Military Medicine* 169, no. 7 (July 2004): 541-545.
- ⁶² Gregg Anders, "Medical Ethics in Detainee/Enemy Prisoners of War Care," *US Army Medical Department Journal* (April-June 2005): 27-28

- ⁶³Jeremy Tuck, “Medical Management of Iraqi Enemy Prisoners of War During Operation Telic,” *Military Medicine*, 170 (March 2005): 177-182.
- ⁶⁴Scott Wagers, “Duty Brings Out the Best,” *Airman* 51 (Winter 2007): 18-22.
- ⁶⁵Griffin, “Critical Thinking,” 44-45.
- ⁶⁶Thompson, “Delphi Study,” 618-625.
- ⁶⁷Ibid.
- ⁶⁸Wilmoth, “Readiness Estimate,” 800-805.
- ⁶⁹Dremsa, “Reliability and Validity Testing,” 879-884.
- ⁷⁰Reineck, “Individual Readiness,” 251-255.
- ⁷¹Gawande, “Casualties of War,” 2471-2475.
- ⁷²Zouris, “Wounding Patterns,” 246-252.
- ⁷³Beitler, “Operation Enduring Freedom,” 189-193.
- ⁷⁴DeLorenzo, “How Shall We Train?” 824-830.
- ⁷⁵Bukowski, “2nd BCT,” 11-15.
- ⁷⁶Ibid.
- ⁷⁷Chapman, “Army Medical Teams.”
- ⁷⁸Griffin, “Critical Thinking,” 44-45.
- ⁷⁹Robert Scales, “Culture-Centric Warfare,” *Proceedings* (October 2004): 132-136.
- ⁸⁰Richard Paul and Linda Elder, *The Miniature Guide to Critical Thinking* (Dillon Beach, CA: The Foundation for Critical Thinking, 2006), 1-8.
- ⁸¹Kennedy, “Simulation Reshaping Military Training.”
- ⁸²Winn, “Spread of Sims.”
- ⁸³Ibid.
- ⁸⁴Ibid.
- ⁸⁵Gourley, “Medical Simulation.”
- ⁸⁶Ibid.
- ⁸⁷Lee, “Virtual, Live Simulated Training,” 35-37.
- ⁸⁸Ibid., 37.
- ⁸⁹Britt, “How Leaders Can Influence,” 541-545.
- ⁹⁰Griffin, “Critical Thinking,” 44.
- ⁹¹Ibid., 45.
- ⁹²Anders, “Medical Ethics,” 27-28.
- ⁹³Ibid., 27-28.
- ⁹⁴Col Eaves interview.
- ⁹⁵Tuck, “Medical Management,” 177-182.
- ⁹⁶Ibid., 177-182.
- ⁹⁷Col Eaves interview.
- ⁹⁸Wagers, “Critical Thinking,” 18-22.
- ⁹⁹Griffin, “Critical Thinking,” 45.
- ¹⁰⁰Ibid., 45.
- ¹⁰¹Col Eaves and Col Alvarado interviews.
- ¹⁰²Tonya Kolkow et al., “Post-Traumatic Stress Disorder and Depression in Health Care Providers Returning from Deployment to Iraq and Afghanistan,” *Military Medicine*, 172 (May 2007): 451-455.
- ¹⁰³Haim Knobler et al., “Psychological Guidelines for a Medical Team Debriefing After a Stressful Event,” *Military Medicine* 172 (June 2007): 581-585.

- ¹⁰⁴ Britt, "How Leaders Can Influence...", 541-545.
- ¹⁰⁵ Kolkow et al., "Post-Traumatic Stress Disorder," 454.
- ¹⁰⁶ Ibid., 454.
- ¹⁰⁷ Knobler, "Psychological Guidelines for Medical Team Debriefing," 581.
- ¹⁰⁸ Britt, "How Leaders Can Influence...", 541.
- ¹⁰⁹ Ibid., 544.
- ¹¹⁰ Griffin, "Critical Thinking," 44.
- ¹¹¹ DeLorenzo, "How Shall We Train?" 824-830.
- ¹¹² DeLorenzo, "Improving Combat Casualty Care," 268-272.
- ¹¹³ Bukowski, "2nd BCT, 101st Airborne Improves Medical Training," 11-15.
- ¹¹⁴ Felicia Rivers, "U.S. Army Professional Filler System Nursing Personnel: Do They Possess Competency Needed for Deployment?" *Military Medicine* 171 (February 2006): 142-149.
- ¹¹⁵ Anders, "Medical Ethics," 27-28.
- ¹¹⁶ Tuck, "Medical Management of Iraqi Enemy Prisoners of War," 177-182.
- ¹¹⁷ Wagers, "Duty Brings out Best," 18-22.
- ¹¹⁸ Bolenbaucher interview.
- ¹¹⁹ Lee, "Virtual, Live Simulated Training," 35-37.
- ¹²⁰ Gourley, "Medical Simulation Training Center."
- ¹²¹ Kennedy, "Simulation Reshaping Military Training."
- ¹²² Winn, "Spread of Sims."
- ¹²³ Kolkow et. al., "Post-traumatic Stress Disorder," 451-455.
- ¹²⁴ Lam, "Trauma Continuum-of-Care," 611-615.
- ¹²⁵ Col Nelson interview.
- ¹²⁶ Col Eaves interview.
- ¹²⁷ Champan, "Army Medical Team Trains."
- ¹²⁸ Ibid.
- ¹²⁹ Lee, "Virtual, Live Simulated Training," 35-37.
- ¹³⁰ Gourley, "Medical Simulation Training Center."
- ¹³¹ Kennedy, "Simulation Reshaping Military Training."
- ¹³² Winn, "Spread of Sims."
- ¹³³ Knobler, "Psychological Guidelines for Medical Team Debriefing."
- ¹³⁴ Eastbridge et al., "Trauma System Development," *The Journal of Trauma Injury, Infection, and Critical Care* 61 (December 2006): 1-8.
- ¹³⁵ Lam and Fecura, "Trauma Continuum-of-Care," 611-615.

Bibliography

- Anders, Gregg. "Medical Ethics in Detainee/Enemy Prisoners of War Care." *U.S. Army Medical Department Journal*, (April-June 2005): 27-28.
- Beitler, Alan L., Glenn W. Wortmann, Luke Hofmann, James Goff. "Operation Enduring Freedom: The 48th Combat Support Hospital in Afghanistan." *Military Medicine*, 171 (March 2006): 189-193.
- Britt, Thomas W., James Davison, Paul Bliese, Carl A. Castro. "How Leaders Can Influence the Impact That Stressors Have on Soldiers." *Military Medicine*, 169 (July 2004): 541-545.
- Bukowski, Craig W. "2nd BCT, 101st Airborne Improves Medical Training to Help Save Lives." *Infantry*, 95:4 (July-August 2006): 11-15.
- Callander, Bruce. "After MASH." *Air Force Magazine* 87, no. 12 (December 2004).
[http://www.afa.org/magazine/Dec 2004/1204mash.asp](http://www.afa.org/magazine/Dec%2004/1204mash.asp).
- Champan, Cori. "Army Medical Team Trains for Wartime Mission." *Defend America News*, 12 May 2005. <http://www.defendamerica.mil/articles/may2005/a051205tj1.html>.
- DeLorenzo, Robert A. "How Shall We Train?" *Military Medicine*, 170 (October 2005): 824-830.
- DeLorenzo, Robert A. "Improving Combat Casualty Care and Field Medicine: Focus on the Military Medic." *Military Medicine*, 162 (April 1997): 268-272.
- Dremsa, Theresa L. "Pilot Testing the Readiness Estimate and Deployability Index." *Military Medicine*, 169 (January 2004): 11-15.
- Dremsa, Theresa, L., Nancy A. Ryan-Wenger, Carol Reineck. "Reliability and Validity Testing of a Short Form of the Readiness Estimate and Deployability Index Revised for Air Force Nurses." *Military Medicine*, 171 (September 2006): 879-884.
- Eastridge, Brian J., Donald Jenkins, Stephen Flaherty, Henry Schiller, John Holcomb. "Trauma System Development." *The Journal of Trauma Injury, Infection, and Critical Care*, 61 (December 2006): 1-8.
- Galarneau, Michael R., William C. Hancock, Paula Konoske, Ted Melcer, Ross Vickers, G. Walker, James Zouris. "The Navy-Marine Corps Combat Trauma Registry." *Military Medicine*, 171 (August 2006): 691-697.
- Gawande, Atul. "Casualties of War—Military Care for the Wounded from Iraq and Afghanistan." *New England Journal of Medicine*, 351:24 (December 2004): 2471-2475.

- Gourley, Scott R. "Medical Simulation Training Center." *Army Times*, 2 August 2006.
- Griffin, Sean D. "Critical Thinking: A Weapon for All Wars." *Marine Corps Gazette*, 89:6 (June 2005): 44.
- Herndon, David. "Wilford Hall Medics Depart for Iraq." *Air Force Link*, 9 January 2007. <http://www.af.mil/news/story.asp?id=123037105>.
- Herndon, David. "Course Focuses on Trauma Training for Nurses, Medics." *Air Force Print News Today*, 21 August 2007.
- Kennedy, Harold. "Simulation Reshaping Military Training." *National Defense Magazine*, November 1999. <http://www.nationaldefensemagazine.org/issues/1999/Nov/Simulation.htm>
- Knobler, Haim Y., Tali Nachshoni, Eli Jaffe, Gabriel Peretz, Yoram Ben Yehuda. "Psychological Guidelines for a Medical Team Debriefing After a Stressful Event." *Military Medicine*, 172 (June 2007): 581-585.
- Kolkow, Tonya, James Spira, Jennifer Morse, Thomas Grieger. "Post-Traumatic Stress Disorder and Depression in Health Care Providers Returning from Deployment to Iraq and Afghanistan." *Military Medicine*, 172 (May 2007): 451-455.
- Lake, Jason. "Air Force Medics Take Control of Combat Hospital." *Air Force Print News Today*, 20 September 2004.
- Lam, David, Fecura, Stephen. "The Trauma Continuum-of-Care Quality Forum Integration Committee System-Wide Video Teleconference." *Military Medicine*, 172 (June 2007): 611-615.
- Larlee, Jeremy. "Training Builds Foundation For Deploying Medics." *Brooks City-Base News*, 20 August 2007. <http://www.brooks.af.mil/news/story.asp?id=123065201>.
- Lee, Howard E. "Virtual, Live and Simulated Training." *Field Artillery*, 5 (September-October 2005): 35-37.
- Paul, Richard and Linda Elder. *The Miniature Guide to Critical Thinking*. Dillon Beach, CA: The Foundation for Critical Thinking, 2006.
- Reineck, Carol. "Individual Readiness in Nursing." *Military Medicine*, 164 (April 1999): 251-255.
- Rivers, Felicia M. "US Army Professional Filler System Nursing Personnel: Do They Possess Competency Needed for Deployment?" *Military Medicine*, 171, (February 2006): 142-149.

- Scales, Robert. "Culture-Centric Warfare." *Proceedings*, (October 2004): 32-36.
- Thompson, CR., Katherine Repko, N. Staggerer. "A Delphi Study to Validate Competencies of Air Force Medical Surgical (46N3) Nurses in Mobilized Environments." *Military Medicine*, 168 (August 2003): 618-625.
- Tuck, Jeremy J. H. "Medical Management of Iraqi Enemy Prisoners of War During Operation Telic." *Military Medicine*, 170 (March 2005): 177-182.
- Wagers, Scott. "Duty Brings Out the Best." *Airman*, 51 (Winter 2007): 18-22.
- Wilmoth, Margaret, Stephanie De Scisciolo, Lacy Gilchrest, and Jacek Dmochowski. "The Readiness Estimate and Deployability Index and Psychometric Properties in Army Reserve Nurses and Medics." *Military Medicine*, 172 (August 2007): 800-805.
- Zouris, James M., Jay Walker, Judy Dye, Michael Galarneau. "Wounding Patterns for U.S. Marines and Sailors During Operation Iraqi Freedom, Major Combat Phase." *Military Medicine*, 171 (March 2006): 246-252.

