BAGHDAD ER - REVISITED

Colonel Erin P. Edgar

September 2009

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ISBN 1-58487-403-1

PREFACE

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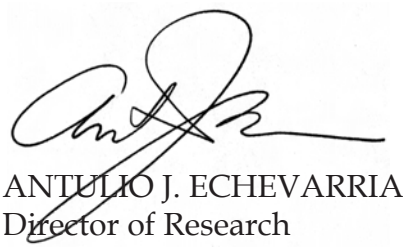

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ABOUT THE AUTHOR

ERIN P. EDGAR received his Regular Army Commission from the United States Military Academy at West Point, New York, in 1988. Subsequently, he attended the Uniformed Services University of the Health Sciences in Bethesda, Maryland, earning his M.D. degree in 1992. Colonel Edgar performed his internship in family practice at Womack Army Medical Center, Ft. Bragg, North Carolina. In 1993, he was assigned as the Brigade Surgeon for the 82d Airborne Division's Aviation Brigade. In 1995, he returned to Womack and completed his family practice residency in 1997 as chief resident. Following residency, Colonel Edgar served as the flight surgeon for 1st Special Forces Operational Detachment-DELTA. In 1999, he attended the Command and General Staff College and subsequently was assigned as the Officer-in-Charge of Monroe Troop and Family Medical Clinic and an adjunct faculty member for the Darnall Army Community Hospital family medicine residency at Ft. Hood, Texas. In 2001, Colonel Edgar returned to Ft. Bragg to be the Division Surgeon for the 82d Airborne Division. In this role, he deployed to Afghanistan as the Surgeon for Combined Task Force 82 in support of Operation ENDURING FREEDOM and later deployed with the division to Iraq in support of Operation IRAQI FREEDOM. Following his tour as Division Surgeon, Colonel Edgar served as the Director of Combat Medic Training at the Army Medical Department Center and School at Ft. Sam Houston, Texas, and the proponent for 40,000 91Ws throughout the Army. Subsequently, he commanded the 264th Medical Battalion at Ft. Sam Houston from 2004 to 2006. In 2006, he returned again to Ft. Bragg to command the 28th Combat Support Hospital. In that capacity, he deployed with the 28th to Iraq in September 2006 for a 15-month tour conducting split-based operations in Baghdad and Mosul. Colonel Edgar is a member of the U.S. Army War College Class of 2009.

ABSTRACT

The China Dragons of the 28th Combat Support Hospital deployed in support of Operation IRAQI FREEDOM from September 2006 until November 2007. This combat tour was historic in many regards, and a good team became a great team while challenged with unprecedented casualty numbers and indirect fire attacks. Not only did they save thousands of lives; they helped advanced trauma medicine, as leading hospitals worldwide have benefitted from military initiatives in the areas of bleeding control and hemostatic resuscitation. Their service epitomizes the strides that have been made in military combat medicine, and their challenges highlight the areas in which our medical system can improve further.

BAGHDAD ER—REVISITED

The China Dragons of the 28th Combat Support Hospital (CSH) departed Ft. Bragg, NC, on September 13, 2006, and performed Level III combat health support in Iraq until returning home on November 18, 2007. The following account highlights the rigor, successes, horrors, and challenges of the most historic CSH deployment in the Global War on Terror (GWOT).

I assumed command of the 28th CSH on June 16, 2006. I was convinced by Lieutenant General Kevin Kiley, the Army Surgeon General, the autumn prior to defer Senior Service College for 2 more years in order to take command and deploy the unit. I was extremely excited about the mission and honored by his confidence in me. With no experience in deployable hospitals, no War College training, and juniority requiring me to be frocked prior to taking command, I prayed that his confidence had a foundation. Shortly after the change-of-command ceremony, the hospital went on block leave prior to its predeployment train-up. I, however, spent that time in the office, learning as much as I could about my new Army home and family.

After block leave, the China Dragons began the painstaking process of training up for the mission. Besides tasks required by U.S. Central Command (CENTCOM), we had multiple medical-specific training such as platelet apheresis for our laboratory technicians, complex medical maintenance courses for the computerized tomography machines, which were nondoctrinal and not in our usual stockage, and trauma training for providers and nursing staff.

Reception and integration of our professional fillers (PROFIS) was probably the hardest predeployment job. In garrison, a CSH is not really a hospital, but rather a skeleton. It has all its equipment but only half its people. I was the only physician there by virtue of command. Most of the medical staff in a CSH comes from the PROFIS system, and the distribution of the load is across the entire Army Medical Department (AMEDD). Our Chief Nurse had the onerous task of integrating PROFIS personnel into the team and, in concert with the executive officer, communicating with them via phone and e-mail about the upcoming mission. They were 225 in number, serving at 31 different hospitals or clinics around the world. Our PROFIS arrived at Ft. Bragg on August 14, and we had 1 month to train them in all required tasks. To say that it went smoothly would be a lie, but we got it done. The biggest waste of time was the convoy live-fire training. It chewed up 5 entire training days because of the limited throughput on this range. To add insult to inefficiency, those of us with 9mm pistols did not fire our weapons. Instead, we pointed unloaded weapons at imaginary enemies and yelled, "Bang!" as we meandered along the course, sitting in the back of exposed transport trucks without canopies. I knew that we would be conducting no convoy operations in Iraq, but it was a nonwaiverable CENTCOM requirement. Common sense had no place in this decision.

The Army designs predeployment training with pain in mind. If it is extremely difficult, it will have the soldier wishing that he was already deployed. It had that effect on us, and the team that would soon become Task Force Med 28 was anxious to depart Green Ramp at neighboring Pope Air Force Base. On a rainy September morning, we hugged our loved ones and made our way to the hangars for the hours-long wait that always accompanies

deployments. Our arrival in Kuwait served to excite the whole team. Though dealing with jet lag, we listened intently to the in-processing briefings and anxiously awaited our tent assignments. Unfortunately, they told us we had 12 days of training before we would depart for Baghdad and Talil—our mission was to conduct split-based operations, essentially standing up two hospitals. Baghdad was the main effort, and Talil was the secondary. We would eventually move the Talil operation to Mosul in the northernmost province. Although dragging 3 days of training into 12 was frustrating, it did afford us the opportunity to acclimate to the hot environment and adjust our bodies' clocks to the Middle East prior to assuming a very demanding mission.

Trauma.

Given that the Baghdad mission was our largest and included two-thirds of our task force, my Command Sergeant Major (CSM) and I decided that we would make it our headquarters. We arrived late at night on September 26 and began our transition with our predecessors of the 10th CSH. They were very happy to see us because our arrival signaled their impending trip home to Ft. Carson, CO.

The China Dragons were immediately immersed in trauma that most had never seen before and at a volume that seemed ridiculous. Ramadan, the Islamic holy month of fasting, had just begun, and the enemy had decided to leverage religious extremism as motivation for attacks on coalition troops, Iraqi security forces, and civilians. The number of trauma patients seen at the hospital rose from 230 in August to 345 in September. As Ramadan continued into October, that month's number rose to above 350. The Transfer of Authority (TOA) on October 8 had unfortunate timing because replacing an experienced crew with a green crew decreases the competence of clinical care. It takes about 8 weeks for a new hospital to reach the previous band of excellence. Furthermore, the Air Force Theater Hospital (AFTH) in Balad (the hospital to which we evacuated all of our coalition casualties for rearward movement) was simultaneously going through a personnel change. It was the "perfect storm."

I was impressed by the ability of the hospital staff to adapt so quickly to the traumatic injuries. Amputations, eviscerations, sucking chest wounds, and open-head injuries became routine. During our tenure, the staff performed 300 thoracotomies in our trauma bay. This is a procedure in which a doctor cuts open the chest, clamps the descending aorta to keep blood volume in the upper part of the body to supply the vital organs, and shocks or manually pumps the exposed heart. When I first learned advanced trauma life support in medical school, I was taught the utter futility of cardiac resuscitation in trauma victims because of near universal failure. However, military trauma management has advanced tremendously as a result of our experience in Iraq and Afghanistan. Ideal ratios for fresh frozen plasma and red blood cells are established, and hospitals are equipped with infusion machines that can push a unit of blood into a patient in less than a minute. The Air Force Surgeon General recently testified to the Senate that the development of such resuscitative cocktails has made a difference in combat casualty care.[1] As a result of this technology and expertise, we successfully returned six of the 300 patients home alive. I began to call such feats "Frankenstein medicine" because we were basically resuscitating dead people.

Tourniquet use has advanced tremendously over the last few years. Ten years ago, a typical military first aid class taught students that elevation and pressure were the preferred methods for stopping extremity bleeding. Tourniquets were to be used only as a last resort because of supposed nerve and tissue injury. Because exsanguination from an extremity is the number one cause of preventable combat-related death, military trauma theory has evolved, and now early and liberal use of tourniquets is the norm. Once a first responder applies one, his hands are free to return fire, transport the casualty, or aid another casualty. The vast majority of our patients with amputations or severe extremity wounds had tourniquets that were properly applied by well-trained troops. Furthermore, nobody sustained permanent extremity damage as a result of their use. This is a "good news" story for combat trauma care and has resulted in many lives saved that would have been lost in prior conflicts. The case fatality rate in our current conflict is 9.1 percent versus 15.8 percent in Vietnam.[2]

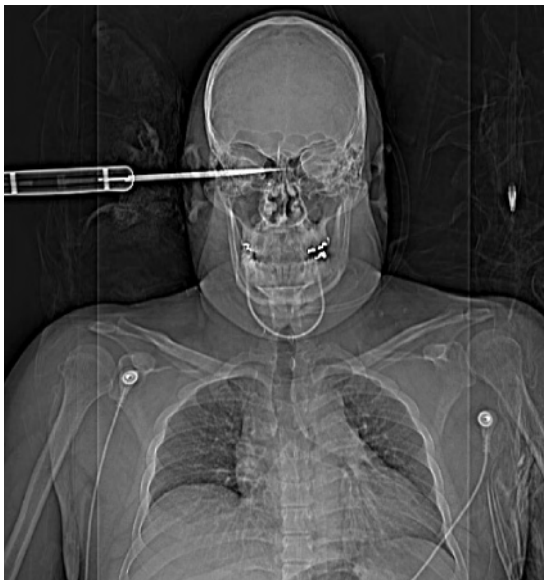

Figure 1. Knife in a Soldier's head.

PAO and Visitors.

Ibn Sina hospital was founded by four altruistic Iraqi physicians in 1964. Ten years later Sadam Hussein seized it for his own personal and family use because it was the finest hospital in Baghdad. It became famous in 2006 when the Emmy award-winning HBO special, "Baghdad ER," chronicled the horrific trauma and the exceptional care provided by the 86th CSH in 2005. Ever since the special debuted, Ibn Sina has been the focus of many visits by celebrities, politicians, and the media. I was not authorized a public affairs officer (PAO), so I had to take one out of hide. This was difficult because I knew that I would have to assign one of my brightest officers if the job was to be done well. We wanted our story to get out and to be as positive as possible. The ideal PAO is

extroverted and a master of verbal and written communication. Ours performed superbly and was one of the busiest officers in the hospital. I, my deputy commanders, and the coordinating staff spent at least 10 percent of our time preparing for and conducting tours for our visitors. I did not consider these tours to be "dog and pony" shows or distractions. Rather, they were a part of our mission essential task list. We needed to engage these visitors in a strategic communications context. Whether we were providing up-to-date progress to a group of senators or letting America know via a media conduit that its sons and daughters were receiving world-class medical care, we had to excel. Our tour performance evolved to the point where we had a multitude of briefings and agendas from which to choose. Based on the demographic of the visitor or group, we could choose from our menu and execute with very little notice.

Figure 2. Visit from Senators Biden and Lincoln.

The Surge and Deployment Extension.

After the conclusion of Ramadan in late October 2006, our casualty numbers dropped a bit, reaching a relative lull around the end of the year. However, the announcement of the surge and subsequent influx of thousands more American troops created a larger population at risk. Many of these troops who were "surged" ended up around the Baghdad area, and our hospital experienced steady gains in trauma casualties with a peak of 375 in June 2007. In April, I took my 2 weeks of mid-tour leave and spent it with my family at Ft. Bragg. While home, I stayed glued to the television and internet, combing over any news of Iraq I could find. This irritated my wife, and I had a hard time explaining to her why I missed my soldiers and partly wished I was back in Baghdad with them. The biggest news item during that time was a bombing of the Iraqi Parliament building. It resulted in many casualties flowing to Ibn Sina, and the staff conducted the trauma care, VIP handling, and press interaction superbly. Our telephone rang on the morning I was putting my uniform on and getting ready to board a plane for the long journey back to Baghdad. The caller was one of my wife's Family Readiness Group (FRG) assistants, and she was calling to inform us that our unit's deployment had been extended from 12 to 15 months. I quickly

called my deputy commander in Baghdad to check the veracity of this information I had received through dubious channels. He confirmed the news, and I couldn't believe my ears. Army Chief of Staff General George Casey had been talking for several weeks about a decreased dwell time at home station for the Army's Brigade Combat Teams (BCTs). Because of the surge, some were returning home from deployment and going back to theater in less than a year. To increase dwell time for BCTs, he said he would probably have to extend deployment time to give soldiers proper time for rest, recovery, schooling, and family bonding. Army CSHs, on the other hand, had, at worst, a 22-month dwell time for a 12-month deployment. I thought for sure when General Casey mentioned a possible extention for BCTs that it would not apply to the 28th CSH, and when rumors circulated in our hospital about such a possibility, my CSM and I were quick to dispel them. Therefore, this news hit the unit hard, and I returned to a hospital that had just had the wind knocked out of it. Morale was in the tank. To make matters worse, our higher headquarters and our sister CSH in theater were from the reserve component, so the extension didn't apply to them. My soldiers noticed this and saw it as inequity.

I asked my higher headquarters for the reason the 28th was being extended, given a healthy 22-month dwell, but I was not given one. Nobody had an answer. This represented a leadership dilemma, because one of the most often quoted bullets from my leadership philosophy is, "Purpose drives task." This was one of the most salient lessons I learned from studying tactics at the Command and General Staff College at Ft. Leavenworth, KS. A mission statement consists of a task and a purpose. They are usually separated by the words, "in order to." The task describes what to do, and the purpose tells you why. The purpose is more important because the guy on the ground executing the mission needs to understand exactly what the commander wants accomplished. I'm amused at all the old "Cold Warriors" who lament the supposed fact that today's young soldiers are always asking, "Why?" "Why" is the most important question there is, and soldiers need to know the answer to it. However, even the dullest China Dragon knew that "Extend your deployment by 3 months in order to increase BCT dwell time" was a mission statement that made no sense. I had to come up with a purpose since the Army, the AMEDD, and my higher headquarters wouldn't give me one. I told our soldiers that our presence in Baghdad throughout the surge was crucial. We had made solid relationships with the BCTs and our Iraqi partners in the Security Forces and the government. Changing out the hospital staff at such a crucial time would result in increased morbidity and mortality at a time when the Army and America could ill-afford it. Luckily, the team, for the most part, bought it. We ate our spinach and soldiered-on. One aspect that likely contributed to the lack of support for redeploying on the original timeline was the credibility gap that plagued the AMEDD at the time. Just a couple months prior, the Walter Reed black mold and bureaucratic hassles of wounded warriors highlighted in the *Washington Post* forced the removal of the Walter Reed commander and the Army Surgeon General. This was a black eye for the AMEDD that put us in a powerless situation. The result of the extension for the 28th CSH was an increased internal disparity of deployment length because of the way that the unit is sourced by the PROFIS system. Of the 725 China Dragons who participated in the deployment, only 358 were there for the duration — just 49 percent.

China Dragon Casualties.

The nature of the combat in Operation IRAQI FREEDOM (OIF) in 2006 and 2007 made working at the CSH a fairly dangerous endeavor. Historically, a CSH was a relatively safe place to serve, but this tour was different. We had our first casualty after being in Baghdad for just a few days. A noncommissioned officer (NCO) was walking from the laundry facility to the hospital when a Kalashnikov 7.62 mm round fell from the sky and embedded in a muscle above his shoulder blade. Luckily he wasn't seriously injured. It was either the result of celebratory fire (common after Iraqi soccer victories) or a battle that was occurring at a nearby Tigris River Bridge.

Indirect fire in the form of mortar shells and rockets rained down on the International Zone of Baghdad (the location of our hospital) on almost a daily basis. Our hospital took many direct hits. The dates and the number of the impacts are classified, but they resulted in the majority of our casualties. On one morning, a sleeping trailer suffered a direct hit that sent a fragment through many layers of the hospital, wounding an NCO. Thankfully, the night shift soldier who had been sleeping in the trailer heard the Counter Rocket, Artillery, and Mortar (C-RAM) warning system and quickly made his way to the bunker before impact.

Indirect fire attacks usually consisted of one to four rounds. However, one summer afternoon we were under sustained bombardment for nearly 90 seconds. Well over 50 rounds impacted in our vicinity, and it appeared to be a rolling barrage down Haifa street right in front of our hospital. Captain Maria Ortiz and a fellow nurse were walking back from the embassy gym. Maria had begun an aggressive exercise regimen in hopes of surprising her fiancé upon redeployment by fitting into a size eight wedding gown. Both nurses heard the C-RAM alarm and hurried toward the nearest bunker, but the warning came too late. They were struck down by mortar fragments from a nearby impact. Within minutes, they were in our trauma bay thanks to Australian soldiers who witnessed their wounding. Despite aggressive measures to save her life, Maria died. Her wounds were fatal. She is the only nurse to be killed in combat since the Viet Nam War. If, prior to deployment, someone would have predicted that I would have 13 soldiers wounded in action and one killed, I would have laughed off such a prediction as inane. That kind of carnage did not happen in deployed CSHs. I pray it never happens again.

Figure 3. Soldiers Paying Last Respects to Captain Ortiz.

Managing Morale.

Shortly after arriving in Baghdad, I decided that one of my most important jobs as commander would be to monitor and, to the greatest extent possible, influence morale. High morale is a combat multiplier, but when it is low, it can mean the death of a unit. Indiscipline rises, and performance drops. My fellow CSH commander who had the mission of caring for security internees (prisoners) sent me some files covering his hospital's morale initiatives and in one file was the "morale curve." It was shaped like a "W." In a standard 12-month deployment, morale starts off very high. Soldiers are excited to be in the fight and are getting their coveted combat patch for the right sleeve of their uniforms. Three or so months into the deployment, morale dips because soldiers are missing their families, and many realize that the mission is not as glamorous as they thought it would be. Mid-tour leave tends to bring morale back up as soldiers get to recharge their batteries and see loved ones. At about 9 months, it dips yet again for a variety of reasons. Many soldiers at this point who are experiencing family and/or financial problems loathe the notion of returning home soon to face those problems. Finally, as redeployment approaches morale increases as the "mission accomplished" attitude pervades the unit.

In late August of 2007, China Dragon morale was the lowest I had ever seen. Our modified "W" for an extended tour had predicted this, but the tour extension and Maria's death had played pivotal roles. We had just said goodbye to our second batch of 6-month deployers and replaced them with the third batch of 40 personnel. I was wondering to what degree the extension was contributing. Studies of soldiers and marines have shown that the rate of post-traumatic stress disorder (PTSD) is higher in soldiers. Researchers hypothesize that Army 12-month tours are psychologically more damaging than Marine 7-month tours. My hypothesis was that 15 months was worse than 12, and I directed my research team to conduct a study on our soldiers. The study utilized a PTSD checklist and looked at a variety of factors. Interestingly, the PTSD rate was not significantly different in my long deployment population than in my short deployment population. Additionally, 15 percent of the task force scored at or above 50 points on the checklist, which is diagnostic of PTSD. I was surprised the number was so high, because most studies at the time suggested a lower percentage for the active Army as a whole. Furthermore, many experts had suggested that combat troops were at higher risk than combat service support troops such as ourselves. We didn't study what made us so different or why our PTSD percentage was so high, but I believe our soldiers saw the daily carnage and experienced the combat vicariously through our patients. Additionally, the indirect fire attacks had many soldiers feeling uneasy and helpless without the ability to shoot back at our attackers. Shooting back might be cathartic. Interestingly, the factors most strongly associated with PTSD were sleeping difficulties and youth.

When one considers these two factors, they make sense. Sleep is the mechanism that recharges the body and brain. If the brain doesn't get enough sleep, it becomes fragile and more prone to illness. Regarding youth, our 20-year-old soldiers were spending 6 percent of their young lives on this deployment compared to our 60-year-old soldiers who were investing just 2 percent. The older you are, the greater ability you have to apply perspective and context to traumatic situations.

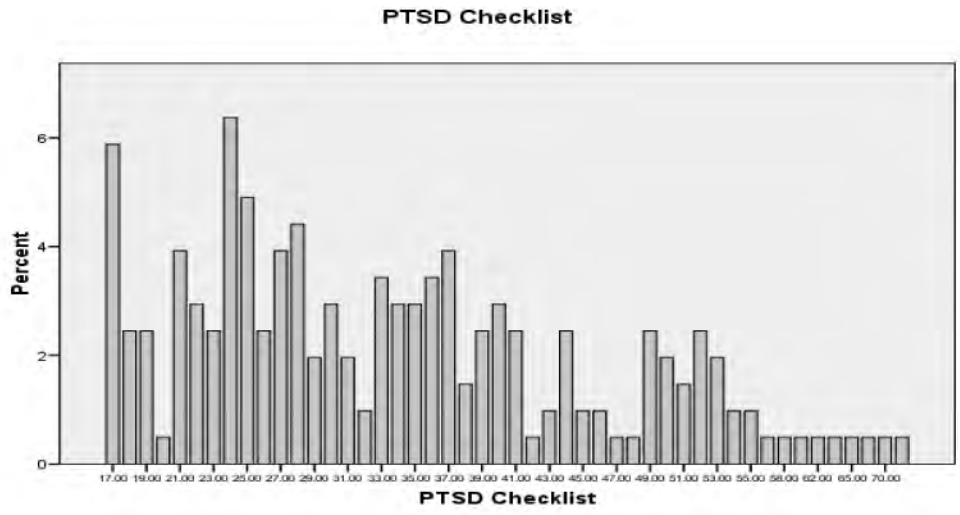

Figure 4. Fifteen Percent of the Task Force with PTSD.

Since morale was a top priority, I met regularly with both the junior officer and junior enlisted councils. These bright young volunteers had tremendous ideas for our Morale, Welfare, and Recreation (MWR) program. We threw theme parties for all the American holidays, held section decorating contests, and sponsored open microphone nights in our dining facility where soldiers could do poetry, comedy, or musical routines to entertain their comrades. These events paid large dividends, but the biggest morale boost came from organizational day activities. A unit is typically funded for just one organizational day per year, but since our deployment was now going to be more than a year, the CSM and I decided to have an additional one on the day we were originally scheduled to redeploy. Therefore, instead of having soldiers bemoaning their circumstances in Baghdad, we'd have hospital sections clashing in competitive sports to determine the champions. The distraction worked, and September 3, 2007, was a day of trash-talking, camaraderie, good sportsmanship, and delicious food. The next big event was a body building contest involving both our men and women. Not only did several China Dragons attend, but our neighbors from the Australian Embassy and the nearby Corps of Engineers contributed to the audience of over 250 people. These social events served the troops well and allowed them to blow off steam. Individually, soldiers used humor to offset the continuous trauma. I saw this everywhere, whether I was in the trauma bay, the intensive care unit (ICU), or an administrative area. Laughter really can be the best medicine.

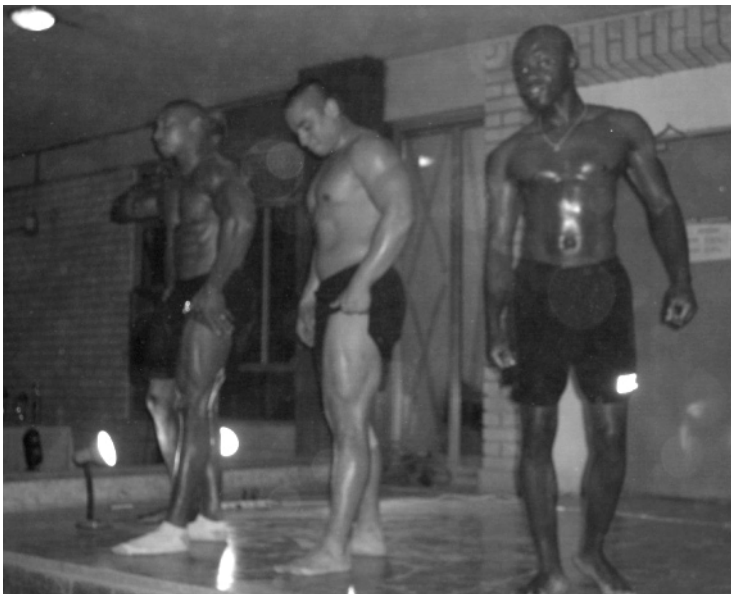

Figure 5. China Dragons Posing for the Judges.

Areas For Improvement.

Without a doubt, our combat healthcare has advanced tremendously in the last few years. But there are areas in which we can improve. During this deployment, I noticed four things that I would change if I were to become king for a day: supplement use by deployed soldiers, the command relationships within the medical task force, forward surgical team (FST) usage, and Army medical evacuation (MEDEVAC).

Shortly after arriving in theater, I decided I would go on a health kick and begin taking a daily multivitamin. When I went to the Army and Air Force Exchange Service (AAFES) store to purchase some vitamins, there were none on the shelves. Instead, the shelves were loaded with thermogenic and metabolic supplements, protein powders, weight loss pills, and the like. These products are known to cause harmful side effects, especially in soldiers operating under load and in extreme heat. They are responsible for lost duty time and dangerous aeromedical evacuations that would otherwise be unnecessary.[3] One day, a 20-something soldier presented to our hospital with palpitations and shortness of breath. In just a couple hours, he was in need of ventilator support for breathing because his lungs had become filled with fluid. We flew him to the Balad AFTH for further care and evacuation, but he died before ever leaving Balad. After learning of his death, his unit leadership went to his living trailer to gather his personal effects. They found a panoply of metabolic supplements which likely contributed to his illness and death.

Figure 6. Supplements Found in Dead Soldier's Living Quarters.

The Department of Defense (DoD) should not allow AAFES to sell these products in a combat theater. It is obvious they are a significant source of soldier morbidity, and I further hypothesize they are killing some soldiers. Certainly, soldiers could acquire these items in care packages or online purchases, but their presence on AAFES shelves represents a ringing DoD endorsement. Lawyers argue that we can't proscribe the sale of supplements at AAFES because they are legal products. However, we've managed to keep alcohol and pornography, both of which are also legal, out of the theater AAFES system because of a general order prohibiting them. The same should be done for supplements. As for my health kick, I had a "V8" moment when it suddenly dawned on me that I was working at a hospital that had a pharmacy. The best multivitamin I know of is the prenatal vitamin, and we had it in ample supply. I took one every day.

The command relationships within our theater medical task force were not optimal. Unlike the Army CSHs, which were under the operational command and control of the higher medical headquarters, the AFTH in Balad was only under tactical control of it. This led to friction because the AFTH ultimately answered to its Air Force boss while the rest of us answered to an Army boss—an AMEDD major general. The friction centered around patient care. Air Force complaints that unexplored wounds, dirty wounds, and missed injuries in the patients we sent them abounded, especially right after the frequent turnovers at the AFTH. These physicians, new to theater, failed to understand the differences in the Ibn Sina and AFTH missions. At Ibn Sina, we saw mostly fresh trauma right off the battlefield. Our job was to perform damage control resuscitation and evacuate the casualties as soon as they could survive a 40-minute helicopter ride to Balad. In Balad, Air Force doctors saw mostly used trauma.[4] They were the conduit through which all theater coalition casualties flowed prior to going to Europe. The AFTH's job was to perform subsequent surgeries on these casualties, if necessary, and evacuate them as soon as they were able to survive a 7-hour flight to Germany. Once

these newly deployed physicians got the gist of the differing missions, the complaints would subside. However, they often percolated up the Air Force chain of command. Subsequently, our commanding general would get a call or an e-mail from a nonmedical Air Force general officer questioning the quality of care at Ibn Sina. This was not helpful and created unnecessary distractions from the mission. Split loyalties resulted in excess friction. All hospitals in the medical task force should work for the same boss.

FSTs are small, mobile teams that are able to provide far forward resuscitative surgery. They are useful in an immature theater while units are still maneuvering, and should, ideally, be redeployed as the theater matures and more robust medical care becomes available in the form of hospitals. FSTs are typically apportioned to brigade equivalent units. When we arrived in theater, there were four to five Navy versions of the FST. Their forward resuscitative surgical sections (FRSS) were in al Anbar Province in support of Marine brigades. Most places in this western Iraqi province were too far away from the existing CSHs in the north, south, and central parts of the country. The plan of the medical task force was to move a CSH from a low volume location to the center of al Anbar in al Asad. The task force accomplished this task in March 2007, assuming the FRSSs would redeploy once the hospital was established. However, the FRSSs stayed. Their Marine commanders became accustomed to owning their own medical capability and didn't want to give it up. The result was an overpopulation of surgeons in al Anbar province. Subsequently, the CSH was underutilized, and Marine MEDEVAC crews often continued to fly casualties to the FRSSs instead of taking them 10 to 15 minutes further to the more capable CSH. This often subjected the casualties to one extra and unnecessary transport because FRSSs don't have holding capability; they evacuate their casualties right after surgery. I'm not suggesting that these teams performed in a sub-par manner. In fact, they performed superb surgery. However, this glut of capability was unfortunate. Deployed surgeons who are not busy operating usually vote with their feet. Many are trying to accumulate case loads in preparation for board certification, and if military decisions keep them from getting adequate numbers, they'll leave the service as soon as their active duty service obligation is over. Brigade commanders must be taught that excess medical capability has untoward consequences. When the military health care system is purchasing civilian care and hiring contractors to take care of its beneficiary population at home, every decision to deploy a surgeon or keep one deployed must be a valid one.

Army MEDEVAC can be improved in two ways: creating new doctrine or procedures for transporting patients between hospitals, and incorporating CH-47 *Chinook* helicopters as part of the potential MEDEVAC fleet. We flew patients out every night to Balad, and sometimes we had other patient movements that were not part of that routine haul. The MEDEVAC corridor between Ibn Sina and Balad was the most travelled and most dangerous one in the world. For those patients who were not part of the routine, we had to designate nightly "milk runs" as "urgent" requests. "Urgent," "priority," and "routine" are the three MEDEVAC categories the Army uses for casualties who can wait up to 2, 4, and 24 hours, respectively, before they are in the capable hands of a surgeon. However, these categories, strictly interpreted, never applied to our patients, who were already in capable hands. We just needed to move them along the evacuation chain so

they could eventually get to their destination. We were moving them to a hospital with equal capability, the exception being that it was located next to a runway upon which a strategic evacuation plane would land and take patients to Germany. The following case is illustrative of why the urgent/priority/routine categorization is an ill-fitted and passé construct for moving patients between hospitals:

> A soldier presents to the trauma bay with bilateral amputations and undergoes damage control resuscitation and surgery to include massive amounts of transfused blood products. He gets out of surgery at noon and cannot wait for the routine flight late that night because he'll be out of his honeymoon period. Because of the massive amounts transfused, his lungs will start to fill up with fluid in 4 to 6 hours, making him a flight risk. By then, it's better for our hospital to hold him for another couple days and fly him when he's more stable.

This scenario played out at least once every week. The answer from the Medical Regulating Office (MRO) was to call for an urgent MEDEVAC. Although doctrine says that it is within 2 hours, helicopters usually arrive within 10 to 15 minutes of such a call. It takes 40 minutes to unplug a very seriously ill patient from an ICU, package him for the flight, and get him out to the helipad. So at times, we had rotors spinning on our helipad, waiting impatiently for us to get the patients out to them, and on at least one occasion, there was a competing call to pick up a casualty at the point of wounding. This should never happen. A patient in our hospital is at the highest level of care in theater and should never trump a casualty who is bleeding in the street at the point of wounding. It didn't take us long to figure out the quick response of the helicopters and adjust the timing of our MEDEVAC call to synchronize patient and helicopter arrival, but a hospital should never have to make that urgent call. What the post-operative ICU patient needs is a predictable arrival time and assurance that the helicopter will fly nonstop to the next hospital on the safest and quickest route. A reply from the MRO or MEDEVAC unit of, "We'll be there to get him at three o'clock," would be great.

In addition to the misapplication of battlefield doctrine to inter-hospital movement, the Army is rigidly stuck to one airframe for casualty movement—the UH-60 *Blackhawk* helicopter. Our patient movement load varied from 6 to 30 people per night. On nights that were busy and we were moving a couple dozen casualties or more, this rigidity made no sense to me. Sometimes, MRO couldn't get enough UH-60s to move all our patients. We had to triage them and hang on to the less serious ones. That usually made for a worse situation the following night. When MRO could accommodate our large numbers, we had multiple lifts of UH-60s moving our patients and any medical attendants we had to send along with them. What we should have done was to use CH-47s with litter stanchions like the Special Forces have been doing for years. They hold many more patients than the UH-60s. By doing this, we would have risked fewer air crews, and I could have achieved economy of force with my medical attendants. The freedom of maneuver in a medically rigged CH-47 is far superior to that of a UH-60, and the attendant-to-patient ratio could have been 1:2 or even 1:3. The Air Force uses airframes of opportunity for its strategic evacuation mission, and the Army should take a lesson in this regard.

Conclusion.

The 28th CSH deployment in support of OIF 2006-08 was historic in many ways. It was certainly the most imperiled CSH ever deployed, with 13 soldiers wounded and one killed. It was easily the most casualty-laden with 6,152 casualties, 501 deaths, 4,807 surgical patients, 14,253 surgical procedures, 2,200 evacuations, 30,128 outpatient visits, 148,996 pharmacy transactions, and 19,744 blood transfusions.[5] These statistics are unprecedented, and I hope will never be repeated. By comparison, Ibn Sina Hospital hasn't seen more than 93 casualties in a month since May 2008.[6] The Surge in Iraq appears to have worked, along with other Iraqi initiatives. Time will tell how the story ends, but it appears the worst is over, and we were there for it. I am thankful that I deployed with such a passionate and capable team, and I will be forever humbled by their collective courage, skill, and perseverence. Their dedication to the mission and to their fellow man remained inviolate under extreme conditions. They helped to advance trauma medicine just as those who have gone before us. There are still areas in which we can improve, and I hope I have the opportunity to write about those successes in the future.

ENDNOTES

1. Ellen Altman Milhiser, ed., *Senate Appropriations Committee Defense Subcommittee Hearing,* Arlington, VA: Gray and Associates, LC, March 18, 2009, p. 3.

2. John B. Holcomb *et al*., "Understanding Combat Casualty Statistics," *Journal of Trauma*, Vol. 60, February 2006, p. 397.

3. Jonathan A. Bolles *et al*., *Etiology and Management of Young Patients with Syncope in a Combat Theater of Operations*, Unpublished Manuscript, San Antonio, TX: Brooke Army Medical Center, 2008.

4. Used trauma is a term referring to injured patients who receive surgical treatment at another facility prior to arriving at a hospital's emergency room.

5. These statistics come from the 28th CSH Command Comprehensive Report submitted to higher headquarters at the conclusion of the deployment.

6. Brian Eastridge, e-mail message to author, April 6, 2009. Colonel Eastridge is the director of the Joint Trauma Research Programs and tracks trauma statistics in Iraq and Afghanistan.