

# **Committee on Tactical Combat Casualty Care Meeting Minutes**

**Davis Conference Center  
MacDill AFB, FL**

**4-5 February 2014**

**Attendance: See Enclosure (1)**

**Agenda: See Enclosure (2)**

## **CoTCCC Action Items:**

- a. Vote – Proposed hemostatic dressing change
- b. Teleconference/Vote – Proposed surgical airway change
- c. Teleconference/Vote – Proposed fluid resuscitation change
- d. Remove the pressure-patch ocular injury first aid kit from DoD inventories and purchase lists
- e. Pursue selected action items from Enclosure (3)

## **Combat Medical Presentations**

**Corporal Bryan Anderson** (75<sup>th</sup> Ranger Regiment) – presented 6 casualties from a multiple (12 detonation) dismounted IED incident. This scenario included the first use of freeze-dried plasma by a U.S. medic on the battlefield.

### **Lessons Learned:**

#### **Sustains**

- First Responder training is done on a weekly basis and paid dividends on the night of the incident.
- Fentanyl lozenges did an outstanding job controlling pain while still having a conscious patient.
- Knowing exactly where everything in my aid bag was made it easy to quickly communicate to others exactly what I needed and where they could find it.
- The use of pressure points on the femoral arteries bought me time while acquiring extra tourniquets.

- Regular Skedco training with first responders allowed for medical personnel to continue treating while patients were being packaged for transport.
- The use of ketamine to sedate a casualty allowed for a medic to use his fingers to find and stop an arterial bleed inside of the patient's face.
- A quick call on the ground to not package a casualty allowed for a quick manual carry of an urgent patient and ultimately led to a faster evacuation time.
- The ability to adapt and overcome is something that needs to be taught to medics at all levels.

### **Improves**

- Do not have loose items in the aid bag.
- When time permits, be sure to record vitals.
- Always carry webbing in order to drag and carry patients especially when dealing with pressure plate IEDs.
- Consider cricothyroidotomy early if patient is not guarding his or her airway.
- Never leave your aid bag at casualty collection point.
  - Service member left his bag at the casualty collection point thinking that was where he would be working on everyone. He was unable to move back there until just before evacuation.
  - All walk bags were also laying on the ground by time the initial blast went off. This made getting to extra med supplies extremely difficult.
- Communicate with leadership early and often
- 2 CAT Tourniquets broke while being applied
  - Ensure that, if you are carrying CAT tourniquets, they are new and have not been previously used for training or sitting on kit exposed to the elements for an extended period of time. Approximately one tenth of tourniquets broke while being applied.
- Ensure that all IV sites are properly secured.
  - If possible, use saline locks and attach an 18g needle to admin set for administration of fluids.

**CPT Andy Fisher** (75<sup>th</sup> Ranger Regiment) – presented a series of 9 casualties whose pain was managed successfully with ketamine. His view is that ketamine is much better than any other medication that we use on the battlefield for analgesia.

### **Lessons Learned:**

- Ketamine has been far superior to any other drug that is used at the Point of Injury (POI)..
- Ketamine works well for tourniquets, long bone fractures due to penetrating trauma, and amputations.
- Dosing between 75-100mg works the best, but 50mg IV is a good initial dose when given with midazolam.

- Without midazolam, most patients moved the extremities and talked or sang, mostly incomprehensible sentences.
- The pre-hospital combat setting requires a larger dose of ketamine than would be expected.
- It is difficult to stop patient movement and administer more medications.
  - First rotation, we used 50 mg/ml - not an issue other than the size of the bottle.
  - Other rotations, we used 100 mg/ml, much smaller - was able to carry two bottles in the medication case.
- Auto-injectors could be beneficial for certain situations.
- When using ketamine, I would draw up 200-250mg and dose as needed.
- All patients that are critically injured or will need surgery should get two saline locks.
- Although pain scores were not available on all casualties, four reported
- 10/10 pain before ketamine, and if they recall, 0/10 after ketamine.
- Ketamine is a safe and effective form of pain management at initial doses of 50 -100mg IV.
- Midazolam should be used in conjunction with ketamine if possible.

#### **Prehospital Blood and Plasma at the Mayo Clinic**

**Dr. Don Jenkins**

Dr. Jenkins discussed the prehospital use of plasma and platelets at the Mayo Clinic. 479 patients have received thawed plasma to date; 442 have received PRBCs. This practice is resulting in improvement in International Normalized Ratios (INRs) by the time the patients arrive at the hospital. Dr. John Holcomb noted that liquid plasma (refrigerated immediately after donation, never frozen) is good for 20 days and is also a good option for prehospital use. Dr. Jenkins also discussed the use of tissue oxygen saturation monitoring as a good method of tracking the adequacy of resuscitation. This new monitoring technology is now in use at Mayo.

#### **CAT Tourniquets and Combat Gauze at the Mayo Clinic**

**Dr. Scott Zeitlow**

Dr. Zeitlow reviewed the prehospital use of tourniquets (CAT Tourniquets used on 73 patients with 98% success) and Combat Gauze (used on 52 patients with a 95% success rate) in the Trauma Service at the Mayo Clinic. He added that "improvised tourniquets were uniformly unsuccessful." Dr. Zeitlow also noted that the Mayo protocol calls for Combat Gauze to be used only after failure of standard gauze. There are 2 CAT tourniquets and 2 Combat Gauzes on each prehospital vehicle or aircraft.

## **TCCC Update**

**Dr. Frank Butler**

Dr. Butler noted that, by direction of the Acting Undersecretary of Defense (Personnel and Readiness), the Committee on Tactical Combat Casualty Care (CoTCCC) was moved to the Joint Trauma System (JTS)/U.S. Army Institute of Surgical Research (USAISR) in February of 2013.

There have been four changes to the TCCC Guidelines approved by the CoTCCC since it has been relocated to the JTS:

1) The TCCC Casualty Card has been updated and a companion electronic after-action report (AAR) have been developed and recommended for use as described below.

*Reference: Kotwal RS, Butler FK, Montgomery HR, Brunstetter TJ, Diaz GY, Kirkpatrick JW, Summers NL, Shackelford SA, Holcomb JB, Bailey JA: The Tactical Combat Casualty Care Casualty Card. J Spec Ops Med 2013;13:82-86*

2) The TCCC Guidelines now specify the use of a vented chest seal for the treatment of open pneumothorax.

*Reference: Butler F, Dubose J, Otten E, et al: Management of open pneumothorax in Tactical Combat Casualty Care: TCCC Guidelines Change 13-02. J Spec Oper Med 2013;13:81-86*

3) There are now three CoTCCC-recommended junctional tourniquets: the Combat Ready Clamp (CRoC) ; the Junctional Emergency Treatment Tool (JETT); and the Sam Junctional Tourniquet.

*Reference: Kotwal RS, Butler FK, Gross KR, Kheirabadi BS, Baer DG, Dubick MA, Rasmussen TE, Weber MA: Management of Junctional Hemorrhage in Tactical Combat Casualty Care. Journal of Special Operations Medicine 2013;13:85-93*

4) A new Triple-Option Analgesia plan has been incorporated into the TCCC Guidelines: 1) oral analgesics for less severe pain: 2) oral transmucosal fentanyl citrate (OTFC) for severe pain in the absence of shock or respiratory distress; or 3) ketamine for severe pain with in the presence of (or with significant potential for) shock or respiratory distress.

*Reference: 90. Butler FK, Kotwal RS, Buckenmaier CC III, Edgar EP, O'Connor KC, Montgomery HR, Shackelford SA, Gandy JV III, Wedmore IS, Timby JW, Gross KR, Bailey JA: A Triple-Option Analgesia Plan for Tactical Combat Casualty Care. Accepted for publication in the Journal of Special Operations Medicine.*

### **Joint Trauma System Director's Report**

**Col Jeff Bailey**

Col Jeff Bailey provided a JTS Director's Brief. Since the implementation of the Theater and DoD Trauma System in 2005, the U.S. military has recorded a steady decrease in the case fatality rate to the lowest level in the history of modern warfare, despite an increasing burden of injury. He emphasized the importance of injury prevention when possible, such as through the use of blast protective pelvic undergarments. Col Bailey also noted the positive impact on survival from the SecDef's 2009 mandate that evacuation missions be accomplished within 60 minutes of mission approval.

### **Deployed JTTS Director's Report**

**Col Stacy Shackelford**

Col Shackelford reviewed a number of issues that were identified during her time as the Joint Theater Trauma System (JTTS) Deployed Director. The first prehospital JTTS team was established during her time in theater, DUSTOFF platforms began a trial program of carrying RBCs on their aircraft, the JTS/CENTCOM Prehospital Trauma Care System Assessment was carried out, and the first CENTCOM/JTTS Theater Trauma Conference was held at Bagram in November of 2012 with 107 participants. Col Shackelford also reviewed recent JTS performance improvement efforts on analgesics (ketamine was found to be as safe as narcotic pain medications for pre-hospital use) and DUSTOFF transfusions to date were reviewed (no adverse events were reported in 61 transfusions.)

### **TCCC Equipment**

**CDR Tyson Brunstetter**

CDR Brunstetter from the Defense Health Agency Medical Logistics office (DHA MEDLOG) discussed TCCC equipment issues. He noted that most tourniquets purchased by the DoD in 2013 were CATs (\$18.5 million in purchases in FY13) with SOFT-Ts second (\$3 million). Combat Gauze was the predominant hemostatic dressing purchased. CDR Brunstetter also noted that work on the Joint First Aid Kit (JFAK) is progressing and that it should be fielded in the near future. The Air Force is anticipated to purchase the first large increment of JFAKs in the near future.

The inappropriate military eye injury first aid kit that encourages pressure patching and antibiotic ointment use for open globe eye injuries will hopefully soon have its availability eliminated for DoD purchases. The effort to have the newly updated TCCC Casualty Card approved as the new DD Form 1380 is nearing completion.

### **Documentation of Care in TCCC**

**COL Russ Kotwal**

COL Kotwal reviewed the progress that has been made in improving documentation and data capture for prehospital care in the U.S. military. A revised and updated TCCC Casualty Card was recommended by the CoTCCC in April 2013. It was forwarded to DHA MEDLOG and Health Affairs and staffed with the Services and COCOMs as the proposed new DD Form 1380 – the standard prehospital casualty care card for the U.S. military. This action was adjudicated and approved through all of the uniformed Services, the Combatant Commands, and NATO. A companion TCCC After Action Report (AAR) has also been developed. The TCCC AAR is designed to be a second opportunity to document TCCC and is to be completed by prehospital care providers within 72 hours following a mission. A JTTS Prehospital Care Cell (Physician, Physician Assistant, and Senior Medic) has been established in CJOA-Afghanistan to assist units in theater with prehospital efforts and initiatives, especially documentation, data capture and analysis, and performance improvement of prehospital care. A PreHospital Trauma Registry (PHTR) was developed and fielded to the JTTS in theater to assist with these efforts.

COL Kotwal also presented comprehensive data and analysis that support a positive outcome resulting from the 2009 Secretary of Defense-mandated maximum 60-minute evacuation time in Afghanistan. Overall casualty survival has improved from 86.5% to 90.5% since that directive was issued. The key to trauma care delivery is optimizing "time to a required capability," as requirements are dictated by injuries and the medical capabilities must be available and successfully performed in a timely fashion in order to reduce morbidity and mortality.

COL Kotwal also presented data from the newly developed Military Orthopedic Trauma Registry (MOTR). This ancillary module of the DoD Trauma Registry (DoDTR) is successfully providing more details and granularity on wounded warriors with orthopedic injuries as well as facilitating performance improvement for the care they are receiving.

### **JTTS Prehospital Care Director's Report**

**LTC Jim Geracci**

LTC Geracci from the Army Department of Combat Doctrine Development discussed his experiences as the Deployed JTTS Prehospital Care Director. He oversaw the implementation of the updated TCCC Casualty Card and electronic TCCC AAR in theater; his efforts resulted in the submission of over 300 AARs – a remarkable success in prehospital care documentation.

LTC Geracci also personally trained over 1100 medics, corpsmen, and pararescuemen (PJs) in the use of junctional tourniquets and documented 8 uses of the JETT device on combat casualties. All were judged successful at controlling the junctional hemorrhage, although two of the casualties later died. LTC Geracci noted that the Sam Junctional Tourniquet was the clear favorite among the junctional devices (CRoC, JETT, SAM, and AAT) of the overwhelming majority of medical personnel that he trained in theater.

A final point of emphasis was that, for casualty survival on the battlefield to be maximized, line commanders at all levels must take ownership of this aspect of combat operations and make caring for wounded unit members part of their unit's warrior culture.

### **JTTS Prehospital Care Director's Report**

**COL Samuel Sauer**

COL Sauer from the US Army School of Aviation Medicine presented his perspectives after a tour as the Deployed JTTS Pre-hospital Director. He reviewed one aspect of care that illustrates the difficulty of overcoming organizational inertia. Despite a consensus opinion by the ophthalmology and the TCCC communities that known or suspected penetrating eye injuries should be treated with a rigid eye shield, no topical medications, systemic antibiotics, and immediate evacuation, there is still support for the misguided and harmful approach of placing topical antibiotics in the injured eye and pressure patching it.

Col Sauer cited a list of doctrinal documents that contain this erroneous guidance and noted that the DoD still fields an eye injury treatment kit that contains all of the equipment (accompanied by directions) required to provide this inappropriate care. As a result of this failure to effectively train and equip the force to manage this type of injury, a significant number (60%) of U.S. casualties haven't received appropriate care for their penetrating eye trauma.

COL Sauer also pointed out that, after 13 years of remarkable success in treating life-threatening extremity hemorrhage with aggressive use of tourniquets to gain initial control of the hemorrhage, the Army Expert Field Medic Badge handbook still describes tourniquets as a treatment of "last resort."

### **Proposed Changes to the TCCC Guidelines**

There were three proposed changes to the TCCC Guidelines presented at the meeting. All of these changes are supported by position papers that have been prepared for presentation to the TCCC Working Group and will be forwarded to the group before the CoTCCC votes on them.

1) **Dr. Brad Bennett and CDR Lanny Littlejohn** proposed a change to add Celox Gauze and ChitoGauze to Combat Gauze as CoTCCC-recommended hemostatic agents, although Combat Gauze would remain the hemostatic dressing of choice.

2) **LTC Bob Mabry** proposed that surgical airways be performed using the CricKey – a device that combines a customized bougie and a cuffed Melker airway. LTC Mabry's surgical airway study published in Annals of Emergency Medicine in 2013 compared airways done with the CricKey to airways done using the standard open surgical airway technique. In a prospective, crossover study with the surgical airways all performed by combat medics, the CricKey technique resulted in significantly faster insertion times.

3) **Dr. Frank Butler** outlined a proposed change to fluid resuscitation in TCCC that incorporates dried plasma as an option for prehospital fluid resuscitation and provides a ranking of the prehospital resuscitation fluid options.

These three changes were discussed at length. The wording for the proposed changes will be modified based on feedback received at the meeting and the changes presented to the CoTCCC for a vote in the near future.

### **Far-Forward Blood and Plasma**

**Dr. Phil Spinella**

Dr. Spinella and CDR Geir Strandenes co-direct the Trauma Hemorrhage and Oxygenation Research (THOR) working group. THOR has 150 members from 11 countries and its mission is: “ To improve survival from hemorrhagic shock for patients with traumatic injuries by improving identification and treatment of shock and coagulopathy in the pre-hospital setting.”

Dr. Spinella observed that blood products provide better resuscitation from shock than either crystalloids or colloids, and that this difference will be more pronounced in future conflicts where evacuation times are longer than the very short evacuation times currently seen in Afghanistan. He outlined the present gaps in evidence that must be addressed to increase the availability of lifesaving blood products in the prehospital setting and noted that there is now a multinational prehospital transfusion registry in development.

### **Norwegian Far-Forward Blood/Plasma Program**    **CDR Geir Strandenes**

CDR Strandenes is the physician for the Norwegian Naval Special Operations Commando (NORNAVSOC). His unit has developed a training and research program for the use of whole blood and freeze-dried plasma (FDP) as primary resuscitation fluids for hemorrhagic shock. Nornavsoc’s protocol for prehospital use of fresh whole blood/cold stored whole blood in combat casualties has recently been accepted for publication.

CDR Strandenes related that his experience is that, if an intraosseous site is to be used to transfuse blood by gravity only, the sternum is clearly the preferred site. His research has demonstrated that a donors’ ability to perform combat skills is maintained immediately after the donation of a unit of whole blood. The advances in prehospital blood and plasma administration pioneered by Nornavsoc are now being transitioned to the Helicopter Emergency Medical System in Norway.

### **Hemostatics Resuscitation R+D**

**Dr. Bijan Kheirabadi**

Dr. Kheirabadi from the USAISR described his recent research on resuscitation fluids in an animal model of non-compressible hemorrhage. Resuscitation was accomplished with Hextend, Dextran 70, or albumin. Hextend and Dextran 70 were both observed to impair coagulation, whereas albumin did not. Survival was 0 of 8 in the Hextend animals, 2 of 8 in the Dextran 70 animals, and 4 of 8 in the albumin group. Dr. Kheirabadi noted that the animals in this study received a much larger dose of Hextend based on body mass than would have been recommended by TCCC.



In subsequent studies using the same non-compressible hemorrhage model, animals (rabbits) were resuscitated with a limited volume of freeze-dried plasma (FFP), 5% albumin and Hextend according to the battlefield resuscitation protocol (15 ml/kg in 2 bolus injections) to a hypotensive target pressure. The survival rates were 40% (4 of 10) for FFP and Hextend but 90% (8 of 9) for albumin with the least amount of blood loss and lower shock indices. In the next experiments, animals were resuscitated by the same method (2 bolus injections targeted to a hypotensive pressure) using a new synthetic colloid (Voluven, 15ml/kg), or crystalloids [normal saline (NS), 30 ml/kg or 5% hypertonic saline (HS), 7.5 ml/kg] and compared with 5% albumin. The best results (lowest blood volume and highest survival rate) were again achieved with 5% albumin resuscitation. No significant difference found among other fluids (survival rates 10-25%).

These study results would suggest that albumin is a better choice than artificial colloids (Hextend, Voluven) and some crystalloids for pre-hospital resuscitation from hemorrhagic shock in this parenchymal bleeding model.

Drs. Champion and Butler noted, however, that albumin is not recommended for use in casualties with TBI because of the increase in mortality associated with albumin use in patients with both severe TBI and hemorrhagic shock. This would be problematic in considering albumin for battlefield use, where shock and TBI are often present in the same casualties.

### **PHTLS TCCC Courses**

### **Mr. Mark Lueder**

Mr. Lueder from the Prehospital Trauma Life Support (PHTLS) Executive Committee observed that PHTLS began teaching TCCC courses in 2010 and that NAEMT has contributed significant resources, both personnel and funds, to develop TCCC teaching sites. There are now two PHTLS TCCC courses - a two-day course for medical personnel and a one-day course for non-medical personnel. PHTLS at this point has over 350 certified TCCC instructors and has taught the course in 26 countries. Activity is very heavy on the TCCC portion of the NAEMT web site and the TCCC pre-course was completely sold out at the EMS Expo last year in Las Vegas.

### **CoTCCC under the JTS – The Way Ahead**

### **Dr. Frank Butler**

Dr. Frank Butler discussed the functioning of the CoTCCC now that it is a component of the JTS instead of the Defense Health Board. One important aspect remains unchanged: the TCCC Guidelines produced by the CoTCCC are evidence-based, best-practice battlefield trauma care guidelines, but they are only recommendations. Turning best-practice guidelines into lives saved requires action on the part of both senior line commanders and medical leaders in the military.

A number of recent preventable deaths and preventable adverse outcomes in U.S. casualties have emphasized the need for better strategic TCCC messaging and improved interaction with the services and with combatant

commands. TCCC will never have maximum effectiveness for U.S. forces until line commanders make it part of their warrior culture, as was done in the 75<sup>th</sup> Ranger Regiment. Specific actions proposed to help enable this transition include:

- A JTS/CoTCCC brief at the COCOM Surgeons Conference
- Increased interaction with Combatant Command Surgeons
- TCCC and JTS briefings for senior line leaders
- TCCC and JTS briefings for service Surgeon's General
- TCCC instruction for all military physicians and PAs
- Shift to an annual update cycle for the TCCC curriculum
- Email an update package for each TCCC Guidelines changes that provides the following:
  - The change to the Guidelines and the paper that supports it
  - A set of TCCC training slides specific to the change
  - An updated version of the TCCC Guidelines
- Regular distribution of updated "Direct from the Battlefield" TCCC Performance Improvement issues
- A focused article for peer-reviewed publication on improving the transition of new concepts in trauma care into military medical practice

### **USASOC Medical R+D Initiatives**

### **SGM Kyle Sims**

SGM Sims reviewed a number of medical Research and Development projects currently underway at USASOC. These projects are selected based on input that comes directly from combat medics and include:

- Junctional tourniquets – his unit is now fielding junctional tourniquets – they prefer the SJT and the AAJT.
- XStat - regenerated cellulose sponges treated with chitosan. This item is not yet FDA-approved. When approved, it will be used for control of external hemorrhage.
  - The Wound Stasis program – an expanding hemostatic foam product designed for intra-abdominal use. This product is not yet FDA-approved.
- Prehospital monitors – the Tempus Pro can do all vital signs, live video, and ultrasound (pending FDA approval). It was developed by Sir Richard Branson for use on his aircraft; this monitor is likely to be vehicle-based rather than carried in medic sets.
  - The ATAK – an Android PDA that provides both digital medical information and an electronic care documentation capability.
- Intranasal ketamine injectors (50 mg)
- A handheld ultrasound device - uses the same wand as the Tempus Pro.
- Field Blood Test Kits that can test for HIV, Hep C, Hep B, HTLV1/II, malaria, syphilis, West Nile virus, and Chagas disease.
- Fluid Warmers – medics in his unit prefer the Belmont Buddy Liter, a smaller version of the Buddy Lite.

- Helmet-Mounted Blast Monitors – to measure the overpressure exposure by service members during training and combat operations.

**TCCC Issues and the Defense Health Agency (DHA)      Mr. Ed Whitt**

Mr. Ed Whitt, who is a former Special Operator now working at DHA, provided insights into the coordination process for CoTCCC recommendations. The organizational structure at the Office of the Assistant Secretary of Defense for Health Affairs (OASD/HA) is being reworked to incorporate the new DHA. Mr. Whitt and his supervisor, Ms. Elizabeth Fudge, both work in the Healthcare Operations section of the DHA, where they help to shape the capabilities for medical support of deployed U.S. military forces. The services have “train and equip” responsibility while the Combatant Commanders establish standards of care for their theaters. OASD/HA and the DHA interact with both.

There is a new Department of Defense Directive (DODD) being written that will specify the location and function of the JTS. There is at present no DoD-wide standard for trauma care, either on the battlefield or within the deployed MTF. An ongoing dialogue with both the services and the COCOMs is key to ensuring that all services and all theaters have the benefit of the 13 years of experience in trauma care that our military has gained in Afghanistan and Iraq.

**CoTCCC Action Items      Dr. Frank Butler**

Meeting attendees reviewed a list of proposed changes to the TCCC Guidelines and other potential action items for the CoTCCC. This list is included as Enclosure (3).



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Frank K. Butler, M.D.  
CAPT, MC, USN (Ret)  
Chairman  
Committee on TCCC

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1 March 2014

Date

Enclosure 1

**CoTCCC Meeting  
4-5 February 2014  
Attendance**

Corporal Bryan Anderson	USASOC
Col Jeff Bailey	JTS
CDR Sean Barbabella	Navy EM Specialty Leader
COL Dave Barber	JREG
Dr. Brad Bennett	WMS
COL Peter Benson	USASOC
LTC Wade Brockway	Canadian Forces
CDR Tyson Brunstetter	DHA MEDLOG
COL Brian Burlingame	JSOC
Dr. Frank Butler	JTS
Dr. Jeff Cain	EM, McKinney, TX
Dr. Howard Champion	USUHS
COL K.B. Chou	SOCCENT
Dr. Warren Dorlac	U Cincinnati
Dr Jim Dunne	GWU
COL Brian Eastridge	UTHSC
COL Erin Edgar	USAMRIID
Dr. Warner Rocky Farr	Lake Erie College Med
CPT Andy Fisher	75 <sup>th</sup> Ranger Regiment
Dr. Doug Freer	NMCSO
LTC James Geracci	MEDCOM DCDD
LTC Elon Glassberg	IDF
Dr. John Holcomb	U Texas
Dr. Don Jenkins	Mayo Clinic
Dr. Jay Johannigman	U Cincinnati
Mr. Win Kerr	JSOMTC
Dr. Jim Kirkpatrick	MEDCOM DCDD
Mr. Josh Knapp	ATF
LTC Tom Kodera	JSDF
COL Russ Kotwal	JTS
CAPT Bill Liston	WRNMMC
CDR Lanny Littlejohn	NMC Portsmouth
Mr. Mark Lueder	PHTLS/NAEMT
LTC Bob Mabry	BAMC
LTC Dave Marcozzi	HHS
Col Mark Mavity	CENTCOM
Dr. Norman McSwain	Tulane Univ
MSG Harold Montgomery	USSOCOM

LCDR Dana Onifer  
Dr. Mel Otten  
LTC James Pairmore  
Mr. Don Parsons  
CMSGT Tom Rich  
Mr. Jeff Rutherford  
COL Samuel Sauer  
CMSGT Ryan Schultz  
Col Stacy Shackelford  
SGM Kyle Sims  
CMDCM Eric Sine  
Dr. Phil Spinella  
CAPT Zsolt Stockinger  
Dr. Geir Strandenes  
Mr. Rick Strayer  
HMC Jeremy Torrisi  
COL Hal Walker  
Mr. Ed Whitt  
Dr. Scott Zeitlow

MARSOC  
U Cincinnati  
USASOC  
AMEDD DCMT  
58 RQS/CEM  
State Dept  
MEDCOM  
347 RQG  
C-STARS, Maryland  
USASOC  
3rd Marine Division  
Washington U  
JTS  
Norwegian Naval Commando  
JSOMTC  
Great Lakes NTC  
USSOCOM  
DHA  
Mayo Clinic

## Enclosure 2

### Agenda

#### Tuesday - 4 February

##### AM

0800	Butler	Admin Remarks and Introductions
0830	Jenkins Zeitlow	Opening Remarks Tourniquets and Combat Gauze Use at the Mayo Clinic
0900	Anderson	Combat Medic Presentation
0930	Break	
0945	Butler	TCCC Update
1015	Bailey	JTS Director Brief
1045	Shackelford	Deployed JTTS Director Brief
1115	Brunstetter	DHA MEDLOG Brief

##### PM

1300	Kotwal	First Responder TCCC Documentation
1330	Geracci	JTTS Prehospital Director Brief I
1400	Sauer	JTTS Prehospital Director Brief II
1430	Break	
1445	Spinella	THOR - Remote DCR
1515	Mabry	Proposed Change - CricKey
1545	Butler	Proposed Change - Fluid Resuscitation
1615	Group	New Business
1630	Finish	
1645	Room Clear	

#### Wednesday - 5 February

##### AM

0800	Fisher	Ranger PA Presentation
0830	Group	Prop Change - CricKey - Discussion
0900	Kheirabadi	Hemostatics/Resuscitation R+D
0945	Break	
1000	Bennett + Littlejohn	Prop Change - Hemostatic Dressings
1045	Lueder	PHTLS TCCC Courses
1100	Butler	PHTLS 8 Textbook Brief
1115	Kotwal	DoDTR - Military Orthopedic Module

**PM**

<b>1300</b>	<b>Group</b>	<b>Prop Change – Fluid Resuscitation - Discussion</b>
<b>1330</b>	<b>Butler</b>	<b>CoTCCC under the JTS- Way Ahead</b>
<b>1400</b>	<b>Sims</b>	<b>USASOC Medical R+D Update</b>
<b>1430</b>	<b>Break</b>	
<b>1445</b>	<b>Whitt</b>	<b>TCCC Issues - Staffing Process at DHA</b>
<b>1515</b>	<b>Butler</b>	<b>TCCC Action Items</b>
<b>1545</b>	<b>Group</b>	<b>New Business</b>
<b>1630</b>	<b>Finish</b>	

## Enclosure 3

### CoTCCC Attention Items

Tourniquet guidelines - add emphasis on the need for re-evaluation and removal of tourniquets if possible in long evacuations.

Tourniquet guidelines - As multiple deployed personnel noted training and placement of tourniquets exclusively in a “high and tight” versus simply proximal to extremity wound location, consider providing additional TCCC tourniquet placement clarification in TCCC instructional materials.

Consider adding ondansetron as an option for management of nausea and vomiting in the prehospital setting.

Review surgical airway indications. Surgical airways are being performed on casualties with GSWs to the head when there is no evidence of airway obstruction. Basic airway management techniques may be more appropriate in this situation.

Simplify and clarify the TCCC airway algorithm.

Review the use of pelvic binders in TCCC.

Reword the TCCC Guidelines to specify an “injured side up” position for NDC.

Consider adding mention of Foley balloon catheter treatment of head and neck bleeding (Weppner 2013)

Re-evaluate the Abdominal Aortic Junctional Tourniquet now that the directions for use have been changed.

Consider adding supraglottic airways as an airway option in Tactical Field Care as well as TACEVAC Care.

Consider the addition of spinal immobilization, bag-valve-mask use, and CPR to the list of skill sets.

Review the use of C-collars and spinal immobilization in TCCC.



Consider recommending the I-Gel as a preferred SGA because the cuff does not expand during flight.

Consider adding scalp skin clips (ITClamps) as an option for hemorrhage control.

Consider recommending one-slit routing for the CAT tourniquet as a preferred method for use.

Revisit the use of the Impedance Threshold Device (ITD) in TCCC.

Evaluate the potential use of the HemaClear Auto-Transfusion Tourniquet in TCCC

Evaluate the potential use of the modified Veres needle for needle decompression of suspected tension pneumothoraces in TCCC