Defense Committee on Trauma (DCoT) Combined Meeting

1-3rd September 2020

San Antonio, TX

Meeting Minutes Prepared by:

Mr. Harold Montgomery, Mr. Dominick Sestito, Mr. Thomas Rich

0700 Day #1 1 September 2020

0800 CST	Welcome to the DCoT Combined Meeting	Gurney / Cunningham / Drew / Shackelford
0830	Combat Casualty through the Continuum Case Presentation	Providers
0920	**Keynote Speaker:** The Future of CCC on the Future Battlefield 20 minutes talk, 20 minute Discussion	GEN Miller
1000 CST	**BREAK**	
1030	JTS Update – DHA Transition Update	Shackelford / Remley
1100	Joint Med Estimate and Joint Warfighting Concept	BG Friedrichs
1130 - 1300	FO/GO Panel: Where do senior leaders see gaps for the future battlefield? Can address Training, OTSG support, DHA support, MTF as training platforms. *NO RECORDING OF THIS SESSION*	RDML Via, RDML Kuehner, BG Friedrichs, BG Talley, BG Appenzeller

1). Admin Remarks and Introductions (COL Jennifer Gurney/COL Cunningham/CAPT Drew): COL Gurney, COL Cunningham and CAPT Drew, the Chairs for Surgical, EnRoute and Tactical Combat Casualty Care Committees, convened the meeting and welcomed meeting participants. COL Gurney briefly reviewed the agenda and welcomed VIP guests, Members, Presenters and Invitees to the inaugural "All Hands" combined Defense Committees on Trauma Virtual Conference. The Program Managers reviewed internal business rules and administrative announcements.

COL Gurney discussed membership requirements, the Subcommittee Chair's roles and responsibilities and how the intent of the combined DCoT meeting was to promote cross-functional lines of effort and to minimize redundancy in committee deliverables. Reiterates that DCoT now has statutory authority to affect change, and the progress we have made with tri-service lexicon and communications to the Combatant Commands.

CAPT Drew discussed the integration of TCCC hurdles and limitations for "Medicine out of a back pack" and transition from POI to Prolonged Field Care and then transition to EnRoute Care and how to successfully approach each level of care in reference to fluid resuscitation, burn management etc.

COL Cunningham discussed main ERC projects (JP 4-02 and Trauma Lexicon) and where we are with service equities and implementation to platforms and minimum training standards for skill level of ERC personnel. Additionally, ERC will discuss Research and Development with special attention to Vent Management and standardization.

2). <u>Case Presentation from Afghanistan Conflict, March 2019:</u> MSG Remley described the environment and challenges the team faced logistically and what took place in context. The patient experienced an IED blast and significant life threatening lower body injuries. Providers from all levels throughout the continuum of care presented on the casualty case, reviewing lessons learned, care provided and perspective on how a patient with life threatening injuries transitions through the roles of care in the Combat Trauma System. The presentation promoted excellent discussion on lessons learned.

Jim Czarnik: *"I think it is amazing that the Role 2 had the ability to administer all the blood products. For the first 6 years in Afghanistan the role 2's did not have this access. These advances alone are significant."*

Col Shackelford commented on current efforts on the Role 2 Readiness Checklist with POC's, processes and procedures based on lessons learned when you arrive in an operational environment at a Role 2. A significant amount of the conversation revolved around administration of blood products and administration of Calcium and potentially under dosing of pain medication based on size of individual and presentation of agitation. Also, this was the Medic assigned to the foot patrol, an emphasis on cross-training TCCC to non-medical personnel demonstrated the ability to save a life when the Medic becomes the patient.

Incredibly intense case and resource intensive. There was potentially a pain issue and he had a real challenge with pain control.

Summary - this patient obviously had a massive transfusion and 16 units of whole blood and 16 RBC and 29 of FFP and 15 of four and seven of platelets and had management of his vascular injuries with a shunt at the role two and obviously some challenges with vascular injuries and repairs along the continuum of care and one

3). VIP Guest Speaker General Austin Miller: General Miller opened with an introduction and dove right into a question posed to him in the Chat box: "who really owns battlefield medicine?"

His answer was:

> *"all of us do. There is an obligation of the commander of the field for sure, and that is just a legal responsibility that comes along with command, to make sure that systems are integrated, and that includes not only medical, but I will tell you some of the people do not want to be integrated and it makes it really, really difficult and we come up short."*

General Miller made some impactful statements throughout his presentation:

> *"At my level he always hears talk about those big success stories and we never talk about the things that were not successful…And it was not real clear what was happening from the ground up. So I took the education piece and just in my mind mistakenly*

assumed there was a level of collaboration and integration that was in play…but there is a level of disconnected views that are spreading across the operational environment."

"I think when you're talking to a commander, I think you have to talk in terms of risks, risks and gains, because ultimately why is battlefield medicine important for us?"

"I think we have to capture what exceptional looks like. And explain that to the community."

General Miller's overall message for Medical Leaders was INTEGRATION…to get involved in the Operational side of the deployment. To be present at meetings and listen in. If Medical Leadership integrates with Operational Commanders, they will gain respect and a mutual understanding and both leaders will begin to understand individual capabilities, as well as how to have mission success.

2). <u>JTS Director's Perspective/ JTS under DHA Update (Col Shackelford/MSG Remley):</u> Col Shackelford discussed the immense work being done on COVID and the development of the COVID Registry. She spoke about the Integrated System of Readiness and Health, stating "There are multiple lines of effort in various stages of implementation to address trauma readiness gaps." Strong and consistent medical and non-medical leadership within the Defense of Defense Trauma Enterprise (DTE) is needed to advance and fund FY 20 Goals:

1. Deliver PI Products to improve buy-in of stakeholders (now includes COVID)
2. Establish baseline interoperability standards workgroup
3. Establish CCMD trauma system (re-frame trauma system in terms of pandemic response)
4. Increase support for the National Defense Strategy and future operations (CTS planning, sustain epidemic registry)

Increased Military and Civilian Partnerships are a key to skills sustainment, but alone can't solve the problem. Civilian trauma centers cannot provide enough true trauma workload to provide readiness for military General Surgeons as well as Trauma Surgeons. The KSA metric empowers clinician and their leadership to develop more robust clinical activity for all surgical specialties.

The military is a balance between unique experiences and sacrifice. In order to recruit and retain quality people, we have to offer more unique experiences and make the sacrifices less painful. The goal is not to duplicate civilian practice.

Closing remarks "JTS can't turn this ship around by itself, it needs your help."

3). <u>VIP Guest Speaker Brig Gen Paul Friedrichs:</u> Brig Gen Friedrichs spoke on The Joint Medical Estimate & Joint Warfighting Concept. HE spoke on the changing environment and how COVID impacted the Enterprise as a whole:

- COVID-19 Impact
  - 1/3 of surgical private practices at risk of closing
  - Vaccine timeline
  - Telehealth
  - Deferred care
- Proposed Medicare Changes

- Effective 1 Jan 21
- Solidifies changes to sustain increased access via telehealth, reclassify some "inpatient only" diagnosis to allow treatment in acute care facilities
- Changes hospital quality ratings
- Driven by "Budget Neutrality" requirements; net 2.6% increase in payments (net ~7% decrease for surgical procedures)

Brig Gen Friedrichs discussed the Joint Warfighting Concept and this challenges it faces (Priorities, Logistics, Continuous Adaptation, Capability Development)

Brig Gen Friedrichs emphasized the following steps on "How We Impact Change":

- DCOT and JTS:
  - Read the classified JME, JWC documents
  - Keep generating objective analyses of capabilities and capacity
- Combatant Commands:
  - Capability Gap Analysis (Integrated Priority Lists)
  - Annual Joint Assessment
  - Updated casualty estimates and requirements
- Services and MTF-level personnel:
  - Brutally honest readiness reporting (DRRS), AAR/LL (JLLS)
  - Pursue connections with local partners and state/national med organizations
- All:
  - Contribute to Joint Concept for Health Services, Joint Publication 4-02 updates over next year, Capabilities Based Analyses

Brig Gen Friedrichs reiterated GEN Miller's point:

> *"there are a lot of things happening that are challenging, and challenging to the entire U. S. healthcare system. Now we need to balance risk. That was a point that General Miller made this morning…. we are having to reprioritize within the entire U. S. government, as well is within the Department of Defense."*

Brig Gen Friedrichs emphasized the importance of the JTS being involved in the combat development space, or envisioning what we need for surgical capabilities, resuscitative care, those sorts of things, that ultimately should be nested under joint concepts.

> *"Not that we are interchangeable. That is not what this is about. But in a way that we are interoperable. The annual joint assessment is due back this fall. Very specific questions… for the first time, medical questions included. We are looking for responses...Say yes when we reach out, looking for volunteers to help with some of these documents, and some of these efforts, whether the JTS asking for help, DHA, service chain, or us knuckleheads of the joint staff. We need your help."*

4). <u>VIP General Officer Panel (RDML Kuehner, BG Talley, RDML Via, BG Appenzeller):</u> COL Gurney introduced and welcomed the GO Panel.

The first question posed to the Panel was to discuss their thoughts on the Top Three issues affecting Combat Casualty Care:

RDML Via – "*If we end up in an competitive war in the near future, I am afraid we are behind the curve. Have we identified the right requirements for equipment, and I'll be aligning them to the platform*?

BG Talley –

> *"Future operation environments will be dispersed. So the training is key. We certainly have to think about if we are going to create capabilities, our design for a physician or a highly trained medic…I think we have to think as to what are the skills in the floor for what we are going to need in our healthcare system. One initiative that has become a top modernization priority, it is called project convergence. A mission commander needs to understand where they are taking the DNBI injuries, and how to apply them to combat power to mitigate risk."*
>
> *"Covid-19 has awakened the lion like never before. So there is a new appetite. There is a new understanding. When I go to the table and ask for funding for certain things, they say, no, we will apply to a weapon system, and answer I may have gotten eight months ago, that is not the case. So I think there is a great opportunity that is upon us now, and it behooves us to stay integrated with the line so we continue to garner their championship."*

RDML Kuehner –

> *"Our task…my task in Navy medicine is to be prepared to win. With and alongside our war fighter, again, any theater, any threat. I think that unfolds this new way of looking at how we manage combat casualty care… How do we distribute it beyond our limited resources? We are not going to have a trauma surgeon in all of the places that trauma may happen. We have to figure out what to do differently and what to let go of… And sometimes our passions get wrapped around what we know. And this is a time, when more than anything, it is important for us to understand systems and understand the value of every single piece of that system."*

BG Appenzeller –

> *"COVID has shown how important it is to focus on readiness as well as non-trauma casualty care. Second, how do we focus on how to sustain readiness through standardization, stabilization and synchronization? Interoperability is key."*

COL Gurney presented the second question to the Panel: Moving into near-peer or maritime environment, can you please identify the biggest challenge we need to be preparing for?

RDML Via –

> *"As a whole we have to get engrained into execution not just strategy of the system. Capabilities are out there but not codified in doctrine. My fear is processes are taking entirely too much time…we have to pressure the system to move more quickly. Keep doing what you're doing and focus on interoperability not interchangeability. I think our lack of ability to do things the same way and communicate, with each other, and then synchronize our medical activities across the force of the total joint force, I think that causes us problems. An example is when I was in Africa, and we had an 80 surgical team*

utilizing Air Force equipment that was trained by the Army, that was a huge anomaly and that shouldn't be an anomaly, we should be able to do that without thought."

CAPT Drew presented the third question to the Panel: "Standardization is a problem. What barriers do you see from the services to get standardization of things such as "THE TCCC" course, not "A TCCC" curriculum standardized across the services?"

RDML Via –

"My request would be that the joint doctrine is liberal enough that the services don't modify what the desired outcome of the product is but the services have the authorization within that joint product to ensure that the service uniqueness are able to be implemented within the joint doctrine and the joint program and then executed as such. And my comment would be which I've asked for all along, is that the joint entity maintains oversight of those programs and even over the services to make sure they are staying in compliance."

BG Talley –

"The issue isn't on deployment. If we can get it right at the edge of battle, our focus needs to be why we lose momentum the closer we get to the building. Instead of perhaps "making a deal" with the unit to try different applications, let's go ahead and formalize it. So, if there is a joint solution that works for all, I think we have to put down our service barriers from time to time and look for the best solution that will save American lives and coalition partners."

COL Gurney presents a question from the chat window: "In the maritime environment prolonged care, interoperability, nonmedical providers, KSA and how DHA could kind of overall implement that with accommodation with the services."

RDML Via – *"What is the greatest limitation? I will be frankly honest with you, resources. That's simple."*

RDML Kuehner –

"Everyone may also be a resource constraint. That is a barrier that is real. There are administrative wartime skill sets, Hospital Corpsman need to have the time on target which means that they need to be working in those places that best produce the training that is going to likely lead to the success on the battlefield."

COL Cunningham presented the next question to the Panel: "My question refers to mil/civ partnerships. I know a lot of what we plan to do at the enterprise level was incorporate prehospital providers into the MTF's, and I think from the density of learners, this is extremely challenging to do. What have you all seen at your level from feedback from the partnerships that we've managed to institute and how does that apply to the prehospital providers and the role one?

BG Talley –

"I was at regional health command Atlantic about one year ago, and to the efforts of Telita Crossland, we were able to establish a couple of pilot programs where we were able to place the entire forward resuscitative surgical teams and a couple of our civilian

platforms. When you look at certainly getting the reps and sets that our providers are going to need, particularly the surgical teams, anytime we can base them at a location where they are seeing complex cases, things that certainly are going to keep them current, the skills current, for not only, not just future operating environments, but for current…and if you look at the cost of that compare to what we expend for weapon systems or exercises, it is pennies to a dollar."

BG Appenzeller – *"it's the sheer volume. I don't know of any one plan that is going to get at the massive numbers of people that we have to get actual reps.*

COL Cunningham added to the question before getting the Navy perspective: "with the Navy owning most of the global battle space…from a service perspective, what efforts do you see potentially addressing General Appenzeller's approach from either the virtual learning environment of the pre-hospital providers as well as potentially those Mil-Civ partnerships?"

RDML Via –

"Requirements don't equal resources...but without a requirement you will have no resources. My frustration, it shouldn't take until POM 23 funding… But the problem is about $2.7 billion across the setup is what Navy medicine has within our MTF readiness dollars that we can spend on the programs…and we have to defend them when they compete against $13 billion for a Navy aircraft carrier. So, we have to take all of that into concept to make sure we are applying the right strategy and executing through it."

RDML Kuehner –

"I would just amplify those partnerships are local. What are we doing to ensure that the individual level, we are making folks better whether they are assigned a platform or not so they are ready for the next assignment? Because it is not operational now, the next one will be."

CAPT Drew presented the last question to the GO Panel: "Where the flag panel that we have present might predict that this conversation goes and how the DHA fits in moving forward."

RDML Via – *"I won't predict because the outcome is in all honesty is the same… a medical ready force and a ready medical force."*

BG Appenzeller –

"Synchronization and standardization as we talked about and how do we all work together to take the best care of our service members in harm's way. I know that we will all get our direction from somewhere. We will all continue to do that. So, who gives me my policies and my money and my direction, that's less relevant than who I'm taking care of. We are a performance-based organization."

COL Gurney closed the session with the following remarks: "As advocates, all around the world for improving combat casualty care improving readiness training and really synchronizing and standardizing all of the efforts."

The DCoT Plenary session ended a 1300. The Component Committees split into three separate sessions (CoSCCC, CoERCCC, CoTCCC). The conferences resumed at 1400.

CoTCCC Meeting (Day 1)

TIME	PRESENTATION	SPEAKER
1400 CST	CoTCCC: TCCC Update / Overview of CoTCCC Projects	Drew / Montgomery
1430	CoTCCC: Future TXA Options	Drew / Wright
1445	CoTCCC: Analgesia Final Vote Presentations	Fisher
1520	CoTCCC: Fluid Resus Final Vote Presentations	Deaton

1). **Admin Remarks, Introductions and TCCC Updates (CAPT Brendon Drew/Mr. Harold Montgomery):** CAPT Drew opened the CoTCCC breakout session with appreciation for the attendance and input during the morning DCOT session, and for the individual efforts over the last several months. CAPT Drew provided an overview of CoTCCC votes and activities, to include the votes and articles submissions for the hypothermia update, and changes to Tranexamic acid (TXA) dosing and administration. CAPT Drew highlighted that Dr. Frank Butler will conduct a review of the JTS clinical practice guidelines (CPG's) to identify inconsistencies with the TCCC Guidelines. Dr. Steve Rush has taken on a re-look and update of Traumatic Brain Injury (TBI) in TCCC which will be a key topic of a future CoTCCC event. SMSgt Travis Shaw has taken lead on a comprehensive review and update of the airway management section of the guidelines. COL Jamie Riesberg will chair the Prolonged Casualty Care Working Group (PCC-WG) , scheduled to have its first meeting this week (5 Sept).

2). **Future Tranexamic Acid (TXA) Options: (COL Christopher Wright / CAPT Brendon Drew):** Colonel Wright (UK LNO to DHA) was unable to present at this meeting and will be rescheduled to a later CoTCCC event. CAPT Drew provided an overview of the recent TXA dosage and administration changes in the TCCC Guidelines. Intramuscular (IM) administration of TXA was considered in the proposal but not recommended in the final guideline change. He provided a summary of the TXA topic to be provided later by COL Wright that focuses on advocacy for intramuscular (IM) administration of TXA. IM TXA is not a new concept, as the Canadian military presented the idea of IM TXA for delayed evacuation situations (Culligan, 2011). Another concept introduced, was the potential for non-medical personnel to administer IM TXA as a component of the individual first aid kit (IFAK). Like suggestions associated with IM Ketamine, the concept of IM TXA flows well with mass casualty situations, or when IV access may be delayed or difficult due to tactical circumstances. Obviously, there is a delay in peak onset of IM TXA but it can be concluded that some TXA is better than no TXA. There were older studies of IM TXA with small numbers of subjects which found a large difference in time to peak concentrations ranging from 30-60 minutes (Sano, 1976 and Puigdellivol, 1985). However, in the last year there have been two studies showing faster absorption with one showing a peak at 60 minutes (DeSoucy, 2019) and at 10 minutes

with 2 injections which challenged the paradigm of shock state absorption (Spruce, 2020). While this is not enough data to make or change recommendations, it should cause us to maintain awareness of this potential future change especially with several TXA studies and publications underway.

COL Czarnik - The UK has discussed IM TXA since 2014 but only recently have moved on fielding based on a DOD funding grant. He highlighted that the science will not be the barrier, but that logistics will be the real hurdle.

Mr. Bill Gephart - Historically, IM morphine does not work well but, in contrast, IM ketamine works very well and for people in shock.

LTC Knight - stated that the 75th Ranger Regiment is fielding TXA to Ranger First Responders (Combat Lifesaver equivalent) which demonstrates how unit level medical direction can employ such capability.

CAPT Drew highlighted that all of these factors are considerations in large scale combat operations involving delayed evacuation scenarios.

3). **Update to Analgesia in TCCC Change Proposal: (MAJ Andrew Fisher/LT Taylor DesRosiers-George):**
MAJ Fisher provided a quick review of previously presented material for the change proposal. Several recently published papers have demonstrated poor adherence to the TCCC Guidelines in the deployed setting IAW medication administration.

The identified probable causes are likely:

1. poor understanding of the TCCC Guidelines
2. limited availability of recommended medications in the deployed setting
3. inadequate pain management with the current dosing guidelines.

It was also highlighted that there are misunderstandings in the prehospital community between sedation and analgesia in the tactical, prolonged, and prehospital settings. For all these reasons, the change proposal team looked hard at redefining the TCCC analgesia to a tiered approach like the TCCC curriculum-based tiers, especially regarding sedation. MAJ Fisher reviewed recently published articles (Gurney and Schauer) that highlighted problems with compliance through both pre-deployment training deficiencies and patient data over the last 10 years. MAJ Fisher discussed the several points regarding the analgesia change proposal. Opioids, specifically IV Fentanyl, is considered safe with several recent papers pointing to pain improvement, minimal effect on vital signs , and being a preferred agent in U.S. EMS systems (Soriya, 2012; Kanowitz, 2006; Gausche-Hil, 2014, Shackelford 2015). In contrast, there is insufficient data on the Sufentanil sublingual tablet (Dsuvia) to make recommendations at this time. MAJ Fisher discussed analgesia versus sedation in the prehospital environment specific to dosages, routes, and when dissociative sedation may be utilized or considered.

MAJ Fisher provided a summary of 12 conclusion points within the analgesia proposal. The proposed changes to TCCC analgesia guidelines allow for better alignment with SOF, MEDEVAC, and PFC guidelines. The current TCCC Guidelines for battlefield analgesia need to be disseminated DoD wide to ensure adherence regardless of platform, training, or branch. The optimal analgesic option will vary

with the nature of the casualty's injuries, his or her physiologic condition, and the tactical circumstances present in the casualty scenario. The meloxicam and acetaminophen contained in the CoTCCC-recommended Combat Wound Medication Pack provide limited analgesia but avoid unwanted adverse effects. They should be used for casualties whose pain is relatively less severe and who are still able to be effective combatants. If opioids are required and safe to use for a particular casualty, OTFC provides rapid and effective analgesia. OTFC is also easier and faster to administer than ketamine. However, IV fentanyl is safe for casualties not in shock and may be considered an option during TCCC. For casualties with more severe pain in whom relief of pain takes precedence over preserving combat effectiveness, OTFC is the analgesic of choice if the casualty is not in hemorrhagic shock or respiratory distress and is judged to be at low risk for the subsequent development of either condition. Opioid analgesia should be avoided in casualties in shock, in respiratory distress, or at significant risk for developing either condition. Ketamine also provides excellent analgesia but requires slightly more time and expertise to administer than OTFC but avoids the risk of cardiorespiratory depression and may be used for IV, IO, IM, or IN. For casualties with more severe pain in whom relief of pain takes precedence over preserving combat effectiveness, ketamine is, therefore, the analgesic of choice if the casualty is in hemorrhagic shock or respiratory distress or is judged to be at significant risk for the subsequent development of either condition. Some situations will require prolonged analgesia or full dissociation, necessitating the use of sedation which is a distinct entity from pain control. The use of benzodiazepines is not recommended for analgesia. However, when performing dissociative sedation in benzodiazepines (midazolam) may also be considered to treat behavioral disturbances or unpleasant reactions.

Dr. Steve Rush and SMSgt Shaw - mentioned the concept of leaning away from mg/kg dosing for the tactical administration to lessen the need for calculations for initial administration.

CDR Deaton - Does CoTCCC needed to provide guidelines for medications that are beyond the conventional medic but already in the scope and capability of paramedics and providers.

LTC Knight - discussed the packaging of 250mcg and 500mcg fentanyl can be easily confused in the dark and tactical environment.

SMSgt Anderson - pointed out that PJs are carrying 100mcg carpujects of Fentanyl which could mitigate the concern of overdose.

4). **Update to Fluid Resuscitation in TCCC Change Proposal: (CDR Travis Deaton):** CDR Deaton reviewed prior updates to this change proposal over the last year to include:

1. Intent to remove Hextend/crystalloids
2. Albumin requires further study
3. Alignment of target blood pressures with the JTS DCR and PFC CPGs
4. Low-titer O added to the recommendation
5. No changes to other blood components
6. Initial calcium supplementation added to the recommendation but re-dosing not currently part of the proposal.

CDR Deaton - highlighted the existing prehospital programs of ROLO within the 75th Ranger Regiment, Valkyrie within the USMC, and the SOLO program recently published by USSOCOM and focused further discussion on points of contention from previous meetings. After previous meetings, the prioritization

of recommended blood product options has been outlined with the first option being cold-stored low-titer O whole blood followed by prescreened low-titer O fresh whole blood.

The field drawing and administration of fresh ABO-type specific was discussed with multiple points of concern:

1. Type specific fresh whole blood administration requires multiple Eldon cards or reliance on rosters
2. Training and sustainment requirements are unknown
3. Currently supported in the DCR and PCC CPGs
4. Efficacy is supported by literature
5. 6-30% associated mortality in ABO incompatible transfusions
6. Need for a value-based risk assessment.

SMSgt Anderson and CDR Onifer - echoed previous discussions that we should not rule out ABO type specific draw and administration in the field but keep it as an option in the sequence of casualty management when there is time and resources available, especially from a PCC or sea vessel perspective. Further discussion by the group highlighted the type specific decision points being involved with the transition from TCCC to PCC situations with obviously more time due to delayed evacuation. It was also highlighted that in a casualty scenario with hemorrhagic shock that there is indeed a risk of transfusion reaction but there is a greater risk of dying from exsanguination. Dr Sean Keenan and Mr Montgomery discussed that transitioning from carried or designated donor low-titer O for the initial resuscitation to type specific is potentially a trigger or an equivalent to the transition from TCCC to PCC.

CDR Deaton - solicited argument or opinion on the removal of clear fluids in favor of all blood products in the TCCC guidelines. It must be understood that the training, logistics, and unit implementation may take a while to ramp up and convert to comply with the guidelines.

HMCM Torrisi - mentioned that though clear fluids would not be considered an option for hemorrhagic shock, this change does not preclude medics/corpsman carrying clear fluids for other field conditions such dehydration from heat injuries or vomiting/diarrhea.

The CoTCCC Day 1 Conference concluded at 1600.

CoSCCC Meeting (Day 1)		
TIME	**PRESENTATION**	**SPEAKER**
1400 CST	CoSCCC: Is the Love Affair with Small Surgical Teams Over?	Benavides
1430	CoSCCC: UAE Update	Gavitt
1450	CoSCCC: Mil-Civ Partnership Viability	Hoffman / Nessen
1510	CoSCCC: BAMC Readiness Training	Becker
1530	CoSCCC: TMSO update / DMO CONOPS	RMDL Via
1550	Discussion (all speakers)	

1). <u>Is Our Love Affair with Small Surgical Teams Over: (LTC Linda Benavides)</u> LTC Benavides discussed the "Frenzy" and lack of standardization of Austere Teams.

FRENZY OF AUSTERE RESUSCITATIVE TEAMS						
Austere Team Name	Acronym	Branch	Manning	Personnel	Est. mission capacity	OR capacity
Surgical Resuscitation Teams	SRT	Joint	5	PA, Surg, EM, CRNA, Commo	2-6 DCS consecutively	1 OR table
Golden Hour Offset Surgical Team	GHOST	Army	5-8	1-2x Surg, 1-2x CRNA, ST, 1-2x RN, medic	2 DCS + 5 DCR/24 h; 3-4 DCS + 8 DCR/72 h	1-2 OR tables
Forward Resuscitative Surgical Team - Split	FRST	Army	10	Surg, Ortho, EM, CRNA, CCRN, EMRN, ST, LPN, 68W, MSC	2 DCS + 5 DCR/24 h 3-4 DCS + 8 DCR/72 h	1 OR table
Expeditionary Resuscitative Surgical Team	ERST	Army	8	Surg, Ortho, EM, CC, CRNA, CCRN, EMRN, ST	1-2 DCS + 2-3 DCR	1 OR table
Special Operations Resuscitation Team	SORT	Army	8	FS, CCRN, 3x SOCM, Rad, Lab, PAD	2-3 DCR	N/A
Special Operations Surgical Team	SOST	Air Force	6	Surg, EM, CRNA, CCRN, RT, ST	2-10 DCS	1 OR table
Tactical Critical Care Evacuation Team	TCCET	Air Force	3	CC, CCRN, RT	3 DCR	N/A
Tactical Critical Care Evacuation Team-Enhanced	TCCET-E	Air Force	5	Surg, EM, 2x CRNA, ST	3-5 DCS	1 OR table
Ground Surgical Team	GST	Air Force	6	Surg, Anesthesia, EM, CCRN, Surg Tech, MSC	3-5 DCS initial, 7-11 DCS extended	1 OR table
Damage Control Surgical Team	DCST	Navy	7	Surg, EM, CRNA, CCRN, EMRN, IDC, ST	2 DCS, 2-3 DCR	1 OR Table
Forward Resuscitative Surgical System	FRSS	Navy	9	Surg, EM, CRNA, EMRN, CCRN, IDC, 2x ST, corpsman	4 DCS, 6 DCR	1 OR table

The love affair will continue but these teams will not be the answer for future combat operation. It is essential that these teams can communicate and integrate with both combat forces and larger surgical / hold elements.
With projected high casualty numbers, all aspects of Medical Assets would be strained from POI through mortuary affairs.

Austere Teams will need to be modular, reactive, highly trained and inter-operable with improved communications.

COL Baker: I agree LSCO are going to be different, and I agree small surgical teams are not going anywhere in reference to low level conflict. Large static medical units are going to be a target in future conflicts.

CAPT Tadlock: Leadership recognizes the issues of administrative barriers and decreased MTF cases so the Navy is finding their own solution because they are tired of waiting since DoD has "No strategy."

Col Shackelford: J5 will help with this. They have been assigned to assist the JTS with high level strategy. When discussing the "Golden Hour" it is a real thing when discussing survivability from hemorrhage, but these small surgical teams do DCR not as much "surgery."

RDML Via: I wanted to address CAPT Tadlocks concerns…we don't need another strategy. We are dealing with competing requirements and competing resources. The Marine Corps understands this, but until the KSA's are developed, the Commanders aren't paying attention. We have a strategy, just not execution. The Navy Surgeon General is onboard…it may take a couple years, but we can drive this train forward!

2). <u>Trauma, Burn, and Rehabilitation Medicine Mission UAE : (Lt Col Brian Gavitt)</u> Lt Col Gavitt introduced partnership development, challenges and lessons learned working in a displaced Civilian Partnership.

Background

- **Partnered US+UAE combat operations**
  - High-visibility incidents required medical support
  - US provided combat casualty care from POI and through roles of care
  - Emirati leadership: plan to augment combat casualty care and trauma capabilities
    - Plan: embed military medics in hospital to receive both military and civilian trauma
- **Process**
  - High-level coordination between US and UAE governments
  - Establishment of foreign military sales (FMS) case through Department of State
    - US Army: staffing lead, funds administration
    - US Embassy Abu Dhabi: mission lead
- **Execution**
  - Initial tri-service TBRM team arrived in Abu Dhabi in August 2019
  - Major new hospital opened- receiving center for military + civilian trauma and burns
    - Mayo Clinic recruited to run hospital: Sheikh Shakhbout Medical City (SSMC)
    - SSMC opened in January 2020 under Mayo Clinic leadership
    - TBRM team embedded at SSMC similar to US military-civilian partnerships

Mission Objectives

- **Overarching goals**
  - Improve trauma, burn, and rehabilitation capabilities in Abu Dhabi
  - In-theater medical readiness platform for deployed US surgical teams

    - Develop strategic regional hub offering advanced trauma care
- **Establish American College of Surgeons verified Level 1 Trauma Center**
    - Civilian hospital supported by embedded US and UAE medical personnel
    - Collaboration with USUHS and Mayo Clinic personnel
- **In-theater medical readiness platform**
    - Deployed small surgical teams to rotate at SSMC to maintain clinical readiness
    - Provide direct trauma care under TBRM staff
- **Regional hub for advanced trauma care**
    - Strategic proximity to Al Dhafra Air Base and Abu Dhabi International Airport
    - Long-term strategy for closer combat casualty care collaboration

Unique Challenges

- **Developing a 'just culture' in medicine**
    - Complications and complaints fall under criminal law
    - Fear of retribution limits transparency in process improvement
    - Previous trauma center development efforts failed because of this system
- **Physician hierarchy and training**
    - Specialist vs consultant physicians: sync with verification requirements
    - US specialties not in existence
- **Non-integrated care**
    - Pre-hospital care not integrated with receiving hospitals
    - Dispersal of specialties impacts continuity of care
- **Transient medical population**
    - Citizenship rules disincentivize long-term residency
    - Lack of longevity in leadership and clinical disciplines

Lessons Learned

- **Key leadership: US Department of State**
    - Critical consideration for partnerships
        - Non-western legal systems
        - Broader gaps in standard of care
    - TBRM mission under Chief of Mission authority (Title 22)
        - Diplomatic credentials increase flexibility and reduce exposure
    - Local support services
        - Facilitated housing, vehicles, identification, visas, communications
- **Critical partnership: Mayo Clinic**
    - Leadership structure and 'just culture' concepts
    - Quality of care dispute resolution (local vs US standard of care)
- **Adapting to cultural values and understanding legal implications in medicine**
    - Medical futility
    - End of life care

COL Nessen: How is your Hospital integrated and who are you "communicating with in the current theater?"

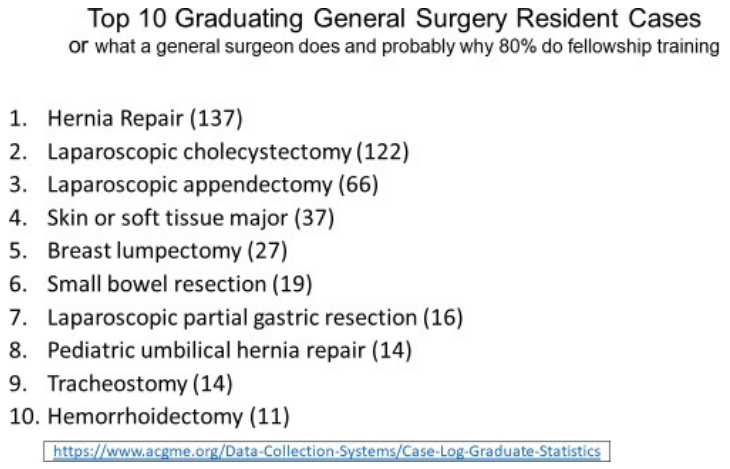
Lt Col Gavitt: We currently are not integrated, but we do have tel-con with CENTCOM, but not in routine contact with Bagdad or Afghanistan.

RDML Via: It takes a lot to operationalize this effort. CENTCOM is tracking and well aware and high on everyone's list. They are waiting on proof of concept and data back to move forward.

3). Do We Need Military-Civilian Training Programs? (COL Shawn Nessen/LTC Brown): COL Nessen opened with presenting the three questions driving his presentation:

- What are we preparing for in the future?
  - A highly lethal, very highly lethal battlefield

- Do we need trauma surgeons, or can we continue to rely on general surgeons in the future?
  - Trauma surgeons are board certified in general surgery and critical care surgery and also complete a fellowship in acute care (emergency) general surgery
  - Trauma surgeons primarily manage trauma patients throughout their hospital course. They increasingly care for all surgical patients admitted to intensive care units as part of non-trauma multidisciplinary teams
  - The most commonly consulted surgical specialists are neurosurgeons, orthopedic surgeons, ENT surgeons, vascular surgeons, and ophthalmologists
  - Critical multidisciplinary non-surgeon experts include critical care nurses, anesthesiologists, nutritionist, physical therapists, radiologists and pharmacists



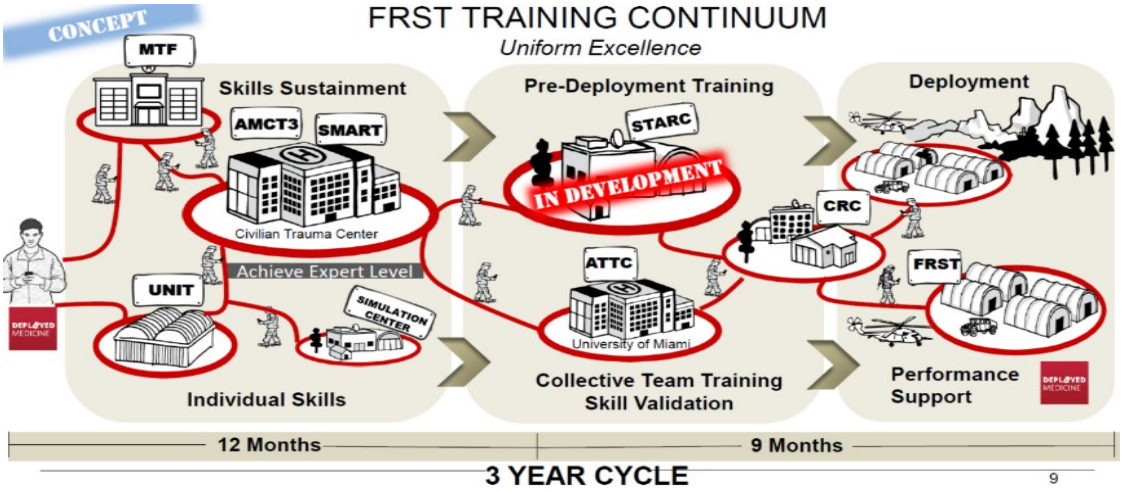
- Can Military Treatment Facilities provide the types, volume and acuity of patients needed to train the number of surgeons required for the future battlefield?
  - If the Army has 43 BCTs, then we need at least 21 role 3 hospitals and we need 3 trauma surgeons and 3 general surgeon per hospital, then we need enough trauma patients to sustain training for 63 trauma surgeons and 63 general surgeons.
  - So then, no.

The army cannot currently sustain general surgeon competencies in most MTFs. Laparoscopic cholecystectomy and appendectomies, hernia repairs, skin and soft tissue cases, and a variable level of

gastrointestinal cases that involve gastric, small bowel and large intestine cases do not sustain trauma competencies

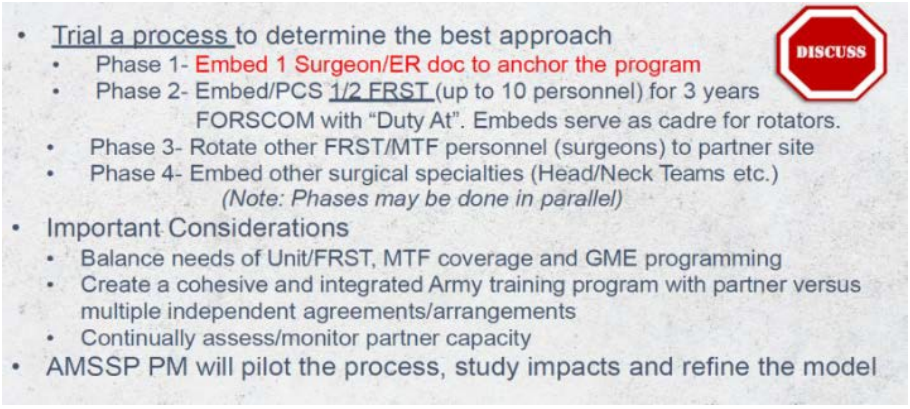
LTC Brown provided an update on Mil-Civ Partnership development with a focus on Skill sustainment vs "Pre-deployment Training":

- AMEDD Medical Skills Sustainment Program (AMSSP)
    - Develops Military-Civilian (MIL-CIV) training partnerships with Level 1 civilian trauma centers to build medical skills sustainment capabilities



Slide demonstrates that MTF's can't sustain skills. This model is a holistic approach to receive training needed to remain proficient and still enable us to sustain MTF's.

The Plan:



Challenges Moving Forward

- Healthcare Delivery
    - Careful planning to include MTF/GME considerations
    - Unit Readiness
        - FRST personnel stationed at a distance from the military instillation
- Increased unit costs associated with skill sustainment training

- Embed: state license cost, reverse TDY cost
- Rotators: Increased TDY cost
- Risk Mitigation: Closer geographic alignment of partnerships

CAPT Elster: The gap is not only on surgeons but also Emergency Medicine Doctors as well. We have signed 10 programs moving forward. What we have to figure out next is the latency of these implementations, and what is a quantifiable "Trauma Experience"...what it looks like and how we measure it. We have the tools in place we just need to keep pushing forward.

4). <u>Role of the MEDCEN in CCC Training: BAMC READINESS TRAINING (LTC Becker)</u> LTC Becker opened with presenting results from a survey from 2015.

- **Army General Surgeon survey (2015):** 51% of surgeons (n=152, 91% response rate) say pre-deployment trauma training is not helpful

We all know this needs to be an enduring effort and not "Just in Time Training" before deployment.

BAMC/MEDCEN is a Platform for Readiness and transforms into Trauma and Operational Readiness with full spectrum of realistic complex trauma care (Burn, ECMO etc.)

Three Phase Approach:

<u>Phase I: EWSC Didactics</u>

- ASSET—Advanced Surgical skills for Exposure in Trauma
- ATOM—Advanced Trauma Operative Management
- REBOA
- 68W EMS Ride-Along

- **Training OBJs:**
  - Identify and develop a surgical repair plan for penetrating injuries to the chest and abdomen
  - Cadavers used to expose and temporize life-threatening hemorrhage

<u>Phase II: Clinical Rotations</u>

- Days 1-2: Individual skills training / Days 3-6: Team Trauma Call
- **Training OBJs:**
  - Hands-on patient care (ED, OR, ICU, MEDSURG, SIM Lab)
  - Cross-train personnel for expanded role
  - Document trauma call using JTTR form

<u>Phase III: Culminating Training Event (FTX)</u>

- Live-fire field exercise with SIM, cadaver, and LTT aides
- **Training OBJs**:
  - Execute Emergency Walking Blood Blank
  - Conduct Military Working Dog training
  - Train on power consumption
  - Conduct a MASCAL exercise
  - Jump FST to an austere FOB

How the MEDCEN fits in:

- MEDCEN serves as the nucleus for CCC training
- Significant resource requirements and investment
- Trauma skills sustainment a cornerstone
- Multi-phase and multi-modality training plan

COL Gurney: Looking through the chat box, we have all the key players with significant influence here on this conference to push this forward. We need to define the N-state and then clarify the steps on how to get there.

5). <u>Medical Capabilities for Distributed Maritime Operations (DMO) RDML Via:</u> RDML Via urges all to pull open the JROCM and JCIDS process to get after these tasks and navigate these high-level products and processes. Have we taken requirements to the finish line, where are they and what can we do to get them to completion?

RDML Via discussed previous war experiences vs future near–peer involvement. The role of Prolonged Field Care and medical advances that will better support LSCO in near-peer conflicts and the different injury types we will experience when 24/48hr evacuation is not possible.

- *Naval Health Service Support (NHSS) of naval maneuver operations in a contested maritime environment requires*:
  - **<u>Forward Treatment</u>** – Modular and scalable capabilities able to provide resuscitative care forward – ashore and afloat – including on non-traditional platforms.
    - Distributed, agile capabilities with increased levels of care across the maritime domain.
    - Reduce the logistical burden for treatment of combat casualties.
    - Highly mobile, small footprint Damage Control Resuscitation and Damage Control Surgery capabilities in austere environments (afloat and ashore).
  - **<u>En Route Care</u>** – Improved patient evacuation and en route care capabilities.
    - Over very long distances.
    - From ships, not just mature airfields.
  - **<u>Holding</u>** – Greater and more dispersed holding capabilities.
    - Extended patient holding (96+ hours) in disaggregated, resource-limited environments.

Combat in a contested maritime environment will generate casualty rates both at sea and ashore much higher than recent experiences and a different mix of casualties. Mass casualties…Medical logistics system will be disrupted and Blood supplies will need to be readily available and rapidly distributable.

- **Materiel Solutions**
  - Develop role 1-3 afloat and ashore adaptive force packages able to be integrated across fleet platforms to meet distributed operations and expeditionary advanced basing operations. Examples: En Route Care System, Expeditionary Resuscitative Surgical Systems (R2LM), Role 2 Enhanced Ashore and Afloat.

- Develop multi-modal patient movement capabilities and increased en route care capacity to hold and transport patients for a minimum of 96 hours. Example: T-EPF/EMT
- Develop through procurement or contracting operations small/agile distributed afloat Theater Hospitalization capabilities

- **Non-Materiel Solutions**
  - Prioritize Programming for medical capabilities development through the establishment of a single resource sponsor in order to provide required capabilities to the fleet
  - Establish relationships with a SYSCOM to develop Program Management functions within NEHSS and integrate within institutional Naval Processes
    - Identify Milestone Decision Authority
  - Organize the NEHSS structure to align expeditionary medical capabilities with the fleet integrated within a TYCOM construct
  - In coordination with NWDC develop DMO CONOPS for NEHSS

GAP	Joint Gap Alignment
Provide En Route Care	Joint Theater Patient Movement DCR
Provide Forward Resuscitative Care	Joint FRC ISO Dispersed Operations DCR
Provide Prolonged Field Care (PFC)	Joint Combat Casualty Care ICD
Provide Theater Hospitalization	Joint Essential Medical Capabilities DCR
Conduct Medical Operations in CBRNE Environment	Joint Force Health Protection DCR
Provide Blood and Blood Products	
Provide Adaptive and Scalable Force Packages	
Provide Rehabilitative Care In-Theater	
Provide Medical Care for Mass Casualty Operations	
Provide Patient Holding	
Equip the NEHSS Force	Joint Medical Logistics Infrastructure Support DCR
Provide NEHSS Command and control for Forces Afloat and Ashore	
Provide Health Surveillance	Joint Force Health Protection DCR
Provide Medical Intelligence	Theater Medical Information Requirement System CDD
Provide Preventive Medicine and Force Health Protection	Joint Force Health Protection DCR
Manage Warfighter Fatigue	
Provide First Responder Care	Joint Combat Casualty Care ICD

CAPT Elster asked about communications during LSCO and how we plan to coordinate patient movement effectively. We will be reduced to using paper charts, and patient records and ensure we are training to prepare for hand written patient records and capabilities…we have shown the Electronic Record will not be an option in this environment.

RDML Via: We don't have a 100% solution, but we will be using ship to ship and ship to shore comms. And lessons learned in real time.
We also have to figure out how we jointly man these gaps identified. The best place to go for Navy is the BUMED M3/5. Get involved with these groups and stay tied in.

The CoSCCC Day 1 Conference concluded at 1600.

CoERCCC Meeting (Day 1) Connect Link: https://connect.apan.org/coercc-mtg/ Audio Dial-In: 630-395-0034 or 800-475-0372 Pass Code: 2096045		
TIME	**PRESENTATION**	**SPEAKER**
1400 CST	CoERCCC: JP 4-02 Trauma Lexicon	Leasiolagi
1430	CoERCCC: ERC Personnel Common Tasks/CAMTS as framework for KSA's	Cunningham / Rich
1500	CoERCCC: ERC Ventilator Performance Research	D Rodriguez
1530	CoERCCC: ERC Considerations for emerging infectious diseases	Wood

1). JP 4-02 inputs review: (SCPO John Leasiolagi) SCPO Leasiolagi opened with a review of the work that had been accomplished by the subcommittee during their review of JP 4-02 for inputs.

- ERC SMEs put some deliberate, critical thought towards evaluation of existing JP4-02 language and building recommendations for refining/ updating language to match current and emerging trends in ERC
- Supporting LOE: Joint Trauma Lexicon
- John started with an overview of a recent MARSOC PFC exercise. Multi systems trauma patients, delayed evacuation, non-standard movement to an HLZ for link up with an evacuation platform.

Issue: If Great Power Competition becomes Great Power Conflict- this will be our reality. A green helicopter with a red cross descending from the heavens to save my dying friends is unlikely.

Discussion: Delayed Evacuation "PCC" Environment expected of the future fight is changing the way we train for pre-hospital care.

- Medicine is a supporting line of effort to Force Protection- a war fighting function. Some medical people get this right…many don't and relegate themselves to being a competing line of effort.

Recommendation:

- The ERC community must continue to find ways to stay agile IOT support the force----specifically the "line" and the maneuver elements on the ground.

- We need to build cohesive, coherent messaging to the line

Issue: Lack of common Lexicon for simple things like a medevac 9 line

Discussion: Largest confusion seems to come from the confusing terminology for evacuation platforms

Recommendation: Provide inputs to upcoming JP 4-02 rewrite to better define evacuation options as shown below.

Recommendations

Medical Evacuation	Non-Medical Evacuation

• **Movement of casualties on ships, land vehicles, or aircraft with ERC personnel on board.**
• **MEDEVAC**
  • Dedicated; Properly marked
  • Employed IAW Geneva convention and LOAC for regulated and unregulated patient movement
• **Aeromedical Evacuation**
  • Regulated
  • To and between MTFs
  • Designated
• **Tactical Evacuation**
  • Unregulated
  • ERC personnel aboard non-medical ships, land vehicles, aircraft.
	• Unregulated; Non-Dedicated; Undesignated
	• May contribute to a negative outcome; May degrade the medical capability of the maneuver/ground element
	FM 4-02.2
	CASUALTY EVACUATION
	1-31. Casualty evacuation is a term used to refer to the movement of casualties aboard nonmedical vehicles or aircraft.
	WARNING
	Casualties transported in this manner may not receive proper en route medical care or be transported to the appropriate MTF to address the patient's medical condition. If the casualty's medical condition deteriorates during transport, or the casualty is not transported to the appropriate MTF, an adverse impact on his prognosis and long-term disability or death may result.
	1-32. If dedicated medical evacuation platforms (ground and air) are available, casualties should be evacuated on these conveyances to ensure they receive proper en route medical care.
	1-33. Since CASEVAC operations can reduce combat power and degrade the efficiency of the AHS, units should only use CASEVAC to move Soldiers with less severe injuries when medical evacuation assets are overwhelmed. Medical planners should ensure CASEVAC operations are addressed in the OPLAN/OPORD as a separate operation, as these operations require preplanning, coordination, synchronization, and rehearsals. The CASEVAC plan should ensure casualties with severe or life-threatening injuries are prioritized for evacuation and are evacuated on dedicated medical evacuation platforms.

Haggle over precise wordings of communications, minutes, resolutions.– *Simple Sabotage Field Manual – Strategic Services Field Manual No. 3 . 17 January 1944*

2). ERC Personnel Common Tasks: Commission on Accreditation of Medical Transport Systems (CAMTS)as framework for KSA's: (COL Cunningham): COL Cunningham started with an overview of the Joint Requirement Oversight Council Memo (JROCM)049-19.

Issue:

- 28 May 2019 Joint Requirement Oversight Council Memorandum 049-19 is published
- Task 16 : Develop a joint competency model for En Route care personnel
- Office of Primary Responsibility: Services and DHA
- Supporting Offices: Office of the Joint Staff Surgeon, USTRANSCOM, & DHA
- JTS is tasked to support DHA Combat Support Action Team, AD (Mr. Richard Kollar)
- JTS through the Defense Committee on Trauma will lead that support

COL Cunningham also went on to explain that at best the current Joint En Route Care Common Tasks

- At best some base line guidance
- Different across the services
- Hard to train to a common joint standard without one

Discussion:

Commission on Accreditation of Medical Transport Systems (CAMTS)

- An international organization that accredits EMS transport services to a recognized standard
- Not a licensing or governmental entity but are the most widely recognized transport agency standards
- Made up of 21 member organizations including ACS, TRANSCOM(SG), ENA, NAEMSP, ACEP, AAP, AARC, etc
- 11th Ed of CAMTS https://www.camts.org/standards/
- 12th Ed in draft https://www.camts.org/wp-content/uploads/2019/07/2020_-12th-Edition-Stds-Second-Draft-with-highlighted-changes.pdf
- 5 levels of care BLS, ALS, Emergency Critical Care, Intensive Care, & Specialty Care
    - Aspects of this included in the COVID PMG

Questions that were raised:

- Hours requirements?
- TRANSCOM already advising but adherence?
- Interfacility Transport of Patients Between Theater Medical Treatment Facilities (CPG ID: 27) establishes 2 levels:
    - Critical Care: "the patient has a critical illness or injury that acutely impairs one or more vital organ systems such that there is a high probability of imminent or life-threatening deterioration in the patient's condition during transport." physician lead team preferred
    - Intermediate Care: at least one at the NRP level

Recommendation: Reengage with DHA POC to find out how to ensure ERCCC recommendations are considered and to assist in the development

3). Mechanical Ventilation in Austere Environments: (CMSgt(ret) Dario Rodriquez): Mr. Rodriquez started the discussion with an overview of the Role of mechanical ventilation.

Issue:

- Role of mechanical ventilation
    - Critical to success of CCATT
    - Impact of en route care transport
- What is “austere”
- Technology considerations
    - Capabilities/limitations
    - Environmental impact on operational characteristics
- Preparation paramount to success
    - Be a skeptic
    - Read beyond the manual

Discussion:

Operational Environment

- Environments we know
- Infrastructure
    - Early to current
- Where to next

Austere Environment

U.S. Army photo/SSgt Alfred Johnson

USAF photo/TSgt Cecilio M. Ricardo Jr.

U.S. Army photo/Sgt 1st Class Matthew Chiosta

U.S. Army photo/Sgt James Avery

Complexity of Transport

Technology Considerations

- Austere environments pose many challenges
    - Extreme settings may alter equipment performance
    - Important to clinically validate in setting of intended use whenever possible
- Military operation requires unique material solution considerations
    - Expanding COTS capabilities
    - Resource constrained environments should influence development
    - Responding to/anticipating mission set requirements

Dario went on to explain the resent study that compared different Vents at altitude

- Clinical relevance
    - Volume measurements
        - Compressible volume loss/compensatory mechanism
        - Flow/volume device measurements
    - Variability of technology (turbine/compressor/bias flow/triggering)
    - Modes of ventilation/breath types
        - Impact of tidal volume delivery
    - Altitude implications
        - Clinician consideration (compensation/ASTM range)
        - Consider gas delivery mechanism
    - Risk assessment
        - ASL (consider starting ground level)
        - Potential events (AWR/STF/JECETS)
        - System response (“ventilation canceled”)/gas density compensation

Recommendation: Further evaluation of ventilators for En Route care and even austere environments is needed

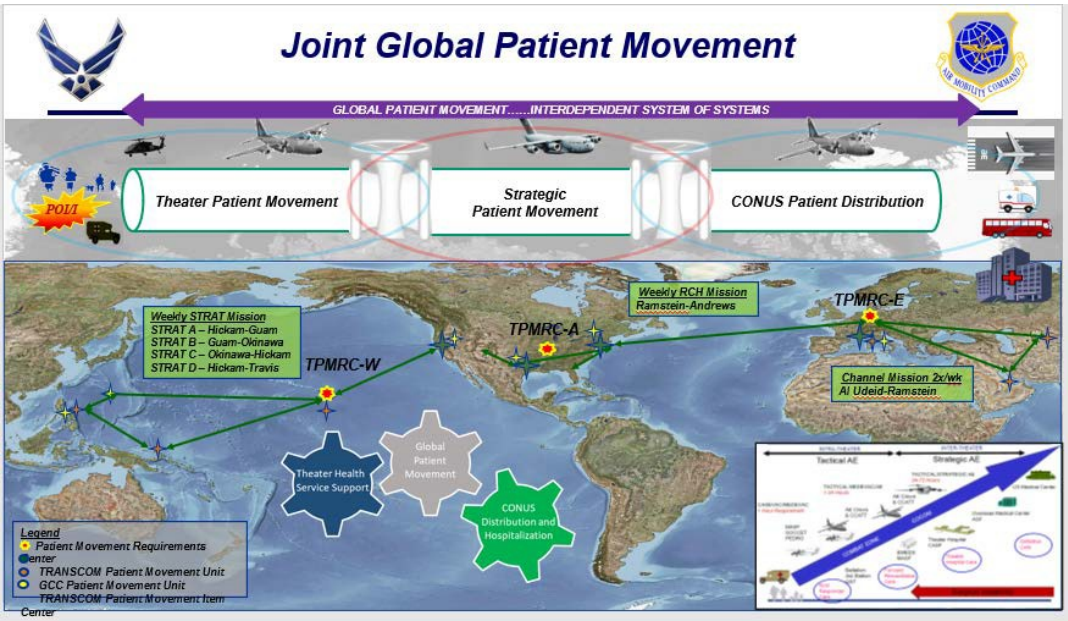
- En route care may impact operational characteristics of medical technology

- Boyle's Law/vibration/ambient pressure
- Temperature/humidity

- Clinician/casualty important points
  - Potential alterations in performance based on environment of use
  - Clinical implications: does it really matter
  - Nomenclature/lexicon/capability/display
  - Appropriate capability for your environment/intended use case

- Manuals aren't just for propping doors open…

3). En Route Considerations for Emerging Infectious Diseases (Col Leslie Wood): Col Wood started with a review of what the basic strategy of patient movement.



- Inter-theater vs Intra- theater mission
- TIS inter-theater
- ID PM System (only 1 piece of this and not amenable to high volume)
- Risk of not developing system
  - Open aircraft
  - no safe space to doff respiratory protection, human performance piece
  - PPE posture
- Attrition of en route care personnel and lift capes

Issue: High Consequence Infectious Disease Patient Movement Strategy

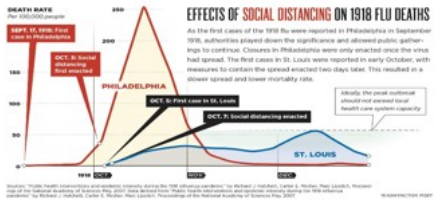
- Current DoD strategy to rapidly move patients rearward has limited applicability to pandemic operations
- US TRANSCOM Instruction 41-02 for High Consequence Infectious Disease (HCID) is "treat in place"
  - Patients with an HCID require and exception to policy (ETP) to be approved

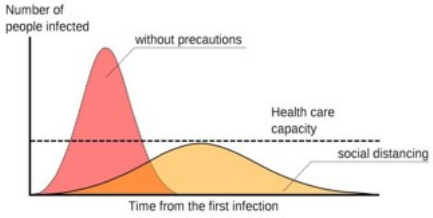
- Outbreak vs Pandemic
  - Both HCID receiving facilities and biocontainment transport have finite capacity
  - Usual tactics (open aircraft model) risk degradation in both airlift and medical capabilities

Discussion: Col Wood explains two key factors Disease containment and patient treatment

Background: Effective Disease Containment

- **Strategy: Flattening the curve**
  - **Isolate and support care in place provides most effective disease containment when no disease cure available**
  - **Best historical example, 1918 Influenza Pandemic**
- **COVID-19, ability to isolate, contain outbreaks and avoid overwhelming local healthcare systems associated with lowest case mortality rates**

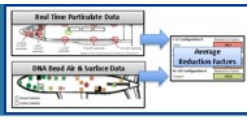




Air Mobility Warriors – Projecting Decisive Strength and Delivering Hope... Always! 6

Problems Faced: Aircraft Airflow

Airframe Airflow Comparison
Overview



Testing Overview

- *6 airframes tested at Lincoln, NE 06-11 APR20*
- *Testing conducted in both flight and on ground*
- *Primarily evaluated spread from potential patient areas to cockpit in optimal configurations*
- *Additionally evaluated spread potentials during loading/unloading and ability to facilitate medical staff rest cycles during transport*

Airframe Performance Overview

Testing Rank	Airframe	Cockpit Safety (IN FLIGHT)	Cockpit Safety (Loading & Unloading)	Medical Staff Rest Capabilities
1st	KC10	Very High	High	Very High
2nd	KC46	Very High	Low	Very High
3rd	C5	High	Low	High
4th	KC135	Very High	Low	Low
5th	C17	Medium	Not Tested	Low
6th	C130J	Low	Low	Very Low

Summary of Results

- *The KC-10 displayed best performance in all categories tested*
- *All airframes saw cockpit penetration when external doors are opened excluding the KC-10 (minimal spread) and C-17 (Not tested)*
- *Protocol modifications for C-5, KC-135, and C-17 may minimize spread to cockpit with doors open, but remains to be tested*
- *The C-130J is best reserved for short flight times and low patient loads with appropriate PPE and CONOPS, but can be viable for low accessibility airstrips*

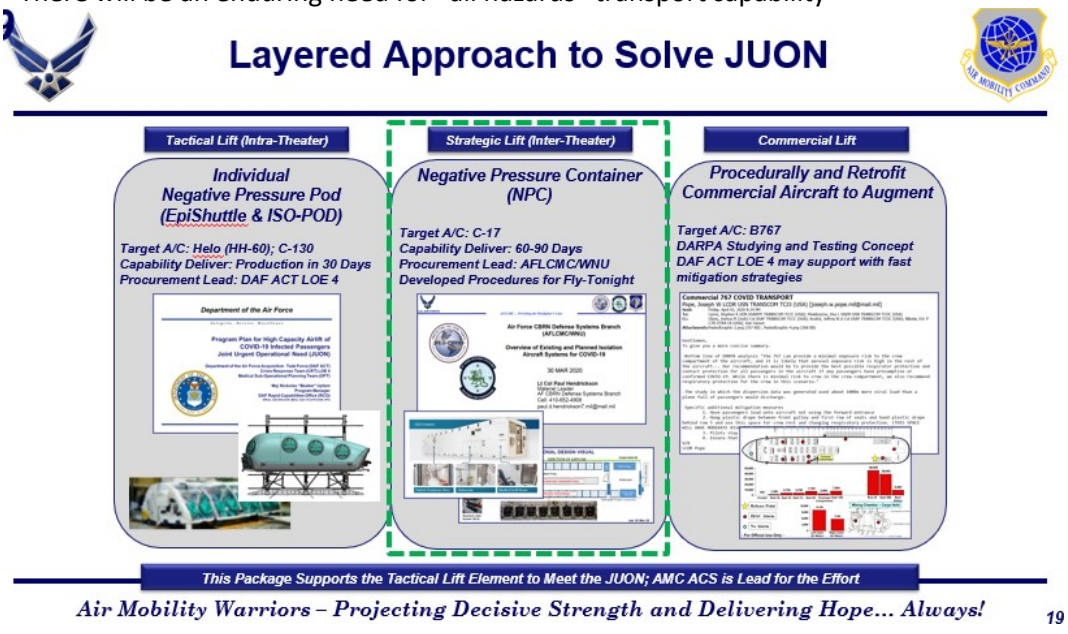
S3i ZeteoTech NATIONAL STRATEGIC RESEARCH INSTITUTE at the University of Nebraska NSRI

Impact on Force

- Patient movement of COVID-19 patients risks worsening operational readiness by accelerating spread throughout the force
    - Ongoing attrition of medical crew
    - <3 months to infect majority of workforce
- We anticipate significant negative impact in the short to medium-term future on En Route Care forces that will threaten the ability to effectively deliver en route patient care

Recommendation: Continue development of a layered approach to the problem

- Patient movement (PM) of HCID occurs within the national security construct
- Lessons learned from COVID-19
    - DoD aircraft airflow limitations make "open air" PM high risk
    - Need isolation units appropriate for patient movement platforms across the continuum of care
- Multidisciplinary team critical to mission success
- PPE posture for human performance/safety
- There will be an enduring need for "all hazards" transport capability



The CoERCCC Day 1 Conference concluded at 1600.

Day 2

0700 Monthly AFMES Mortality Presentation by Dr. Mazuchowski.

At 0800 the DCoT broke into Component Committee sessions.

Day 2 CoTCCC Component Committee Break out

CoTCCC Meeting (Day 2)		
0800 CST	CoTCCC: Guideline Edit Update	Montgomery
0830	CoTCCC: Abdominal Evisceration	Riesberg
0900	CoTCCC: TCCC Interventions Review	JTS PI
0930	CoTCCC: New Business / Emerging Issues	Drew

CAPT Drew opened the day with clarification and review of Deliverables for the CoTCCC and how we define future deliverables moving forward.

1). Guideline Comprehensive Edit Review: (Mr. Harold Montgomery) Mr. Montgomery summarized proposed edits to the TCCC Guidelines. A routine comprehensive review provides an opportunity to:

1. Integrate best practices and lessons learned from the field
2. Enable improved and more precise TCCC messaging
3. Ensure joint terminology and lexicons
4. Maintain synchronization with TCCC curricula, knowledge products, and literature references.

Proposed Changes

1. **Change "Care Under Fire" phase to "Care Under Fire/Threat"**
   Fundamentally, the TCCC principles apply whether in ground tactical combat, aboard a sea vessel, at a deployed staging base, or even CONUS station facilities. The principle of first suppressing enemy fire, subduing an active shooter, or extinguishing a shipboard fire or reducing the threat prior to rendering medical treatment, may be applicable in any of those situations whether deployed or at home. It is also important that the TCCC Guidelines be applicable in terminology used throughout the entire DoD.

2. **Add text to Care Under Fire/Threat line 3 to include dragging and/or carrying a casualty to cover when tactically feasible.**
   Direct casualty to move to cover and apply self-aid or when tactically feasible, move or drag casualty to cover.

3. **Edit Care Under Fire Line 5 to read:**

Casualties should be extracted from burning or damaged vehicles or buildings and moved to places of relative safety. The term "extricated" is associated with technical rescue capabilities involving specialized equipment such as used during combat search and rescue operations as well as emergency medical services. As such, the use of specialized equipment requires specialized training that is part of technical rescue training.

4. **Add text to paragraph 4-c to read:**
   Allow a conscious casualty to assume any position that best protects the airway, to include sitting up and/or leaning forward.

5. **Shift assessment of hemorrhagic shock to an earlier text and reference point in the guidelines.**

6. **Add a new first line to paragraph 14. Burns to read:**
   Assess and treat as a trauma casualty with burns and not burn casualty with injuries.

7. **Add a new last bullet to paragraph 14-d to read:**
   Consider oral fluids for burns up to 30% TBSA if casualty is conscious and able to swallow. This measure is currently published in the JTS Burn Management in Prolonged Casualty Care CPG (CITE). This is a measure that is more feasible for a medic during the tactical field care phase than initiating a burn fluid resuscitation.

8. **Swap paragraph 16. Communication and paragraph 17. Cardiopulmonary resuscitation in sequence.**

9. **Separate the TACEVAC guidelines from the TCCC Guidelines to become a stand-alone document and the basic guidelines managed by the Committee on En Route Combat Casualty Care (CoERCCC):**
   The intent is to establish the existing TCCC TACEVAC Guidelines as the primary point of reference for any air, ground, or water evacuation from point of injury to the next point of medical care. As such, TACEVAC would be the baseline for tactical evacuation to include MEDEVAC aircraft, tactical ground ambulances, and initial evacuation watercraft. This shift does not preclude the establishment of detailed en route clinical practice guidelines for other evacuation situations such as Role II to Role III post-surgical casualties.

2). <u>Update to Eviscerations in TCCC Change Proposal: (COL Jamie Riesberg):</u> COL Riesberg summarized findings for abdominal injuries; specifically eviscerations, in preparation of a proposed addition to the TCCC Guidelines. A recent review of the US Department of Defense Trauma Registry (DODTR) from 2015-2020 reveals a consistent rate of abdominal eviscerations in areas of conflict resulting in 42 patients out of 53 abdominal injury cases that were identified as having abdominal evisceration. 6 deaths resulted – a mortality rate of 14% which is consistent with data from WWII thru more recent armed conflict.

COL Riesberg's proposal would add text to the current paragraph 12 of Inspect and dress known wounds.

> *Abdominal evisceration – [Control bleeding]; rinse with clean fluid (preferably warm) to reduce gross contamination. Hemorrhage control – apply combat gauze or CoTCCC approved hemostatic dressing to uncontrolled bleeding. Reduction- A single brief attempt may be made to replace/reduce the eviscerated abdominal contents. If successful, re-approximate the skin and secure using a chest seal (other options include: suture, staples, wound closure devices). Do NOT FORCE contents back into abdomen or actively bleeding viscera. If unable to reduce; cover the eviscerated organs with water impermeable non-adhesive material (transparent preferred to allow ability for re-assessment); examples include a bowel bag, IV bag, clear food wrap, etc. and secure the impermeable dressing to the patient using adhesive dressing (examples: ioban, chest seal). Administer combat pill pack.*

COL Riesberg discussed prolonged casualty care considerations associated with the proposed change to the TCCC Guidelines.

> *If no known endpoint exists for surgical care, consider NOT attempting reduction. It is OK to attempt reduction if a patient presents late after injury. Odds of a stable, successful reduction are low – Make a single attempt to reduce and then dress in place. Hypothermia – Monitor closely as exposed abdominal contents will result in more rapid heat loss. Re-evisceration – In the event of re-evisceration (hernia) remove the skin closure and cover the eviscerated organs as previously recommended.*

3). <u>Performance Improvement Review of TCCC Interventions: (Dr. Elizabeth Mann-Salinas/Dr. Megan Blackburn):</u> Dr. Mann-Salinas provided an overview of recent TCCC performance improvement updates and identified issues to include:

1. Burns related to hypothermia prevention kits
2. Intraosseous (IO) device failures
3. Prehospital provider CPG reading lists
4. PI initiatives to gather prehospital after-action reviews

Iatrogenic burns related to hypothermia prevention kits.

> Hypothermia kits are usually applied at POI, MEDEVAC or at the Role 2 and require blanket or sheet barrier placed between HPMK and patient skin; added barriers sometimes slip during movement or transport. Four (4) known cases of iatrogenic burns related to HPMK (3 recent cases and 1 in 2016; suspect there may be more unreported). JTS partnering with Walter Reed, AOR leaders, and clinicians to conduct chart audits, literature review, reviewing supply lot numbers. JTS PI is reaching out to the field and is requesting any cases and photos of related burns as well as reinforcement of training on the use of sheets and/or blanket barriers.

Intraosseous device failures.

> JTS PI is investigating IO insertions failing to penetrate the bone cortex and anecdotes of other failed insertion attempts. First noted during Armed Forces Medical Examiners/JTS mortality reviews, the occurrence of incomplete and misplaced IO devices is being searched in the DoD

trauma registry and AARs. JTS PI is reaching out to the field and is requesting any cases and photos of related to IO device failures or misplacement.

Dr. Blackburn – reviewed study undertaken by the Army Institute of Surgical Research (ISR) titled "Acute Over-Ventilation Does Not Increase Morbidity in a Swine Hemorrhage Model". In 2012, that identified airway compromise as the second leading cause of potentially survivable death on the battlefield and in terms or specifically interested, of course, in pre hospital strategies and so approximately 5% of trauma patients receive pre hospital advanced life support. In a study performed at the University of Iowa. Most patients were ventilated with bag-valve ventilation. Of those placed on a ventilator, a majority were ventilated with a volume above the "lung protective range" denoted in gray.

Dr. Blackburn - described the methodology of the ISR study involving anesthetized, intubated, spontaneously breathing swine (n=10) subjected to 25% controlled hemorrhage and 1 hour of manual ventilation and subsequently tissue samples taken after 24 hours. The data indicates no negative side-effects, to include hemodynamic changes, inflammatory markers, and tissue damage, as the result of acute over-ventilation. The study concluded that hyperventilation, as could be seen in the pre-hospital phase of care, does not adversely affect mildly hemorrhaged casualties.

Day 2 CoTCCC concluded at 1015

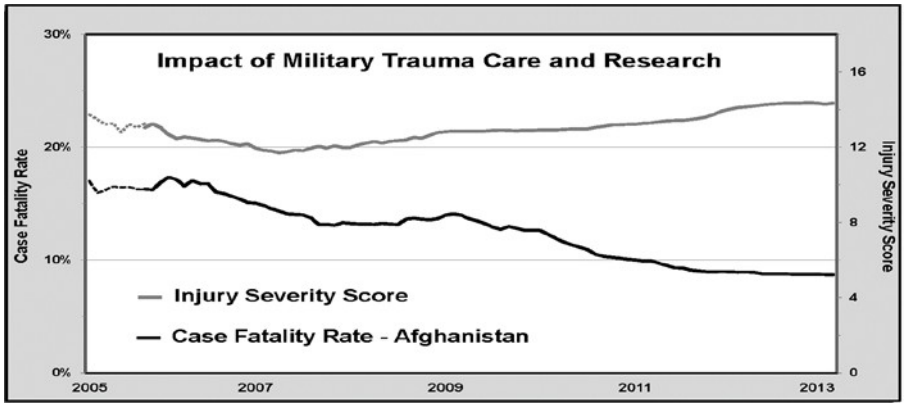
Day 2 CoSCCC Component Committee Break out

0800 CST	Introduction	Gurney/Sestito
0810	CoSCCC: Way Ahead for CCC Research	Polk / Schreiber
0830	CoSCCC: Surgical Force Extenders: PA	Merkle
0850	CoSCCC: Surgical Force Extenders: 18D	Loos
0910	CoSCCC: LRMC Trauma Program	Purtill
0930	Discussion (all speakers)	Gurney / Sestito

COL Gurney opened the day with clarification and review of Deliverables for the CoSCCC and how we define future deliverables moving forward. One of the top priorities is how we translate Research in Combat Casualty Care to the MTF and close gaps with training and preparation for future LSCO.

1). <u>Way Ahead for CCC Research Reality: (COL Marty Schreiber/CDR Polk)</u> COL Schreiber opened with a review of advances in the research community and the impact Military Trauma Care has had on research priorities.

- Joint Theater Trauma System
- Personal protective equipment, vehicles
- Tourniquets: Extremity, Junctional, Abdominal
- Hemostatic dressings
- Hypotensive resuscitation
- Blood products – Hemostatic resuscitation
  - Whole blood
  - Cold platelets
  - Lyophilized plasma
- Transcontinental ECMO
- Transportation in and out of theater

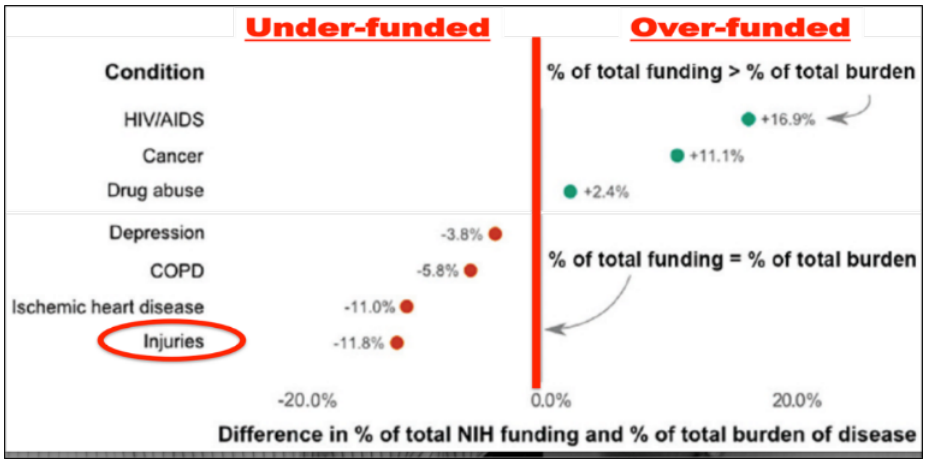


2005 >16% 2013<10%

COL Schreiber displayed how many items such as PPE and vehicle advancements have saved lives and reduced injury patterns. He also portrayed how advances in research and Military Medicine have altered his practice and approach to implementing care:

- Approach trauma from more of a systems standpoint
- Focused on stopping bleeding
- Hypotensive resuscitation
- No crystalloid
- Whole blood or 1:1:1 when we run out
- Tourniquets
- A lot of Combat Casualty Care Research
  - TXA – IM for self or buddy aid
  - PCC – For field use
  - Stem Cells – For everything trauma
  - Whole blood
  - Platelet EVs

COL Schreiber concluded by identifying that Trauma Research, in comparison, is the MOST underfunded area of medicine.



What do us as a Committee need to focus on?

- Recognize we haven't done that much and we need to do a lot.
- Education (public, legislators, line)
- Lobby for more trauma funding, federal and DoD
- Establish a trauma institute
- Make the DoDTr functional, widely available and learn from it!

CDR Polk transitioned the presentation into a discussion on the Combat Casualty Research Program (CCRP) defined CCRP as a requirements-driven, medical research and development program, driving medical innovation through development of knowledge & materiel solutions for the acute & early management of combat related trauma including point of injury, en-route, and facility based care.

CDR Polk identified Battlefield Resuscitation and Stabilization, Prolonged Field Care/Enroute Care and Neuro/TBI Trauma as the three top focus groups for the CCRP.

Turning the Golden Hour into the Golden Day:

Key S&T Questions	Mid-Term Goals (2028-2035)	Far Term Goals (2035 and Beyond)
• How can we ensure adequate blood is available at POI and forward surgical locations during MDO?	• **Improved blood shelf life for platelets and whole blood** through improvements in storage solutions. • **Improved blood products that do not rely on cold chain** (freeze dried plasma, lyophilized platelets, freeze dried cryoprecipitate) • Pathogen reduction techniques for in-theater blood procurement	• **Blood substitutes** that are shelf stable and do not rely on cold chain. • **Autonomous unmanned system to deliver and recover whole blood/ and critical Class VIII** to /from forward deployed units over large distances with little/no forward infrastructure.
• How can we ensure that the Warfighter and medic are able to provide life saving interventions on the future battlefield?	• **Semiautonomous vascular access, airway and chest decompression** • **Autonomous far-forward imaging diagnostics for injuries** (torso hemorrhage, pneumothorax, intracranial hemorrhage, fractures) • **Semiautonomous tools to improve far forward surgical capabilities** (asynchronous tele-mentoring, improved neurosurgical access device)	• **Autonomous closed loop resuscitation** • **Semi-autonomous endovascular surgical capability** for non-compressible hemorrhage.
• How can we remain prepared for novel medical challenges of the future battlefield?	• Characterization of injury patterns and treatment techniques for **combined injury (CBRN+polytrauma/TBI/burn)** • Characterization of injury patterns and treatment of injury patterns and treatment for **emerging weapons systems** (Unconventially-acquired brain injury; directed energy)	• Characterization of injury patterns and treatment techniques related to **CCC delivery during space operations**

Key S&T Questions	Mid-Term Goals (2028-2035)	Far Term Goals (2035 and Beyond)
• How can the effects of injury be mitigated to maintain soldier lethality and return the warfighter to duty?	• **Wound care dressings for field treatment of burns** that facilitate healing and decrease need for evacuation. • Device for improved **field diagnosis and triage of TBI** to decrease need for evacuation.	• **Exoskeleton based fracture fixation** that allows warfighter to ambulate in order to maintain lethality and facilitate evacuation. • **Neuroprotective drug to mitigate impact of TBI** preserving fighting strength. • **Non-opioid analgesics** that preserve physiologic capabilities and mentation. • **Semi-autonomous ultrasound or RF based nerve block device** for battlefield treatment of pain without use of opioids.
• How can the unit maintain maneuverability and combat power with injured soldiers during MDO?	• **Semi-autonomous system of care to facilitate casualty identification, triage, medical regulating, and documentation** in order to cognitively offload the Warfighter. • **AI-driven decision support/asynchronous telementoring** tools to assist forward medical personnel	• **Autonomous unmanned system (ground/air) capability to provide evacuation and enroute care.**

CDR Polk concluded with a synopsis of the Linking Investigation in Trauma & Emergency Services (LITES) program:

Mission: To create a research network of US trauma systems and centers with the capability to conduct prospective, multicenter, injury care and outcomes research of relevance to the Department of Defense.

2). <u>Surgical Force Extenders: PAs on the Battlefield (CPT Merkle):</u> CPT Merkle discussed the identification of a historical need to bridge the gap of inadequate numbers of surgeons on the battlefield by creation of a Surgical PA fellowship in the military.

COL Nessen - "There aren't enough surgeons to support current deployment requirements and Utilization of specialty trained non-physicians to extend the care capability of our existing surgeon assets is critical to maintain combat support effectiveness"

CPT Merkle displayed several Journal articles on the shortage of rural surgeons, and the use of PA's as Trauma/Surgery staff. He outlined the proposed fellowship requirements with rotations, procedures, courses needed and actual surgical training.

How can the DCoT help drive this forward?:

MTF support
- Assist with teaching & research
- Dedicated PA / trauma surgeon shift scheduling
- Continuity of care for deployments/ training
- Care for post-op clinic patients

Civ-mil support
- Continuity for service line
- First assist, floor mgmt, post-op clinic for patient care
- Facility SME
- Education and training of medics and support staff

MTOE
- Augment role 3 and 2 capability
- Extend capability of deployed surgeon

3). <u>Office of Special Warfare Advanced Special Operations Medical Sergeant Course (SFC Loos)</u>
SFC Loos was unable to present due to lost communications on the day of the conference, however his presentation was recorded and is available for dissemination to those interested in the topic.

Presentation Impact Statement –

"The mission of the Office of Special Warfare Non-Standard Medical Detachment is to be a focal point for all unconventional warfare medical capabilities, activities and interagency coordination across the special warfare spectrum."

4). <u>The LRMC Trauma Program: Right-sized, Ready, and Agile (Dr Purtill):</u> Dr Purtill outlined the LRMC capabilities, role and mission…stating they are currently a Low-volume high acuity MEDCEN.

LRMC serves 3 AOR's and each MEDEVAC Chain differs:

EUCOM
- Critically injured patients, stabilized
- Requires CCATT

Requires dedication to:
- Identification and Notification
- Host Nation facilities
- Evaluation for return to duty

- CENTCOM
  - Critically unstable patients
  - Requires CCATT

Requires dedication to:
- Time constants of "disease"
- Attention to detail
- Timing additional procedures to allow for further evacuation
- Evaluating the risks and benefits of further movement

- AFRICOM
  - Patients arrive at a much later stage in their disease

The Goal: To sustain and "Right-size LRMC"

- "Right-Sizing" LRMC Trauma Program
  - Complex set of variables for a Low Volume, High Acuity center
    - Support CENTCOM, AFRICOM and EUCOM missions
    - Be medically ready for a transition to hostilities within EUCOM

- ACS Level II Trauma designation
  - Remain an agile MTF prepared to respond to the needs of the patient population of the moment
  - Fits well with our mandate

ACS Trauma Center Verification
Mil/Civ Win-Win Opportunity

DHA Defense Health Agency

Military Benefit
- Our soldiers' needs align with ACS mandatory capabilities
  - upgrade to Level II in 2021
- Glean from ACS' 70+ years of experience in structuring (civilian) trauma facilities
  - Resource Allocation
  - Performance Improvement

Civilian Benefit
- LRMC is in a position to help the ACS trauma system
  - LRMC represents what I call the "Military Edition" of a Level II Trauma Hospital
  - Build on history of US Military influence of trauma care
  - Models austere medical environments
    - Rural Trauma Care
    - Air Evacuation

"Medically Ready Force…Ready Medical Force" 14

Day 2 CoSCCC concluded at 1015

Day 2 CoERCCC

CoERCCC Meeting (Day 2) Connect Link: https://connect.apan.org/coercc-mtg/ Audio Dial-In: 630-395-0034 or 800-475-0372 Pass Code: 2096045		
0800 CST	CoERCCC: Admin Remarks	Cunningham / Rich
0830	CoERCCC: Medical Direction Position Paper/Med Dir course Efforts	Kharod
0845	CoERCCC: Space Force ERC needs	Manning
0915	CoERCCC: MEDEVAC in MDO/LSCO	Raines/Coughlin
0945	CoERCCC: Alaska COVID 19 Response Navigating Title 10 vs 32	Rund

COL Cunningham opened the meeting with a refocusing on going lines of efforts and Mr. Rich covered the new requirements outlined in the DCoT Charter for members.

1). Medical Direction Position Paper/Med Dir Course Efforts (Kharod):

Issue: Lack of standardization for medical direction provided for ERCCC personnel that negatively impacts mission execution.

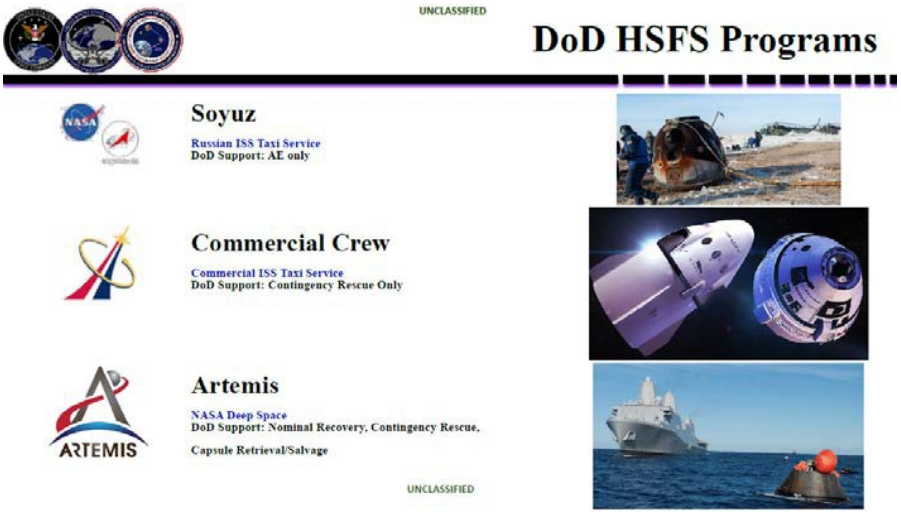
Discussion: The group discussed the differences in those please in medical director positions in the joint force.

Recommendation: Continue the development of a base line course that provides training to address common base line for needed training. This base line should include items that allow better oversite and support to those in the ERCCC phase of operations.

2). Space Force ERC Needs (Mr. Brent Maney and LtCol Kristin Silvia): LtCol Silvia and Mr. Maney spoke to the group about the current DoD Human Space Flight Support as part of Space Command.

The briefing was informative with a few areas that ERCCC and the JTS might be able to help Space Force with ongoing and future efforts.

There are three main efforts for Human Space flight that were discussed:



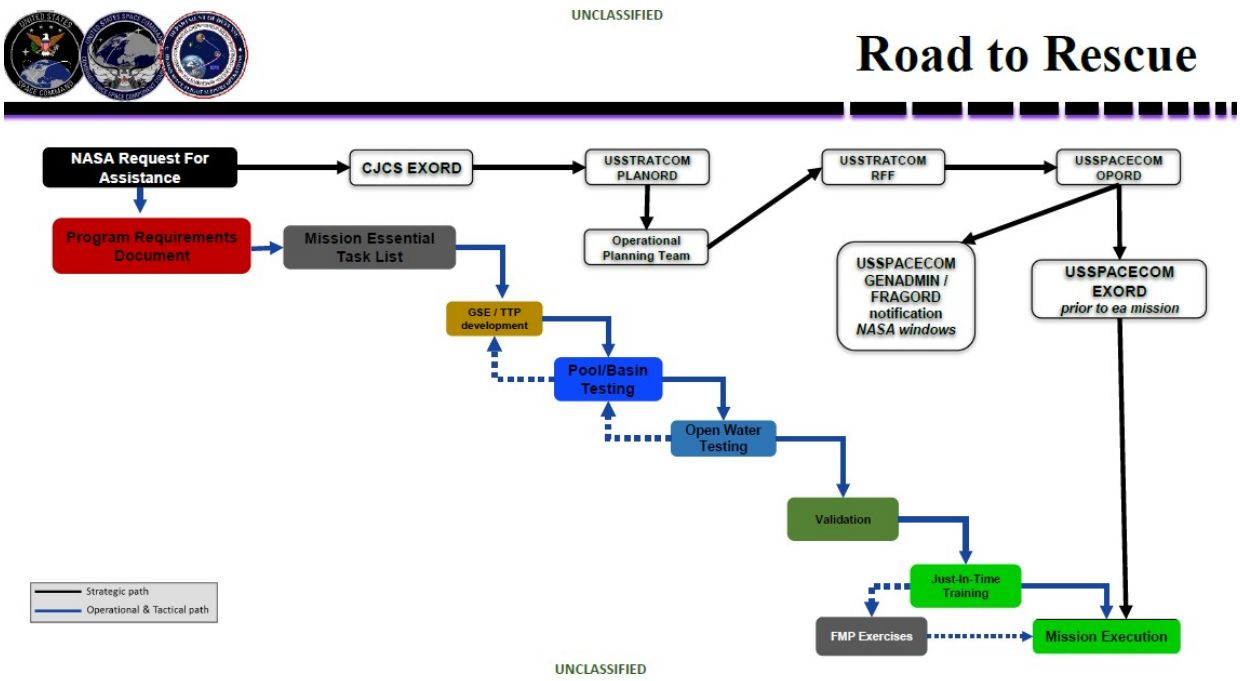
Issue: The three different lines of efforts require different levels of support.

Discussion:

- Soyuz
    - Coordinate Astronaut medical requirements between NASA Crew Surgeons and DoD Aeromedical Evacuation/Critical Care Air Transport Team (AE/CCATT)
    - Support from both the DoD HSFS Support Operations Center (SOC) and forward deployed 603rdAir Operations Center (AOC)

- **Commercial Crew Program (CCP)**
    - Provide SME input to DoD HSFS orders and publications, as needed
    - Coordinate PJ and Flight Surgeon Medical requirements with Air Force Medical Operations Agency (AFMOA), MAJCOM Surgeon Generals (SG), PJ Medical Program Manager, PJ Medical Director and tasked unit Physicians
    - Coordinate logistics and management of medical material with AFMOA, Installation Medical Groups (MDG) and tasked units; this includes blood products and controlled medications
    - Manage $500K operational medical assemblage and account
    - Act as on-line-medical control from SOC to coordinate direct care for deployed PJ's and provide medical updates to NASA Crew Surgeons
    - Coordinate patient movement with Theater Patient Movement Requirements Center (TPMRC), AE/CCATT and NASA
    - Train tasked rescue teams on unique aspects of space operational medicine

- **Orion: in addition to the above CCP**
    - Coordinate DoD medical assets for recovery ship with USINDOPACOM/SG, COMPACFLT/SG, ESG-3/SG and individual recovery ship physicians; assets include DoD emergency medical and surgical teams embarked on ship
    - Ensure all DoD and NASA employees supporting recovery are medically cleared for duty on the recovery ship
    - Embarked on ship as liaison between NASA Crew Surgeons and tasked DoDmedical teams; provide medical updates to SOC as needed
    - Train tasked recovery ship teams on unique aspects of space operational medicine



Recommendations: Assist Space Force as requested to review current medial assemblages and training to ensure best chance for survival for returning space crews.

Key areas:

- DoD HSFS has developed a 72hr PCC maritime medical assemblage for 4 critically injured Astronauts
- Assist with future validation for this assemblage as a paper sim with the PJ MOAB
- Evaluate training provided to tasked PJs while making minor improvements with each event
- Stay connected to the JTS CoERCCC in order to keep up with CROSSTELL from the joint environment
- Lessons learned
- Future medical equipment/supply improvements
- Ideas for other improvements

3). MEDEVAC in Multi-Domain Operations (MDO)/Large-Scale Combat Operations (LSCO) (1SG Branden Coughlin, Mr. George Hildebrandt): 1 SG Coughlin briefed the group on Evacuation in Future Operating Environments.

Issue: There are many challenges that we will face in future operating environments that present challenges we haven't faces in recent years.

Discussion: Recent conflicts have focused on different areas and developed strengths that might not translate to future operations.

- Multi-Domain Operations (MDO):

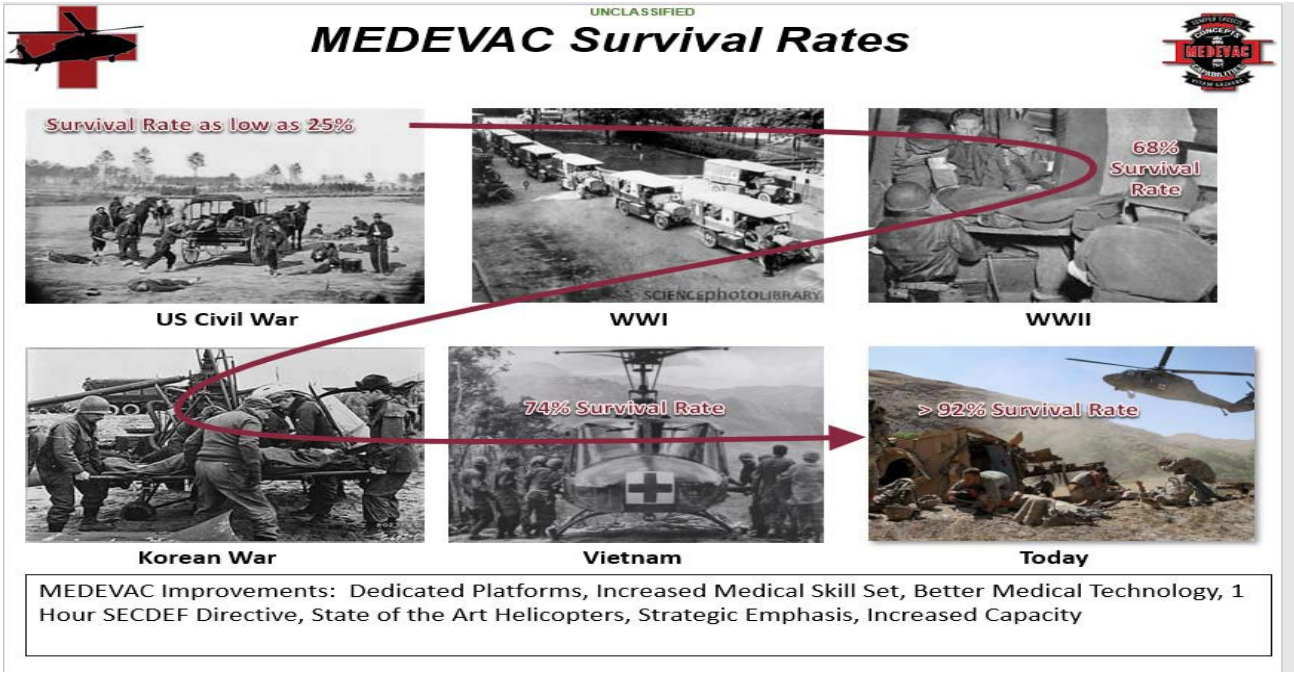
- Joint forces [Army, Navy, Air Force, and Marines] can counter and defeat a near-peer adversary capable of contesting the U.S. in all domains [air, land, maritime, space, and cyberspace] in both competition and armed conflict.

- Denial, Technology disruptions (PNT), communication denial, etc.

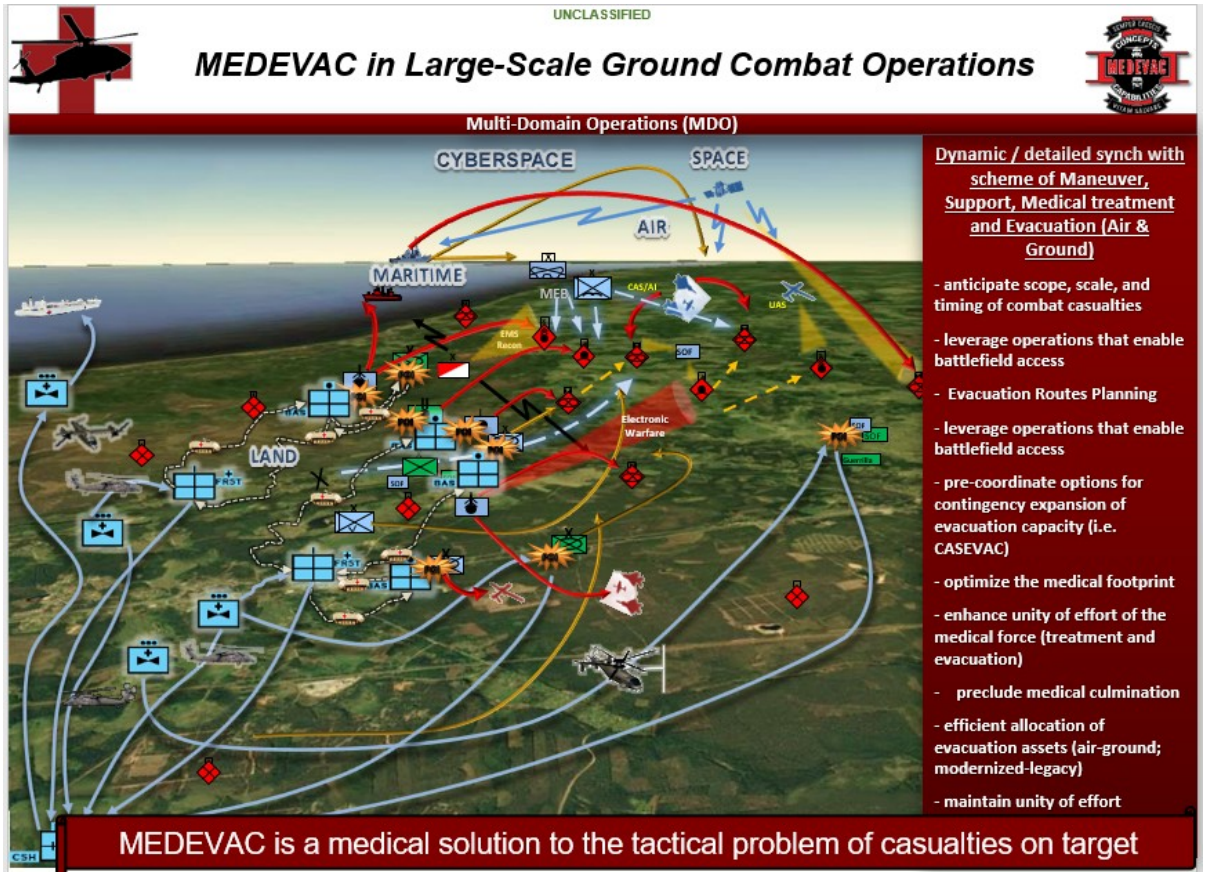
- Large-Scale Combat Operations(LSCO):
  - Large Scale (Multi-Corps) warfare against a peer or near peer adversary

  - Large-scale combat operations are at the far right of the conflict continuum and associated with war. Historically, battlefields in large-scale combat operations have been more chaotic, intense, and highly destructive than those the Army has experienced in the past decades. During the 1943 battles of Sidi Bou Zid and Kasserine Pass in World War II, 5,000 American Soldiers were killed over the course of just 10 days; during the first three days of fighting the Army lost Soldiers at a rate of 1,333 per day. —Field Manual 3-0, Operations

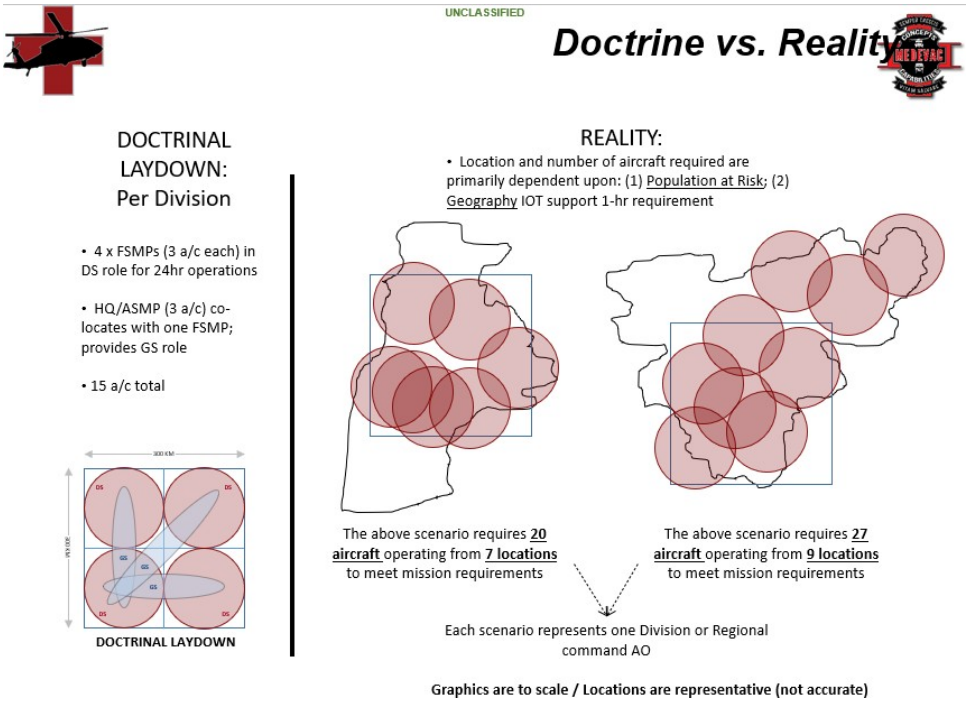
  - Broad breadth of battlefield, highly dispersed units, large patient volumes, greater efficacy of weapons, etc.



Recommendation: Leverage past experiences to find a better base line that we can build upon to ensure we can provide the best medical treatment allowed in a complex environment.



Another point to realize is that some of our recent doctrine might not match the reality we will face.



4). <u>Alaska COVID 19 Response Navigating Title 10 vs 32 (Maj Titus Rund):</u> Maj. Rund spoke to the group about some of the challenges that are faced with the differences between Title 10 and Title 32 during the recent COVID 19 Response.

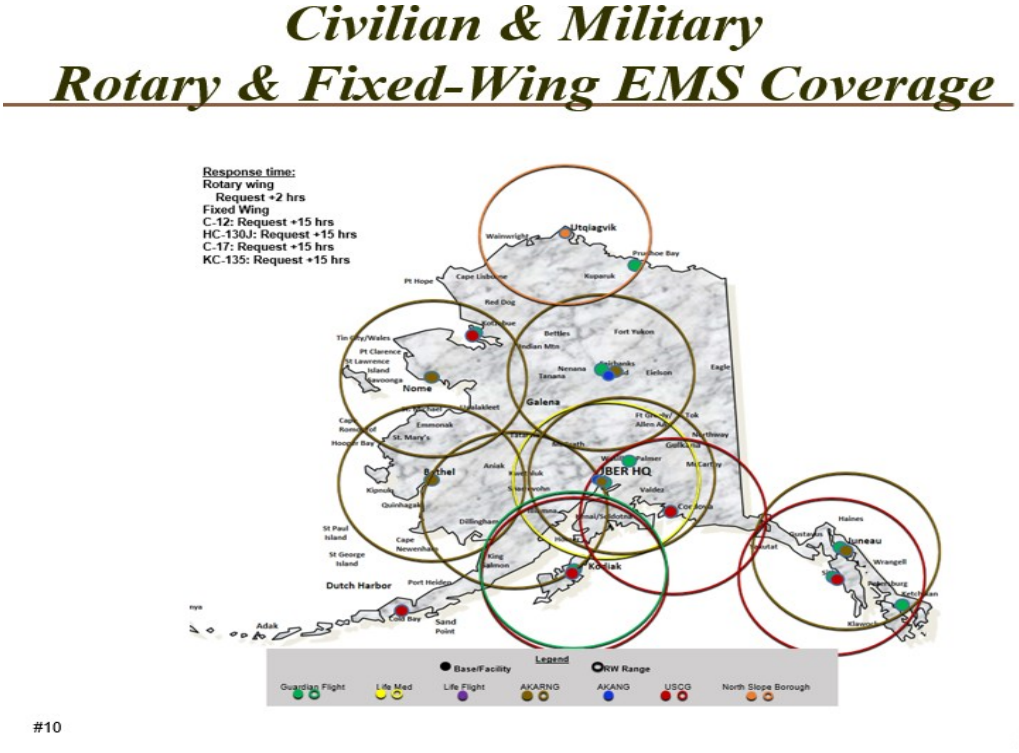
<u>Issue:</u> There are some key differences in what authorities and protections for providers based on what Title they are working under.

- Title 10 – Federal Tort Protection

- Title 32 – Alaska NORAD Region (ANR)
  - Personnel Recovery (PR) – AK ANG Guardian Angel Triad
  - The AK Rescue Coordination Center (AK RCC)
    - Issues Mission Authorization (MA) Number under Immediate Response Authority.
    - ANG personnel - convert to Title 10 status for duration of mission
    - ARNG Aircrew - DO NOT convert to Title 10 but remain Title 32

- Title 32 – *National Guard Bureau Legal Review
  - M-Day Providers acting as a Supervising Medical Director
  - M-Day Physician is not a covered entity under Federal Tort
  - Operate under their Private State Medical License
  - Outside of Mobilization - most NG providers (CST Provider is possible exception) are not credentialed for direct patient care and only support Aviation & Medical Readiness activity within NG
  - Complicated area of Tort (ie CST, GMD, and MEDDET operations)

<u>Discussion:</u> As you look at the state of Alaska you can see why some of these factors are amplified:



There is also a consideration for Line of Duty determination if something goes wrong:
DUTY Status Consideration (Title 32)

- Affects Recruiting & Retention

- Title 32 (State Active Duty (StAD))
    - State Workman's Compensation
        - Ex: Aviator removed from Flight Status 2/2 injury while fighting wildland fires
- Title 32 (Dual Status Guardsman (DSG))
    - Tech Position: Federal Workman's Compensation
    - M-Day: Line of Duty (LOD)
- Title 32 (Annual Training & M-Day)
    - LOD
- Title 32 (502F >30 days)
    - < 30d = LOD
    - 30d = Tricare convert to LOD if injury beyond
- Title 32 (Active Guard/Reserve)
    - Routine Medical Care eligible for AD

Recommendation: Continue education and development of recommendations for appropriate Title authorities to help ensure best patient care and protection of medical providers.

1015 Day 2 Component Committee Meeting Adjourned. Participants were sent on a 1 Hour break before Sub-committee break-out sessions began at 1100.

1100 Day 2 Breakout sessions: CoSCCC Sub-committee

CoSCCC Operational Sub-Committee (CDR Jensen/CAPT Edson)

COL Kirby Gross has transitioned the Chair position to Shane Jensen Chair, Ted Edson co-chair
Attendees:
Alex Merkle
Linda Benavides
Jonathan Hamrick
Jay Baker
Kyle Remick
Mary Ann Spott
Tommy Chavez
Scott Armen
D Marc Northern
Rich Lesperance
Donald Marion
Ted Edson
Sandra Wanek
Kirby Gross
Liz Mann-Salinas
Shane Jensen
Skerrett
Dominick Sestito
Brendon Drew
Thomas Rich
Danielle Davis
Jennifer Gurney
HR Montgomery

Old business:

- R2R2 – brief history of the genesis of the report by COL Gross
- Mentoring tool evolving into a final checklist
- Initial feedback, current document too long/extensive
- Consideration that this R2R2 links with mid and post-unit AARs
- KG soliciting feedback from SC: content appropriate, gaps, length
- Considerations of Joint interoperability requirements integrated into the R2R2

Due out: all members of the SC and Austere SC review R2R2 and provide the feedback. Will adjudicate virtually. Must have as "report card" that TMD would be responsible for ensuring prior to theater entry. Finalizing this is #1 priority for the SC.

New Business:

- **Operational AAR review –**
    - Proposed by Jay Baker. Tool separate from R2 AAR so classification can be elevated as needed. Jay working to determine appropriate classification level.
    - JB – briefing history of SOCEUR engagement with partner nations for COVID support

    - Importance to sell ourselves to the operational commanders
    - See questions below

- **Due out: Continue refining questions for a pilot (lower priority than the others)**

Kyle Remick – Precision Trauma Risk Assessment tool for commanders to make informed decisions

    - Mesh point b/t trauma system science and operations planning
    - Data exist in various places what risk of death is over time with given injury patterns.
    - Need formal analysis of available data to optimize mesh point
    - Are teams/providers utilized appropriately?
    - Precision medicine for military trauma care

- **Due out: Kyle's notes on this topic to share with team.**

R2 AAR

    - Discussion of multiple lines of effort to develop standardized AARs (see list below)
    - Driven by DoD IG report recommendation for JTS PI to develop R2 AAR and supported by CJCS Instruction for formal LL programs.

- **Due out: Liz will send R2 AAR and Indiv Readiness to group for review in one week. This is second priority to R2R2 review.**

Surgical "extenders" discussion – PA/18D/Surgical first assist nurse….

- R2 v R3
- Should not assume robust R3 surgical capabilities
- Consider what Theater "needs"
- Expeditionary surgeon – needs unique training
- What is professional capability required for expeditionary surgery?
    - Surgical PA very valuable in this context
- Most R3 configured optimally now, but what about the future battlefield
- MTOE for new field hospitals removed from operationally active surgeons
- ICU management may be facilitated with extenders
- Variability among services, how to support GME?
    - Lejeune, Pendleton as example of utilization target
- Curricula for this capabilities falls in lane of Ed/Training SC
- Surgical specialties substitution may be impacted by this
- What is specific gap? Deployable surgeons, capability
- What is optimal manning? Why is one surgeon team acceptable? Surgical PA could be force multiplier on such a team. Right-size v substitute.
-

Due out: What is the deliverable for this group?

- Recommendation to get the extenders added to substitution list as a first step
- Curricula requirements for the extender capability

CoSCCC Austere Sub-committee: COL Jay Baker

Attendees:
Shane Jensen
Jennifer Gurney
Dominick Sestito
Kristopher
Mark Buzzelli
Jose Ariaspatino
Ted Edson
Sean Keenan
Kyle Remick
Marc Northern
Jay Sampson
Jon Hamrick
Andrea Sotelo
Jake Anderson
Marc Northern
Scott Armen
Clint George
Sandra Wanek
Rich Lesperance
Jay Baker
Tommy Chavez
Dominique Greydanus (JTS)
Skerrett

Old Business

1. ARSC CPG—Published at JTS website 30 October 2019
   - Next steps—Format and submit for publication to Journal of Trauma concurrently with ARSC definition paper
     - Primary responsibility (PR): Jay Baker
     - Suspense: NLT 31 DEC 19

2. Operational planning guidance
   - Marc Northern leading final drafts, will circulate with ASTSC for approval
   - Plan to publish at Journal of Special Operations Medicine
     - PR: Marc Northern
     - Suspense: Completed prior to next CoSCCC, MAY 19

3. Special Operations Forces Baseline Interoperability Standards (SOFBIS)
   - SOCOM Board of Command Surgeons (BOCS) meeting 16 SEP 19 sketched initial draft for capabilities requirement for SOF surgical teams with input from SOCOM Component Surgeons, TSOC Surgeons, Consultants for General and Trauma Surgery, and JTS Chief

- Information Paper for COMSOCOM re: crisis in military surgery in draft. Will complete edits from DCOT meeting and staff with BOCS, Consultants, JTS, maybe others, then submit to COMSOCOM through SOCOM Surgeon.
    - PR: Jay Baker
    - Suspense: 15 DEC 19
- Surgical teams SOFBIS in draft, pending staffing with BOCS, Consultants, JTS, SOCOM J3, SOCOM J8 then will submit for approval at SOCOM Requirements Evaluation Board (SOCREB). However, the process for approval is not yet clear.
    - PR: Jay Baker
    - Suspense: 30 MAR 19? (date of next BOCS)

New Business

Due outs	Status	Action
ARSC CPG	Published in JSOM Summer 2020	Completed
ARSC position paper	Submitted to Military Medicine, accepted for publication 04 AUG 20	Pending publication
SOF Baseline Interoperability Standards	SOCREB approved CBA for SOF Surgical Teams 03 MAR 20	Support for SOCOM-led CBA, date TBD
Research	Nearly 300 documents have been reviewed	Review and discuss interim data and sample cases with Sr. surgeons, date TBD
Training	Joint Trauma Education and Training (JTET) aims to develop Joint Interoperability Standard IAW DODI 1322.32, 10 June 2020	JTET is OPR with ASTSC OCR
Austere Anesthesia	Stalled due to COVID	Pick back up and complete
OPG	Stalled due to COVID	Pick back up and complete
R2 Readiness Report & AAR	Op SC is OPR	Review and reply to Op SC
Mil Med Strategic Fellowship	Draft in progress	Contact me if interested
Merge with Ops SC	Discussion	Decision pending

CoSCCC Education& Training Sub-Committee: LTC Graybill

Attendees:
Gian Tai See
Dominick Sestito
Zsolt Stockinger
Eric Verwiebe
Keith Jackson
Kirby Gross
Jay Sampson
Bob Mabry
Matt Tadlock
John Christopher Graybill
Larry Crozier
Liz Mann-Salinas
Eric Elster
Tyson Becker

1. Sub Committee Requirements/Deliverables

JTETD:

1. There were five standardized medical training courses developed by JTETD, as of October 2019, and identified as:
    - Tactical Combat Casualty Care Courses; Tier 1-4 teaches evidence-based, life-saving techniques and strategies for providing the best trauma care on the battlefield.
    - Combat Casualty Care Course is a 3-day course design to enhance medical readiness and provide knowledge on Role I and Role II care in an austere combat environment.
    - Emergency War Surgery Course consists of trauma lectures that cover war wounds and the management of injuries, such as spine trauma injury, abdominal trauma, amputations. The course also covers field critical care principles, mass casualty and triage principles, and burn management.
    - Trauma Nurse Care Course/Advanced Trauma Care for Nurses is two-day course that provides knowledge on early care of trauma patients and information and skills to identify life threatening injuries associated with the care of patients.
    - Advanced Trauma Life Support is a two-and-a-half-day course that prepared physicians to identify and respond to life-threatening traumatic injuries.

    Request 1: We pulled the above course descriptions/objectives from various .mil websites. Please provide documentation with the official/updated course objectives.

    Request 2: We know that as of January 2020, only the TCCC course had been implemented. Please provide documentation with timelines for when the other courses are expected to be implemented.

2. Remaining three courses JTETD plans to develop were identified as:
    - Austere Resuscitative Surgical Care Course

- EnRoute Casualty Care Course
- Prolong Casualty Care Course

Request 3: Please provide documentation with timelines for when these three courses are expected to be developed and implemented, and the official course overview/objective for each of these three courses.

3. We received the Blue Book, which outlines forming military-civilian partnerships per the FY 2017 NDAA.

   Request 4: Please provide documentation with a timeline for a final version and issuance of this guidance. Additionally, have criteria and timelines been established for entering into military-civilian partnerships? If so, please provide that documentation or indicate when you expect to establish the criteria and timelines.

Basic Knowledge:

Agenda is 2 main topics:

a. Standardize training within DoD under the JTS auspice to set Trauma Standards
   i. Funding for ASSET+ and COTS+ courses in place
   ii. Modules for Head and Neck training, Critical Care for non-intensivists
   iii. Will contact Chung/Pamplin re Critical Care for intensivist
   iv. Quick access training on ECMO/CRRT
   v. Develop Joint minimum standards
   vi. Requests to set up workgroup to support these educational requirements development
   vii. TCCC course for Physicians, Nurses and advanced practice providers.
b. Orchestrate Mil-Civ partnerships

Review Membership Roster and key stakeholders

Due Outs/ Request for Info:

- Jay Sampson will go back to AF and make sure that ASSET + is mandatory for General Surgeons and that COTS+ is required for Orthopedists. Also will include that each may do the alternate course in out years.

- LTC Graybill will write official memo to show that ASSET+ and COTS+ are required. Intent to make this self-sustaining longitudinally.
- Work on TCCC Course for Providers
- Will resurrect WG for team training and minimum interoperability standards.

1100 Day 2 Breakout sessions: Combined Sub-committees

CoSCCC/CoERCCC Research Sub-committee (Chairs: COL Marty Schreiber(SCCC) COL Cap/Col Hatzfeld(ERC)

Brendon Drew
Danielle Davis
Martin Schreiber
Ana-Claire Meyer (Presenter)
Andy Vaughan
Anne Ritter
Virginia Blackman
Linda Smith
Dario Rodriquez 711 HPX
Donald Marion
George Hildebrandt
Jennifer Gurney
Kathy Ryan
Larry Crozier
Cubby Gardner
Rachel Ely
Matthew Martin
Steven Gaydos
Tami Averett-Brauer
Travis Deaton
Travis Polk
John Holcomb
Lisa McFarlan
Jared Fontanos
Steven Galps
Russ Kotwal
Caleb Twillgear

COL Schreiber opened the meeting by presenting the Research agenda and introduced Dr. Caudle. Col Shackelford added that this presentation is the model for future "New Technology" with acquisition and coordination with the DCoT.

Research Priorities:

- Suggestion to add TBI/TBI and Resuscitation Adjuncts to top 10 list
- Referenced Table 3 of paper " Top 10 Research Priorities for Forward Surgical Care"

TCCC Research Priorities:

- Power (batteries etc.,)

- Utilizing available resources to optimize care of the patient quicker
- Wearables r/t detection of illness translatable to detection of injury.
- Sensors currently being looked at: hr, hr variability, skin temp, accelerometer, altitude/fall detection, RR combined with algorhythm development for heart strain and other key parameters, algorhythms for heat injury, cognition, hypoxia, and acute mountain sickness (Ana-Claire Meyer)
  Lt Col Gadner

Top 10 CoERCC Research Priorities:

- Medical Documentation
- Clinical Decision Support
- Patient Monitoring
- Transfer of Care
- Transport Physiology
- Maintenance of Normothermia
- Transport Timing Following DCS
- Intelligent Tasking
- Commander's Risk Assessment
- Unmanned Transport

Recommendations for Future Trial Protocols:

- Current Task Orders:
- Whole Blood Resuscitation
- Prehospital Analgesia – ketamine (not fully executing yet)
- Prehospital Airway Management
- Epidemiology study
- Potential Future Trial Task List (reviewed annually):
- Prehospital plasma (pending FDA approval)
- Non operable interventions for non-compressible hemorrhage (pending FDA product approval)
- Damage Control interventions for major vascular injuries
- Early use of different types of organ support early after trauma
- Optimization of blood products and storage (in negations)
- VS monitoring capabilities (needs narrowing down)
- Comparison of different intervention for maintain normothermia
- Human static resuscitation

Additional committee ideas for future trials:

- TBI (currently no task order however, all resuscitation orders have a TBI arm_
- Prehospital burn resuscitation with plasma
- Prehospital 2gm TXA for hemorrhagic shock
- Valproic Acid
- Prehospital Vasopressin
- Plasma as a drug to mitigate secondary effects of TBI
- Hypertonic albumin
- Calcium dosing in larger blood volume transfusions

Primary topics to discuss:

-Traumatic Brain Injury Biomarkers research/ goal to develop point of care testing on I-Stat
-New technology and how to study it
-Access to the DoDTR – discussion on open, easy Registry access to all
-Review Research Priorities from ("Matt's paper") ID

Laboratory Assay for Traumatic Brain Injury Product Development Effort: (Dr Caudle)

GOALS:

- Introduce the Laboratory Assay for Traumatic Brain Injury (LATBI) product development
- Describe the role of materiel developer and Acquisition strategy
- Capture initial concerns and feedback of clinical stakeholders
- Discuss relevant operational data and proposed implementation of LATBI
- Learn how we can support the Clinical Practice Guideline process for next steps

LATBI Capability

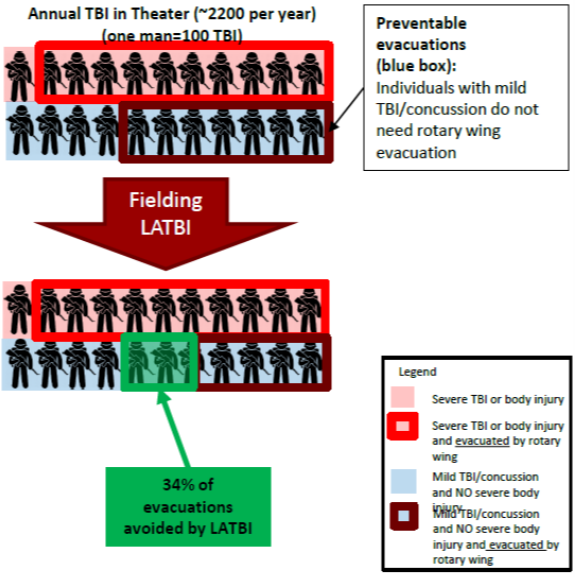
Description: FDA approved diagnostic assay system to detect serum biomarkers of traumatic brain injury (TBI); multiplex assay cartridge detects 2 circulating blood biomarkers, control calibrators and device platformBiomarkersGlial Fibrillary Acidic Protein (GFAP)
Ubiquitin Carboxy-terminal Hydrolase L1 (UCH-L1)

Modernize currently fielded i-STAT 1 to i-STAT AlinityPlasma assay accelerated interim capability
Whole blood (WB) assay POC utilityAssociated Support Items of Equipment (ASIOE) -Centrifuge, freezer and refrigeration collocated at ROC 2 & 3

Role of Care: Army deployed units ROC 2 –3Also appropriate for ROC 4
Multiservice availability through established procurement systems Defense Logistic Agency -Medical

New or Replacement: TBI cartridge added to menu of assays on modernized i-STATMaintenance, logistical support and sustainment already established

- LATBI is a point of care blood test for traumatic brain injury (TBI) biomarkers (GFAP and UCH-L1)
  - ❑ Build 1: Plasma; Milestone C March 2021, IOC by Sept 2021
  - ❑ Build 2: Whole blood, FOC by Dec 2023
- In current operations, 48% of individuals with concussion/mild TBI in theater are evacuated by rotary wing, presumably for Head CT
- Fielding LATBI could reduce the number of Warfighters evacuated for Head CT by 34% and return uninjured Warfighters to duty sooner



Annual Estimates derived from analysis by Warfighter Brain Health Project Management Office based on data from Defense Veterans Brain Injury Center Office of Surveillance, Department of Defense Trauma Registry, and Bazarian, JJ, et. al. 2018. Lancet Neurol.

Gaps:
-Brain Trauma -Identify, diagnose and accurately quantify severity of brain injury among Soldiers who have suffered concussive events.

-Identify, Diagnose and Treat TBI-Army Medical Units lack the ability to assess severity, analyze, and effectively treat 100% of those Soldiers who have suffered traumatic brain injury

•**Requirement:** LATBI Biomarker Assay and Blood Analyzer Device Capability Development Document (CDD) for Laboratory Assay for Traumatic Brain Injury (LATBI); dated 23 November 2013 Catalog of Approved Requirements Documents (CARDS) # 14104
Operational Requirements Document (ORD) for Analyzer Blood (AB); dated 05 February 2003; CARDS # 14044.

<u>Due Outs:</u>

- Ana-Claire – follow up on Pilot Study on infrascanner to identify subdural or epidural bleed to get to surgery ASAP vs cerebellar bleeding.
- SAS recommendation to send out maybe 10 scenarios to see how SMEs would manage them as part of evaluation process of how to use this technology; SAS called it a “Thought experiment survey”. Ana-Claire volunteered Dr. Krista Caudle as USAMMDA POC to this effort.

1100 Day 2 Breakout sessions: CoERCCC Sub-committees

CoERCCC CPG/PI Subcommittee (Chairs: Ben Walrath and Jared Voller)

Attendees:

Kristin Silvia
Dana Flieger
Chris Cieurzo
Ben Walrath
Giselle Moody
Cord Cunningham
Cubby Gardner
Lisa McFarlan
Thomas Rich

Old business:

Task & Accountable Team Leads		Task Progress Tracking	
Task	Primary Task Lead	Next Major Milestone	Comments
Review and provide inputs to 11 CPGs from TRANSCOM			No update on this was provided to the subcommittee during CoERCCC. However, these are inputs from TRANSCOM regarding aeromedical considerations for flight for revision of existing JTS CPGs, not input for new CPGs. Col Wood and Col Strilka volunteer to review and present to next subcommittee meeting, TCON?
Review and provide inputs for 44 CPG on En Route Care considerations			No update on this was provided to the subcommittee during CoERCCC. However, reguar TCONS of a Subcommittee WG to work through this. Mr Thomas Rich willing to facilitate scheduling.
Create a Quick Reference Tri-Service Handbook			No update on this was provided to the subcommittee during CoERCCC
Patient Packaging CPG	Capt. Parrot	Out for coordination to the committee late July	Discussion was had duringthe Subcommittee meeting on whether this needed to be a self-standing CPG or embedded in the Inter-Facility Transport CPG
Blood Transfusion (Pre-hospital) CPG	MSG Voller and PI team	Out for coordination to the committee late July	Ready for an E-Vote of the Committee shortly (ETC<30D)
Ventilation management CPG	MSgt Whitmore	Out for coordination to the committee NLT Nov 19	No update
Behavioral Health CPG		Out for coordination to the committee NLT Nov 20	Parallel efforts occurring within AF. Interest in synchronization prompted email introduction of principles, who will report back to the Committee by next meeting as to whether scopes will allow convergence of efforts

Due out:

- Assign updated task leads
- Establish Milestones
- Set up next subcommittee meeting before holiday slowdown

New Business:

Task & Accountable Team Leads		Task Progress Tracking	
Task	Primary Task Lead	Next Major Milestone	Comments
Prehospital En Route Care Protocols - Converge tri-service protocol to have a JTS endorsed model for standing medical orders for medics in the field			2/3 signatories for tri-service medic protocols are in the Subcommittee and felt this was an opportunity to align practice and improve inter-operability. CAPT Walrath and Col Wood to reach out to signatory counterparts to determine feasibility of this PI effort
Consider Crisis Standard of Care CPG or concept inclusion into Mass Casualty CPG			Col Wood to make request of this concept through formal JTS process

Due out:

- Assign task lead for new items
- Establish Milestones
- Set up next subcommittee meeting before holiday slowdown

CoERCCC Transfer/Documentation Subcommittee (Chair: 1SG Couglin)

Attendees:

Shelia Savell
Travis Shaw
Kristin Silvia
Cord Cunningham
Chris Cieurzo
Michael Chernenko
Shelia Savell
Laura Runyan
Russ Kotwal
Theepica Jeyarajah
Joseph Lopreiato
Cubby Gardner
Branden Coughlin
Kimberlie Biever
Joey Hernandez
Matt Harmon
Thomas Rich

Old business:

Task & Accountable Team Leads			Task Progress Tracking			
Task Title	Primary Task Lead	condary Task Lead	Next Major Milestone	Task Status	Percent Complete	Comments
Develop new DA 4700	1SG Coughlin	Bruce Tarpey	Development complete. Awaiting final administrative fixes	In Progress	99	
Update How-To/Instructions for 4700	1SG Coughlin	Bruce Tarpey	Pending development. Will be able to publish nearly simultaneous to 4700 approval	In Progress	25	
Partner to include 4700 guidance in Documentation CPG	1SG Coughlin	Nikki Selby	Edits entered into comprehensive documentation CPG. Updates needed pending completion/approval of new 4700	In Progress	90	
Develop methods to enable early ERC provider passing of information to receiving MTF's to enhance transition of care	1SG Matt Harmon	Shane Runyon	Early concepts identified. Requires communication with EM physicians to determine information needs.	In Progress	10	Iterative plan
ERC Provider updates to "prep for Evacuation" step of TCCC guidelines	SFC(P) Hernandez	Shawn Anderson	Army Combat Paramedic program refining update recomendations. Requires coordination with CoTCCC for implimentation into TCCC guidelines	In Progress	50	
How to document video to include 4700 and 1380	1SG Coughlin		Awaiting completion and approval of DA 4700 before initiating	Pending	0	
Develop end-user updates to Mercury PI form based on updated 4700			Sample updates and Sub-committee development	Pending	0	Must include Equipment and JPSR data
Partner with T&E committee to develop action plan for JPSR education and expanded utilization	Jamie Eastman		TBD	Pending	0	

Due out:

- Assign updated task leads
- Establish Milestones
- Set up next subcommittee meeting before holiday slowdown

<u>New Business:</u>

- Where are the Services with regard to automated en-route documentation (e.g. MEDHUB/BATDOK)?
    - Issue raised about the lack of time to fill out reports during flights
- Need to clean up the standard for verbal reports
    - For verbal report the 5W pass off is common in civilian EMS (Who the patient is, where the patient was picked up, what happened to the patient, what you did for the patient, what the patient still requires)
- Concerns of who fills out DD1380 verse the DA4700

HMC Michael Chernenko: We may change documentation from our aviation rescue swimmers with no medical provider on board over to DD1380 instead of DA4700. They just don't have the medical training at the level to fill a 4700 out. JTS will be receiving a batch of reports that are going to look rough.

Due out:

- Select Co-Chair
- Assign updated task leads
- Establish Milestones
- Set up next subcommittee meeting before holiday slowdown

CoTCCC / CoERCCC Policy & Doctrine Subcommittees (Chairs: Col Mark D. Ervin & John Leasiolagi)

Attendees:

Thomas Rich
HR Montgomery
Cord Cunningham
Thomas Brockmann
Sean Barbabella
Ben Walrath
Brendon Drew
Michael Chernenko
Bill Gephart
Laura Runyan
Mike Remley
Branden Coughlin
Bjoern Pietrzyk
Ed Whitt
Diane Lent-Tucker
Jim Czarnik

Old business:

Task & Accountable Team Leads		Task Progress Tracking	
Task	Primary Task Lead	Next Major Milestone	Comments
Readiness policy recommendation and DRRS reporting on Service Specific Enroute care capability	Ervin	Co-Ord with other working groups	
Documentation- "mandatory pre-hospital medical documentation" BLUF: A similar version of the draft SOCOM policy should be adopted by the COCOMs.	Ervin	Co-Ord with other working groups	
Casualty Evacuation and Medical Evacuation – CoERCCC needs to agree on a joint definition of those two terms. Capabilities can be defined within the service.	Ervin	Approve submission for inclusion in JP-04	
ERC capabilities levels	Ervin	evaluate CAMTS and TCCC for applicable deffinitions	
Position paper on the impact of added ERC capabilities to reduce risk associated with reduced forward DCR/DCS presence.	Ervin	Review Rand AFRICACOM Rescue study and other literature review	

Due out:

- Assign updated task leads
- Establish Milestones
- Set up next subcommittee meeting before holiday slowdown

New Business:

- DD 818 go up that we were working on for common lexicon conversation that John Leasiolagi briefed on
- JP 4-02 is being re-written and that is the Joint Policy we are going to focus on 1st
    - Joint trauma Lexicon (JTL) needs to account for those terms that are not accepted into JP 4-02 and we restaff through the DCoT as outlined in the JTL
    - Initial goal is to complete review before the end of Oct
    - The JP4-02 discussion of the terms CASEVAC, TACEVAC, MEDEVAC
        -

Due out:

- Select replacement for Col Ervin
- Set up a DCoT lvl WG for Policy and Doctrine that will focus on JP 4-02 first
- Assign updated task leads
- Establish Milestones
- Set up next subcommittee meeting before holiday slowdown

CoERCCC Education & Training Subcommittee (Chair: LTC Graybill)

Attendees:

Thomas Rich
John Andrus
Wayne Papalski
Joseph Buatti
Dan Brown
Richard Caldwell
Dana Flieger
Liz Mann-Salinas
Brendon Drew
Mary Ann Spott
Mark Jacques
Diane Lent-Tucker
Brit Adams

Old business:

Task & Accountable Team Leads			Task Progress Tracking			
Task	Primary Task Lead	Secondary Task Lead	Next Major Milestone	Task Status	Percent Complete	Comments
Paramedic for USN SAR Medical Technician	Papalski	Walrath/Roy	Complete	Complete	100	Signed and POM for FY22
Push education on documentation of 4700. Secondary updated the Navy's way of reporting to send all reports to the JTS.	Roy	Walrath/Papalski	Complete	Complete	100	Awaiting data changes from 2017 to now… to show if there has been an improvement.
Sharing gear requirements associated with ERC tasks list across services, ultimately leading to the Navy approval of funded AMAL's	Chernanko	Roy/Papalski	Complete	Complete	100	AMAL is signed off by PAC FLT and USFF, at NAVMEDLOGCOM being built
Provide inputs to redo the memo from House Affairs DHP memo on casualty requirements as listed in JRCOM 026-12 dated 27 Feb. 2012	Papalski	Eastman	Push to doctrine for QA	In Progress	75	
Email curriculum leads at each training site for introduction to the T&E sub-group. Additionally, sending the MERCURY data to school houses to show " real time fleet feedback" to improve QA/QI	Eastman	Hardy	Draft email	Pending	0	
Create/Provide Packaging and Loading video/pictures	Hardy	Eastman/Roy	Email Script to Tom			
Create/Provide Hoisting video/pictures	Papalski	Buatti	Email Script to Tom			
Create/Provide video on how to document	Hardy					

Due out:

- Assign updated task leads
- Establish Milestones
- Set up next subcommittee meeting before holiday slowdown

New Business:

- Training impacts of MERCuRY Report for 2019

Due out:

- Assign updated task leads
- Establish Milestones
- Set up next subcommittee meeting before holiday slowdown

CoTCCC Technology Subcommittee: (Chair: CAPT Lanny Littlejohn)

CAPT Littlejohn reviewed the mission, requirements, and deliverables of the TCCC Technology Subcommittee. The Technology Subcommittee will:

-Review current and potential recommended devices annually
-Provide recommendations as needed
-Routinely review new or proposed technology and equipment potentially relevant to JTS clinical practice guidelines and provide reports or recommendations to the committee as needed
-Produce CoTCCC preferred features documents for reference by combat developers, logisticians, and industry to meet the expected standard of care on the battlefield.

Attendees
Lanny Littlejohn
Brendon Drew
Mel Otten
Frank Butler
Ryan Knight
John Dorsch
Travis Shaw
Jim Bagian
Tim Sprunger

Curt Conklin

The subcommittee reviewed two medications and one device.

Sufentanil (Dsuvia) oral dissolving tab. FDA-Approved for use in the "monitored health care setting." Not currently approved for prehospital use. No safety studies published in the prehospital environment although one DoD-affiliated organization is finalizing a protocol. It is significantly more expensive than OTFC but is in the DoD inventory for purchase. 75th RR has purchased it but only due to shortage of OTFC. Not currently a topic for further TCCC Review due to lack of safety studies in the prehospital environment.

Omadacycline (Nuzyra) oral and IV broad-spectrum antibiotic with potential also in biowarfare threats (Bacillus Anthracis and Yersinia Pestis). Currently there is renewed debate on the utility of early antibiotic use for combat casualties and this needs a relook at the evidence supporting the TCCC recommendations. So no further review of Omadacycline ATT but we are looking for initial position papers on antibiotics in TCCC.

For Devices the issue of vented chest seals and valve type was discussed. Many chest seals have animal "efficacy" data with mixed results. Most valves are of the collapsible type but the SAM has a raised valve that may be more important for chest wounds on surfaces that would have weight upon them. This case could arise when the wound is on the back and the patient must be on a stretcher. In rare instances when body armor must be replaced on a casualty this issue would arise with anterior wounds as well. A position paper that would review the evidence on efficacy studies would be beneficial as it could delineate the situations where different valve types may be useful as well as the evidence for the various seals on the market (at least 12 at present).

Other devices briefly mentioned for situational awareness were focused on adjuncts for the safe and effective delivery of blood for trauma resuscitation. These were Blood Boxes (Blood Box Tactical, and Golden Minute Container) and Fluid warmers (Buddy lite, EnFlow, QinFlow, and Quantum). These are prime targets for position papers.

Preferred features documents for IO and Surgical Airway kits were reviewed as a model to complete a more thorough inventory of documents for use by committee members, combat medical developers, and by unit medical acquisition personnel. On the agenda within the next quarter will be to produce official documents on hemostatic dressings (already published in the literature), chest seals, fluid warmers, and blood boxes. To align with JTS preferences we will move away from recommended devices and adjuncts and speak only to the evidence base for specific devices and develop a scoring index for quality of evidence. This scoring will also feed into another larger score that will assess cost, logistics (cube/weight), training requirements, durability, etc…

Due-Outs and Requests for Info:

The Subcommittee members will review, amend, and complete 4 preferred features documents over the next 3 months. Will initiate position papers on chest seals, Antibiotics in TCCC, Dsuvia, fluid warmers, and blood boxes. Members will follow up by email and meet virtually in 3 months to complete the preferred features documents. Assessed that at least two position papers can be completed within 6 months and all the above before the next formal CoTCCC meeting.

Day 2 Subcommittee Break-out Sessions Concluded at Approximately 1600

Day 3 Plenary Session All Hands

0800 CST	Committee on Canine Combat Casualty Care (CoK9CCC)	Nemelka/Mont
0830	R&D Subcommittee Briefbacks (Combined)	Schreiber
0840	CoTCCC Technology Subcommittee Briefback	
0850	Education & Training Subcommittee Briefbacks (Combined)	Graybill
0900	Policy & Doctrine Subcommittee Briefback (TCCC & ERCCC)	
0910	CoSCCC Austere Subcommittee Briefback	Baker
0915	CoSCCC Operational Subcommittee Briefback	Jensen
0920	CoERCCC CPG/PI Subcommittee Briefback	
0925	CoERCCC Transfer/Documentation Briefback	
0930	CoTCCC Tasks / Due-Out Review	Drew / Montgomery
0940	CoERCCC Tasks / Due-Out Review	Cunningham / Rich
0950	CoSCCC Tasks / Due-Out Review	Gurney / Sestito

COL Mont provided an overview of the K9 Combat Casualty Care Committee. The K9CCC WG falls under DCoT Per-view as an affiliated Work Group.

Deliverables:

- Canine Combat Casualty Care Committee (K9C4)
- DD Form 3073, K9 Tactical Combat Casualty Care (TCCC) card
- DD Form 3074, K9 Treatment and Resuscitation Record

- Military Working Dog (MWD) Clinical Practice Guidelines (CPG)

Current Lines of Effort:

- MWD Trauma Registry
- K9TCCC guidelines
- Tiers
- Training Packages (Two nearly complete, other ongoing)
- Simulation

- **MIL/CIV training opportunities for U.S. Army Veterinary Services personnel**
  - Military Training Agreement – signed
  - Development of curriculum and assessments

Day three Brief-backs for each Sub-committee break out session were presented to ALL HANDS by the respective Sub-committee Chair. Brief-backs reviewed old business, current lines of effort, and deliverables previously stated during breakout sessions.

BDrew

Brendon Drew, DO
CAPT, MC, USN
Chair, CoTCCC

Cord Cunningham, MD FAEMS
COL, MC, USAR
Chair, CoERCCC

GURNEY.JENNIFER.MARGARET.1155030590 Digitally signed by GURNEY.JENNIFER.MARGARET.1155030590 Date: 2020.12.16 12:42:23 -06'00'

Jennifer Gurney, MD FACS
COL, MC, USA
Chair, DCoT

Enclosure (1) – Meeting Attendance

JTS Staff:
Col Stacy Shackelford (JTS Chief)
MSG Michael Remley (SEL)
Dr. Mary Ann Spott (JTS Deputy Director)
Mr. Dallas Burelison (JTS Chief Administrator)
COL Jennifer Gurney (DCoT Chief)
CDR Shane Jensen (CoSCCC Chair)
COL Brian Sonka (PI Chief)
LTC Chris Graybill (JTET)
LTC Edward Mazuchowski (AFMES)
COL Cord Cunningham (ERC)
CAPT Brendon Drew (CoTCCC)
Harold Montgomery (TCCC)
Mr. Dominick Sestito (SCCC)
Mr. Tom Rich (ERCCC)
Dr. Russ Kotwal (Spec Projects)
Ms. Liz Mann-Salinas (PI)
Dr. Jud Janak (Epi)
Matt Adams (JTET)
Larry Crozier (PI)
Laura Runyan (PI)
Andrea Sotelo (PI)
Ed Whitt (Pubs)
Bill Orr (OPS Planner)
Giselle Moody (PI)
Trevor Gipper (Media)
Sean Keenan (PFC)
Frank Butler (CoTCCC)
Linda Martinez (PI)
Domenique Greydanus (QAAC)
Larry Crozier (PI)
Danielle Davis (CoTCCC Admin)
Chet Kharod (Spec Projects)
Lisa McFarlan (PI)
Bruce Tarpey (MEDEVAC)
Patty Drouillard (PI)
Art Cruz (JTET)
Curtis Hall (Pubs)

Abraham Medina (Pubs)
Margarita Carter (PI/Admin)

VIP Guest Speakers:
GEN Austin Miller
BG Michael Talley
BG George Appenzeller
BG Paul Friedrichs
RDML Darin Via
RDML Cindy Kuehner

Day 1 Attendance

1SG Specht
Aimee Chapman
Alex merkle
Ana-Claire Meyer
Andrew D Fisher
Andrew D. Fisher
Andrew Fisher
Andrew Olson
Andrew Vaughn
Anjali Morgan
Anne Ritter
Anne Rizzo
Antonio Ziherl
CAPT Ben Walrath
Bethe Curtice
Bill Gephart
Bill Soliz
Bob Mabry
Bonnie Hartstein
Bonnie Woffenden
Brad Bennett
Branden Coughlin
Brandi Terra
CAPT Brendon Drew
Brent Maney
Brit Adams
CAPT CA Kurtz
CAPT Chris Lucas
CAPT Stockinger
CDR Joseph Kotora
CDR Linda Smith
CDR Michael Tiller
CDR Travis Polk
Clint George
COL David Dennison
COL Jeremy Pamplin
Col Leslie Wood, HQ AMC
Col M. Nasri
COL Mark Reynolds
COL Mark Stackle
COL Scott Armen
COL Tammy Funari
COL Tyson Becker
CPT Gotay
CPT Jason Ausman
CPT Steven Oliveira
Crystal Hill-Pryor
CSM Laragione
CSM Tim Sprunger
Curt Conklin
Maj D Marc Northern
Dan Brown
CDR Dana Onifer
Dario Rodriquez
David W. Cannon
Col Deb Malone
Derek Brown
Diane Lent-Tucker
Dominic Thompson
Donald Adams
Donald Parsons
Dr. Cardin
Edward Otten
Eric Elster
Erin Edgar
Col Eveline Yao
George Hildebrandt
Maj Gina Tai See
HMC Michael Chernenko
HMCM Jeremy Torrisi
Howard Champion
J Sazon
Jamie Eastman
Jamie Riesberg
COL Jason Corley
COL Jay Baker
Jay Johannigman
Col Jay Sampson
Jered Fontanos
Jerome Benavides
Jim Bagian
Jim Czarnik
Joe DuBose

John Dorsch
John Holcomb
LTC John Houk
John Maitha
SFC Jon Johnson
LCDR Jonathan Hamrick
JOSE ARIASPATINO
Lt Col Joseph Maddry
Karl Kmiecik
Kathy Ryan
LTC Keith Jackson
Kevin Krul
COL Kevin Nemelka
COL Kimberlie Biever
Kyle Remick
COL Lance Cordoni
CDR Lanny Littlejohn
Lt Col Brian Gavitt
Lt Col Chris Cieurzo
Lt Col Dan Brown
Lt Col Gardner
Lt Col Thomas Brockmann
LT Dana Flieger
LTC C Gardner
LTC Delgado
LTC Eric G. Verwiebe
LTC Kathleen Samsey
LTC Moon
LTC Rich Lesperance
LTC Shaun Brown
LTC Summers
LTC VanFosson
LTC(P) Justin Stewart
LTC(P) Mark Buzzelli
Luis Diolazo
Luke Hofmann
Maj Erica Simon
Major Stephan Kesterson
Marcozzi
Margaret Morgan
COL Mark Jacques
Mark Lenart
COL Martin Schreiber
Mary-Anne Purtill
CDR Matt Bradley
Matt Harmon
Matthew Clark
Matthew Griffith
Matthew Grinstaff
Matthew Martin
CDR Matthew Tadlock
Megan Blackburn
Msgt Trey Garner
Nicholas Namias
CDR Obie Powell
Pamela Lane
COL Paul White
Rachel Ely
Ramey Wilson
Richard Strayer
Ricky Ditzel JR
Robert Noll
Ryan Knight
COL Sandra Wanek
Sean Barbabella
SFC Paul Loos
MSgt Shawn Anderson
COL Shawn Nessen
Shelia Savell
Skerrett (VSB)
SSG Smith
Stephen Rush
Steve Gaydos
Tami Averett-Brauer
CAPT Ted Edson
Todd Getz
SGT Tommy Chavez
Travis Deaton
CDR Travis Polk
Travis Shaw
LTC Valerie Sams
Lt Col Vik Bebarta
CAPT Virginia Blackman
Warren Dorlac
HMC Wayne Papalski
CAPT Zsolt Stockinger