Committee on Surgical Combat Casualty Care Meeting

11-12th May 2022

San Antonio, TX

Meeting Minutes Prepared by: Mr. Dominick Sestito

Day #1 CoSCCC May 11th, 2022

Day 1			
Time	**Presentation**	**Speaker**	**Topic and Intent**
0800	Welcome and Introductions	Jensen / Dom	
0820	JTS update and DHA Strategic Plan for CCC	Shackelford	SEMS / 5 LOE
0840	Extramural LOE	Gurney (10min)	MCP WG, MZA, AAST, COT, Excelsior
0850	Discussion, Q/ A regarding DHA Strategic Plan, JTS, CoSCCC Roles Moderator: Shackelford / Graybill		
0910	Deployed Surgeon Talk: From Role 2 to TMD – the maturation of a trauma surgeon	Roedel	Trauma system development in OIR
0940	Medical Treatment in the Contested Multi-Domain Environment	Moe	Improving our Operational IQ
1000	Group Discussion: How is CoSCCC's Operational IQ; do we need to Improve? Moderators: Seery/Kotwal		
1025	**BREAK**		
1050	Update Health Affairs	Cannon (15min)	VIRTUAL Military supplement
1105	MTF Being Trauma Centers – Show me the $	Sams (20 min)	Brief Update on SEMS WS#2
1125	Trauma Perspective Lejeune	Pokorny (20min)	Case Study – saving lives secondary to trauma center capability
1145	MCP Challenges – the risks / the benefits	Schreiber (15 min)	Nuances with MCPs….the things we don't talk about….
1200	ODE is not for Readiness	Gurney (15min)	Risk/Benefit of ODE: what's the plan?
1215	Group Discussion: MCPs / MTFs - How do both MTFs and MCPs succeed? Moderators: Eckert/Jensen		
1245	**LUNCH**		
1345	Non-surgeon Surgeons….training medics to perform laparotomies	Loos	SOCOM medics are going to have to perform surgery, or are they?
1405	Group Discussion: CoSCCC membership position on medics performing surgical procedures Moderators: Shackelford / Lesperance		
1425	IDA Report	Jensen/Gurney (15 min)	Review of Report to Congress
1440	MTF Struggles; Failure?? – Can We Recover?	Sohn (25min)	Can we make MTFs great again or are we looking at critical failure?
1505	Group Discussion	Moderators: Sohn / Cap / Seery / Jensen	
1530	**BREAK**		
1550	**Work Groups / Line of Effort -**		
NSG at R3 Position Statement		Leads: Gurney / Schreiber / Eckert / Dom	
Finalizing Trauma Lexicon Terms		Leads: Jensen / Edson / Gavitt / Baker / Proctor / Loos / Tom	

0800 – Introduction: The CoSCCC conference opened with an introduction by COL Gurney, Chair of the Defense Committees on Trauma (DCoT) and CDR Jensen, the Chair of the Committee on Surgical Combat Casualty Care (CoSCCC).

CDR Jensen restated the purpose of this meeting, which is to stay ahead of changes to the MHS and the casualty care system and to come up with the best ideas and the processes that we can help contribute to the customer and the war fighter. CDR Jensen also recapped the goals and initial initiatives of the CoSCCC from the fall 2016 inaugural meeting.

Three major lines of effort for this meeting were Neurosurgeon Role 3 Position Statement, Proposal for the Top 10 Research Priorities review (5 year), and completion of the Trauma Lexicon review; consensus was to ensure the lines of effort are our targets and not overuse medical terminology. We have an 85% solution and will work to get a finalized drafts for each line of effort, and get this out for Vote at the conclusion of the meeting. COL Gurney concurred, and expressed the importance of taking ownership of these documents and others.

COL Gurney reviewed the importance of cost–benefit analysis (CBA's) and completion of the Joint Requirements Oversight Council (JROCM) tasks. She concluded with an overview of the agenda topics and presenters. Emphasizing the importance of avoiding the "Walker Dip" during peacetime. Focus on what we can change and what is important, and understand where we have influence and authority.

Mr. Sestito covered administrative tasking's for Defense Travel System (DTS) travelers, updating personal information on the sign in roster and items related to membership.

1. Joint Trauma System (JTS) Director's Perspective/ JTS under Defense Health Agency (DHA) Update (Col Stacy Shackelford): Col Shackelford presented the JTS Chief update and DHA's strategic plan for Combat Casualty Care:

Col Shackelford highlighted the most important and influential documents produced since transitioning to DHA in 2018.

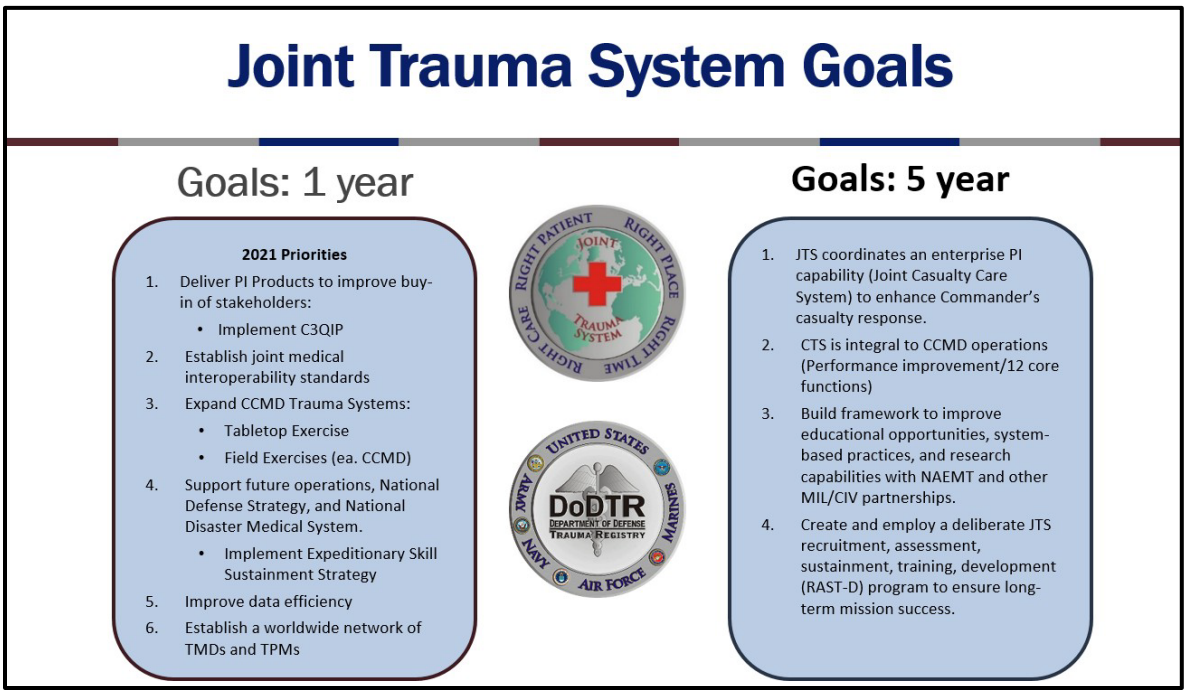
- National Defense Authorization Act (NDAA) FY17 sec 707/708
- NDAA FY22 sec 732
- Department of Defense Issuance (DODI) 6040.47/6000.19/1322.24
- DHA-PI 6040.03/6040.05/6040.06
- DHA-AI 107

The Campaign Plan will include the Sustainment of Expeditionary Medical Skills and will further execute the transition within the DHA.

Col Shackelford – *We have arrived at a place in the DHA where we are influencing policy and making definitive change and not just an expedient temporary solution.*

Col Shackelford introduced the newest Branch within the JTS – Joint Knowledge, Skills, And Abilities (KSA) Program Management Office (PMO), led by Rick Kollar, and how they will integrate with the current JTS 1 and 5 year goals. We are currently writing the business plan and establishing the PMO, for proper staffing and funding. It is going to be a tool to hold leadership responsible for our clinical activity.

Figure 1. JTS Short and Long Term Goals.

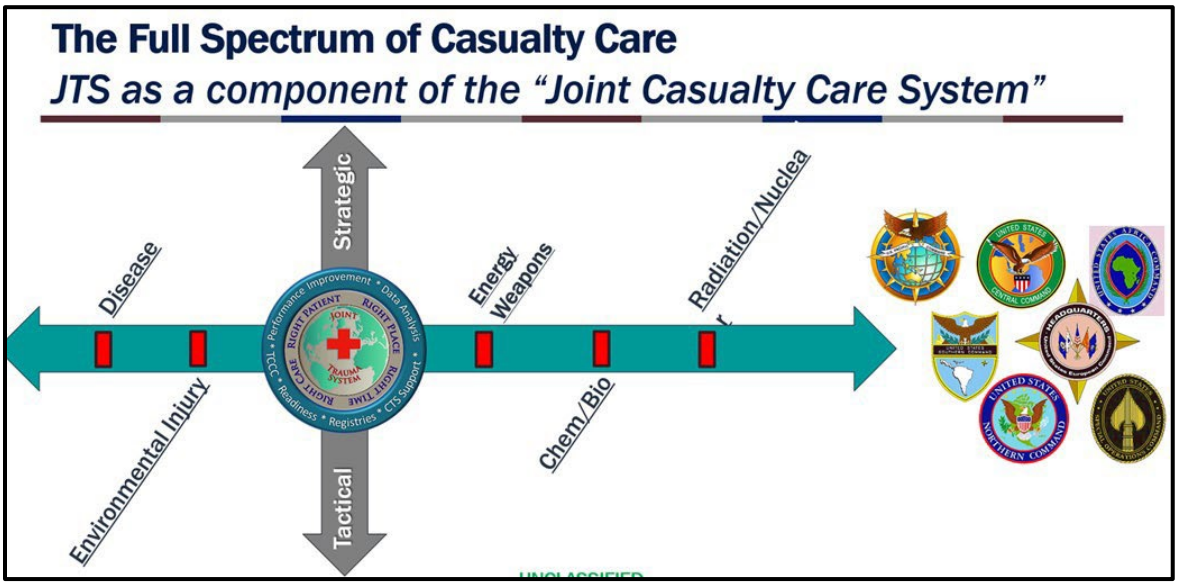


She further explained the "Full spectrum of Casualty Care" and how JTS is a "Component" of the "Joint Casualty Care System."

A future goal of the JTS is to have each of the 12 core functions implemented into each CCDM.

COL Detro – *I concur with JTS including all forms of casualties. Kathy Lee at OASD Health Affairs is leading efforts on Direct Energy Weapons and attends our TBI CoE to provide unclassified updates.*

Figure 2. JTS as a Component



The future of Performance Improvement (PI) lies in the Combatant Command Trauma Systems (CTS) 12 core functions of a Trauma System implemented in all CCMD's; how the DoD Trauma Registry (DoDTR) integrates with Electronic Health Records (EHR) and automates electronic data collection.

Col Shackelford - *The COVID pandemic gave us a good picture of what a large scale casualty event would look like and we realized there is no way registrars could keep up with record abstraction without automated data.*

Additionally the JTS has emphasis on getting the Joint Trauma Education Training Branch (JTET) to Full Operating Capacity (FOC). They will be tasked with tracking all military/civilian (MIL/CIV) training partnerships and standardizing trauma core curriculum for each role of care. Col Shackelford touched on Multi-media resources to include Deployed Medicine https://deployedmedicine.com/, the JTS website, and the advisor line. She reviewed how the registry is changing since its inception, with new overlapping and integrated automated filters and functions such as real time dashboards providing a "360 degree view."

(Registry Dashboards https://carepoint.health.mil/sites/JTS/SitePages/Home.aspx)

2. Extramural Lines of Effort (COL Jen Gurney): COL Gurney presented on extramural activities that we should all have situation awareness on. "The Mission Zero Act" has moved to the "All Hazards Pandemic Act" and was actually passed this year and funded through the United States Department of Health and Human Services (HHS). JTS has recommended a process for funds distribution and enduring funds.
Excelsior Surgical Society (est. 1945) with outreach to Gen Surgeons and growing membership.

Committee on Trauma Resident Paper Competition: Tri-service has completely different ways to do this competition. Asked The American Association for the Surgery of Trauma (AAST) if we could host symposium in lieu of pre-session, and extend it to residents with fund raiser monies. The goal is to maintain readiness and this will start in 2023. The Regional paper competition will still be at Excelsior.

The AAST Military Liaison Committee is looking at research priorities. This will enable General Surgeons interested in Trauma. Journal of Trauma gave accolades, support, and commentary on our Single Surgeon Statement.

The American College of Surgeons (ACS) Military Partnership advocacy will present to congress issues we can't address.

CoSCCC is becoming relevant and maintains the core mission – to take care of the sick and wounded. We are now getting into the Policy realm and that is where change happens and influence and authority are established.

LtCol Hall – *Still waiting on DoDTR Data...did get some RFI's pretty quickly but dashboard needs some work, what is being presented needs better definition. I really want an MOA between CENTCOM and a Research Organization so I can support downrange PI/Research; unfortunately I have no funding to provide.*

COL Nessen – *the key is to establish a protocol. We did this with Dr. Holcomb when he was the ISR Commander. This can be done.*

3. <u>Deployed Surgeon</u> (LTC Erik Roedel): LTC Roedel presented his experiences as the Trauma Medical Director and his maturation throughout his career path as a Trauma Surgeon. LTC Roedel started out as an enlisted 91D in the Army Reserves in 1998. He worked as a Civilian scrub tech from 2000-2004, receiving an ROTC commission to attend UMASS in 2004. He continued through the Health Professions Scholarship Program (HPSP) for medical school in 2008.

Upon graduating in 2014, he was engrained with the mindset to be safe, competent, and independent. He was deployed within 6 months of graduation to a Role 2 split with Forward surgical team(FST). As the sole surgeon he performed approximately20 cases as attending. He stated his last ICU rotation was in 2010, and was part of an inexperienced team. Their mission was a long standing fixed facility with an established supply process and 10+ years of Theater-provided equipment (TPE) (OR Beds/Sterilizers etc).

LTC Roedel's next experience was at U.S. Army Medical Department Activity (MEDDAC), as Chief of General Surgery Winn ACH. Here he conducted 200 mixed cases, bariatric, foregut, colon etc, with no other active duty (AD) surgeons and at his time of departure there was an obvious shift towards outpatient. He experienced "capability creep" and was nervous prior to his second deployment.

LTC Roedel was assigned to a conventional Role 2 (being used unconventionally) for four months from 2016-17. This team was considered highly mobile with minimal logistic support (improvised single surgeon team).

Prior to applying for fellowship at the Internal Medicine Service - Tripler Army Medical Center (MEDCEN TAMC), he performed 240 mixed cases some trauma and emergency general surgeries (EGS), assisted in building the level 2 trauma program, and did no MTA or ODE.

He attended the Los Angeles County + USC Medical Center (LAC + USC) for 2 year trauma/critical care with a long history of military fellows/faculty and a military specific curriculum (NTTC/ASSET/BEST/LAPD affiliation). This was a high volume county style trauma program.

Assigned to Madigan Army Medical Center (MAMC), level 2 trauma center, he walked into the MEDCEN TMD role. He encountered state leadership and was integrated into a state system. He had approx. 12 months on ground prior to his 3rd deployment. He was able to conduct regional medical treatment facilities (MTS's) with level 1 and 2 trauma centers and had ODE opportunities.

Assigned as Operation Inherent Resolve, Operation Inherent Resolve, Trauma Medical Director (OIR TMD) to a Role 3, this was his first true Role 3 experience. He focused on the importance of Graduate Medical Education (GME) at a MIL/CIV partnership with Reservists and/or prior Military and military specific curriculum for context and guidance to produce safe, competent, and independent surgeons. Readiness metrics need to continue to be developed and case volume does translate to readiness.

COL Nessen - *Operational Commander (OC) holds power to allow travel for TMD but only if there is a Policy /PD in place for TMD to present to OC saying these are my requirements to be successful.*

LtCol Hall - *I can add something like that to CCR 40-1 Andrew Hall: If there are suggestions as to what the CENTCOM healthcare regulations should say, just PM me.*

LtCol Hall - *I know this is Surgical Committee, but I have come to appreciate DNBI. Trauma is currently a tiny fraction of the medical problems. There is a persistent 1-2 DNBI/per 1000 population (27% psych) evacuations required due to DNBI. A full 10% of our deployed force has a medical appointment a month. In a contested environment, we are trying to figure out what to do with this group. This problem with DNBI I fear is going to overshadow trauma readiness as time goes on since it is such a persistent problem. That 1-2 DNBI/per 1000 is by month.*

4. <u>Improving our Operational IQ</u> (MAJ Chris Moe): MAJ Moe is a medical operational planner and discussed Medical Treatment in the Contested Multi-domain Environment. MAJ Moe opened by referencing his SAMS/Monograph.

1. School of Advanced Military Studies
    - Teaches students Operational Art, focuses on understanding theories, cultures, and understanding WHY doctrine is written the way it is, and when to break from it.
2. What is a Monograph? (10,000 word limit)
    - In depth knowledge into a research question. NOT usually original research. Link to previous SAMS monographs.

My Research Question: How do we reduce mortality on the future battlefield and which tactics, techniques, and procedures (TTPs) from the Global War on Terror (GWOT) era will be useful, and which will not?

Scope: Conventional Weapons only, mortality not morbidity.

Figure 3. Abstract Research Document

The military health system used during the Global War on Terror (GWOT) produced excellent results and minimized preventable death on the battlefield compared to previous conflicts. However, military medicine accomplished this against an insurgent enemy while US Forces enjoyed dominance in the air domain, a critical factor in the rapid evacuation methods used to save lives. The key question this monograph seeks to answer is: what methods during GWOT produced excellent results, and will these methods work in the future environment of Multi-Domain Operations (MDO) in Large Scale Combat Operations (LSCO)? This monograph analyzes lessons learned in reducing preventable casualty mortality in the Global War on Terror (GWOT), compares and contrasts these with 1st Cavalry Division's medical support during large scale combat operations (LSCO) across multiple domains in the Philippines during WWII, assesses the future environment, and synthesizes potential solutions to reduce preventable battlefield death in the future. Key conclusions include the need for all Commanders to train Soldiers on Tactical Combat Casualty Care (TC3), the need to empower role I medical assets with diagnostic and triage capability to support empowered medical mission command, the need for aggressive and competent medical leadership, and the need for forward blood and blood products when forward surgery is unavailable.

In order to reduce mortality on the expected future multi-domain operation/ large scale combat operations (MDO/LSCO) battlefield, we must focus on these key factors:

1. **Non-Medical Command/Leadership involvement**
    a. Line Unit Commanders own casualty evacuation (CASEVAC) (MAJ Cale Hamilton's Monograph)
    b. Ground Commanders own Combat life saver/Tactical Combat Casualty Care (CLS/TC3)
2. **Empowered Medical Mission Command**
    - Forward diagnostics to support Medical evacuation (MEDEVAC)/CASEVAC triage
    - Maximize MEDEVAC and patient regulation
    - En Route Care (Critical Care Nurses)

3. **Mitigate Delayed Evacuation**
    a. Forward Surgery (40 FRSD, 60 BCTs according to sustainment force structure handbook 2020)
    b. Forward (Role I) blood when surgery is unavailable.
    c. Prolonged Care Augmentation Detachment (PCAD)
4. **Competent, aggressive, doctrinally capable medical leaders.**
    a. One shot to get it right-during the operation
        i. Why Casualty Fatality Rate (CFR) vs. Died of Wounds (DOW)?
            - Evacuation during GWOT was so fast that Soldiers reached care even with non-survivable wounds.
        ii. DOW is measure of those who died after reaching care.
            - WWII DOW was 3.5%, GWOT was 4.8% (Holcomb et al).

Casualty Fatality Rate is a better overall measurement of how many wounded Soldiers survive a conflict OVERALL

MAJ Moe continued to outline numerous publications referencing the inception of TCCC, The Golden Hour, Death on the Battlefield, etc. and their importance to the CCC environment, and how the system improves upon itself through peer-reviewed scientific study. MAJ Moe then spoke about LSCO and the future battlefield domain with lack of air superiority, MEDEVAC capabilities and the ability to reach surgical care in contested domains.

Highlighting several conflicts and their outcomes in the Pacific (Philippines).

Open Discussion amongst the members commenced at the conclusion of MAJ Moe's presentation:

Dr. Eastridge – *I couldn't agree more with your #2 in pushing therapeutics and resuscitation strategies. Blood far forward and advanced diagnostics will revolutionize combat casualty care.*

COL Seery – *As we look at PI/(CPG's) how do we make sure we are current and relevant with providing guidance with LSCO in future environments with current equipment's etc.*

COL Sonka – *That's the gap, we assume sets, kits, and outfits are optimal but we all know they are not. 2018 review did include Doppler but a number of outfits were not funded/rolled out…this is a capability document bureaucratic "SNAFU" several levels of review cause these gaps.*

MAJ Moe - *One thing I might add is that the Army force structure is combat arms heavy and does not have the right force mix of sustainment, to include medical. So I think part of the discussion is how do we manage the initial stage of the war with what we have, and how would we grow our capability and capacity to support LSCO.*

COL Cordoni - *bottom line set kits and outfits are not backed by appropriate capabilities documents. Doctrine is meant to guide.*

COL Baker – *Gaps in the DOTMLPF framework in moving towards zero preventable deaths and owning TCCC within their command. Increasing to larger number of CLS providers, I don't think we need a new program, just utilize the one we have more effectively.*

MAJ Moe - *The Sustainment Force Structure Handbook shows all sustainment units throughout the Army. According to the 2020 Sustainment Force Structure, there are only 40 surgical teams (then*

switching from FST to FRSD MTOE), and that includes reserves. There may be updates since that was published, but across the board we don't have enough sustainment assets to include medical.

COL Cunningham - *The IDA Report on 757 Study of Force mix highlights of my point of prehospital skill sustainment as that was not included in the current MCP focus or programs.*

LT Keeney-Bonthrone - *MAJ Moe, does your monograph discuss how the massive proliferation of sensors will affect medical units (fixed and mobile) and CASEVAC - e.g. enemy using drones to track CASEVAC routes IOT determine positions of both combat and medical forces, then target them - and how that will affect Role 1+2 training, equipment, etc?*

MAJ Moe - *Sir, it does not, but that is definitely a topic worth discussion.*

LT Toby Keeney-Bonthrone USN - *Roger, I think that's where someone like you can serve as a great bridge to educate medical providers on what their future battlespace will look like.*

BG Cox – *referencing historical LSCO, integrating a central repository for non-medical research papers (war colleges /SAMS etc) would be an outstanding idea from senior service colleges. Our frame of reference is best expanded by reading things we don't necessarily agree with and learn about inter-service functions and mindsets.*

5. **<u>Update Health Affairs</u> (Jeremy Cannon)**: Dr. Cannon discussed Journal of Trauma and Acute Care Military Supplement and our role in preserving lessons learned and providing it to future generations.

The 3 fold objective

- Disseminate military relevant research
- Create a touchstone for current mindset during current conflicts
- Inform best practice

Dr. Cannon briefly discussed the Supply and Demand of high quality content. Big surges with conflicts and an undulating cycle but clearly lower than an expected benchmark. Combat fatigue sets in and there is a deep decline before the conflict even ends.

Dr. Cannon - *Military relevant publications are significantly undervalued in top tier journals with notable exceptions during notable conflict.*

In conclusion, current publications do not demonstrate a societal investment in our Military's Medicine contributing to the Walker Dip.

Need to:

1. Promote high quality research eligible for publication.
2. Educate editorial boards not to dramatically under represent military medicine.
3. Step up the quality and quantity of "supply".
4. Increase emphasis on high profile Journals.
5. Cultivate next generation of Editors.

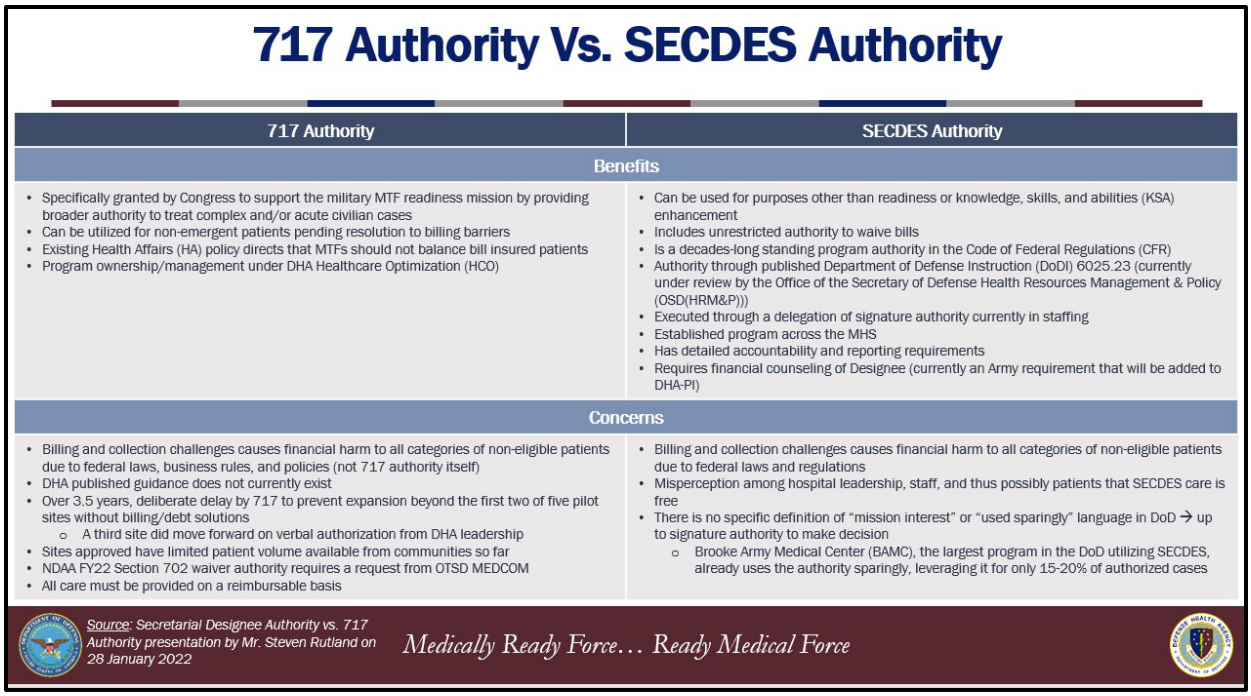
Opportunity to develop this year's Military Medicine Supplement.

Future direction – contractual agreement not mutually exclusive, but do not understand why not all open access, and would like to push for an all access military centric journal in the future.

COL Gurney –*Those are great points how to mitigate Walker Dip in publication realm as it informs training, clinical practice etc.*

6. **<u>MTF becoming Trauma Centers: Show me the Money</u> (LtCol Sams) –** LtCol Sams discussed work stream #2 making MTF's Trauma Centers and the difference of 717 Authority vs. Secretarial Designee Authority. The overall situation is that the existing federal laws, policies, and business rules were not written to adequately address and resolve billing issues. The most effective way forward to address the billing issue is likely to revise existing legislation. 717 Authority program ownership is now with HCO but must be confirmed.

Figure 4. 717 Authority vs SECDES Authority



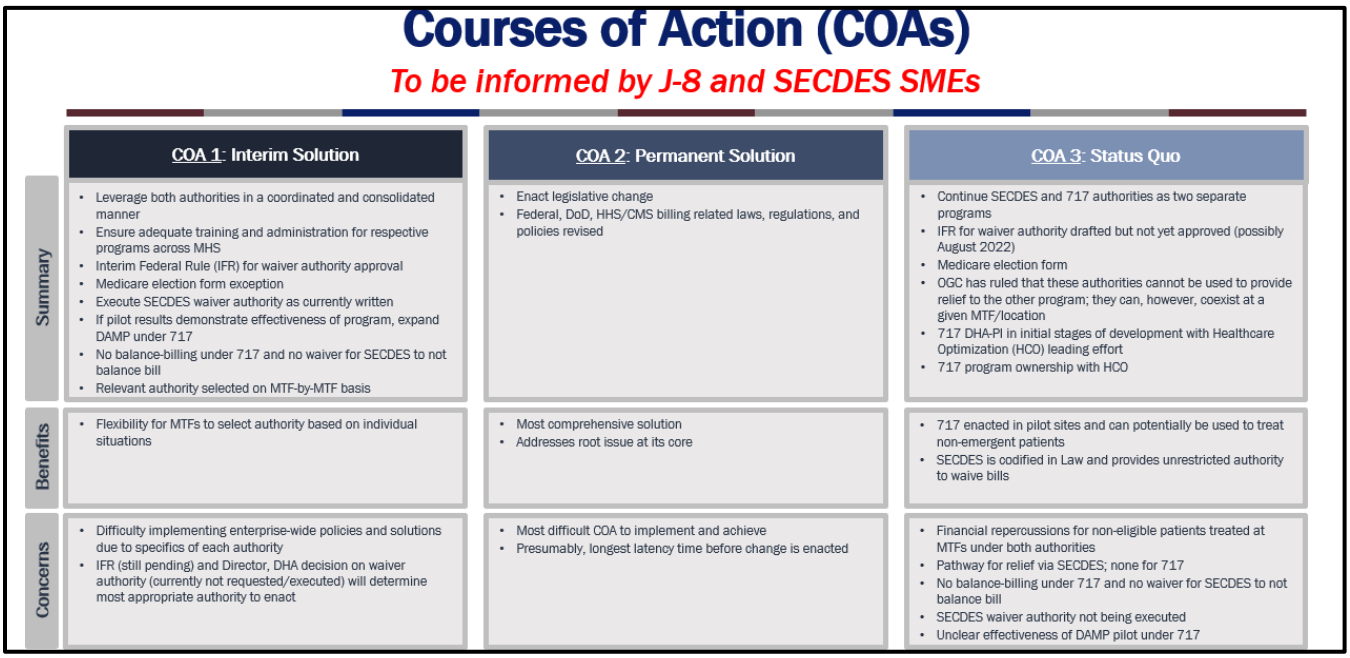
The Sec Army never implemented the Secretarial Designee Program (SECDES) waiver authority because they were never requested to do so.

Office of the General Counsel (OGC) and Senior Leader concurrence is required on the waiver authority before DHA receives SECDES delegation. This delegation is currently undergoing a second review and staffing with Services before going to OGC and Senior Leaders.

Attendees noted that SECDES is far ahead of 717 in implementation.

1. The GAO Audit 104770, "DoD's Care of Civilian Emergency Patients at MTFs" is in the final stages and will make recommendations based on their findings.
2. Formal training was completed for 717 Authority with Nellis and Camp Lejeune (monthly meetings scheduled, issues tracker maintained, etc.). Womack has not undergone any formal training.
3. Currently, SECDES is taught at the Services patient administration officer courses by DHA SECDES manager and at the Army pre-command course.

Figure 5. COAs



Next Steps:

- Establish a group of subject matter experts (SMEs) (i.e., J-8 representatives and the SECDES team) to identify a common way forward and build out recommendations
- Bring recommendations to the TSSWG for review

COL Cunningham – *How many MTF's are currently taking civilian trauma?*

LtCol SAMS - *10 under 717 or SECDEF authority.*

COL Schreiber – *This a readiness issue. Even if we lose money this drives readiness, this can be offset by reducing training to make forces "ready" by everyday experience. We can bill Medicare, the VA bills Medicare, that shouldn't be an issue. Medicaid is a problem, because MTF's are located on "Federal Reservations"…and you can't bill Tricare but that still leaves about 75% for profit.*

LtCol SAMS – *Agree on all, but the message isn't being received at higher echelons. The US Treasury still sends a bill bankrupting our local populations.*

7. **Trauma Perspective Trauma Perspectives: Navy Medicine Readiness & Training Command Camp Lejeune (LCDR Pokorny)**: LCDR Pokorny is the Trauma Medical Director and Director for Surgical Critical Care, as well as the Onslow County Asst. Medical Director.

Figure 6. Major Milestones

Date	Major Milestones
December 2017	ACS Initial Consultation Visit
February 2018	Received initial Level III Verification
March 2018	NMCCL Approved as DHA 717 Pilot Site; Program commenced 4 days later
May 2018	Developed Corpsman Ambulance Ride Along Program
June 2018	ACS Focused Visit – Successful Review
July 2018	Initial North Carolina State Trauma Designation (Level III)
January 2019	Official Trauma Designation Ribbon Cutting Ceremony
August 2019	First Fellowship Trained Trauma Surgeon and Orthopedic Traumatologist officially assigned to NMCCL establishing pelvic/acetabular, thoracic and emergency vascular capabilities
February 2020	Section 703 Congressional Report filed supporting enhancing capabilities to pursue Level 2 trauma center designation
January 2021	Interventional Radiologist begins taking patients and assisting with trauma coverage
December 2021	Successful reverification as ACS Level III Trauma Center w/ zero deficiencies

LCDR Pokorny gave an overview for major milestones and demographics for the surrounding areas of Camp Lejeune Naval Hospital, encompassing 8 treatment facilities, 2500 staff and 50,000 enrollees and extensive surgical capabilities.

Area of responsibility covers approx. 156,000 acres and multiple counties. Local ground assets with County EMS, Fed- Fire, Inter-facility Transport Teams with ground transport times only option 244 days/yr, anywhere from 168 minutes (Duke/UNC) to local.

LCDR Pokorny posed the question, *does this transition actually support Readiness?*

1. General / Trauma Surgeons…Partially
    a. Constant cadence of trauma resuscitations, but operative volume is low.
        i. 10-15 operative major traumas per month for general surgeons split among 12 surgeons on call panel.
        ii. Decent thoracic volume for the trauma surgeons (15-20 cases/year).
        iii. Trauma surgeon gets the highest operative experience because you double scrub to help junior general surgeons with complex cases.
2. Orthopedic Surgeons…fairly adequate
    a. High volume of complex fractures and FAI work for Ortho Trauma.
3. Ancillary staff…yes
    a. Radiology, blood bank, techs, corpsmen, pharmacy, etc.
4. What this means for our staff –
    a. 24 hours per day, 7 days per week, trauma care is being provided at Lejeune.
        i. Maintains a constant trauma mindset for those that otherwise would have no exposure.

ii. Every activation exposes 15-30 ancillary personnel to trauma care.

b. Non-trauma trained providers get the opportunity to provide trauma care with expert guidance and advice readily available.

i. Entire teams train together so that they are more effective when they deploy.

- **FST Program**
- **European Partnerships**

ii. The first time a provider treats an injury isn't when they are alone in a deployed setting.

Future Expansion

1. Could we support more surgical specialists?
   a. Neurosurgery
      i. Naval Medical Center Portsmouth (NMCP) (6 surgeons full time)
         - Avg. 90-100 encounters and 6-7 cases per surgeon per month.
      ii. Lejeune (1 NMCP surgeon visits 1 week per month)
         - 60-65 patients' template and takes 3-6 cases back to NMCP.
           - About 60 cases per year taken to NMCP from Naval Medical Center Camp Lejeune (NMCCL).
         - 316 Neurosurgery cases deferred out via purchased care in our market last year.
      iii. Trauma Patients
         - 142 trauma patients transferred from our facility due to neuro injuries last year.
         - 13 traumas flown from scene for suspected neuro injuries.

Challenges

- Losing IR this October (2022)
- Losing all but one general internal medicine provider this summer
- No nephrologists or hemodialysis capability
  - CRRT in ICU with select providers
- Building size
- MOR size and constant construction
- Ancillary Staffing challenges
- No civilian hiring potential for specialists (no providers in the area to hire)
- No guarantee we could actually reclaim the purchased care cases

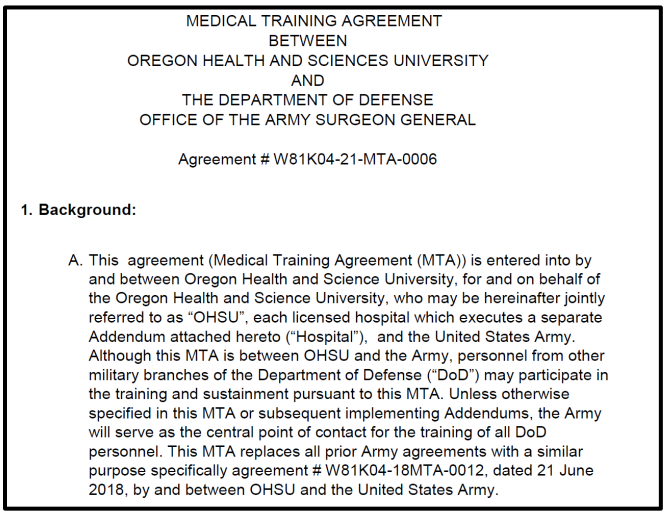
8. **MIL/CIV Partnership Challenges – the risks / the benefits (COL Schreiber)**: COL Schreiber discussed nuances with MCP's and things "we don't talk about in public." Col Schreiber portrayed the Case Fatality Rate decline since WWII through OEF.

The Problem:

1. Operational tempo has decreased significantly.
2. Training opportunities are limited.
3. Only 1 DoD Level 1 Trauma Center.
4. No other MTF has adequate volume for training.
5. Outsourcing.

COL Schreiber contrasted multiple training Partnerships (JTTC, AMCT3, SMART). He proposes more Medical Treatment Agreements.

Figure 7. Medical Training Partnerships



MEDICAL TRAINING AGREEMENT
BETWEEN
OREGON HEALTH AND SCIENCES UNIVERSITY
AND
THE DEPARTMENT OF DEFENSE
OFFICE OF THE ARMY SURGEON GENERAL

Agreement # W81K04-21-MTA-0006

1. Background:

A. This agreement (Medical Training Agreement (MTA)) is entered into by and between Oregon Health and Science University, for and on behalf of the Oregon Health and Science University, who may be hereinafter jointly referred to as "OHSU", each licensed hospital which executes a separate Addendum attached hereto ("Hospital"), and the United States Army. Although this MTA is between OHSU and the Army, personnel from other military branches of the Department of Defense ("DoD") may participate in the training and sustainment pursuant to this MTA. Unless otherwise specified in this MTA or subsequent implementing Addendums, the Army will serve as the central point of contact for the training of all DoD personnel. This MTA replaces all prior Army agreements with a similar purpose specifically agreement # W81K04-18MTA-0012, dated 21 June 2018, by and between OHSU and the United States Army.

DoD Elements of the MTA:

- Personnel PCS to a civilian center for 3 years
- Fully funded – Salary, living expenses
- Mutually beneficial
- Personnel integrated into department sections
- Do not displace other personnel
- Not essential personnel
- Function under civilian supervision

Prohibited DoD actions:

- Engaging in off duty employment
- Receiving any payment or contribution
- Funding for meetings must be approved
- Wearing the duty uniform unless mutually agreed upon

Military Specific Pitfalls

- Billing in the civilian environment
- Malpractice vulnerability
- Different command structure
- Somewhat different environment

- No ODE
- Can't be paid anything by civilian institution
  - Expensive cost of living, limited military salary
  - Expensive raising children
  - Difficult to pay for meetings
- Rating chain problematic
- Tough to get top box
- Ability to excel in military specific tasks
- Loss of military affiliations

Conclusion – MIL/CIV Partnerships are great, but problems remain – solutions pending and need to be addressed -Pay and Career related issues by Supportive legislation.

LTC Graybill – *Navy and Air Force is very different than Army, and training agreements are highly variable. We have been trying to standardize this, but the WG doesn't have anyone in an MCP…I don't know how to overcome this with DoD minutia.*

CDR Jensen – *Such disparity between Dr. Pokorny, Dr. Schreiber and Dr. Roedel's three experiences…this is what has to change. Location and service CAN NOT dictate readiness or lack there-of.*

LTC Roedel – *There isn't one central solution. Collaboration is key and these tri-service WG are key. Madigan model with a geographic MTF regionally located has enabled partnerships with core MTA's to keep the whole team trained is a great solution.*

LTC Lesperance – *we need a "life cycle" rotation at multiple locations for optimal readiness, maybe best served in a Reserve Model.*

COL Wanek – *The Reserve Model just does not work for rapid deployment. We need to keep Trauma Centers that enable rapid deployment. Expanding would be an option because for example I do not get residents.*

Col Shackelford – *DHA leadership actually agrees with a lot of these opinions. Places will be designated as readiness platforms (Trauma Centers) and then start getting the resources. They fully support MIL/CIV partnerships to fill gaps and recapturing complex cases.*

9. **Non-surgeon Surgeons – Training Medics to perform laparotomies (SFC Loos)**: – SFC Loos discussed the history of the Special Forces Medic and gave a breakdown of the Command Structure, Training pipeline and assignments. He displayed the "Truths" about Prolonged Field Care:

1. If you think you need a surgeon or intensivist in the Field, put one there.
2. No magic piece of equipment will give you the capability.
3. PFC is not a qualification or skill set, it is an operational problem or situation that you find yourself in.
4. Competent (PFC medical) Forces cannot be created after emergencies occur.
5. Most Special Operations require non-SOF assistance (especially if you have a smaller deployed force).

SFC Loos - *We continue to attempt to solve problems with expensive technology where the answer is training and utilization. If technology is used, it must be integrated into training and analog solutions which require no electricity, updates, cloud or AI.*

Special Operations Combat Medic (SOCM) is a 36 week course, 8 iterations per year, designed to train, equip and transform Soldiers and Sailors with little or no medical training into operators capable of supporting SOF missions.

1. Divided into 7 blocks, roughly 25 days each, each with POI-driven, externally validated instructor: student ratios.
    a. First 3 blocks (EMT, Clinical Fundamentals and Clinical Medicine) provide the foundation necessary for all subsequent blocks of instruction.
    b. Following these blocks, there is a transition to emergency and trauma medicine, which remains the focus of the remainder of the course. There is a progressive approach from basic trauma skills practiced on manikins and fellow students in Trauma 1; then in Trauma 2, careful and judicious live tissue trauma surgical skills, first in a controlled surgical environment (TSS) and then simulated combat environment (CTM), and finally, in Trauma 3, continued combat simulated environment with multiple patients from POI to evacuation and includes prolonged field care (ATM), culminating in a 72 hour FTX under continuous operations.
    c. Finally, students participate in one month of clinical rotations with civilian trauma centers/EMS services at 3 locations (Flint, MI / St Petersburg, FLA and Tampa, FLA).
2. SOCM graduates leave with 5 external certifications (NREMT-B, BLS, ACLS, PEPP, ATP) and boasts a greater than 99% pass rate for the NREMT and ATP.
3. SOCM results in 35 ACE (American Council on Education) hours.

Instructor requirements: Contracted instructors must be ATP certified, ACLS instructor certified, and Attend the Special Operations Instructor Course (SOIC). They must also under go block validation, which includes shadowing during a class or small group, and then being shadowed by a validated instructor (12week time line).

Military Cadre must also validate in their assigned blocks, and attend SOIC, along with maintaining 18D credentials, and attending professional development.

Preceptor requirements: Weigh continuity against dwell time, and additional course requirements.

To train and qualify selected Non-commissioned officers in the basic skills and knowledge required to perform duties as a medical sergeant on a Special Forces Operational Detachment Alpha, sustain combat casualties and medical patients (both US and host nation) indefinitely during continuous combat operations in austere, hostile-fire environments without conventional casualty evacuation assets or resupply.

The course teaches 18D and Navy students the advanced skills and knowledge required to perform as supervised providers in Continental United States (CONUS) environments, and as independent providers outside the contiguous United States (OCONUS). Independent provider means the 18D and Navy SM is supervised indirectly after diagnosis.

The course consists of 5 academic blocks: Laboratory Subjects, Veterinary Medicine, Surgery, Anesthesia, Records & Reports, Special Operations Clinical Training rotation, and 18D Duties and Responsibilities.

COL Gurney – *Some leadership has stated that you guys "will be doing this" in the future.*

SFC Loos – *my goal is to demonstrate other options...if we don't have the capability of giving blood, we shouldn't be cutting. We have to consider type of patient, prolonged care etc.*

COL Nessen – *you have to have equipment, ventilator, blood etc...so the question is what type of patient even benefits from a Medic cutting on them, if there aren't second and third order support, power, supplies etc, who even receives this decision…the only one I can think of is extremity.*

10. **IDA Report on 757 (CDR Jensen):** CDR Jensen broke down and provided a review of the Independent Study of Force Mix Options and Service Models to Enhance Readiness of the Medical Force (NDAA-21 Sec 757).

1. The Department of Defense (DoD) has an operational requirement for a deployable medical force – mix of active component (AC) and reserve component (RC) personnel provide these capabilities
    a. When not deployed, most AC providers work in military hospitals (MTFs).
    b. When not deployed or activated for training, RC providers work in civilian jobs.
2. The wars in Iraq/Afghanistan revealed challenges with the current models for meeting medical readiness requirements.
    a. Case-mix/volume available in MTFs does not support the skill sustain needs of key AC combat casualty care team (CCCT) specialties.
    b. 2017 NDAA directed establishment of military civilian partnerships (MCPs) with civilian trauma centers.
    c. RC CCCT specialists likely have greater access to desired case-mix but workload tracking is very limited.
3. Section 757 of the 2021 NDAA directed further study of these topics

REPORT-Not later than 15 months after the date of the enactment of this Act, the Secretary shall submit to the Committees on Armed Services of the Senate and the House of Representatives a report on the findings and recommendations resulting from the study under subsection (a).

Study Approach – Four Course Analyses:

1. Review of Medical Readiness Challenges.
2. Overview of the Current Medical Force.
3. MCP Analysis.
4. A Force Mix Analysis.

Key Findings –

1. The MTF-based training model does not support the readiness of key CCCT personnel (except SAMMC).
2. MCP-based training models appear to be highly effective for supporting the readiness of CCCT personnel.
3. An MCP expansion targeting key CCCT personnel is feasible and would not impactthe majority of the force.
4. Changing the force mix of key CCCT personnel offers a model for achieving enhanced readiness at lower costs.

MCP-based training appears to be highly effective; MCP expansion is feasible.

Conclusions/Recommendations –

1. The practice of maintaining key CCCT personnel in low-volume MTFs to perform beneficiary care at the expense of readiness should be discontinued.
2. The Services should clearly identify their requirements for trauma surgeons and other key CCCT specialties.
3. The DoD should expand MCPs to place all forward surgical teams in busy trauma centers full time.
4. The DoD should consider increasing the use of RC forces for CCCT specialties, including expanded RC force mix options.

Criticisms –

- Significant focus on volume, KSA data not mature enough to compare so RVUs were used.
- Significant focus on forward surgical teams, not necessarily Role 3+ care. Surgeon biased.
- RC recommendations are in my opinion (IMO) limited mostly to Tax payer/cost analysis.
- Potential risk of improved clinical relevance over Operational IQ.

11. **MTF Struggles/Failures…can we recover (COL Sohn):** COL Sohn opened by giving his background, training and assignments; declaring his opinion that MHS remains in a state of crisis, stating senior leadership receive conflicting messaging, and posed the question of how does the MHS recover…what is our desired "end state"

We all acknowledge that we are in a downward spiral and no one is talking about how to pull out of this tailspin that we are in.

The proposed timelines are too long. We are still talking about building data sets and validating the value of partnering with the military and of course, the concern is that by the time the perfect database or validation tool is set, many of the MTFs may not be able to collect this data.

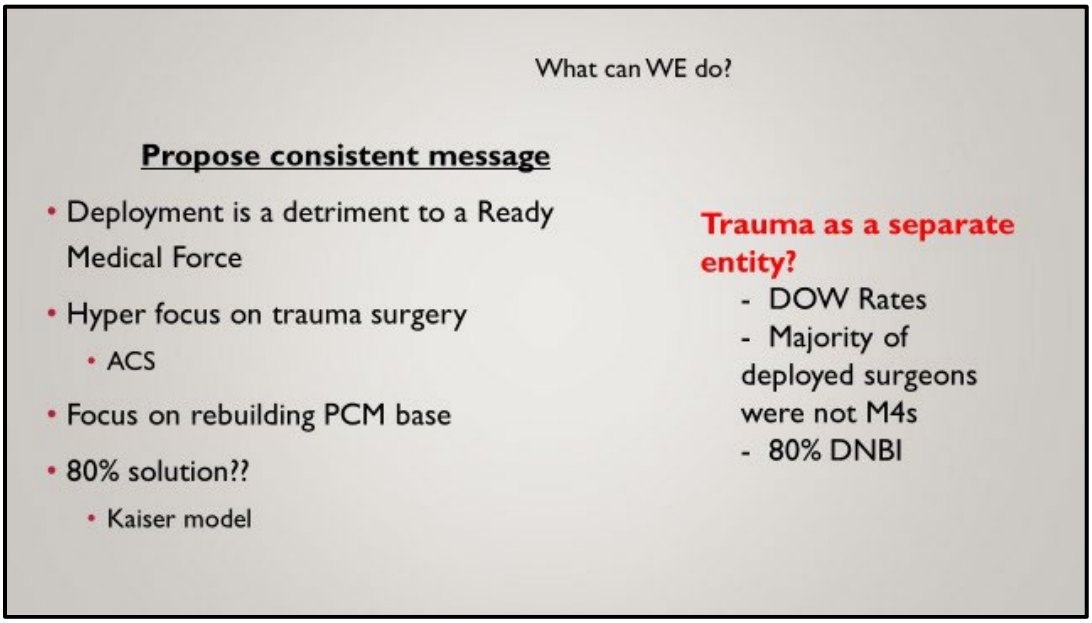
Overview

1. Army 61J's
    a. Includes sub-specialties: Surgical Oncology*, Pediatric Surgery*, Minimally Invasive Surgery (Bariatric), Transplant*, Vascular, Plastics, Cardiothoracic*, Trauma/Critical Care.
    b. 7 United States Army Medical Centers (MEDCENs)- 29 Gen Surg Trainees: 26 at MTFs + 3 Mil-Civ Trainees.

2. Obtaining skills competency has been outsourced.
3. Skills Sustainment is increasingly difficult at MTFs.
    a. Skills Sustainment/Augmentation:
        i. ODE, Medical Training Agreements, External Resource Sharing Agreement Claims (ERSA), Mil-Civ Partnerships.
    b. Garrison: Low surgical volume and limited surgical complexity:
        i. Of the 8 Gen Surg specialties and sub-specialties, **7 of 8** are reliant on patient referral (Trauma/CC is the exception if at **high volume** trauma center). **4 of 8** requires a team of multi-disciplinary providers.
    c. Operational:
        i. High OPTEMPO
        ii. 0.8 cases/4.5 month deployment

How do we define failure: Patient Outcomes? Morale? Competency Model? Moral Injury? Failure to train GME?

Figure 8. What can we do



1. A medically ready force is a detriment to a ready medical force!
2. Focus on rebuilding our Primary Care Base not just focus on trauma.
3. We are stuck on step 2 of the 8 stages of the 8 steps of change (Develop a change vision).

COL Cap – *there is a morale crisis happening and it must be addressed. I couldn't agree more about the Primary Care position, because if we don't have people coming in for care we will not have the ability to perform complex procedures. We have to keep in mind that America is one of the ONLY Military forces with a huge expeditionary capability.*

LTC Graybill – *Desired end state if near-peer conflict happens and patients are in the conflict zone, we are going to have to reach out to Civilian Trauma Centers to facilitate shortages.*

COL Sohn – *The real question is what are we in the business of and how important is GME? We can find willing partners and fund MIL/CIV partnerships and increase the numbers we just have to be proactive.*

Col Shackelford – *You can't focus on being a ready medical force and beneficiary care. The solution is appropriately designated resources across the entire MHS, to be able to optimize readiness platforms.*

COL Gurney – *MTF being high acuity, high volume, and high complexity would be the answer for an end state model…so how?*

COL Schreiber - *Commit MTF's to be Level 1 Trauma Centers, fully commit with all sub-specialties, and go through ACS verification to take care of beneficiaries.*

COL Seery – *the problem is we don't truly know the end state. We are in a period of modernization so congress shifted money and that impact military medicine. We don't have a clear path in Medicine, but we change day to day and how to "make things work"*

1530 - Attendees broke into two Working Groups:

WG #1 - Trauma Lexicon Terms

WG #2 - Neurosurgeon at Role 3 Position Statement

MEETING ADJOURNED @ 1645

Day #2 CoSCCC May 12th, 2022

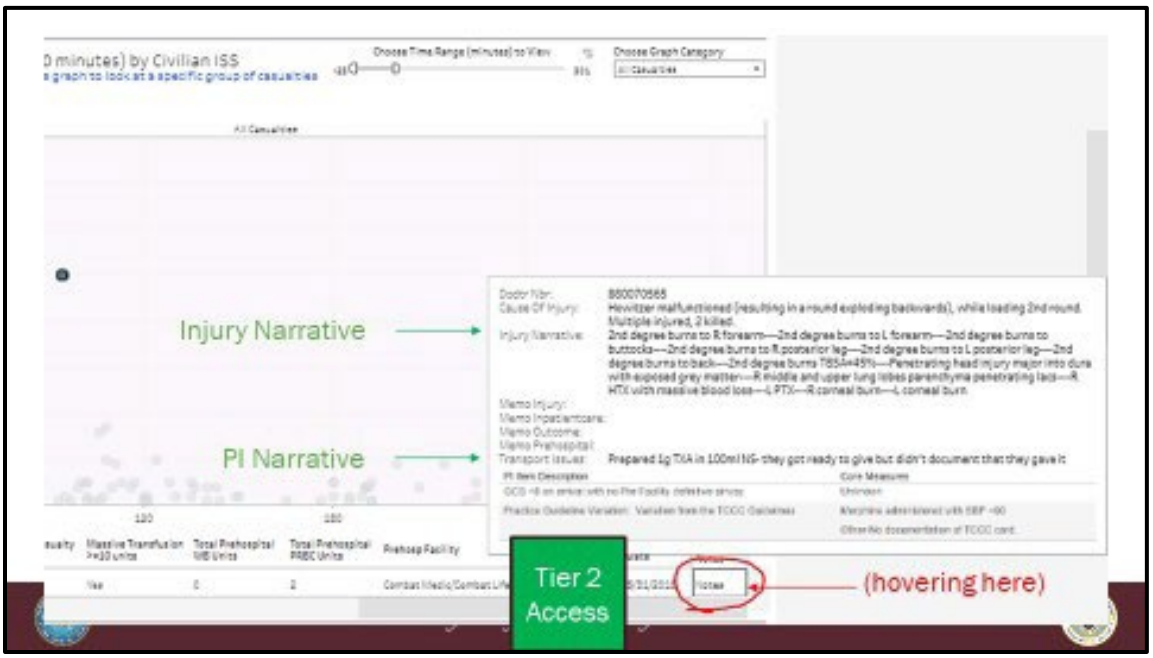
CoSCCC Day 2			
Time	**Presentation**	**Speaker**	**Topic and Intent**
0700	**JTS Combat Casualty Care Conference**		
0815	C3QIP - monitoring CCC delivery	Sonka	Explain the JTS C3QIP
0840	Brief and discussion on Trauma Lexicon terms	Jensen / Edson	Decision of Trauma Lexicon terms for final submission to JP4.02…slapping the table!!
0910	**BREAK**		
0930	Survey on Neurosurgery Training	Ravindra	
0950	Work on Neurosurgery at R3 Position Statement	Gurney/Jensen	Review / Edit / Revise Statement / establish WG to finalize prior to next meeting
1120	**BREAK**		
1130	The EUCOM CTS from the LRMC TMD perspective	Rittenhouse	How the JTTS is being established in EUCOM during Phase 0
1150	Discussion on CTS execution and assessment	Rittenhouse / Roedel moderated by Baker	
1210	ARSC Working Group Update	Baker	ARSC Workgroup Charter and Deliverables
1230	ARSC OPG Update	Allen/Mosely	ARSC OPG revisited
1245	Group Discussion: ARSC Line of Effort / Training standardization Moderators: Allen / Mosely/Proctor		
1300	Do we need a clinical pathway for CCC providers?	Eckert	With MCPs / MTFs does there need to be a defined clinical pathway for CCC providers?
1330	Group Discussion: Putting it all together. How do we turn risks into opportunities? Moderators: Sohn/Jensen/Gurney/Polk		
1400	Closing Comments: Jensen / Remley / Shackelford		

0700 CJTS weekly Combat Casualty Care Conference

1. JTS C3QIP Prehospital Trauma Dashboard (COL Sonka): COL Sonka the JTS PI Branch Chief briefed on the new JTS Dashboards and their application for C3QIP. We start with the registry and decide what metric we will use to define our data set. The program is then queried and data is cleaned and validated. The data science team then creates the Tableau graphics for the dash board.

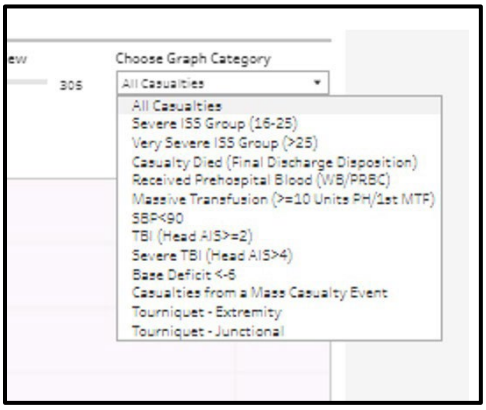
Queries hovered over will display the PI items initial review date or outliers at the same time, we are able to update data fields as well.

Figure 9. Graph Categories



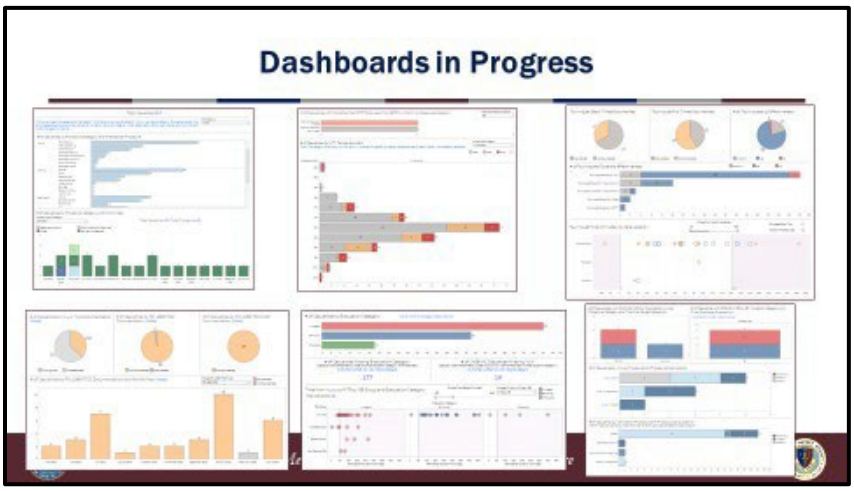
Graph Categories can be further excluded as you select Injury Severity or TBI for example.

Figure 10. Drop Down Options



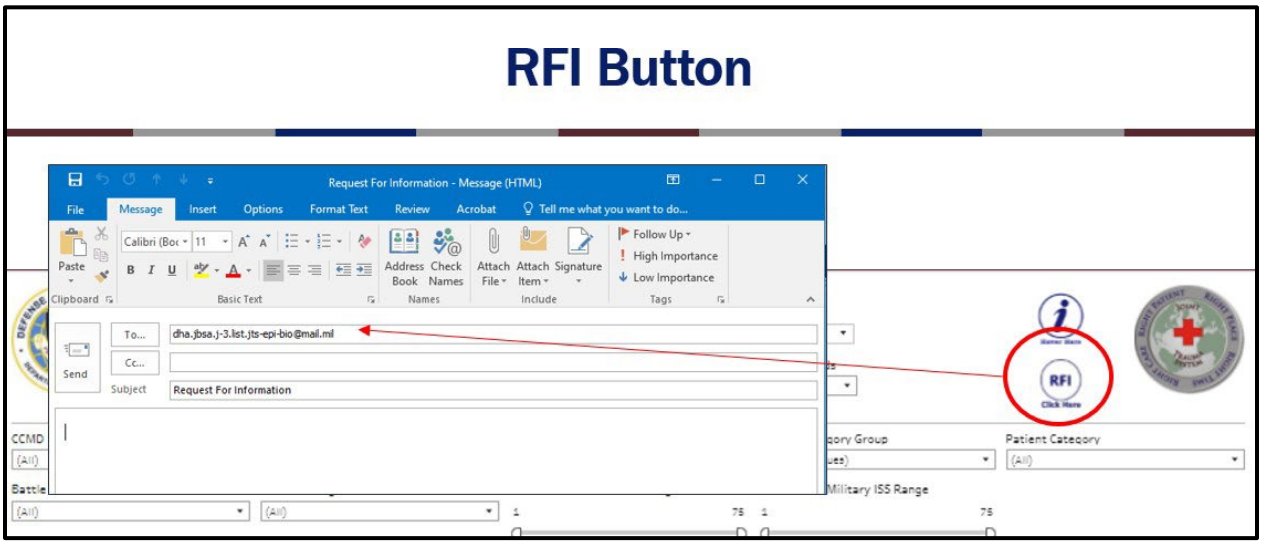
Dashboards in their final presentation mode will provide visual charts to depict outcomes of those patients.

Figure 11. Dashboards



New Requests For Information (RFI) can be submitted through the JTS website to request data. The RFI icon on the website will auto-generate an email to the JTS EPI-BI team.

Figure 12. RFI Icon for email



Future Graphs in development:

Role 2 Data Set:

- DCR stuff (blood ratios, can't do FWB)
- High acuity procedures
  - ✓ REBOA
  - ✓ Resuscitative Thoracotomy
  - ✓ Vascular

SFC Remley – *How close are we to having a data base or dashboard that tracks training and readiness to get Teams and Commanders to looking at these on a regular basis. We can provide a "Report Card" of metrics to identify gaps and where time allocations need to be modified.*

COL Sonka – *I think we are a long way away from that.*

Col Shackelford – *Registry logic could divert them to a separate area of data so we wouldn't have to duplicate the software, I don't think we are as far away as you might think. We need to identify the demand signal to answer the call appropriately.*

CAPT Polk – *As we move to automated documentation and the EHR should solve a lot of these issues because it should auto populate. Theoretically there should be less of a need for a "training registry" the need is for a "training documentation" in the training environment…effectively training appropriate documentation in the current platform…not the registry.*

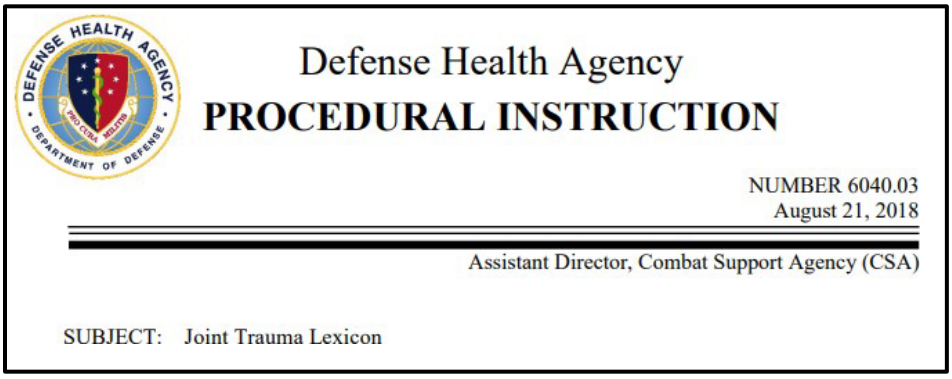
COL Gurney – *Providers documentation, yes, but also in the training environment we will be looking at other factors like time to tourniquet, time to blood, time to OR etc…looking at how we are training and how we are auditing.*

Dr. Kotwal – *This is a wonderful tool, however, unfortunately If I were a line commander, I would say "who cares…because I can't see my guys in there" it needs to be emphasized that the Unit documentation is key to delineate metrics for each unit…I understand variance in documentation and abstraction makes this very difficult due to human inconsistencies because of the "free text field"*

SFC Loos – *The problem in the training environment is that we teach the M.A.R.C.H algorithm and there is no "D" for teaching documentation in that training algorithm...we are teaching it, as well as time to blood, time to tourniquet etc. They then put the training patients into the registry. That's how we get extra funding and training time back.*

2. **<u>Trauma Lexicon Terms update</u>** **CDR Jensen/CAPT Edson:** CDR Jensen briefed the committee on the work being done to adjudicate Trauma Lexicon terms identified by the JTS as frequently used terms in DoD MHS language. These terms are to be defined, staffed and codified to be represented in ALL Tri-service Policy and Doctrine.

Figure 13. DHA Procedural Instruction



Defense Health Agency

PROCEDURAL INSTRUCTION

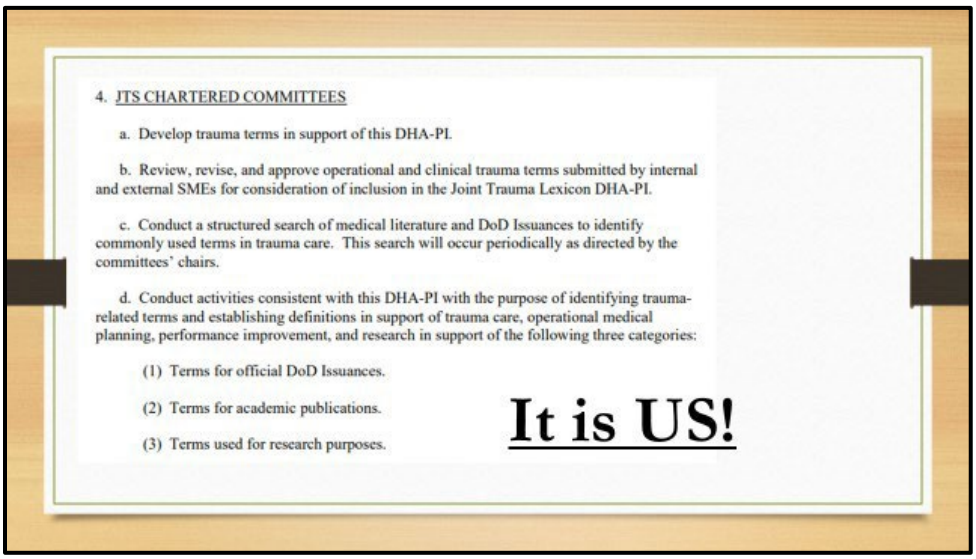
NUMBER 6040.03
August 21, 2018

Assistant Director, Combat Support Agency (CSA)

SUBJECT: Joint Trauma Lexicon

This is a JTS/DCoT Task

Figure 14. JTS Charted Committees



Way Forward:

1. Terms were segregated out to SME's in each Branch of the JTS (KSA/PMO, CTS and AFMES).
2. Terms will be reviewed and adjudicated and returned to DCoT PM's NLT 20 June 2022.
3. Terms will be formatted and disseminated to the DCoT for voting.
4. Once votes are concluded Terms will be staffed to JTS Leadership and DHA.

3. <u>(Pushed from Day 1 Agenda) ODE is not for Readiness</u> (Gurney): COL Gurney discussed Off-duty Employment and how it is not a tool that translates experience to deployment readiness in the field of trauma. COL Gurney has never moonlighted and never earned a dollar outside of her Military salary. ODE is a conflict of commitment…we are either committed or involved. Case volumes, providers being committed to the MTF and its mission, these are the conflicts…how can one organization possible produce a "Medically Ready Force" and a "Ready Medical Force"?

- Do we want people to invest or divest in our system
- ODE is a temporary solution to a long term problem

COL Gurney - *…saying ODE is for readiness, is the same as saying REBOA is for definitive hemorrhage control*

We incentivize military surgeons to leave the MHS…work less earn more, it's a race to the bottom.

I believe Military Medicine is a strategic national asset and we are different than civilian sectors…we have different missions, operational, modular...this is not the same level of commitment to the job.

Case volume for the individual surgeon does not make the surgical team better, it does not make readiness better…ODE is for money, not for readiness. Compensation needs to be seriously looked at across the board for all Providers, Hospital Managers etc. We are expected to perform in parallel with civilian partnerships but without the perks.

We have to reward for work instead of punishing. The more I end up doing I get no incentives, just less personal time. We have to improve value and quality in the MTF. It starts with our Mission statement…no Level 1 Trauma Center has "Readiness" in their mission statement, they all state high quality, high complexity trauma care.

What if:

-we got rid of bonuses upfront and all ODE and we paid 80% of the national average.

-standardize annual metrics (KSA), if your facility doesn't offer enough you're free to go wherever.

LTC Lesperance – *With respect I totally disagree with a lot of that, and since you have never done ODE, how do you know...in the military environment you have Resident and other resources at your disposal, but in my civilian ODE, there is no one else...I have to dive into a laparotomy with just a RN...it is making me more clinically relevant and "ready".*

COL Gurney – *Senior Leadership is not messaging the risk appropriately.*

Col Shackelford – *The Army has already decided they are not permitting ODE cases to be counted towards Readiness and the KSA metric model, so some of this is already being addressed and hopefully will drive things in the right direction to recapture cases.*

4. <u>Survey Results on Neurosurgery Training</u> (LCDR Ravindra): LCDR Ravindra is a Navy neurosurgeon from NMRTC-San Diego and presented the genesis of the survey he conducted. In this study we present the findings of a QI investigation assessing the current attitudes and state of neurosurgery.

Training for military non-neurosurgeons, LCDR Ravindra stated the discussion came to fruition while he was temporary active duty (TAD) in Okinawa (4 months) where there is only one Neurosurgeon, and the amount of risk inherently assumed having non-neurosurgeons do neurosurgical procedures. The focus was on the education of the Non-neurosurgeon doing neurosurgery.

LCDR Ravindra stated that 4.5% of all Role 2 surgical casualties and 62% of all role 3 cases in OIF/OEF were categorized as neurosurgical in some shape or form. The presence of neurosurgeon has shown to increase survival rates, but we all know retention is an issue.

Current pre-deployment/Training exposure survey for General Surgeon Residents to neurosurgical procedures prior to deployment showed less than 2% had multiple case exposure to craniotomies per resident. And 80% of general surgeons desired additional training in some areas, 2nd most requested skill set being emergency neurosurgery.

Hypothesis: Most general surgeons have limited neurosurgical training and both neurosurgeons and general surgeons recognize the need for further advanced, formalized training.

METHODS: Surveys investigated surgeon experience and attitudes towards training.

CRITERIA:

- Level of experience
- Branch of service
- Deployment history/frequency
- Type of platform (Role 2 or 3)
- Length and type of training
- Neurosurgery training during residency
- Perceived procedural competency case numbers for external ventricular drain (EVD) placement, craniotomy/craniectomy
- Additional queries regarding method of proctoring/mentoring, use of mixed reality (VR+AR)
- Perceived procedural competency case numbers for EVD placement, craniotomy/craniectomy

- Whether or not they had participated in training non-neurosurgeons during residency or military service
- Opinions on most practical training methods
- Need for proctoring or direct supervision, MR training and proctoring

Figure 15. Craniectomy Percentage for Procedural Independence

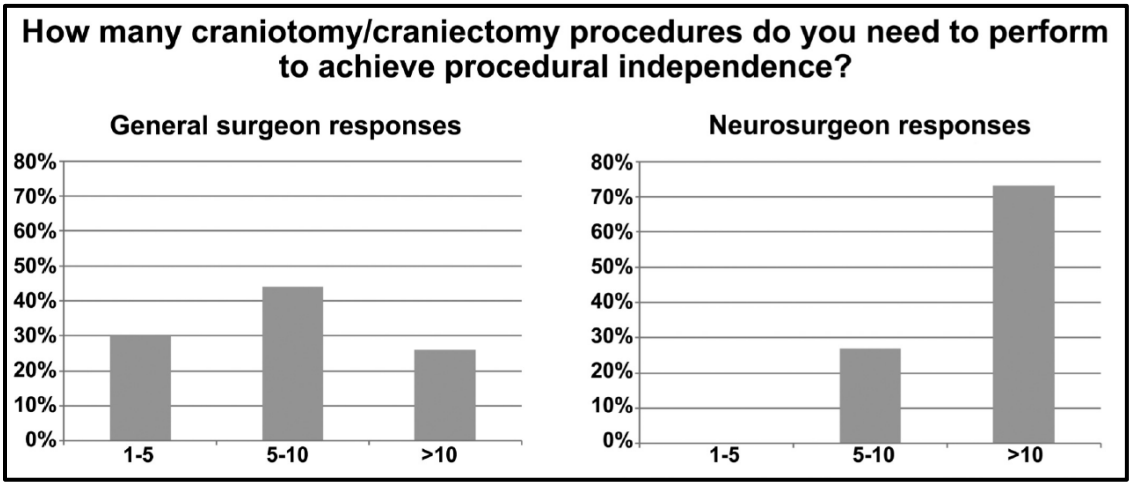
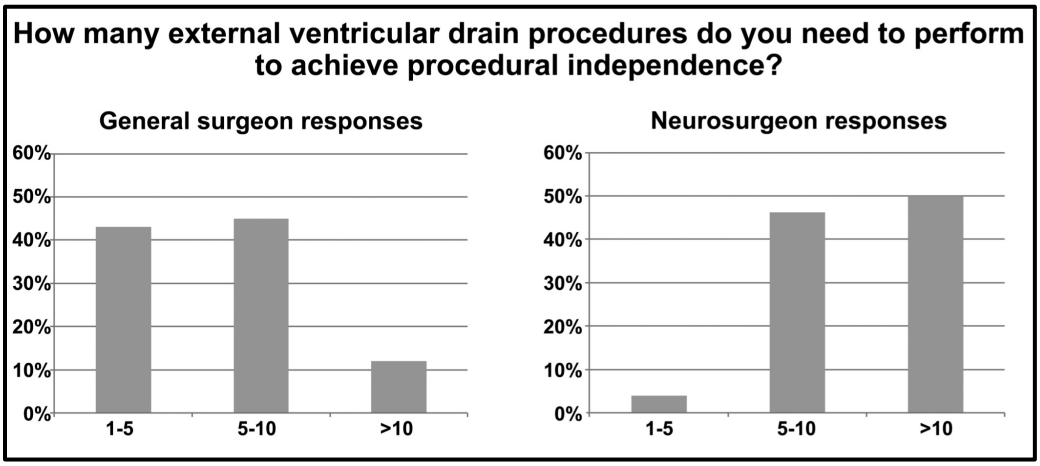


Figure 16. Ventricular Drain Procedure Percentage



DISCUSSION:

1. Only 53% of general surgeons had pre-deployment training (compared to 42% in 2016 survey).
    a. JTS guidance dictates that general surgeons should be able to perform neurosurgical procedures.
    b. 2022 survey – 9 general surgeons performed neurosurgery procedures while deployed.
    c. 2016 survey- 44 had done so.
2. 44 respondents were not at all comfortable performing a burr hole and 78 were not at all comfortable performing a craniotomy/craniectomy (*J. Gurney, unpublished*).

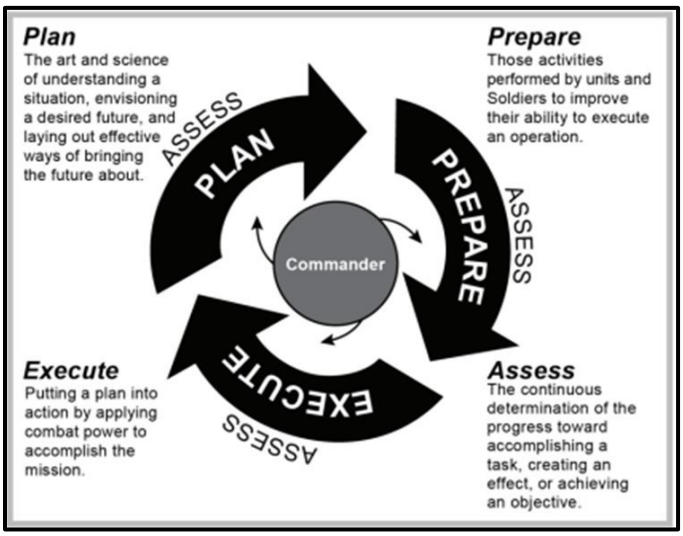
a. Current study – 70% of general surgeons believed performing EVD/craniotomy/craniectomy, should be part of their wartime/austere environment surgical capability.

**Accreditation Council for Graduate Medical Education (ACGME) guidelines/case minimums require graduating neurosurgery residents to have performed 40 trauma craniotomy/craniectomy procedures.

1. **Current state of training – EWSC, ASSET+**
    a. No graded assessment of neurosurgery skills.
    b. EVD placement not in curriculum (many ask about it!).
    c. At most – one craniotomy per attendee – no experience with brain laceration, hemostasis, sinus injury, herniation through defect, rapid closure, etc.
2. **Takeaways:**
    a. Future conflicts will likely be different than Operation Enduring Freedom (OEF)/ Operation Iraqi Freedom (OIF) – rapid AEROVAC cannot be assumed.
    b. General surgeons are frontline military caregivers in combat, thus procedural competence for neurosurgical trauma should be emphasized.
    c. Perceptions for competence differ between specialties.
    d. Curriculum development based on the tenets of the CPG will be a worthwhile endeavor (expanding ASSET+).
    e. 67% thought it should be part of DoD general surgery training – but when??
    f. 36% favored an "expeditionary surgeon" curriculum.
3. **Conclusions:**
    a. There is a clear need/desire to improve the neurosurgery training for the non-neurosurgeon in the military.
    b. Should consider incorporating neurosurgery into DoD general surgery programs.
    c. Need to explore alternative methods of education – live tissue animal models, and mixed reality.
    d. Collaborative efforts are needed to improve the care and outcomes of our service members!

5. <u>EUCOM Trauma Experience from LRMC TMD Perspective</u> (LTC Rittenhouse): LTC Rittenhouse spoke on the "uptick" in his workload as the TMD in EUCOM following the war between Russia and Ukraine. He stated the importance of establishing authority, referencing the DoDI 6040.47 and the DHAP-I 6040.06 for integrating the CTS to support unique CCMD mission requirements.

Figure 17. Plan Prepare Assess Execute



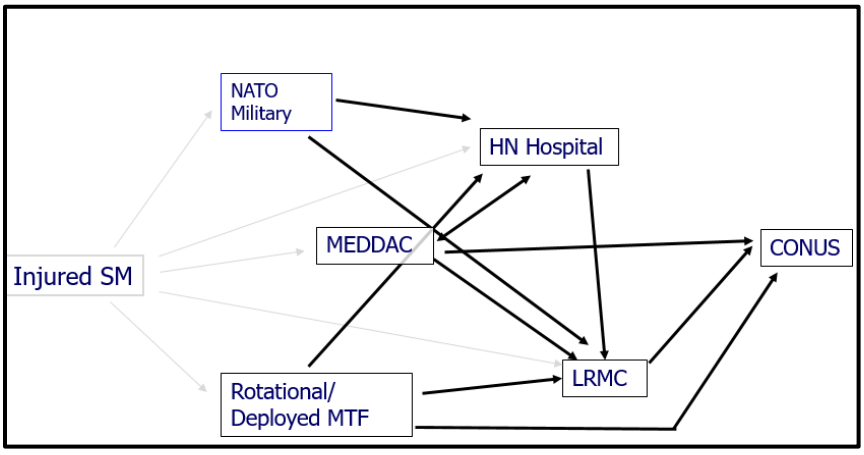
Issue 1: Leadership didn't know what a CTS was and didn't understand what was required, so LTC Rittenhouse relied on the 12 core functions and implemented them into the operational process.

Challenge 1: *EUCOM has a very complex military medical organization. USEUCOM does not have direct authority or partnerships with direct lines to many aspects of the functional working relationships throughout the continuum…some are supporting relationships, some are contractual, and some are military command and control relationships.*

Challenge 2: *Injured service member can go to 1 of 6 pathways for care (NATO Military, Host Nation Hospital, MEDDAC, CONUS, LRMC, and/or Rotational/Deployed MTF) simply based on how injury happened, where it happened, who calls it in…mass confusion execute!*

LTC Rittenhouse - *And I haven't even touched on receipt or transfer of documentation….*

Figure 18. Pathways



Challenges

- Multiple organizations
- Variable patient flow
- Variable privacy laws
- Scalability
- Challenges
- Multiple organizations
- Variable patient flow
- Variable privacy laws
- Scalability

Way Forward

- Solidify reporting process and requirements
- Obtain PI information from partner organizations
- Participate in O plan development
- Exercise process through Joint Combined Exercises

COL Nessen – *We function pretty well at the operational level with the JTS model, but not at the strategic level. You have to get the Medical level leadership into the Brigade Level and engagement has to be done at the Pentagon.*

COL Baker – *Your points are valid, but the DODI that support and describe the CTS in Phase Zero, has the challenge of "where is the TMD rest" will there be opportunities to link together integration with operational units?*

LTC Rittenhouse – *the frustration is that it has taken me a year to establish relations with current leaders and when they rotate in a few months those relationships will all go out the window and we will be back at square one.*

LTC Roedel - *as we close theater of operations in Afghanistan, now the mission has totally changed, we deal with designated forces and a structured "what is your job" vs. actual Phase Zero implementation.*

COL Gurney – *we have to link the data to the Leadership to deaths on the battlefield for them to understand.*

LTC Benavides – *JTS INDOC should be part of the deployment process, so they truly understand CTS and how to do it…you don't know what you don't know…*

COL Nessen - *we have to figure out how to get more doctors back into key decision making positions…clinical ability has been diminished at the Leadership level0.*

6. <u>Austere Resuscitation Working Group</u> (COL Baker): COL Baker discussed the ARSC purpose within the Austere Resuscitation and Surgical Care Work Group (ARSCCD WG) which is to provide subject matter expertise for JTS mission support and improve trauma readiness and outcomes through evidence-driven performance improvement (PI).

The audit of the Training Mobile Medical Teams IG Report:

Recommendation 1: "The Chief of the Joint Trauma Education and Training Branch continues efforts to complete and implement standardized medical training, to include an Austere Surgical Resuscitative Course, in accordance with the Fiscal Year 2017 (FY17) National Defense Authorization Act (NDAA) and Joint Requirements Oversight Council Memorandum (JROCM)125-17."

BLUF: In accordance with FY17, NDAA Section 708, the ARSC WG will develop the ARSC curriculum as one of several courses addressing the JROCM 125-17, "Forward Resuscitative Care in Support of Dispersed Operations DOTmLPF-P Change Recommendation," dated December 11, 2017, Actions 7 and 10.

COL Baker outlined responsibilities for the ARSC WG, which predominantly revolve around curriculum development. The responsibilities also define Membership requirements for both Voting and Advisory members and deliverables.

Figure 19. ARSC Curriculum Input Process

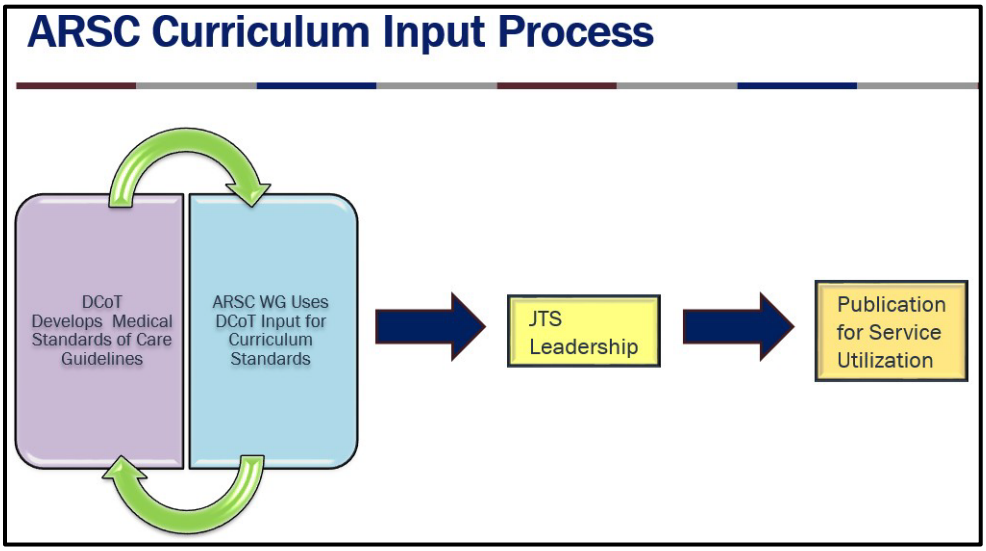
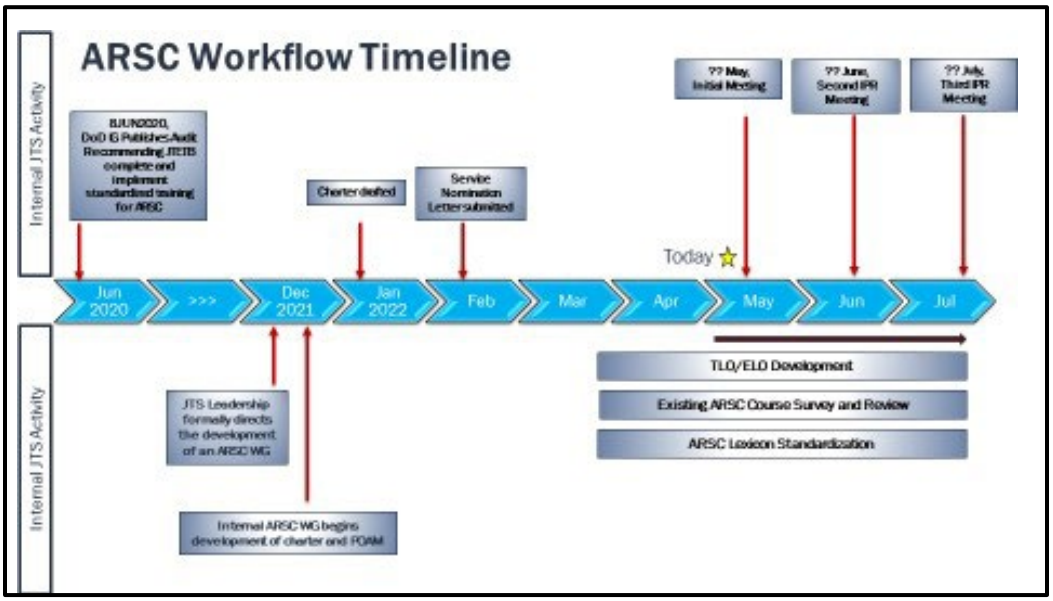


Figure 20. ARSC Workflow Timeline



Service Nomination Request Required: Proposed to CoSCCC for appropriate nomination

Figure 21. Position Statement

To fulfill the responsibilities outlined in the attached ARSC WG Charter, the DHA requests the names and contact information of the appropriate representatives/subject matter experts from the Deputy Assistant Secretary of Defense for Health Readiness Policy and Oversight (DASD, HRP&O), Service, and USSOCOM offices to participate in the WG in support of fulfilling the requirements outlined in the DoDIG Report 2020-087, JROCM 125-17, and DoDI 1322.24. These include the following:

1. DASD (HRP&O) - 1 Representative
2. Department of the Army - 1 Primary Representative & 1 Alternate Representative
3. Department of the Navy - 1 Primary Navy Representative & 1 Alternate Navy Representative
4. Department of the Navy - 1 Primary Marine Representative & 1 Alternate Marine Representative
5. Department of the Air Force - 1 Primary Representative & 1 Alternate Representative
6. SOCOM - 1 Primary Representative & 1 Alternate Representative
7. DHA/JTS - 1 Representative

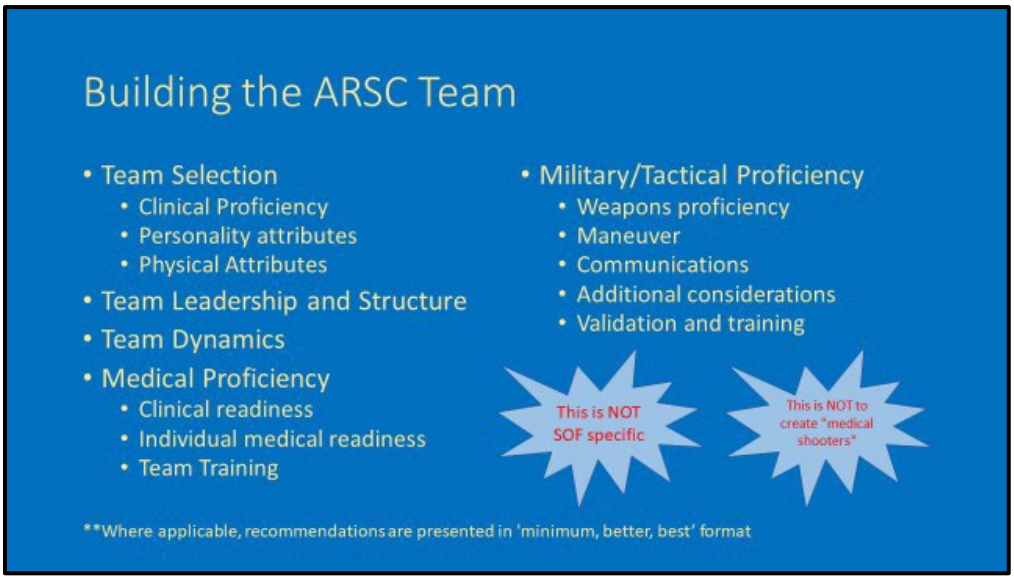
LTC Graybill – *We can make a Position Statement, but these are just curriculum recommendations, training sustainment and help define the curriculum with appropriate language.*

COL Baker – *Our aspiration is for baseline curriculum for Services to build upon, but standardize for what these Surgical Teams can be expected to do/perform.*

7. <u>ARSC OPG Update: (Paul Allen/Dan Mosely):</u> Mr. Allen reviewed the history of why the OPG came to fruition and needs to be separate and distinct from the ARSC CPG that was developed. This guideline will focus on operational and administrative considerations for small surgical teams, deploying in austere operational environments, and finding the optimal balance between effectiveness and efficiency across the DoD.

This is being developed as a "how-to" guide to select, train, deploy and re-deploy in the operational cycle as an off the shelf capability. Trying to define minimum, better, best format to assume and thrive in a deployed environment and NOT be SOF specific.

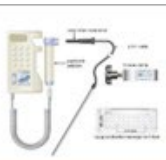
Figure 22. Building the ARSC Team



8. <u>Austere hand held X-ray and Doppler modernization</u> (COL Sonka): COL Sonka presented an update on the USAMMDA working group on hand held x-ray to Role 2, Doppler modernization and TBI biomarker roll-out in CENTCOM.
The WG involves the Joint Medical Augmentation Unit (JMAU) and Conventional forces. The United States Army Medical Materiel Agency (USAMMDA) wants to contract an external agency to review all COTS (Commercial Off the shelf) products. The request was for a draft statement from CoSCCC defining this capability for acquisition review to establish left and right limits, OJSS review, and forwarded to Services for a tri-service Joint evaluation. What missions will this support (this is a "truck/house" product...not a "Ruck product), and lastly, multi-domain operations and its impact on the PFC setting.

The Doppler is also under market analysis for Role 3 implementation. It was recently added to the FRSD product line. See Figure 23 for the current products under review:

Figure 23. Dopplers

				
Wallach Surgical Devices LifeDop L150 (Current Device)	**Summit LifeDop 300 ABI**	**HUNTLEIGH INTRA DOPPLER W/D900**	**Koven ES-100X MiniDop**	**VTI TQ1 DOPPLER**
website link	website link	website link	website link	website link
U.S.A	U.S.A	U.K	U.S.A/Canada	U.S.A
Yes	Yes	Yes	Yes	Yes
Yes	Yes	Yes	Yes	Yes
21 CFR 870.2100	21 CFR 870.2100	21 CFR 870.2100	21 CFR 870.2100	21 CFR 870.2100
DPW, ITX	DPW	DPW	DPW	DPW
Peripheral Vascular, ABI	Intraoperative (microvascular and vascular), Intraoperative Neurological, Transesophageal, Transrectal, Laparoscopic and Peripheral Vascular.	Intraoperative (microvascular and vascular), Intraoperative Neurological, Transesophageal, Transrectal, Laparoscopic and Peripheral Vascular.	Intraoperative (microvascular and vascular), Intraoperative Neurological, Transesophageal, Transrectal, Laparoscopic and Peripheral Vascular.	Intraoperative (microvascular and vascular), Intraoperative Neurological, Transesophageal, Transrectal, Laparoscopic and Peripheral Vascular.
Pocket/handheld	Pocket/handheld	Pocket/handheld	Pocket/handheld	Portable/tabletop

TBI Biomarker Assay update. COL Sonka stated 2 of 5 deployed locations are up and running with 5 patients tested so far, all being negative. This allowed for transport to be averted to BDSC CT. Womack has been doing this and has about 60 patients enrolled.

COL Seery – *Why do you need x-ray capability at Role 2? We aren't funded for this...the sets kits and outfits for Army are for entry missions and damage control and not for a small fracture. The way we are structured the Role 2 should possess the ability to "know" whether the injury is amenable or needs to go to Role 3 for definitive treatment.*

Discussion ensued with overall replies referencing DNBI, non-trauma type injuries to get back into the fight.

COL Sonka – *So why did CENTCOM spend hundreds of thousands of dollars to put x-ray capability at Role 2's if this was deemed an unnecessary capability?*

LTC Lesperance – *COL Seery, I couldn't disagree more…what you just said is you would rather put someone on a flight over international borders vs keeping them at Role 2 for a radiographic injury??*

COL Seery – *What we do in CPG's and what is recommended is not without expenses, maintenance, training etc….we have other capabilities that help you get to a definitive diagnosis.*

LTC Roedel – *We are already asking too much of down range providers, if we can put a piece of equipment in the Role 2 that drastically improves their diagnostic capabilities in an already impossible situation how can you argue against that?*

CDR Jensen – *correct me if I am wrong, for example an x-ray is the only way to reliably Dx an open book pelvic fracture, which is a hemodynamically significant DCR injury.*

COL Baker – *Role 1 capability for example, for it to be small and portable offers tremendous expansion across the continuum.*

Col Shackelford – *I've seen this so often in BAMC, just from a pneumothorax perspective we can avoid chest tubes on countless occasions with X-ray vs. ultrasound…I'm like wait, no chest tube, he's not dying get an x-ray…what they are seeing is lack of lung sliding and surprise...no pneumothorax.*

9. <u>Do we need a pathway for CCC Providers</u> (COL Eckert): COL Eckert contrasted some of the differences between past and present statements. We have done our own comprehensive analysis and keep failing or failing to implement the needed changes. The emphasis has been shifted from Volume to Quality and this is creating a façade, and how we are assessing quality and complications accurately? Senior Medical Leaders continue to make decisions on silos of practice and how heterogeneous the MHS actually is.

1. It is easy to stay in your successful silo and point fingers and pretend that your personal silo doesn't have issues or is part of the issue as a whole.
2. Anything we do is linked to GME. What we need is Senior Leadership with an 80,000ft view to eliminate silos and standardize practices and requirements across the services/MHS.
3. Just in time MCP's are inadequate to build and sustain skills. The best way to maintain CCC skills are in Civilian Trauma Centers!

Constraints:

- Volume
- Degraded internal system (funding)
- Quality of Professional experience across MHS
- Exposure to complex cases

Opportunities:

- Operational experiences
- Research/Clinical Director
- Leadership role

Must provide stability and predictability to the career pathway of our clinical providers. Morale and quality of life and a relationship that is continuous/optimal.

COL Eckert proposed that on the heels of the IDA report, we can strive to consolidate and identify the right locations, consolidate GME and CCC providers with MIL/CIV partnerships that are locations set for success. This requires SME guidance and active engagement in Physician leadership…this can't be done remotely for an analytic perspective needs an on the ground clinical leader with the ability and authority to make *PROFOUND STRATEGIC DECISIONS.*

The solutions being offered are 5-10 year solutions and I feel the actual solution needs to be implemented in 1-3 years…meanwhile the MHS is eroding GME.

COL Gurney – *Do we think DHA senior leadership even understands how bad the system is with GME, case volumes…the ground truth?*

Col Shackelford – *They may or may not be, I don't know the answer to that but DHA looks at this that there is not an enterprise solution and these are local decisions. Tools to measure readiness and turn back to Commander Authority to incentivize other solutions. DHA provides the tools (KSA) and clinical experience options (optimized through Humanitarian, MIL/CIV etc) with internal system proposals.*

Part of the JTET goal/mission is to have a standardized agreement for MIL/CIV partnerships. We won't be at the mercy of every local legal office interpretation. And JTS now owns the KSA/PMO but only for 5 weeks so it takes time for change.

COL Sohn – *I think terminology is the problem, we are trying to create an arbitrary metric that the Civilian population doesn't have and we publish that only 8% are reaching the metric…DHA is very under resourced and understaffed and prioritization falls off. Their constraints cause delays in progress. The IDA report shows it costs us a Billions dollars more to purchase all this. We need legislative relief, but how long does that take??*

Col Shackelford – *once DHA solves this billing problem and recaptures VA patients it will be a game changer. Lt Col Sams is crushing these barriers and I am confident it will come to fruition. Legislative relief is not required.*

COL Seery – *GEN Place wants every MTF to be a Trauma Center (Role 3) but its all money driven. There are all these hidden stipulations that have to be met/agreed on. It's going to prove General Surgeons can do the job.*

CDR Jensen – *The problem is that there is no expertise on this billing issue and how to solve it because nobody seems to have the answer, so maybe legislative relief is the only answer thrown out?*

LTC Graybill – *Debt forgiveness for civilians is the main barrier, this is an ethical issue not legal.*

LTC Lesperance – *what Lt Col Sams meant was morally and ethically relief, at the end of the day University is going to say "you can't get blood out of a stone" and write it off…and County or State reimburses, but BAMC can't do that because the we are a federal institution and the Government will take that money from a tax return and that's why we are fearful to throw our gates open wider.*

CDR Jensen – *it's not the uninsured, it's the under insured…balances if not waived or gotten rid of get transmitted Dept of Treasury and can't be negotiated and "wages will be garnished" The legal people have stated we are following the law but simultaneously bankrupting people…but we "followed the law"*

COL Schreiber – *meaningful legislation needs to be implemented…Military centers that treat civilian trauma patients needs to treat the same way Civ centers treat and charge and deal with billing.*

Closing Comments by COL gurney and CDR Jensen thanking all attendees. Reviewing Due outs and Lines of Effort

1. **Neuro-surgeon Position Statement**
2. **X-ray Statement**
3. **CoSCCC Input on Medics performing surgery in austere PFC**
4. **Trauma Lexicon**
5. **Committee Membership Review**
6. **CPG cross-walk with newly developed Position Statements**

Meeting Adjourned at 12:45

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Shane Jensen, MD, FACS
CDR, MC, USN
Chair, Committee on Surgical Combat Casualty Care

Jennifer Gurney, MD, FACS
COL, MC, USA
Chair, Defense Committees on Trauma

Enclosure (1) – Meeting Attendance

JTS Staff:
Col Stacy Shackelford (JTS Chief)
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)
COL (Res) Cord Cunningham (ERCCC Chair)
CAPT Brendon Drew (CoTCCC Chair)
LTC Chris Graybill (JTET Branch Chief)
LtCol Andrew Rhorer (AFMES)
Harold Montgomery (TCCC PM)
Mr. Dominick Sestito (SCCC PM)
Mr. Tom Rich (ERCCC PM)
Danielle Davis (CoTCCC Admin)
Dr. Russ Kotwal (Spec Projects)
Amanda Torres (PI)
Dr. Sean Keenan (JTET Spec Proj)
Trevor Gipper (A/V Spec)
Curtis Hall (Pubs)
Larry Crozier (PI)
Liz Mann-Salinas (PI)
Linda Martinez (PI)
Laura Runyan (PI)
Katherine Robbel (PI)
Dr. Kenneth Leffler (PI)
Teresa (Teri) Duquette-Frame (PI)

VIP Guests
BG E. Darrin Cox

CoSCCC Attendance
CAPT Joe Kotora
CAPT (Res) Margaret Moore
CAPT Matt Tadlock
CAPT Ted Edson
CAPT Travis Polk
CAPT Virginia Blackman
CDR John Maddox
CPT Alex Merkle
COL Andre Cap
COL Jason Seery
COL John Detro
COL Kirby Gross
COL Mark Buzzelli
COL (Res) Brian Eastridge
COL (Res) Martin Schreiber
COL (Res) Sandra Wanek
COL (Res) Scott Armen
COL Shawn Nessen
COL Vance Sohn
Col Jeremy Cannon
Col Peter Learn
Dr. Donald Marion
Dr. Jacob Glaser
Dr. John Holcomb
Dr. Kevin Nemelka
Dr. Matt Martin
Dr. Nick Namias
Dr. Peggy Knudson
HMCS Tyler Scarborough
MAJ Brian Knipp

MAJ Christopher Moe
MAJ Crystal Doyle
MAJ Ryan McMahon
LCDR Chris Renninger
LCDR Erik Olson
LCDR Vijay Ravindra
LTC Brad Rittenhouse
LTC Eric VanFosson
LTC Eric Verwiebe
LTC Erik Roedel
LTC Jonathan Stallings
LTC Linda Benavides
LTC Matt Eckert
LTC Rich Lesperance
LTC Shaun Brown
LtCol Andrew Hall
LtCol Brian Gavitt
LtCol Chris Mahoney
LtCol Lindsey July
LtCol Ryan Earnest
LtCol Thomas Brockmann
SFC Andrew Proctor
SFC Mike Remley
SFC Paul Loos

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Diana Del Monaco
Don Adams
Ellie Curtis
John Marsh
Paul Allen
Randy Stone
Sherwin Cruz
Toby Keeney-Bonthrone
Tracy Bogart

Foreign Partner Nations
Maj Chris Wright (British LNO)
Maj Mark Frederiske (Netherlands LNO)