Committee on Surgical Combat Casualty Care Meeting
6-7th May 2021 San Antonio, TX

Meeting Minutes Prepared by: Mr. Dominick Sestito

Day #1 CoSCCC April 6th, 2021

Day #1 Committee on Surgical Combat Casualty Care			
Time	**Presentation**	**Speaker**	**Topic and Intent**
0730	Welcome to the DCoT Meeting	Gurney/Jensen	Welcome guests / introduce Conference Focus / Lines of Effort
0745	JTS Chief/SEA Brief	Shackelford/ Remley	JTS Updates / 2021 Goals / Change Plan
0820	Recently Deployed Surgeon	COL Gurney	COVID Stand up in the Deployed Environment
0850	Single Surgeon Teams (SST): Best Idea or Worst Idea Ever?	Pro: Northern Con: Nessen Moderate: Benavides	Intent: review capability / understand committee views Best way to define risk for commanders ...if there's risk
0930	**BREAK**		
0945	SST: How the MAU does it	Eckert	Lessons learned from SRT
1000	Focused /Moderated Discussion (? survey review) led by Service Trauma Consultants	Gavitt / Seery / Tadlock	Do we need more or less of the SST capability? Operational vs Clinical
1030	STaRC: A bad name but a good training program. Do we need a Joint Forward Austere Surgical Team Training	Becker	Potential Deliverable: consensus statement from CoSCCC through JTET regarding standards for AST training and advocacy for single program? Who is the owner of this training? What are the risks if it goes away
1050	Discussion: 5 minutes from each speaker for individual + collective R2 training followed by group discussion	Dannebaum/ D'Angelo/ Armen/ Newberry	
1115	**Hot Topics: Group Discussion** Moderator: Matt Martin		
1145	**LUNCH**		
1245	Lions and Tigers and Bears Oh My! Understanding capability development and acquisitions get to know the Wizard	Berst / Bennet	Where the JTS can help the Joint and Service Acquisitions Process to have a positive impact on casualty care
1315	Mentorship and growing trauma leaders in the DCOT – Future CCC Leaders	Chet Kharod	Development of Future Trauma Leaders in the DCOT – how can we be better at succession planning?
1335	Moderated DCOT discussion: leadership development and where we have failed	Bob Mabry	Idea generating discussion: leadership amongst CCC providers
1355	Subcommittee Info for Afternoon Session	Shane Jensen	AST → Operational are merging What about Education SC, it's now what? Research→ new direction by the two Martins
1400	**BREAK**		

0730 – Introduction: The CoSCCC conference opened with an introduction by CDR Jensen, the Chair of the Committee on Surgical Combat Casualty Care (CoSCCC). COL Gurney briefly reviewed the meeting's agenda. Mr. Dominick Sestito discussed current membership, CPG updates and contact information.

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 touched on the new Strategic Goals of the JTS to the surgical casualty care response to make sure we continue the effective care of the war fighter; the Subcommittee Chair's roles and responsibilities and how the intent of the CoSCCC was to improve surgical care through work products, communication, and the multiple deliverables from each Subcommittee. There have been some consolidations and revamping to the Subcommittees. The current CoSCCC Subcommittees:

1) Austere Surgical Team Subcommittee will be combined with Operational – Chair, COL Jay Baker. This Subcommittee has been working on two lines of effort over the last year: the ARSC CPG and definition paper. COL Baker and the Subcommittee members have been working on better control of the FART (Forward Austere Resuscitative Team) Frenzy. Given the lack of a defined capability for the various Services' FARTs, this Subcommittee has the goal of capability standardization and a better understanding of FART utilization. Ultimately, after a better understanding of team composition and utilization, this Subcommittee will inform (with the Education and Training SC) a joint core curriculum for standardized FART training.

2) Education and Training Subcommittee – will be renamed to Educate and Inform -Chair, LTC Graybill (deployed). The overarching goals of the ET&T Subcommittee align well with the NDAA17 mandate of mil-civ partnerships and training initiatives. Training standards and support of high quality, enduring, committed mil civ partnerships.

3) Operational Resources Subcommittee - will be combined with Austere – Chair, CDR Jensen/ CAPT Edson. The challenges of this Subcommittee are significant. This is the Subcommittee that provides guidance and documents that bridge the clinical community to the CCMD/ operational force. One of the challenges that the meeting agenda was designed to address is: How do we appropriately influence and communicate with the Line/non- medical operational forces.

4) Research Subcommittee – Chair, COL Marty Schreiber/COL (Ret) Matt Martin. The Research Subcommittee bridges across all of the Subcommittee. In addition to setting CoSCCC research priorities, this Subcommittee can help inform appropriate research initiatives for CoSCCC members.

CDR Jensen concluded with an overview of the agenda topics and presenters.

1. **<u>JTS Director's Perspective/ JTS under DHA Update</u>** (Col Shackelford/MSG Remley): Col Shackelford presented the JTS Chief update showing what we've been working on at the JTS:
    a. Emphasize we are the trauma enterprise for the whole DoD, advising trauma care throughout DoD, you can see the report for all of the MTF's, a few metrics that we are tracking, and we will have to change our metrics, our blood metrics are 100% now, and we probably need to track something that is a little less nailed down, we have this blood thing down, then you could see the fatalities report, this is a high level overview of the scope of what we are working with, we are collaborating with DHA clinical communities.
    b. Joint medical interoperability standards; we have had this concept in the works for a couple of years. Working on issues with combat support in those things across the finish line needed a larger working group. Problem solvers, med planners, and each of the services, we are working to expand and get those representatives. We started drafting one interoperable capabilities, deliver a consistent standard of care and transfer capabilities between teams of different services and roles and interoperability standards.
    c. The DHA procedural instruction provides more detail on the combatant command trauma system. Those instructions are foundational documents, and tell us how to run a combatant Command Trauma System (CTS).
    d. What we learned in the pandemic. We had been directed by combat support to do everything for the pandemic, we ended up in charge of the COVID registry. We much rather be in the trauma business of course, so we're trying to propose and develop the joint casualty care system, more expensive than the Joint trauma system, and to develop more of the JTS capability.
    e. How we are rebuilding the trauma registry- a data space, that links together with the electronic health records, and to import any other database with the id appropriate sharing, and data feeds, and we're trying to set up a data feed, from the casualty system, reporting from the personnel and readiness.
    f. Expeditionary skills statement - American College of surgeons, one sector, and other departments that we never interact it with, department of homeland, Health and Human Services, to help establish the medical disaster system mandated now for the five pilot sites under the NDAA, and you were actually tasked with it.
    g. Optimize MTF's readiness platform, this certainly includes an assessment of how we can optimize the trauma centers, and one barrier to getting patients at military centers, function learning at changing the national laws that are causing these barriers, and like Medicare. The authority to take care of trauma patients, licensing, etc., and trying to address those barriers.
    h. We are developing military skills training registry, based on this registry. It will be away to track all of the KSA's for one, and also to be able to track the metrics of performance in partnership, as they are lifted out of the blue book. We really want to utilize that blue book, which was written as the outline of these partnerships.
    i. Proposes we define "COMMANDERS RESPONSE" – proposed definition *"casualty response is a leader distribution to synchronize all individual tasks to complete the mission while optimizing mission outcomes."*

Top 10 CURRENT Battlefield Issues (Preliminary):
1. Improve capability and capacity for Whole Blood transfusion throughout the continuum.
2. Improve ways to sustain trauma skills.
3. Recruit and retain medical personnel to support operations.
4. Facilitate documentation and data collection.
5. Standardize trauma care training across the Services.
6. Facilitate interoperability and standardization of devices for patient movement items (monitors and materiel products) throughout the continuum.
7. Standardize joint evacuation platforms and communication plans.
8. Optimal number, mix, and training of personnel for variety of missions/scenarios.
9. Improve capability and capacity for FDP transfusion throughout the continuum.
10. Relationship between time to definitive care and outcomes - validating and clarifying the "golden hour" concept.

2). <u>Recently Deployed Surgeon</u> (COL Gurney): COL Gurney recapped her 8th deployment, her extended stay and modification in country from Trauma focus to COVID focus. Nominated to be Commander - put together a memorandum for the record, in a program called ReSTORE Partner capacity, restore was readiness, and partner capacity; bringing patients of care, Afghan security forces, we will bring with them the Afghan doctor or the nurse, and make this into a training opportunity to grow partner capacity.

"Work for the Idiot or Be the Idiot"

Task Force Med Commander response:

"I am huddling with my team to figure out if there is a way we can meet Major Matlock's demand for a good starting point is to help shape and the misconception that gross surgery cases are not synonymous with currency"

I started training, and opened up TC3 training to the base-we trained 590 international civilians in 6 months.

- Tuesdays were trauma training day, for three hours, there was usually 100+ people training, we used to redo the trauma trunks, and drills for other teams.

- Once COVID started our blood source went very low, the screening program was not okay with the walking blood bank should we have a Mass Care situation, we considered where we had ran patients to ORs, three or four patients, but nothing close to a mass Cal; took advantage of this pre-screening program, and every time someone was bleeding, they were pre-screened, we drew of the unit of blood from them, and we were able to keep the blood at the role 2, for 35 days, we only did that for six units for blood, none of these units were wasted, and we usually have 11 to 14 days of use, when you do it this way, you have 35 days, this is something in the future as a potential TTP.

- COVID task force set up in February internationally, and we came up with our clinical practice guideline, and how we would manage patients on COVID Registry, in March we were able to do performance improvement for clinical decision-making.

"The thought from medical was, we know how to manage ARDS. We do not have to worry, it doesn't matter what is causing it, COVID, flu, there's nothing we have to worry about."

I think one of the things we lost sight of, health service support, these health protections are two separate things.

What I learned on this deployment:

- a totally different type of deployment, operational commanders that believe surgeons are surgeons, they are command surgeons, they honestly believe they are surgeons, so when they get advice they are hearing it from a surgeon, some commands are excellent, and some are not, what happened with COVID, medical had to come out of gopher holes, all the sudden medical was asked to start doing something.
- The leadership doesn't know about the joint trauma system
    - didn't understand the idea of performance improvement and how to inform operational decisions with clinical operations
- Commander cares about medical.
    - If we are going to change medical, we will change it through the operational side, I think some of them care more than our own leadership, not that we don't have good leadership, but they absolutely care about medical outcomes.

3). <u>Pro vs. Con of Single Surgeon Teams</u> (Maj Northern/Col Nessen):

Maj Northern –

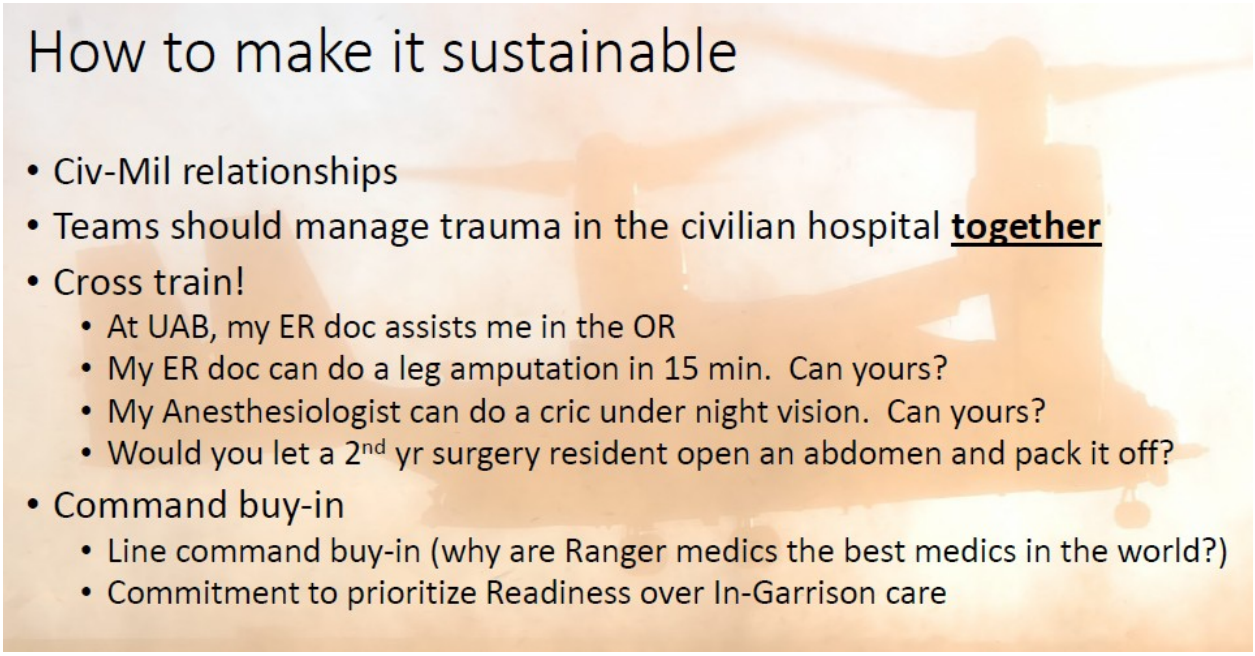
What is the overall mission? Not bringing it to zero, but saving lives that can be saved… That means damage control surgery, certainly for single surgeon teams.
If we are going to mitigate the risk for the commander, how do we get on the mortality curve?
-I will submit the proximity of the point of injury is the answer:
-single surgeon teams in my view, lighter and faster, more maneuverable
-we can send them further forward, they are a lighter footprint
-not so much 1 vs 2, but location of proximity of surgical capability

"example where I did not operate because I was only two hours from the next dual surgeon role team. I was 15 minutes from the point of injury, three patients arrived, all were hypotensive, all had leg injuries. They all received tourniquets, primary and secondary surveys-- transported two hours upstream to dual surgeon to and none arrived unders resuscitated. None needed -- total time three minutes/30 minutes. Our intervention and I estimated the supplies we used were very few. I did not operate on these three because we were so close to critical care and I have positive communication with next level to let them know what they were receiving."

I would submit to you the super challenging cases are not the ones we stand to impact mortality or maybe we do and I would 100% agree first single surgeon these are exceedingly hard.

Should all teams only have one surgeon?

I think absolutely not. We are part of spectrum and we should be part of the spectrum but we need to admit that we are just part of that larger chain and we have a critical role to get closer to the point of injury.



Question to the Group:

"Would you rather have the following cases alone 15 minutes from the point of injury or one hour from point of injury? With help? Alone 15 minutes from point of injury or with help one hour away and what if your ER doc can place REBOA?"

LTC Benavides - how much deployment training do you get with your actual team? And what is the longest you had to hold the patient?

Maj Northern-

I train and do a night of trauma call a month with my team year-round whether deployed or not. So from clinical standpoint we worked together at level I trauma center each month and each respective member works in their own department and from a capital stand point we train quarterly and try to do some kind of tactical training quarterly and regardless of deployment status and pre-deployment cycle there's about a month of a dedicated training that is aligned with our deployment plan as far as where we are going and who we are supporting an accomplished tactical training in that sense which involves medical scenarios so quite a bit.

As far as critically injured operative patient, I held them for several hours and then ship them. Postop, if I did operate on a patient and stabilize them, we have not had to hold the patient maybe at the longest a few hours.

COL Nessen- "Worst idea ever one-man surgical team."

"I will say my perspective on this is I don't care what special operations does for our soldiers involved, they barely take casualties. I do have a problem with an ER doctor doing surgery in the United States of America that's negligence and I don't think negligence is what we should provide to the soldiers."
"We know that the number one cause of potentially preventable deaths is hemorrhage so create a capability to address the gap. We have taken the team and added primary care capabilities and added orthopedic capability and now we want to split it, but now we have a general surgeon by himself trying to deal with the most difficult kinds of hemorrhage."

Now we've created this doctrine where we separate damage control resuscitation. When was the last time he did damage control resuscitation in the ER? We don't do that here we do it in OR and we do it so we can get the surgical bleeding stopped. That is most effectively done with two surgeons who know how to operate anywhere on the body.

SURGERY: NATIONAL RESIDENT REPORT (Main Table) Reporting Period: Total Experience of Residents Completing Programs in 2018-2019
Trauma Cases

Procedure	Average
Exploratory laparotomy	8.1
Thoracotomy	2.7
Debride/suture major wounds	2.6
Colon resection	2.0
Splenectomy	1.9
Small bowel resection	1.7
Repair hepatic resection	1.2
Neck exploration	1.2
Laparoscopy	1.1
Fasciotomy	0.8
Peripheral vessel repair	0.5
Other	4.9
Total Average Trauma Cases	30.1

"Separating damage control resuscitation and damage control surgery into distinct capabilities is not the answer."

COL Gurney – *"Our strategic leaders do not have nuanced thinking when it comes to medical anymore. They are not medically trained. They grasp onto the single surgeon concept and they turn it into doctrine. I think one of the important things also to point out is I feel like a lot of us are saying the same thing but one is it for low intensity conflict where there are not a lot of casualties? That is a good case to be made for single surgeon team as long as they are being trained with realistic expectations, versus if you have large-scale combat operations the singles surgical team may have niche but not the*

predominant. I will concede that one surgeon in certain scenarios is better than nothing but I don't think we should plan the future that way."

DUE OUT- I think most of us would agree with the concept and I think the goal of this meeting is to start working toward a consensus statement that talks about when is the need for single surgeon team and what a realistic expectations for the commander in the concept is what is the risk for that commander and what are the risk of for the patient.

4). <u>Single Surgeon Team: How the MAU Does It</u> (LTC Eckert): not here to make a case for single surgeon team discussion but I am here to talk about how one organization approaches a rather unique capability and operational requirement.

The unit vision is to be an elite medical team and is the only "joint" service austere resuscitative surgical team platform.

-personnel – selection process
-experience – individual and collective organizational experience
-training – dedication to mission relevant training

"Training is essential for us it builds familiarity with personnel, communication trends and methods, standard operating procedures, shared -- capabilities in trust, recognizing inherent limitations of small teams that come with resource limitations these teams are continuously cross training as previously mentioned and that cannot be emphasized enough and we will emphasize the clinical experience is why we are brought along."

Successful Teams	Unsuccessful Teams
• Effective communication	• Lack of team cohesion
• Supportive team environment	• Lack of trust
• Shared role understanding	• Ineffective communication
• Equity among team members	• Unresolved conflicts
	• Rank conflicts

"single surgeon teams are not the solution to poor planning or organization and cannot be ad hoc"

5). <u>STaRC Training</u> (COL Becker)**:** Strategic Trauma Readiness Center of San Antonio- a great opportunity for the individuals to get their daily practice and experience in trauma and keep their skills up.

- -STaRC is holistic small team training course incorporating both tactical and clinical components for both the individual provider and the surgical team in an austere dynamic environment.
- -As the operational demand for austere surgical teams continues to grow, pre-deployment training incorporating fluid leadership, qualified peer-based facilitation and evaluation of performance, and tactical and clinical team based skills in CCC will be integral to ideal patient outcomes.

- -Standardizing a program such as STaRC into a Joint Forward Austere Surgical Team training program has the potential to aggregate Services' lessons learned and increase the efficiency and quality of this training.

Phase I: Didactics and Labs

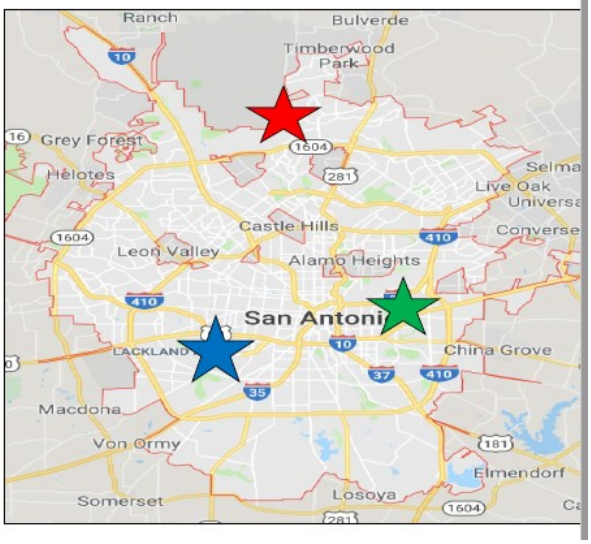
- ASSET +: Advanced Surgical skills for Exposure in Trauma
- ATOM: Advanced Trauma Operative Management
- REBOA: Resuscitative Endovascular Balloon Occlusion of the Aorta
- Medic EMS Ride-Along
- **Training OBJs:**
  - Damage control resuscitation and surgery
  - Cadavers and live tissue used address life-threatening injuries

Phase II: BAMC Clinical Rotations

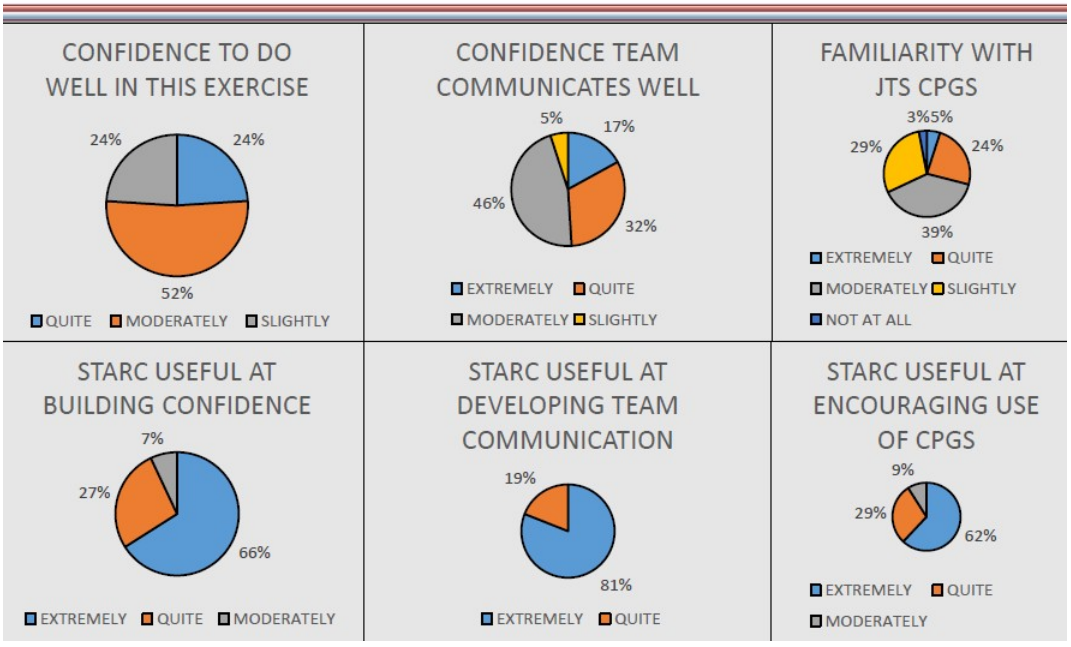
- Days 1-2: Individual and team skills training / Days 3-6: Team Night Trauma Call
- **Training OBJs:**
  - Hands-on patient care (ED, OR, ICU, PACU), SIM lab
  - Cross-train personnel for expanded role, team dynamics
  - Document trauma call using JTS documentation

Phase III: Culminating Training Event (FTX)

- Live-fire multi-day field exercise with SIM, cadaver, and LTT aides
- **Training OBJs:**
  - Communication, execution of individual cross-training
  - Execute walking blood bank, blood management
  - Conduct Military Working Dog training
  - Conduct MASCAL Exercises
  - Jump FST to an austere FOB



Pre and Post Exercise Survey Results



"We do need pre-deployment training that is comprehensive, holistic, bring together realistic training based on the realistic environment that they are going to encounter. A lot of training done now is self-facilitated and that is not adequate."

"I think it is important to discuss standardizing the program such as STaRC into a joint program and that gives us the potential to aggregate services lessons learned and increase the efficiency and quality of the training."

6). Role 2 Training: Who owns it?: (Dannebaum/D'angelo/Armen/Newberry)

D'annebaum – Reserve Orthopedic Surgeon provided feedback from recently attending STaRC course and additional pre-deployment training.

> *"we were able to identify individuals especially those who are deployed to get to know your medics and assistants in the operating room are ingrained because surgical tech, LPN they do not get a lot of actual hands-on MOS training because everyone seems to be more worried about the readiness of "deployment" and there has to be a policy of the command units of the higher ups to push that priority to make sure the teams are ready to deploy and do what they need to do here. From that standpoint I thought it was an excellent thing for our unit and allowed us to identify holes in our training here."*
>
> *"we had an opportunity to test our surgical capabilities in the middle of the night as a civilian trauma in the middle the night, and it was great to see the general surgeons and myself (ortho) on call get called in the middle of the night to balance multiple cases going at the same time."* Those were valuable experiences.

D'angelo – Reserve Trauma Nurse Perspective currently attending War College; teaches at USC with ONLY Joint Medical/Nursing Program.

> -current duty station has proven there is a misperception that the line expect Medical to be ready to go down range in the same way sub and tank guys are.
>
> -We need joint training –Many students regardless of service end up partnered with Army Surgical Teams
>
> -have to speak to the line not just to each other inside the medical community
>
> -recommend crediting these programs to ensure consistency and parallel efforts amongst services to avoid silos of individual training. *"We cannot leave this to the services."*

COL Armen – Army Trauma/Gen Surg Reserve Consultant

> Reserve major issue - pre-deployment training and the commitment from reserve component to staff the training exercises
>
> -For the reservist this equates to time away from practice
> -Loss of Salary
> -Out of Pocket Cost
> -No leave accrual/Vacation

-Variability of Civ Practice

-Some are very competent and practice in their expertise, but some are not proficient at time of reporting

-Creates "Role" problems and quality of care given

-Huge benefit to "Team Training pre-deployment"

-Need to change the mindset about initial training vs re-deploying personnel

-Learn something new every time/ every deployment team is different

Absolutely support COL Becker's efforts with STaRC

Newberry – Perspective from Reserve ER Physician/Director San Antonio Fire

Goal of STaRC – "*ensure in the multi-patient scenario will run efficiently and were able to take care of any the nonsurgical patients that present to the teams"*

Concur that the biggest observation thus far in the training is wide spectrum of experience coming through the training.

Also, at arrival, the teams tend to work in silos, and by the end of the training evolution they are a cohesive group. This is an amazing transformation to watch and integral to the success of the Teams.

Need to continue to improve – cross train to prepare for the single surgeon team split, using non-providers as first assist, circulator etc

CAPT Stockinger: As a community, we are failing to get involved in planning. Who here has taken the Joint Medical Planners' Course or the Joint Medical Planning Tool course, which are (supposedly) required for all med planners, so that we know what they know and how they think (and where they make bad assumptions). Who here has taken a command surgeon HQ position in an operational environment? Most deployed surgeons complain that they're not doing anything.

COL Becker: You can't replicate the deployed experience in a US Level I trauma center. Can't really push working outside scope of practice. And Home Station FTXs are not adequate. So I argue you will need STaRC.

Brian Smedick: Concur, STaRC allows the entire team to train as a single entity, our role one does not at this point in time

COL Seery: The most important thing is that SST, along with many other things we are discussing, are complex. We need the community to speak with us so we can work out what is feasible, attainable, sustainable, etc. We will set up follow on conversations ref these topics over the months to come.

7). <u>Service Trauma Consultants Round Table Discussion</u> (COL Seery/Lt Col Gavitt/CAPT Tadlock):

Tri-service consultants. Basically we are looking at defining some of the differences between what surgeons do whether they're general surgeons are trauma surgeons to start talking about helping to define the risk and capability for commanders and medical or group commanders.

Single Surgeon Team Issues:

-assuming enduring operational requirement
-spread outside initially intended Spec Ops environment
-No consistent training pipeline
-lack of standardization and variability
-Lack of risk communication to Op Commanders

Due Out: The Committee on Surgical Combat Casualty Care should publish a position statement on SSTs to communicate capabilities and limitations based on:

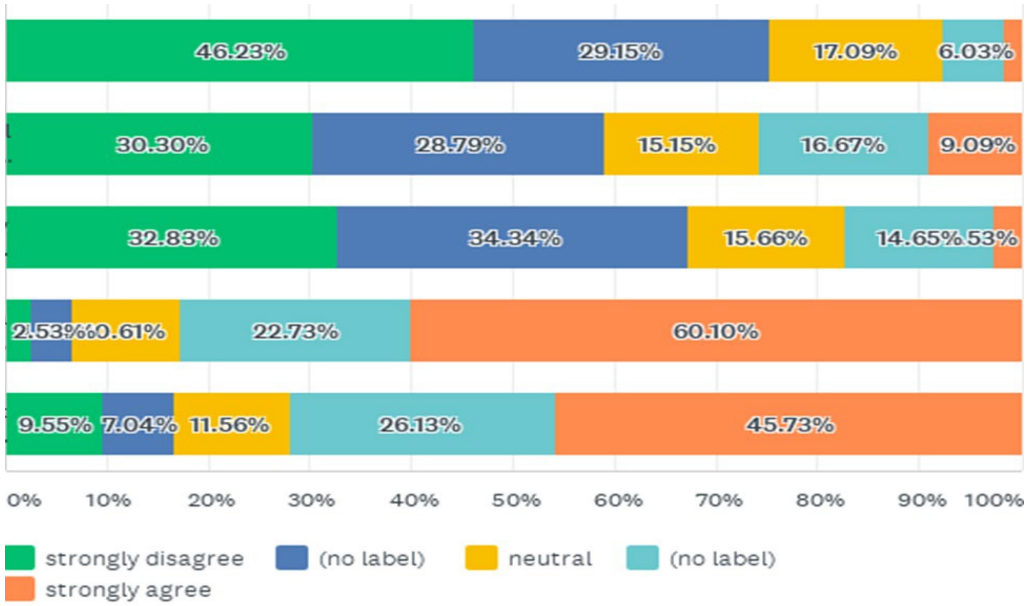
- **Personnel Selection**
- **Team Composition**
- **Training and Experience**
- **Logistics Support**
- **Operational Needs**
- **Performance Improvement Data**

Pilot survey - was focusing on the contrast between non-deployed surgical practice and what the surgical practice is on deployment and what the underlying goal is looking at the staffing for trauma and surgery cases and identifying the differences between the two practices.

- Of respondents, the majority:
  - Were active duty with deployment experience?
  - Practice at a major trauma center while stateside
  - Operate nearly exclusively on major cases with a trained assistant (i.e. RNFA, PA, Resident, Fellow, or Surgeon)
  - Would request a second surgeon for major cases if back-up were available
  - Believe that operating as a single surgeon on an unstable trauma patient without a trained assistant is below the acceptable standards of care in the US
  - Believe that operating as a single surgeon on an unstable trauma patient without a trained assistant will generate worse outcomes

75% of respondents did not feel it was safe committing a general surgeon to operate on an unstable trauma patient without a trained assistant. 83% would request the assistance of a second surgeon for an unstable trauma patient and 72% believe operating on unstable trauma patient without a trained assistant available would be below the standard of care.

PERCEPTIONS ABOUT SINGLE SURGEON TEAM CAPABILITY

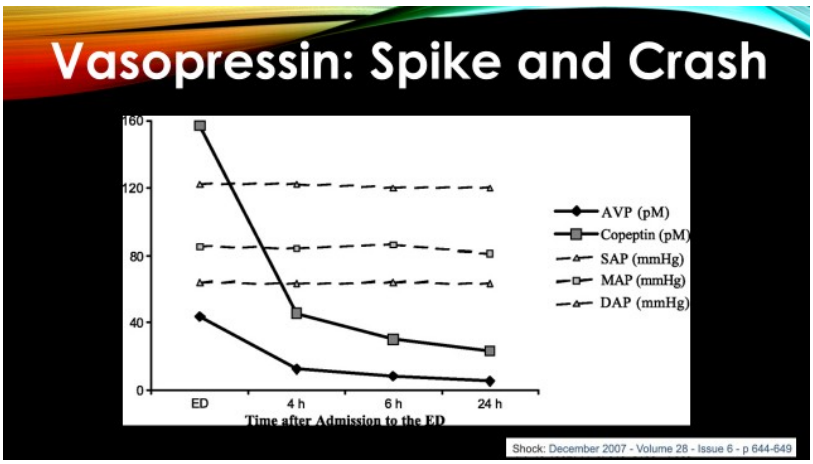


•Bottom line - SSTs exist because of operational requirements, not because of alignment with standard practices in trauma care and the difference between what we do what we accept at home station than what we are doing in the deployed environment

CAPT Tadlock- I would echo single surgeon teams are not going away and they are also not the solution to poor planning or organization so how do we integrate these conventional single surgeon teams into the current plight and future plight?

8). <u>Hot Topics Discussion:</u> (Matt Martin) **– Purpose:** bring up some things that are new in the literature, or we think are about to be coming out, and talk about them and how and if we should try to implement them.

- Pressors in trauma resuscitation
- VPA for everything
- TXA timing and dosing



This was a randomized trial that came out last year. It was 100 patients, this was in the civilian trauma center, randomized to Vasopressin versus placebo and the criteria was these patients were getting at least six units of any blood product and that's any type of blood product combined for total six units within 12 hours.

The main outcomes and findings, Vasopressin significantly decreased the number of blood products reacquired, significantly decreased to the overall fluid balance that was required, no difference in additional pressor requirements. Looking at outcomes, they didn't see any difference in the complication rates, length of stay or mortality but it is important to note this study was underpowered for outcome. It was powered for 50 percent reduction in blood products which is a pretty big difference, so resulted in a relatively small sample size. The only other findings was a significant reduction in DVT.

For Discussion:

- Role for pressors?
- Is vasopressin THE pressor of choice?
- Interaction with forward blood products?
- What would protocol look like?
- Military specific benefits?
- Prolonged Field/Casualty Care?

Valprorate:

- Improved survival from trauma
- Tolerance to hemorrhage
- Reduced blood product/pressor requirement
- Decreased size of TBI and edema
- Improved neurologic outcomes
- Pro-survival pathways
- Pre or post injury treatment

Role for VPA?

- Prehospital vs en-route or at MTF?
- Synergism with plasma/blood?
- Translational and pre-clinical data?
- Blood product sparing effect/PCC?
- Combat pill pack? Pre-injury?

TXA – TCCC doing a lot of work on this updated data on dosing and timing- For Discussion:

- TCCC recs – 2gram bolus
- Same recs for in-hospital?
- Follow CRASH protocols?
- Time limit: 1-hour? 3-hour?
- Will benefit be lost with PH blood?
- Update CPGs? Make TXA CPG?

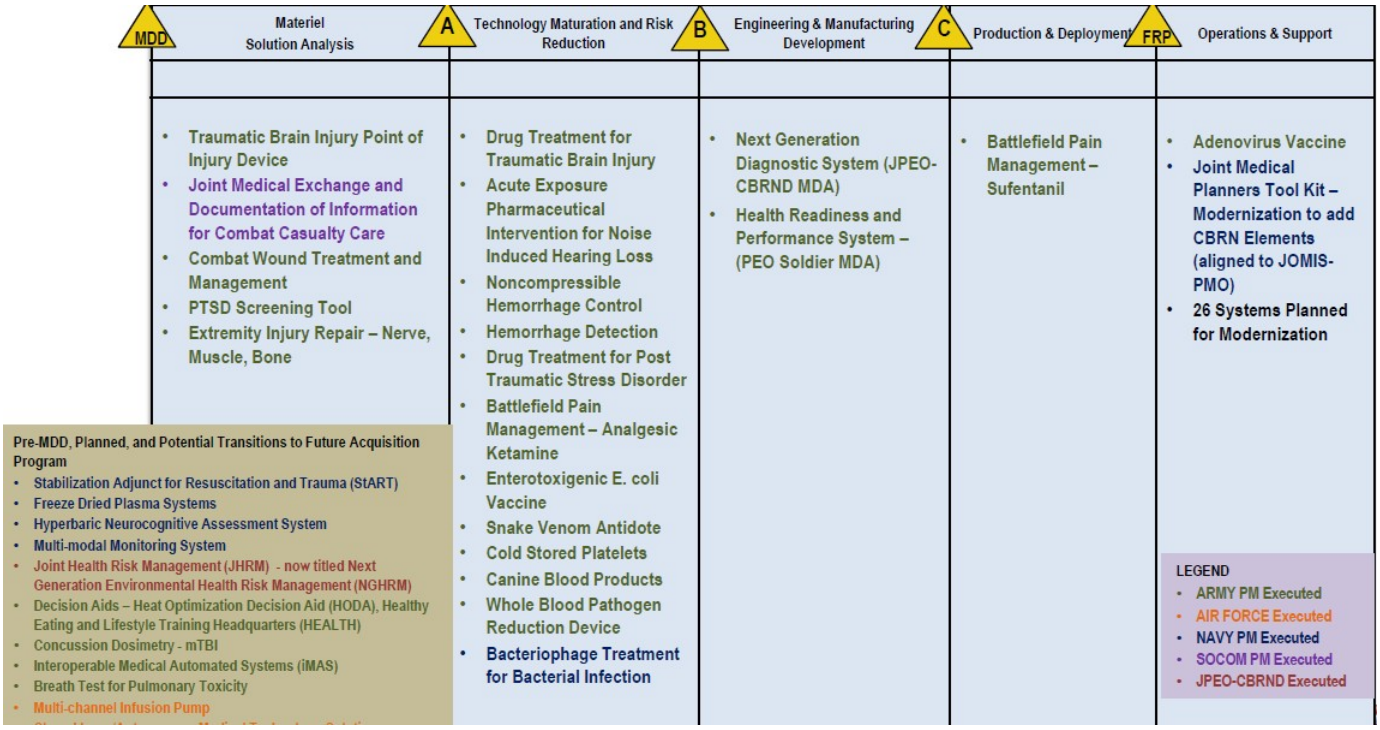
COL Gurney - how can we use Vasopressin in prehospital and emergency… It is a lot more critical, you have a limited blood supply, and have them develop an appropriate protocol for implementation and look at it in a multicenter fashion. Everyone should be aware that we do have that network that now has six ongoing projects, mostly looking at resuscitation. Mostly using it in the prehospital environment.

7). <u>Medical Product Development and Acquisition: Where the JTS can help</u> (Kathy Berst/ Tyler Bennett): Opened with a discussion of the Mission and Vision of USAMMDA. Outlined the process from start to finish for fielding new items through Requirements, Research, Knowledge Translation, Key External Partnerships, Development and Acquisition and final end users, coordinating fielding to over 2200 Army units.
Discussed the path of DoD Acquisition and FDA regulated development.

- Mission: JPMO-PDMSS develops, delivers, and modernizes medical products that increase readiness and improve care and health for the DoD
- In close collaboration with Service and SOCOM Project/Product Management capabilities, JPMO-PDMSS supports Joint acquisition programs that deliver solutions to support COCOM requirements

- Acquisition strategies are tailored to the unique aspects of the program
    - Programs are responsive to JCIDS requirements (both Service and Joint)
    - Develop militarily relevant (not typically militarily unique) capabilities, leveraging civilian markets (where possible) to ensure sustainability
    - Capitalize on opportunities to innovate & accelerate delivery – Other Transactional Agreements, prototyping, & rapid equipping

Mrs. Berst and Dr Bennett gave some examples of products currently undergoing modernization, as well as products in development. Like USAMMA and USAMMRA, JPEO-CBD works through the JCIDS process to document the Services need. As a Joint office, the Joint Requirements Office serves as the interface with the Army, Navy, USMC, and AF to prioritize Joint requirements.



End Goal: FDA approved, safe, effective, militarily relevant, affordable, and sustainable fielded product.

Opportunities for Engagement with the JTS:

- Requirements: While JTS and Committees do not have the ability to direct and validate requirements, you have valuable input and experiences and have many user representatives who can provide valuable input to Combat Developers:
  - ❑ Use case scenarios
  - ❑ Performance parameters

- Acquisition Process: While JTS and Committees do not have the ability to direct the acquisition process, you have valuable input and experiences that can be utilized:
  - ❑ Integrated Product Teams
  - ❑ Program IPRs and Milestone Decisions
  - ❑ Source Selection

- JTS representatives are included
  - ❑ DHA Acquisition Program IPRs and Decisions for trauma related programs
  - ❑ DHA Acquisition Program IPTs

- Piloting "new technology" or "new capability" processes – integrating requirements, acquisition, resourcing, and JTS SME and user experiences
  - ❑ Medical grade fluid production in austere environments
  - ❑ Mobile x-ray capabilities

- Working group to define points of alignment/intersection with JTS and committee processes and requirements and acquisition processes

CT Scanner: by leveraging the funding for joint funding forced us to work with the other services to include the Air Force and Navy and to come to an agreed-upon set of essential characteristic so that the Army CT scanners exact same make and model now as the Air Force… Which is a good news across the joint spectrum because now it is easier to maintain, easier to train, cross use between the services.

COL Gurney – "*Is there a way that there can be forcing function some type of mandate so there is a timeline that can be shortened or a requirement that is something is considered a urgent operational needs, we don't have to go through the process and stuff like that but if there is an urgent operational need would it ever be possible to get something through this process in a six month time period?"*

Dr. Bennett - I would say yes. We have done that before.

COL Gurney- *"I would like to add that one of the important things is we need to actively engage in this process and inform them… and I think the example of broad expertise and where the acquisitions people need to figure out, are we headed in the right direction, it is the right thing to do, because there is no better group of people then CoSCCC to provide that expertise and you may be getting that an email from one of us requesting that you guys assist in this process."*

8). Mentorship: Grooming Future Trauma Leaders: (Chet Kharod)- Taking the guesswork out of organizational excellence. Succession planning, a systematic and deliberate process. We identify clinical roles in our organization. We use energy to scout, recruit and having recruited to develop, the people we are choosing. There is a process called deliberate mentoring.

The Plan – RAST-D

Recruitment

Scouting the DCOT and other talent pools

- Who's getting it done?
    - On deployment?
    - In the field?
    - In residency?
    - In medical school rotations?

- **Inviting and fostering new members**

Assessment and Selection

- Test "recruits" on smaller projects
- Use subcommittee & committee work as "The Lab"
- Engage new leadership potential

Training and Development

- Deliberate mentoring
- Teaching with hands-on efforts and engagement
- "Mentoring is for the many, grooming is for the few"
    - DCOT members, Course and Fellowship Graduates
    - Trained and vetted
    - Cadre of leaders
    - Multidisciplinary network of combat casualty care

Dr. Kharod - *"It is the operation of the system. That does make people feel there is a burden to all of it."*

Dr. Holcomb – *"It is to partner clinical expertise. And system knowledge. I think to be leaders, you have to have clinical expertise. You have to have this first. Then you have to focus on understanding and working within the trauma system. And in between wars or a low casualty flow, you can take that and apply it into the military world."*

COL Gurney – *"One thing that I think we should do, I think we need to lead more. I always want to be active. I think if we are going to change the system, you know, we need to be the ones to step up and lead. The people who are leading have never been on the battlefield. And we have to change that. There is a lot of bureaucracy."*

Col Shackelford – *"To get the young people excited about leading. It is a conversation about the young people and how they can bring their enthusiasm to the table. We have to talk about medicine. If they are or are not in a conflict right now. We have to bring them on other missions. Whether it is a combat mission or global health."*

9). <u>Leadership Development Discussion</u>: (Dr**.** Mabry**) –** Dr. Mabry opened by posing a question to the group following Dr. Kharod's presentation:

> *"I will ask you the 1st question. A lot of folks on the phone have been working for 2 to 3 decades, sometimes their entire adult life, tremendous leaders in the field. What is the evidence that we felt to develop? Specifically failed to develop?"*

COL Gurney – "*Honestly Bob, until recently, I didn't see it at all. I didn't see the big community even existed until I had the opportunity with COL Kirby Gross, my mentor, and my opportunities with the JTS. You are right, in the core group of people we have in the DCOT, we have people that are like-minded , who have been fortunately mentored by people on the call. But we are the minority I think."*

Dr. Mabry – *"I used to think that was the case. Based on the last couple of jobs, I realized it's not the culture, its operations that strangles innovation."*

The answer to the question is how to we overcome the limitations of People, Time, Money etc.

Dr. Holcomb – *"I think it's a two-part answer. There is clinical expertise, and system knowledge. I think to really be leaders in combat casualty care, you have to have clinical expertise. 1st. But then you have to focus on understanding and working with, within trauma systems. And in between wars with low casualty flow in the civilian world. And take that and apply it into the military world."*

"When that happens, we lose knowledge expertise. Not only in the doctors and nurses, but also the line leadership. The line leaders, you and I worked with, who put medical 1st because they had been in combat and lost soldiers …those guys are getting out. We have a lot of line leaders now that go back to medical at the rear, they haven't lost guys. We are in and in between. We are losing the medical knowledge and capability. All trying really hard to preserve it. It's hard to do."

COL Gurney .. What do we do differently?

-Lead more
-Clinically active
-parallel Clinic track/leadership track
-engage young people/get excited about leading
-standardization will develop appreciation about field medicine

COL Becker - *"It is hard to mentor general/trauma surgeons on their military career when they are deploying too rapidly to be home enough to work on their career."*

Lt Col Hall- "*a lot of local command staff with no deployment experience. Hard to get into a position of leadership after 5 years of residency and deploying all the time. The current leaders are choosing the next leaders… Many are not surgeons."*

Subcommittee Breakout Sessions

1415-1600	Subcommittee Breakouts: **Operational Subcommittee**: Baker / Edson / Jenson Room Link: https://connect.apan.org/coscccoperationalsub/ Dial In: **Toll: 1-210-839-9575; Toll Free: 888-455-7125** **Pass Code: 2770510#** **Educate and Inform**: Kickoff with presentation by Remley/Monty Room Link: https://connect.apan.org/coscccedtrsub/ Dial In: **Toll: 1-210-839-9575; Toll Free: 888-455-7125** **Pass Code: 7215961#** **Research**: Schreiber /Martin Room Link: https://connect.apan.org/coscccresearchsubcommittee/ Dial In: **Toll: 1-210-839-9575; Toll Free: 888-455-7125** **Pass Code: 3518592#**

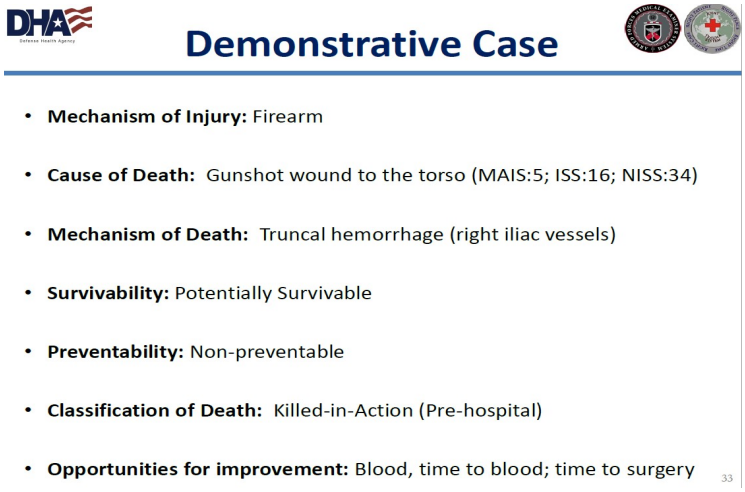
Day #2 CoSCCC April 7th, 2021

Day #2 Meeting of the Committee on Surgical Combat Casualty Care			
Time	**Presentation**	**Speaker**	**Topic and Intent**
0800	AFMES preventable deaths update: what's new in Preventable Death Analysis, what we have learned and where we are going?	Mazuchowski	Casualty Review
0900	MWD Update	LTC Cooper	Update on MWD CPG and K9 CCC LOE
0920	Perspectives from CoTCCC & CoERCCC on DCOT collaboration and vision for future	Cord Brendon Monty	Where should component committees be moving towards together and individual committee lines of effort
0950	**BREAK**		
All about that brain, 'Bout that brain, no treble: FOCUSED SESSION ON NEUROSURGERY			
1005	TBI Biomarker Update and Fielding of LATBI Biomarker Device / CPG Review	Ana Claire Meyer	Fielding of TBI Biomarker Device. Commentary by COL Chatila, CENTCOM
1025	Moderated discussion	Sonka / Chatila	Discuss PI process regarding this device CPG Discussion
1040	Every Role 3 Needs a Neurosurgeon vs. No Role 3 Needs a Neurosurgeon	Dirks 10 min JJ 10 minutes	Pro/Con Debate on need for a Neurosurgeon at a Role 3
1105	**Roundtable Discussion regarding NS capability in theater:** Questions submitted via web. Discussants: Dirks, Johannigman, Bell, Sonka, (AF NS TBD) Potential Deliverable (after CoSCCC vote) consensus statement/position paper about the role of the joint medical force of NS support in an AO: facts/assumptions; when/where; contingencies; risk		
1140	National Perspective: TBI Research & Care	Schreiber	NASEM work on TBI
1200	**BREAK**		
1230	**Special Lunch Session: This is How We Do It: Avi Benov (IDF) - CPG Compliance and the Hawthorne Effect**		

1). Administrative Remarks (CDR Jensen)**:** CDR Jensen, the Chair of the Committee on Surgical Combat Casualty Care (CoSCCC), convened the meeting with a brief review of the meeting's agenda for the day.

2). <u>Preventable Death Update</u> (Lt Col Mazuchowski)**:** Lt Col Mazuchowski highlighted survivability of injuries and preventability of death. He showed how the team defined the lexicon terms separating Manner of Death from Mechanism of Injury, Cause of Death and Mechanism of Death. This was previously not done, which now allows us to categorize type of death.

Ex.



"When we do these mortality reviews we know where the injuries are and the extent of those injuries so it is an idealized situation that will not be for any individual just looking at a patient on the ground."

Lt Col Mazuchowski then discussed the USSOCOM Mortality Review conducted on Battlefield injuries/fatalities from 2001-2018.

Mortality Review of US Special Operations Command
Battle-Injured Fatalities

Fatalities, 2001-2018 (N=369)	Cause of Death: All (n=369) 100%	Blast (n=166) 45.0%	GSW (n=147) 39.8%	Multiple/ Blunt Force (n=56) 15.2%
Mechanism of Death				
Catastrophic Tissue Destruction	73.7%	77.1%	60.5%	98.2%
Hemorrhage Only	7.6%	7.2%	10.9%	0.0%
Hemorrhage and Other mechanisms	15.5%	10.9%	25.9%	1.8%
Other Mechanisms	1.6%	1.8%	2.0%	0.0%
Complications	1.6%	3.0%	0.7%	0.0%
Potentially Survivable-Survivable	25.7%	21.7%	39.5%	1.8%
Potentially Preventable-Preventable	6.8%	6.6%	9.5%	0.0%

Mazuchowski EL, et al.
Journal of Trauma
May 2020

The Journal of Trauma and Acute Care Surgery

IS has been shown the biggest Opportunity for Improvement is in Damage Control Resuscitation, controlling massive hemorrhage with blood products as close to the point of injury as possible.

"Prehospital blood transfusion (89.5%; 85/95), time to prehospital blood transfusion (89.5%; 85/95), and time to surgery (93.7%; 89/95) were leading potential opportunities for improvement."

- Leading cause of death for all battle-injured fatalities was blast injuries, followed by gunshot wounds.
- Leading mechanism of death for all battle-injured fatalities is catastrophic tissue destruction.
- For potentially survivable injuries, hemorrhage is a significant mechanism of death component; however, most deaths are multifactorial.
- In cases where the mechanism of death has a component of hemorrhage, individual needs surgical intervention.

In Conclusion:

- Leading mechanism of death for all trauma fatalities is catastrophic tissue destruction.
- For potentially survivable injuries, hemorrhage is a significant mechanism of death component; however, most deaths are multifactorial.
- In cases where the mechanism of death has a component of hemorrhage, individual needs surgical intervention.
- Continue to focus on optimization of prehospital diagnostic and therapeutic capabilities.
- Develop innovative strategies that expeditiously link injured patients to advanced resuscitative and surgical capabilities.

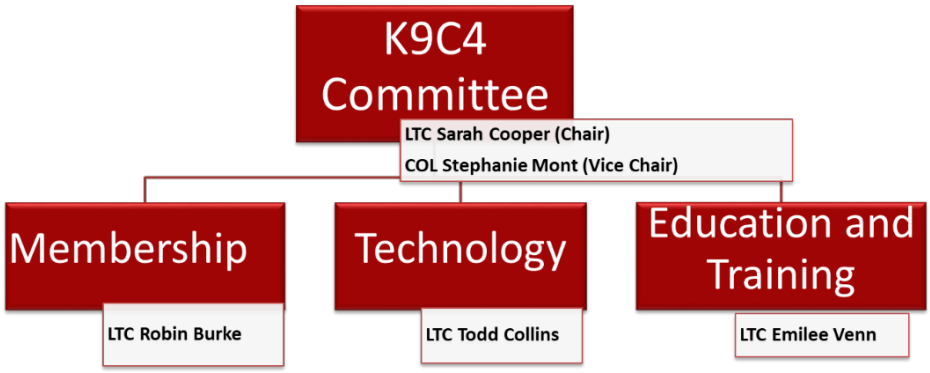
"One of the last things in conclusion, all trauma fatalities, the number one mechanism has been catastrophic tissue disruption. Hemorrhage is a significant mechanism. Most deaths are multifactorial where the mechanism has a component of hemorrhage and need surgical intervention. We need to continue to focus on optimization of prehospital diagnostics and therapeutic capabilities. Continue to teach principles as you saw in individuals that need tourniquets are getting tourniquets."

Dr. Keenan – *"We should also consider publishing what is working well, and double down on policy recommendations that influence and sustain the successes we see in the system."*

Dr. Holcomb – *"Future efforts of the JTS need to focus on moving these research efforts of studying potentially survivable injuries forward into the pre-hospital world. This is a controversial statement... I would remind the group 20 years ago tourniquets outside the OR was a controversial statement. Tourniquets in the ED caused people head to explode and certainly tourniquets in the hands of medics was stated publicly by many military surgeons and medics as malpractice 20 years ago. What we propose to date is a potentially controversial subject 10 or 15 years ago from now with research and data could be a standard of care."*

COL Gurney – *"Including the mortalities in the analysis, especially prehospital mortality is essential and something the civilian community hasn't quite gotten a handle on yet just because there is not a good way to capture the prehospital death."*

3). <u>Military Working Dog Update</u> (LTC Cooper)**:** LTC Cooper provided updates on the K9CCC committee Org structure, lines of effort and sub-committee deliverables.



Committee Updates and Accomplishments:

- Publications
  - DD Form 3073, K9 Tactical Combat Casualty Care (TCCC) card
  - DD Form 3074, K9 Treatment and Resuscitation Record
  - DHA-PIs completed staffing

LTC Cooper – *"We had some big wins this year as far as publications. We were able to get DD form 3073 and 3074 officially published. These are based on the human equivalent forms and one being the tactical canine casualty card and the 3074 is the treatment and resuscitation card. This is the first major step in ensuring we get usable and translatable data to feed to the military working dog trauma registry."*

- DoD MWD Trauma Registry
  - Registry Update
  - Resource support
- Veterinary Strategic Medical Asset Readiness Training (VetSMART)
  - MIL/CIV partnership
  - Military Training Agreement – signed
  - Pilot Program launching this summer

*Current projects tracking:

1. Syndaver - MEDCOE Animal Health Branch working on canine model with greater durability and lower maintenance/environmental requirements
2. Sonosim - potential for US training using virtual cases on laptop/tablet
3. Army STTC incorporating K9 heat stress scenario with behavioral ques into virtual training simulation (1st-person-shooter-style TCCC training game)
4. SBIR may be expanded for K9 on MEDIC platform - augmented reality (AR) avatar using multi-layered real-world registered projection to hand-held or HUD: skeleton, organs, muscles, nerves, vasculature, etc.
5. Pending Incorporation of K9 TCCC card into MEDHUB (Medical Hands-Free Unified Broadcast System) - human healthcare interface for Point of Injury (POI) EHR using existing tactical communications network.
6. Potential "seat" from Tech sub-committee on the JPC-1 Simulation Advisory Committee for

DHA's Medical Simulation and Information Systems RD&T portfolio

-K9TCCC training packages will have Tier 1-3 levels. Tier 1=CLS/Working Dog Handlers, Tier 2=first responders/Animal Care Specialists (Army MOS 68T), Tier 3=DVM/MD/Advanced Trauma Provider

Due Out: Goal is to get the draft content and packages to JTETD by June 2020 for review and feedback to format appropriately for Deployed Medicine release by end of FY20.
K9TCCC training products

Annual Meeting Proposed - 14-15 October 2020 (virtual)

- Case series highlighting
  - MWD Blood Transfusion CPGs
  - Human healthcare provider and veterinary provider team
  - AVS training of human healthcare providers
    - K9TCCC
    - MWD Clinical Practice Guidelines

4). <u>CoTCCC/CoERCCC Updates</u> (CAPT Drew/Monty-Cord/Tom)**:** The Chairs and Program Managers from the committees on EnRoute Combat Casualty Care and Tactical Combat Casualty Care gave brief updates on their current deliverables and how they support parallel lines of effort with the CoSCCC and within the DCoT as a whole.

<u>CoERCCC Update:</u>

The main three projects coming to completion

1. Multimodal Patient Movement.
   - Task 16 talks about establishing the common task for en route care providers.
   - Task 17 asks for the same common task to be established for the medical planners and medical regulators.

Our approach from a task 16 perspective is taking the commission on accreditation of medical transports. The international standardization and accreditation committee that looks at establishing levels of transport services. It defines five categories from advanced to critical care to specialty and beyond. We took that model and distilled that down to what we are focusing on. We move from a guidelines perspective and shared space as being carved off to the Enroute care committee, then looking at healthcare is documented.

2. TACEVAC Guidelines

Cord – *"In our working group, this is the emphasis, not on the critical care transport as much but as we look toward a large-scale combat environment where we will have some denial of the*

aerial movement…How we best prepare that patient were being received at the surgical role of care as well as damage control surgery in light of large-scale combat operations were the decision to evacuate might happen earlier than we would be comfortable with."

3. DA4700 OP5 to DD Form

CoTCCC Update:

CAPT Drew – *"As a Command Surgeon, my main committee focus is to try and always remember the circumstances under which care is rendered may be as important as the medicine and you will see this for those of you familiar with medicine and tactics matter because the goal is to save lives and sometimes unique tactics and sometimes you need good medicine."*

CAPT Drew – *"The TCCC curriculum needs to be implemented not interpreted. There is no Navy TCCC, Army TCCC…there is only TCCC; Everybody putting on a course is a remote medical director and they download directly from deployedmedicine.com and teach the course as is. I think after the course is taken or as a supplement to the course, the experts can add their medical director input and service and platform unique items but that is what you do afterwards."*

CAPT Drew reviewed some recently approved change proposals to the TCCC environment:

TXA administration guidelines

- Add TBI as an indication
- Change the dose to 2g
- Change administration from 10 min to 1 min
- Add IO as a route of administration
- Considered but did not adopt IM administration
- Eliminate prehospital redosing

Analgesia

- Triple Option Anesthesia
  - NSAID, APAP, OTFC, IV morphine, IM/IO/IV ketamine
- Working draft of analgesia update
  - Interventions by provider Tier
  - Emphasize avoidance of polypharmacy
  - Emphasize choice of agent appropriate for the situation
    - Patient participation in evacuation and care
    - Estimated time to complete movement and mode of transportation
  - Directly address incomplete dissociation versus emergence
  - Emphasize avoidance of empiric benzodiazepines
  - Addition of IV/IM fentanyl

Fluid Resuscitation

- Cold stored low titer O whole blood
- Pre-screened low titer O fresh whole blood

- Plasma, red blood cells (RBCs) and platelets in a 1:1:1 ratio
- Plasma and RBCs in a 1:1 ratio
- Plasma or RBCs alone

TBI

- Evaluation of 23.4% HTS in addition to 3%
- Expand and update interventions related to preventing secondary injury

Airway Management

- Emphasize procedures and technique
- De-emphasize specific devices

Col Shackelford – *"One of the lines of effort we are putting forward to identify what is most important at of our initiatives is the interoperability standards. It is important to note the individual services are really pushing back on this idea of interoperability or standardization. As we see things in the clinical environment or the technical or operation it is important to bring those things up and capture them. We can continue to show lack of interoperability that can impact along the continuum... we can use that as a forcing function for the services that pushback on this."*

5). TBI Biomarker Update (Ana-Claire Meyer)**:** Dr. Meyer recapped the LATBI capability which will provide an objective method to detect the presence and severity of traumatic brain injury (TBI) using a few drops of plasma. LATBI is a diagnostic test that detects two protein biomarkers of TBI in plasma with the hopes this will improve triage and treatment decisions and ultimately help better understand and characterize traumatic brain injury in our war fighters.

This is not a capability currently available in the civilian sector. For visibility this will be commercially available to the civilian sector sometime between July and September and for us we will get an initial batch of devices probably in the June time frame. That may be available for procurement within DoD in July.

LTC Lesperance - "*Dr. Meyer, what is the specificity of this test? Is the 42% number accurate?"*

CAPT Stockinger: The NPV is "approaching 100%" according to the CPG. That is the argument for use, because negative pts can avoid transfer with confidence. False positives will still end up with CT, but the number of negative patients being sent will be halved.

Lt Col Mazuchowski – *"Have any of the consultants, the pathology consultant and surgeon generals and others have buy-in or any comments on this?"*

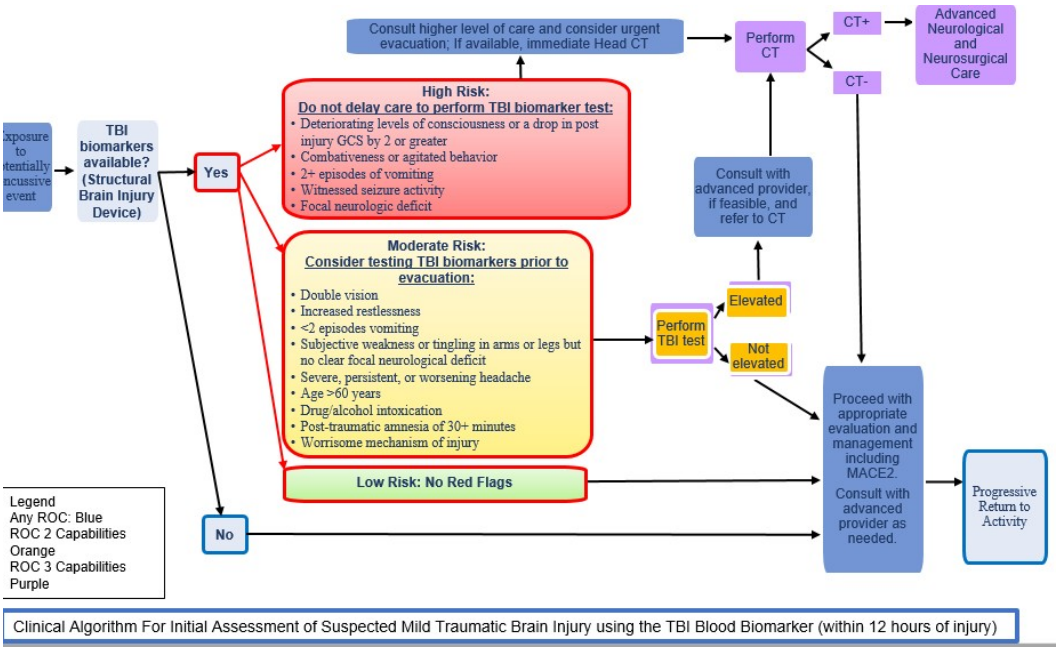
Dr. Meyer – *"It's difficult for us to engage those folks until we have an approved product, otherwise it's an investigational product"*

CDR Jensen - There were multiple calls and biomarkers, they did the research and found the product and develop the product and right as it was getting near fielding they engaged others across the spectrum and we want to roll this out right, we want to develop a guideline and a plan for how to dothis

in advance of sending it in so like I literally cannot say enough about what you have done for the process Annamarie and the correct way that this was fielded as a model for future capabilities.

6). <u>CPG/PI Process Discussion TBI (COL Sonka):</u>

DRAFT ALGORITHM



COL Sonka - What we did is worked with our neurosurgical colleagues and some of our narrow critical care for a to divide up the flags to the head CT into three groups that were high, medium and low risk and really only target the TBI test of people who are not at moderate risk and that is because of the low specificity. Our goal is to reduce the number of head CTs we are ordering and people that don't need it.

The CoSCCC Chat room had lively discussion centering around expeditionary funding sources, service-specific requirements and the primary barrier of inter-service substitutions.
Almost all were in agreement that the services need to agree and adopt ONE "Purple" mentality for Role2/3 and higher with documented standards pertaining to evacuation time to treatment

Proposed Due Out: capabilities document -- written as "purple" -- about how to tie capabilities to expectations and needs

7). <u>Need for Role 3 Neurosurgeon (Col Johannigman/LTC Dirks):</u> The two presented views about whether or not there should be a mandated requirement for neurosurgical capability at Role 3.

LTC Dirks-

- What can we expect from surgeons and general surgeons when it comes to neuro-trauma in situations where neurosurgeons are not available.
- Time to neurosurgical intervention makes a difference in outcomes

- Neurosurgery capability is not organic to field hospitals; neurosurgical capability comes as the head and neck augmentation team
- The basic allocation is one head neck team for 150 patients. We only have three and the Army, so not even one per field hospital.

Here are my reasons why you want to have a neurosurgeon at roll 3:

- Neurosurgeons are critical members of a comprehensive trauma team
- Neurosurgery is very challenging
    - Neurosurgeons are trained to perform complex neurotrauma cases (cranial and spine)
    - Neurosurgeons are trained to interpret imaging of the nervous system
    - Neurosurgeons know the indications for neurosurgical procedures
- I don't think every role 3 needs a neurosurgeon
    - If the Role 3 MTF is not expected to receive trauma patients
    - If the Role 3 MTF is in a host nation with adequate local neurosurgical capability

Recommendations

- Draft Joint manning document for neurosurgeons at Role 3
- Draft recommendations for when a Role 3 needs a neurosurgeon
- Draft recommendation for shortened tours for neurosurgeons when there is low or no volume of neurosurgery cases on a deployment
- Draft recommendation for considering expanding medical ROE to include host nation and civilian casualties as a means to maintain skills at low volume Role 3

8). <u>Neurosurgeon Round Table Discussion</u> <u>(Bell/Johannigman/Dirks/Sonka)</u>**<u>:</u>**

COL Johannigman-

"we cannot fight the battle based upon a theater that we've been in for over 18 years in a hospital that is been a roll 3 for 14 years now and assume this is always the way we are going to be in the future conflict."

-"There are innumerable places throughout the U.S. where neurosurgeons are not available even in our own home country and the ACS understands this and does not demand, actually neurosurgeons are only required to be present within 30 minutes for level 1."

CAPT Bell – "if the trauma volume is sufficient enough to require or to mandate at role 3, then probably a neurosurgeon needs to be at that role 3…and if it does not, then it's not a Role 3"

"When I was an author on that paper the emergency lifesaving neurosurgery procedures for non-neurosurgeon - a couple of general surgeons had presented some very poignant experiences and you could see the pain of having a patient there and just desperately wanting to help but not knowing what to do or not having the equipment to do it in no way to transport the patient out. These are compelling. That CPG was written specifically to provide guidance in that horrible circumstance and it does very specifically include forcing function requirements, none is switch that have been met yet."

Col Shackelford – *"I suggest we take this into our interoperability standard because that is what we set as a joint standard of care for trauma. I do think the consensus paper would support because I think everything we put forward as an interoperability standard should be supported by consensus as well as data to the extent that we have it so it is a solid bulletproof argument for when services pushback."*

Due Out:

-Draft recommendations for when a role 3 needs a neurosurgeon.
-Draft recommendation for shortened tours for neurosurgeons when there is low or no volume -
-Draft recommendation for considering expanding the medical rules of engagement to include host nation and civilian casualties.
That's not just for neurosurgeons but forever specialty. If this situation allows that we should always strive for that for everyone.

Col Shackelford - I wanted to make sure as we frame this we need to think of it as a worldwide standard.

- We need to think in terms of timely capability. I presume that capability would be acceptable in some AOR's and not in other AOR's. I think establishing timeline will be much better received by the services and give them the flexibility to do what they need to do.
- Also in terms of skill sustainment there was a capability-based assessment a couple years ago looking at skill sustainment during deployment and there were a litany of recommendations that came out of that.
- Look at the issue of skill sustainment during deployment and look back at that assessment that we were involved in as well as some of you and we looked at that issue in detail.
- Think of the broader issue of skill sustainment.

Dr. Holcomb – *"I think there is another comment on bullet four on that list, not only does it maintain skills but also exercises logistics systems which is important. If you are not doing cases your logistics and resupply system doesn't get exercised."*

9). <u>National Perspective-TBI Research</u> (COL Schreiber): COL Schreiber discussed Accelerating Progress in TBI Research & Care.

Impact of TBI

- Leading cause of death ages 1 –44
- 1.5 million cases in US annually
- 50,000 deaths, survivors disabled
- Estimated economic impact $60 billion
- US military 2000 –2011, 235,046 SMs suffered TBI
- Not much new lately

COL Shcreiber – ***"****If you look at the burden of disease versus the amount of funding that goes to this and this came from the first NASEM report… The absolute worst relative to the burden of disease, the worst funded disease of all is trauma. Of course that includes TBI."*

You would hope the Department of Defense would do a better job but actually it is fascinating despite the primary mission being that care of the injured war fighter, only about 20 percent of DoD research financing goes to trauma, and 80 percent goes to other causes.

The current TBI study being done within the network is boost 3 and this is a randomized trial in patients requiring ICP monitors. And ICP monitor in a brain oxygenation catheter, they are simultaneously placed in the patient is randomized whether it's utilized and if the patient is used, there is an algorithm at the brain tissue oxygen is low to raise that oxygen.

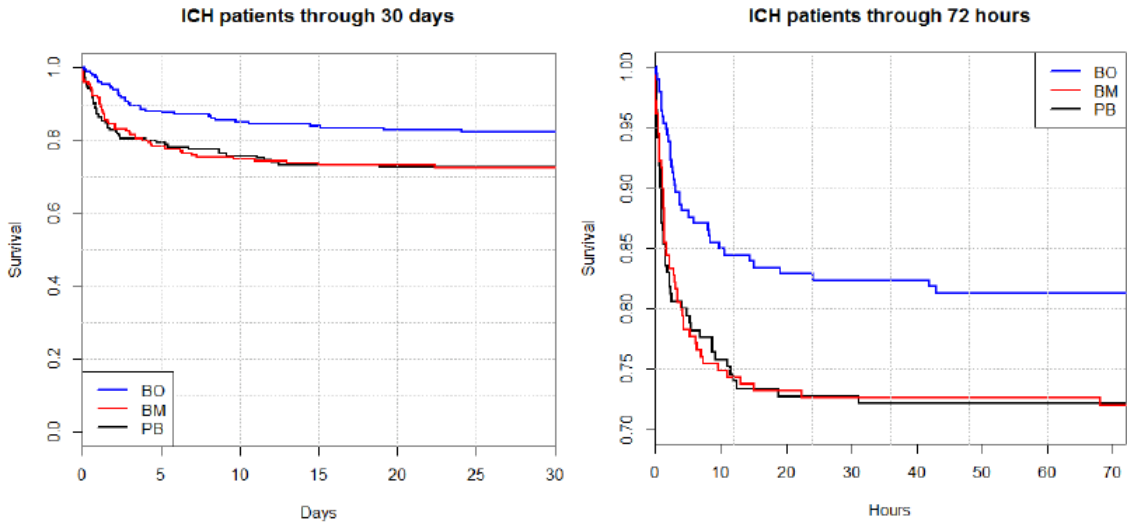
Additional studies mentioned by COL Schreiber:

-Bone Marrow Harvesting/Stem Cell

-Crash 3 style Third World Countries – GCS <12/IC Bleed -1G TXA

-TXA Trial - We looked at patients with a GCS from 3 to 12 and we found only 57 percent of the patient population that met the criteria only 57 percent actually had intracranial bleeding on their initial head CT. When we looked specifically at those patients you can see that survival was increased with a two gram bolus only dose given in the field. The one gram standard treatment actually did no better than placebo. The median time for delivery was 42 minutes after injury so the time of treatment is absolutely critical and I think the two gram dose is absolutely critical. I want to comment that it's not that easy to do this research and again only 57 percent had intracranial bleeds.

-12 Sites/20 Hospitals/DoD Funded



COL Schreiber – *"I think we have a critical mismatch of the burden of disease and funding allocations in TBI I think we should be excited and speaking loudly to our Congress, to our government, leaders, the Department of Defense and NIH."*

Col Shackelford – "*Commented on the transition to Genesis, how it will synchronize the medical records across the DoD and VA, providing better long-term outcome capability from the registry. It has to be mapped initially, then standard data points that are mapped, then if you want to add a data point later, or, you know, it is a lot easier to map, to the medical records."*

Question – *"As the data reported from multiple sources into the registry, how is it being validated? The industry literature, medical records often not frequently correct. There was a huge VA study, Medical records, average of seven records per patient, and where is that validation piece going to be in this new registry that is being built?"*

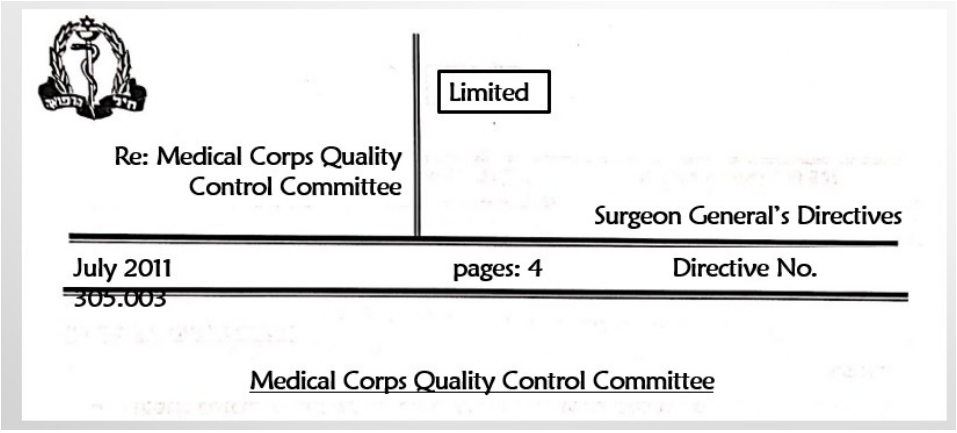
Col Shackelford – *"Basically the same as it is now, we have one level of data entry, and the second level of QA, that's not going to change. They will be 100% coded by the registrars, for the center. The automated data import, and hand coded data, and those levels of the QA's we have now. Hopefully it will apply to the same in the prehospital setting. Yes, currently any other handwritten cards will be fully manually abstracted, the capability of a digital collection source for pre hospital data, and they would be able to use it as an automated usage."*

10). <u>This is How We Do It- IDF and the Hawthorne Effect</u> (LTC Avi Benov)**:** LTC Benov provided a summary comparison between how the IDF and US Military forces parallel and oppose US functionality and execution.

LTC Benov – *"We are here to take care of those who are willing to die, every once in a while, this is a question, at least in our leadership we have to understand why, about funding, what is the purpose of the game? The game is not HIV, it is the next war, either your war are preparing for the next war, everything else doesn't count"*

"You never learn from it if you don't collect the data! We do it for each casualty. For each one of them we study, we do this in a joint system. I will show you in a second… They gather data of course anonymous, lesson learns, in the past six months, and the levels of care. Again anything you learn, the data is presented to the Surgeon General every six months."

Quality Control Order



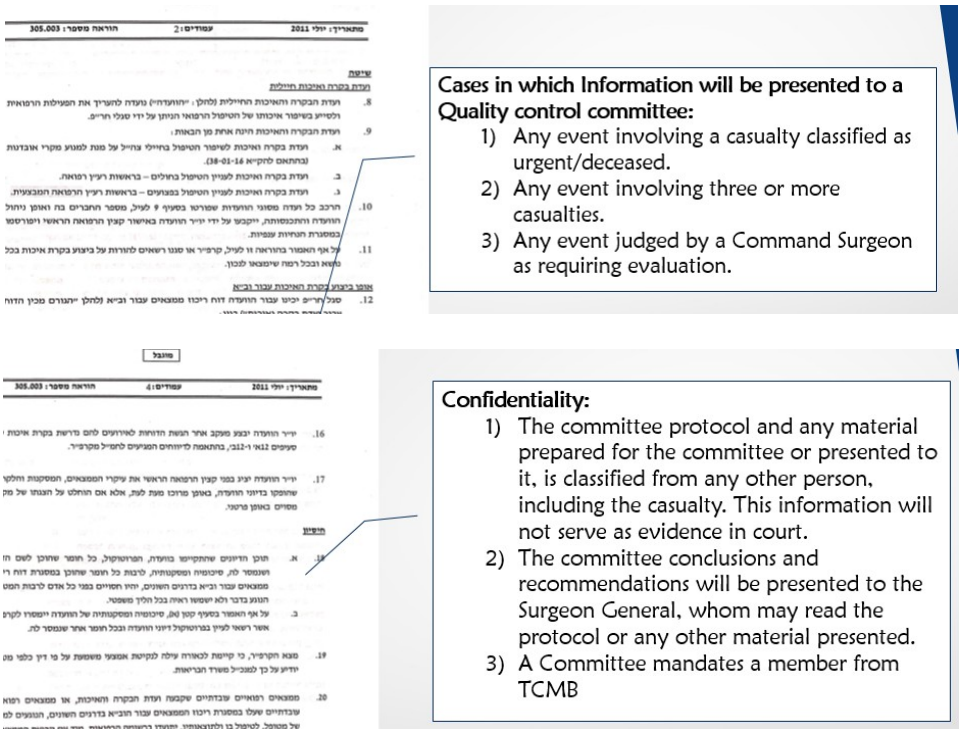
Limited

Re: Medical Corps Quality Control Committee

Surgeon General's Directives

July 2011 pages: 4 Directive No. 305.003

Medical Corps Quality Control Committee



Cases in which Information will be presented to a Quality control committee:

1) Any event involving a casualty classified as urgent/deceased.
2) Any event involving three or more casualties.
3) Any event judged by a Command Surgeon as requiring evaluation.

Confidentiality:

1) The committee protocol and any material prepared for the committee or presented to it, is classified from any other person, including the casualty. This information will not serve as evidence in court.
2) The committee conclusions and recommendations will be presented to the Surgeon General, whom may read the protocol or any other material presented.
3) A Committee mandates a member from TCMB

LTC Benov – *"The most important part, when I'm talking about compliance, is actually trust. Everything is open access. If the trial surgeon, wants to know in Israel, how many casualties happen in the five years I arrived before in the area, what happened to them? What kind of injuries? What kind of mistakes to the surgeon before me do you, you wouldn't know who did the mistakes, or who it happened to, but it is open access data, this is the way to build trust, if you want people to be faithful about what happens to them, or to fulfill their practice guideline, then you need to make it open."*

"IDF is not kind if you fail to do your obligation you will be sanctioned, let's say you didn't do your procedure card… you did not follow the registry… we shun you from the system, if you are a physician you will not be able to do anything, not treat anyone in your area...you will not get paid, no one will pay you."

LTC Benov - The IDF does not permit special equipment. "What's good for one is good for all." From the medic all the way through the Role 2, if it's not approved, you can't buy it…even Special Ops.

<u>IDF Top 5</u>

- Be relevant
- Open data to all
- People behave the way we expect them to behave (high standards)
- From POI through all levels of care and rehabilitation
- Frustration is not a work plan

CAPT Stockinger – *"Technically (according to NDAA), his SG and our 3 service SGs all have the same job -- readiness to go to war. Beneficiary care is no longer the responsibility of the service SGs. So when will things change?"*

COL Gurney – *"Avi, it's obvious the take away message is accountability, but how and who do you hold accountable for training?"*

LTC Benov – *"So there are some obvious questions, 90%, -- KSA is readiness, then -- Again I think everything ends up in leadership. And it has to be high leadership. It could be a brigade, and to decide that anybody in the command are in track, and being able to do. We just hold the commanders on the soldier themselves, responsible to that, the commander for the surgeon, for all the physicians and medics in his unit, and then in his unit, they are making sure they are on track, the second they are not, then we have alternative routes."*

"IDF doesn't have non-medical leadership… You have to be the best brigade surgeon. The best battalion surgeon to be the brigade surgeon and the best brigade surgeon come to be division surgeons."

COL Gurney – *"recognizing, that you guys have laser focus on casualty care, that is something that even though we do separate those things, if you follow the money, our money is and beneficiary care. It's hard for MTF, to do this care, these are the challenges, which we continuously try to address."*

Col Shackelford – *"We are working to make the data, this available on the dashboard, and we have severely delayed now because of COVID, as the registry is rebuilt within the year, there will be a capability to view and search data within the registry, and also a detailed AAR database with the standardized AAR process, hopefully when our IDF liaison gets over here, he can help us work on that."*

Subcommittee Break out Session/ Brief Backs:

Operational and Austere Subcommittee

-(CDR Jensen/CAPT Edson/COL Baker)
- consolidated into one subcommittee
- -COL Baker/CAPT Edson will Co-Chair with CDR Jensen/COL Gurney Assist
- -FART Data Analysis
  - -Single Surgeon Statement
- -Standardized Austere/Revie Raw PI Data (Readiness Assessment)
  - -TMD's (specific raw data)
    - -Training Interoperability
- -Assessment Piece initiation (standardization roll out)

LTC Lesperance Opened with a recap of the Role 2 Readiness Report efforts. *"a spectacular tool that helped me drill down on a lot of details about the different teams. Strengths and weaknesses."*

As an example, pre-deployment training. The majority of the role 2 teams in my theater had limited or no pre-deployment training. Because of COVID-19, at we saw that you could do pre-deployment training and be safe in the COVID-19 era.

COL Gross – *"was a quarterly joint trauma system report regarding clinical activity for OIR. Did it exist downrange?"*

LTC Lesperance – *"It did not. Trauma volume is very low, we only had two cases and both came from the same incident, but no Kirby, it did not."*

CDR Jensen – We need to look into this, this should come from JTS to COCOM Surgeon, not directly from JTS.

Dr. Keenan reiterated the process the information should flow "the JTS works for the TMD. The information should flow from JTS to TMD, who in turn should have direct lines to the COCOM Surgeon. *"Remember, JTS, by federal law as the reference body for trauma care. Backing up TMD with the weight of moral authority of JTS, the JTS is enabling the inside person to make the right calls and right decisions."*

CAPT Edson briefed on how the Marine Expeditionary Forces are implementing the Role 2 Readiness process to hold FRSS and STP accountable and ensure they are coming in ready to stand up QRF (quick reaction forces) to support.

CPT Merkle briefed on his proposal for an Order Set – *"tasked by our split role commander to help them come up with austere postop order set.. The reason for this is to move into low intensity conflict impairments, which I think will be the dominant business for the next couple of decades we may hold onto patients for longer."*

The intent was to try to capture as much useful data that could be used as a medical record. Also a running real-time flowsheet as a task that should be accomplished over a 12 or 24 hour period.

Due Out- Circulate for feedback from the group over the next 2-3 weeks.

LTC Sams – *"I think we should look more at putting it towards looking at the disbursed environment and looking at how we will increase capability and those contested areas and what does that look like? Does that mean more regulated healthcare? Does that mean more small disbursed surgical teams that can be moved around more easily? What does that mean in the environment of the future?"*

LTC Lesperance – *"If I could change one thing I would say having the JTS offer more of a nuts and bolts like this is how you do PI. And this is how you interact with your task force commander... may be to do active outreach to the incoming TMD to help mentor them through their job as opposed to just discovering on the ground what their job is."*

LTC Sams – *"I think the first thing is better defining the role, where they sit and what the roles and responsibilities are to whatever theater they are assigned to. That should be clear and then that education does they need to be aware that that is what is expected of them and they could be oriented and trained to that."*

Due Out - a statement from the operational subcommittee, saying this is what we think a role 3 should look like.

COL Gross - *"my quick review of the readiness assessment that was provided, I think one thing to consider reporting back to committee this afternoon is that only about half of the surgeons have a surgery course. I think as we pass that along to the committee, as we get back*

together, it will energize them to make sure that we are getting some information back on this. And also, it will tell us exactly that we do training and education, it is a huge shortfall."

Education Subcommittee

(Needs New Chair Needs to be Identified)

–COL Gurney/Lt Col Hall filling in while LTC Graybill is deployed

-Renamed to Educate and Inform/ "Strategic Communication Committee"

- Targeted education centering on interoperability

-Communicate with COCOM/SG on Critical Issues

-No longer recapping JTET functions/Lines of Effort

-Mentorship Program within CoSCCC (Dr. Kharod)

New Business:

1. Casualty Response System of the Future…the Future is NOW (Remley/Monty) –
   - RR success was CDRs ownership of casualty management
   - Post-Somalia impact to mission success having taken tactical casualties
   - Right leaders in place to implement changes
   - Goal is to replicate RR experience to future events
   - Building relationships with line/tactical leaders
   - Sync planning execution of individual/collective tasks to improve CCC
   - Casualty Response + Ready Med Force + Interop Standards (IS)
   - How do we step back from inventing new courses, but rather identify existing courses/content that achieves IS?
   - JTS/PI/JTET/CTS should be in all the non-medical courses (Gurney)
   - Need to exercise the trauma system (Shackelford); CTS TTX with SG first step
   - Seery: Leadership philosophy drives effectiveness; choice between clinical and leadership role is significant barrier, no defined career path
   - Stockinger: SC aims need to be very clear; appropriate Med TF CDR selection key to communication with line CDRs, now disincentive for the right provider to take that position; clinicians do not want the leadership positions; surgeons not able to speak the line language, lack operational understanding; effecting system change is difficult at the local level; poor medical planning/support staff; line needs to demand we fix the system.
   - CTS: Focus should be on system specific criteria for deployed med operations and encourage clinicians to take on the roles/responsibilities
   - Benov, Israeli experience: Completely different systems; medical CDRs will have to treat less patients so you can ensure treatment of all are improved; still must decide career track clinical vs leadership;
   - Remick: Lack of GO level support is a shortcoming; MTF command probably not helpful for operational medicine; needs path post-GME through Trauma System leadership, formal program could align with mentorship program; JTS developing leverage and influence in DHA; trauma systems focus perhaps for this SC
   - Kotwal: Is this SC needed at the strategic level? Individ/teams level – clinical leadership; higher level of transformational factors provide mission strategy and org structure; in the

middle – translational level – system for encapsulating trauma within DoD; Challenge, various organizations need to collaborate, influence multiple domains/organizations;

- Sampson: strategic communication important; SC could develop newsletter, materials to inform audience;
- Hall: How would SC actually affect change? SC as a "brain trust" for the CCMD SGs (will be part of CTS); offer the SCs "services"
- Proposed names: Strategic Outreach, Engagement, and Development; Strategic Engagement SC;
- Buzzelli: SOUTHCOM TMD/ATTD perspective; rank/seniority an issue to really influence at strategic level
- SAS: Must keep CCMD SG and staff close in the loop of communication; JTS needs to provide direct support to the SGs; good progress in SOUTHCOM
- Tadlock: TMD training should be a requirement to understand the system; like Strategic communications approach; CCMD SG should have required trauma system training, many do not have trauma knowledge, although some do; Navy doing Operational Medical Track, required for all clinicians;
- Remley: 3 levels of leadership applicable for officers and enlisted; is this unique to CoSCCC, should this SC be a DCoT group?
- Gurney: Start as a CoSCCC SC, refine deliverables then consider expanding to other component committees; ERC and TCCC ahead of SCCC
- Becker: I think the keys are awareness and acceptance. For effective change and improvements to take place it needs to start with awareness. But then you have to have acceptance of recommendations made by SMEs. I get frustrated when I make recommendations (senior Army medical leaders) as a SME that don't get listened to. Why am I in a role as a SME then?
- Becker: need STRATCOM with training, will help consultants;
- Gurney: COVID has opened aperture to medical issues

2. <u>Due Outs/ Request for Info</u>:

1. Standardize training within DoD under the JTS auspice to set Trauma Standards
    - Funding for ASSET+ and COTS+ courses in place
    - Modules for Head and Neck Training, Critical Care for non-intensive
    - Will contact Chung/Pamplin re Critical Care for intensivist
    - Quick access training on ECMO/CRRT
    - Develop Joint minimum standards
    - Requests to set up working group to support these educational requirements development
    - TCCC course for MDs, RNs and advanced practice providers
2. Orchestrate Mil-Civ partnerships

Research Subcommittee

- (COL Schreiber/Matt Martin)

Break out room initiated introductions and a synopsis by COL Schreiber for his vision on where the subcommittee needs to focus efforts to enhance the JTS/DCoT.

C**DR Polk** briefed on the LITES Clinical Trial Network to rapidly answer questions related primarily to resuscitation or other questions that we have.

We have projects going on related to cold storage platelets. Blood storage is the most recent one. We are looking at the overall trauma burden within the United States and [Indiscernible]. We have a prehospital airway study. There is a study related to prehospital with FDA. We believe that this will be their first. Once it starts, we believe this is going to be the first study for team intervention. That is going to be a huge success. That will open up the door for future study.

Dr. Martin recapped the Top 10 Research Priorities Methodology.

Dr. Knudson – *"This paper, this work is really generating topic areas. The next step is to translate that into a specific project. We could do that."*

Dr. Knudson/Dr. Martin proposed looking into funding a Junior Military Research Grant to promote Research for Young Military Investigators. Dr. Knudson will gather details on current existing programs and brief the group on how we could move forward.

Due Outs

-Conduct Top 10 Survey every 5 years (3 years in from initial so time to plan for next survey)

-Make formal recommendations to CCRP Top Research priorities from CoSCCC/DCoT

-Updates every 6 months/CoSCCC "Hot Topics" Presentation

-Review of the anatomic injuries and the preventable injury categories

-Prioritized current "Hot Topics" presented

-AFMES Follow up (Research?)

-Call with Marty, Matt, Caryn, CoSCCC Leadership 4/29

1.TXA/Hemorrhagic Shock
2. Factor Concentrates/PCC/Pre-hospital
3. Vasopressin –pre-hospital/DCR
4. TBI Biomarkers
5. Training/skill capacity (reality simulation)
6. Calcium Supplementation (no current standard)
7. NARA/Intracranial bleed

COL Schreiber - *We recommend that a letter be written to their director of CCCRP to the commander from the JTS every six months.*

- In general I think we need to have consistency between the T triple C guidelines and the CPG's

COL Gurney – "*I think as far as vasopressin goes again we don't recommend it be a firm expectation that vasopressin be given. What we are saying is that it should be an option a consideration."*

Committee Due Outs:

1. Monthly Subcommittee Updates (Dial-in)
2. Follow up on Feedback Survey (Resend??)
3. Consensus Statement "Single Surgeon"
   - -Gavitt
   - -Seery
   - -Tadlock
4. TCCC Joint Training Module SCCC -> JTET -> (Platform for Role 2)
   - -Indiv Training
   - -Iterative
   - -Joint/Standardized/Austere Training?
5. List of IPT's from Berst/Bennett
   - -Ex. LATBI
6. Mentorship Program
   - -Scheduled to discuss during DCoT Call 4/28
7. AFMES Follow up (Research?'s)
   - -Call with Marty, Matt, Caryn, CoSCCC Leadership 4/29
8. MWD – PI Canine Casualty (CCCC Thurs 4/30)
   - -Follow up Registry Implementation (Assistance?)
9. CPG Crosswalk (Monty/Sonka)
   - -DCoT Strategy/Assistance?
10. Neurosurgeon Summary Slide/Vision Statement
    - -Dirks/Bell/Berg
    - -Call scheduled for 11:00 4/28 (Chatila/Sonka/CoSCCC Leadership)
11. Operational Order Set (Merkle)
    - -2-3 Weeks (Touch Base with PI)
    - -Austere Team Data Analysis/FART Team

Closing Comments (CDR Jensen/COL Gurney/Mr. Sestito):
-Meeting Proposal to be in-person Sept/Oct Dates TBD

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

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

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 Edward Mazuchowski (AFMES)
Cord Cunningham (ERCCC Chair)
CAPT Brendon Drew (CoTCCC Chair)
Harold Montgomery (TCCC)
Mr. Dominick Sestito (SCCC)
Mr. Tom Rich (ERCCC)
Dr. Russ Kotwal (Spec Projects)
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)
Dr. Sean Keenan (PFC)
Linda Martinez (PI)
Larry Crozier (PI)
Danielle Davis (CoTCCC Admin)
Dr. Chet Kharod (Spec Projects)
Lisa McFarlan (PI)
Art Cruz (JTET)
Katherine Robbel (PI)
Dr. Dan (Trey) Mosely (Spec Projects)
Kenneth Leffler (PI)
Kimberly Smith (PI Lead)
Teresa (Teri) Duquette-Frame (PI)

CoSCCC Attendance

Alex Merkle
Amal Chatila
Amanda Staudt
Andrew Hall
Anne Rizzo
Anne Ritter
Ana-Claire Meyer
Ari Doucette
Billy Ward
Bob Mabry
Brian Eastridge
Brian Gavitt
Brian Smedick
Cedric Bermudez
C.J. Berg
Christopher Mahoney
Chris VanFosson
D Marc Northern
Daniel Cox
David Hardin
DJ
Donald Hamilton
Donald Marion
Eveline Yao
Gina Tai See
Jack Mather
Jake Anderson
Jamie Fitch
Jason Bingham
Jason Corley
Jason Seery
Jay Johannigman
Jay Sampson
Jennifer Trevino
Jeremy Cannon
Joe Kotora
John Chovanes
John Maddox
Jon Fruendt
Joseph Dannenbaum
Joseph Penick
Kathleen Berst
Kirby Gross
Kyle Remick
LCDR Jonathan Hamrick
Leslie Wood
Linda Benavides
Luke Hofmann
Malena Rone
Margaret Morgan
Mark Buzzelli

Mark Reynolds
Martin Schreiber
Matt D'Angelo
Matt Eckert
Matthew Clark
Matthew Hackett
Matthew Martin
Matt Tadlock
Matthew Young
Michael Dirks
MSgt Marita Rose C. Hyder
Nicholas Namias
Nicholas Tsantinis
Patrick Osborn
Paul Loos
Paul White
Peggy Knudson
Peter Learn
Randy Bell
Regan Lyon
Remealle How
Rich Lesperance
Richard Betzold
Sandra Wanek
Sarah Cooper
Satterly
Scott Armen
Shawn Nessen
Skerrett
Theodore D Edson
Therese West
Thomas Brockmann
Tim Curlett
Tim Plackett
Travis Polk
Tyler Bennett
Tyler Scarborough
Tyson Becker
Valerie Sams
Virginia Blackman
Zsolt Stockinger