LIGHT
FAST
MOBILE
...not just about cell phones
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Disclosures

- No financial disclosures
- Opinions herein are mine and do not represent those of SOST, the AFSOC, or the DOD
Overview

• The New Military Medical Team
• Flexibility in Austere Medicine
• Blood Product Challenges
• Get Comfortable Being Uncomfortable
The New Military Med Team
The New Military Medical Team

• UW has changed the battlefield

• Ground Force Commander’s Goal: Risk mitigation for fighters
  • Close the ”Golden Hour Gap”

• Far Forward/Outside Wire
  • Move with FLOT
  • Move if in contact
  • Provide same, if not better care

• Strategic Asset vs Support Asset
SOST Black Team’s Summary Numbers

• Deployment length: 120d
• Total Patients: 1011
  • Battle Injury - 761 (75.2%)
  • Non-Battle Injury – 122 (12.1%)
  • Disease – 127 (12.6%)
  • Pediatric – 140 (13.8%)
• Trauma Patients seen: 866
  • 87% penetrating
  • 98% trauma survivability
• Damage control resuscitations: 234
• Damage control surgeries: 212
  • Pediatric: 28
• Regional anesthesia blocks: 142
• REBOAs: 8
Flexibility in Austere Medicine
Flexibility in Austere Medicine

• Must remain LIGHT, FAST, MOBILE!
• Limitations
  • Diagnostic Capability
  • Monitored holding capability
  • Supply Chain
  • Electricity/Power
  • Blood products (and blood storage)
Far Forward Medical Decision Making

- Limited Diagnostics
  - V-Scan dual probe ultrasound
  - Doppler probe
  - Glucometer
- Can’t “watch and wait”
- Decisions based off:
  - What you see/what you get
  - Transport Time
  - Receiving Facility’s Capability
Improvised Shunts

- Blast RLE Large soft tissue defect
- Proximal femur fracture
- Long segment SFA injury
  - Blunt/thrombosed CFA
- IV tubing
- Pelvis to femur ex-fix
Traction Splint

• 50 fractures requiring traction
  • Only 4 splints
• Improvise!
  • ‘Kicker’ triwall cardboard
  • Kerlix/ACE
No Luxuries...for you or the patient

- Electricity/Power
  - Generator-Based
  - Heating Elements Minimized
    - No Bovie/Cauderization
  - ”Balancing” Circuits
  - Limited Equipment
  - Correct/Enough Fuel
  - Maintenance

- No Running Water
- No OR Suction
- No OR Irrigation
- No Wi-Fi
Blood Considerations
Blood Products

• Total products used: 1370
• **Whole blood** transfused: 786
• Emergent walking blood drives: 53
  • Collected +460U blood
• Massive transfusions: 25
• Most Products Transfused in one Patient: 42
• Blood transfusion reactions: 2
Blood Product Challenge

• CPG recommendations
• Limitations of forward facilities
• Logistics supply timeline
  • Whole Blood Supply Limited
  • Length of Transport/Viability of Blood
• Light/Fast/Mobile vs Storage Capability
  • Large Enough → More supplies/power
  • Mobile → Less Blood
Blood: The Way Forward

• Low-titer O whole blood
• Liquid plasma
• FDP
• Cold stored platelets
• POC titer testing
• POC infectious disease testing
Comfortable being
Uncomfortable
Ultimate Team Player

- Know each other’s roles
- Feel comfortable stepping in
- Trust your team!
- Suggested skills to obtain:
  - IV placement (LARGE)
  - Mixing Medications
  - Vent settings
  - Priming tubing
  - Instrument Names
  - Regional Anesthesia
Ultimate Team Player

• Don’t forget the non-medicine stuff!
  • Power Expert
  • Carpentry/Engineering
  • Vehicle Maintenance
  • Security mindset
  • Convoy ops
  • Integration with ground forces
  • Resupply network
  • And on....and on....and on....
Patient demographics

- 82% penetrating trauma
- 20% blunt trauma
- 33% civilian
- 14% pediatric
- 1.1% major burns (>20% TBSA)
- 3 military working dog evaluations
Total Surgical Cases

- 109 laparotomies
- 26 thoracotomies
- 27 vascular shunts
- 7 neck cases
- 28 pediatric cases
- 63 amputations
- 13 ex-fixes
- 22 urologic cases
- 8 REBOAs
Notable Cases
Cardiac Injury

- 10F GSW L chest to R abdomen
- Hemopneumo on L
- + FAST
- R Diaphragm injury
- + pericardial window
Cardiac Injury

- Blast wounds
- Eviscerated
- Bilateral traumatic BKA – TQs placed
- + E-FAST L chest
- Large volume out of L chest tube
- L Thoracotomy

- Ex-lap, gastrorrhaphy, bilat BKA
- 22u WB, no coagulopathy noted
Carotid Injury

• Civilian Male GSW L neck w expanding hematoma
• Injury to proximal internal carotid
• External to internal transposition
• Closed over drain
Facial and Ocular Injuries

• 29 open globes
• 28 corneal abrasions
• 6 corneal ulcers
• 1 lateral canthotomy

• Airway/Bleeding control
  • 1 cric
Conclusion
The Way Forward – for DOD Medicine

• Light, Fast, Mobile
  • Bringing Same Medicine, Less Stuff, Less People
• Damage control mindset
• Austere mindset
  • No Luxuries
  • No Subspecialties
  • No ”Extra Hands”
• Blood Trouble-shooting
• Step Out of Comfort Zone
Questions?