Committee on Surgical Combat Casualty Care Position

Statement on Single-Surgeon Teams

This position paper addresses the risks associated with the evolving use of single-surgeon teams in the deployed environment.

- A single-surgeon team (SST) is a surgical team that consists of one qualified general surgeon.
- A qualified general surgeon is one with current and relevant trauma experience.
- There has been no standardization of this capability among the Services.
- Employment of an SST may carry more risk than fully understood.

Background

Hemorrhage is the most common mechanism of death resulting from potentially survivable battlefield injuries. Minimizing the time to hemorrhage control has driven the requirement for rapid access to surgical care on the battlefield. Over the last 10 years the size of the surgical teams providing resuscitative care and damage control surgery has decreased; smaller, more mobile teams are being deployed closer to the tactical environment where forces are actively engaged in combat activities. The demand for progressively smaller SSTs were not driven by evolutions in surgical practice, or improved survival rates, but rather out of a necessity to meet operational demands which exceed the available supply of surgeons.

Data exist that demonstrate a survival benefit associated with traditional multi-surgeon Role 2 surgical teams, but only limited outcome data exist for SSTs. Neither the training nor the composition of SSTs are standardized, and the smaller size of SSTs (4–8 personnel) limits capability and capacity more than traditional Role 2 surgical teams. While an optimal surgical team size has not been established, logic dictates a reduction in team size will cause a progressive degradation in capability and capacity. SSTs are typically tasked to provide Austere Resuscitative Surgical Care (ARSC) at the request of operational commanders who deem standard Role 2 capability and footprint would not be justified by the operational contingencies or surgeon availability. ARSC is defined as "advanced medical capability delivered by small teams with limited resources, often beyond traditional timelines of care, and bridges gaps in roles of care in order to enable forward military operations and mitigate risk to the force."

The Committee on Surgical Combat Casualty Care (CoSCCC), part of the Defense Committee on Trauma (DCoT), recognizes the need for a subject matter expert position statement to list the risks and benefits of SSTs compared to traditional Role 2 surgical teams.

Facts and Principles

1. Surgical care provided by multisurgeon teams paired with robust blood supply saves lives on the battlefield.
2. Surgical teams are a limited resource. They are most effective in saving critically injured casualties when positioned to receive them as soon as possible after injury.
3. Tactical Combat Casualty Care (TCCC), damage control resuscitation, damage control surgery, and perioperative critical care are necessary on the battlefield to save lives.
4. Single-surgeon management of severely injured trauma patients is not standard practice at major trauma centers in the United States.
5. SSTs are neither manned nor equipped to manage more than one severely injured casualty, nor do SSTs have the capacity to hold patients. Task saturation risks can degrade overall capability.
6. Despite the wide deployment of SSTs, training, staffing, and equipment are not standardized, leading to limited interchangeability and interoper ability in a joint environment.
7. SSTs may mitigate risk imposed by time and distance between point of injury and traditional multi-surgeon teams. SSTs are most likely to mitigate this risk when properly trained, equipped with blood transfusion capability, and supported by medical evacuation assets to transport casualties rapidly to higher roles of care with expeditious resupply of the SST.
8. The decision on whether or not to perform damage control surgery in austere conditions with limited resources requires significant experience in managing complex trauma patients.

Recommendations

Given the likely continued operational requirement for small mobile surgical teams, the CoSCCC, DCoT, and JTS endorse the following:

1. SSTs should not be used as a mitigation strategy in high-risk operational contingencies when a standard Role 2 team could be placed in the same area of operations.
2. Mobile SSTs located close to point of injury can provide rapid surgical re sponse for a small number of casualties with minor-to-moderate injuries.
3. An SST, when compared to an equidistant multisurgeon team, will be less likely to save a critically injured casualty.
4. SST capability and capacity are very limited and lack redundancy in team capability compared to larger surgical teams; this impacts anesthesia, transfusion, critical care, and the ability for sustained clinical operations. It is unlikely that an SST can successfully manage more than one critical surgical patient at a time.
5. Casualties with complex injuries that SSTs are positioned to manage – i.e., intrathoracic or intra-abdominal hemorrhage – are less likely to be saved by an SST than a doctrinally-resourced Role 2 team.
6. The use of SSTs must take into account the system of care which supports the risks these teams are deployed to mitigate. For example, casualties who are rescued by an SST

require rapid casualty evacuation and the SST requires prompt resupply in order to maintain surgical capability.
7. In large-scale ground or maritime combat operations, SSTs are most vulnerable to cognitive overload and task saturation because of their small size and lack of redundancy. SSTs are not a stand-alone solution and will be insufficient to manage large casualty volumes, especially if surgical resources become more dispersed.

The CoSCCC, DCoT, and JTS recommend:

1. Operational planning should assume SSTs do not have holding capacity.
2. SSTs should have early evacuation and rapid resupply capabilities.
3. SSTs should be trained and equipped to provide warm whole blood-based resuscitation for its clinical and logistical benefits.
4. SST training and equipment should be standardized across the Services to facilitate interoperability.
5. SSTs should require cross-discipline training for skill redundancy in essential functions.
6. In order to maximize survivability, SST members must actively participate in team-based clinical exercises and combat casualty relevant clinical skill sustainment. Just-in-time clinical experiences in trauma care are not adequate to ensure clinical readiness.
7. SST members should be required to attend appropriate team-based tactical training. Just-in-time pre-deployment training is inadequate for safe team functioning in a tactical environment.
8. Ad hoc SST creation in theater or just prior to deployment should not occur due to the increased risk to mission, risk to force, and risk to SST members on the team.

References

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CoSCCC VOTING MEMBERS AND POSITION STATEMENT CONTRIBUTORS

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CoSCCC Chair: *CDR Shane Jensen*

COL Jennifer Gurney
CDR Shane Jensen
Lt Col Brian Gavitt
CAPT Matthew Tadlock
CAPT Ted Edson
COL Matthew Eckert
COL (Ret) John Holcomb
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JTS Senior Enlisted Advisor: *MSG Michael Remley*

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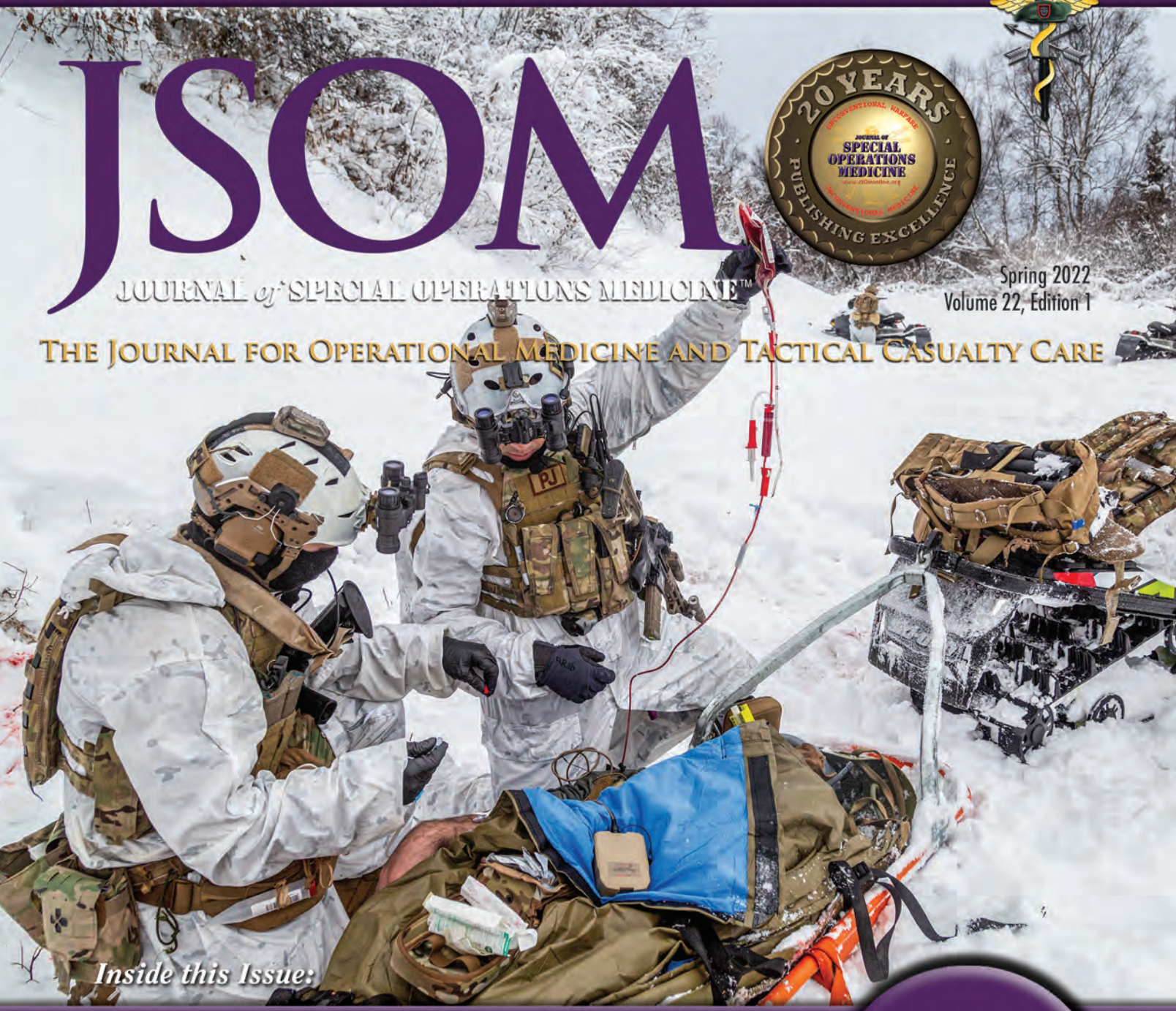

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- Prolonged Casualty Care Guidelines
- Stopping Midazolam Coadministration With Ketamine
- IO and IV Access Using Night Vision Goggle Focusing Adaptors
- Expeditionary Mechanical Ventilation/Extracorporeal Life Support During Ground Transport
- Knives and Multitools for Cadaveric Limb Amputation
- Efficacy of Vancomycin Powder on the Battlefield
- Alternative Equipment for Austere Fasciotomy in the Field
- Minnie Ties for Maxillomandibular Fixation
- Prioritization of Humanitarian Efforts
- Military Working Dogs in CENTCOM
- IN BRIEF: Circuit Connection for Emergency Percutaneous Transtracheal Ventilation
- CASE REPORTS: Pulseless Arrest Postintubation in Hemorrhaged Warfighter
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