

# 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 amongst the Services.
- ◆ Employment of SST may carry more risk than fully understood.



## BACKGROUND

Hemorrhage is the most common cause for death amongst 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. This mitigates risk by decreasing time to care, but the trade off is less capability compared to larger surgical teams. This demand for progressively smaller SSTs was 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 compared to 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), recognized a need for a subject matter expert position statement to delineate the risks and benefits of SSTs compared to traditional Role 2 surgical teams. DCoT is part of the Joint Trauma System (JTS).

## FACTS AND PRINCIPLES

1. Surgical care provided by trained multi-surgeon 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, 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 can degrade overall capability.
6. Despite the wide deployment of SSTs - training, staffing, and equipment are not standardized, resulting in limited interchangeability and interoperability 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 that rapidly transport casualties to higher roles of care and expeditiously resupply 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.

### Given likely continued operational requirement for single surgeon 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 response for a small number of casualties with minor-to-moderate injuries.
3. An SST, when compared to an equidistant multi-surgeon team, will be less likely to save a critically injured casualty.
4. SST capability and capacity are very limited. The lack of redundancy in team capability compared to larger surgical teams impacts anesthesia, transfusion, critical care, and the ability to sustain 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 evacuation and the SST requires prompt resupply in order to maintain surgical capability.
7. In large-scale ground or maritime combat operations, SSTs are vulnerable to cognitive overload and task saturation secondary to their small size and lack of redundancy. SSTs are not stand-alone solutions; they are insufficient and not appropriate to manage large casualty volumes, especially if surgical resources become more dispersed.

### With regard to single surgeon teams, the CoSCCC, DCoT, and JTS recommend the following:

1. Operational planning should assume SSTs do not have holding capacity.
2. SSTs need early evacuation and rapid resupply capabilities.
3. SSTs should be trained and equipped to provide warm whole blood-based resuscitation for both the 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 never occur due to the increased risk to mission, risk to force, and risk to the members of the SST.

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## REFERENCES

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## CoSCCC VOTING MEMBERS & POSITION STATEMENT CONTRIBUTORS

**DCoT Chair:** COL Jennifer Gurney  
**CoSCCC Chair:** CDR Shane Jensen

**JTS Chief:** Col Stacy Shackelford  
**JTS Senior Enlisted Advisor:** MSG Michael Remley

COL Jennifer Gurney

CDR Shane Jensen

Lt Col Brian Gavitt

CAPT Matthew Tadlock

CAPT Ted Edson

COL Matthew Eckert

COL (Ret) John Holcomb

LTC Shaun Brown

COL (Res) Martin Schreiber

SFC Andrew Proctor

CDR Brian Knipp

Col Jay Sampson

CAPT Brendon Drew

COL (Res) Cord Cunningham

LTC Richard Lesperance

COL (Ret) Bob Mabry

COL (Ret) Russ Kotwal

CAPT Travis Polk

COL Kirby Gross

Col Peter Learn

COL John Detro

CAPT Obie Powell

COL Jason Seery

CAPT Jeffrey Timby

CAPT Virginia Blackman

COL Jason Corley

Lt Col Andrew Hall

Col Stacy Shackelford

LCDR Jonathan Hamrick

LTC Keith Jackson

MSgt Fabrizio Lamarca

COL Jay Baker

LTC Chris Graybill

COL Tyson Becker

COL Mark Buzzelli

MSG Michael Remley

COL (Ret) Brian Eastridge

Col (Res) Jeremy Cannon

COL Brian Sonka

COL (Res) Scott Armen

CAPT Randy Bell

LTC Linda Benavides

Maj Steven (Craig) Berg

SFC Paul Loos

COL (Ret) Kyle Remick

CAPT (Res) Margaret Moore

LCDR Chris Renninger

Col (Res) Anne Rizzo

Lt Col Valerie Sams

HMCS Tyler Scarborough

LTC Eric Verwiebe

COL (Res) Sandra Wanek

MSgt Luis Reyes

LTC Ronald David Hardin