2026 MILITARY HEALTH SYSTEM RESEARCH SYMPOSIUM

Addressing the Triage Training Gap: A Qualitative Analysis of Nonmedical Military Personnel's Perceptions After Brief SALT Training

MAJ Sloan W. Kelly, DMSc, PA-C[1]; LTC Jonathan R. Haller, DSc, PA-C[2]; MAJ Joseph R. Griggs, MD[3]; Samuel S. Pendergraft, PhD, PA-C[4]; MAJ Darrell C. Owens, DMSc, PA-C[5]

[1] Defense POW/MIA Accounting Agency, Joint Base Pearl Harbor-Hickam, HI [2] Womack Army Medical Center, Fort Bragg, NC [3] Martin Army Community Hospital, Fort Benning, GA [4] Wake Forest University School of Medicine, Winston-Salem, NC [5] 8th Psychological Operations Group (Airborne), Fort Bragg, NC

MHSRS-26-5157
Session 2:
Advances in Far-Forward (Roles 1/2) Clinical Care Provision

IMMEDIATE | DELAYED | MINIMAL | EXPECTANT

SUMMARY:

Brief SALT triage training changed how nonmedical military personnel approached multi-casualty scenarios, generated concrete plans to embed triage in unit training, and shifted perceived readiness for large-scale combat operations (LSCO) mass-casualty (MASCAL) events. These findings move the evaluation of SALT training to Kirkpatrick Level 3 and early, perceived Level 4.

SALT: Sort, Assess, Lifesaving Interventions, Treatment/Transport | Quality Improvement Project, Fort Bragg, North Carolina, January to May 2025

117 / 128 completed the post-course survey (91.4%)

22-Minute Standardized training video intervention

κ 0.70 median code-level agreement (range 0.54 to 1.00)

3 themes across behavior, transfer, and readiness
1 Structured framework
2 Training integration
3 Perceived readiness

THE TRAINING GAP

- LSCO will produce high casualty volumes, contested evacuation, and prolonged prehospital care. Nonmedical personnel will perform initial triage when medics are unavailable or overwhelmed.
- Tactical Combat Casualty Care (TCCC) standardizes interventions through Massive hemorrhage, Airway, Respiration, Circulation, Hypothermia/Head injury (MARCH), which manages one casualty at a time. During the evaluation period, TCCC offered no method for choosing among many casualties; triage guidance followed later.
- Army doctrine has specified SALT for that choice since 2021. Created as a national guideline, SALT adds global sorting, lifesaving intervention prompts, and standardized categories.
- Most triage training evaluations stop at reaction and knowledge gains. Whether brief instruction transfers to behavior and readiness was unknown.

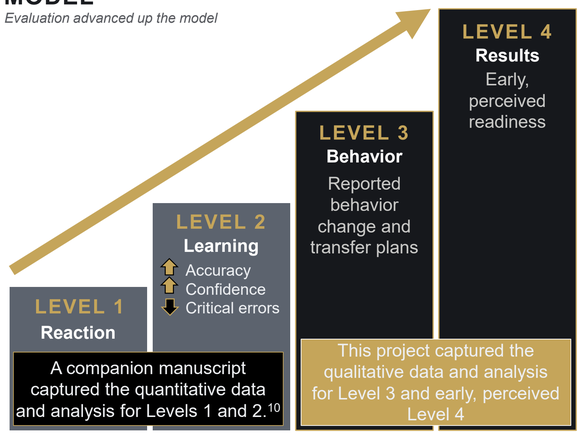
Sources: LSCO casualty care,[1,2] TCCC,[3] its later triage supplement,[4] SALT guideline, accuracy,[5,6] and Army doctrine.[7,8]

PROJECT AIMS

- Describe perceived changes in approach to casualty scenarios during TCCC (Level 3 behavior)
- Identify plans for integrating SALT into unit training (Level 3 transfer)
- Assess perceived preparedness for real-world MASCAL triage (early, perceived Level 4)
- Summarize additional comments informing training refinement

WHERE THIS PROJECT SITS: KIRKPATRICK MODEL[9]

Evaluation advanced up the model



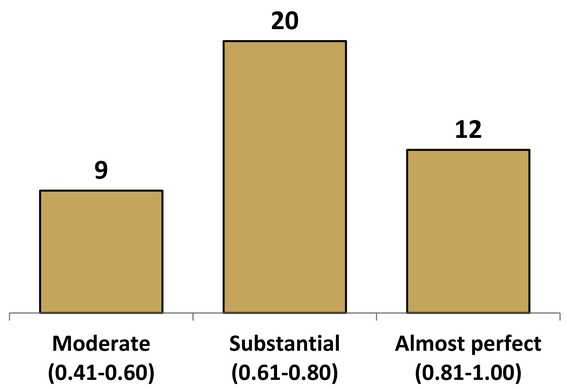
METHODS

1. **22-minute standardized SALT video** viewed before the TCCC course; pre- and post-tests completed
2. **TCCC course with culminating MASCAL lane** 128 nonmedical active-duty personnel; required pre-deployment training
3. **Four open-ended post-course questions** Q1 approach to casualties, Q2 integration plans, Q3 perceived readiness, Q4 additional comments; 117 of 128 responded (91.4%)
4. **Inductive thematic analysis** Two military clinicians coded independently against a shared 41-code codebook; consensus meetings throughout

ANALYTICAL RIGOR

- Independent dual coding against a shared codebook
- Structured adjudication meetings resolved discrepancies
- Saturation defined a priori: under 5% new codes per cohort; reached at cohort 4, verified through all 12 cohorts
- Audit trail documented code-to-subtheme-to-theme decisions; Q4 confirmed coverage with no new categories

CODE-LEVEL INTERRATER AGREEMENT (41 CODES)



Cohen's kappa 0.54 to 1.00, median 0.70; interpretation per Landis and Koch.[11]

FINDINGS: THREE THEMES

1 SALT AS A STRUCTURED DECISION-MAKING FRAMEWORK

- Shifted participants from single-casualty fixation to scene-level prioritization
- Aligned triage with TCCC/MARCH: SALT decided whom to treat, MARCH guided what to treat
- Provided a common triage language that simplified coordination with teams and medics

"It provided a logical framework for approaching a casualty situation and made the scenarios much more manageable." **Participant 14, Cohort 1**

"[The communication] makes the hand-off easier when the medic arrives." **Participant 1, Cohort 11**

2 PLANS TO INTEGRATE SALT INTO UNIT TRAINING

- Participants planned incorporation into battle drills, Sergeant's Time Training, field exercises, and pre-deployment events
- Codifying SALT into unit standard operating procedures (SOPs) to standardize MASCAL communication
- Barriers named plainly: compressed calendars, turnover, and variable command emphasis

"[D]eveloping TTPs [tactics, techniques, and procedures] and reaction plans based on SALT [triage method] to ensure the team knows their roles during the [MASCAL] event." **Participant 4, Cohort 4**

"Unfortunately, there isn't enough time, ever, to train skills like medical when leaders don't prioritize it." **Participant 12, Cohort 2**

3 INCREASED PERCEIVED READINESS, WITH RESIDUAL UNCERTAINTY

- SALT gave a starting point and a plan where no triage framework existed before
- The MASCAL lane turned abstract knowledge into perceived capability
- Residual uncertainty: need for repetitions and the ethical weight of expectant decisions

"Just knowing a system to use helps overcome the initial confusion in mass cas [MASCAL]." **Participant 1, Cohort 2**

"I believe I would be able to assist in triaging. The only concern I have is when patients transition from one state to the next, where that line is and what that looks like." **Participant 9, Cohort 3**

CONCLUSIONS

- Brief SALT training produced self-reported behavior change and concrete implementation intentions beyond what knowledge tests capture.
- Participants valued SALT as a shared triage language as much as an algorithm.
- Perceived readiness rose despite residual uncertainty, supporting standardized, more frequent triage training.
- With the companion quantitative results[10], findings support scalable SALT integration into TCCC and pre-deployment training for LSCO medical readiness.

WHAT LEADERS CAN DO

- Embed SALT in battle drills, Sergeant's Time Training, and MASCAL lanes
- Codify SALT in unit SOPs before deployment
- Protect time on the training calendar and signal command emphasis
- Add repetitions, varied MASCAL scenarios, and structured debriefs that address the ethical weight of expectant decisions

LIMITATIONS

- Self-reported perceptions collected immediately after one course; not observed operational behavior
- Single installation and a specific TCCC/SALT configuration may limit transferability
- Level 4 reflects perceived readiness, not demonstrated effects on casualty care or mission success

REFERENCES

1. Remondelli MH, Remick KN, Shackelford SA, et al. Casualty care implications of large-scale combat operations. J Trauma Acute Care Surg. 2023;95(2S Suppl 1):S180-S184.
2. Izaguirre MK, Cox ED, Lodi PC, et al. To conserve fighting strength in large-scale combat operations. Military Review. 2025;105(4):107-125.
3. Butler FK. Two decades of saving lives on the battlefield: Tactical Combat Casualty Care turns 20. Mil Med. 2017;182(3):e1563-e1568.
4. Committee on Tactical Combat Casualty Care. Supplement A (Triage in TCCC) to the TCCC Guidelines. Joint Trauma System; June 1, 2025. Accessed March 2, 2026.
5. Lerner EB, Schwartz RB, Coule PL, et al. Mass casualty triage: an evaluation of the data and development of a proposed national guideline. Disaster Med Public Health Prep. 2008;2(S1):S25-S34.
6. Lee CW, McLeod SL, Peddle MB. First responder accuracy using SALT after brief initial training. Prehospital and Disaster Medicine. 2015;30(5):447-451.
7. Medical Platoon (ATP 4-02.4). Department of the Army; May 2021. Accessed July 12, 2024.
8. Casualty Evacuation Support to Operations (FM 3-08). Department of the Army; May 2026.
9. Kirkpatrick D. Great ideas revisited. Techniques for evaluating training programs. Revisiting Kirkpatrick's four-level model. Training & Development. 1996;50(1):54-59.
10. Kelly S, Haller J, Griggs J, Pendergraft SS. Addressing the triage training gap: effects of brief SALT training on triage accuracy among nonmedical military personnel. Mil Med. In press.
11. Landis JR, Koch GG. The measurement of observer agreement for categorical data. Biometrics. 1977;33(1):159-174.

Disclosures: The authors have no relevant financial relationships with ineligible companies to disclose. No commercial support was received. **Ethics:** This project was reviewed and determined to be not human subjects research by the Wake Forest University School of Medicine Institutional Review Board (IRB #00122433), with concurrence from the US Army Special Operations Command Human Research Protection Program. **Disclaimer:** The views expressed in this material are those of the authors and do not reflect the official policy or position of the US Government, the Department of War, or the Department of the Army.