

ALERRT's "BATH" Assessment Algorithm No Longer Meets the Needs of American Law Enforcement Personnel or the Public They Serve

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Situation

Other than during the "Care Under Fire" (TCCC) / "Direct Threat Care" (TECC) / "Stop the Killing" (ALERRT) phase of a tactical engagement, the primary tool used in both Tactical Combat Casualty Care (TCCC) and Tactical Emergency Casualty Care (TECC) for *all responders*, is a rapid assessment and treatment algorithm referred to as "MARCH" – Massive Hemorrhage, Airway, Respirations, Circulation, Head/Hypothermia.^{1,2} However, the Advanced Law Enforcement Rapid Response Training (ALERRT) program continues to alter this standard of care and use its own proprietary algorithm referred to as "BATH" – Bleeding, Airway, Tension Pneumothorax, Hypothermia.³⁻⁵ As observed in both training and real-world operations, this altered BATH approach no longer meets the needs of American law enforcement personnel or the public they serve.

Background

Founded in 2002 at Texas State University after the Columbine High School tragedy, ALERRT was established to "address the need for active shooter response training for first responders," and has been named the National Standard in Active Shooter Response Training by the Federal Bureau of Investigation (FBI).^{6,7} In the 20 years since, ALERRT has trained over 300,000 first responders, including law enforcement personnel, firefighters, emergency medical services personnel, and emergency room physicians.⁷ The number and scope of trainees has increased significantly since the 2022 active attack at Robb Elementary School in Uvalde, Texas.

ALERRT's core concepts are built around two phases: "Stop the Killing" and "Stop the Dying."⁶ Stop the Killing is primarily a tactical phase that addresses the priority of threat mitigation via direct confrontation of the attacker without unnecessary delay, the details of which are outside the scope of this editorial.^{6,8} Stop the Dying is a fully blended tactical/medical phase that addresses the priority of emergency medical care and evacuation by law enforcement personnel at the point of injury, which is our focus.^{6,8}

The Stop the Dying phase is not dissimilar to the role of an infantryman in mitigating preventable death on the battlefield

prior to the arrival of a medic; a concept, as a whole, that was born from hard lessons learned in combat. The TCCC program was established to take these hard-learned lessons and create a lifesaving standard of care across the battlespace continuum using scientific evidence to inform clinical best practices and ultimately achieving the lowest mortality rate in military history.⁹⁻¹⁶ Subsequently, the TECC program was established in the mold of TCCC, but as the non-military equivalent, translating TCCC into the civilian/domestic high-threat prehospital environment.^{17,18} Both programs are proponents of the MARCH algorithm.^{1,2}

Assessment

For many law enforcement personnel, ALERRT training may be the only ongoing "medical" training they receive, which means there is a limited and finite opportunity to influence an individual officer's clinical decision-making capability. Teaching the MARCH algorithm would directly address the Stop the Dying component in active attack scenarios, while also allowing for interoperability, scalability, and applicability, whereas ALERRT's proprietary BATH algorithm does not.

Of further critical importance, both with respect to active attacks and other medical emergencies, is the benefit of the "Circulation" assessment in MARCH – there is no such assessment in BATH. We have identified this to be a core issue when considering direct treatment of patients by law enforcement personnel, rapid decisions for movement to casualty collection points or ambulance exchange points, and decisions regarding law enforcement transporting casualties direct to the hospital, all of which support one of the military's key successes in survivability: reducing time to definitive treatment.¹⁶

- **Interoperability:** MARCH improves inter-governmental and civil-military medical capability integration, a critical component in ensuring a ready national medical force, by sharing common operating language already in use with federal agencies (TECC), military partners (TCCC), and personnel from local Emergency Medical Services departments, whereas BATH does not. In addition, MARCH does

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not confuse historical acronyms across training content. For example, with BATH, the “B” stands for “Bleeding,” but in nearly all other standardized clinical education courses, including Cardio-Pulmonary Resuscitation and Pre-Hospital Trauma Life Support, “B” is generally known as “Breathing”. Based on lessons learned, this often confuses the law enforcement rescuer when under stress.

- **Scalability:** MARCH allows for scaling of the training and the assessment/interventions up and down based on the audience/provider, using a single algorithm, from the most basic to the most advanced, all within a common framework, whereas BATH does not. Many law enforcement entities employ a variety of skillsets similar to the military, from non-operational support/enabler personnel, to straight non-medical commissioned officers, to commissioned officers who are also certified Emergency Medical Responders or Emergency Medical Technicians, to non-commissioned Tactical Paramedics, etc. The MARCH algorithm creates a framework to educate, train, equip, and deploy *all* responder types, regardless of primary skillset.
- **Applicability:** MARCH enables law enforcement personnel to learn a single clinical assessment algorithm/technique for all patient types and to identify key interventions they can perform and/or identify critical patients that may need immediate law enforcement transport rather than waiting for EMS, whereas BATH does not. Law enforcement personnel are spread far and wide across both urban and rural jurisdictions, often the first on scene for a variety of emergency medical needs and sometimes with prolonged patient/victim contact before local Emergency Medical Services arrive. Our internal data and observational notes suggest that for a majority of the time, law enforcement personnel are encountering victims of blunt trauma (usually from motor-vehicle collisions or motor-pedestrian collisions), heat/cold environmental emergencies, cardiac arrest, and drug overdoses, far more often than shoot/stab penetrating trauma or active attacks. In utilizing MARCH, law enforcement personnel are not learning five different algorithms for assessing five different types of patients, which at its core creates simplified, efficient task management when under stress – only one MARCH algorithm to recall.
- **Direct Treatment of Patients by Law Enforcement Personnel:** Circulatory assessment (which MARCH incorporates, but which is lacking in BATH) has always been one of the bedrocks of patient assessment, and it certainly has its place in the law enforcement environment. In active attacks and other mass casualty situations, assessment of circulatory status (via pulse and skin checks) can be the primary decisive factor in continuing to render aid to a specific victim versus determining that they are likely dead and therefore rapidly moving on to the next salvageable victim. With a victim of blunt trauma from motor-vehicle collisions or motor-pedestrian collisions, assessment of circulatory status may be the only indicator of significant internal hemorrhage when no external visual bleeding indicators are present. With a victim of heat injury, assessment of circulatory status may be the key indicator that differentiates oral hydration by law enforcement personnel versus notification of EMS for intravenous fluid therapy. With a victim of drug overdose, assessment of circulatory status may be one of the differential indicators of opioids for the corresponding use of naloxone. With a victim of cardiac arrest, assessment of circulatory status is the primary indicator for chest compressions and automated external defibrillator (AED) use. MARCH provides an assessment

framework for all of the most common emergency medical encounters and differentials, whereas BATH does not.

- **Law Enforcement Evacuation and/or Transport of Patients:** In repeated exercises and multiple real-world operations, we have observed that law enforcement personnel responsible for evacuating casualties have better decision-making ability when verification of pulses is a part of the assessment (even if just at the most basic level, strictly in terms of presence or lack thereof, death – no need to move at this time, take someone else instead). Without this simple verification of pulses, personnel are prone to prioritize evacuating victims with the most visually disturbing wound patterns (victims who may already be clinically deceased), thereby delaying definitive care for those who remain salvageable and potentially leading to preventable death. When referencing lessons learned from the Aurora theater (2012), Pulse nightclub (2016), downtown Austin (2021), Uvalde’s Robb Elementary (2022), etc., evacuation decision-making by law enforcement personnel to established casualty collection points or ambulance exchange points is actually frequently encountered. In many instances, these personnel are the ones to ultimately transport patients directly to definitive care because of ongoing threat, congestion, or other difficulty getting medics and ambulances on scene. In these cases, assessment of circulatory status (via pulse and skin checks) to determine whether “likely stable,” “likely shock,” or “likely dead,” can directly impact evacuation and/or transport priority, or lack thereof. MARCH provides an assessment framework that includes verification of circulatory status, whereas BATH does not.

Recommendation

In today’s domestic climate, law enforcement personnel carry an enormous weight of expectations from the general public and our nation’s elected and appointed leaders – expectations that include the provision of point-of-injury/point-of-illness emergency medical care across the broad spectrum of official duties, not limited to just active attacks; and in certain states, these expectations are actually mandates found codified in state law and/or outlined in state law enforcement commissioning board training requirements.^{19,20} As such, we must broadly enable and equip law enforcement personnel to rapidly assess, perform basic lifesaving interventions, and provide rapid evacuation and/or transportation when indicated – which is best achieved using a single industry-accepted assessment and treatment approach that is interoperable, scalable, and applicable: MARCH.

Based on the totality of circumstances presented in this brief opinion editorial, in order to address the needs of American law enforcement personnel and the public they serve, ALERRT should rapidly transition away from teaching their strictly-limited proprietary BATH assessment algorithm, and instead fully-adopt and implement the TCCC/TECC MARCH assessment algorithm, thereby further enhancing first responder capabilities to *Stop the Dying*.

Author Contributions

Dr Taylor George is the original intellectual property owner of the ideas/arguments presented herein, and subsequently authored the manuscript. Wren Neally provided support, review, edit, and additional operational input. Dr Mark Escott provided support, review, edit, and additional clinical input.

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References

1. **Joint Trauma System/Committee on Tactical Combat Casualty Care.** TCCC Guidelines. 01 December 2022. <https://books.allogo.com/web/tenant/8/books/b729b76a-1a34-4bf7-b76b-66bb2072b2a7/>. Accessed 25 Sep 2023.
2. **Committee on Tactical Emergency Casualty Care.** Tactical Emergency Casualty Care (TECC) Guidelines for first responders with a duty to act. Mar 2019. https://www.c-tecc.org/images/4-2019_TECC_Guidelines_for_FR_with_a_duty_to_act.pdf. Accessed 25 September 2023.
3. **Texas State University.** ALERRT First Responder Medical Instructor Course, Version 3.0. ALERRT online Instructor Resources (not publicly accessible). 2017. <https://alerrt.org/>. Accessed 25 September 2023.
4. **Texas State University.** ALERRT Active Attack Integrated Response Course, Version 2.0. ALERRT online Instructor Resources (not publicly accessible). 2018. <https://alerrt.org/>. Accessed 25 September 2023.
5. **Texas State University.** ALERRT Level 1 Train the Trainer Course, Version 7.2. ALERRT online instructor resources (not publicly accessible). 2023. <https://alerrt.org/>. Accessed 25 September 2023.
6. **Martindale MH, Blair JP.** The Evolution of Active Shooter Response Training Protocols Since Columbine: Lessons Learned From the Advanced Law Enforcement Rapid Response Center. *Journal of Contemporary Criminal Justice.* 2019;35(3):342–356. doi: 10.1177/1043986219840237.
7. **Texas State University.** About ALERRT. 2023. <https://alerrt.org/about>. Accessed 25 September 2023.
8. **Texas Commission on Law Enforcement.** Active Shooter Response for School-Based Law Enforcement. website. 30 January 2020. <https://www.kxan.com/wp-content/uploads/sites/40/2022/05/Active-Shooter-SBLE-2195-course-Final-1-30-20-1.docx>. Accessed 25 September 2023.
9. **Butler FK, Hagmann J, Butler EG.** Tactical Combat Casualty Care in Special Operations. *Mil Med.* 1996;161(suppl):3–16.
10. **Kotwal RS, Montgomery HR, Kotwal BM, et al.** Eliminating Preventable Death on the Battlefield. *The Archives of Surgery.* 2011;146(12):1350–1358.
11. **Butler F.** Tactical Combat Casualty Care: A Brief History. National Association of Emergency Medical Technicians. Published 7 August 2015. <https://www.naemt.org/docs/default-source/education-documents/tccc/150807-brief-history-of-tccc-v2.pdf?sfvrsn=0>. Accessed 25 September 2023.
12. **Butler FK.** Tactical Combat Casualty Care: Beginnings. *Wilderness Environ Med* 2017;28(2S):S12–S17.
13. **Kotwal RS, Montgomery HR, Miles EA, et al.** Leadership and a Casualty Response System for Eliminating Preventable Death. *J Trauma Acute Care Surg.* 2017;82(6S):S9–S15.
14. **Kellerman A, Elster E, eds.** Out of the Crucible: How the US Military Transformed Combat Casualty Care in Iraq and Afghanistan. Fort Sam Houston, TX: Borden Institute; 2017.
15. **Joint Trauma System.** Mission Statement. Committee on Tactical Combat Casualty Care. 3 May 2018. <https://jts.health.mil/index.cfm/committees/cotccc/mission>. Accessed 25 September 2023.
16. **Howard JT, Kotwal RS, Stern CA, et al.** Use of Combat Casualty Care Data to Assess the US Military Trauma System During the Afghanistan and Iraq conflicts, 2001–2017. *JAMA Surg.* 2019; 154(7):600–608.
17. **Committee for Tactical Emergency Casualty Care.** What is C-TECC? <https://www.c-tecc.org/about-us/what-is-tecc>. Accessed 25 September 2023.
18. **Committee for Tactical Emergency Casualty Care.** TECC Overview. <https://www.c-tecc.org/images/content/C-TECC-Overview.pdf>. Accessed 25 September 2023.
19. Section 2.35 – Duty to request and render aid. 2023. Criminal Code (TX).
20. **Texas Commission on Law Enforcement.** “Chapter 40: Emergency medical assistance.” In: Basic Peace Officer Course 736. 28 November 2023. https://www.tcole.texas.gov/document/bpoc-Editorial_RS_1_1000736-instructor-resource-guide-2023.zip. Accessed 23 January 2024.

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