LESSON 1

Introduction to Tactical Emergency Casualty Care

LESSON OBJECTIVES

- Describe the key factors influencing casualty care.
- Discuss the impacts that threat, time, incident, location, and available resources have on the tactical response and care of trauma patients.
- Understand how Tactical Combat Casualty Care (TCCC) and Tactical Emergency Casualty Care (TECC) were developed.
- Describe the phases of tactical casualty care.
- Explain the differences between military tactical and civilian tactical prehospital trauma care.

Introduction to Tactical Emergency Casualty Care

TECC is a set of best practice treatment guidelines for trauma care in the high-threat prehospital environment. These guidelines are built upon critical medical lessons learned by U.S. and allied military forces during 21st-century conflict and brought to the civilian sector via the Committee on Tactical Combat Casualty Care (Co-TCCC). They are appropriately modified to address the specific needs of civilian populations and civilian emergency medical services (EMS) practice. The guidelines are freely available to all interested stakeholders.

Response to mass-casualty events, such as the shootings at the Route 91 Harvest country music festival in Las Vegas and the bombings at the 2013 Boston Marathon, demonstrated the gap that exists between the capability of prehospital trauma care and casualty needs during these events. In fact, the Federal Emergency Management Agency (FEMA) has identified mass-casualty incident (MCI) preparation as a national priority. The National Association of Emergency Medical Technicians (NAEMT) second edition TECC course is designed to provide caregivers with best practices when operating in a high-risk environment involving multiple casualties (**Figure 1-1**).

Where Did the Tactical Emergency Casualty Care Course Come From?

This TECC course was developed using guidelines from the Committee for Tactical Emergency Casualty Care (C-TECC). Formed in 2010, the C-TECC formally translated military trauma lessons into the civilian

Figure 1-1 Mass-casualty management at the scene of the Boston Marathon bombing.

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high-threat prehospital community. The committee brought together subject matter experts from EMS, fire, law enforcement, and the Department of Homeland Security to work with physicians from emergency departments, trauma centers, and the military to develop best practices for high-threat prehospital medicine.

The C-TECC is modeled after the highly successful U.S. Department of Defense Co-TCCC—frequently credited as one of the major initiatives that has resulted in the lowest combat mortality rates in recorded history. However, Co-TCCC treatment guidelines focus on a very specific population: fit and healthy 18- to 40-year olds in a combat environment.

The C-TECC guidelines, therefore, cover the requirements of a civilian population. This includes pediatric, geriatric, and special needs patients, as well as considerations for underlying medical conditions common in a civilian population, the characteristics and limitations of civilian EMS, and the varied types of threats that responders face. TECC guidelines have since been incorporated into the National Joint Counterterrorism Awareness Workshop used by the FBI, FEMA, and the National Counterterrorism Center. The NAEMT TECC course is built from four information sources:

- U.S. Department of Defense Tactical Combat Casualty Care (TCCC) course
- Committee for Tactical Emergency Casualty Care (C-TECC) guidelines
- Prehospital Trauma Committee of NAEMT
- National Tactical Emergency Medical Support (TEMS) competency domains

The NAEMT TECC course focuses on prehospital medical care in high-risk tactical situations. TECC is not a comprehensive tactical operators' course. Completing TECC does not result in certification as a tactical medic. In addition, the TECC course is not a rescue task force course.

CHECK YOUR KNOWLEDGE

TECC guidelines cover the medical requirements of:

a. fit and healthy 18- to 40-year-old first responders.
b. emergency medical services responders.
c. those most likely to survive a multisystem trauma injury.
d. the civilian population.

What Does the Tactical Emergency Casualty Care Course Cover?

NAEMT's TECC course teaches EMS practitioners and other prehospital providers how to respond to and care for patients in a civilian tactical environment. It is designed to decrease preventable deaths in a tactical situation.

The course presents the three phases of tactical care:

- Direct threat care that is rendered while under attack or in adverse conditions.
- Indirect threat care that is rendered while the threat has been suppressed but may resurface at any point.
- Evacuation care that is rendered while the casualty is being evacuated from the incident site.

The 16-hour classroom course covers the following topics:

- Hemorrhage control
- Surgical airway control and needle decompression
- Strategies for treating wounded responders in threatening environments
- Caring for pediatric patients
- Techniques for dragging and carrying victims to safety

The course includes EMT, advanced EMT, and paramedic skills. It is NAEMT's philosophy that TECC caregivers should be exposed to all skills in this course. As such, students may practice a skill in the TECC class that is beyond their current scope of practice. The value of this exposure is that the TECC caregiver can anticipate what procedures will be done in an actual tactical situation and the time required to complete the skill. Students are expected to participate in all in-class skills required in a TECC course. Outside of class, all clinical interventions must be in accordance with local policy and protocol and within the caregiver's authorized scope of practice.

The TECC course offers the following skill stations:

- Casualty drags, carries, and assists
- Tourniquets
- Tourniquet optimization
- Junctional tourniquets
- Wound packing/compression dressing
- Airway management
- Chest seals/needle decompression (NDC)

- MARCH assessment/shock assessment
- Intravenous (IV)/intraosseous (IO) fluid administration

CHECK YOUR KNOWLEDGE

You have successfully completed the TECC course and are operating in an indirect threat care/warm zone scene. Your patient has a tension pneumothorax, is rapidly decompensating, and needs a needle decompression. You can perform this skill under which of these situations?

a. On-site medical oversight is available by a critical care paramedic or physician assistant.
b. The caregiver calls medical control, identifies as a TECC-credentialed caregiver, and obtains authorization.
c. Needle decompression is within the caregiver's scope of practice and authorized under local policy and protocol.
d. The incident has been declared a mass-casualty event and the authority having jurisdiction has established medical incident command under the National Response Framework.

Tactical Care Situations

Active shooter/hostile events (ASHEs) have been increasing in severity and frequency since 2000. The distribution of such events has impacted rural, suburban, and urban communities. What makes these events unique from other mass-casualty events is that responders are at high risk for injury or death when arriving at an ASHE incident. In addition, the use of military-style weapons and techniques results in patients with complex and life-threatening traumatic wounds.

Resuscitation Zones: Phases of Care

TECC divides patient care into three zones that match the disaster management and EMS identification of caregiver and patient risk. Each zone has specific treatment goals, caregiver skills, and patient management objectives. Casualty scenarios in dynamic events usually entail both a medical problem and a tactical problem. The TECC goal is: Right Care—Right Time—Right Patient.

Direct Threat Care/Hot Zone

This zone (or phase) represents the highest danger to caregiver and patient. There is an immediate threat of additional injury or death. The incident scene is not secure. The emphasis in this zone is on threat suppression, preventing further casualties, extracting casualties from the high-threat area, and implementing control of life-threatening hemorrhage.

Indirect Threat Care/Warm Zone

Later lessons will extensively cover TECC operations in the indirect threat care/warm zone. The warm zone is the area where a potential threat exists, but there is no direct or immediate threat. For example, if you are called to an active shooter situation at a local mall, you may need to enter the mall to tend to casualties. Wherever the shooter is contained, but still active, is considered the hot zone (direct threat care). The rest of the mall would be the warm zone, as the shooter could escape containment and become an immediate threat in your area. Warm zone care includes the other lifesaving interventions associated with applying the MARCH algorithm (**M**assive hemorrhage, **A**irway, **R**espiration, **C**irculation, and **H**ead/Hypothermia). Casualty collection points and rescue task forces are typically employed within the warm zone.

Evacuation Care/Cold Zone

Evacuation care/cold zone is the area where no significant threat is reasonably anticipated, and additional medical/transport resources may be staged. Evacuation care generally falls under established local, regional, or state protocols (**Figure 1-2**).

Table 1-1 provides examples of the different zones and phases of care.

CHECK YOUR KNOWLEDGE

The use of advanced airway devices can start in the _____ zone.

a. direct threat/hot
b. indirect threat/warm
c. evacuation/cold
d. All of the zones

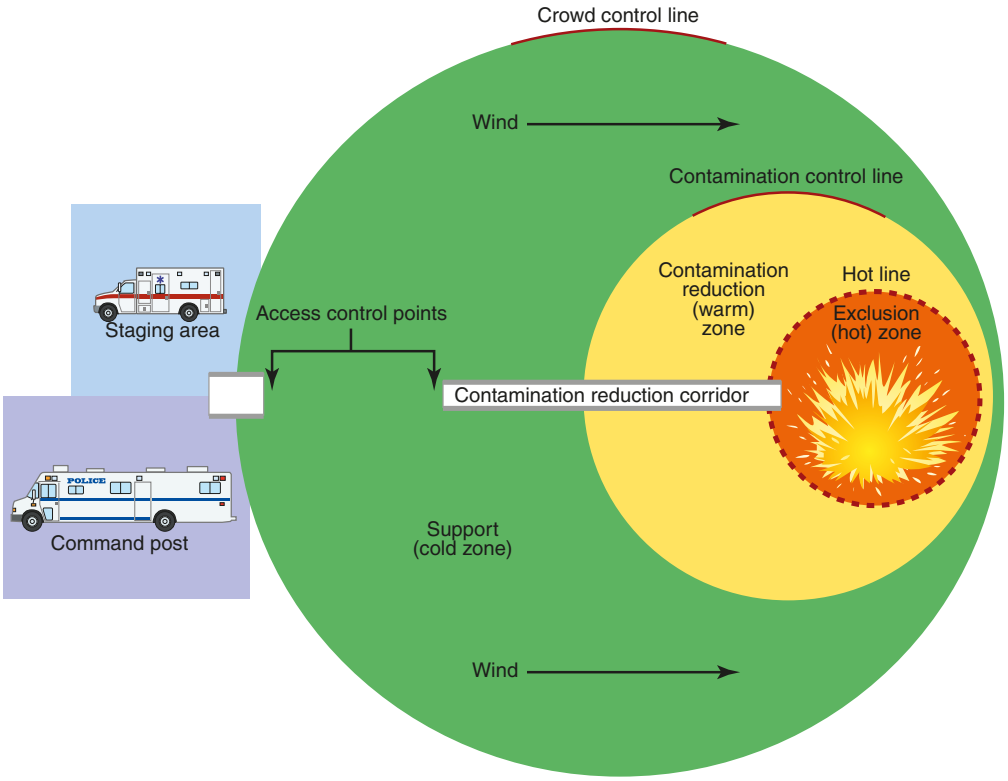

Figure 1-2 Direct threat, indirect threat, and evacuation care are matched with the hot zone, warm zone, and cold zone descriptions used by emergency management.

Table 1-1 Zones and Phases of Care

Zone/Phase of Care	Examples
Direct threat/hot zone	■ You are in the direct line of fire of an active shooter. ■ Someone is deploying a biologic weapon and you are in the contamination zone.
Indirect threat/warm zone	■ There is an active shooter in the area, but you are not in the line of fire.
Evacuation/cold zone	■ You are transporting casualties to the hospital from the scene of an ASHE.

NAEMT TECC Course Goals

The NAEMT course goals for TECC are designed to provide the caregiver with evidence-based best practices when responding to an ASHE with many patients:

- Rapid assessment of the trauma patient
- Student knowledge regarding examination and diagnostic skills
- Understanding the three phases of care
- Enhancing student assessment and treatment of the trauma patient
- Advancing student competence in prehospital trauma intervention skills in tactical environments
- Establishing management of the multisystem trauma patient while limiting the risk of further casualties
- Promoting a common approach for the initiation and transition of care of the trauma patient
- Providing an understanding of tactical and environmental factors on trauma care

TECC Guiding Principles

Responding to and working within an ASHE tactical situation requires a different response from EMS

caregivers. C-TECC guidelines provide four guiding principles for caregivers:

Casualty Scenarios in Dynamic Events Usually Entail Both a Medical Problem and a Tactical Problem

Not all tactical events will be initially dispatched as an ASHE. It may start as a request for an ambulance for a "person down in the street." A "sudden impact" mass-casualty event is one that causes traumatic injuries involving burns, fractures, bleeding, and trauma as well as death. A conventional mass-casualty event does not contain any chemical, biologic, radiologic, or nuclear (CBRN) elements.

An "emergency" mass-casualty event describes an event that generates hundreds of casualties, occurs simultaneously in multiple locations, or involves CBRN elements. A Mumbai-style attack with marauding terrorists using high-powered weapons running through a city and creating multiple mass-casualty sites is an extreme example of the dynamics of a tactical event.

Best Possible Outcome for the Injured and the Mission Is Desired: Save as Many People as Possible

As caregivers, you are aware of the time-essential interventions needed to maintain a life. Working within a tactical situation requires situational awareness, active and continuous triage of patients, and a multiorganizational effort to save as many casualties as possible without death or serious injury to the first responders.

Good Medicine Can Sometimes Be Bad Tactics and Bad Tactics Can Get Everyone Killed and/or Cause Mission Failure

In these scenarios, maintain the safety of the responders. For example, there is little medicine performed in the direct threat care/hot zone outside of tourniquet application, due to the risk of further injury to both the casualty and the responder. The goal is to quickly move the casualty and the caregiver(s) out of the direct threat care/hot zone into the indirect threat care/warm zone.

A Medically Correct Intervention Performed at the Wrong Time May Lead to Additional Casualties

Operating in a tactical situation requires a recalibration of medical care priorities and timing. The most complex care should be provided in the evacuation care/cold zone, as the indirect threat/warm zone could unexpectedly collapse into a direct threat/hot zone. Providing complex care in the warm zone could be dire for both the patient and the caregivers.

Response and Arrival-Scene Assessment

When responding to any type of emergency event, always consider the possibility of ASHE hazards until they can be ruled out. Be vigilant when approaching the incident to identify when things "do not look right" or are unusual. Be prepared to retreat and seek cover.

If your crew has the first eyes on the situation, provide a clear and concise report to dispatch on what you observe on arrival. Multiple patients, patients with grievous trauma, the aftermath of an explosion, or evidence of an active shooter are indications of a tactical situation. Call for additional resources, try to identify the nature of the threat, and seek to identify the direct threat/hot zone.

The direct threat/hot zone represents the highest danger to caregiver and patient. There is an immediate threat for additional injury or death. If you discover you are in the direct threat/hot zone during the initial scene assessment, leave immediately. Your first priority is to gain cover. A dead caregiver provides no lifesaving care to casualties.

CHECK YOUR KNOWLEDGE

When operating in a tactical situation _____ can sometimes be _____ and cause mission failure.

a. response teams; attacked
b. too many paramedics; uncoordinated
c. good medicine; bad tactics
d. EMT-level caregivers; overwhelmed

Other Elements Operating Within a Tactical Environment

There are other task-focused elements operating in a civilian tactical environment that you may encounter. Local, regional, and state response to an ASHE situation continues to evolve based on experience and best practices research.

Rescue Task Force

A rescue task force (RTF) is a unit comprised of mixed resources (often EMS and law enforcement personnel)

Figure 1-3 Conducting rescue task force training.

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who work together to provide point-of-wound care to tactical casualties while tactical EMS works to provide assessment and treatment to responders.

The RTF approach starts with the assumption that the entire building is a direct threat/hot zone. The goal of law enforcement is to immediately locate the shooter or shooters and neutralize the threat as soon as possible, using all of the available resources. During this effort, law enforcement is securing sections of the building. Once a section is secured by law enforcement, it becomes an indirect threat/warm zone. EMS caregivers join law enforcement in the indirect threat/warm zones to locate and treat casualties.

The goal for EMS caregivers is to treat life-threatening conditions, stabilize casualties, and rapidly remove casualties from the indirect threat/warm zone into the cold zone. Injured casualties are treated as they are reached by EMS caregivers; there is no triage. People who can walk without assistance are directed to self-evacuate down a cleared corridor under law enforcement direction (within the warm zones) (**Figure 1-3**).

Tactical Emergency Medical Support

TEMS teams encompass the provision of preventive, urgent, and emergent medical care during high-risk, extended-duration, and mission-driven law enforcement special operations. EMS caregivers are embedded within the law enforcement special operations teams.

The TEMS provider serves as the tactical commander's medical conscience. The medical support unit provides the tactical commander with real-time advice and action based on situational considerations. The TEMS provider can provide a medical threat assessment of a planned operation.

At times, wounded individuals may be located in an area inaccessible to direct medical care. Remote medical assessment and TEMS-directed self-care are responsibilities of the tactical EMS caregiver.

CHECK YOUR KNOWLEDGE

_____ focuses on medical care of the first responders.

a. Medical branch
b. Tactical emergency medical support
c. Rescue task force
d. Police medic

Summary

The NAEMT TECC course will provide you with a set of best-practice treatment guidelines for trauma care in the high-threat prehospital environment. The course content is developed to provide care for all patients in a civilian tactical environment.

REFERENCES AND RESOURCES

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