Changing the Paradigm: Tactical Emergency Casualty Care for High Risk Operations

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Are we paying attention yet??

- Attacks on soft targets, schools and children
- Coordinated attacks on mass gatherings and mass transit
- Attacks on pre-hospital and hospital personnel
- Attacks on public places and commerce
- Attacks on military personnel and facilities

So… how can we improve survival?

- **Understand exactly what we are facing and how it impacts medical care**

OLD: Traditional WMD

- Difficult to acquire
- Difficult to deliver
- Requires extensive training and specialized resources

NEW: 2016 Threat Environment

- Characterized by a multi-lateral spectrum of potential threats
  - One or more perpetrators willing to fight and die
  - Military style tactics, training and coordination
  - Multi-capacity high velocity weapons
  - Atypical threats such as home-made IEDs
  - Potential for use of toxic hazards
  - Prolonged wounding over wide geography
  - Austere conditions due to operational limitations and geography

2016 Threat Environment
Impact on delivery of medical care

- Restrictions to care in this new environment
- Casualty profile shifted towards significant traumatic morbidity and mortality
- Atypical trauma populations and delays to care
- Need for real-time risk:benefit framework that by change care protocols **from what can be done** to only that **which MUST be done** for life-saving

So… how can we improve survival?

- ✓ Understand exactly what we are facing and how it impacts medical care

- **Identify gaps that exist in traditional mass casualty medical response**

GAP: Traditional Response Paradigm for High Threat Mass Casualty

- In our current paradigm of response, who has the responsibility to mitigate the medical effects of the mass casualty?

GAP: Traditional Response Paradigm for High Threat Mass Casualty

- Total reliance on first responders built on:
  - The concept of rapid availability
  - Technical capability of public safety operations

- Leads to:
  - Delays in ‘stopping the dying’
  - Increase in psychological damage
    - Feelings of loss of control
    - Undermines self-reliance of the community

GAP: Stage and wait until scene is safe!

- Traditional operational medical response for the recon and subsequent rescue in scenarios with known wounded but active threats

GAP: “Combat is combat and bullets are bullets. The wounds are the same”

- Are personnel knowledgeable about the wounds and trained to do the appropriate care prior to and during evacuation?

GAP: "Combat is combat and bullets are bullets. The wounds are the same"

- Causes of preventable death from military style ordinance
  - Bleeding to death from extremity wounds
  - Airway obstruction
  - Open chest wounds and tension pneumothorax
  - Hypothermia
  - Dilutional coagulopathy

60% of Combat Preventable Death: Bleeding From Extremity Wounds

Civilian Active Shooter Fatalities

- Different overall wounding, fatal wounding and potentially survivable injury pattern!!
  - **More** head/upper torso overall (72% vs 48%)
  - Much **higher casualty fatality rate** (45% vs 9%)
  - **Minimal** life-threatening extremity bleeding (9% vs **0%**)
  - **Lower incidence** of potentially survivable wounds (7% vs 24.3%)
    - Chest and airway wounds only

Smith, Shapiro, Sarani. Journal of Trauma April 2016

CLARIFICATION: Everyone NEEDS a tourniquet!!!

New Message:
Stop the Clock!!

Go beyond bleeding
and
"Stop the Clock"
on all causes of
preventable death!!!

GAP: We have plenty of transport resources!

- Do we actually have enough resources to surge medical responders and transports as needed?

GAP: Our trauma center is super-high speed and low drag!!

- Is there continuity of care as the patient moves through the medical system? Are the first receivers aware of what has occurred before them and how to build upon it?

GAP: “If it works for the military, it will work for us.”

External Validity of military TCCC???

- Guidelines of TCCC is largely based off of evidence gleaned from the **overall young and healthy** military combat population

- Written for the **military combatant** treating the combat wounded **military population** in the **combat environment**

- **Fails to account for the differences** in civilian population, regulations, settings and resources

How civilians are different…

- Scope of practice and liability
- Patient population to include geriatrics, pediatrics, and special populations
- Availability of transport assets, transport barriers, and distance to definitive care
- Need for common operating language across all disciplines
- Baseline health and chronic medication use in the wounded population
- Wounding patterns without ballistic armor

The same goes for equipment!!

- Civilian medical equipment needs differ than military
  - Different population = different needs
  - Acquisition and purchasing rules

So… how can we improve survival?

- ✓ Understand exactly what we are facing
- ✓ Identify gaps that exist in traditional mass casualty medical response
- **Develop new strategies to mitigate known gaps in medical care during high threat operations**

Medical Gap Mitigation

- "First responders should develop and adopt evidence-based standardized training that addresses the basic civilianized tenets of Tactical Combat Casualty Care."
  - Dr. Kathy Brinsfield, Assistant Secretary for Health Affairs and Chief Medical Officer, Department of Homeland Security

Medical Gap Mitigation: Tactical Emergency Casualty Care

- Civilian operational medical response framework for high threat events
    - Evidenced-based, best-practiced civilian based principles of care translated from TCCC military lessons learned
- Primary goal to identify those with potentially preventable causes of death and prioritize rapid application of stabilizing medical care at or near the point of wounding

Tactical Emergency Casualty Care

- Developed and maintained by the 501 3(c) Committee for TECC (www.C-TECC.org)

- Foundations of C-TECC
    - Grass roots, all inclusive
    - Open source
    - Non-proprietary, non-dogmatic
    - Not-for-profit

Tactical Emergency Casualty Care

- Not cookie cutter! Allows for differences in protocols and scope among agencies and providers
- Pediatric guidelines
- General, not specific product recommendations
- Civilian specific conditions, eg smoke inhalation
- Psychiatric threat mitigation
- Accounts for higher and more rapid resource availability with different operational risk
- NOT anti-TCCC – is the civilian translation of TCCC

Official TECC Training/Certification??

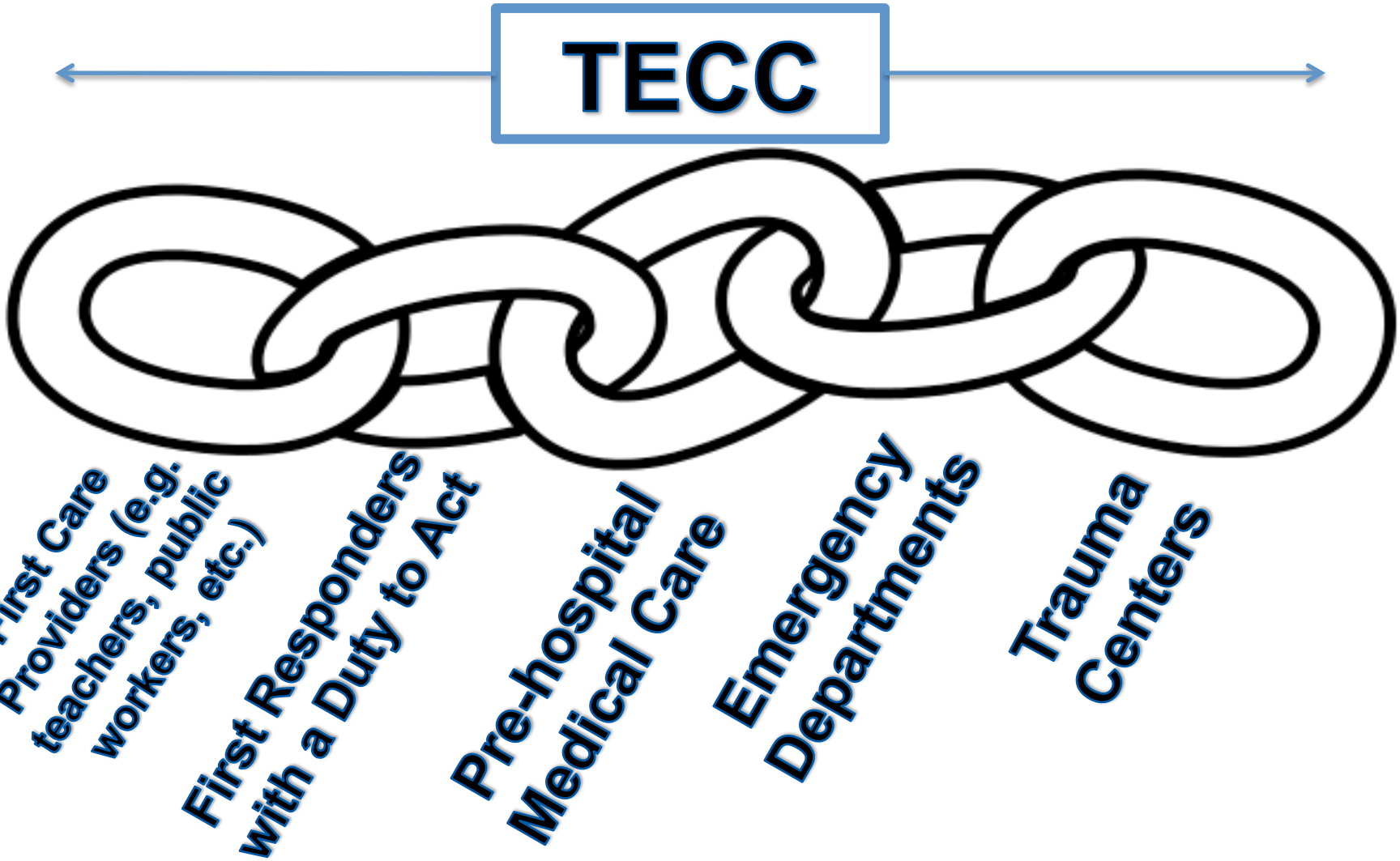
- Nope. There is **NO required TECC training course or official TECC certification**!
  - Guidelines are simply the **WHAT** and the **WHY**, not the **HOW**
  - Best recommendation is for guidelines to be used to develop in house **training and local certification** to account for agency specific scope and culture
    - Discourage cookie cutter application
  - Free generic and shared resources available to **build your own in-house** agency/regional program
    - Network of sharing among members

Only for medical personnel??

- **NO!!** Everybody has a role in improving survivability in mass casualty events
  - We MUST move away from the traditional paradigm of reliance on professional first responders

- TECC is most effective when implemented as a 'system'
  - Must be scoped to the **appropriate** level of the provider

Coordinated across the system…



Implement TECC as a System to improve survival!

- **Empower** immediate care to the wounded

PLUS

- **Coordinate rapid access** to the wounded by first responders

PLUS

- **Rapidly apply** of stabilizing TECC treatments at or near the site of wounding

PLUS

- **Expediently evacuate** to closest appropriate medical facility where TECC care will be continued

EQUALS….

Maximal Survival Rate for the Wounded!!!

So…
Empower your First Care Providers!!

Chain of Survival in Action

The ugly truth of complex mass casualty

- Uninjured or minimally injured citizens are there in the immediate aftermath. We are not.
- There are not enough of us to provide immediate care to all of the wounded.
- Bystanders are available and willing to assist, yet are traditionally marginalized by public safety.
- Bystanders will act in the immediate aftermath and bystanders will save lives.

Empowering citizens is nothing new…..

Empower your First Care Providers!!

- Beyond Bleeding: Train to 'Stop the Clock"
  - Mental strategies to prepare
  - TECC training for bystanders
    - Tourniquets and bleeding control
    - Basic airway management and positioning
    - Basic strategies for penetrating chest injury
    - Hypothermia prevention
    - Effective and efficient casualty movement
  - Psychological support of the wounded

Empower your First Care Providers!!

Building Community Resilience to Dynamic Mass Casualty Incidents: A Multi-Agency White Paper in Support of The First Care Provider

Authors

The Committee for Tactical Emergency Casualty Care
FirstCareProvider.Org
The Koshka Foundation for Safe Schools

www.tqsresponse.com

Empower your Law Enforcement!!

Law Enforcement TECC

- Can fill the gap until professional medical first response arrives
    - Concentration on ‘the first 10 minutes”
- To increase buy-in, focus on care for the wounded officer

Law Enforcement TECC

- More than just tourniquets/bleeding control!
  - Sztajnkrycer study of line of duty deaths showed mostly chest injury in LE fatalities
- Should be equipped for <u>all</u> injuries
  - During Dallas police ambush, Officer Gunter had to use a **cigarette wrapper** to cover a chest wound of a fellow wounded officer

Empower your Fire/EMS!!

Rescue Task Force

- First arriving street medics (NOT tactical medics) team up with 2-4 patrol officers to move quickly into “warm” zone areas along cleared corridors to initiate TECC point of care treatment and evacuation of victims

Empower your Hospitals and First Receivers

Empower your Hospitals and First Receivers

- Familiarization with pre-hospital TECC techniques and priorities
- Emphasis on TECC evacuation care and damage control principles (especially for non-trauma facilities)
  - Permissive hypotension
  - TXA and resuscitation with blood products
  - Strict prevention of hypothermia
  - Multi-modal pain control

Best Practice Example and The Way Forward

EMS and Austere Environments

- Active Shooter Incidents (**ASI**)
- Improvised Explosive Devices (**IED**)
- Weapons of Mass Destruction (**WMD**)
- Natural Disasters

-Hurricanes and tornadoes

-Floods

-Earthquakes

Rescue Task Force: Purpose

- The primary goal of a rescue task force (RTF) is to deliver lifesaving treatment to victims of a mass casualty incident, regardless of etiology, as rapidly as possible
- The RTF concept **is not** tactical EMS (TEMS)

Rescue Task Force vs. TEMS

Rescue Task Force

Medical support to victims

Partnership between an EMS agencies and a law enforcement agencies

Unarmed with appropriate PPE for austere environments

Tactical EMS

Medical and occupational health support to law enforcement personnel

TEMS unit is a division or team member of the law enforcement agency

Often armed and/or deputized

EMS vs. Rescue Task Force

Traditional EMS

Respond to scene

Stage in the periphery

Enter scene after safety confirmation from law enforcement

Rescue task force

Respond to scene

Stage with law enforcement

Enters scene with law enforcement escort and protection

Rescue Task Force vs. TEMS

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EMS vs. Rescue Task Force

Traditional EMS

EMS equipment

(*monitors, stretchers, oxygen, drug boxes, spine immobilization devices*) carried into incident site

Patient care initiated on site

Transport from scene

Rescue Task Force

Lightweight medical kit with critical lifesaving measures delivered to victims immediately

Rapid extrication of victims to a patient collection point

Continued care delivery outside of the hot zone and/or transport

Rescue Task Force:
Basic Foundation of Knowledge

- Situational awareness
- Role of EMS in a austere environments
- Role with law enforcement
- Limitations of a rescue task force
- Recommended and prohibited medical equipment
- Appropriate ballistic personal protective equipment

Rescue Task Force:
Basic Foundation of Knowledge

- Patient care guidelines during incidents involving active shooters or IEDs

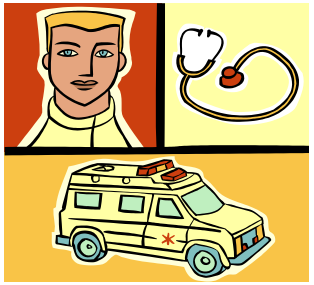
(Ohio EMS scope of practice maintained)

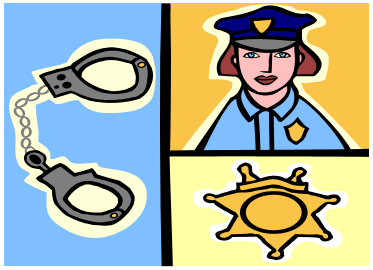
-Tactical Emergency Casualty Care (**TECC**)

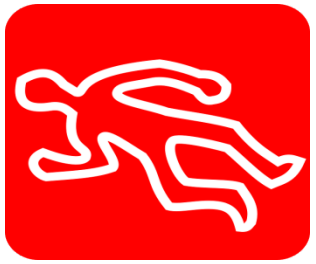
-Tactical Combat Casualty Care

(**TCCC**)

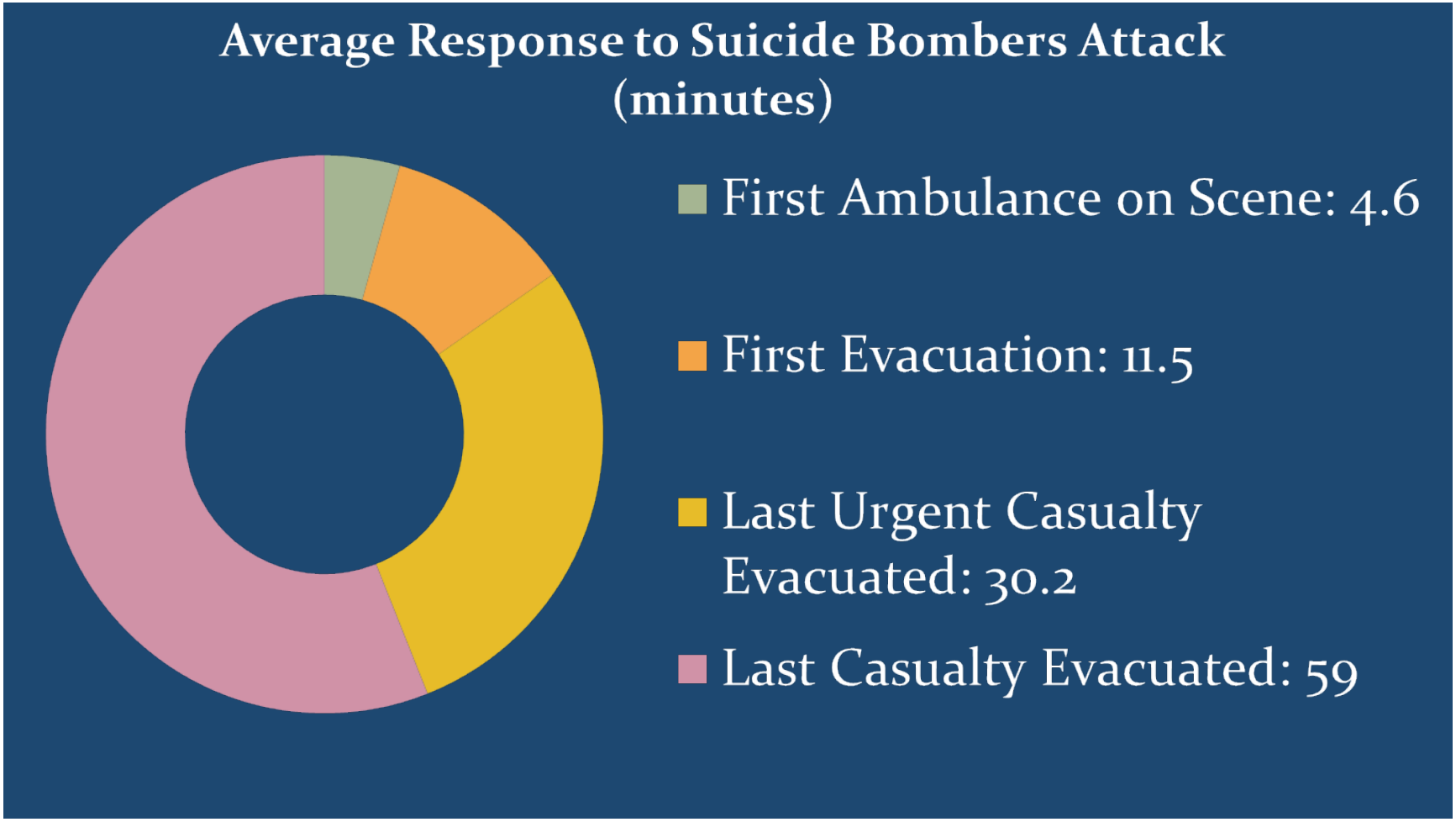
Is the Scene Safe Yet?: Quadruple "The Golden Hour"







A Goal for the New Paradigm



Ohio Best Practice Opportunities for Partnership

- Uniform and/or required education
- Creation of an on-line training tool
- Patient care guidelines
- Engagement with law enforcement
- Engagement with communities

NASEMSO and C-TECC

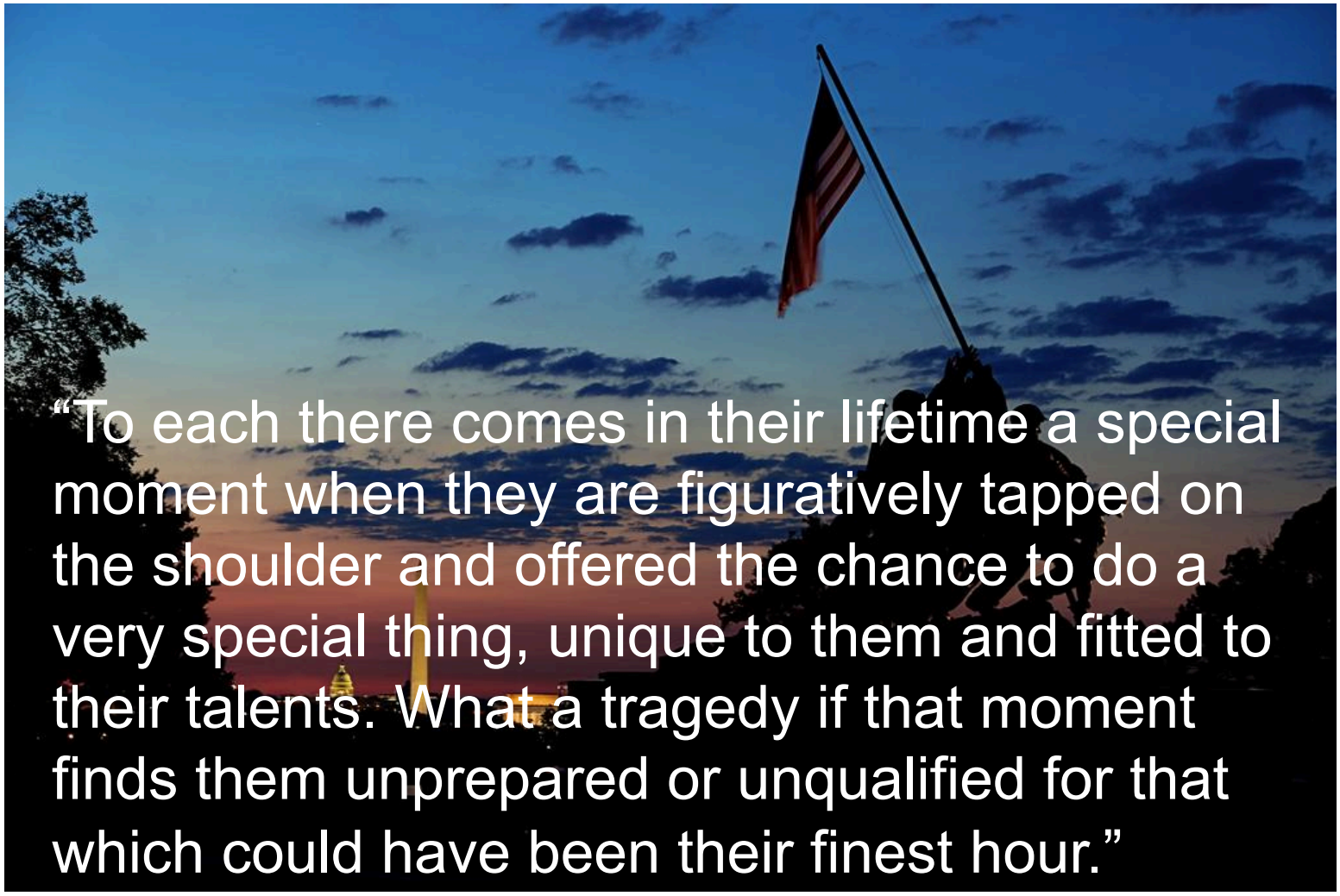
- Active participation in C-TECC meetings
  - Establish Liaison seat in Board of Advisors
- Leadership in development and promotion of consistent policy and practice
- Combined white paper on implementation as a system across all levels
- Encourage TECC principles to be considered when developing EMS initiatives

Conclusions: Food for thought…

- To improve survival must **embrace all aspects** of what needs to be done to address the gaps
  - Better coordination, better tactics, better medicine
  - **Implement TECC in a coordinated fashion** across the entire chain of survival

- Understand that the world is not flat, that the way “we have always done things” may not be correct, and that you are a target!

WWW.C-TECC.ORG



- Winston Churchill