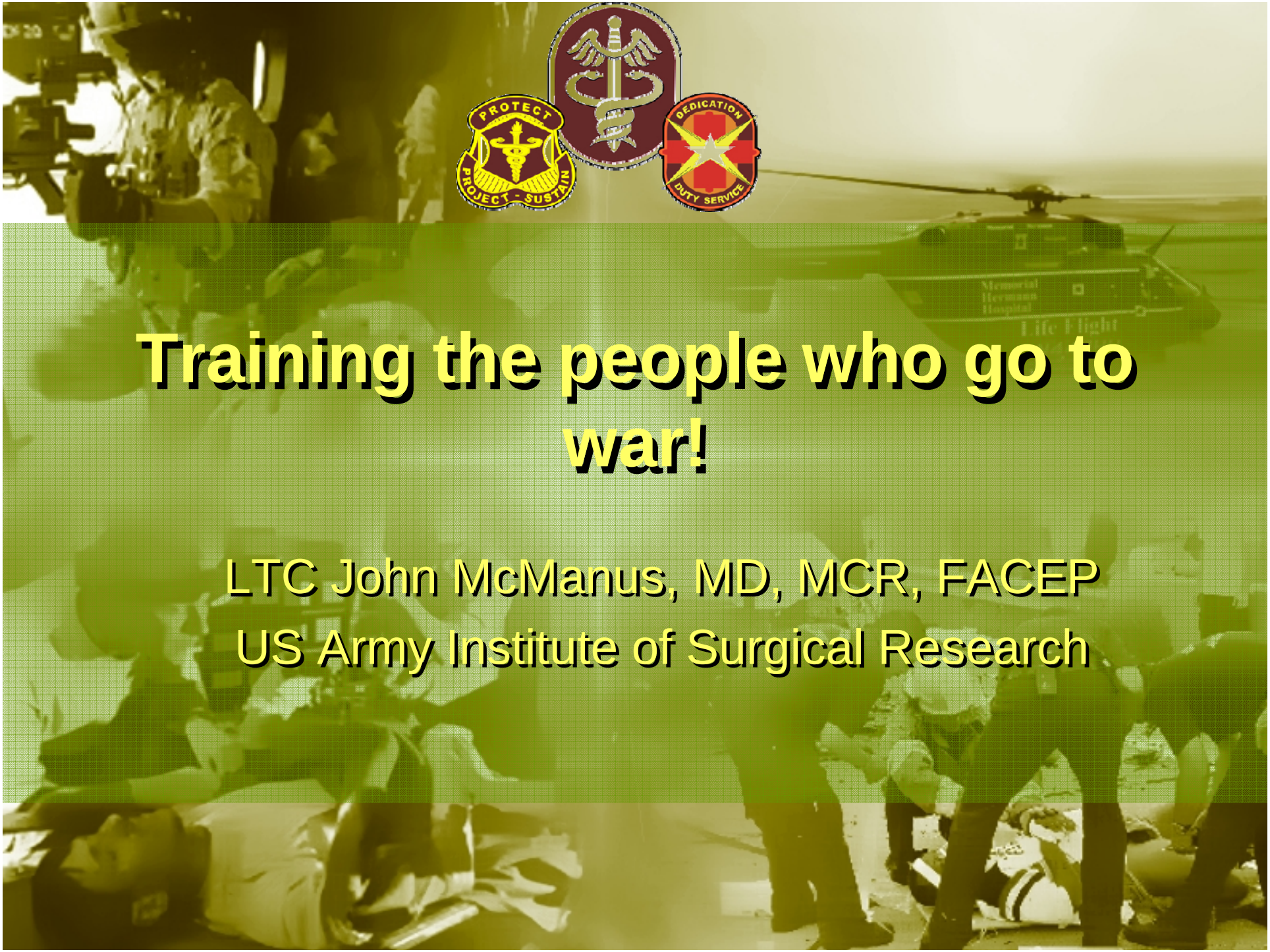
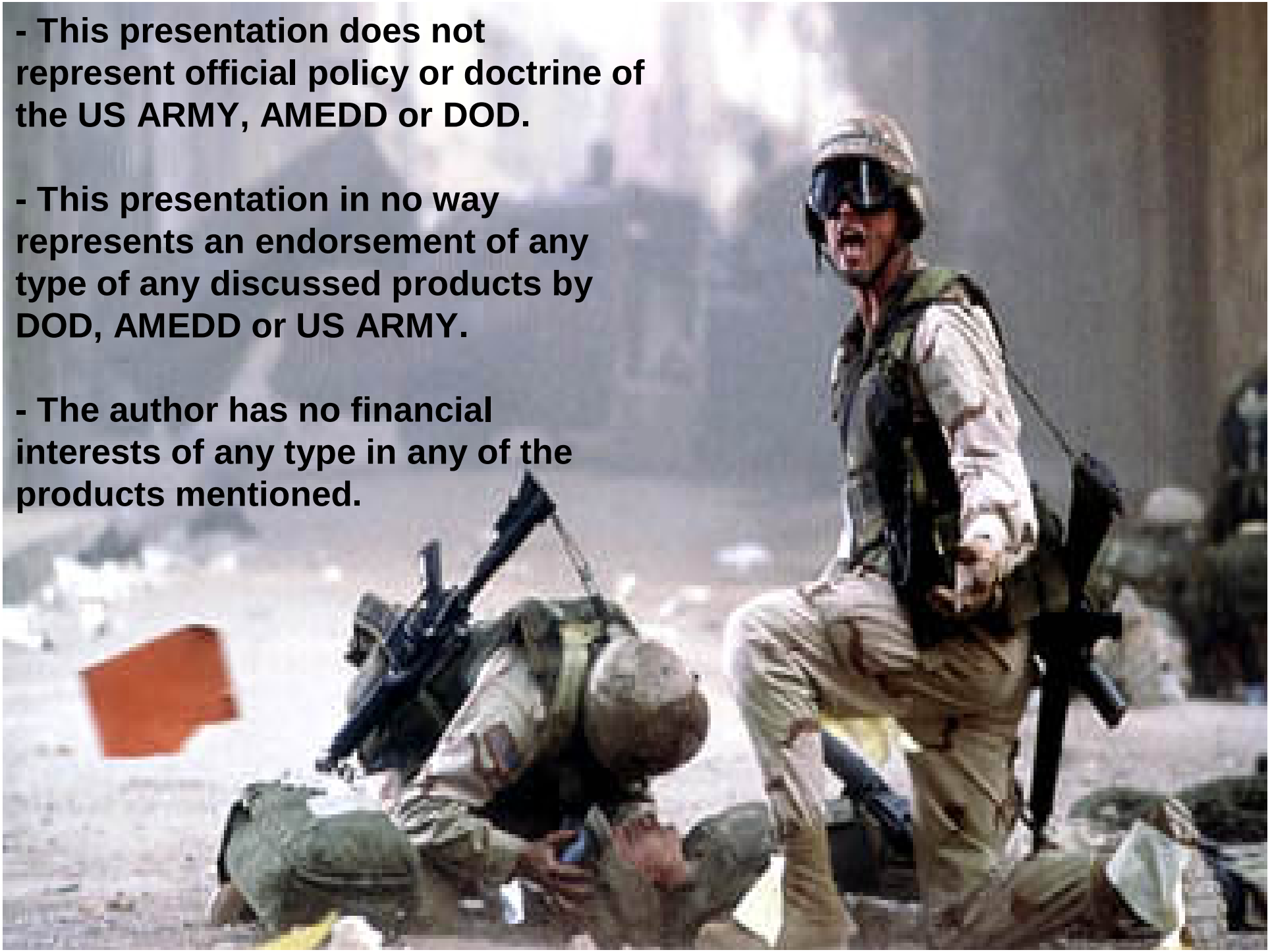


Training the people who go to war!

LTC John McManus, MD, MCR, FACEP

US Army Institute of Surgical Research


- This presentation does not represent official policy or doctrine of the US ARMY, AMEDD or DOD.
- This presentation in no way represents an endorsement of any type of any discussed products by DOD, AMEDD or US ARMY.
- The author has no financial interests of any type in any of the products mentioned.

Not a new concept!

- It is difficult to emphasize sufficiently the importance of initial treatment on the battlefield. What the wounded soldier does on his own behalf, or what his infantry colleagues do for him; and what the company aidman does for a traumatic amputation or gaping wound of the chest, in the thick of battle, in dust and heat or in blowing snow -- on these simple procedures depend life and death....A slight improvement in the skill and judgment of the company aidman will save...more human lives than will the attainment of 100 percent perfection in the surgical hospital
- ***LTC Douglas Lindsay 1951***

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Introduction

- The contemporary operating environment our soldiers find themselves in today mandates tactical medicine principles be taught to ***every soldier*** deployed to a tactical environment.

- Doing so will save more lives on the battlefield

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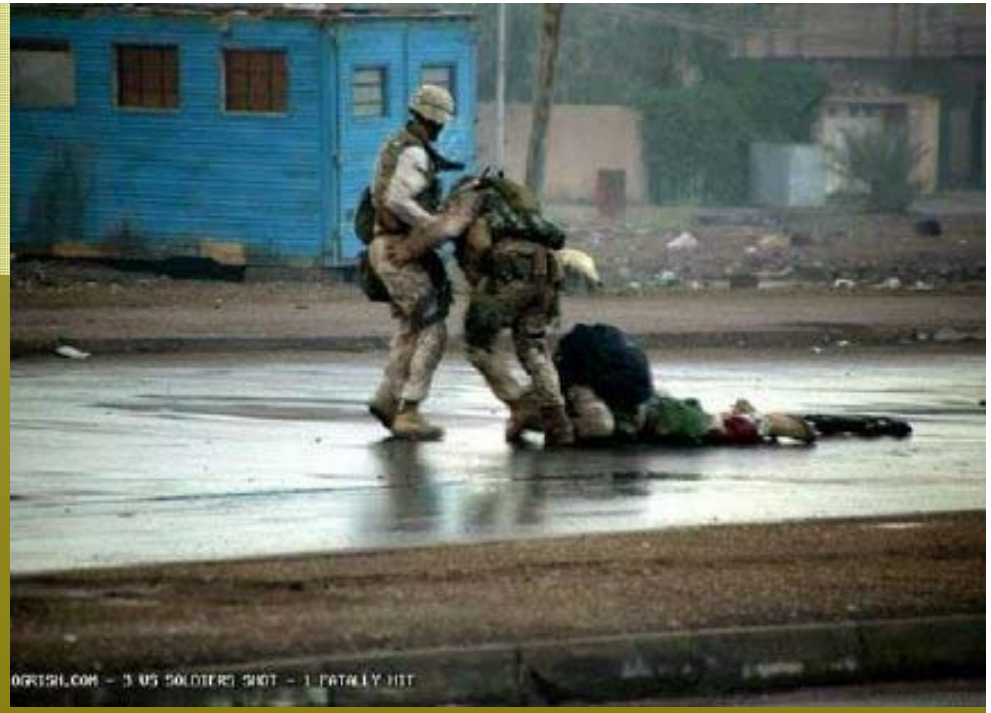
COE Dangerous Environment

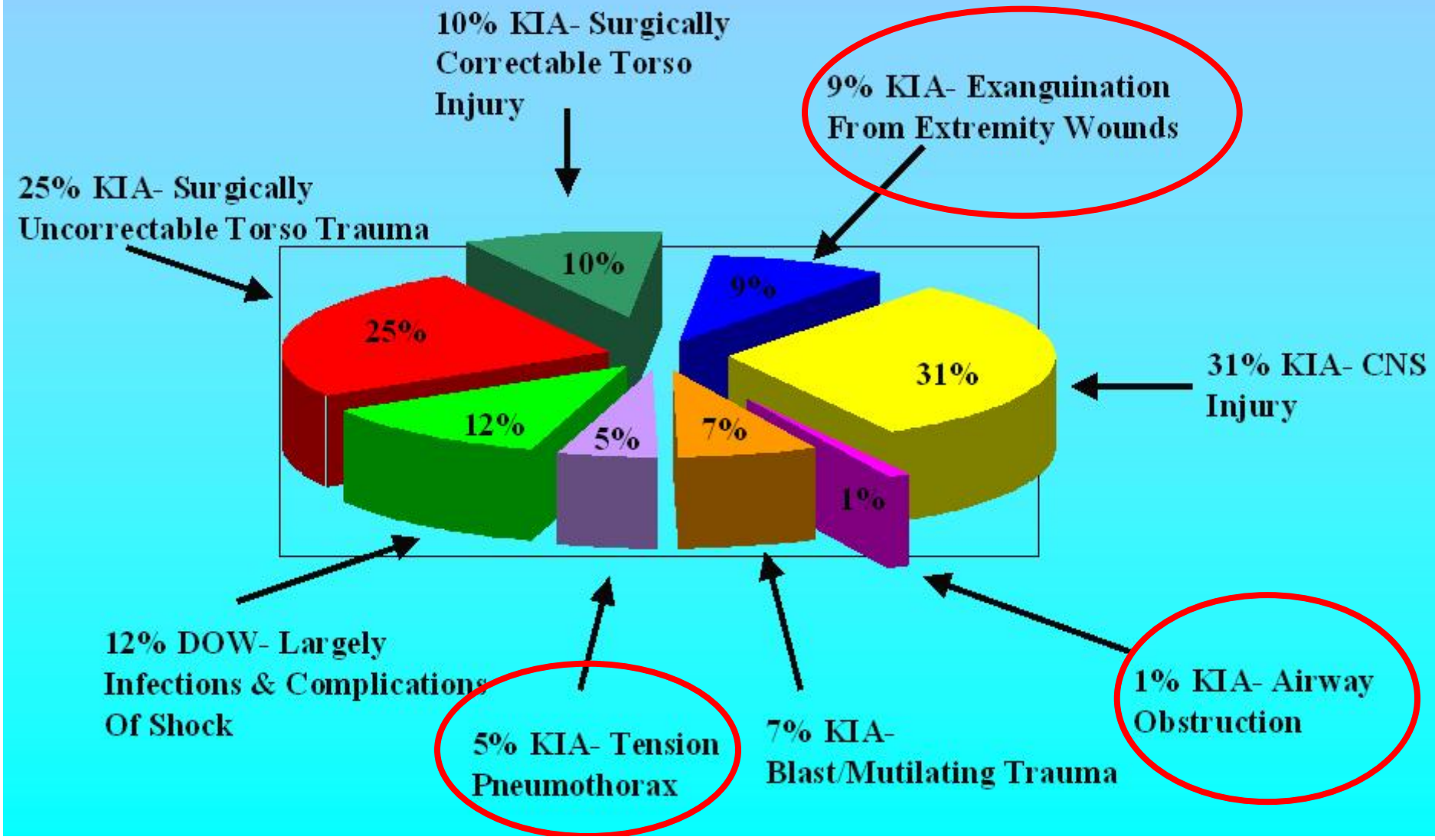

OGRISH.COM - 3 US SOLDIERS SHOT - 1 FATALLY HIT


OGRISH.COM - 3 US SOLDIERS SHOT - 1 FATALLY HIT


OGRISH.COM - 3 US SOLDIERS SHOT - 1 FATALLY HIT


OGRISH.COM - 3 US SOLDIERS SHOT - 1 FATALLY HIT

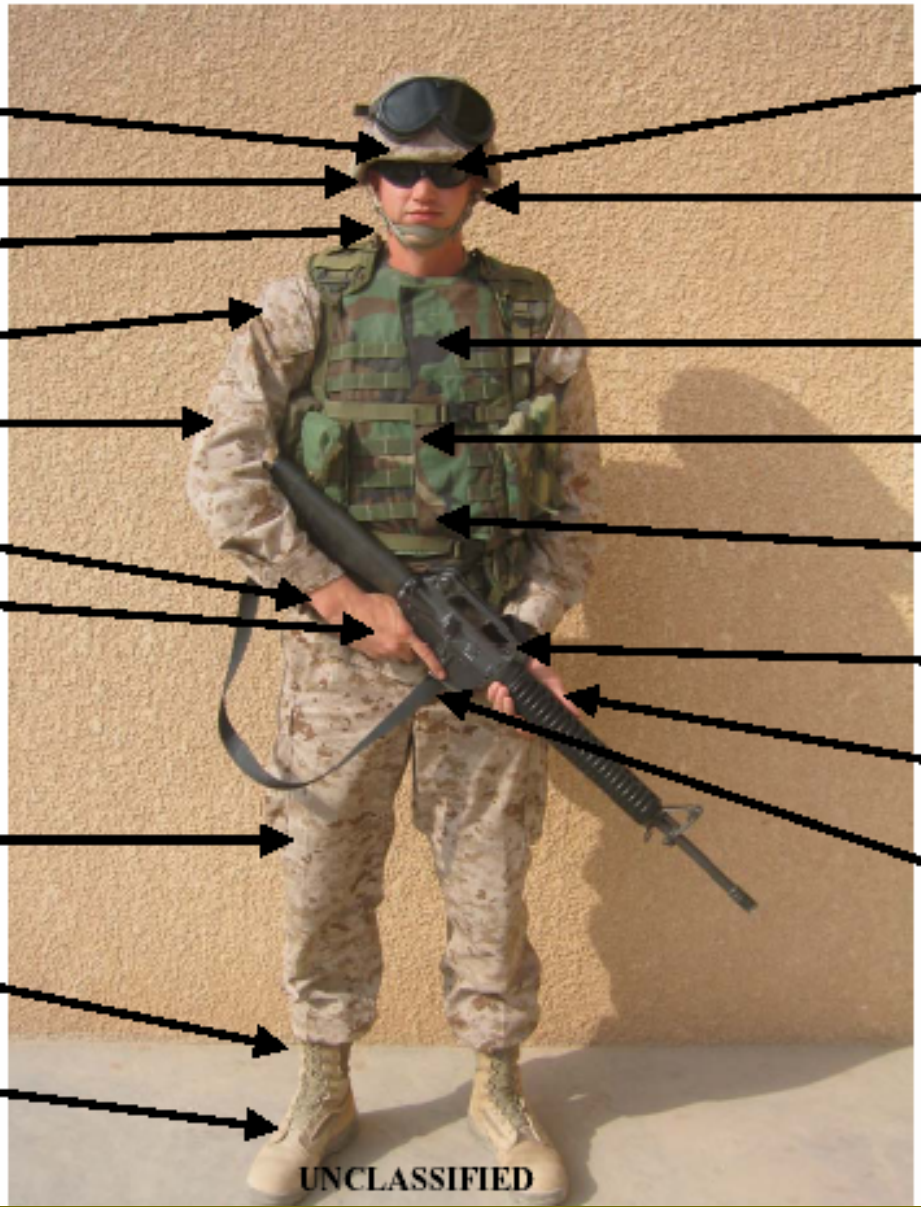
How People Die In Ground Combat (From COL Ron Bellamy)



UNCLASSIFIED

WIA WOUNDED AREAS

19 March 2003 – 18 May 2004



HEAD 63

FACE 72

NECK 46

SHOULDERS 61

ARMS 165

WRIST 11

HANDS 96

OTHER 120

LEGS 310

ANKLE 43

FEET 60

EYE 68

EAR 60

CHEST 34

BACK 23

ABDOMEN 24

PELVIS 3

BUTTOCKS 15

GROIN 6

CAUSES

IED-313

Blasts - 185

GSW - 249

Shrapnel – 255

Other - 235

TOTAL WIA 19 Mar 03 – 18 May 04

1237

(wounds do not add up to 1237 due to other injuries)

UNCLASSIFIED

Point of Wounding Care

- 90% of all battlefield casualties die before they reach definitive care.
- Point of wounding care is the responsibility of the individual soldier, his battle buddy, the Combat Lifesaver, and the Combat Medic.

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Point of Wounding Care

- There needs to be a shift in our thinking, the days of not providing self aid and laying there and yelling "*Medic"* are over. We must have the ability to assess our own wounds, provide self or buddy aid if needed, and continue the mission if able. The bottom line is a soldier capability at the point of wounding, who is trained and equipped to decrease preventable battlefield death. This strategy will increase the unit's combat effectiveness and it's survivability. If we could make some minor changes in our common soldier medical skills training, we can improve the survival rate by 15% of all battlefield deaths.

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Self aid/ Buddy aid Skills

- Rapid Casualty Assessment (ABCs)
- Control Hemorrhage
- Treat penetrating chest trauma
- Maintain airway
- Package casualty for transport
- Other principles – pain management, hypothermia management, early antibiotics, IV access and appropriate fluid

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Medic First to Die, Soldiers not Trained

Tourniquet

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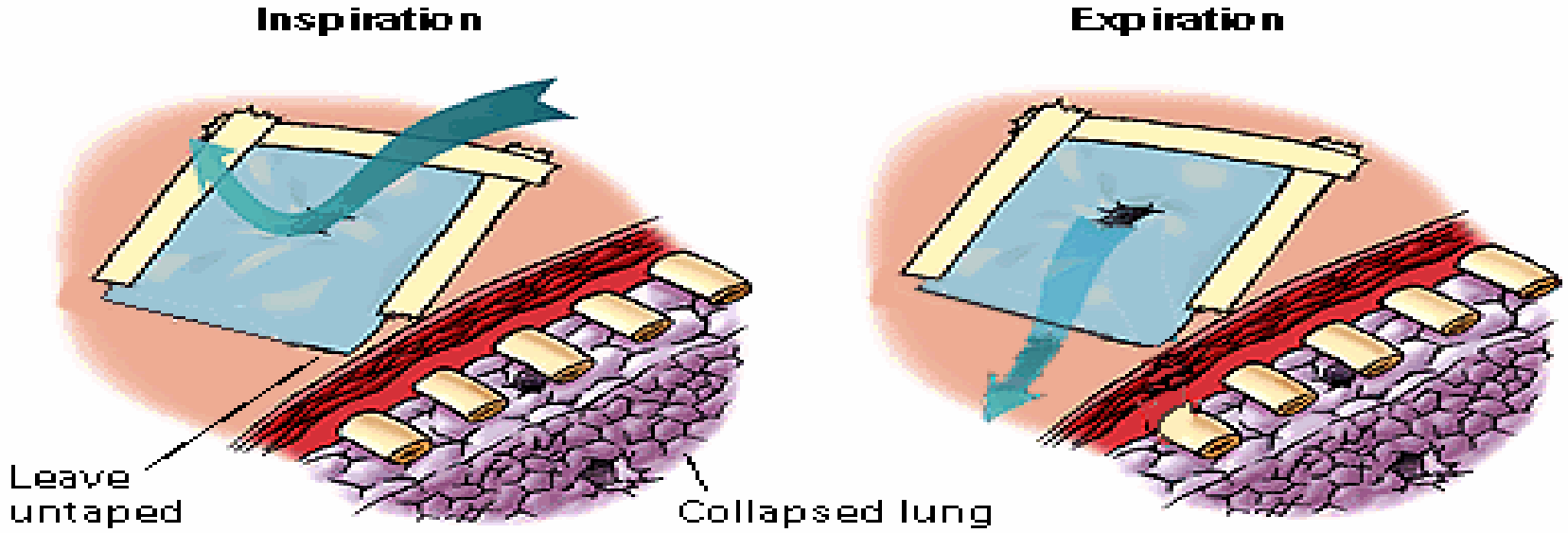
Open Pneumothorax

Wound Dressing for an Open Pneumothorax



Insert Tip of Airway Through Nostril

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Improved First Aid Kit

Israeli Pressure Dressing (IPD)
aka: Emergency Bandage

4” Kerlix

Combat Application Tourniquet (CAT)

Nasopharyngeal Airway (NPA)

14g Needle

2” Tape

MOLLE Type Pouch

Exam Gloves (4)

Weight: 1.08 lbs Cube: 128 ci

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Combat Lifesaver Skills

- Rapid Casualty Assessment
- Control Hemorrhage
- Treat penetrating chest trauma
- Maintain airway
- Initiate Saline Lock
- Package casualty for transport

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Emphasize Pressure Points, HemCon

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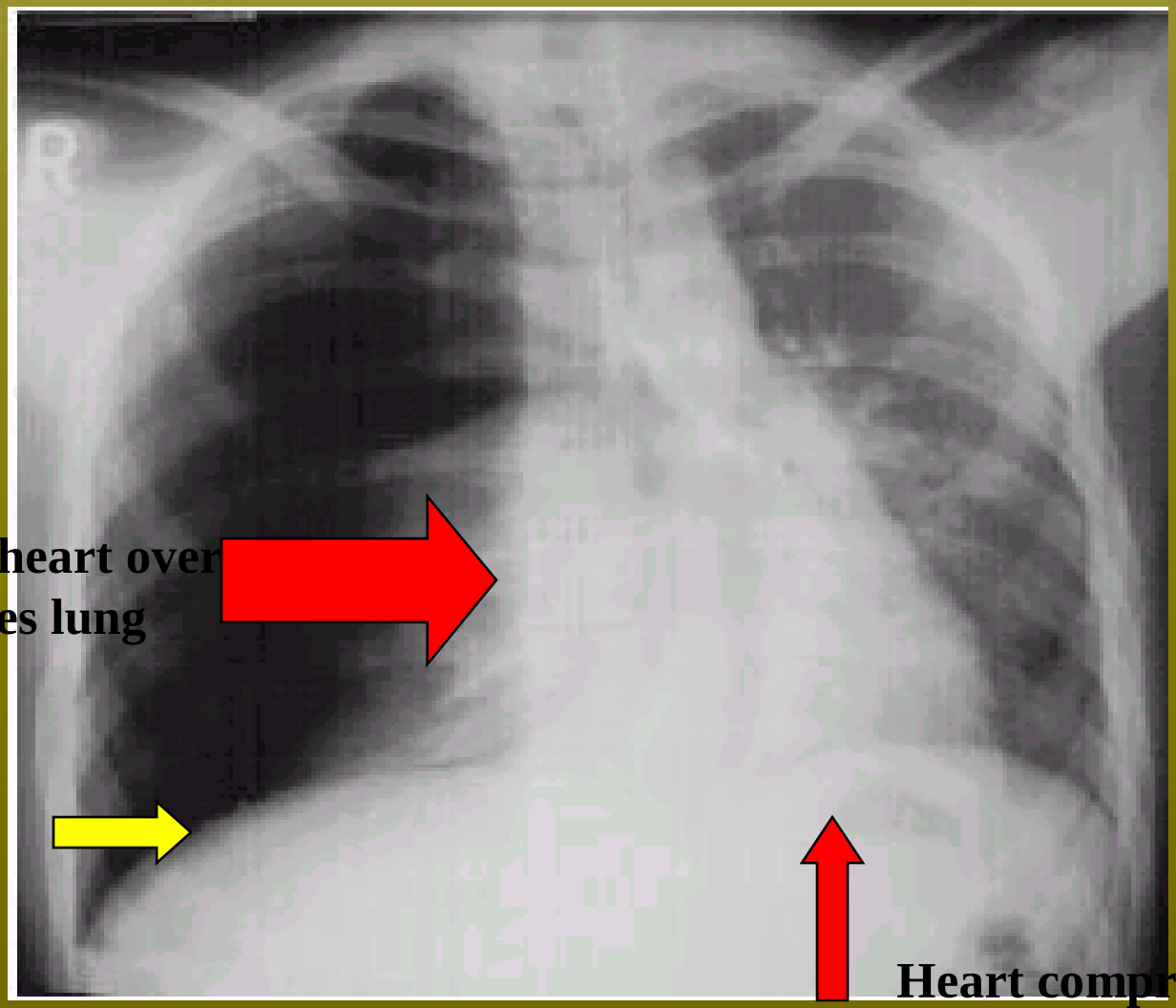
Nasopharyngeal Airway

Tension Pneumothorax



Air pushes heart over and collapses lung

Air outside lung from wound

Heart compressed not able to pump well

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Needle Chest Decompression

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SKED Litter

Talon II Litter

Talon Litter

Tactical Combat Casualty Care, 91W

- Care Under Fire
- Tactical Field Care
- Combat Casualty Evacuation Care

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TCCC

- Casualty scenarios in combat usually entail both a medical problem as well as a tactical problem.
- We want the best possible outcome for both the man and the mission.
- Good medicine can sometimes be bad tactics, bad tactics can get everyone killed, and or cause the mission to fail

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TCCC

- This approach recognizes a particularly important principle –
- Performing the correct intervention at the correct time in the continuum of combat care. A medically correct intervention performed at the wrong time in combat may lead to further casualties

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Extremity Hemorrhage

Chitosan Hemostatic Dressing

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Chitosan HCD

Porcine Abdominal Aorta Punch

Airway, Recovery Position or Surgical Cric

Cricothyroidotomy

Operational Medicine

Saline Lock

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F.A.S.T 1

Hextend

- 1000ml of Ringers Lactate (2.4lbs) will expand the intravascular volume by 250ml within 1 hour

- 500ml of 6% Hetastarch (trade name Hextend®, weighs 1.3lbs) will expand the intravascular volume by 800ml within 1 hour, and will sustain this expansion for 8 hours

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Why does Hypothermia Happen?

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Hypothermia Prevention

6 – Cell

"Ready-Heat" Blanket

4- Cell

"Ready-Heat" Blanket

Blizzard *"Survival Blanket"*

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Tactical Field Care

Pain Control

- Able to fight
  - Meloxicam (Mobic®) 15 mg qd
  - Acetaminophen 1000 mg po q6hr
- Unable to fight
  - Morphine 5 mg IV / IO
  - Phenergan® 25mg IV, IM

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Combat Pill Pack

Pain Management and Infection Control
For Combat Casualties

"Just Got Easier To Swallow"

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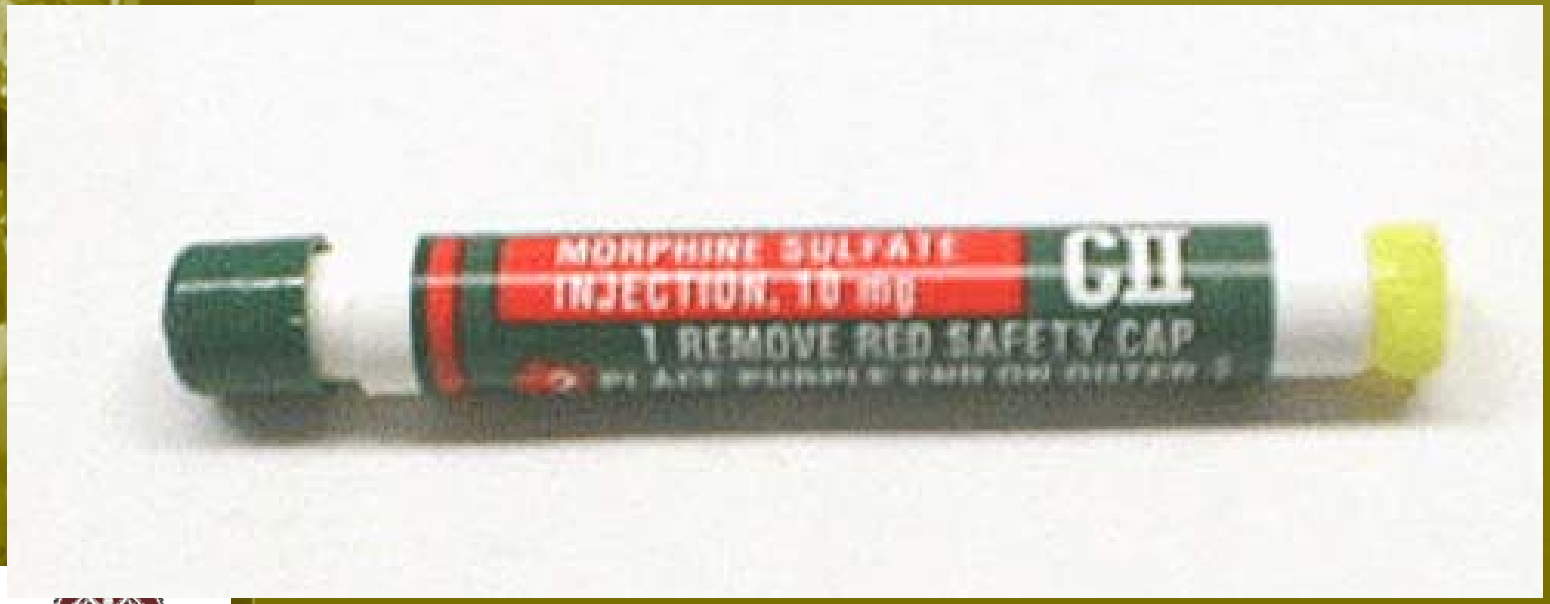
Morphine Autoinjector Device

Can only be given IM



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Morphine Administration Devices

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Future Pain Relief

Fentanyl Transmucosal Lozenge

Future Pain Relief

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Tactical Field Care

- Antibiotics

- Antibiotics should be considered in any wound sustained on the battlefield.

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Antibiotics

- Casualties who are awake and alert, Gatifloxacin 400 mg, one tablet Q day (pill pack)
- Casualties who are unconscious,
- Cefotetan-no longer manufacturered
- Cefoxitin- 1-2 Gms TID May not be available
- Ertapenum 1 gm IV /IM QD
- IV requires 30 infusion time
- IM should be diluted with lidocaine

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Casualty Response Leaders Course

- Familiarize intermediate level leaders with
- Self-aid / Buddy-aid
- Combat lifesaver
- Tactical Combat Casualty Care Principles
- Recognize employment capabilities of limited battlefield medical assets

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Equip Individual Soldiers

- Equip Individual Soldiers with IFAK and Combat Pill Pack
- Equip CLS with new CLS Bag

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Combat Medic Equipment

- Equip Combat Medics with new equipment:
  - **Cat Tourniquet**
  - **Emergency Bandages (Israeli)**
  - **HemCon Bandages**
  - **Hextend**
  - **FAST 1 Sternal IO Device**
  - **Morphine**
  - **Antibiotics**
  - **Blizzard Rescue Wraps**
  - **Ready Heat Blankets**

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Changes Related to TCCC

- SACMS-VT proposed changes to reflect TCCC principles and skill sets
- 91W Transition Training changed to reflect TCCC training.
- CTT tasks need changes to reflect skill sets for individual soldiers based on TCCC principles.

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Changes Related to TCCC

- Training for every individual soldier on use of the IFAK
- Proposed changes to Expert Field Medical Badge testing to reflect TCCC principles

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Anatolian / Reuters

Warrior Aid and Litter Kit

- Attacks against lightly armored vehicles continue to be a source of injury and death to our Soldiers. Direct and indirect fire weapons, improvised explosive devices, and mines produce devastating effects.

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HMMWV at 0630

Shrapnel from the RPG flew back through the driver's side and out the frame. The exit hole was elevated above the entry, indicating the RPG was fired from the road level, by an individual most likely at the crouch.

Warrior Aid and Litter Kit

- Several initiatives ranging from improved armor kits, and sandbagging vehicle floors, to improving Soldier body armor, to changing Tactics Techniques and Procedures have addressed improving Soldier survivability. However, nothing substantial has been implemented to address providing adequate casualty care at the point of wounding in these scenarios.

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Warrior Aid and Litter Kit

- These convoys/patrols may or may not have a Combat Medic or even a Combat Lifesaver organic to the element. They must rely on equipment carried on the vehicles and on the individual to provide care and conduct evacuation.

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Current Vehicle First aid Kit

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Warrior Aid and Litter Kit

- A need exists for a vehicle life-saving kit that can be carried on every vehicle traveling in a convoy or on a combat patrol within the current tactical theaters. Positioning this kit on less than every vehicle risks losing the ability if the vehicle it is loaded on is destroyed.

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TP-40
USE DIESEL FUEL ONLY
USE DIESEL FUEL ONLY

WALK Prototype

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IED's produce multiple casualties with devastating morbidity and mortality.

Devastating Injuries

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Warrior Aid and Litter Kit

- Improvised explosive devices are the leading cause of Morbidity and Mortality in Iraq today
- Equipping our vehicles traveling in convoys in danger areas with adequate medical supplies to care for two critically injured soldiers and a stable evacuation platform will enhance the soldier care capability in theatre.

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Summary

- Tactical medicine principles are appropriate and necessary for the Contemporary Operating Environment our soldiers find themselves in today.

- Employment of these principles throughout the force will result in more lives saved.

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Recommendation

- Recommend Tactical Combat Casualty Care principles be disseminated for all soldiers and units within the Army
- Recommend the adoption of the PHTLS Manual, 5th Edition or newer, as the Army Reference for TCCC.

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QUESTIONS?

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