# Tactical Combat Casualty Care (TCCC / TC3)

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Tactical Combat Casualty Care (TCCC) has saved hundreds of lives during our nation's conflicts in Iraq and Afghanistan. Nearly 90% of combat fatalities occur before the casualty reaches a Medical treatment facility, it is clear that the prehospital phase of care is the focus of efforts to reduce deaths in combat. Very few military physicians, however, have had training in this area. As a result, at the onset of hostilities, most combat Medics, corpsmen, and para-rescue personnel (PJs) in the US Military were trained to perform battlefield trauma care through the use of civilian-based trauma courses that were not designed for the prehospital combat environment and did not reflect contemporary knowledge in this area.

This challenge was met by the Committee on TCCC (CoTCCC) voting members and its many liaison members that collectively comprise the TCCC Working Group. This remarkably eclectic group includes trauma surgeons, emergency medicine physicians, internists, family medicine physicians, operational physicians and physician assistants, combat medical educators, trauma researchers, pathologists, combat medical doctrine developers, medical equipment specialists, and combat medics, corpsmen, and PJs. All of the US Armed Services are well-represented in the group's membership and 100% of the CoTCCC voting members have been to war. The CoTCCC and the TCCC Working Group represents different services, disciplines, and military experiences, all brought to bear on a single goal - reducing preventable deaths on the battlefield.

No such group existed when the Twin Towers fell. The US Special Operations Command initially funded the group as a research effort, then ownership of the group was successively assumed by the Naval Operational Medicine Institute, the Defense Health Board, and now the Joint Trauma System.

This group has taken the TCCC Guidelines as they existed in 2001 and continually updated them throughout the 15 years of war, based on input from the Joint Trauma System Performance Improvement trauma teleconferences, published case reports and case series from the war zones, breakthroughs in military Medical research, and new publications from the civilian medical literature that bear on combat trauma. It has processed a continual steam of input from the battlefield throughout the war years and ensured that battlefield trauma care lessons learned were not just noted, but acted upon.

Through the ongoing volunteer efforts of this dedicated group of individuals - which met quarterly throughout most of the war - US Forces have had prehospital trauma care guidelines that were customized for the battlefield and updated continuously based on real-time evaluation of outcomes from ongoing combat operations. This is the first time in our nation's history that this has occurred.

The success of TCCC effort had been well documented. It is a great tribute to all of the members of the CoTCCC and the TCCC Working Group, that it has been able to transcend service and Medical specialty differences, process new information expertly, and develop evidence-based, best-practice guidelines that have completely transformed battlefield trauma care.

It is to the Committee on TCCC and all of our valued colleagues in the TCCC Working Group that this TCCC text is dedicated. Our country and its casualties owe you all a profound measure of thanks.

Frank Butler, MD
CAPT (Retired), MC, USN
Chairman, Committee on Tactical Combat Casualty Care
Basic Management Plan for Care Under Fire

Return fire and take cover
Direct or expect casualty to remain engaged as a combatant if appropriate
Direct casualty to move to cover and apply self-aid if able.
Try to keep the casualty from sustaining additional wounds.
Stop life-threatening external hemorrhage if tactically feasible:
  - Direct casualty to control hemorrhage by self-aid if able.
Use a CoTCCC-recommended limb tourniquet for extremity hemorrhage
  - Move the casualty to cover

Airway management is generally best deferred until the Tactical Field Care phase.

Basic Management Plan for Tactical Field Care


Triage Casualties as required. Altered mental status is criteria to have weapons cleared/secured, communications gear secured and sensitive items redistributed.

Massive Hemorrhage
Assess for unrecognized hemorrhage and control all life-threatening bleeding.

Use one or more CoTCCC-recommended limb tourniquets if necessary.

Use a CoTCCC approved hemostatic dressing for compressible hemorrhage not amenable to limb tourniquet use.

Immediately apply a CoTCCC-recommended junctional tourniquet if the bleeding site is amenable to use of a junctional tourniquet.

Airway Management
Unconscious casualty without airway obstruction:
  - Chin lift or jaw thrust maneuver
  - Nasopharyngeal airway
  - Place the casualty in the recovery position
Casualty with airway obstruction or impending airway obstruction:
  - Allow a conscious casualty to assume any position that best protects the airway, to include sitting up
  - Chin lift or jaw thrust maneuver
  - Nasopharyngeal airway
  - Place an unconscious casualty in the recovery position
If the previous measures are unsuccessful perform a surgical cricothyroidotomy using one of the following:
  - CricKey technique
  - Bougie-aided open surgical technique
  - Standard open surgical technique
*Use lidocaine if the casualty is conscious
Basic Management Plan for Tactical Field Care continued

**Respiration/Breathing**
In a casualty with progressive respiratory distress and known or suspected torso trauma, consider a tension pneumothorax:
- Decompress the chest on the side of the injury at the primary or alternate site.
All open and/or sucking chest wounds should be treated by:
- Applying a vented chest seal (preferred)
- Applying a non-vented chest seal
- Burp the wound if indicated for breathing difficulty
Initiate pulsoximetry monitoring.
Monitor for tension pneumothorax.
Casualties with moderate/severe TBI should be given supplemental oxygen when available to maintain an oxygen saturation > 90%.

**Circulation - Bleeding**
Apply a pelvic binder for suspected pelvic fracture and/or severe blunt force or blast injury.
Reassess prior tourniquet application:
- Expose the wound and determine if a tourniquet is needed; if bleeding is not controlled then tighten tourniquet if possible.
  - If the first tourniquet does not control bleeding after tightening, then add a second tourniquet side-by-side with the first.
Convert Limb tourniquets and junctional tourniquets if the following three criteria are met:
  - The casualty is not in shock.
  - It is possible to monitor the wound closely for bleeding.
  - The tourniquet is not being used to control bleeding from an amputation.
Convert tourniquets in less than 2 hours if bleeding can be controlled with other means.
Expose and use an indelible marker to clearly mark all tourniquet sites with the time of tourniquet application, reapplication, conversion, or removal.

**Circulation - IV/IO Access**
Start an 18-gauge IV or Saline Lock if indicated.
If IV access is not obtainable, use an intraosseous (IO) needle.

**Circulation - TXA**
If a casualty is anticipated to need a blood transfusion, then administer 1 gram of tranexamic acid (TXA) in 100ml of NS or LR over 10min ASAP but NOT beyond 3 hours post injury.

**Circulation - Fluid Resuscitation**
Assess for hemorrhagic shock:
  - If not in shock PO fluids are permissible if casualty is conscious and can swallow.
  - If in shock resuscitate with:
    Whole blood (preferred) or
    Plasma, RBCs and platelets (1:1:1) or
    Plasma and RBCs (1:1) or
    Plasma or if blood products not available,
    Hextend or Lactated Ringers or Plasma-Lyte-A
Resuscitate with above fluids until a palpable radial pulse, improved mental status or systolic BP of 80-90 mmHg is present. Discontinue fluids when one or more end points are achieved.
Reassess casualty frequently to check for recurrence of shock. If shock recurs, verify all hemorrhage is under control and repeat fluid resuscitation as above.
Basic Management Plan for Tactical Field Care continued

**Hypothermia Prevention**
- Minimize casualty environmental exposure and promote heat retention.
- Keep personal protective gear on if feasible. Replace wet clothing if possible. Get casualty onto insulated surface ASAP.
- Use a hypothermia prevention kit with active rewarming.
- If none above is available, then use dry blankets, poncho liners, or sleeping bags and keep the casualty warm and dry.
- Warm IV fluids are preferred.

**Penetrating Eye Trauma** - If penetrating eye injury is noted or suspected:
- Perform a rapid field test of visual acuity and document findings.
- Cover eye with a rigid eye shield (not a pressure patch).
- Administer Combat Wound Medication Pack if possible and/or administer IV/IM antibiotics per below.

**Monitoring** – Initiate advanced electronic monitoring of vital signs if available.

**Analgesia/Pain Management**
- Analgesia on the battlefield should generally be achieved by one of three options:
  - Mild to Moderate Pain and/or Casualty can swallow and is still able to fight:
    - Administer TCCC Combat Wound Medication Pack (CWMP)
  - Moderate to Severe Pain and casualty IS NOT in Shock
    - Oral Transmucosal Fentanyl Citrate (OTFC) 800mcg
  - Moderate to Severe Pain and casualty is in hemorrhagic shock or respiratory distress
    - Administer Ketamine 50mg IM or IN repeating q30min prn
    - OR
    - Administer Ketamine 20mg Slow IV or IO repeating q20min prn

*Endpoint control of pain or development of nystagmus.*
*Consider Ondansetron 4mg ODT/IV/IO/IM q8hours prn for nausea and vomiting.*

**Antibiotics**
- If able to take PO, then administer Moxifloxacin 400mg PO qDaily from CWPP.
- If unable to take PO, administer Ertapenem 1 gram IV/IM qDaily.

**Wounds**
- Inspect and dress known wounds.
- Check for Additional Wounds.

**Burns**
- Facial burns should be aggressively monitored for airway status and potential inhalation injury.
- Estimate total body surface area (TBSA) burned to nearest 10%.
- Cover burned areas with dry, sterile dressings. For burns >20% TBSA, consider placing casualty immediately in HPMK or other hypothermia prevention means.
- Fluid Resuscitation (USAISR Rule of Ten):
  - If burns >20% TBSA, initiate IV/IO fluids ASAP with Lactated Ringers, NS, or Hextend. If Hextend, then no more than 1000ml followed by LR or NS as needed.
  - Initial IV/IO fluid rate = %TBSA X 10ml/per hour for adults 40-80 kg (+100ml/hr for every 10kg above 80kg).
  - If hemorrhagic shock is present then resuscitate IAW fluid resuscitation in Circulation section.
- All TCCC interventions may be performed on or through burned skin.
### Basic Management Plan for Tactical Field Care continued

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<tr>
<td>Communicate with the casualty if possible. Encourage, reassure, and explain care.</td>
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<tr>
<td>Communicate with tactical leadership ASAP and throughout treatment. Provide casualty status and evac requirements.</td>
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<tr>
<td>Communicate with the evacuation system to arrange TACEVAC.</td>
</tr>
<tr>
<td>Communicate with medical personnel on evacuation assets and relay mechanism of injury, injuries sustained, signs/symptoms and treatments rendered.</td>
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<td>Document clinical assessments, treatments rendered, and changes in the casualty's status on a TCCC Casualty Card (DD Form 1380) and forward this information with the casualty to the next level of care.</td>
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<td>Battlefield blast or penetrating trauma casualties with no pulse, no ventilations, and no other signs of life should not be resuscitated.</td>
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<td>Casualties with torso trauma or polytrauma with no pulse or respirations should have bilateral needle decompression performed to confirm/deny tension pneumothorax prior to discontinuing care.</td>
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<tr>
<td>Secure hypothermia prevention wraps/blankets/straps.</td>
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<tr>
<td>Secure litter straps and consider additional padding for long evacuations.</td>
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<tr>
<td>Provide instructions to ambulatory patients as needed.</td>
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<td>Stage Casualties for evacuation.</td>
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<td>Maintain security at evacuation site.</td>
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### Basic Management Plan for Tactical Evacuation Care (TACEVAC)

In addition to the principles of Tactical Field Care consider the following for Tactical Evacuation Care:

#### Transition of Care
- Tactical force should establish evacuation point security and stage casualties for evacuation.
- Tactical force personnel/medic should communicate patient status to TACEVAC personnel to include stable/unstable, injuries identified, and treatments rendered.
- TACEVAC personnel stage casualties on evac platform as required.
- Secure casualties on evac platform IAW unit policies, platform configurations, and safety requirements.
- TACEVAC medical personnel reassess casualties and re-evaluate all injuries and interventions.

#### Airway Management
- Consider the following for casualty with airway obstruction or impending airway obstruction:
  - Supraglottic airway, or
  - Endotracheal intubation

#### Breathing
- Consider chest tube insertion if no improvement and/or long transport is anticipated.
- Administer oxygen when possible for the following types of casualties:
  - Low oxygen saturation by pulse oximetry
  - Injuries associated with impaired oxygenation
  - Unconscious casualty
  - Casualty with TBI (maintain oxygen saturation > 90%)
  - Casualty in shock
  - Casualty at altitude

#### Traumatic Brain Injury
- Casualties with moderate/severe TBI should be monitored for:
  - Decreases in level of consciousness
  - Pupillary dilation
  - SBP should be >90 mmHg
  - O₂ sat > 90
  - Hypotension
  - PCO₂ (If capnography is available, maintain between 35-40 mmHg)
  - Penetrating head trauma (if present, administer antibiotics)
  - Assume a spinal (neck) injury until cleared
- If impending herniation is suspected take the following actions:
  - Administer 250 cc of 3 or 5% hypertonic saline bolus
  - Elevate the casualty’s head 30 degrees
  - Hyperventilate the casualty

#### Communication
- Communicate with the casualty if possible. Encourage, reassure, and explain care.
- Communicate with next level of care and relay mechanism of injury, injuries sustained, signs/symptoms, and treatments rendered.
CARE UNDER FIRE

Casualty Sustained

Return Fire and Take Cover

Direct casualty to move to cover and apply self-aid

YES Casualty Conscious? NO Move casualty to cover if tactically feasible

Try to keep casualty from sustaining additional wounds.

Casualty moved to cover or extrication needed *

STOP LIFE THREATENING BLEEDING

Use CoTCCC Recommended Limb Tourniquet applied proximal to bleeding site

YES Limb Tourniquet Indicated? NO Continue with Fight / Mission

Airway management is generally best deferred until the Tactical Field Care phase

LIFE THREATENING BLEEDING: Spurting Blood or Flowing Blood Blood soaking rapidly through uniform or pooling on the ground Complete Amputation

Place tourniquets “High & Tight” if bleeding site is not easily identifiable

Move casualty to CCP or secure area and initiate Tactical Field Care

* Extrication: Casualties should be extricated from burning vehicles or buildings and moved to relative safety. Do what is necessary to stop burning process.

Casualty Movement: The fastest method is dragging along the long axis of patient’s body by two rescuers. Spinal precautions or stabilization should only be considered after a casualty is removed from the enemy threat and indicated by mechanism of injury.

TACTICAL FIELD CARE

Indicates All Combatants and Combat Lifesaver capability level skill
Indicates Combat Medic capability level skill
Indicates Combat Paramedic or SOF Medic capability level skill

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TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL FIELD CARE


Triage as required.

Casualties with altered mental status should have:
- Weapons cleared and secured
- Communications secured
- Sensitive missions items redistributed

MASSIVE HEMORRHAGE

Uncontrolled Massive External Hemorrhage or Traumatic Amputation Present?

NO

YES

Tighten previously applied tourniquet or apply a CoTCCC-recommended Limb Tourniquet. Apply a 2nd Tourniquet if bleeding not controlled.

Amenable to Limb Tourniquet?

YES

Use CoTCCC-recommended Hemostatic Dressing/Agent

Amenable to Junctional Device?

YES

Apply CoTCCC-recommended Junctional Device

Hemorrhage Controlled?

YES

Hemorrhage Controlled?

NO

Maintain Pressure with CoTCCC-recommended Hemostatic Dressing/Agent and Direct Pressure

Hemorrhage Controlled?

NO

Assess minimal bleeding after airway and breathing management

Indicates All Combatants and Combat Lifesaver capability level skill

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill

Triage multiple casualties into CCP or secure area as required

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TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL FIELD CARE CONTINUED

RESPIRATION / BREATHING

Assess Respiration / Breathing

Progressive Respiratory Distress and Known or Suspected Torso Trauma?

NO

YES

Suspect/Consider Tension Pneumothorax

Needle Decompress Chest at Primary or Alternate Site on injured side. Repeat as necessary.

Open/Sucking Chest Wound?

NO

YES

Apply Vented Chest Seal to all open/sucking chest wounds

Vented chest seals are preferred over non-vented.

Initiate Pulse Oximetry Monitoring if available

MONITOR FOR TENSION PNEUMOTHORAX

Burp or remove chest seal if applied. Repeat as necessary.

Tension Pneumothorax Suspected?

NO

YES

If moderate or severe TBI is suspected, provide supplemental O2 if available to maintain SpO2>90%

CONTINUE TACTICAL FIELD CARE

TENSION PNEUMOTHORAX INDICATORS:
Increasing Hypoxia
Respiratory Distress
Hypotension

Decompression Needle
14-gauge, 3.25 inch needle/catheter unit

Primary Site:
2nd Intercostal Space/Midclavicular line

Alternate Site:
4th or 5th Intercostal Space / Anterior Axillary Line

Indicates All Combatants and Combat Lifesaver capability level skill
Indicates Combat Medic capability level skill
Indicates Combat Paramedic or SOF Medic capability level skill
**TACTICAL COMBAT CASUALTY CARE ALGORITHM**

**TACTICAL FIELD CARE CONTINUED**

**CIRCULATION (BLEEDING)**

**Bleeding Assessment**

**Pelvic Binder indicated?**

- **YES**
  - Apply a Pelvic Binder

- **NO**
  - Reassess previously applied tourniquets.
  - Reassess previously applied hemostatic dressings/agents
  - Expose wound and determine if tourniquet is needed.
    - **YES**
      - Leave previous tourniquet in place
      - Place second tourniquet 2-3 inches above wound on skin.
      - Loosen first tourniquet once second tourniquet is effectively placed.
      - Leave tourniquet in place – maximum 2 hours of tourniquet time until reassessment
      - Note time of tourniquet release on tourniquet and/or casualty card
      - If needed, control bleeding with hemostatic and/or pressure dressing.
    - **NO**
      - Bleeding Controlled?
        - **YES**
          - Note time of tourniquet reapplication on tourniquet and/or casualty card
          - Monitor wound closely for bleeding
        - **NO**
          - Move original tourniquet to position next to second tourniquet directly on skin and tighten both until bleeding stopped and distal pulse not palpated
          - Note time of tourniquet release on tourniquet and/or casualty card
          - Control bleeding with hemostatic and/or pressure dressing.

**Pelvic Binder Indications**
- Severe blunt trauma or blast injury with one or more of the following:
  - Pelvic pain
  - Any major lower limb amputation/near amputation
  - Physical exam suggestive of pelvic fracture
  - Unconsciousness or Shock

**Tourniquet not needed criteria:**
- Minor lacerations w/ minimal bleeding
- Surface Abrasions
- Bleeding controlled by pressure dressing

**Loosen tourniquet in <2 hours if bleeding can be controlled by other means. Leave tourniquet loosely on limb for rapid reapplication if needed. Do not remove if TQ in place >6 hours.**

**Note time of tourniquet reapplication on tourniquet and/or casualty card**

Each hemostatic works differently. If one fails to control bleeding, it may be removed and a fresh dressing of the same type or a different type applied (Xstat cannot be removed in the field)

**Indicates All Combatants and Combat Lifesaver capability level skill**

**Indicates Combat Medic capability level skill**

**Indicates Combat Paramedic or SOF Medic capability level skill**

*In accordance with CoTCCC Guidelines As Of: 31 JAN 2017*

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Initiate 18G IV or Saline Lock

If IV is not obtainable, use IO route

TXA Criteria:
- Presents with Hemorrhagic Shock
- One or more major amputations
- Penetrating torso trauma
- Evidence of severe bleeding

CIRCULATION (TRANEXAMIC ACID)

TXA Needed?

YES

Administer 1 gm of Tranexamic Acid (TXA) in 100 ml of NS or LR IV over 10min
Administer as soon as possible after injury
Do NOT administer >3hours after injury

NO

After initial fluid resuscitation, administer second dose of Tranexamic Acid (TXA) 1 gm in 100 ml of NS or LR IV over 10 min
Do NOT administer 3 hours or more after injury

Reassess frequently for presence of shock

CONTINUE TACTICAL FIELD CARE

Indicates All Combatants and Combat Lifesaver capability level skill
Indicates Combat Medic capability level skill
Indicates Combat Paramedic or SOF Medic capability level skill
Shock Criteria:
- Altered Mental Status (in absence of TBI)
- Weak/Absent Radial Pulse

Indicates Combat Paramedic or SOF Medic capability level skill
Indicates All Combatants and Combat Lifesaver capability level skill
Indicates Combat Medic capability level skill

Shock Criteria:
- Altered Mental Status (in absence of TBI)
- Weak/Absent Radial Pulse

CIRCULATION (SHOCK / FLUID RESUSCITATION)

Assess for Shock

Hemorrhagic shock present?

YES

Fluid Resuscitation (in preferred order/combinations)

If not in shock, NO IV fluids are immediately necessary

PO fluids permissible if casualty is conscious and can swallow

If not available

Whole Blood Transfusion

OR, if not available

Plasma, RBCs, Platelets

1:1:1

OR, if not available

Plasma and RBCs 1:1

OR, if not available

Plasma (reconstituted, liquid, or thawed) or RBCs

Re-assess after each unit or 500 cc bolus administered

Continue fluid resuscitation until:

- Palpable radial pulse OR
- Improved mental status OR
- Systolic BP of 80-90 mmHg

If altered mental status due to suspected TBI and has weak/absent radial pulse, then resuscitate to restore normal radial pulse or Systolic BP >90 mmHg

After initial fluid resuscitation, administer second dose of Tranexamic Acid (TXA) 1 gm in 100 ml of NS or LR IV over 10 min

Do NOT administer 3 hours or more after injury

Reassess frequently for presence of shock

CONTINUE TACTICAL FIELD CARE

Fluid resuscitation and hypothermia prevention should be executed simultaneously if possible

If shock recurs, check all hemorrhage management interventions for effectiveness. Repeat fluid resuscitation.
TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL FIELD CARE CONTINUED

HYPOTHERMIA PREVENTION

Minimize casualty environmental exposure / promote heat retention
Keep Personal Protection Equipment (PPE) on if feasible and warranted
Replace wet clothes if possible
Use CoTCCC recommended hypothermia prevention equipment if available
Use dry blankets, poncho liner or sleeping bag. Keep casualty dry.
Warm IV fluids are preferred if possible

Hypothermia prevention and fluid resuscitation should be executed simultaneously if possible

Penetrating Eye Trauma noted or suspected?

YES

Penetrating Eye Trauma

NO

Perform rapid field test of visual acuity and document
Cover eye with Rigid Eye Shield (DO NOT use pressure patch)
Ensure administration of Moxifloxacin 400 mg from Combat Wound Medication Pack

Patient Monitoring

Pulse oximetry should be utilized as a minimum adjunct to clinical monitoring as stated in Breathing/Respiration section.
Advanced non-invasive electronic monitoring and recording of vital signs should be initiated if possible and available.

On accordance with CoTCCC Guidelines As Of: 31 JAN 2017
Indicates combat paramedic or SOF medic capability level skill

Indicates all combatants and combat lifesaver capability level skill

Indicates combat medic capability level skill

Indicates combat paramedic or SOF medic capability level skill

In accordance with CoTCCC Guidelines
As Of: 31 JAN 2017

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TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL FIELD CARE CONTINUED

INSPECT & DRESS KNOWN WOUNDS

CHECK FOR ADDITIONAL WOUNDS

Dress wounds to ensure hemorrhage control and wound protection

BURNS

Burns?

YES

Aggressively monitor airway status and O2 saturations

Facial / Neck Burns?

YES

Consider early surgical airway for respiratory distress or O2 desaturation

NO

Estimate TBSA to nearest 10% using Rule of Nines

Cover burned areas with dry sterile dressing

Burns >20%?

YES

Initiate Fluid Resuscitation using USAISR Rule of 10 using LR, NS or Hextend

USAISR Rule of 10 Fluid Calculation: %TBSA x 10 ml/hour for adults 40-80 kg (for every 10 kg above 80 kg, increase rate by 100 ml/hour)

NO

SPLINT FRACTURES

Splint Fractures and re-check pulses

CONTINUE TACTICAL FIELD CARE

All TCCC interventions may be performed on/through burned skin.

Consider placing casualty in hypothermia management equipment to cover/protect wounds and prevent hypothermia

Hemorrhagic shock fluid management takes precedence over burn fluid resuscitation

Do not exceed 1000 ml of Hextend for burn resuscitation, but can be followed by LR or NS.
Communicate with casualty, tactical leadership, and medical providers in evacuation chain.

Cardiopulmonary Resuscitation (CPR) Considerations

Battlefield blast or penetrating trauma casualties with NO pulse, NO ventilations, and NO other signs of life should not be resuscitated.

However, casualties with torso or polytrauma with no pulse or respirations should have bilateral needle decompression performed to confirm/deny tension pneumothorax prior to discontinuing care.

Document clinical assessments, treatments rendered, and changes on DD1380 TCCC Card and forward with casualty to next level of care.

Communicate with casualty.
Encourage, reassure, explain care if possible.

Communicate with tactical leadership.
Provide casualty status and evacuation requirements to assist in evac coordination.

Communicate with evacuation system (PECC) to arrange TACEVAC.

Communicate with evacuation chain.
Communicate with medical providers on evac asset if possible.
Relay mechanism of injury, injuries sustained, signs/symptoms, and treatments rendered.

Communicate with tactical leadership.
Provide casualty status and evacuation requirements to assist in evac coordination.

Communicate with evacuation chain.
Communicate with medical providers on evac asset if possible.
Relay mechanism of injury, injuries sustained, signs/symptoms, and treatments rendered.

In accordance with CoTCCC Guidelines
As Of: 31 JAN 2017

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As Of: 31 JAN 2017

TACTICAL COMBAT CASUALTY CARE ALGORITHM

TACTICAL FIELD CARE CONTINUED

PREPARE FOR EVACUATION

Complete & Secure TCCC casualty card to each casualty

Package Casualty for Evacuation

Secure all loose ends of bandages and wraps

Secure hypothermia prevention wraps/blankets/straps

Secure litter straps as required

Consider additional padding for long evacuations

Stage Casualties for Evacuation

Provide instructions to ambulatory patients as required

Stage casualties for evacuation IAW unit SOP

Maintain security at evac point IAW unit SOP

TACTICAL EVACUATION CARE (TACEVAC)

Transition of Care / Casualty Handover:
- Identify receiving care provider on evac platform
- Establish direct contact with receiving provider (Radio Comms/Eye Contact/Hand Contact)
- Provide a SIT Status on each casualty beginning with most serious
  - Stable or Unstable
  - Injuries (Life threats & MOI)
  - Treatments (Drugs & Interventions)

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TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL EVACUATION CARE
(TACEVAC)

TRANSITION OF CARE

Tactical Force

Establish evacuation point security and stage casualties for evacuation

Communicate patient information and status to TACEVAC personnel as clearly as possible.

Refer to appropriate manuals for specifics and procedures for Helicopter Landing Zones (HLZ), Ambulance Exchange Point (AXP), Maritime Evacuation Point (MEP) or as dictated by unit mission.

TACEVAC Personnel

Triage and stage casualties on evacuation platform as required

Secure Casualties in Evacuation Platform IAW unit policies, configuration and safety requirements

Re-Assess casualties and re-evaluate all injuries and previous interventions

CONTINUE TACTICAL EVACUATION CARE

Minimum information communicated:
- Stable or unstable
- Injuries identified
- Treatments rendered

Method of SIT Report:
- Identify receiving care provider on evac platform
- Establish direct contact with receiving provider (Radio Comms/Eye Contact/Hand Contact*)
- Provide a SIT Status on each casualty beginning with most serious
  Stable or Unstable Injuries (Life threats & MOI)
  Treatments (Drugs & Interventions)
* If verbal communication is difficult, point to each injury and treatment and confirm acknowledgement.

Indicates All Combatants and Combat Lifesaver capability level skill
Indicates Combat Medic capability level skill
Indicates Combat Paramedic or SOF Medic capability level skill

In accordance with CoTCCC Guidelines
As Of: 31 JAN 2017

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TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL EVACUATION CARE
(TACEVAC)

Re-Assess casualties and re-evaluate all injuries and previous interventions

Casualties with altered mental status should have weapons and radios taken away

MASSIVE HEMORRHAGE

Uncontrolled Massive External Hemorrhage or Traumatic Amputation Present?

YES

Tighten previously applied tourniquet or apply a CoTCCC-recommended Limb Tourniquet. Apply a 2nd Tourniquet if bleeding not controlled.

YES

Amenable to Limb Tourniquet?

NO

Amenable to Junctional Device?

YES

Apply CoTCCC-recommended Junctional Device

NO

Use CoTCCC-recommended Hemostatic Dressing/Agent

Hemorrhage Controlled?

YES

Maintain Pressure with CoTCCC-recommended Hemostatic Dressing/Agent and Direct Pressure

NO

Hemorrhage Controlled?

Assess minimal bleeding after airway and breathing management

CONTINUE TACTICAL EVACUATION CARE

Triage multiple casualties onto evacuation platform as required

Head Wounds
Neck Wounds
Junctional Wounds

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill

Indicates All Combatants and Combat Lifesaver capability level skill

In accordance with CoTCCC Guidelines
As Of: 31 JAN 2017

In accordance with CoTCCC Guidelines
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TACTICAL COMBAT CASUALTY CARE ALGORITHM

TACTICAL EVACUATION CARE (TACEVAC)

AIRWAY

Assess Airway

Conscious with NO airway trauma or problem identified

Unconscious without Airway Obstruction

Chin Lift / Jaw Thrust Maneuver
Insert Nasopharyngeal Airway
Recovery Position

Airway Obstruction or Impending Airway Obstruction

Chin Lift / Jaw Thrust Maneuver
Insert Nasopharyngeal Airway
If able, allow casualty to assume any position that best protects the airway, to include sitting up and leaning forward.

Supraglottic Airway

OR

Endotracheal Intubation

OR

Perform Surgical Cricothyroidotomy

Use lidocaine if casualty is conscious.

CricKey Technique (preferred)

OR

Bougie-assisted surgical technique or

OR

Standard open surgical technique

Assess Respiration / Breathing

Assess Airway Procedures Successful?

NO

Spinal stabilization is not necessary for casualties with penetrating trauma.

CONTINUE TACTICAL EVACUATION CARE

YES

Spinal stabilization is not necessary for casualties with penetrating trauma.

Indicates All Combatants and Combat Lifesaver capability level skill

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill

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TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL EVACUATION CARE
(TACEVAC)

RESPIRATION / BREATHING

Assess Respiration / Breathing

Progressive Respiratory Distress and Known or Suspected Torso Trauma?

NO

YES

Suspect/Consider Tension Pneumothorax

Needle Decompress Chest at Primary or Alternate Site on injured side. Repeat as necessary.

Open/Sucking Chest Wound?

NO

YES

Apply Vented Chest Seal to all open/sucking chest wounds

Vented chest seals are preferred over non-vented.

Initiate Pulse Oximetry Monitoring if not previously done

MONITOR FOR TENSION PNEUMOTHORAX

Burp or remove chest seal if applied. Repeat as necessary.

Tension Pneumothorax Suspected?

NO

YES

Administer Oxygen when possible as indicated:
- Low oxygen saturation by pulsoximetry
- Injuries associated with impaired oxygenation
- Unconscious casualty
- Casualty in shock
- Casualty at altitude
- Known or suspected smoke inhalation

If moderate or severe TBI is suspected, provide supplemental O2 if available to maintain SpO2>90%

Consider chest tube insertion if no improvement and/or long transport anticipated

CONTINUE TACTICAL EVACUATION CARE

TENSION PNEUMOTHORAX INDICATORS:
- Increasing Hypoxia
- Respiratory Distress
- Hypotension

Decompression Needle
14-gauge, 3.25 inch needle/catheter unit

Primary Site:
2nd Intercostal Space/Midclavicular line

Alternate Site:
4th or 5th Intercostal Space/Anterior Axillary Line

Indicates All Combatants and Combat Lifesaver capability level skill

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill

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As Of: 31 JAN 2017

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TACTICAL EVACUATION CARE (TACEVAC)

CIRCULATION (BLEEDING)

Bleeding Assessment

Apply a Pelvic Binder

Pelvic Binder indicated?

NO

Reassess previously applied tourniquets.

Reassess previously applied hemostatic dressings/agents

Expose wound and determine if tourniquet is needed.

YES

Leave previous tourniquet in place

Place second tourniquet 2-3 inches above wound on skin.

Loosen first tourniquet once second tourniquet is effectively placed

Bleeding Controlled?

YES

NO

Leave tourniquet in place – maximum 2 hours of tourniquet time until reassessment

Before 2 hours, reassess: if not in shock, able to monitor the wound closely for bleeding, and no amputation – control bleeding with hemostatic and/or pressure dressing. Do not remove if TQ in place >6 hours.

Note time of tourniquet release on tourniquet and/or casualty card

If needed, control bleeding with hemostatic and/or pressure dressing.

CONTINUE TACTICAL EVACUATION CARE

Pelvic Binder Indications- Severe blunt trauma or blast injury with one or more of the following:
- Pelvic pain
- Any major lower limb amputation/near amputation
- Physical exam suggestive of pelvic fracture
- Unconsciousness or shock

Tourniquet not needed criteria:
- Minor lacerations w/minimal bleeding
- Surface Abrasions
- Bleeding controlled by pressure dressing

Each hemostatic works differently. If one fails to control bleeding, it may be removed and a fresh dressing of the same type or a different type applied (Xstat cannot be removed in the field)

Loosen tourniquet in <2 hours if bleeding can be controlled by other means. Leave tourniquet loosely on limb for rapid reapplication if needed. Do not remove if TQ in place >6 hours.

Note time of tourniquet release on tourniquet and/or casualty card

Control bleeding with hemostatic and/or pressure dressing.

Indicates All Combatants capability level skill

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill

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CIRCULATION (INTRAVENOUS ACCESS)

IV access indicated?

YES

Initiate 18G IV or Saline Lock

If IV is not obtainable, use IO route

CIRCULATION (TRANEXAMIC ACID)

TXA Needed?

YES

Administer 1 gm of Tranexamic Acid (TXA) in 100 ml of NS or LR IV over 10 min
Administer as soon as possible after injury
Do NOT administer >3 hours after injury

NO

TXA Criteria:
- Presents with Hemorrhagic Shock
- One or more major amputations
- Penetrating torso trauma
- Evidence of severe bleeding

After initial fluid resuscitation, administer second dose of Tranexamic Acid (TXA) 1 gm in 100 ml of NS or LR IV over 10 min
Do NOT administer 3 hours or more after injury

Reassess frequently for presence of shock

CONTINUE TACTICAL EVACUATION CARE

Indicates All Combatants and Combat Lifesaver capability level skill
Indicates Combat Medic capability level skill
Indicates Combat Paramedic or SOF Medic capability level skill
TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL EVACUATION CARE (TACEVAC)

CIRCULATION (SHOCK / FLUID RESUSCITATION)

Assess for Shock

Hemorrhagic shock present?

YES

Fluid Resuscitation (in preferred order/combinations)

Whole Blood Transfusion

OR, if not available

Plasma, RBCs, Platelets 1:1:1

OR, if not available

Plasma and RBCs 1:1

OR, if not available

Plasma (reconstituted, liquid, or thawed) or RBCs

Blood Products Available?

YES

Re-assess after each unit or 500 cc bolus administered

Continue fluid resuscitation until:

- Palpable radial pulse OR
- Improved mental status OR
- Systolic BP of 80-90 mmHg

If altered mental status due to suspected TBI and has weak/absent peripheral pulse, then resuscitate to restore normal radial pulse or Systolic BP >90mmHg

After initial fluid resuscitation, administer second dose of Tranexamic Acid (TXA) 1 gram in 100 cc of NS or LR IV over 10 min

Do NOT administer 3 hours or more after injury

Reassess frequently for presence of shock

CONTINUE TACTICAL EVACUATION CARE

NO

If not shock, NO IV fluids are immediately necessary

PO fluids permissible if casualty is conscious and can swallow

Shock Criteria:
- Altered Mental Status (in absence of TBI)
- Weak/Absent Radial Pulse

Fluid resuscitation and hypothermia prevention should be executed simultaneously if possible

If shock recurs, check all hemorrhage management interventions for effectiveness. Repeat fluid resuscitation.

Indicates All Combatants and Combat Lifesaver capability level skill

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill

In accordance with CoTCCC Guidelines
As Of: 31 JAN 2017

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TACTICAL COMBAT CASUALTY CARE
ALGORITHM

TACTICAL EVACUATION CARE
(TACEVAC)

TRAUMATIC BRAIN INJURY (TBI)

Assess for traumatic brain injury (TBI)

Moderate/Severe TBI suspected?

YES

Monitored for:
- Decreased level of consciousness
- Pupillary dilation
- SBP should be >90 mmHg
- O2 sat>90
- Hypothermia
- PCO2 maintained between 35-40 mmHg
- Penetrating head trauma (administer antibiotics)
- Assume a spinal (neck) injury until cleared

- Administer 250 ml of 3% or 5% hypertonic saline bolus
- Elevate the casualty’s head 30 degrees
- Hyperventilate the casualty at 20 breaths/min with highest O2 concentration available
- Initiate capnography if available to maintain end-tidal CO2 between 30-35mmHg

- DO NOT hyperventilate the casualty unless signs of impending herniation are present.
- Casualties may be hyperventilated with O2 using the BVM.

HEMORRHAGE INDICATORS:
- Asymmetrical Pupils / Unilateral pupillary dilation accompanied by decreased level of consciousness.
- Fixed Dilated Pupil
- Extensor Posturing
- Widening Pulse Pressure

CONTINUE TACTICAL EVACUATION CARE

TBI Indicators:
- Obvious mechanism of injury
- Loss of consciousness >30 min
- Confused of disoriented state
- Moderate TBI – GCS 9-13
- Severe TBI – GCS 3-8

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Indicates All Combatants and Combat Lifesaver capability level skill
Indicates Combat Medic capability level skill
Indicates Combat Paramedic or SOF Medic capability level skill
HYPOTHERMIA PREVENTION

- Minimize casualty environmental exposure / promote heat retention
- Keep Personal Protection Equipment (PPE) on if feasible and warranted
- Replace wet clothes if possible
- Use CoTCCC recommended hypothermia prevention equipment if available
- Use dry blankets, poncho liner or sleeping bag. Keep casualty dry.
- Use portable fluid warmer to warm all IV fluids including blood.
- Protect the casualty from wind if doors/windows must be kept open.

PENETRATING EYE TRAUMA

YES

Penetrating Eye Trauma noted or suspected?

NO

Patient Monitoring

- Pulse oximetry should be utilized as a minimum adjunct to clinical monitoring as stated in Breathing/Respiration section.
- Advanced non-invasive electronic monitoring and recording of vital signs should be initiated if possible and available.

CONTINUE TACTICAL EVACUATION CARE

Hypothermia prevention and fluid resuscitation should be executed simultaneously if possible.
TACTICAL COMBAT CASUALTY CARE
ALGORITHM
TACTICAL EVACUATION CARE (TACEVAC)

PAIN MANAGEMENT / ANALGESIA

Mild to Moderate Pain
(Casualty still able to fight)

Assess Pain

Moderate to Severe Pain

Disarm casualty

Document Mental Status

Indicates Combat Paramedic or SOF Medic
capability level skill

Indicates All Combatants
and Combat Lifesaver
capability level skill

Indicates Combat Medic
capability level skill

Ensure Nalaxone
(Narcan) available if administering
opioid analgesics.

Administer 0.4 – 2 mg q 2-3
min PRN

END POINT:
Control of pain or Nystagmus development

Mild to Moderate Pain
Administer Combat Wound Medications Pack
Tylenol 650 mg bilayer caplet, 2 PO q8h
Meloxicam 15 mg PO qd

Moxifloxacin 400 mg PO qd
(CWMP)

Early administration of
antibiotics is
recommended for ALL
open combat wounds

YES

PO Able?

PO Able?

No

NO

YES

Administer Oral Transmucosal Fentanyl Citrate
(OTFC) 800 ug

Add a second OTFC 800 ug
in 15 min if needed

Ensure Nalaxone (Narcan)
available if administering
opioid analgesics.
Administer 0.4 – 2 mg q 2-3
min PRN

Meloxicam 15 mg PO qd

Consider Ondansetron 4 mg ODT/IV/IO/
IM q8h
PRN for nausea/vomiting

Monot Airway-Breathing-Circulation
closely. Be prepared to provide
ventilatory assistance.

Administer Ketamine
20 mg slow IV or IO
Repeat q20 min PRN

Administer Ketamine
50 mg IM or IN
Repeat q30 min PRN

Administer Oral Transmucosal Fentanyl Citrate
(OTFC) 800 ug

Add a second OTFC 800 ug
in 15 min if needed

END POINT:
Control of pain or Nystagmus development

Ertapenem 1 gm IV/IM qd

Administer Ketamine
50 mg IM or IN
Repeat q30 min PRN

Administer Ketamine
20 mg slow IV or IO
Repeat q20 min PRN

Ensure Nalaxone (Narcan)
available if administering
opioid analgesics.
Administer 0.4 – 2 mg q 2-3
min PRN

END POINT: Control of pain or Nystagmus development

Consider Ondansetron 4 mg ODT/IV/IO/
IM q8h
PRN for nausea/vomiting

Monitor Airway-Breathing-Circulation
closely. Be prepared to provide
ventilatory assistance.

Assess Pain

Early administration of
antibiotics is
recommended for ALL
open combat wounds

PAIN MANAGEMENT / ANALGESIA

END POINT: Control of pain or Nystagmus development

Antibiotics

Moxifloxacin 400 mg PO qd
(CWMP)

Ertapenem 1 gm IV/IM qd

Antibiotics

Early administration of
antibiotics is
recommended for ALL
open combat wounds

Antibiotics

Early administration of
antibiotics is
recommended for ALL
open combat wounds

CONTINUE TACTICAL EVACUATION CARE

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**TACTICAL EVACUATION CARE (TACEVAC)**

**INSPECT & DRESS KNOWN WOUNDS**

**CHECK FOR ADDITIONAL WOUNDS**

- Dress wounds to ensure hemorrhage control and wound protection

**BURNS**

- **Burns?**
  - **NO**
  - **YES**
    - Aggressively monitor airway status and O2 saturations
    - Consider early surgical airway for respiratory distress or O2 desaturation

**Facial / Neck Burns?**

- **NO**
  - **Estimate TBSA to nearest 10% using Rule of Nines**
  - Cover burned areas with dry sterile dressing
  - **YES**
    - Burns >20%?
      - **NO**
      - **YES**
        - Initiate Fluid Resuscitation using USAISR Rule of 10 using LR, NS or Hextend
        - USAISR Rule of 10 Fluid Calculation: %TBSA X 10 ml/hour for adults 40-80 kg (for every 10 kg above 80 kg, increase rate by 100 ml/hour)
        - Do not exceed 1000 ml of Hextend for burn resuscitation, but can be followed by LR or NS.
        - Extra emphasis should be placed on hypothermia prevention and IV warming for burn patients.

**SPLINT FRACTURES**

- Splint Fractures and re-check pulses

**CONTINUE TACTICAL EVACUATION CARE**

Indicates All Combatants and Combat Lifesaver capability level skill
Indicates Combat Medic capability level skill
Indicates Combat Paramedic or SOF Medic capability level skill

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**TACTICAL COMBAT CASUALTY CARE ALGORITHM**

**TACTICAL EVACUATION CARE (TACEVAC)**

**COMMUNICATION**
- Communicate with casualty and medical providers in evacuation chain

- Communicate with Casualty
  - Encourage, reassure, explain care if possible

- Communicate with Receiving Medical Facility
  - Communicate with medical providers on evac asset if possible.
  - Relay mechanism of injury, injuries sustained, signs/symptoms, and treatments rendered.

**Cardiopulmonary Resuscitation (CPR) Considerations**
- CPR may be attempted in TACEVAC if casualty does not have obviously fatal wounds and quickly arriving at a surgical capability. CPR should not be attempted if compromising the mission or denying lifesaving treatment to other casualties.

**DOCUMENTATION**
- Document clinical assessments, treatments rendered, and changes on DD1380 TCCC Card and forward with casualty to next level of care.

**NEXT LEVEL CARE**

---

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

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TACTICAL COMBAT CASUALTY CARE (TCCC) CARD

BATTLE ROSTER #: ____________________________

EVAC: □ Urgent □ Priority □ Routine

NAME (Last, First): ____________________________ LAST 4: ________

GENDER: □ M □ F DATE (DD-MMM-YY): ___________ TIME: ________

SERVICE: ____________________________ UNIT: ____________________________ ALLERGIES: ____________________________

Mechanism of Injury: (X all that apply)

□ Artillery □ Blunt □ Burn □ Fall □ Grenade □ GSW □ IED
□ Landmine □ MVC □ RPG □ Other: ____________________________

Injury: (Mark injuries with an X)

TQ: R Arm
TYPE: ____________
TIME: ____________

TQ: L Arm
TYPE: ____________
TIME: ____________

TQ: R Leg
TYPE: ____________
TIME: ____________

TQ: L Leg
TYPE: ____________
TIME: ____________

Signs & Symptoms: (Fill in the blank)

Time

Pulse (Rate & Location)

Blood Pressure / / / / / /

Respiratory Rate

Pulse Ox % O2 Sat

AVPU

Pain Scale (0-10)

DD Form 1380, JUN 2014
BATTLE ROSTER #:

EVAC: ☐ Urgent ☐ Priority ☐ Routine

Treatments: (X all that apply, and fill in the blank)

C: TQ- ☐ Extremity ☐ Junctional ☐ Trunical

Dressing- ☐ Hemostatic ☐ Pressure ☐ Other

A: ☐ Intact ☐ NPA ☐ CRIC ☐ ET-Tube ☐ SGA

B: ☐ O2 ☐ Needle-D ☐ Chest-Tube ☐ Chest-Seal

### C:

<table>
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<th>Name</th>
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<th>Route</th>
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<td>Fluid</td>
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<td>Blood Product</td>
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### MEDS:

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<td>Analgesic</td>
<td>(e.g., Ketamine, Fentanyl, Morphine)</td>
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<tr>
<td>Antibiotic</td>
<td>(e.g., Moxifloxacin, Ertapenem)</td>
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</tr>
<tr>
<td>Other</td>
<td>(e.g., TXA)</td>
<td></td>
<td></td>
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</tbody>
</table>

OTHER: ☐ Combat-Pill-Pack ☐ Eye-Shield (☐ R ☐ L) ☐ Splint ☐ Hypothermia-Prevention Type:

NOTES:
**TACTICAL COMBAT CASUALTY CARE**  
(TCCC / TC3)

**TRIAGE CATEGORIES**

### IMMEDIATE

This category includes those casualties who require an immediate LSI and/or surgery. Put simply, if medical attention is not provided they will die. The key to successful triage is to locate these individuals as quickly as possible. Casualties do not remain in this category for an extended period of time. They are either found, triaged and treated, or they die! Hemodynamically unstable casualties with airway obstruction, chest or abdominal injuries, massive external bleeding, or shock deserve this classification.

### DELAYED

This category includes those wounded who are likely to need surgery, but whose general condition permits delay in surgical treatment without unduly endangering the life, limb, or eyesight of the casualty. Sustaining treatment will be required (e.g., oral or IV fluids, splinting, administration of antibiotics and pain control), but can possibly wait. Examples of casualties in this category include those with no evidence of shock who have; large soft tissue wounds, fractures of major bones, intra-abdominal and/or thoracic wounds, and burns to less than 20% of total body surface area (TBSA).

### MINIMAL

Casualties in this category are often referred as the “walking wounded.” Although these patients may appear to be in bad shape at first, it is their physiologic state that tells the true story. These casualties have minor injuries (e.g., small burns, lacerations, abrasions, or small fractures) that can usually be treated with self- or buddy-aid. These casualties should be utilized for mission requirements (e.g., scene security), to help treat and/or transport the more seriously wounded, or put back into the fight.

### EXPECTANT

Casualties in this category have wounds that are so extensive, that even if they were the sole casualty and had the benefit of optimal medical resources, their survival would be highly unlikely. Even so, expectant casualties should not be neglected. They should receive comfort measures and pain medication if possible, and they deserve re-triage as appropriate. Examples of expectant casualties are the unresponsive with injuries such as penetrating head trauma with obvious massive damage to the brain.

**EVACUATION PRECEDENCE**

| URGENT / CATEGORY A  
(WITHIN 2 HOURS) * | PRIORITY / CATEGORY B  
(WITHIN 4 HOURS) | ROUTINE / CATEGORY C  
(WITHIN 24 HOURS) |
|----------------------|----------------------|----------------------|
| • Significant injuries from a dismounted IED attack  
• Gunshot wound or penetrating shrapnel to chest, abdomen, or pelvis  
• Any casualty with ongoing airway difficulty  
• Any casualty with ongoing respiratory difficulty  
• Unconscious casualty  
• Casualty with known or suspected spinal injury  
• Casualty in shock  
• Casualty with bleeding that is difficult to control  
• Moderate/Severe TBI  
• Burns greater than 20% Total Body Surface Area | • Isolated, open extremity fracture with bleeding controlled  
• Any casualty with a tourniquet in place  
• Penetrating or other serious eye injury  
• Significant soft-tissue injury without major bleeding  
• Extremity injury with absent distal pulses  
• Burns over 10-20% of Total Body Surface Area | • Concussion (mild traumatic brain injury)  
• Gunshot wound to extremity - bleeding controlled without tourniquet  
• Minor soft-tissue shrapnel injury  
• Closed fracture with intact distal pulses  
• Burns over <10% Total Body Surface Area |

* Note that by Secretary of Defense directive, all casualties categorized as CAT A in the Afghanistan theater of operations should be able to be evacuated to an MTF with a surgical capability within 60 minutes from the time that the evacuation mission is approved.
# MEDEVAC REQUEST 9-LINE

<table>
<thead>
<tr>
<th>LINE 1: LOCATION OF UNIT</th>
<th>HLZ GRID (MGRS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>LINE 2: CALLSIGN AND FREQUENCY AT THE PZ</td>
<td>CALLSIGN:</td>
</tr>
<tr>
<td>FREQUENCY:</td>
<td></td>
</tr>
<tr>
<td>LINE 3: NUMBER AND PRECEDENCE OF CASUALTIES</td>
<td>A: Number of Urgent Casualties</td>
</tr>
<tr>
<td>B: Number of Priority Casualties</td>
<td></td>
</tr>
<tr>
<td>C: Number of Routine Casualties</td>
<td></td>
</tr>
<tr>
<td>LINE 4: SPECIAL EQUIPMENT REQUIRED</td>
<td>A: None</td>
</tr>
<tr>
<td>B: Hoist</td>
<td></td>
</tr>
<tr>
<td>C: Extraction</td>
<td></td>
</tr>
<tr>
<td>D: Ventilator</td>
<td></td>
</tr>
<tr>
<td>E: Other (specify)</td>
<td></td>
</tr>
<tr>
<td>LINE 5: NUMBER OF CASUALTIES BY TYPE</td>
<td>L: Number of Litter Casualties</td>
</tr>
<tr>
<td>A: Number of Ambulatory Casualties</td>
<td></td>
</tr>
<tr>
<td>E: Number of Escorts</td>
<td></td>
</tr>
<tr>
<td>LINE 6: SECURITY AT PZ</td>
<td>N: No enemy</td>
</tr>
<tr>
<td>P: Possible enemy</td>
<td></td>
</tr>
<tr>
<td>E: Enemy in area</td>
<td></td>
</tr>
<tr>
<td>X: Armed escort required</td>
<td></td>
</tr>
<tr>
<td>LINE 7: PZ MARKING</td>
<td>A: Panels</td>
</tr>
<tr>
<td>B: Pyrotechnics</td>
<td></td>
</tr>
<tr>
<td>C: Smoke (designate color)</td>
<td></td>
</tr>
<tr>
<td>D: None</td>
<td></td>
</tr>
<tr>
<td>E: Other (specify)</td>
<td></td>
</tr>
<tr>
<td>LINE 8: CASUALTIES BY NATIONALITY/STATUS</td>
<td>A: US/Coalition Military</td>
</tr>
<tr>
<td>B: US/Coalition Civilian</td>
<td></td>
</tr>
<tr>
<td>C: Non-Coalition</td>
<td></td>
</tr>
<tr>
<td>D: Non-Coalition Civilian</td>
<td></td>
</tr>
<tr>
<td>E: Opposing Forces/Detainee</td>
<td></td>
</tr>
<tr>
<td>F: Child</td>
<td></td>
</tr>
<tr>
<td>LINE 9: PZ TERRAIN/OBSTACLES (CBRN CONTAMINATION IF APPLICABLE)</td>
<td>Brief description of significant obstacles on approach / departure headings and type of predominant terrain for the HLZ</td>
</tr>
</tbody>
</table>

In accordance with and excerpted from Army Training Publication (ATP) 4-02.2 (Medical Evacuation)
### MIST Report Format

<table>
<thead>
<tr>
<th>M – Mechanism of Injury and Time of Injury (if known)</th>
<th>Mechanism of Injury and time of injury (if known)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I – Injury or Illness</td>
<td>Injury or Illness</td>
</tr>
<tr>
<td>S – Symptoms and Vital Signs</td>
<td>A – Airway status</td>
</tr>
<tr>
<td></td>
<td>B – Breathing rate</td>
</tr>
<tr>
<td></td>
<td>C – Pulse rate</td>
</tr>
<tr>
<td></td>
<td>D – Conscious/Unconscious</td>
</tr>
<tr>
<td></td>
<td>E – Other signs</td>
</tr>
<tr>
<td>T – Treatment Given</td>
<td>Such as Tourniquet/Time Applied</td>
</tr>
<tr>
<td></td>
<td>Drugs administered</td>
</tr>
</tbody>
</table>
**TACTICAL COMBAT CASUALTY CARE**
*(TCCC / TC3)*

**POINT-OF-INJURY / TCCC AFTER ACTION REPORT**

The **POI/TCCC AAR** can be found electronically at:

- www.cotccc.com
- or
- atn.army.mil.

The TCCC AAR is to be completed within 72 hours of the injury occurring, by the POI Medical team or Role I, and sent to the DoD Trauma Registry (DoDTR).

E-mail To:
usarmy.jbsa.medcom-aisr.list.jts-trauma-registry@mail.mil.

The **DoDTR** is the data repository for DoD trauma-related injuries. The goal of this registry is to document, in electronic format, information about the demographics, injury-producing incident, diagnosis and treatment, and outcome of injuries sustained by US/Non-US military and US/ Non-US civilian personnel in wartime and peacetime from the point of wounding to final disposition. The JTS collects data from TCCC cards (DD Form 1380, TCCC AARs and from the Armed Forces Medical Examiner Services (AFMES). Documentation is vital to accumulate data in the DoD Trauma registry, formerly the Joint Theater Trauma Registry (JTTR). The JTS functions as:

1. JTS Operations consisting of; Data Acquisition mines Medical records to abstract, code, and enter critical trauma data into the DoDTR database. Data Analysis develops, queries, and provides data from the DoDTR in response to requests for information and conducts classified and non-classified data analysis. Data Automation supports the information technology for the DoDTR and data-related special projects.

2. Trauma Care Delivery maintains a database of operational and physiologic parameters related to delivery of en route care and has evaluated the validity of the "Golden Hour" standard for movement of casualties from point of injury to the first surgical capability. The addition of a military en route care registry (MERCuRY) will capture all ground, air and ship transport care.

3. Performance Improvement (PI) coordinates improvement activities across the spectrum of trauma care developing PI course content and training for combatant command trauma system development.
### TCCC AAR

**(Complete within 72hrs after mission and send via NIPR to the Director of the Joint Theater Trauma System)**

**Event** | **Date** | **Time** | **Local / ZULU** | **Region**
---|---|---|---|---
Battle Injury (BI): | | | | Non-Battle Injury (NBI): Alive / Dead

**Evacuation Category** | **Type** | **Time of Pick Up**
---|---|---
Ground Carry | A / B / C |  
Ground Litter |  
Ground Vehicle |  
Aircraft |  

**Casualty Demographic Information**

*Minimum requirement is for Battle Roster # and Unit*

<table>
<thead>
<tr>
<th>BR#:</th>
<th>LName:</th>
<th>FName:</th>
<th>Rank:</th>
<th>SSN:</th>
<th>DOB:</th>
<th>Unit:</th>
</tr>
</thead>
</table>

**Point of Injury Provider Information**

<table>
<thead>
<tr>
<th>NM</th>
<th>Non-Medic First Responder</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Medic</td>
</tr>
<tr>
<td>MO</td>
<td>Medical Officer</td>
</tr>
</tbody>
</table>

---

### I - Injuries

<table>
<thead>
<tr>
<th>Mechanism of Injury</th>
<th>Annotate Injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airborne Operation</td>
<td>(A) Amputation</td>
</tr>
<tr>
<td>Aircraft Crash</td>
<td>(B) Bleeding</td>
</tr>
<tr>
<td>Blast – Dismounted IED or Mine</td>
<td>(Bu)m, TBSA: ________%</td>
</tr>
<tr>
<td>Blast – Mounted IED or Mine</td>
<td>(C) Repitius</td>
</tr>
<tr>
<td>Blast – RPG or Grenade</td>
<td>(D) Deformity</td>
</tr>
<tr>
<td>Blast – Indirect Fire (Mortar/Artillery)</td>
<td>(D) Degloving</td>
</tr>
<tr>
<td>Blast – Other</td>
<td>(E) Ochymosis</td>
</tr>
<tr>
<td>Collapse / Crush from Structure</td>
<td>(FX) Fracture</td>
</tr>
<tr>
<td>Environmental:</td>
<td>(GSW) Gun Shot Wound</td>
</tr>
<tr>
<td>Fall, Height:</td>
<td>(H) Hematoma</td>
</tr>
<tr>
<td>Fragmentation / Shrapnel</td>
<td>(LAC) Eration</td>
</tr>
<tr>
<td>GSW – Gunshot Wound</td>
<td>(P) Pain</td>
</tr>
<tr>
<td>Motor Vehicle Accident</td>
<td>(PP) Pepering</td>
</tr>
<tr>
<td>Other:</td>
<td>(PW) Puncture Wound</td>
</tr>
</tbody>
</table>

---

### S - Signs

| Initial: | Last: |
| A | V | P | U | GCS: | /15 (E | /4, V | /6, M | /6) |
|---|---|---|---|---|---|---|---|---|---|

**Eye Opening**
- 4 – spontaneous
- 3 – to speech
- 2 – to pain
- 1 – no response

**Verbal Response**
- 5 – alert and oriented
- 4 – oriented conversation
- 3 – speaking but nonsensical
- 2 – moans, unintelligible sounds
- 1 – no response

**Motor Response**
- 6 – follows commands
- 5 – localizes pain
- 4 – withdraws from pain
- 3 – decorticate flexion
- 2 – decerebrate extension
- 1 – no response

---

### T - Treatments

**WHO** | **WHAT** | **WHERE** (on body) | **WHEN**
---|---|---|---

**WHO** | **WHAT** | **WHERE** (on body) | **WHEN**
---|---|---|---

**Circulation - Hemorrhage Control**
- NM | M | MO | TQ - Extremity | CAT | SOFTT | Other: | RUE | LUE | RLE | LLE |
- NM | M | MO | TQ - Extremity | CAT | SOFTT | Other: | RUE | LUE | RLE | LLE |
- NM | M | MO | TQ - Extremity | CAT | SOFTT | Other: | RUE | LUE | RLE | LLE |
- NM | M | MO | TQ - Extremity | CAT | SOFTT | Other: | RUE | LUE | RLE | LLE |
- NM | M | MO | TQ - Extremity | CAT | SOFTT | Other: | RUE | LUE | RLE | LLE |
- NM | M | MO | TQ - Junctional, Type: |  |
- NM | M | MO | Hemostatic Dressing, Type: |  |
- NM | M | MO | Pressure Dressing, Type: |  |
- NM | M | MO | Splint, Type: |  |
- NM | M | MO | Other: |  |

**Airway**
- NM | M | MO | NPA - Nasopharyngeal Airway |  |
- NM | M | MO | Cric - Cricothyroidotomy, Type: |  |
- NM | M | MO | ET - Endotracheal Tube, Type: |  |
- NM | M | MO | King LT, ILMA, Other: |  |
# TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

## POINT-OF-INJURY / TCCC AFTER ACTION REPORT

**FOR OFFICIAL USE ONLY (FOOU)**

<table>
<thead>
<tr>
<th>Breathing</th>
<th>Spontaneous</th>
<th>Labored</th>
<th>Assisted</th>
<th>Assisted with BVM</th>
<th>WHEN</th>
</tr>
</thead>
<tbody>
<tr>
<td>NM  M  MO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Circulation - Resuscitation</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NM  M  MO</td>
<td>Saline Lock</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>IO-Intraosseous Device, Type:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>TXA-Tranexamic Acid</td>
<td>Dose:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Hextend IVF</td>
<td>Volume:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>FDP-Freeze Dried Plasma</td>
<td>Volume:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Other Blood Product:</td>
<td>Volume:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Other IVF:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interventions - Other</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NM  M  MO</td>
<td>Eye Shield</td>
<td>OD</td>
<td>OS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>C-Collar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Spine Board</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medications - Pain, Infection, Other</th>
<th>(Route = IM, IV, PO, PR, SL, SQ)</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NM  M  MO</td>
<td>Combat Wound Pill Pack</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Analgesic, Name:</td>
<td>Dose:</td>
<td>Route:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Analgesic, Name:</td>
<td>Dose:</td>
<td>Route:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Analgesic, Name:</td>
<td>Dose:</td>
<td>Route:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Antibiotic, Name:</td>
<td>Dose:</td>
<td>Route:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Antibiotic, Name:</td>
<td>Dose:</td>
<td>Route:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Other Med, Name:</td>
<td>Dose:</td>
<td>Route:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NM  M  MO</td>
<td>Other Med, Name:</td>
<td>Dose:</td>
<td>Route:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**General Comments:**

**Sustains (Treatment, Equipment, Evacuation, Operations):**

**Improves (Treatment, Equipment, Evacuation, Operations):**

**BR#:**

**Unit:**
### TOURNIQUETS

<table>
<thead>
<tr>
<th>Common Name / Brand Name</th>
<th>DLA Nomenclature</th>
<th>NSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combat Application Tourniquet (CAT)</td>
<td>Tourniquet, Nonpneumatic</td>
<td>6515-01-521-7976</td>
</tr>
<tr>
<td>SOF-Tactical Tourniquet (SOFTT)</td>
<td>Tourniquet, Nonpneumatic One-Hand w Handles</td>
<td>6515-01-530-7015</td>
</tr>
<tr>
<td>Emergency Medical Tourniquet (EMT)</td>
<td>Tourniquet, Pneumatic Single-hand application</td>
<td>6515-01-580-1645</td>
</tr>
</tbody>
</table>

### HEMOSTATIC DRESSINGS/DEVICES

<table>
<thead>
<tr>
<th>Common Name / Brand Name</th>
<th>DLA Nomenclature</th>
<th>NSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combat Gauze (CG) Z-Fold</td>
<td>Bandage, Gauze Kaolin Impregnated 3X4&quot;</td>
<td>6510-01-562-3325</td>
</tr>
<tr>
<td>Celox Gauze, Z-fold 5&quot;</td>
<td>Dressing, Hemostatic Celox Gauze 3&quot;X5&quot; folded</td>
<td>6510-01623-9910</td>
</tr>
<tr>
<td>ChitoGauze</td>
<td>Dressing, Hemostatic 3X144&quot; coated with Chitosan</td>
<td>6510-01-591-7740</td>
</tr>
<tr>
<td>X-Stat, Single Applicator</td>
<td>Applicator, Hemostatic Sponges and Dispenser</td>
<td>6510-01-644-7335</td>
</tr>
</tbody>
</table>

### JUNCTIONAL TOURNIQUETS & DEVICES

<table>
<thead>
<tr>
<th>Common Name / Brand Name</th>
<th>DLA Nomenclature</th>
<th>NSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combat-Ready Clamp (CRoC)</td>
<td>Clamp, Tourniquet Expandable Aluminum</td>
<td>6515-01-589-9135</td>
</tr>
<tr>
<td>SAM Junctional Tourniquet (SAM-JT)</td>
<td>Tourniquet Kit Junctional Compression</td>
<td>6515-01-618-7475</td>
</tr>
<tr>
<td>Junctional Emergency Treatment Tool (JETT)</td>
<td>Tourniquet, Inguinal Hemorrhage Adjustable</td>
<td>6515-01-616-5841</td>
</tr>
</tbody>
</table>

### AIRWAY MANAGEMENT DEVICES & ADJUNCTS

<table>
<thead>
<tr>
<th>Common Name / Brand Name</th>
<th>DLA Nomenclature</th>
<th>NSN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Cric / CricKey</td>
<td>Cricothyrotyotomy System</td>
<td>6515-01-640-6701</td>
</tr>
</tbody>
</table>

DLA – Defense Logistics Agency

DLA Nomenclature is the naming convention terminology used in DoD supply systems and often differ from common, brand, or product names.

NSN – National Stock Number. A NSN is 13-digit code identifying all standardized material supply items recognized by NATO countries and the DoD.
The TCCC pharmacology reference provides drug information as based on administration based solely on the TCCC Guidelines. These references should not be used for the administration of these medications for any environment outside of tactical combat casualty care on the battlefield or in the combat/tactical setting.

**ACETAMINOPHEN (TYLENOL)**

**Class:** CNS agent – non-narcotic, analgesic, antipyretic

**TCCC Indications:** For mild to moderate pain management for a casualty that is still able to fight as a component of the Combat Wound Medication Pack (CWMP)

**DOSE:** 325–650 mg PO q4–6h (max: 4 g/d)

**Onset / Peak / Duration:** Onset Varies / Peak 1-3 hours / Duration 3-4 hours

**Administration Instructions:** PO

**Contraindications:** Acetaminophen hypersensitivity; use with alcohol; pregnancy category B

**Adverse/Side Effects:** Negligible with recommended dose; rash; acute poisoning: anorexia, nausea, vomiting, dizziness, lethargy, diaphoresis, chills, epigastric or abdominal pain, diarrhea; hepatotoxicity: elevation of liver function tests; hypoglycemia, hepatic coma, acute renal failure; chronic ingestion: neutropenia, pancytopenia, leukopenia, thrombocytopenic purpura, renal damage

**Interactions:** Cholestyramine may decrease absorption; barbiturates, carbamazepine, phenytoin, rifampin, and excessive alcohol use may increase potential for hepatotoxicity

**Mission Impact:** None to minimal mission impact

**K-9 Dosage:** DO NOT GIVE

---

**ERTAPENEM (INVANZ)**

**Class:** Antimicrobial – antibiotic, carbapenem, beta-lactam

**TCCC Indications:** Recommended for all open combat wounds if unable to take PO meds

**DOSE:** 1 gram IV/IM q24h

**Administration Instructions:** For IV reconstitute with 10mL NS; for IM 3.2mL 1.0% lidocaine without epinephrine

**Contraindications:** Carbapenem, beta-lactam, or amide-type local anesthetic (ie. Lidocaine) hypersensitivity; pregnancy cat B

**Adverse/Side Effects:** Injection site phlebitis or thrombosis; asthenia, fatigue, death, fever, leg pain, anxiety, altered mental status, dizziness, headache, insomnia; chest pain, hypo- or hypertension, tachycardia, edema; abdominal pain, diarrhea, acid reflux, constipation, dyspepsia, nausea, vomiting, increased LFTs; cough, dyspnea, pharyngitis, rales, rhonchi, respiratory distress; erythema, pruritus, rash

**Interactions:** Probenecid decreases renal excretion

**Mission Impact:** GROUNDING medication for personnel on flight status
### Fentanyl Oral Lozenge / Oral Transmucosal Fentanyl Citrate (OTFC)

**Class:** CNS agent - potent narcotic (opiate) agonist  
**TCCC Indications:** For moderate to severe pain management for a casualty that IS NOT in shock or respiratory distress and is NOT at significant risk of developing either condition.  
**DOSE:** 800 mcg oral transmucosally, reassess in 15 min, add a second lozenge in other cheek as necessary.  
**Administration Instructions:** Document AVPU prior to administration. Place lozenge between the cheek and gum; do not chew lozenge. Recommend taping lozenge-on-a-stick to casualty's finger as an added safety OR utilizing a safety pin and rubber band to attach the lozenge (under tension) to the patient's uniform or plate carrier. Monitor for respiratory depression. Administer Nalaxone as reversal if needed. Be prepared to provide ventilatory support with a BVM.  
**Contraindications:** MAOIs; myasthenia gravis; pregnancy category C  
**Adverse/Side Effects:** Sedation, euphoria, dizziness, diaphoresis, delirium, convulsions; bradycardia, hypotension, circulatory depression, cardiac arrest; miosis, blurred vision; nausea, vomiting, constipation, ileus; muscle and thoracic muscle rigidity; urinary retention, rash; laryngospasm, bronchoconstriction, respiratory depression or arrest  
**Interactions:** Alcohol and other CNS depressants potentiate effects; MAOIs may precipitate hypertensive crisis  
**Mission Impact:** Casualty weapons, communications and sensitive equipment should be secured. GROUNDING medication for personnel on flight status.

### Ketamine (Ketalar)

**Class:** Nonbarbiturate anesthetic, Dissociative  
**TCCC Indications:** For moderate to severe pain management for a casualty that IS in hemorrhagic shock or respiratory distress or is at significant risk of developing either condition. Also a useful adjunct to reduce the amount of opioids required to manage pain.  
**DOSE:** 50 mg IM or IN, Repeat doses q30min prn IM or IN (max: 4 g/d)  
**OR**  
20 mg slow IV or IO, Repeat doses q20min prn IV or IO (max: 4g/d)  
**Onset / Duration:** IM – Onset in 3-4 minutes / Duration 12-25 minutes IV – Onset in 30 seconds / Duration 5-10 minutes  
**Administration Instructions:** Document AVPU prior to administration. IV Ketamine should be administered slowly over 1 minute. End points: Control of pain or development of nystagmus (rhythmic back-and-forth movement of eyes). Be prepared to suction as Ketamine can increase secretions. Be prepared to provide ventilatory support with a BVM.  
**Contraindications:** Head injury (may worsen severe TBI), Hypersensitivity to ketamine, Pregnancy Category B  
**Adverse/Side Effects:** Hypertension, Respiratory Depression, Emergence Reactions (delirium, hallucinations, confusion), Increased Intra-cranial pressure, Increased intra-ocular pressure  
**Interactions:** Effects of ketamine are increased when combined with other analgesics or muscle relaxants  
**Mission Impact:** Casualty weapons, communications and sensitive equipment should be secured. GROUNDING medication for personnel on flight status.  
**K-9 Dosage:** 100-150mg (3-5mg/kg) IV/IM (best given in conjunction with diazepam 7.5mg or medazolam 7.5mg for profound sedation)
MELOXICAM (MOBIC)

Class: NSAID; COX2 Inhibitor, anti-inflammatory, analgesic, antipyretic

TCC Indications: For mild to moderate pain management for a casualty that is still able to fight as a component of the Combat Wound Medication Pack (CWMP)

DOSE: 7.5–15 mg PO daily

Administration Instructions: PO

Contraindications: NSAID or salicylate hypersensitivity; rhinitis, urticaria, angioedema, asthma; severe renal or hepatic disease; pregnancy category C (1st/2nd trimester) and category D (3rd trimester)

Adverse/Side Effects: Edema, flu-like syndrome, pain; abdominal pain, diarrhea, dyspepsia, flatulence, nausea, constipation, ulceration. GI bleed: anemia; arthralgia; dizziness, headache, insomnia; pharyngitis, upper respiratory tract infection, cough; rash, pruritus; urinary frequency, UTI

Interactions: May decrease effect of ACE inhibitors and diuretics; may increase lithium levels and toxicity; aspirin may increase GI bleed risk; warfarin and herbs (feverfew, garlic, ginger, ginkgo) may increase bleeding.

Mission Impact: None to minimal mission impact

K-9 Dosage: DO NOT GIVE

MORPHINE SULFATE (MSO4)

Class: CNS agent – narcotic (opiate) agonist; analgesic

TCC Indications: Alternative to OTFC moderate to severe pain management for a casualty that IS NOT in shock or respiratory distress and IS NOT at significant risk of developing either condition.

DOSE: 5 mg IV/IO. Reassess in 10 min, repeat dose every 10 min as necessary to control severe pain.

Onset / Peak / Duration: IV – Onset in 5-20 minutes / Peak in 20 minutes / Duration 4-5 hours

Administration Instructions: Document AVPU prior to administration. Monitor for respiratory depression. Administer Nalaxone as reversal if needed. Be prepared to provide ventilatory support with a BVM.

Contraindications: Opiate hypersensitivity; increased ICP; seizures; acute alcoholism; acute bronchial asthma, chronic pulmonary disease, severe respiratory depression; chemical-irritant induced pulmonary edema; BPH; diarrhea due to poisoning until toxic material has been eliminated; undiagnosed acute abdominal conditions; following biliary tract surgery and surgical anastomosis; pancreatitis; acute ulcerative colitis; severe liver or renal insufficiency; hypothyroidism; pregnancy category B

Adverse/Side Effects: Pruritus, rash, urticaria, edema, anaphylactoid reaction; sweating, skeletal muscle flaccidity; cold, clammy skin, hypothermia; euphoria, insomina, disorientation, visual disturbances, dysphoria, paradoxic CNS stimulation (restlessness, tremor, delirium, insomnia), convulsions; decreased cough reflex, drowsiness, dizziness, deep sleep, coma; miosis; bradycardia, palpitations, syncope; flushing of face, neck, and upper thorax; orthostatic hypotension, cardiac arrest; constipation, anorexia, dry mouth, biliary colic, nausea, vomiting, elevated LFTs; urinary retention or urgency, dysuria, oliguria, reduced libido or potency; severe respiratory depression or arrest; pulmonary edema

Interactions: CNS depressants, sedatives, barbiturates, alcohol, benzodiazepines, and TCAs potentiate CNS depressant effects; MAOIs may precipitate hypertensive crisis; phenothiazines may antagonize analgesia; herbs (Kava-kava, valerian, St. John's wort) may increase sedation.

Mission Impact: Casualty weapons, communications and sensitive equipment should be secured. GROUNDING medication for personnel on flight status.

K-9 Dosage: 2-3mg IV OR 10-20mg IM/SQ. Nausea/emesis and defecation common. Reverse with 1mg Nalaxone IV/IM/SQ.
### Moxifloxacin (Avelox)

**Class:** Antimicrobial – antibiotic; fluoroquinolone

**TCCC Indications:** Recommended for all open combat wounds if unable to take PO meds as a component of the Combat Wound Medication Pack (CWMP)

**DOSE:** 400 mg PO qd

**Onset / Peak / Duration:** Onset Varies / Peak 1-3 hours / Duration 3-4 hours

**Administration Instructions:** PO

**Contraindications:** Quinolone hypersensitivity; hepatic insufficiency; syphilis; arrhythmias; myocardial ischemia or infarction; QTc prolongation, hypokalemia, or those receiving Class IA or Class III antiarrhythmic drugs; pregnancy category C.

**Adverse/Side Effects:** Dizziness, headache, peripheral neuropathy, nausea, diarrhea, abdominal pain, vomiting, taste perversion, abnormal LFTs, dyspepsia, tendon rupture.

**Interactions:** Iron, zinc, antacids, aluminum, magnesium, calcium, sucralfate decrease absorption; atenolol, cisapride, erythromycin, antipsychotics, TCAs, quinidine, procainamide, amiodarone, sotalol may prolong QTc interval; may cause false positive on opiate screening tests.

**Mission Impact:** GROUNDING medication for personnel on flight status.

**K-9 Dosage:** DO NOT GIVE

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### Nalaxone (Narcan)

**Class:** CNS agent – narcotic (opiate) antagonist

**TCCC Indications:** For narcotic opiate overdose and reversal of effects, including respiratory depression, sedation, and hypotension.

**DOSE:** 0.4–2.0 mg IV, repeat q2–3min up to 10 mg prn

**Onset / Peak / Duration:** IV – Onset in 1-2 minutes / Peak in 5-15 minutes / Duration 45 minutes or longer

**Administration Instructions:** Have available when administering opioids. Titrate to effect to manage negative opioid effects, but use caution that pain is still managed.

**Contraindications:** Non-opioid drug respiratory depression; pregnancy category B

**Adverse/Side Effects:** Analgesia reversal, tremors, hyperventilation, drowsiness, sweating; increased BP, tachycardia; nausea, vomiting.

**Interactions:** Reverses analgesic effects of narcotic (opiate) agonists and agonist-antagonists.

**Mission Impact:** GROUNDING medication for personnel on flight status.

**K-9 Dosage:** 1mg (0.02-0.04mg/kg) IV/IM
**ONDASETRON ORAL DISSOLVING TABLET (ZOFRAN)**

**Class:** GI agent – 5-HT₃ antagonist, antiemetic  
**TCCC Indications:** For prevention and management of nausea and vomiting associated with pain management medications.  
**DOSE:** 4 mg ODT PO q8h PRN (max: 8 mg in an 8 hour period)  
**Administration Instructions:** PO  
**Contraindications:** Hypersensitivity to ondansetron; pregnancy category B  
**Adverse/Side Effects:** Dizziness, light-headedness, headache, sedation; diarrhea, constipation, dry mouth  
**Interactions:** Rifampin may decrease ondansetron levels  
**Mission Impact:** GROUNDING medication for personnel on flight status.

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**ONDASETRON INJECTION (ZOFRAN)**

**Class:** GI agent – 5-HT₃ antagonist, antiemetic  
**TCCC Indications:** For prevention and management of nausea and vomiting associated with pain management medications.  
**DOSE:** 4 mg q8h PRN (max: 8 mg in an 8 hour period)  
**Administration Instructions:** Slow IV Push or IM  
**Contraindications:** Hypersensitivity to ondansetron; pregnancy category B  
**Adverse/Side Effects:** Dizziness, light-headedness, headache, sedation; diarrhea, constipation, dry mouth  
**Interactions:** Rifampin may decrease ondansetron levels  
**Mission Impact:** GROUNDING medication for personnel on flight status.

---

**TRANEXEMIC ACID (TXA, CYKLOKAPRON)**

**Class:** Antifibrinolytic agent  
**TCCC Indications:** For patients anticipated to need significant blood transfusion; hemorrhagic shock, one or more major amputations, penetrating torso trauma, or evidence of severe bleeding.  
**DOSE:** 1 gram in separate 100cc of NS or LR slow IV push over 10 min. Do not administer in same bag as blood products or Hextend. Administer a second infusion of 1 gram after 500cc fluid challenge.  
**Administration Instructions:** Administer as soon as possible but not later than 3 hours after injury. Ensure documentation on casualty card and/or attach/write on patient's chest wall.  
**Contraindications:** subarachnoid hemorrhage, active intravascular clotting, Pregnancy Category B.  
**Adverse/Side Effects:** Blurred vision or impaired color vision. Gastrointestinal disturbances (nausea, vomiting, diarrhea) may occur but disappear when the dosage is reduced. Hypotension has been observed when intravenous injection is too rapid. To avoid this response, the solution should not be injected more rapidly than 100mg per minute.  
**Interactions:** should not be administered concomitantly with Factor IX Complex concentrates or Anti-inhibitor Coagulant concentrates, as the risk of thrombosis may be increased.
### MISSION MEDICAL PERSONNEL

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<th>Name</th>
<th>Call Sign / Frequency</th>
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### MISSION MEDICAL ASSETS / VEHICLES

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### CASEVAC / MEDEVAC

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<th>Asset</th>
<th>Unit</th>
<th>Contact / Type</th>
<th>Call Sign / Frequency</th>
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<td></td>
<td></td>
<td></td>
<td>___ min</td>
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<tr>
<td>Secondary</td>
<td></td>
<td></td>
<td></td>
<td></td>
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**Notes:**

### CSAR ASSETS

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<td>___ min + ___ min</td>
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<tr>
<td>S:</td>
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<td>___ min + ___ min</td>
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**Note:**

### MEDICAL TREATMENT FACILITIES

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<th>Order</th>
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<th>Total time from Alert to MTF</th>
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<td>Primary</td>
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<tr>
<td>Secondary</td>
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<td>___ min</td>
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<tr>
<td>Head Injury MTF</td>
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<td>___ min</td>
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<tr>
<td>MWD</td>
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</tbody>
</table>

**Note:** Time to MTF is using primary CASEVAC/MEDEVAC

### (P) MTF CAPABILITIES

**LOCATION (ROLE #):**

- SVOP:
- DSN:
- mIRC:
  - Grid:
    - # x OR
    - # x ICU
    - # x CT Scanner

### (S) MTF CAPABILITIES

**LOCATION (ROLE #):**

- SVOP:
- DSN:
- mIRC:
  - Grid:
    - # x OR
    - # x ICU
    - # x CT Scanner

---

**EVAC FLOW:**

- POI
- RTO 9 LINE TO TOC / JOC
- MEDO CALLS OR MIRC
- PRI MEDEVAC
- TF MEDOPS APPROVAL
- MEDEVAC LAUNCH
- EVAC
CoTCCC MISSION:
To develop on an ongoing basis the best possible set of trauma care guidelines customized for the tactical environment and to facilitate the transition of these recommendations into battlefield trauma care practice.

The Committee on Tactical Combat Casualty Care (CoTCCC) is the Prehospital arm of the Joint Trauma System for the Department of Defense. The CoTCCC is composed of 42 voting members specially selected as subject-matter experts in trauma, battlefield medicine, tactical medicine, prehospital medicine and their experience in the deployed combat environment. The TCCC Working Group is composed of the CoTCCC and hundreds of subject-matter experts across many domains and liaisons from DoD, Government and Partner nation organizations. The CoTCCC and the TCCC Working Group focus all of their efforts on providing the best recommendations for training and equipment for our individual service members, combat medics, corpsman, pararescue, and med techs going into harm's way around the world.

JTS MISSION:
The mission of the Joint Trauma System (JTS) is to provide evidence-based process improvement of trauma and combat casualty care, to drive morbidity and mortality to the lowest possible levels, and to provide evidence-based recommendations on trauma care and trauma systems across the Department of Defense (DoD).

The DoD CENTER OF EXCELLENCE FOR TRAUMA
DATA ACQUISITION: Mines the medical records to abstract, code, and enters critical trauma data into the DoDTR database for use in support of the JTS mission.
DATA ANALYSIS: Develops queries and provides data from the DoDTR in response to requests for information. Conducts classified and non-classified data analysis.
DATA AUTOMATION: Supports the information technology for the DoDTR and data-related special projects. Designs and implements special-project database applications, related architecture, and documentation. Handles documentation needs for JTS to maintain Program compliance with the Defense Health Agency.
PERFORMANCE IMPROVEMENT: Coordinates performance improvement (PI) activities across the spectrum of trauma care. Participates in the development, maintenance, and adherence to Clinical Practice Guidelines. Develops PI course content and training, and resolves trauma system patient care issues.
EDUCATION: Develops and conducts pre-deployment training of the Joint Theater Trauma System (JTTS) teams, DoDTR user training, and JTS staff training. Develops educational products for combatant command trauma system development. Secures continuing education credits and coordinates performance improvement and other trauma related courses.
TACTICAL COMBAT CASUALTY CARE IN SPECIAL OPERATIONS.

PREHOSPITAL TRAUMA LIFE SUPPORT (PHTLS) MANUAL, 8TH EDITION (MILITARY)
Butler FK, Giebner SD, Pons PT, McSwain NE, eds. Burlington, MA: Jones & Bartlett Learning; 2014.

SAVING LIVES ON THE BATTLEFIELD: A JOINT TRAUMA SYSTEM REVIEW OF PRE-HOSPITAL TRAUMA CARE IN COMBINED JOINT OPERATING AREA—AFGHANISTAN (CJOA-A) EXECUTIVE SUMMARY.

SAVING LIVES ON THE BATTLEFIELD (PART II) - ONE YEAR LATER: A JOINT THEATER TRAUMA SYSTEM AND JOINT TRAUMA SYSTEM REVIEW OF PREHOSPITAL TRAUMA CARE IN COMBINED JOINT OPERATIONS AREA-AFGHANISTAN (CJOA-A).

ELIMINATING PREVENTABLE DEATH ON THE BATTLEFIELD.

TRAGEDY INTO DRAMA: AN AMERICAN HISTORY OF TERRORIST USE IN THE CURRENT WAR.

DEATH ON THE BATTLEFIELD (2001-2011): IMPLICATIONS FOR THE FUTURE OF COMBAT CASUALTY CARE.

IMPLEMENTING AND PRESERVING THE ADVANCES IN COMBAT CASUALTY CARE FROM IRAQ AND AFGHANISTAN THROUGHOUT THE US MILITARY.

LEADERSHIP LESSONS LEARNED IN TACTICAL COMBAT CASUALTY CARE.

TACTICAL COMBAT CASUALTY CARE: BEGINNINGS.
Butler FK. Wilderness Environ Med. 2017

THE TRANSITION TO THE COMMITTEE ON TACTICAL COMBAT CASUALTY CARE.
Giebner SD. Wilderness Environ Med. 2017

BATTLEFIELD TRAUMA CARE THEN AND NOW: A DECADE OF TACTICAL COMBAT CASUALTY CARE.
Butler FK, Blackbourne LH. J Trauma Acute Care Surg. 2012 Volume 73, Number 6
<table>
<thead>
<tr>
<th>Glossary Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>AAL</td>
<td>anterior axillary line</td>
</tr>
<tr>
<td>ASAP</td>
<td>as soon as possible</td>
</tr>
<tr>
<td>AVPU</td>
<td>Alert/Verbal/Pain/Unresponsive</td>
</tr>
<tr>
<td>AXP</td>
<td>ambulance exchange point</td>
</tr>
<tr>
<td>BAS</td>
<td>battalion aid station</td>
</tr>
<tr>
<td>BVM</td>
<td>bag-valve-mask</td>
</tr>
<tr>
<td>CASEVAC</td>
<td>casualty evacuation</td>
</tr>
<tr>
<td>CAT</td>
<td>Combat Application Tourniquet®</td>
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<tr>
<td>CCP</td>
<td>casualty collection point</td>
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<tr>
<td>CEP</td>
<td>casualty evacuation point</td>
</tr>
<tr>
<td>CG</td>
<td>Combat Gauze®</td>
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<tr>
<td>Class VIII</td>
<td>class of supply for medical</td>
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<tr>
<td>CLS</td>
<td>combat lifesaver</td>
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<tr>
<td>COMSEC</td>
<td>communications security</td>
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<tr>
<td>CoTCCC</td>
<td>Committee on Tactical Combat Casualty Care</td>
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<tr>
<td>CPG</td>
<td>clinical practice guidelines</td>
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<td>CROC</td>
<td>Combat Ready Clamp®</td>
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<td>CRS</td>
<td>casualty response system</td>
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<tr>
<td>CTS</td>
<td>Combat Trauma System</td>
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<tr>
<td>CUF</td>
<td>Care Under Fire (phase)</td>
</tr>
<tr>
<td>CWMP</td>
<td>combat wound medication pack</td>
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<tr>
<td>DoDTR</td>
<td>department of defense trauma registry</td>
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<tr>
<td>EMT</td>
<td>Emergency Medical Tourniquet®</td>
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<tr>
<td>HLZ</td>
<td>helicopter landing zone</td>
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<tr>
<td>HPMK</td>
<td>Hypothermia Prevention and Management Kit®</td>
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<tr>
<td>HRS</td>
<td>Heat Reflective Shell®</td>
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<td>IAW</td>
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<td>IED</td>
<td>improvised explosive device</td>
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<td>Junctional Emergency Treatment Tool®</td>
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<td>Joint Trauma System</td>
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<tr>
<td>LR</td>
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<tr>
<td>LSI</td>
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<td>MASSCAL</td>
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<tr>
<td>MEDEVAC</td>
<td>medical evacuation</td>
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<tr>
<td>mmHG</td>
<td>millimeters of mercury</td>
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<tr>
<td>MSO4</td>
<td>Morphine Sulfate</td>
</tr>
<tr>
<td>MTF</td>
<td>medical treatment facility</td>
</tr>
<tr>
<td>NS</td>
<td>normal saline / sodium chloride</td>
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<tr>
<td>ODT</td>
<td>orally dissolving tablet</td>
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<tr>
<td>OTFC</td>
<td>oral transmucosal fentanyl citrate</td>
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<tr>
<td>PCO2</td>
<td>partial pressure of carbon dioxide</td>
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<tr>
<td>PI</td>
<td>performance improvement</td>
</tr>
<tr>
<td>PO</td>
<td>by mouth / oral</td>
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<tr>
<td>POI</td>
<td>point-of-injury</td>
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<tr>
<td>PRN</td>
<td>pro re nata (as needed/circumstances require)</td>
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<tr>
<td>RBC</td>
<td>red blood cells</td>
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<tr>
<td>SAM-JT</td>
<td>SAM-Junctional Tourniquet®</td>
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<tr>
<td>SBP</td>
<td>systolic blood pressure</td>
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<tr>
<td>SGA</td>
<td>supraglottic airway</td>
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<td>SOF</td>
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<tr>
<td>SOFT-T</td>
<td>Special Operations Forces Tactical Tourniquet®</td>
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<tr>
<td>SOP</td>
<td>standard operating procedure</td>
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<tr>
<td>TACEVAC</td>
<td>Tactical Evacuation (phase)</td>
</tr>
<tr>
<td>TBI</td>
<td>traumatic brain injury</td>
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<tr>
<td>TBSA</td>
<td>total body surface area</td>
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<tr>
<td>TCCC or TC3</td>
<td>Tactical Combat Casualty Care</td>
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<tr>
<td>TFC</td>
<td>Tactical Field Care (phase)</td>
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<tr>
<td>TQ</td>
<td>tourniquet</td>
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<tr>
<td>TXA</td>
<td>tranexamic acid</td>
</tr>
<tr>
<td>USAISR</td>
<td>US Army Institute of Surgical Research</td>
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</tbody>
</table>
Conversion Formulas

WEIGHT

| lb = kg X 2.2 | kg = lb X 0.45 |
| L = inches X 0.394 | c = inches X 2.54 |

LENGTH

| 1 oz = 30 g | 1 g = 001 kg = 0.36 oz |
| 1 lb = 16 oz = 0.45 kg | 1 kg = 1000 g = 2.2 lbs |
| 1 ton = 2000 lbs = 907 kg |
| 1 grain = 65 mg |

TEMPERATURE

F = (1.8) X C + 32
C = (F – 32) / (1.8)

Volume Conversions

| 1 fl oz = 30 ml = 30 cc | 1 cc = 00.001 liter |
| 1 US Gal = 128 fl oz = 3785 ml | 1 ml = 1 cc = 0.34 fl oz |
| 1 liter = 1000 ml = 340 fl oz |

Quick Conversions

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<tr>
<th>ft/in</th>
<th>in</th>
<th>cm</th>
<th>lb</th>
<th>kg</th>
<th>F</th>
<th>C</th>
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<td>142</td>
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<td>147</td>
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IV FLUID RATES IN DROPS PER MINUTE

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**ACETAMINOPHEN (Tylenol):** 325-650 mg PO q8h prn (max: 4 g/d)

**ERTAPENEM (Invanz):** 1g IV/IM q24h

**FENTANYL ORAL LOZ (Actiq):** 400-800 mcg (max: 1600 mcg/d)

**HETASTARCH (Hextend):** 500-1000ml IV

**KETAMINE (Ketalar):** 50mg IM/IN q1h OR 20mg IV/IO q30m until nystagmus or max dose of 100mg

**LIDOCAINE (Xylocaine):** Infiltration 0.5%-2% injection

**MELOXICAM (Mobic):** 15 mg PO daily

**MORPHINE SULFATE (MSO4):** 5-15 mg slow IV push; titrate to pain

**MOXIFLOXACIN (Avelox):** 400 mg PO/IV daily

**NALAXONE (Narcan):** 0.4-2.0 mg IV/IM; repeat q2-3m up to 10 mg prn

**ONDANSETRON (Zofran):** 4 mg slow IV push or IM q8h prn OR 4mg ODT PO q8h prn

**TRANEXEMIC ACID (TXA):** 1 gm in 100cc of NS or LR slow IV push over 10m (<3h of wounding)