



TACTICAL COMBAT CASUALTY CARE
QUICK REFERENCE GUIDE
FIRST EDITION

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TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



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TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



FORWARD

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 stream 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



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



ABBREVIATED TCCC GUIDELINES 31 JAN 2017

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

Establish Security Perimeter IAW Tactical SOPs. Maintain situational awareness.

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



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



ABBREVIATED TCCC GUIDELINES 31 JAN 2017

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 pulseoximetry 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.



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



ABBREVIATED TCCC GUIDELINES 31 JAN 2017

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.



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



ABBREVIATED TCCC GUIDELINES 31 JAN 2017

Basic Management Plan for Tactical Field Care continued

Splinting - Splint Fractures and Recheck Pulses.

Communication

- Communicate with the casualty if possible. Encourage, reassure, and explain care.
- Communicate with tactical leadership ASAP and throughout treatment. Provide casualty status and evac requirements.
- Communicate with the evacuation system to arrange TACEVAC.
- Communicate with medical personnel on evacuation assets and relay mechanism of injury, injuries sustained, signs/symptoms and treatments rendered.

Documentation

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.

Cardiopulmonary resuscitation (CPR)

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

Prepare for Evacuation

- Complete and secure TCCC Card (DD1380) to casualty.
- Secure all loose ends of bandages and wraps.
- Secure hypothermia prevention wraps/blankets/straps.
- Secure litter straps and consider additional padding for long evacuations.
- Provide instructions to ambulatory patients as needed.
- Stage Casualties for evacuation.
- Maintain security at evacuation site.



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



ABBREVIATED TCCC GUIDELINES 31 JAN 2017

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
- Hypothermia
- 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.

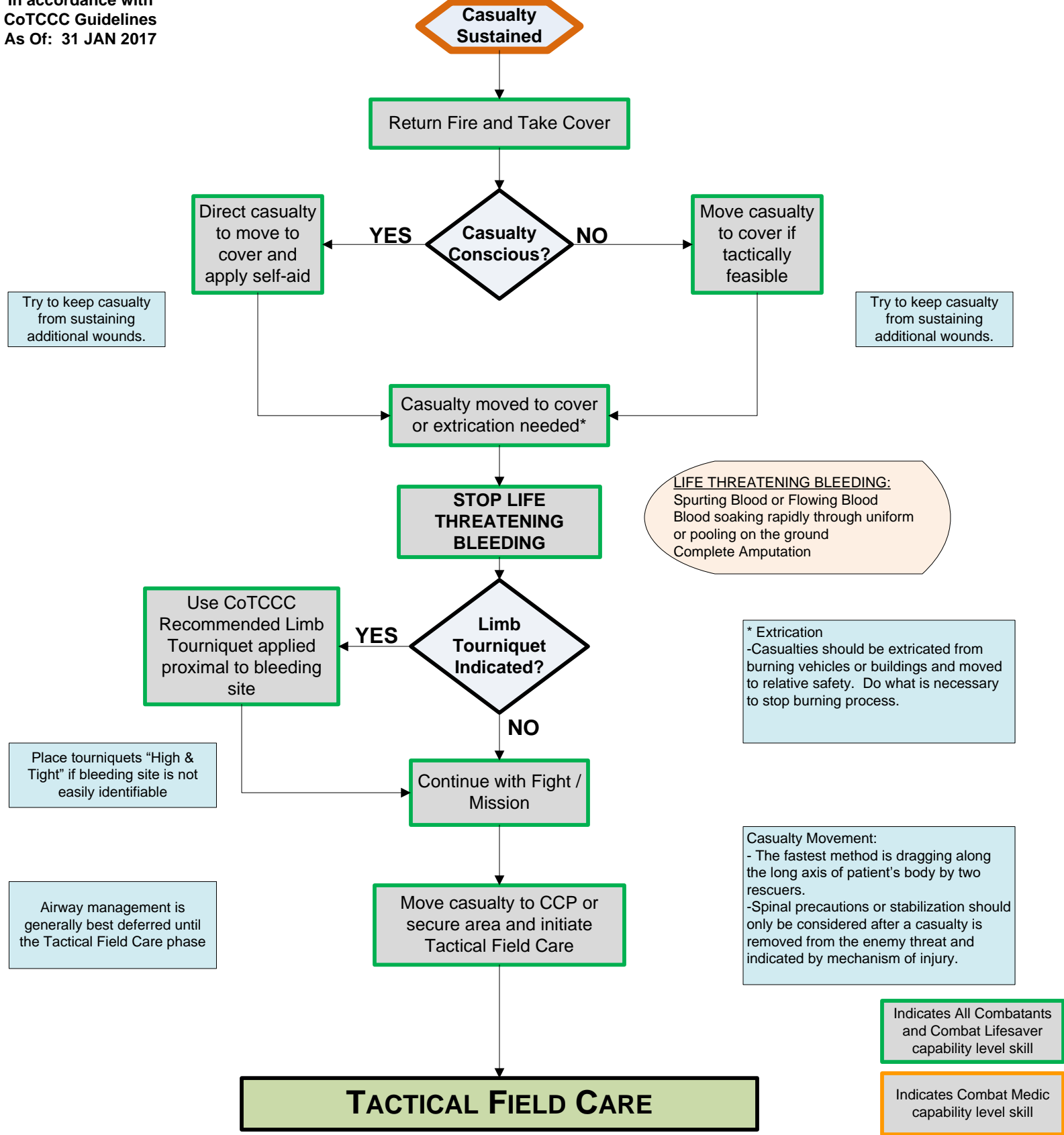


TACTICAL COMBAT CASUALTY CARE ALGORITHM



CARE UNDER FIRE

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017



Try to keep casualty from sustaining additional wounds.

Try to keep casualty from sustaining additional wounds.

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

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

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

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

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.

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 FIELD CARE



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

TACTICAL COMBAT CASUALTY CARE ALGORITHM



TACTICAL FIELD CARE

Establish Security Perimeter.
Maintain Situational Awareness.

Triage as required.

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

Triage multiple casualties into
CCP or secure area as required

MASSIVE HEMORRHAGE

Uncontrolled
Massive External
Hemorrhage or
Traumatic Amputation
Present?

NO

YES

Amenable to Limb
Tourniquet?

YES

NO

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

Head Wounds
Neck Wounds
Junctional Wounds

YES

Hemorrhage Controlled?

NO

Use CoTCCC-recommended
Hemostatic Dressing/Agent

YES

Amenable to Junctional
Device?

NO

Apply CoTCCC-recommended
Junctional Device

YES

Hemorrhage
Controlled?

NO

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

Assess minimal bleeding after airway
and breathing management

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

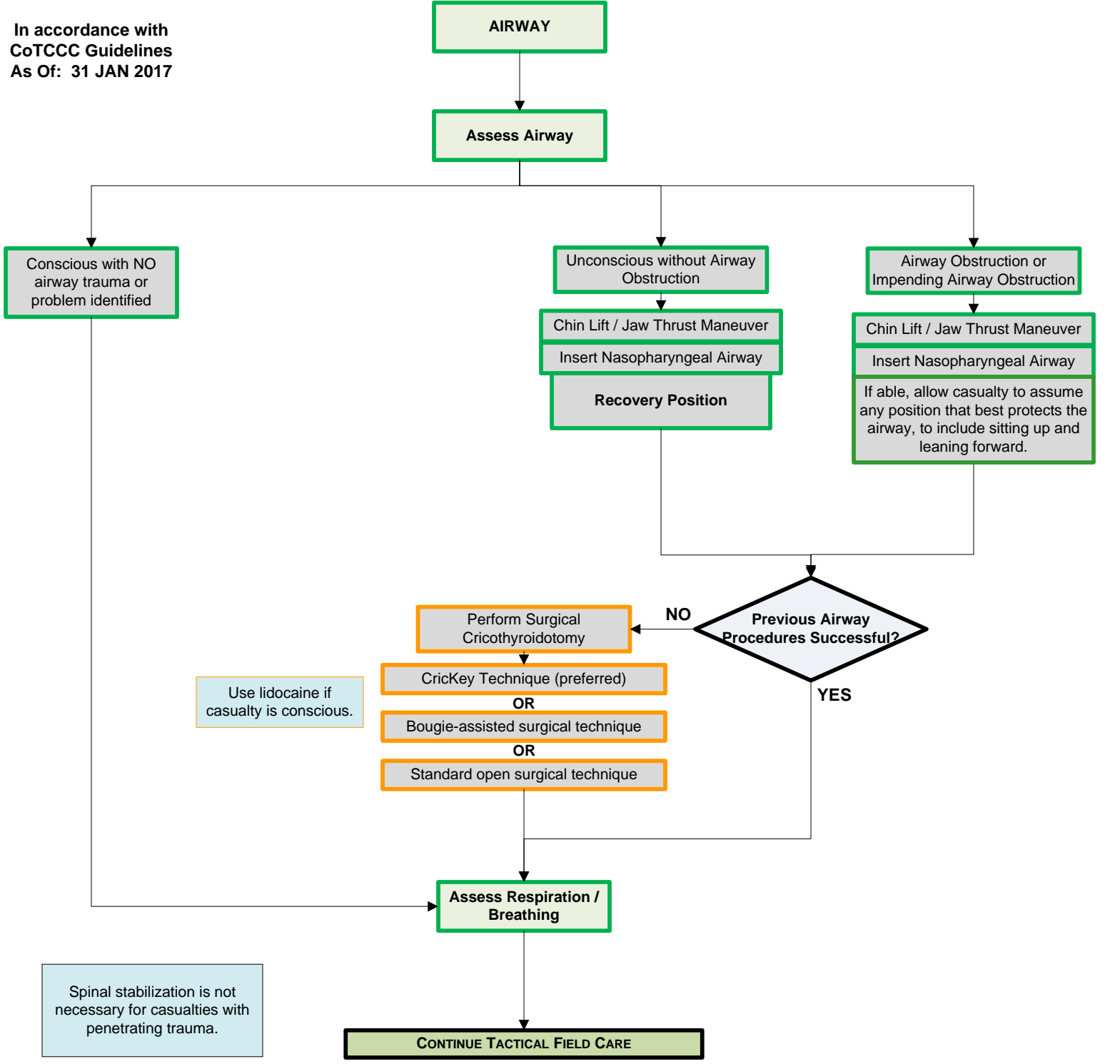


TACTICAL COMBAT CASUALTY CARE ALGORITHM

TACTICAL FIELD CARE CONTINUED



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017



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

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

RESPIRATION / BREATHING

Assess Respiration / Breathing

NO
Progressive Respiratory Distress and Known or Suspected Torso Trauma?

NO
Open/Sucking Chest Wound?

YES
Suspect/Consider Tension Pneumothorax
Needle Decompress Chest at Primary or Alternate Site on injured side. Repeat as necessary.

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

YES
NO
Tension Pneumothorax Suspected?

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

Needle Decompress Chest at Primary or Alternate Site if indicated. Repeat as necessary.

TENSION PNEUMOTHORAX INDICATORS:
Increasing Hypoxia
Respiratory Distress
Hypotension

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

CONTINUE TACTICAL FIELD CARE

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

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

CIRCULATION (BLEEDING)

Bleeding Assessment

Pelvic Binder indicated?

Apply a Pelvic Binder

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

Reassess previously applied tourniquets.

Reassess previously applied hemostatic dressings/agents

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)

Expose wound and determine if tourniquet is needed.

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.

Leave previous tourniquet in place

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

Loosen first tourniquet once second tourniquet is effectively placed

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

Control bleeding with hemostatic and/or pressure dressing.

Bleeding Controlled?

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.

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

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

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

Monitor wound closely for bleeding

Indicates All Combatants and Combat Lifesaver capability level skill

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill

CONTINUE TACTICAL FIELD CARE



TACTICAL COMBAT CASUALTY CARE ALGORITHM



TACTICAL FIELD CARE CONTINUED

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

IV/IO Indications:
-In hemorrhagic shock or at significant risk of shock
-Casualty needs IV/IO medications

CIRCULATION (INTRAVENOUS ACCESS)

IV access indicated?

NO

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 10min
Administer as soon as possible after injury
Do NOT administer >3hours 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 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



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

TACTICAL COMBAT CASUALTY CARE ALGORITHM



TACTICAL FIELD CARE CONTINUED

**CIRCULATION
(SHOCK / FLUID RESUSCITATION)**

Assess for Shock

Hemorrhagic shock present?

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

If not in shock, NO IV fluids are immediately necessary

PO fluids permissible if casualty is conscious and can swallow

Fluid Resuscitation
(in preferred order/combinations)

Blood Products 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

- Hextend 500 ml bolus
- OR, if not available
- Lactated Ringers 500 ml
- OR Plasma-Lyte A 500 ml bolus

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 >90mmHg

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.

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



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

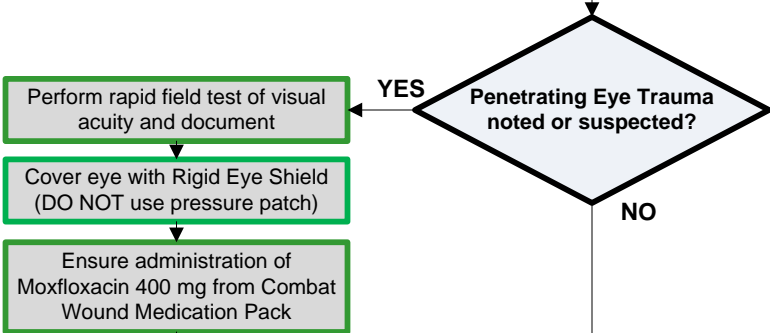
TACTICAL FIELD CARE CONTINUED

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



Patient monitoring should be initiated as early as possible

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 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



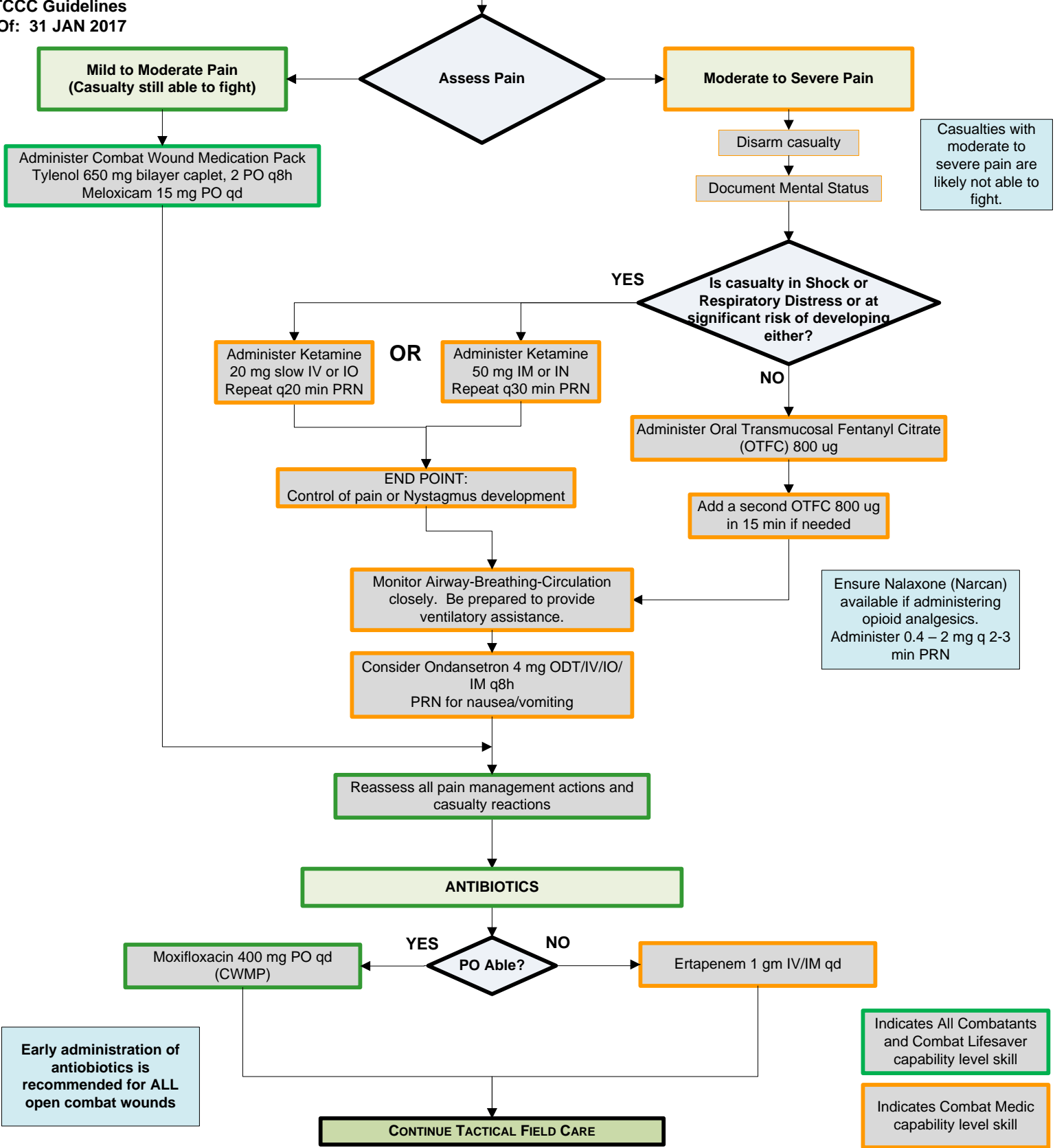
TACTICAL COMBAT CASUALTY CARE ALGORITHM



In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

TACTICAL FIELD CARE CONTINUED

PAIN MANAGEMENT / ANALGESIA





In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

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?

Aggressively monitor airway status and O2 saturations

Consider early surgical airway for respiratory distress or O2 desaturation

Facial / Neck Burns?

Estimate TBSA to nearest 10% using Rule of Nines

Cover burned areas with dry sterile dressing

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

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.

Burns >20%?

SPLINT FRACTURES

Splint Fractures and re-check pulses

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



TACTICAL COMBAT CASUALTY CARE ALGORITHM



TACTICAL FIELD CARE CONTINUED

COMMUNICATION

Communicate with casualty, tactical leadership, and medical providers in evacuation chain

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

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.

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

Cardiopulmonary Resuscitation (CPR) Considerations

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.

DOCUMENTATION

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

CONTINUE TACTICAL FIELD CARE

Indicates All Combatants and Combat Lifesaver capability level skill

Indicates Combat Medic capability level skill

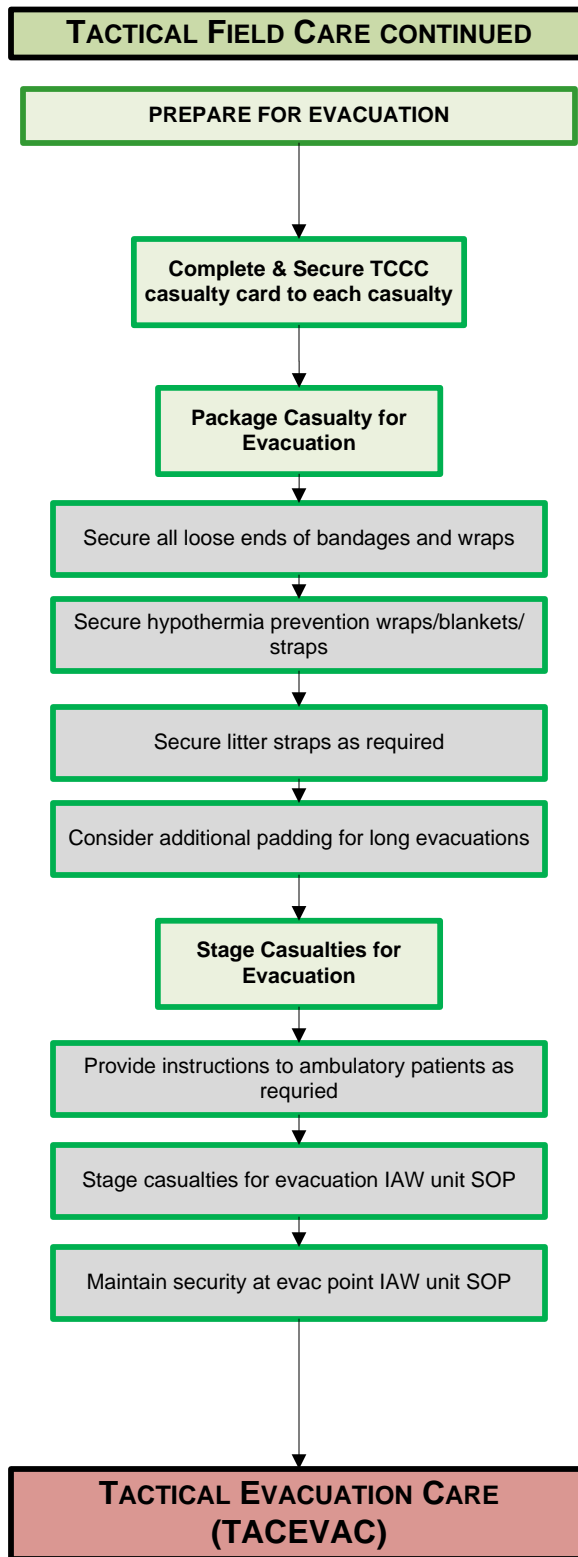
Indicates Combat Paramedic or SOF Medic capability level skill



TACTICAL COMBAT CASUALTY CARE ALGORITHM



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017



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)

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



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

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.

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

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.

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.

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

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)

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

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

Triage multiple casualties onto evacuation platform as required

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

MASSIVE HEMORRHAGE

Uncontrolled Massive External Hemorrhage or Traumatic Amputation Present?

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

Amenable to Limb Tourniquet?

Head Wounds
Neck Wounds
Junctional Wounds

Hemorrhage Controlled?

Use CoTCCC-recommended Hemostatic Dressing/Agent

Assess minimal bleeding after airway and breathing management

Apply CoTCCC-recommended Junctional Device

Amenable to Junctional Device?

Hemorrhage Controlled?

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

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



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

TACTICAL EVACUATION CARE (TACEVAC)

AIRWAY

Assess Airway

Conscious with NO
airway trauma or
problem identified

Unconscious without Airway
Obstruction

Airway Obstruction or
Impending Airway Obstruction

Chin Lift / Jaw Thrust Maneuver
Insert Nasopharyngeal Airway

Chin Lift / Jaw Thrust Maneuver
Insert Nasopharyngeal Airway

Recovery Position

If able, allow casualty to assume
any position that best protects the
airway, to include sitting up and
leaning forward.

**Previous Airway
Procedures Successful?**

Supraglottic Airway

OR
Endotracheal Intubation

OR
Perform Surgical
Cricothyroidotomy

CricKey Technique (preferred)

OR
Bougie-assisted surgical technique or

OR
Standard open surgical technique

Use lidocaine if
casualty is conscious.

**Assess Respiration /
Breathing**

Spinal stabilization is not
necessary for casualties with
penetrating trauma.

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



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

TACTICAL EVACUATION CARE (TACEVAC)

RESPIRATION /
BREATHING

Assess Respiration /
Breathing

NO

Progressive Respiratory
Distress and Known or
Suspected Torso Trauma?

YES

Suspect/Consider Tension
Pneumothorax

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

NO

Open/Sucking
Chest Wound?

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

YES

Tension Pneumothorax
Suspected?

NO

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

Needle Decompress Chest at
Primary or Alternate Site if indicated.
Repeat as necessary.

TENSION PNEUMOTHORAX INDICATORS:
Increasing Hypoxia
Respiratory Distress
Hypotension

Administer Oxygen when possible as indicated:
-Low oxygen saturation by pulseoximetry
-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

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

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capability level skill

Indicates Combat Medic
capability level skill

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Paramedic or SOF Medic
capability level skill



TACTICAL COMBAT CASUALTY CARE ALGORITHM



TACTICAL EVACUATION CARE (TACEVAC)

CIRCULATION (BLEEDING)

Bleeding Assessment

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

Apply a Pelvic Binder

Pelvic Binder indicated?

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

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)

Reassess previously applied tourniquets.

Reassess previously applied hemostatic dressings/agents

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

Expose wound and determine if tourniquet is needed.

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.

Leave previous tourniquet in place

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

Loosen first tourniquet once second tourniquet is effectively placed

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

Control bleeding with hemostatic and/or pressure dressing.

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

Bleeding Controlled?

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.

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

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

Indicates All Combatants and Combat Lifesaver capability level skill

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill

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

Monitor wounds closely for bleeding

CONTINUE TACTICAL EVACUATION CARE



TACTICAL COMBAT CASUALTY CARE ALGORITHM



TACTICAL EVACUATION CARE (TACEVAC)

In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

IV/IO Indications:
-In hemorrhagic shock or at
significant risk of shock
-Casualty needs IV/IO
medications

**CIRCULATION
(INTRAVENOUS ACCESS)**

IV access indicated?

NO

Initiate 18G IV or Saline Lock

If IV is not obtainable, use IO route

**CIRCULATION
(TRANEXAMIC ACID)**

TXA Needed?

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

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

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)

In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

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.

CIRCULATION (SHOCK / FLUID RESUSCITATION)

Assess for Shock

Hemorrhagic shock present?

If not in shock, NO IV fluids are immediately necessary

PO fluids permissible if casualty is conscious and can swallow

Fluid Resuscitation (in preferred order/combinations)

Blood Products 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

- Hextend 500cc bolus
- OR, if not available
- Lactated Ringers 500cc
- OR Plasma-Lyte A 500cc bolus

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

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



In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

TACTICAL EVACUATION CARE (TACEVAC)

TRAUMATIC BRAIN INJURY (TBI)

Assess for traumatic brain
injury (TBI)

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

Moderate/Severe TBI
suspected?

NO

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

Impending herniation
suspected?

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

YES

NO

-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.

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



In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

TACTICAL COMBAT CASUALTY CARE ALGORITHM



TACTICAL EVACUATION CARE (TACEVAC)

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.

Hypothermia prevention and fluid resuscitation should be executed simultaneously if possible

PENETRATING EYE TRAUMA

Penetrating Eye Trauma noted or suspected?

YES

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

Patient monitoring should be initiated as early as possible

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

Indicates All Combatants and Combat Lifesaver capability level skill

Indicates Combat Medic capability level skill

Indicates Combat Paramedic or SOF Medic capability level skill



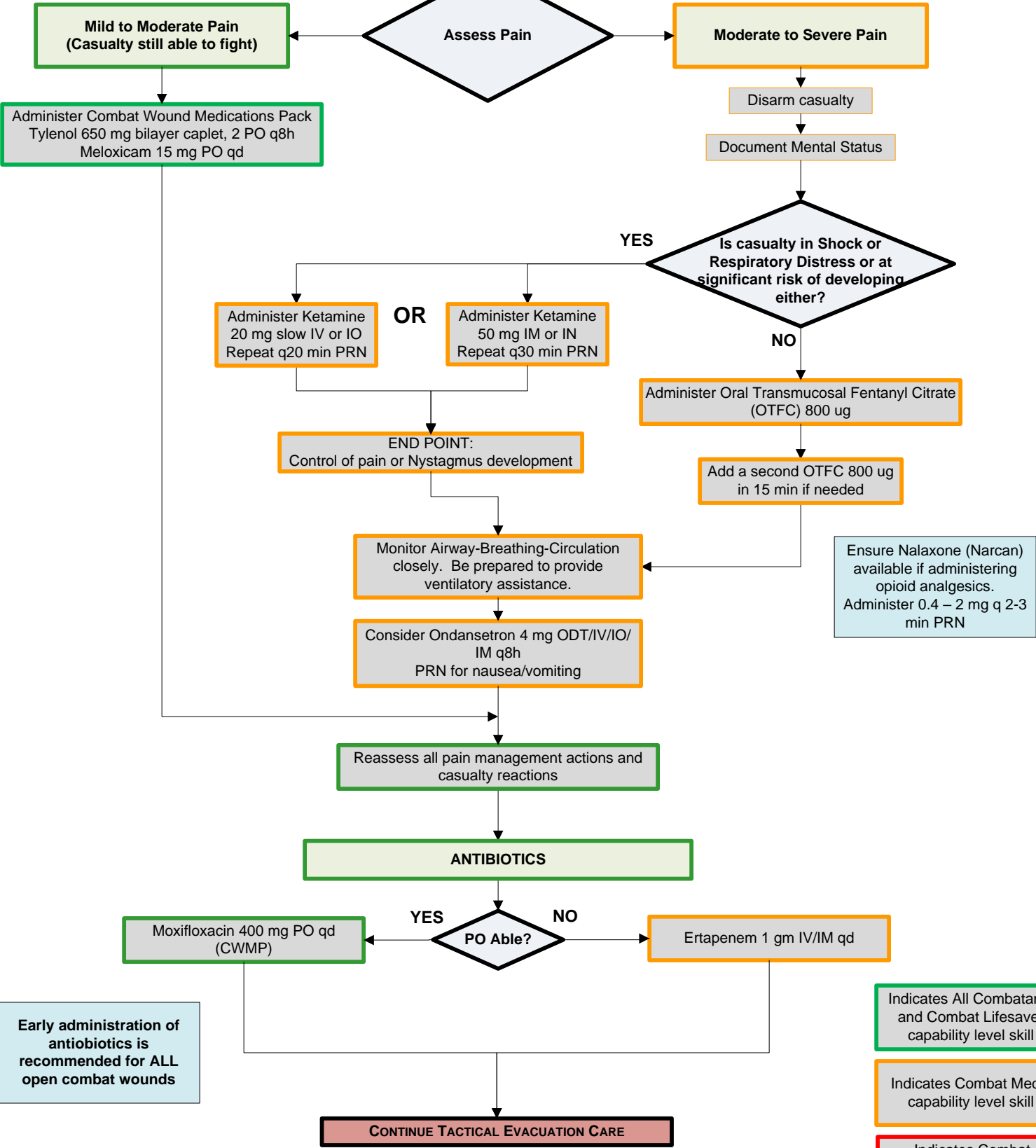
TACTICAL COMBAT CASUALTY CARE ALGORITHM



In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

TACTICAL EVACUATION CARE (TACEVAC)

PAIN MANAGEMENT / ANALGESIA



Early administration of antibiotics is recommended for ALL open combat wounds

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

TACTICAL COMBAT CASUALTY CARE ALGORITHM



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

Facial / Neck
Burns?

YES

NO

Aggressively monitor airway status and
O2 saturations

Consider early surgical airway for respiratory
distress or O2 desaturation

Estimate TBSA to nearest 10% using
Rule of Nines

Cover burned areas with dry sterile
dressing

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.

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

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



TACTICAL COMBAT CASUALTY CARE ALGORITHM



In accordance with CoTCCC Guidelines As Of: 31 JAN 2017

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.

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.

Cardiopulmonary Resuscitation (CPR) Considerations

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.

DOCUMENTATION

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

NEXT LEVEL 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 (TCCC) CARD

BATTLE ROSTER #: _____

EVAC: Urgent Priority Routine

NAME (Last, First): _____ **LAST 4:** _____

GENDER: M F **DATE** (DD-MMM-YY): _____ **TIME:** _____

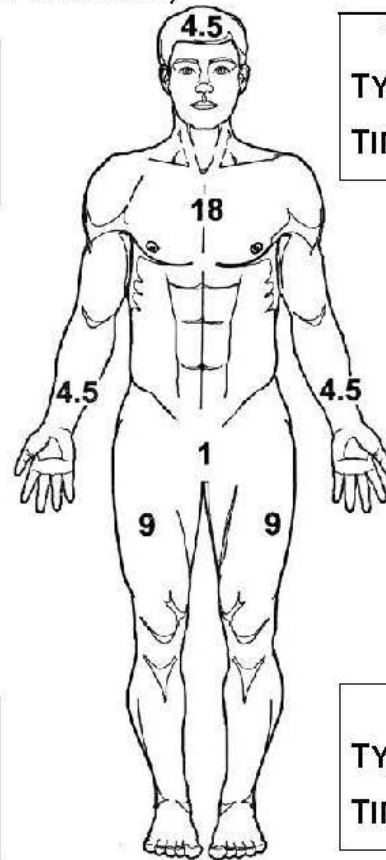
SERVICE: _____ **UNIT:** _____ **ALLERGIES:** _____

Mechanism of Injury: (X all that apply)

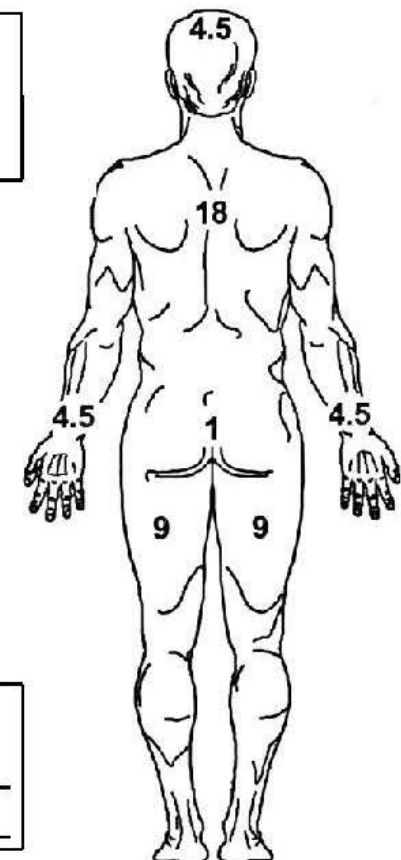
- Artillery Blunt Burn Fall Grenade GSW IED
 Landmine MVC RPG Other: _____

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)

<i>Time</i>				
Pulse (Rate & Location)				
Blood Pressure	/	/	/	/
Respiratory Rate				
Pulse Ox % O2 Sat				
AVPU				
Pain Scale (0-10)				

BATTLE ROSTER #: _____

EVAC: Urgent Priority Routine

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

C: TQ- Extremity Junctional Truncal _____

Dressing- Hemostatic Pressure Other _____

A: Intact NPA CRIC ET-Tube SGA _____

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

C:

	<i>Name</i>	<i>Volume</i>	<i>Route</i>	<i>Time</i>
<i>Fluid</i>				
<i>Blood Product</i>				

MEDS:

	<i>Name</i>	<i>Dose</i>	<i>Route</i>	<i>Time</i>
<i>Analgesic</i> (e.g., Ketamine, Fentanyl, Morphine)				
<i>Antibiotic</i> (e.g., Moxifloxacin, Ertapenem)				
<i>Other</i> (e.g., TXA)				

OTHER: Combat-Pill-Pack Eye-Shield (R L) Splint

Hypothermia-Prevention Type: _____

NOTES:

FIRST RESPONDER

NAME (Last, First): _____

LAST 4: _____



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)
<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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 	<ul style="list-style-type: none"> • 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.



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

MEDEVAC REQUEST

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

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



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

MIST REPORT FORMAT

MIST REPORT	
M – MECHANISM OF INJURY AND TIME OF INJURY (IF KNOWN)	Mechanism of Injury and time of injury (if known)
I – INJURY OR ILLNESS	Injury or Illness
S – SYMPTOMS AND VITAL SIGNS	A – Airway status B – Breathing rate C – Pulse rate D – Conscious/Unconscious E – Other signs
T – TREATMENT GIVEN	Such as Tourniquet/Time Applied Drugs administered



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

www.usaisr.amedd.army.mil/pdfs/POI_TCCC_AAR_26Apr2013.pdf

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.



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



POINT-OF-INJURY / TCCC AFTER ACTION REPORT

FOR OFFICIAL USE ONLY (FOUO)

TCCC AAR			
(Complete within 72hrs after mission and send via NIPR to the Director of the Joint Theater Trauma System)			
Event Date: _____		Time: _____ Local / <input type="checkbox"/> ZULU	
Country: _____		Region: _____	
<input type="checkbox"/> Battle Injury (BI): <input type="checkbox"/> WIA / <input type="checkbox"/> KIA / <input type="checkbox"/> DOW		<input type="checkbox"/> Non-Battle Injury (NBI): <input type="checkbox"/> Alive / <input type="checkbox"/> Dead	
Evacuation Category <input type="checkbox"/> A / <input type="checkbox"/> B / <input type="checkbox"/> C			
<input type="checkbox"/> Ground Carry	Type: _____		
<input type="checkbox"/> Ground Litter	Type: _____		
<input type="checkbox"/> Ground Vehicle	Type: _____	Time of Pick Up: _____	
<input type="checkbox"/> Aircraft	Airframe: _____	Time of Pick Up: _____	
Casualty Demographic Information (Minimum requirement is for Battle Roster # and Unit)			
BR#: _____		Unit: _____	
LName: _____	FName: _____	Rank: _____	DOB: _____
SSN: _____		Rank: _____	
Point-of-Injury Provider Information		Last Name	
NM - Non-Medic First Responder		First Name	
M - Medic		Rank	
MO - Medical Officer			
M - Mechanism of Injury		I - Injuries	
<input type="checkbox"/> Airborne Operation <input type="checkbox"/> Aircraft Crash <input type="checkbox"/> Blast – Dismounted IED or Mine <input type="checkbox"/> Blast – Mounted IED or Mine <input type="checkbox"/> Blast – RPG or Grenade <input type="checkbox"/> Blast – Indirect Fire (Mortar/Artillery) <input type="checkbox"/> Blast – Other <input type="checkbox"/> Collapse / Crush from Structure <input type="checkbox"/> Environmental: _____ <input type="checkbox"/> Fall, Height: _____ ft <input type="checkbox"/> Fragmentation / Shrapnel <input type="checkbox"/> GSW – Gunshot Wound <input type="checkbox"/> Motor Vehicle Accident <input type="checkbox"/> Other: _____		<input type="checkbox"/> (A)mputation <input type="checkbox"/> (B)leeding <input type="checkbox"/> (Bu)rn, TBSA: _____ % <input type="checkbox"/> (C)repitus <input type="checkbox"/> (D)eformity <input type="checkbox"/> (DG)Degloving <input type="checkbox"/> (E)chymosis <input type="checkbox"/> (FX)Fracture <input type="checkbox"/> (GSW) Gun Shot Wound <input type="checkbox"/> (H)ematoma <input type="checkbox"/> (LAC)eration <input type="checkbox"/> (P)ain <input type="checkbox"/> (PP)Peppering <input type="checkbox"/> (PW)Puncture Wound	
S - Signs			
Initial: <input type="checkbox"/> A <input type="checkbox"/> V <input type="checkbox"/> P <input type="checkbox"/> U	GCS: <input type="checkbox"/> /15 (E <input type="checkbox"/> /4, V <input type="checkbox"/> /5, M <input type="checkbox"/> /6)	RR: _____	HR: _____
Last: <input type="checkbox"/> A <input type="checkbox"/> V <input type="checkbox"/> P <input type="checkbox"/> U	GCS: <input type="checkbox"/> /15 (E <input type="checkbox"/> /4, V <input type="checkbox"/> /5, M <input type="checkbox"/> /6)	RR: _____	HR: _____
	BP: _____ / _____	pOx: _____ %	
	BP: _____ / _____	pOx: _____ %	
	Eye Opening 4 – spontaneous 3 – to speech 2 – to pain 1 – no response	Verbal Response 5 – alert and oriented 4 – disoriented 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			
Circulation - Hemorrhage Control			
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> TQ-Extremity	<input type="checkbox"/> CAT	<input type="checkbox"/> SOFTT <input type="checkbox"/> Other: _____
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> TQ-Extremity	<input type="checkbox"/> CAT	<input type="checkbox"/> SOFTT <input type="checkbox"/> Other: _____
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> TQ-Extremity	<input type="checkbox"/> CAT	<input type="checkbox"/> SOFTT <input type="checkbox"/> Other: _____
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> TQ-Extremity	<input type="checkbox"/> CAT	<input type="checkbox"/> SOFTT <input type="checkbox"/> Other: _____
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> TQ-Junctional, Type: _____	<input type="checkbox"/> RUE <input type="checkbox"/> LUE <input type="checkbox"/> RLE <input type="checkbox"/> LLE	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Hemostatic Dressing, Type: _____	<input type="checkbox"/> RUE <input type="checkbox"/> LUE <input type="checkbox"/> RLE <input type="checkbox"/> LLE	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Pressure Dressing, Type: _____	<input type="checkbox"/> RUE <input type="checkbox"/> LUE <input type="checkbox"/> RLE <input type="checkbox"/> LLE	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Splint, Type: _____	<input type="checkbox"/> RUE <input type="checkbox"/> LUE <input type="checkbox"/> RLE <input type="checkbox"/> LLE	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Other: _____	<input type="checkbox"/> RUE <input type="checkbox"/> LUE <input type="checkbox"/> RLE <input type="checkbox"/> LLE	
Airway			
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> NPA-Nasopharyngeal Airway		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Cric-Cricothyroidotomy, Type: _____		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> ET-Endotracheal Tube, Type: _____		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> King LT, <input type="checkbox"/> LMA, <input type="checkbox"/> Other: _____		



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



POINT-OF-INJURY / TCCC AFTER ACTION REPORT

FOR OFFICIAL USE ONLY (FOUO)

Breathing	<input type="checkbox"/> Spontaneous <input type="checkbox"/> Labored <input type="checkbox"/> Assisted <input type="checkbox"/> Assisted with BVM	WHEN	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Chest Seal, Type: _____		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Needle Decompression		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Chest Tube		
Circulation - Resuscitation			
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Saline Lock		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> IO-Intraosseous Device, Type: _____		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> TXA-Tranexamic Acid	Dose: _____	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Hextend IVF	Volume: _____	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> FDP-Freeze Dried Plasma	Volume: _____	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Other Blood Product:	Volume: _____	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Other IVF:	Volume: _____	
Interventions - Other			
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Eye Shield	<input type="checkbox"/> OD <input type="checkbox"/> OS	
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> C-Collar <input type="checkbox"/> Spine Board		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Hypothermia Prevention, Product: _____		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Hypothermia Prevention, Product: _____		
Medications - Pain, Infection, Other (Route = IM, IV, PO, PR, SL, SQ)			
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Combat Wound Pill Pack		
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Analgesic, Name: _____	Dose: _____	Route: <input type="text"/>
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Analgesic, Name: _____	Dose: _____	Route: <input type="text"/>
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Analgesic, Name: _____	Dose: _____	Route: <input type="text"/>
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Analgesic, Name: _____	Dose: _____	Route: <input type="text"/>
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Antibiotic, Name: _____	Dose: _____	Route: <input type="text"/>
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Antibiotic, Name: _____	Dose: _____	Route: <input type="text"/>
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Other Med, Name: _____	Dose: _____	Route: <input type="text"/>
<input type="checkbox"/> NM <input type="checkbox"/> M <input type="checkbox"/> MO	<input type="checkbox"/> Other Med, Name: _____	Dose: _____	Route: <input type="text"/>
General Comments:			
Sustains (Treatment, Equipment, Evacuation, Operations):			
Improves (Treatment, Equipment, Evacuation, Operations):			
BR#:		Unit:	



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



CoTCCC RECOMMENDED DEVICES & ADJUNCTS

In accordance with
CoTCCC Guidelines
As Of: 31 JAN 2017

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

<u>HEMOSTATIC DRESSINGS/DEVICES</u>		
<u>Common Name / Brand Name</u>	<u>DLA Nomenclature</u>	<u>NSN</u>
Combat Gauze (CG) Z-Fold	Bandage, Gauze Kaolin Impregnated 3X4"	6510-01-562-3325
Celox Gauze, Z-fold 5'	Dressing, Hemostatic Celox Gauze 3"X5' folded	6510-01623-9910
ChitoGauze	Dressing, Hemostatic 3X144" coated with Chitosan	6510-01-591-7740
X-Stat, Single Applicator	Applicator, Hemostatic Sponges and Dispenser	6510-01-644-7335

<u>JUNCTIONAL TOURNIQUETS & DEVICES</u>		
<u>Common Name / Brand Name</u>	<u>DLA Nomenclature</u>	<u>NSN</u>
Combat-Ready Clamp (CRoC)	Clamp, Tourniquet Expandable Aluminum	6515-01-589-9135
SAM Junctional Tourniquet (SAM-JT)	Tourniquet Kit Junctional Compression	6515-01-618-7475
Junctional Emergency Treatment Tool (JETT)	Tourniquet, Inguinal Hemorrhage Adjustable	6515-01-616-5841

<u>AIRWAY MANAGEMENT DEVICES & ADJUNCTS</u>		
<u>Common Name / Brand Name</u>	<u>DLA Nomenclature</u>	<u>NSN</u>
Control Cric / CricKey	Cricothyrotomy System	6515-01-640-6701

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.



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

TCCC PHARMACOLOGY REFERENCE

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



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

TCCC PHARMACOLOGY REFERENCE

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)



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

TCCC PHARMACOLOGY REFERENCE

MELOXICAM (MOBIC)

Class: NSAID; COX2 Inhibitor, anti-inflammatory, 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: 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 herbals (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

TCCC Indications: Alternative to OTFC moderate to severe pain management for a casualty 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, insomnia, disorientation, visual disturbances, dysphoria, paradoxical 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; herbals (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.



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

TCCC PHARMACOLOGY REFERENCE

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; QT_c 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 QT_c interval; may cause false positive on opiate screening tests.

Mission Impact: GROUNDING medication for personnel on flight status.

K-9 Dosage: DO NOT GIVE

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

IM – Onset in 2-5 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



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

TCCC PHARMACOLOGY REFERENCE

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.

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.



TACTICAL COMBAT CASUALTY CARE
(TCCC / TC3)

EXAMPLE TACTICAL MEDICAL CONOP

OBJ _____ CONOP _____

Prepared BY: _____
Position: _____
Name: _____
Contact: _____

OBJ GRID: _____

MISSION MEDICAL ASSETS / VEHICLES

Name	Call Sign / Frequency	Locations (INFIL / EXFIL / ON OBJ)	Asset	Call Sign / Frequency	Locations / Routes (INFIL / EXFIL / ON OBJ)
1					
2					
3					
4					

MISSION MEDICAL PERSONNEL

Name	Call Sign / Frequency	Locations (INFIL / EXFIL / ON OBJ)
1		
2		
3		
4		

CASEVAC / MEDEVAC

Order	Asset	Unit	Contact / Type	Call Sign / Frequency	Staging Location	Response Time (SIU + time to TGT)	Target to Primary Med Facility
Primary						___ min	___ min
Secondary						___ min	___ min

Notes:.

CSAR ASSETS

Call Sign	Location/SAT	Alert + Time of Flight
P:		___ min + ___ min
S:		___ min + ___ min

Note:

ADDITIONAL:

MEDICAL TREATMENT FACILITIES

Order	MTF Name / Grid	Total time from Alert to MTF
Primary		___ min
Secondary		___ min
Head Injury MTF		___ min
MWD		___ min

Note: Time to MTF is using primary CASEVAC/MEDEVAC

(P) MTF CAPABILITIES (S) MTF CAPABILITIES

LOCATION (ROLE#) _____

SVOIIP: _____
DSN: _____
MIRC: _____
Grid: _____
x OR _____
x ICU _____
x ICW _____
x CT Scanner _____

LOCATION (ROLE#) _____

SVOIIP: _____
DSN: _____
MIRC: _____
Grid: _____
x OR _____
x ICU _____
x ICW _____
x CT Scanner _____





TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)



ABOUT THE COMMITTEE ON TACTICAL COMBAT CASUALTY CARE AND THE JOINT TRAUMA SYSTEM

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 (TCCC / TC3)

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TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

GLOSSARY

AAL	anterior axillary line
ASAP	as soon as possible
AVPU	Alert/Verbal/Pain/Unresponsive
AXP	ambulance exchange point
BAS	battalion aid station
BVM	bag-valve-mask
CASEVAC	casualty evacuation
CAT	Combat Application Tourniquet®
CCP	casualty collection point
CEP	casualty evacuation point
CG	Combat Gauze®
Class VIII	class of supply for medical
CLS	combat lifesaver
COMSEC	communications security
CoTCCC	Committee on Tactical Combat Casualty Care
CPG	clinical practice guidelines
CRoC	Combat Ready Clamp®
CRS	casualty response system
CTS	Combat Trauma System
CUF	Care Under Fire (phase)
CWMP	combat wound medication pack
DoDTR	department of defense trauma registry
EMT	Emergency Medical Tourniquet®
HLZ	helicopter landing zone
HPMK	Hypothermia Prevention and Management Kit®
HRS	Heat Reflective Shell®
IAW	in accordance with
IED	improvised explosive device
IM	intramuscular
IN	intranasal
IO	intraosseous
IV	intravenous
JETT	Junctional Emergency Treatment Tool®

JTS	Joint Trauma System
JTTS	joint theater trauma system
LR	Lactated Ringer's
LSI	life-saving intervention
MASSCAL	mass casualty
MEDEVAC	medical evacuation
mmHG	millimeters of mercury
MSO4	Morphine Sulfate
MTF	medical treatment facility
NS	normal saline / sodium chloride
ODT	orally dissolving tablet
OTFC	oral transmucosal fentanyl citrate
PCO2	partial pressure of carbon dioxide
PI	performance improvement
PO	by mouth / oral
POI	point-of-injury
PRN	pro re nata (as needed/circumstances require)
RBC	red blood cells
SAM-JT	SAM-Junctional Tourniquet®
SBP	systemic blood pressure
SGA	supraglottic airway
SOF	special operations forces
SOFT-T	Special Operations Forces Tactical Tourniquet®
SOP	standard operating procedure
TACEVAC	Tactical Evacuation (phase)
TBI	traumatic brain injury
TBSA	total body surface area
TCCC or TC3	Tactical Combat Casualty Care
TFC	Tactical Field Care (phase)
TQ	tourniquet
TXA	tranexamic acid
USAISR	US Army Institute of Surgical Research



TACTICAL COMBAT CASUALTY CARE (TCCC / TC3)

CONVERSIONS

Conversion Formulas

WEIGHT	LENGTH
lb = kg X 2.2	Inches = cm X 0.394
kg = lb X 0.45	c = inches X 2.54
TEMPERATURE	
F = (1.8) X C + 32	
C = (F - 32) / (1.8)	

Weight Conversions

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	

Volume Conversions

1 fl oz = 30 ml = 30 cc	1 cc = 0.001 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

HEIGHT			WEIGHT		TEMPERATURE	
ft/in	in	cm	lb	kg	F	C
4'8"	56	142	40	18.2	212	100
4'9"	57	145	50	22.7	108	42.2
4'10"	58	147	60	27.3	107	41.6
4'11"	59	150	70	31.8	106	41.1
5'0"	60	152	80	36.4	105	40.6
5'1"	61	155	90	40.9	104	40.0
5'2"	62	157	100	45.5	103	39.4
5'3"	63	160	110	50.0	102	38.9
5'4"	64	163	120	54.5	101	38.3
5'5"	65	165	130	59.1	100	37.8
5'6"	66	168	140	63.6	99	37.2
5'7"	67	170	150	68.2	98	36.7
5'8"	68	173	160	72.7	98.6	37.0
5'9"	69	175	170	77.3	97	36.1
5'10"	70	178	180	81.8	96	35.6
5'11"	71	180	190	86.4	95	35.0
6'0"	72	183	200	90.9	94	34.4
6'1"	73	185	210	95.5	93	34.0
6'2"	74	188	225	102.3	92	33.3
6'3"	75	191	250	113.6	91	32.8
6'4"	76	193	275	125.0	90	32.1
6'5"	77	196	300	136.4		

IV FLUID RATES IN DROPS PER MINUTE

ml/HR	50	75	80	100	125	150	175	200	250
10GTT-	8	13	13	17	21	25	29	33	42
15GTT-	12	19	20	25	31	37	44	50	62
60GTT-	50	75	80	100	125	150	175	200	250



TACTICAL COMBAT CASUALTY CARE
(TCCC / TC3)

TCCC
DRUG QUICK REFERENCE

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)

