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|  |  | **Tactical Combat Casualty Care for Medical Personnel**  **03 June 2016**  **Tactical Field Care #3** |  |
|  |  | **Tactical Field Care Guidelines**  14. Splint fractures and recheck pulse. | Read text |
|  |  | **Fractures: Open or Closed**  • Open Fracture – associated with an overlying skin wound  • Closed Fracture – no overlying skin wound | Open fractures present a major threat of serious infection. |
|  |  | **Clues to a Closed Fracture**  • Trauma with significant pain AND  • Marked swelling  • Audible or perceived snap  • Different length or shape of limb  • Loss of pulse or sensation distally  • Crepitus (“crunchy” sound) | What are the warning signs that an arm or leg might be fractured? |
|  |  | **Splinting Objectives**  • Prevent further injury  • Protect blood vessels and nerves     - Check pulse before and after splinting  • Make casualty more comfortable | Why do we take the time to splint fractures? |
|  |  | **Principles of Splinting**   * Check for other injuries * Use rigid or bulky materials * Try to pad or wrap if using rigid splint * Secure splint with ace wrap, cravats, belts, duct tape * Try to splint before moving casualty | Here are some of the things that you want to do when splinting a fracture. |
|  |  | **Principles of Splinting**   * Minimize manipulation of extremity before splinting * Incorporate joint above and below * Arm fractures can be splinted to shirt using sleeve * Consider traction splinting for mid-shaft femur fractures * Check distal pulse and skin color before and after splinting | And a few more.  The splint shown is a traction splint. |
|  |  | **Things to Avoid in Splinting**   * Manipulating the fracture too much and damaging blood vessels or nerves * Wrapping the splint too tight and cutting off circulation below the splint | You can do harm with splinting as well. |
|  |  | **Commercial Splints** | Pneumatic splint and flexible type splint shown |
|  |  | **Field-Expedient Splint Materials**   * Shirt sleeves/safety pins * Weapons * Boards * Boxes * Tree limbs * ThermaRest pad | Remember to pad rigid splints.  **If you use a weapon as a splint – don’t forget to unload and safe it first!** |
|  |  | **Don’t Forget!**  Pulse, motor and sensory checks before and after splinting! | Most important aspect of splinting is to splint in a way that does not harm the nerves or blood vessels to the extremity.  Check for this by assessing circulation and motor and sensory status before and after splinting. |
|  |  | **Splinting Practical** |  |
|  |  | **Tactical Field Care Guidelines**  15. Antibiotics: recommended for all open combat  wounds:        a. If able to take PO meds:             - Moxifloxacin, 400 mg PO one a day        b. If unable to take PO (shock, unconsciousness):             - Cefotetan, 2 g IV (slow push over 3-5 minutes) or IM, every 12 hours  or             - Ertapenem, 1 g IV/IM once a day | Why not Rocephin? Some people suggest that as an alternative.  Rocephin does not cover for anaerobic bacteria – big hole in its coverage  Should also irrigate wound with clean water if possible – also reduces chance of infection |
|  |  | **Outcomes: Without Battlefield Antibiotics**   * Mogadishu 1993 * Casualties: 58 * Wound Infections: 16 * Infection rate: 28% * Time from wounding to Level II care – 15 hrs. | Why bother giving antibiotics?  Why not just wait until they get to the hospital?  ANTIBIOTICS MUST BE GIVEN EARLY TO PREVENT WOUND INFECTIONS.  WOUND INFECTIONS CAN KILL THE CASUALTY OR DELAY HIS RECOVERY.  Let’s look at three examples. |
|  |  | **Outcomes: With Battlefield Antibiotics**  Tarpey – AMEDD J 2005:    –32 casualties with open wounds    –All received battlefield antibiotics    –None developed wound infections    –Used TCCC recommendations modified by availability:        • Levofloxacin for an oral antibiotic        • IV cefazolin for extremity injuries       • IV ceftriaxone for abdominal injuries. | Huge improvement over the wound infection rate seen in Mogadishu. |
|  |  | **Outcomes: With Battlefield Antibiotics**   * MSG Ted Westmoreland * Special Operations Medical Association presentation  2004 * Multiple casualty scenario involving 19 Ranger and Special Forces WIA as well as 30 Iraqi WIA * 11-hour delay to hospital care * Battlefield antibiotics given * No wound infections developed in this group. | USE battlefield antibiotics! |
|  |  | **Battlefield Antibiotics**  **Recommended for all open wounds on the battlefield!** | Even wounds much less severe than this warrant antibiotic coverage. |
|  |  | **Battlefield Antibiotics**  If casualty can take PO meds    •Moxifloxacin 400 mg, one tablet daily        –Broad spectrum – kills most bacteria       – Few side effects       – Take as soon as possible after life-threatening conditions have been addressed       – Delays in antibiotic administration increase the risk of wound infections | Moxifloxacin – chosen after a careful review of available choices.  Confirmed by multiple subsequent reviews of this topic.  O’Connor – Military Medicine 2003  If you want to read about why moxifloxacin is the best choice for oral antibiotic in TCCC, this paper spells it out. |
|  |  | **Combat Wound Medication Pack**  Mobic 15mg  Tylenol ER 650mg, 2 caplets  Moxifloxacin 400mg  Blister pack  NSN:  6505016529652 | Best plan - pre-packaged PO pain meds and antibiotics in a foil pouch.  These meds should be carried by EVERYONE in the unit and self-administered as soon as possible after sustaining a wound.  The **Combat Wound Medication Pack** contains the following components: Moxifloxacin 400 mg tablet (one), Meloxicam 15 mg tablet (one), and Acetaminophen 1300 mg extended release (650mg caplet x 2); each of the three medications (in unit dosages) is contained in a blister pack. NSN:  6505016529652 |
|  |  | **Battlefield Antibiotics**  • Casualties who cannot take PO meds:       –Ertapenem 1 gm IV/IM once a day  • IM should be diluted with lidocaine (1 gm ertapenem with 3.2cc lidocaine without epinephrine)         • IV requires a 30-minute infusion time  • NOTE: Cefotetan is also a good alternative, but has been more difficult to obtain through supply channels | For IV use – Reconstitute the contents of a 1-gram vial of ertapenem 10ml of 0.9% saline. Shake well to dissolve and immediately transfer to 50ml of 0.9% saline. Infuse over 30 minutes.  For IM use – Reconstitute the contents of a 1-gram vial of ertapenem with 3.2ml of 1% lidocaine injection (WITHOUT EPINEPHRINE). Shake well to dissolve and administer into a deep muscle mass (gluteal, lateral thigh). The reconstituted solution should be used within 1 hour after preparation. |
|  |  | **Medication Allergies**  • **Screen your units for drug allergies!**  • Patients with allergies to aspirin or other non-steroidal anti-inflammatory drugs should not use Mobic.  • Allergic reactions to Tylenol are uncommon.  • Patients with allergies to flouroquinolones, penicillins, or cephalosporins may need alternate antibiotics that should be selected by unit medical personnel during the pre-deployment phase. **Check with your unit physician if unsure.** | Mobic should not be given to those who have experienced trouble breathing, hives or other allergic-type reactions after taking aspirin or other NSAIDs.  Severe, rarely fatal, reactions have been reported in these patients.  There are many classes of antibiotics. Individuals with known medication allergies should be identified as they may require a different class of antibiotic. Moxifloxacin (Avelox®) is a member of the flouroquinolone class. It is contraindicated in persons who have known allergic reactions to other flouroquinolones like NegGam® or Cipro®. Ertapenem (Invanz®) is a member of the carbapenem family of the beta lactam class of antibiotics. It is contraindicated in persons with known anaphylactic reactions to other beta lactams including penicillins and cephalosporins. Furthermore, since ertapenem is reconstituted with lidocaine for IM injection, it cannot be given to persons with known hypersensitivity to lidocaine. |
|  |  | **Tactical Field Care Guidelines**  16. Burns  a. Facial burns, especially those that occur in closed spaces, may be associated with inhalation injury. Aggressively monitor airway status and oxygen saturation in such patients and consider early surgical airway for respiratory distress or oxygen desaturation.  b. Estimate total body surface area (TBSA) burned to the nearest 10% using the Rule of Nines. (see third slide) | Read text |
|  |  | **Degrees of Burns**  Superficial burn - “First Degree”  Partial thickness burn - “Second degree” | Here are some examples of different degrees of burns |
|  |  | **Degrees of Burns**  Full-thickness burn - “Third degree”  Deep (subdermal) burn - “Fourth-degree” | Here are more examples of different degrees of burns |
|  |  | **Rule of Nines for Calculating Burn Area** | Note: Do not count superficial (first degree) burnsin calculating TBSA burned. |
|  |  | **Tactical Field Care Guidelines**  16. Burns (cont)  c. Cover the burn area with dry, sterile dressings. For extensive burns (>20%), consider placing the casualty in the HRS or the Blizzard Survival Blanket in the Hypothermia Prevention Kit in order to both cover the burned areas and prevent hypothermia. | Read text |
|  |  | **Tactical Field Care Guidelines**  16. Burns (cont)  d. Fluid resuscitation (USAISR Rule of Ten)  – If burns are greater than 20% of Total Body Surface Area, fluid resuscitation should be initiated as soon as IV/IO access is established. Resuscitation should be initiated with Lactated Ringer’s, normal saline, or Hextend. If Hextend is used, no more than 1000 ml should be given, followed by Lactated Ringer’s or normal saline as needed. | Read text |
|  |  | **Tactical Field Care Guidelines**  16. Burns (cont)    –Initial IV/IO fluid rate is calculated as %TBSA x 10cc/hr for adults weighing 40-80 kg.    –For every 10 kg ABOVE 80 kg, increase initial rate by 100 ml/hr.    –If hemorrhagic shock is also present, resuscitation for hemorrhagic shock takes precedence over resuscitation for burn shock. Administer IV/IO fluids per the TCCC Guidelines in Section 7. | Read text |
|  |  | **Tactical Field Care Guidelines**  16. Burns (cont)  e. Analgesia in accordance with TCCC Guidelines in Section 13 may be administered to treat burn pain.  f. Prehospital antibiotic therapy is not indicated solely for burns, but antibiotics should be given per TCCC guidelines in Section 15 if indicated to prevent infection in penetrating wounds. | Read text |
|  |  | **Tactical Field Care Guidelines**  16. Burns (cont)     g. All TCCC interventions can be performed on or through burned skin in a burn casualty.  *These casualties are “trauma casualties with burns” - not the other way around.*  *US Army ISR Burn Center* | Read text |
|  |  | **Tactical Field Care Guidelines**  17. Communicate with the casualty if possible.  - Encourage; reassure  - Explain care | Read text |
|  |  | **Tactical Field Care Guidelines**  18. Cardiopulmonary resuscitation (CPR)  Resuscitation on the battlefield for victims of blast or penetrating trauma who have no pulse, no ventilations, and no other signs of life will not be successful and should not be attempted.However, casualties with torso trauma or polytrauma who have no pulse or respirations during TFC should have bilateral needle decompression performed to ensure they do not have a tension pneumothorax prior to discontinuation of care. The procedure is the same as described in section 3 above. | Read text |
|  |  | **NO battlefield CPR** | Why not??? |
|  |  | **CPR in Civilian Trauma**   * 138 trauma patients with prehospital cardiac arrest and in whom resuscitation was attempted. * No survivors * Authors recommended that trauma patients in cardiopulmonary arrest not be transported emergently to a trauma center even in a civilian setting due to large economic cost of treatment without a significant chance for survival.   *Rosemurgy et al. J Trauma 1993* | **Because CPR done for trauma patients in cardiac arrest DOES NOT WORK!**  CPR may work SOMETIMES for cardiac patients without trauma – but not for trauma patients. |
|  |  | **The Cost of Attempting CPR on the Battlefield**   * CPR performers may get killed * Mission gets delayed * Casualty stays dead | In combat, futile attempts at CPR may interfere with caring for casualties who have a chance to survive and may interfere with the unit’s ongoing mission. |
|  |  | **CPR on the Battlefield (Ranger Airfield Operation in Grenada)**   * Airfield seizure operation * Ranger shot in the head by sniper * No pulse or respirations * CPR attempts unsuccessful * Operation delayed while CPR performed * Ranger PA finally intervened: “Stop CPR and move out!” | Real-world example.  A very large-scale operation could have been compromised by a tactical medicine mistake. |
|  |  | **CPR in Tactical Settings**  Only in the case of cardiac arrest due to:    – Hypothermia    – Near-drowning    – Electrocution    – Other non-traumatic cause  should CPR be considered prior to the Tactical Evacuation Care phase. | There are some notable exceptions to the rule about CPR on the battlefield.  Individuals with these disorders have a better chance of survival than those with cardiac arrest due to trauma.  Myocardial infarction is not on this list because it is pretty rare for combat troops to have heart attacks in the middle of an op. |
|  |  | **Traumatic Cardiac Arrest in TCCC**  • Mounted IED attack in March 2011  • Casualty unconscious from closed head trauma  • Lost vital signs prehospital  • CPR on arrival at hospital  • **Bilateral needle decompression** done in ER  • Rush of air from left-sided tension pneumothorax  • Return of vital signs – life saved  • This procedure is routinely done by Emergency Medicine physicians and Trauma Surgeons for trauma victims who lose their pulse and heart rate in the hospital Emergency Department. | Though CPR for a combat casualty on the battlefield is contraindicated, bilateral needle decompression is not. This should be done before attempts at resuscitation are discontinued in any casualty who suffered polytrauma or torso trauma and lost vital signs. It is done to rule out tension pneumothorax. It could save a life if tension pneumothorax is present, and no harm will be done if it is not. |
|  |  | **Questions?** |  |
|  |  | **Tactical Field Care Guidelines**  19. Documentation of Care:  Document clinical assessments, treatments rendered, and changes in the casualty’s status on a TCCC Casualty Card (DD Form 1380). Forward this information with the casualty to the next level of care. | Read text |
|  |  | **TCCC Casualty Card**  • Designed by combat medics  • Used in combat since 2002  • Replaced old DD Form 1380  • Only essential information  • Can be used by hospital to document injuries sustained and field treatments rendered  • Heavy-duty waterproof or laminated paper | Medical documentation may be difficult to accomplish in tactical settings.  It is so important to the casualty’s subsequent care that every effort should be made. |
|  |  | **Kotwal et al – 2011**  **Eliminating Preventable Death on the Battlefield**   * In order to know if we are doing the right thing, we must first know what we did. * This paper was made possible by the Ranger TCCC Card. | This paper appeared in the Archives of Surgery in December, 2011. It documents prehospital battlefield trauma care and examines outcomes. It could not have been written without data from TCCC Casualty Cards. |
|  |  | **TCCC Casualty Card**  • This card is based on the principles of TCCC.  • It addresses the initial lifesaving care provided at the point of wounding.  • Filled out by *whoever* is caring for the casualty.  • Its format is simple with a circle or “X” in the appropriate block. | Read text |
|  |  | **TCCC Casualty Card**  **Front** | This is the front of the TCCC Casualty Card.  Individual’s name and allergies should already be filled in.  This should be done when placed in IFAK. |
|  |  | **TCCC Casualty Card**  **Back** | And this is the back. |
|  |  | **Instructions**   * A TCCC Casualty Card should be kept in each Individual First Aid Kit. * Use an indelible marker to fill it out. * When used, attach it to the casualty’s belt loop, or place it in their upper left sleeve, or the left trouser cargo pocket. * Include as much information as you can. | Read text |
|  |  | **Documentation**   * Record each specific intervention in each category. * If you are not sure what to do, the card will prompt you where to go next. * Simply circle the intervention you performed. * Explain any action you want clarified in the remarks area. | Read text |
|  |  | **Documentation**   * **The card does not imply that every casualty needs all of these interventions.** * You may not be able to perform all of the interventions that the casualty needs. * The next person caring for the casualty can add to the interventions performed. * This card can be filled out in less than two minutes. * It is important that we document the care given to the casualty. | Read text |
|  |  | **TCCC Card Abbreviations**   * DTG = Date-Time Group (e.g. – 160010Oct2009) * NBC = Nuclear, Biological, Chemical * TQ = Tourniquet * GSW = Gunshot Wound * MVA = Motor Vehicle Accident * AVPU = Alert, Verbal stimulus, Painful stimulus, Unresponsive * Cric = Cricothyroidotomy * NeedleD = Needle decompression * IV = Intravenous * IO = Intraosseous * NS = Normal Saline * LR = Lactated Ringers * ABX = Antibiotics | Review abbreviations |
|  |  | **TCCC After Action Report**   * This electronic AAR is intended to be completed when the first responder returns to base. * Somewhat more complete than the TCCC Casualty Card * TCCC AAR should be submitted to the Joint Theater Trauma System Director within 72 hours of casualty evacuation * **Both the TCCC Casualty Card and the TCCC AAR are required by USFOR-A FRAGO 13-139** | Read text |
|  |  | **TCCC After-Action Report**  **March 2014** | The TCCC AAR is similar to the Casualty Card, but more extensive. |
|  |  | **Questions?** |  |
|  |  | **Further Elements of Tactical Field Care**  • Reassess regularly.  • Prepare for transport.  • Minimize removal of uniform and protective gear, but get the job done.  • Replace body armor after care, or at least keep it with the casualty. He or she may need it again if there is additional contact. | A few final points |
|  |  | **Further Elements of Tactical Field Care**  Casualty movement in TFC may be better accomplished using litters. | Remember that we used carries and drags in Care Under Fire.  We did it that way to get the casualty to cover as quickly as possible.  Now we have time to use litters.  Often better for moving casualty a long distance.  Casualties do NOT have to be placed supine on a litter. The litter exists only to facilitate casualty movement. The casualty can be placed in the best position that facilitates their care and comfort. The casualty must, however, be secured to litter prior to movement. |
|  |  | **Litter Carry Video**  • Secure the casualty on the litter  • Bring his weapon | (Click on photo to start video.)  Remember - Don’t let the casualty fall off of the litter! |
|  |  | **Summary of Key Points**  • Still in hazardous environment  • Limited medical resources  • Hemorrhage control  • Airway management  • Breathing  • Transition from tourniquet to another form of hemorrhage control when appropriate  • For hemorrhagic shock, resuscitate with blood products per the TCCC Guidelines when they are available | TFC takes place in a hazardous environment.  The enemy may be close, and medical care may be far away.  There is more time here than in Care Under Fire, but still; you should do only those aspects of care that are really important.  Remember that your unit may have to move quickly at short notice. |
|  |  | **Summary of Key Points**   * Hypotensive resuscitation with Hextend for hemorrhagic shock when blood products are not available * Hypothermia prevention   • Shield and antibiotics for penetrating eye injuries  • Pain control  • Antibiotics  • Reassure casualties  • No CPR  • Documentation of care | Review |
|  |  | **Questions?**  **Wear your body armor!** |  |
|  |  | **Casualty Collection Point Operations** | This information on CCP operations was extracted from the chapter on TCCC Casualty Response Planning by Kotwal and Montgomery in the military version of the Prehospital Life Support Manual. |
|  |  | **Casualty Collection Points in the Evacuation Chain** | If possible, casualty flow should be planned from the point of injury all the way back to a fixed medical facility in CONUS. Tactical medics should understand the casualty flow up two levels above themselves at a minimum, including patient regulating, casualty accountability, and hospitalization requirements. For example, a platoon medic should have a good understanding of where a casualty goes after leaving the tactical CCP or battalion aid station.  There are several questions that need to be answered in order to establish the tactical casualty flow:  To where will the unit’s casualties be evacuated?  Will evacuation be conducted by ground or air (or water) assets to a casualty collection point?  How will evacuation be conducted to casualty transload points?  What are the distances and times of travel?  Will expected casualties be able to make it that far? If not, what parts of the plan need to be corrected?  Who will evacuate the casualties?  Will medical assets be properly positioned to ensure continuity of care? |
|  |  | **CCP Site Selection**   * Should be reasonably close to the fight * Located near areas where casualties are likely to occur * Must provide cover and concealment from the enemy * Inside a building or on hardstand (an exclusive CCP building limits confusion) * Should have access to evacuation routes (foot, vehicle, aircraft) * Proximal to “Lines of Drift” or paths across terrain that are the most likely to be used when going from one place to another. | This is a checklist for selecting a good location for a tactical CCP.  “Lines of Drift” are paths of least resistance that offer the greatest ease while taking into account obstacles and modes of transit to the objective. |
|  |  | **CCP Site Selection**   * Adjacent to Tactical Choke Points (breeches, HLZ’s, etc…) * Avoid natural or enemy choke points * Choose an area providing passive security (inside the perimeter) * Good drainage * Accessible to evacuation assets * Expandable if casualty load increases | Read text. |
|  |  | **CCP Operational Guidelines**   * Typically, a First Sergeant (1SG) or Platoon Sergeant (PSG), or equivalent, is given responsibility for casualty flow and everything outside the CCP:   + Provides for CCP structure and organization (color coded with chemlights)   + Maintains command & control and battlefield situational awareness   + Controls aid & litter teams, and provides security | Read text |
|  |  | **CCP Operational Guidelines**   * First Sergeant (1SG), Platoon Sergeant (PSG) or equivalent:   + Strips, bags, tags, organizes, and maintains casualties’ tactical gear outside of treatment area   + Accountable for tracking casualties and equipment into and out of CCP and reports to higher command   + Moves casualties through CCP entrance/exit choke point which should be marked with an IR chemlight | Read text |
|  |  | **CCP Operational Guidelines**   * Medical personnel are responsible for everything inside the CCP   + Triage officer sorts and organizes casualties at choke point into appropriate treatment categories   + Medical officers and medics organize medical equipment and supplies and treat casualties   + EMTs, First Responders, and Aid &Litter Teams assist with treatment and packaging of casualties | Read text |
|  |  | **CCP Operational Guidelines**   * Casualties with minor injuries should remain with original element or assist with CCP security if possible * Those killed in action should remain with original element | Read text |
|  |  | **CCP Operational Guidelines** | This is a typical configuration of a CCP receiving casualties from a nearby encounter with hostile forces. |
|  |  | **Questions?** |  |
|  |  | **Management of Wounded Hostile Combatants** | When you are taking care of casualties who were recently fighting for the other side, there are a few additional things to remember. |
|  |  | **Objective**  • DESCRIBE the considerations in rendering trauma care to wounded hostile combatants. | Read text |
|  |  | **Care for Wounded Hostile Combatants**  • No medical care during Care Under Fire  • Though wounded, enemy personnel may still act as hostile combatants    –May employ any weapons or detonate any ordnance they are carrying  • **Enemy casualties are *hostile combatants* until they:**    –**Indicate surrender**    –**Drop all weapons**    –**Are proven to no longer pose a threat** | **Remember that wounded hostile combatants still represent a lethal threat.** |
|  |  | **Care for Wounded Hostile Combatants**  • **Combat medical personnel should not attempt to provide medical care until sure that wounded hostile combatant has been rendered safe by other members of the unit.**  • Restrain with flex cuffs or other devices if not already done.  • Search for weapons and/or ordnance.  • Silence to prevent communication with other hostile combatants. | These are just VERY BASIC prisoner handling guidelines. |
|  |  | **Care for Wounded Hostile Combatants**  • Segregate from other captured hostile combatants.  • Safeguard from further injury.  • Care as per TFC guidelines for U.S. forces after above steps are accomplished.  • Speed to the rear as medically and tactically feasible | Once the hostile combatants have been searched and secured, the care provided should be the same as for U.S. and coalition forces per the Geneva Convention. |
|  |  | ***QUESTIONS?*** |  |
|  |  | **Preparing for Evacuation** |  |
|  |  | **NATO/ISAF Standard Evacuation Categories**  **International Security Assistance Force**  **SOP #312:**   * Governs operations in Afghanistan * Follows NATO doctrine * Specifies three categories for casualty evacuation: * **A - Urgent** * **B - Priority** * **C - Routine** | These are evacuation categories established by ISAF operations pubs – not TCCC. The **International Security Assistance Force** (**ISAF**) is a [NATO](https://en.wikipedia.org/wiki/NATO)-led security mission in [Afghanistan](https://en.wikipedia.org/wiki/Afghanistan) that was established by the [United Nations Security Council](https://en.wikipedia.org/wiki/United_Nations_Security_Council) in December 2001.  Must know them when calling on the radio for MEDEVAC/CASEVAC. |
|  |  | **NATO/ISAF Standard Evacuation Categories**   * **CAT A – Urgent (denotes a critical, life-threatening injury)** * 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 | Casualties with these injuries would be considered Urgent. |
|  |  | **NATO/ISAF Standard Evacuation Categories**   * **CAT A – Urgent (continued)** * 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 | More examples of injuries in the Urgent category. |
|  |  | **NATO/ISAF Standard Evacuation Categories**   * **CAT B – Priority (serious injury)** * 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 10-20% Total Body Surface Area | Casualties with these injuries would be categorized Priority. |
|  |  | **NATO/ISAF Standard Evacuation Categories**   * **CAT C – Routine (mild to moderate injury)**   + Concussion (mild TBI)   + Gunshot wound to extremity - bleeding controlled without tourniquet   + Minor soft tissue shrapnel injury   + Closed fracture with intact distal pulses   + Burns < 10% Total Body Surface Area | These injuries would be assigned an evacuation category of Routine. |
|  |  | **Tactical Evacuation: Nine Rules of Thumb** | Here’s something that IS particular to TCCC.  If you have a casualty – HOW DO YOU KNOW how delays to evac will impact on him/her?  **These slides will help in that respect. Not taught anywhere else.** |
|  |  | **TACEVAC 9 Rules of Thumb: Assumptions**   * These Rules of Thumb are designed to help the corpsman or medic determine the true urgency for evacuation. * They assume that the decision is being made at 15-30 minutes after wounding. * Also that care is being rendered per the TCCC guidelines. * Most important when there are tactical constraints on evacuation:   + Interferes with mission   + High risk for team   + High risk for TACEVAC platform | Why not just evac all casualties immediately?  May be OK for some situations, but others scenarios may have tactical constraints that must be factored in.  Here is where you would want to use the Rules of Thumb to help you. |
|  |  | **TACEVAC Rule of Thumb #1**  **Soft tissue injuries are common and may look bad, but usually don’t kill unless associated with shock.** | Casualties do not die acutely from soft tissue wounds alone unless associated with severe bleeding or airway problems. |
|  |  | **TACEVAC Rule of Thumb #2**  **Bleeding from most extremity wounds should be controllable with a tourniquet or hemostatic dressing. Evacuation delays should not increase mortality if bleeding is fully controlled.** | BUT – long delays to evacuation may cause a limb to be lost if a tourniquet is in place.  Two hours does not seem to be a problem for limbs with tourniquets. As you move past four to six hours, the risk to limb survival increases. |
|  |  | **TACEVAC Rule of Thumb #3**  **Casualties who are in shock should be evacuated as soon as possible.** | This GSW to the torso is an example of a wound that causes internal, non-compressible bleeding.  There is nothing that the combat medic/corpsman/PJ can do to stop internal bleeding. TXA may help, but even so, shock is nothing to sit on in the field. |
|  |  | **TACEVAC Rule of Thumb #4**  **Casualties with penetrating wounds of the chest who have respiratory distress unrelieved by needle decompression of the chest should be evacuated as soon as possible.** | Usually when you do needle decompression, casualties with a tension pneumo WILL get better.  If they don’t, their main problem may be a large HEMOthorax (blood in the chest).  Needle decompression will not help that. Chest tubes may not, either. |
|  |  | **TACEVAC Rule of Thumb #5**  **Casualties with blunt or penetrating trauma of the face associated with airway difficulty should have an immediate airway established and be evacuated as soon as possible.**  **REMEMBER to let the casualty sit up and lean forward if that helps him or her to breathe better!** | You can make these casualties much worse if you force them to lie on their backs! |
|  |  | **TACEVAC Rule of Thumb #6**  **Casualties with blunt or penetrating wounds of the head where there is obvious massive brain damage and unconsciousness are unlikely to survive with or without emergent evacuation.** | There are some casualties you can’t help. |
|  |  | **TACEVAC Rule of Thumb #7**  **Casualties with blunt or penetrating wounds to the head - where the skull has been penetrated but the casualty is conscious - should be evacuated emergently**. | Some penetrating trauma to the head IS survivable, especially shrapnel injuries. |
|  |  | **TACEVAC Rule of Thumb #8**  **Casualties with penetrating wounds of the chest or abdomen who are not in shock at their 15-minute evaluation have a moderate risk of developing late shock from slowly bleeding internal injuries. They should be carefully monitored and evacuated as feasible.** | This photo shows a 7.62mm entrance wound. This single GSW to the torso proved fatal.  The casualties who will die from internal bleeding do not always succumb in the first 15-30 minutes. |
|  |  | **TACEVAC Rule of Thumb #9**  **Casualties with TBI who display “red flag” signs - witnessed loss of consciousness, altered mental status, unequal pupils, seizures, repeated vomiting, visual disturbance, worsening headache, unilateral weakness, disorientation, or abnormal speech – require urgent evacuation to a medical treatment facility.** |  |
|  |  | **9-Line Evacuation Request**  **Required if you want an evacuation from another unit** | The requirements for these may not seem to be optimally designed.  Get over it – this is the format that you have to use. |
|  |  | **9-Line Evacuation Request**   * Request for resources through tactical aircraft channels. * NOT a direct medical communication with medical providers * Significance   + Determines tactical resource allocation   + DOES NOT convey much useful medical information | This will help to explain why you are sending what you send on the 9-line. |
|  |  | **9-Line Evacuation Request**  Line 1: Pickup location  Line 2: Radio frequency, call sign and suffix  Line 3: Number of casualties by precedence (evacuation category)  Line 4: Special equipment required | Read text |
|  |  | **9-Line Evacuation Request**  Line 5: Number of casualties by type (litter,  ambulatory)  Line 6: Security at pickup site  Line 7: Method of marking pickup site | Read text |
|  |  | **9-Line Evacuation Request**  Line 8: Casualty’s nationality and status  Line 9: Terrain Description; NBC contamination  if applicable | Read text |
|  |  | **Preparing for Evacuation: Summary of Key Points**   * Evacuation Categories * Tactical Evacuation Rules of Thumb * 9-Line Evacuation Request | Read text |
|  |  | **Questions?** |  |
|  |  | **Convoy IED Scenario**  • Recap from Care Under Fire  • Your last medical decision during Care Under Fire:     – Placed tourniquet on left stump  • You moved the casualty behind cover and returned fire.  • You provided an update to your mission commander | OK – let’s go back to our scenario that we started in Care Under Fire.  Your element was in a five-vehicle convoy moving through a small Iraqi village when a command-detonated IED exploded under the second vehicle. The person next to you sustained bilateral mid-thigh amputations.  He had heavy arterial bleeding from the left stump, and the right stump was only mildly oozing blood.  Read text in this slide. |
|  |  | **Convoy IED Scenario**  **Assumptions in discussing TFC in this scenario:**  • Effective hostile fire has been suppressed.  • Team Leader has directed that the unit will move.  • Pre-designated HLZ for helicopter evacuation is 15 minutes away.  • Flying time to hospital is 30 minutes.  • Ground evacuation time is 3 hours.  • Enemy threat to helicopter at HLZ estimated to be minimal. | Read text  HLZ = helicopter landing zone |
|  |  | **Convoy IED Scenario**  Next decision (Command Element)?  • How to evacuate casualty?      –Helicopter  • Longer time delay for ground evacuation  • Enemy threat at HLZ acceptable | Next decision?  CASEVAC by air is chosen because it is significantly faster than ground CASEVAC in this scenario. |
|  |  | **Convoy IED Scenario**  Next decision (Command Element)?  • Load first and treat enroute to HLZ or treat first and load after?    –Load and Go    –Why?  • Can continue treatment enroute  • Avoid potential second attack at ambush site | Read text  Get the unit off the X – the enemy now knows where you are. |
|  |  | **Convoy IED Scenario**  Casualty is still conscious and has no neck or back pain.  Next decision?    –Do you need spinal immobilization?    –No  • Not needed unless casualty has neck or back pain    – Why?   – Low expectation of spinal fracture in the absence of neck or back pain in a conscious casualty    – Speed is critical   – NOTE: Casualties who are unconscious from blast trauma should have spinal immobilization if feasible. | Read text |
|  |  | **Convoy IED Scenario**  Ten minutes later, you and the casualty are in a vehicle enroute to HLZ.  Next action?  • Reassess casualty    – Casualty is now unconscious    – No bleeding from first tourniquet site    – Other stump noted to have severe bleeding | Read text |
|  |  | **Convoy IED Scenario**  • Next action?    – Place tourniquet on 2nd stump  • Next action?    – Remove any weapons or ordnance that the casualty may be carrying.  • Next action?    – Place nasopharyngeal airway  • Next action?    – Make sure he’s not bleeding heavily elsewhere    – Check for other trauma | Read text |
|  |  | **Convoy IED Scenario**  • Next action?    – Establish IV access - need to give TXA and then resuscitate for shock  • Next action?    – Administer 1 gram of tranexamic acid (TXA) in 100 cc NS or LR    – Infuse slowly over 10 minutes | Read text |
|  |  | **Convoy IED Scenario**   * Next action?   + Begin fluid resuscitation – your convoy carries plasma and RBCs – give them in a 1:1 ratio per the TCCC Guidelines * Next actions   + Hypothermia prevention   + IV antibiotics   + Pulse ox monitoring   + Continue to reassess casualty | Your unit is equipped and trained to resuscitate for hemorrhagic shock in the field Hextend, as are most units at this time. Blood products would be better if available, but that is not yet a widespread norm. |
|  |  | **Convoy IED Scenario**  **What is your 9-line?**  Line 1: Grid NS 12345678  Line 2: 38.90, Convoy 6  Line 3: 1 Urgent  Line 4: PRBCs, oxygen, advanced airway  Line 5: 1 litter  Line 6: Secure  Line 7: VS-17 (Orange Panel)  Line 8: U.S. Military  Line 9: Flat field  **\* Some individuals recommend adding a tenth line: the casualty’s vital signs** | Line 1: Pickup location  Line 2: Radio frequency, call sign and suffix  Line 3: Number of casualties by precedence (evacuation) category  Line 4: Special equipment required  Line 5: Number of casualties by type (ambulatory vs. litter)  Line 6: Security of pickup site (wartime) or number/type  Line 7: Method of marking pickup site  Line 8: Casualty’s nationality and status  Line 9: Terrain description at Landing Site; NBC contamination if applicable |
|  |  | **Convoy IED Scenario**  **Your convoy has now arrived at the HLZ**  **Next steps?**   * Continue to reassess casualty and prep for helo transfer   + Search casualty for any remaining weapons and remove before loading him or her on the helo   + Secure casualty’s personal effects   + Document casualty status and treatment | At this point, the Flight Medic assumes care of the casualty. The Convoy IED Scenario will continue in TACEVAC. |
|  |  | **Remember**  • **The TCCC guidelines are not a rigid protocol.**  **• The tactical environment may require some modifications to the guidelines.**  • **Think on your feet!** | Every tactical scenario will have some features that are unique and that may require some change to your plan. |
|  |  | **Questions?** |  |