Tactical Combat Casualty Care for Medical Personnel August 2017

(Based on TCCC-MP Guidelines 170131)



TCCC Scenarios



Tactical Casualty Scenarios

- If the basic TCCC combat trauma management plan doesn't work for the specific tactical situation, then for combat medics, corpsmen, and PJs it doesn't work.
- There are no rigid guidelines for combat tactics THINK ON YOUR FEET.
- Scenario-based planning is critical for success in TCCC
- Examples to follow:



- August 2002
- Somewhere in Afghanistan
- SEAL element on direct action mission
- Story of the casualty as described by the first responder – NOT a corpsman





"There were four people in my team, two had been shot. Myself and the other uninjured teammate low crawled to the downed men. The man I came to was lying on his back, conscious, with his left leg pinned awkwardly beneath him. He was alert and oriented to person, place, time, and event. At that point I radioed C2 (mission control) to notify them of the downed man."



"Upon closer inspection, his knee was as big as a basketball and his femur had broken. The patient was in extreme pain and did not allow me to do a sweep of his injured leg. He would literally shove me or grab me whenever I touched his leg or wounds. I needed to find the entrance and exit wound and stop any possible arterial bleeding."



"But there was zero illumination and he was lying in a wet irrigation ditch. So I couldn't see blood and I couldn't feel for blood."





"We were also in danger because our position was in an open field (where the firefight had been) and I had to provide security for him and myself. So, I couldn't afford to turn on any kind of light to examine his wounds. I told him to point to where he felt the pain. He had to sort through his pains."



"He had extreme pain in his knee and where his femur had been shattered as well as a hematoma at the site of the entrance wound (interior and upper left thigh). Finally, he pointed to his exit wound (anterior and upper left thigh). Again, I had no way of telling how much blood he had lost. But I did know that he was nonambulatory."



"So I called C2 again. I gave him the disposition of the patient as well as a request for casevac, a Corpsman, and additional personnel to secure my position and assist in moving the patient to the helicopter. I thought about moving the two of us to some concealment 25 meters away, but we were both really low in a shallow irrigation ditch. I felt safer there than trying to drag or carry a screaming man to concealment."



"Between providing security and spending a lot of time on the radio I didn't get to treat the patient as much as I wanted to. I had given him a Kerlix bandage to hold against his exit wound. When he frantically told me that he was feeling a lot of blood, I went back to trying to treat him. I couldn't elevate his leg. To move it would mean he'd scream in pain, which wasn't tactical."



"There was just no way he would allow me to apply a pressure dressing to the exit wound even if I could locate it and pack it with Kerlix. So, I decided to put a

tourniquet on him."





"His wounds were just low enough on his leg to get the tourniquet an inch or so above the site. I had a cravat and a wooden dowel with 550 cord (parachute cord) attached to it to use as a tourniquet. I told him to expect a lot of pain as I would be tightening the cravat down."



"At this point he feared for his life so he agreed. Once I got it tightened I had trouble securing it. The 550 cord was hard to get underneath the tightened cravat."





"After over 5 minutes, the Corpsman arrived along with a CASEVAC bird and a security force. Moving the patient was very hard. Four of us struggled to move him and his gear 25 meters to the bird. The patient was over 200 pounds alone and we were moving over very uneven terrain."



"We wanted to do a three-man carry with two men under his arms and one under his legs. But again, his leg was flopping around at the thigh and couldn't be used to lift him."



"The bird, (a Task Force 160 MH-60) had a 50-cal sniper rifle strapped down, which made it hard for us to get him in. It took us minutes to get him 25 meters into the bird. The Corpsman went with my patient as well as the other downed man in my team and I went back to the op."



Scenario Discussions – Suggested Format

- Break up into groups of six
- Present the background for the scenario on the screen.
- The Instructor will lead the group's discussion through to the end of the scenario.
- Instructor should have a printout of the speaker notes to lead the session.
- 10 minutes per scenario
- Stop after 10 minutes and present next scenario on screen





Real-World Scenario

- High-threat urban environment
- 16-man Ranger team
- 70-foot fast rope insertion for building assault
- One man misses rope and falls
- Unconscious on the ground
- Bleeding from mouth and ears
- Unit taking sporadic fire from all directions from hostile crowds



The Battle of Mogadishu

- Somalia Oct 1993
- US casualties 18 dead, 73 wounded
- Estimated Somali casualties 350 dead, 500 wounded
- Battle 15 hours in length



Mogadishu Complicating Factors

- Helo CASEVAC not possible because of crowds, narrow streets and RPGs
- Vehicle CASEVAC not possible initially because of ambushes, roadblocks, and RPGs
- Gunfire support problems
 - Somali crowds included non-combatants
 - Somalis able to take cover in buildings
 - RPG threat to helo fire-support gunships



Care Under Fire

- Return fire?
- Move patient to cover right away or wait for long board?
- How should he be moved?
- Intubation?
- IV fluids?
- Urgency for evacuation?







- Hostile and well-armed (AK-47s, RPGs) crowds in an urban environment.
- Building assault to capture members of a hostile clan.
- Blackhawk helicopter trying to cover helo crash site.
- Flying at an altitude of 300 feet.



- Left door gunner with 6-barrel M-134 minigun (4000 rpm)
- Hit in left hand by ground fire
- Another crew member takes over mini-gun
- RPG round impacts under right door gunner



- Windshields are all blown out
- Smoke is filling the aircraft
- Right minigun is not functioning
- Left minigun is without a gunner and is firing uncontrolled
- Pilot:
 - -Transiently unconscious now becoming alert



- Co-pilot
 - Unconscious lying forward on the helo's controls
- Crew Member
 - -Right leg blown off above the knee
 - -Lying in puddle of his own blood
 - -Pulsatile bleeding from the stump



• YOU are the person providing care in the helo.

What do you do first?



- Who gets treated first?
 - Take care of the pilot first.
 - You want to get him back to flying the aircraft.
 - The most important thing about medical care in an aircraft is to keep the aircraft in the air.
 - Stimulate the pilot by shaking him or performing a sternal rub.



- Who's next?
 - The casualty with the femoral bleeder is next.
 - He needs a tourniquet.
 - He should be able to provide self-care if he's conscious.
 - The individual in Mogadishu treated himself.
 - He used an improvised tourniquet.
 - He survived.



- What can you do for the unconscious co-pilot?
 - First, get him off the controls.
 - Get him into a supine position.
 - Establish an airway with an NPA.
 - Check for external bleeding.
 - You see none.



- Next action?
 - Check the casualty with the hand injury.
 - Stop any severe bleeding.



- What else?
 - Radio for help.
 - Prepare for impact if a crash landing is anticipated.
 - After impact secure weapons and ordnance.



End of Scenario





MOUT Scenario 1

- A U.S. ground element is moving on a highvalue target in an urban environment.
- The first two men in a 8-man patrol are shot by an individual with an automatic weapon while moving down a hallway in a building.
- The attacker follows this burst with a grenade.



- One casualty is shot in the abdomen but conscious.
- The second casualty is shot in the shoulder with severe external bleeding.
- A third person is unconscious.
- The attacker withdraws around a corner.



• YOU are the person providing medical care.

• What do you do?



- What are the tactical considerations here?
 - How many other hostiles in are in house?
 - Should everyone pursue the hostile(s) and leave care of the casualties for later?
 - Should the whole unit withdraw to care for casualties?
 - Should the unit set security and treat casualties there?
 - Should the unit split up and have some pursue and others treat?
 - Splitting the force is most often chosen by previous groups as the best option.
 - So, you are left with the casualties to proceed with care as per Tactical Field Care Guidelines.



- Who gets treated first?
 - The casualty with the shoulder injury and massive external bleeding.
 - He's the most important to treat immediately he could bleed to death quickly.
- What do you do for him?
 - Stop the bleeding with XStat.
 - The wound has a deep, narrow tract.
 - XStat doesn't require 3 minutes of manual pressure.
 - Bleeding is controlled
 - Casualty is alert.



- Casualty with shoulder injury: what next?
- Airway Management?
 - He's conscious and breathing OK.
- Respirations?
 - He's breathing OK. O2 sat is 95%.
 - Beware of the risk for tension pneumothorax.
- IV?
 - Not yet.
 - He's not in shock at the moment.
 - You have controlled the bleeding.



- Casualty with shoulder injury: what else?
- Combat Wound Medication Pack?
 - Yes.
- Pain is becoming increasingly severe.
- Should you give fentanyl?
 - Careful he may go into shock later due to bleeding from the shoulder wound.
 - Ketamine is a better choice here.



- Who's next?
- Unconscious Casualty
- He has no penetrating head trauma.
- What do you do first?
 - Check for massive hemorrhage
 - You find major bleeding in back of one thigh from a shrapnel wound. Treatment?
 - Apply a limb tourniquet.



- Unconscious casualty: What else?
- Airway Management
 - Chin-lift/jaw thrust
 - NP airway
- Next?
 - Check pulse and respirations
 - You find a rapid, thready pulse and rapid respirations.
 - You attach a pulse oximeter
 - O2 sat is 95%



- Unconscious casualty: Next?
 - Circulation
 - Pelvic binder?
 - Maybe when you have taken care of the last casualty.
 - Pelvic fx is unusual following isolated hand grenade blasts.
 - IV
 - TXA
 - Whole blood
 - Hypothermia prevention



- Unconscious casualty: Next?
- Analgesia?
 - None required since he's unconscious.
- Antibiotics?
 - Yes
 - IV Ertapenem
- Have someone else check for other injuries:
 - There are none.



- Conscious casualty with abdominal GSW is last. What do you do?
- Check for massive hemorrhage
 - Minimal oozing from abdominal GSW
 - No exit wound
- Airway Management?
 - He's conscious and breathing OK.
- His radial pulse is strong.



- Conscious casualty with abdominal GSW: Next?
- Does he need IV access?
 - Yes he's at significant risk for developing hemorrhagic shock.
- TXA?
 - Yes. He's at significant risk of shock due to uncontrolled hemorrhage secondary to abdominal GSW.



- Conscious casualty with abdominal GSW: what else?
- Fluid resuscitation?
 - − No, not at present − he's not in shock.
 - Keep the saline lock.
 - He may go into shock later.
- Analgesia?
 - He is in moderate pain.
 - No opioids. Use IV ketamine.
 - Best for a casualty at risk of shock.



- Conscious casualty with abdominal GSW: what else?
- Antibiotics?
 - Yes- IV ertapenem.
- Hypothermia prevention?
 - You bet.
 - Hypothermia would increase his risk of shock.



End of Scenario







SCENARIO HISTORY: While on patrol in a city in Iraq, your platoon receives effective direct small arms fire. A unit member falls to the ground, holding his right thigh. The platoon, including you, reacts to the ongoing contact by returning fire.



• You can see that the casualty is bleeding heavily from his thigh wound.

• YOU are the person providing medical care for the unit.

What do you do?



- What phase are you in?
 - Care Under Fire
- What should you do for the casualty?
 - Yell at him to get under cover if he can.
 - Tell him to put a tourniquet "high and tight" on his wounded leg.
- If he can't control the bleeding, you may have to help him.
 - If you do, consider a movement plan, suppression of fire, etc.



- Should he take his Combat Wound Medication Pack meds now?
 - No. You are still in Care Under Fire.
 - Your priorities are to get to cover and return fire if possible.



- Scenario continues:
- The casualty has moved behind a vehicle.
- All hostiles are eliminated or have retreated.
- The platoon establishes a secure perimeter.
- The platoon leader tells you that you have only one casualty, and that you have a few minutes to work on him before the platoon will have to move.



- What phase are you in now?
 - Tactical Field Care.
- Your casualty is alert, in moderate pain, and clutching his right leg. There is blood all over his leg and hands, and a tourniquet is in place on his right thigh.
- What is your first concern?
 - Is life-threatening bleeding controlled?



- What do you do to assure hemorrhage control?
 - Expose the wound.
- Blood is oozing from the wound. What next?
 - Apply another tourniquet 2-3 inches above the bleeding site and tighten it.
 - Ensure that bleeding has stopped and distal pulse has been eliminated.
 - Loosen the high-and-tight tourniquet and reassess bleeding control and distal pulse elimination.
 - Slide the tourniquet that was high-and-tight down to just proximal to the second tourniquet.
 - If you need to later, you can further tighten the second tourniquet and tighten the tourniquet you just moved to control bleeding and eliminate distal pulses.



- What's next?
 - You search quickly for any other life-threatening bleeding, and find none.
- Next concern?
 - Airway management
 - He is conscious and talking his airway is OK.



- Next?
 - Breathing.
 - Breathing is rapid from pain and the situation, but not labored.
- What next?
 - Check for shock.
 - Mental status is normal. Radial pulse is strong.



- Should you start a saline lock?
 - No, but you'll watch for any signs of shock.
- Does the casualty need IV fluids at this point?
 - − No − he's not in shock now.
 - Conserve limited IV fluids until they are really needed.



- Next?
 - Prevent hypothermia?
 - Ready Heat Blanket not needed now.
 - Heat Reflective Shell not needed now.
- Next?
 - Should you disarm the casualty and take his comms gear?
 - Yes. He is already distracted by the pain and you anticipate giving him ketamine or narcotics soon.



- Next?
- Monitoring
 - Pulse oximetry shows O2 sat is 96%
- Analgesia?
 - OTFC



- Next?
 - Inspect and dress his leg wound.
 - Reassess for hemorrhage control.
- Next?
 - Assess for other wounds.
 - You discover tenderness over his anterior lower right chest.
 - You check his body armor and find corresponding damage compatible with a bullet strike.



- Scenario continues:
- Your platoon leader tells you the unit will move in 10 minutes to a CASEVAC location.
 - No enemy contact is expected.
 - CASEVAC should take about 45-60 minutes.
- Should you try to remove the tourniquet and replace it with Combat Gauze?
 - No less than two hours tourniquet time is anticipated. Leave it on.



- What else do you want to accomplish before TACEVAC?
 - Reassure the casualty
 - Document care



• Scenario continues:

- You have now moved to the CASEVAC site. The platoon establishes security.
- You check the patient and notice that he is confused and breathing rapidly.
- You check his thigh wound and find that the tourniquet just above the wound has become loose and the dressing is soaked with blood.



- The tourniquet is loose and the wound is bleeding again. What do you do?
 - Re-tighten the tourniquet nearest the wound.
 - Tighten the proximal tourniquet, too.
 - You remove the bloody dressing to re-assess hemorrhage control:
 - Bleeding is now controlled.
 - Distal pulses are not present.
 - You re-dress the wound.



- Scenario continues:
- Casualty becomes unconscious from shock.
 What next?
 - Establish IV/IO access if not done before.
 - Immediately administer 1 gm TXA in 100cc NS over 10 minutes.
 - Begin infusion of whole blood.



- What next?
 - Nasopharyngeal airway casualty is unconscious
 - Recovery position
 - Continue resuscitation
 - Prepare for evacuation and transport ASAP



End of Scenario







SCENARIO HISTORY: While on patrol in the city of Mosul, an infantry platoon comes under small arms fire. The point man is hit and falls to the ground. The platoon reacts to the contact, rapidly eliminating the ambushing hostiles. There are no other casualties. The platoon leader tells you take care of the casualty while the others establish a secure perimeter.



- You move to the casualty, and quickly assess for life-threatening conditions:
 - -GSW
 - Entrance at right upper back
 - Exit in right armpit
 - Heavy, pulsatile bleeding from the exit wound
 - Breathing OK, though a little fast
 - No other wounds
- YOU are the person providing medical care.
- What do you do?



- It has been about 4 minutes since the casualty was wounded. What is your immediate concern?
 - Life threatening hemorrhage from the wound in the armpit.
- What phase of care are you in?
 - TFC



- As the first responder caring for this casualty, what do you do next?
 - Expose the wound.
 - Pack the wound with XStat.
 - Hold direct pressure for a minimum of 3 minutes.



- What do you do while holding pressure?
 - Talk to the casualty
 - Checks both airway and mental status
- External bleeding appears controlled but the casualty is drowsy.



- What next?
 - Apply a pressure dressing over the XStat.
 - Check for other sources of bleeding.
 - None found.
 - Check the left radial pulse.
 - It is not palpable.



- What next?
 - Check breathing.
 - Slightly fast but not obviously labored.
 - Breath sounds are absent on the right.
- Should you treat for a tension pneumothorax here?
 - Yes the casualty has a chest wound, rapid breathing, absent breath sounds, and shock.



- You perform needle decompression of the right chest.
 - At the 5th intercostal space at the anterior axillary line with the patient in supine position
 - There is no hiss of escaping air.
 - You see no improvement.
 - You decompress at the 2nd intercostal space at the mid-clavicular line.
 - There is no hiss of escaping air.
 - You see no improvement.



- The casualty may be in hemorrhagic shock.
- What next?
 - Start an IV.
- What do you give first?
 - TXA 1gm over 10 minutes
- What next?
 - You start the first unit of dried plasma. (Because this
 is the only blood component you have been trained to
 infuse and are authorized to carry.)



• Scenario continues:

- Ten minutes pass. Plasma is going in.
- External bleeding is controlled by the XStat.
- Casualty is now unconscious and does not respond to deep pain.
- There is no reading for O2 sat displayed on the pulse ox.
- Carotid pulse is not palpable.
- His breathing has stopped.
- Arrival of MEDEVAC helicopter is expected to take at least an hour.



- What next?
 - You perform bilateral needle decompression of possible tension pneumothorax.
 - You do this and there is no improvement.
 - You recheck the airway to make sure it's clear.
 - A second person confirms no pulse or breathing.
- What next?
 - **–** CPR?
 - No.



- Why not perform CPR?
 - <u>It won't help!</u>
 - Individuals in traumatic cardiac arrest have little to no chance of surviving more than 10 minutes without surgical care.



- You inform your platoon leader that the casualty has died.
 - The cause of death is probably internal hemorrhage from the GSW.
- The decision to be made now is how and when to transport your teammate's body off the battlefield.
- Document the injuries and the care rendered.



End of Scenario







SCENARIO HISTORY: You are riding with a squad in the back of a cargo Humvee. When you stop at an intersection, a lone attacker fires an RPG at your vehicle. It is poorly aimed, and strikes the ground beside the Humvee. The vehicle sustains moderate damage and is not able to move. Everyone scrambles out of the vehicle. The last person out is complaining of chest pain and shortness of breath. You and the others are uninjured.



- Security is set.
- There is no further hostile fire.
- YOU are the person providing medical care.
- What do you do?





- What phase are you in?
 - Tactical Field Care
- You examine the casualty and find:
 - She is alert and talking normally, but in severe pain.
 - She has a shrapnel wound in her right lateral chest no exit wound.
 - Entrance wound is a sucking chest wound.
 - Her right thumb is missing and the wound is oozing a little blood.
 - There is no major external bleeding.



- What do you do first?
 - Cover the chest wound with a vented chest seal.
 - Apply the dressing at end-exhalation.
 - Have her breathe all the way out and put it on before she breathes in again.
- This makes the casualty more comfortable.
- Her O2 sat improves from 91% to 97%.



- What next?
 - She's at risk for shock.
 - You start an IV and give 1 gm of TXA.
- Next?
 - Analgesia
 - Ketamine 50 mg IM immediately after starting the TXA infusion.
- What else?
 - You have someone else dress her thumb wound while you were giving the ketamine.



- You are worried about internal bleeding from the chest wound. What are you going to do about it?
 - Monitor for changes in radial pulse strength and mental status.
- Casualty is alert and now breathing OK.
- Radial pulse is strong.
- O2 sat is 97%.



- What next?
 - Look for other wounds.
 - You find none.
- What next?
 - Hypothermia prevention.



- Your casualty says that her pain is still very severe. What else do you want to do for her?
 - Can you give her a fentanyl lozenge?
 - No she's at risk for hemorrhagic shock and increasing respiratory distress.
 - She's alert with good O2 sat and breathing well.
 - She's not in shock at this point, BUT she has a chest injury and probably has internal bleeding.
 - IV ketamine is a good next option since you have an IV and you have finished the TXA infusion.
 - Monitor oxygen saturation and breathing carefully.



- What's next?
 - Antibiotics.
 - Have her take the moxifloxacin in her CWMP.
- Your casualty is stable. What steps do you take now?
 - Communicate her status to your squad leader.
 - Begin TACEVAC preparations.
 - Document care on the TCCC Casualty Card.



- Scenario continues:
 - You are 8 miles from a CSH.
 - A helicopter will not be available for an hour.
 - By ground vehicle, the trip will take 35 minutes.
 - A mounted patrol is dispatched to take your casualty to the CSH.
 - It has now been about 40 minutes since the RPG attack.
 - You are in route to the CSH.



- The casualty tells you she's having increasing trouble breathing. What do you do?
 - Assess her airway. It's clear.
 - Breathing is rapid and labored.
 - The vented chest seal is secure.
 - Her O2 sat has dropped to 80%.



- What's the presumptive diagnosis?
 - Tension pneumothorax.
- What are you going to do about it?
 - You lift one side of the chest seal for a few seconds.
 - There is a rush of air from the wound confirming the tension pneumothorax.



- The casualty's respiratory distress is relieved.
 - O2 sat goes up to 94%.
 - Good job!
 - Consider replacing the chest seal, since the vent on the first one apparently failed to do it's job.
 - Continue to monitor.
 - If distress or hypoxia recurs, burp the chest seal again.
- Continue TACEVAC preparations.



End of Scenario





Tactical Combat Casualty Care

- Casualty scenarios on the battlefield usually entail both medical and tactical problems.
- Emergency actions must address both.
- Medical personnel should be involved in mission planning.



Scenario-Based Planning

- The TCCC guidelines for combat trauma scenarios are advisory rather than directive in nature.
- Rarely does an actual tactical situation exactly reflect the conditions described in planning scenarios.
- Unit medics/corpsmen/PJs will typically need to modify the medical care plan to optimize it for the real scenario.



The 3 Objectives of TCCC

Treat the casualty

Prevent additional casualties

Complete the mission

