

1. What is the most preventable cause of death in casualties?
 - a. Extremity trauma hemorrhage that can generally be controlled by TQ use.
2. What are the steps for care under fire?
 - a. Take cover and return fire. If you are unable to reach the casualty during care under fire, instruct the casualty to return fire, move to cover, and perform self aid. The only medical interventions that you should be undertaking is applying a TQ to address life threatening bleeding.
 - b.
 - c. If patient is conscious, direct casualty to seek cover and control hemorrhage by self aid. If unconscious, move patient to cover when feasible.
 - d.
 - e. Casualties should be moved from burning buildings and vehicles and moved to places of relative safety.
 - f.
 - g. Tactical patient assessment during this phase is limited to identifying life threatening hemorrhage in a rapid head to toe survey taking less than 10-15 seconds or as tactically feasible.
 - h. Stop life threatening bleeding with use of a tourniquet if tactically feasible. Tourniquets should be placed as high as possible on the wounded extremity.
3. What are the major goals of CUF?
 - a. Move the casualty to safety
 - b. Prevent further injury to the casualty and the provider
 - c. Stop life threatening external hemorrhage
 - d. Gain and maintain fire superiority.
4. What is a Basic Management Plan for Care Under Fire?
 - a. Return Fire and take cover
 - b. Direct or expect casualty to remain engaged as a combatant if appropriate.
 - c. Direct casualty to move to cover and apply self-aid if able.
5. What are the characteristics of life threatening bleeding?
 - a. Pulsatile or steady bleeding from the wound.
 - b. Blood is pooling on the ground.
 - c. Clothes are soaked with blood.
 - d. Bandages are soaked with blood.
 - e. Amputation of limb.
6. What types of tourniquets should be used to control extremity bleeding?
 - a. Use CoTCCC approved tourniquets for hemorrhage.
7. What is proper method of CAT application?
 - a. Route around extremity and position as high as possible
 - b. Tighten as tight as possible.
 - c. Secure using velcro.

- d. Twist rod until bleeding stops.
 - e. Secure windlass in securing clips.
 - f. Place the strap across the rod.
8. What is tactical field care?
- a. Care rendered by the first responder or combatant once he and the casualty are no longer under effective hostile fire.
 - b. It may consist of rapid treatment of serious wounds with the expectation of re-engagement of enemy forces at any moment.
 - c. Applies to situations where an injury has occurred, but there is no hostile fire.
9. What actions are taken during Tactical Field Care?
- a. Consolidate casualties in CCP.
 - b. Initially, conduct triage to identify which patient needs attention first and who can wait. Identify any life-threatening hemorrhage not already controlled. In this phase, the first priority is to conduct a rapid trauma assessment.
 - c. A more deliberate and traditional head-to-toe MARCH survey is completed on each casualty after all life threats have been addressed.
 - d. Casualties with an altered mental status should be disarmed immediately, including communications equipment. Injuries are managed in a head-to-toe-treat-as-you-go manner.
 - e. Triage reoccurs during this entire phase. Delegate treatment of minor injuries to ARFRs or RFRs freeing the medic to focus on more seriously injured. Provide instructions to ARFRs or RFRs if tasked to assist you with multi-system trauma casualties.
 - f. Communicate casualty status and evacuation requirements to C2. Consolidate medical supplies in CCP. Prepare and package casualties for evacuation.
10. What remains paramount in tactical field care?
- a. Security. Without proper security procedures, the enemy has a chance to cause more casualties.
11. What is MARCH?
- a. Massive Hemorrhage-Control life threatening bleeding
 - b. Airway - Establish and maintain a patient airway
 - c. Respiration - Decompress tension pneumothorax if suspected, seal sucking chest wounds, and support ventilation / oxygenation as required.
 - d. Circulation - Establish IV access and administer blood products as required to treat shock
 - e. Head injury / Hypothermia - Prevent hypertension and hypoxia and treat hypothermia
12. What does M mean in MARCH?
- a. Assess for massive hemorrhage and control bleeding.

- b. Obvious external sources of bleeding should be controlled with tourniquets, hemostatic agents and pressure dressings.
 - c. Sources of internal hemorrhage should be identified.
 - d. Initial tourniquets are to be placed "high and tight".
 - e. Double check TQs placed during CUF. Set a new TQ directly next to the 1st TQ if it is not holding.
 - f. Check the armpit, neck, and groin for bleeding using your hands.
 - g. Pack wounds with hemostatic agents. Hemostatic gauze should be packed into wound cavity with at least 3 minutes of direct pressure.
 - h. Conduct a visual sweep of the body for any other sources of bleeding.
 - i. During this phase talking to the casualty allows you to assess for responsiveness and airway obstructions. If the patient is incoherent, remove weapons, ammo, and equipment.
 - j. When time and situation permit, a distal pulse should be checked. If pulse is present on wounded extremity, apply another TQ or tighten current TQ until pulse is not present.
13. What are common TQ mistakes you should avoid?
- a. Not using the tourniquet when you should
 - b. Not pulling the slack out of the tourniquet
 - c. Removing tourniquets when casualty is in shock
 - d. Not tightening the TQ enough
 - e. Not using a 2nd tourniquet if needed
 - f. Periodically loosening a TQ
14. What does A mean in MARCH?
- a. Airway Management must be of prime concern of any trauma casualty.
 - b. A conscious and spontaneously breathing patient rarely requires immediate airway intervention.
 - c. If the patient is able to talk normally then his airway is intact.
 - d. If a patient can breathe on his own he should be allowed to breathe on his own unless the injury requires more aggressive action.
 - e. If the patient is semi-conscious or unconscious, the tongue is the most common source of airway obstruction.
 - f. Patient positioning and airway adjuncts (NPA/OPA) should be the first choice to maintain a patient airway. In many cases, repositioning the airway may solve airway and breathing problems.
 - g. Penetrating trauma causing c-spine fractures is almost universally fatal. One should consider c-spine fracture in blunt trauma and take appropriate precautions.
 - h. If the patient is unable to speak, their airway may be obstructed. Clear the airway. Listen and feel for signs of breathing. This may be feeling breaths or seeing the

rise and fall of the chest. If the casualty is unconscious you may need to insert a NPA to ensure breathing.

15. What is one of the most common forms of airway obstruction?
 - a. If the patient is semi-conscious or unconscious, the tongue is the most common source of airway obstruction.
16. What are the procedures for aiding an unconscious casualty with no airway obstruction?
 - a. Inspect mouth and remove foreign objects from airway to lip
 - b. Do not conduct blind finger sweeps.
 - c. Use Chin lift or jaw thrust maneuver to open the airway
 - d. Nasopharyngeal airway
 - e. Place unconscious casualty in the recovery position
17. What are the actions for aiding a casualty with an airway obstruction?
 - a. Inspect mouth and remove foreign objects from airway to lip
 - b. Do not conduct blind finger sweeps
 - c. Chin lift or jaw thrust maneuver
 - d. Nasopharyngeal airway
 - e. Allow casualty to pick position that best protects the airway.
 - f. Place unconscious casualty in the recovery position.
 - g. What actions are taken if measures for clearing a casualty's airway are unsuccessful? Perform a surgical cricothyroidotomy using one of the following
 - h. -CricKey technique
 - i. -Bougie-aided open surgical technique
 - j. -Standard open surgical technique
 - k. *Use lidocaine if the casualty is conscious
18. What are considerations for dealing with thoracic trauma?
 - a. Penetrating and blunt chest trauma is a threat even with body armor. Tension Pneumothorax is the primary preventable life threat for thoracic trauma.
19. What does R mean in MARCH?
 - a. Respiration
 - b. In the conscious patient, who is alert and breathing normally, no interventions are required.
 - c. If the patient has an appropriate mechanism of injury and signs of respiratory distress such as tachypnea, dyspnea, or cyanosis, which may be associated with agitation or decreasing mental status, then a presumption of tension pneumothorax management is indicated.
 - d. Check for any holes in the torso by exposing the chest and checking the neck, chest, and back for holes. Patch holes by applying a chest seal or applying direct pressure to the hole. Check the sternum for any broken bones. Inspect the rib cage.
20. How is thoracic trauma addressed during tactical field care?

- a. In a casualty with progressive respiratory distress, consider a tension pneumothorax.
 - b. Decompress chest on the side of the injury with a 14 gauge 3.25 inch needle. Needle should be placed in the 5th intercostal space on the anterior auxiliary line or the 2nd intercostal space on the mid clavicular line.
 - c. Ensure the needle is not medial to the nipple line and that it isn't directed towards the heart.
 - d. All open and sucking chest wounds should be treated with an occlusive dressing.
 - e. Casualty should be monitored for development of tension pneumothorax
21. What is tension pneumothorax? When is tension pneumothorax considered?
- a. Pressure build up in lungs that pushes on major vessels, lungs, and heart.
 - b. It is considered when worsening respiratory distress develops in casualty with torso trauma. Decreased breath sounds, tracheal deviation, jugular vein distention may not be present in a casualty.
 - c. Relief of Tension Pneumothorax requires use of air under pressure w/ chest cavity.
 - d. Uses of occlusive dressing may lead to onset of Tension Pneumothorax
22. When should you consider the use of a NCD?
- a. In a casualty with progressive respiratory distress and known or suspected torso trauma, consider a tension pneumothorax.
23. Using a 14 gauge needle, where should the NCD be placed?
- a. The anterior site is the second intercostal space at the mid clavicular line, lateral to the nipple line.
 - b. The lateral site is the fifth intercostal space at the anterior axillary line.
24. Where should a Second NCD be placed?
- a. It should be placed next to the first NCD over the rib because of vessels, nerves, and artery on the bottom side
25. How do you unclog a NCD?
- a. Turn the needle 1/2 turn and listen for a whoosh. Take a 10cc needle filled with NACL and flush it.
26. How should sucking chest wounds be treated?
- a. All open and/or sucking chest wounds should be treated by:
 - b. Applying a vented chest seal (preferred)
 - c. Applying a non-vented chest seal
 - d. Burp the wound if indicated for breathing difficulty Initiate pulse oximetry monitoring. Monitor for tension pneumothorax. Casualties with moderate/severe TBI should be given supplemental oxygen when available to maintain an oxygen saturation > 90%.
27. What does C mean in MARCH?
- a. Circulation

- b. Important information can be rapidly obtained regarding perfusion and oxygenation from the level of consciousness, pulse, skin color, and capillary refill time.
 - c. Decreased cerebral perfusion may result in an altered mental status.
 - d. Skin color and capillary refill will provide a rapid initial assessment of peripheral perfusion.
 - e. Pink skin is a good sign versus the ominous sign of white or ashen, gray skin depicting hypovolemia. Pressure to the thumb nail or hypothenar eminence will cause the underlying tissue to blanch.
 - f. In a normovolemic patient, the color returns to normal within two seconds. In the hypovolemic, poorly oxygenated patient and/or hypothermic patient this time period is extended or absent.
 - g. Recheck prior interventions
 - h. Reassess prior tourniquet application:
 - i. Expose the wound and determine if a tourniquet is needed; if bleeding is not controlled then tighten tourniquet if possible.
 - j. If the first tourniquet does not control bleeding after
 - k. tightening, then add a second tourniquet side-by-side with the first.
 - l. Conduct a blood sweep and feel for a pulse on the carotid or radial arteries. Check for skin temperature and color. Check for neck and spine injuries. Assess responsiveness using AVPU.
28. What are the common points for checking pulses?
- a. Side of the neck (carotid Artery)
 - b. Groin (Femoral artery)
 - c. Wrist (Radial artery)
 - d. Ankle (Posterior tibial artery)
29. How to check carotid pulse?
- a. Feel for a pulse of the side of the casualty's neck using your first two fingers next to the casualty's Adam's apple.
30. How to check femoral pulse?
- a. Press your first two fingers into the middle of the groin.
31. How do you check the radial pulse?
- a. Place your first two fingers on the thumb side of the casualty's wrist.
32. How do you check the posterior tibial pulse?
- a. Place 2 fingers on the inside of the ankle.
33. Why is it a bad idea to check a casualty's pulse using your thumb?
- a. You may confuse your heartbeat with the heartbeat of the casualty.
34. What interventions should be applied for suspected pelvic fracture?
- a. Apply a pelvic binder for suspected pelvic fracture and/or severe blunt force or blast injury.

35. Limb tourniquets and junctional tourniquets should be converted to hemostatic or pressure dressings asap if what 3 criteria are met?
- Casualty is not in shock,
 - It is possible to monitor the wound for bleeding,
 - The tourniquet is not being used to control bleeding from an amputated extremity
 - 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.
36. Every effort should be made to convert tourniquets in less than ____ hours if bleeding can be controlled with other means.
- 2
37. What is a method for TQ conversion?
- Use scissors to cut away pants
 - Take combat gauze and create Powerball
 - Pack gauze into the deepest section of the wound.
 - Place pressure bandage on the wound and secure
38. What are some Methods for releasing a TQ?
- Release windlass 1/4 turn per minute
 - Release all together and check for bleeding
 - Reposition TQ as low as possible but 2-3 inches above the wound site
39. IV or IO access is indicated if the casualty is in hemorrhagic shock or at significant risk of shock (and therefore may need fluid resuscitation). For IV, an ____-gauge IV or saline lock is preferred.
- 18
40. What does H mean in MARCH?
- Hypovolemic Shock / Hypothermia
 - Clothing and protective equipment such as helmets and body armor should only be removed as required to evaluate and treat specific injuries. If the patient is conscious with a single extremity wound, only the area surrounding the injury should be exposed. Unconscious patients may require more extensive exposure in order to discover potentially serious injuries but must subsequently be protected from the elements and the environment. Hypothermia is to be avoided in trauma patients. A brief neurological assessment should be performed and LOC can be described through preferably AVPU or alternately by the Glasgow Coma Scale (GCS) method. If the pupils are found to be sluggish or nonreactive to light with unilateral or bilateral dilation, one should suspect a head injury and/or inadequate brain perfusion. Assessment for any fractures or deformities of extremities or joints.
 - Prevent hypothermia
 - Place the casualty under a blanket and dry clothes.

- e. Minimize casualty environmental exposure and promote heat retention
 - f. Keep personal protective gear on if feasible.
 - g. Replace wet clothing if possible.
 - h. Get casualty onto insulated surface ASAP.
 - i. Use a hypothermia prevention kit with active rewarming.
 - j. If none above is available, then use dry blankets, poncho liners, or sleeping bags and keep the casualty warm and dry.
 - k. Warm IV fluids are preferred.
41. Why is it important to evaluate a casualty for shock?
- a. Unless shock is prevented by medical treatment, shock can result in death even from nonfatal injuries
42. Why is hypovolemic shock a concern with casualties?
- a. Shock can be considered a pause in the act of dying and requires aggressive intervention.
43. Once a casualty is in shock, he is susceptible to the lethal triad. What is the lethal triad?
- a. Coagulopathy
 - b. Hypothermia
 - c. Acidosis
44. What are the 9 most common symptoms of shock?
- a. Sweaty or cool skin
 - b. Paleness of skin
 - c. Restlessness or nervousness
 - d. Thirst
 - e. Loss of blood
 - f. Confusion
 - g. Heightened breathing rate
 - h. Blotchy or bluish skin
 - i. Nausea or vomiting
45. What are considerations for hypothermia management?
- a. Hypothermia is a significant concern in any trauma victim because it leads to hypothermia-induced coagulopathy by both decreasing platelet function and slowing enzyme activity in the coagulation cascade. Prevention of hypothermia, along with hemorrhage control and fluid resuscitation, will help maintain the casualty's ability to generate heat.
46. What steps can be taken to reduce the risk of hypothermia?
- a. Stop hemorrhage
 - b. Assess for hemorrhagic shock - Decreased mental status and weak or absent pulses are good signs.
 - c. Minimize patient exposure to the elements
 - d. Keep protective gear on if possible

- e. Replace wet clothing with dry clothing
 - f. Move casualty to insulated surface as soon as possible
 - g. Blankets, poncho liners, sleeping bags work well to retain casualty body heat.
47. What actions are taken of an eye injury is noted or suspected?
- a. Perform a rapid field test of visual acuity and document findings.
 - b. Cover eye with a rigid eye shield (not a pressure patch).
 - c. Administer Combat Wound Medication Pack if possible and/or administer IV/IM antibiotics per below.
48. What is the goal of analgesia?
- a. To reduce pain to a tolerable level while still protecting their airway and mentation.
49. What is the goal of sedation?
- a. The goals is to stop awareness of painful procedures.
50. How is pain management achieved?
- a. Analgesia on the battlefield should generally be achieved by one of three options:
 - b. Mild to Moderate Pain and/or Casualty can swallow and is still able to fight:
 - c. -Administer TCCC Combat Wound Medication Pack (CWMP)
 - d. Moderate to Severe Pain and casualty IS NOT in Shock
 - e. -Oral Transmucosal Fentanyl Citrate (OTFC) 800mcg
 - f. Moderate to Severe Pain and casualty is in hemorrhagic shock or respiratory distress
 - g. -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
51. How are burns to be treated?
- a. Facial burns should be aggressively monitored for airway status and potential inhalation injury. Estimate total body surface area (TBSA) burned to nearest 10%.
 - b. Cover burned areas with dry, sterile dressings.
 - c. For burns >20% TBSA, consider placing casualty immediately in HPMK or other hypothermia prevention means. Fluid Resuscitation (USAISR Rule of Ten):
 - d. -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.
 - e. -Initial IV/IO fluid rate = %TBSA X 10ml/per hour for adults 40-80 kg (+100ml/hr for every 10kg above 80kg).
 - f. -If hemorrhagic shock is present then resuscitate IAW fluid resuscitation in Circulation section. All TCCC interventions may be performed on or through burned skin.
52. What is triage?

- a. Triage is the process for sorting casualties into groups based on their need or benefit from immediate medical treatment. All casualties need treatment, but accurate triage aids the provider in deciding which casualties have the greatest likelihood of survival if immediate care is rendered.
 - b. Triage ensures the greatest care for the largest number of casualties with the most efficient use of medical personnel and resources.
 - c. Triage is a dynamic and continuous process that must continue as the casualty's status changes
53. What are considered immediate casualties?
- a. 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.
54. What are considered delayed casualties?
- a. 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).
55. What are considered minimal casualties?
- a. 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.
56. What are considered expectant casualties?
- a. 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.

57. What are considered Urgent, or category A casualties?
- This category includes casualties that require immediate life-saving intervention.
 - 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
 - These casualties typically require evacuation within 2 hours.
58. What are considered Priority, or category B casualties?
- Casualties that may need surgery, but their condition permits delay in treatment without unduly endangering life, limb, or eyesight. 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
 - No evidence of shock
 - Evacuation is required within 4 hours
59. What are considered Routine, or Category C casualties?
- Often referred to as walking wounded.
 - 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
 - Evacuation required within 12 hours.
60. What actions are taken for fractures?
- Splint Fractures and Recheck Pulses.
61. What are signs of a traumatic brain injury?
- Blown Pupils
 - Eye discoloration
 - Leaking from the ears or nose

62. What are considerations for dealing with head injuries?
- With head injuries the primary damage is done and there is little that can be done to fix it.
 - The primary goal of dealing with head injuries is to prevent injuries from hypoxia, hypotension, anemia, hyperthermia, and hypothermia.
 - One of the hallmark signs of an injury is an alteration of consciousness.
 - Vital signs should be assessed in patients with head injuries
 - Inspect for signs of open injury of skull fracture
 - Cerebrospinal fluid may leak from the ears or nose
 - Pupils should be inspected for equality and reactivity
63. What is a concussion?
- Blow to the head that disrupts the function of the brain.
 - Symptoms include Headache, fatigue, sensitivity to light and noise, difficulty concentrating, loss of balance, nausea/ vomiting, insomnia, vision changes, ringing ears, excessive tiredness, dizziness.
64. What is the procedure for applying a pressure dressing?
- MAINTAIN PRESSURE USING ANY DIGIT
 - EXPOSE STERILE PORTION OF DRESSING
 - PLACE OVER COMBAT GAUZE
 - MAINTAIN PRESSURE WHILE DRESSING
 - LOCK IN STERILE FIELD OVER GAUZE
 - ONCE AT VELCOR PORTION OF DRESSING, APPLY LOCK MECHANISM
 - PULL UP PORTION OF WRAP AND SECURE WITH TEETH
65. What are the steps for applying combat gauze?
- IDENTIFY WOUND AREA
 - PUT PRESSURE ON WOUND
 - EXPOSE WOUND
 - IDENTIFY MAJOR BLEED SITE
 - OPEN UP DRESSING
 - MAKE A SMALL BALL WITH GAUZE
 - FOR EACH FINGER REPLACE FINGER HOLDING PRESSURE AGAINST THE BLEED UNTIL ENTIRE WOUND IS PACKED
 - MAINTAIN PRESSURE WHILE PACKING ENTIRE WOUND
 - ENSURE BLOOD IS NOT SEeping THROUGH OR AROUND GAUZE AS WOUND IS PACKED
 - AFTER WOUND IS PACKED
 - HOLD PRESSURE FOR 3 MINUTES
66. What 3 types of combat gauze are approved for use?
- COMBAT GAUZE
 - CELOX GAUZE

c. CHITO GAUZE

67. What is the hemostatic dressing of choice for a compressible/external hemorrhage not amenable to limb tourniquet use or as an adjunct to tourniquet removal?
- Combat gauze
68. Hemostatic agents should be applied with at least how many minutes of direct pressure?
- 3 minutes (optional for XStat)
69. What is the only hemostatic dressing that is not to be removed in the field?
- XStat. More of it, other hemostatic adjuncts, or trauma dressings may be applied over it. It is best for deep, narrow-tract junctional wounds.
70. Is cervical spine stabilization necessary for casualties who have sustained only penetrating trauma?
- Stabilization is not necessary for casualties that have sustained only penetrating trauma.
71. Do not remove a tourniquet that has been in place more than ___ hours unless close monitoring and lab capability are available.
- 6
72. True or False: all TCCC interventions can be performed on or through burned skin in a burn casualty.
- False
73. True or False: resuscitation on the battlefield for victims of blast or penetrating trauma who have no pulse, no ventilations, or other signs of life should be attempted.
- False
74. Document clinical assessments, treatments rendered, and changes in the casualty's status on DD form _____.
- 1380 (forward this information with the casualty to the next level of care)
75. The term "tactical evacuation" includes both _____ and _____.
- Casevac, Medevac
76. What are indicators of a source of bleeding?
- Continuous bleeding
 - Large-volume bleeding
 - Pooling of blood
77. What does it mean to compress the wound?
- Apply direct pressure to the wound
 - Focus in location of the bleeding
 - Use enough gauze or cloth to cover injury
 - If pressure stops bleeding, keep pressure on wound until help arrives
78. What is X-stat best used for?
- Best for deep, narrow tract junctional wounds
79. What is useful for external hemorrhage of the head and neck?

- a. The iTclamp can be used as hemorrhage control. wounds shall be packed with hemostatic agents or Xstat prior to iT clamp application.
80. What are alternate hemostatic agents?
- a. Colox gauze, chitogauze, iTclamp can be used alone or with hemostatic dressing or x stat.
81. What should be done with burn casualties?
- a. Cover the burn area with dry, sterile dressings. For extensive burns (>20%), consider placing the casualty in the Heat-Reflective Shell or Blizzard Survival Blanket from the Hypothermia Prevention Kit in order to both cover the burned areas and prevent hypothermia.
82. What is a concern for casualties with facial burns?
- a. Cover the burn area with dry, sterile dressings.
83. Burn patients are particularly susceptible to hypothermia. What does this mean?
- a. Extra emphasis should be placed on barrier heat loss prevention methods.
84. What are considerations for casualties in CBRN environments?
- a. Limit and minimize exposure/contamination
 - b. Treat immediate life threats
 - c. Administer appropriate antidotes / countermeasures
85. Assessment and treatment of casualties in CBRN environments follows what algorithm?
- a. Massive Hemorrhage/ Mask Check
 - b. Airway / Antidotes
 - c. Respiration / Rapid Spot Decontamination
 - d. Circulation / Administer Countermeasures
 - e. Head Injury / Hypothermia
86. What does the acronym CRESS used for?
- a. Determines agent of concern, conduct triage, and recognize symptoms.
 - b. Consciousness (Unconscious, convulsing, altered)
 - c. Respirations (Present, Labored, Altered)
 - d. Eyes (Pupil size, PERRA)
 - e. Secretions (Absent, Normal, Increased)
 - f. Skin (Diaphoretic, cyanotic, dry, hot)
87. What is the 9 Line MEDEVAC?
- a. Line 1. Location of the pick-up site
 - b. Line 2. Radio frequency, call sign, and suffix
 - c. Line 3. Number of patients by precedence
 - d. Line 4. Special equipment required
 - e. Line 5. Number of patients by type
 - f. Line 6. Security at pick-up site
 - g. Line 7. Method of marking pick-up site
 - h. Line 8. Patient nationality and status

- i. Line 9. NBC Contamination
88. What information is outlined in LINE 1?
- a. This is sent as a grid coordinate
89. What information is outlined in LINE 2?
- a. Callsign and frequency of personnel at PZ
90. What information is outlined in LINE 3?
- a. A-Urgent casualties
 - b. B-Priority casualties
 - c. C-Routine casualties
91. What information is outlined in LINE 4?
- a. A None
 - b. B Hoist
 - c. C Extraction Device
 - d. D Ventilator
 - e. E Other
92. What information is outlined in LINE 5?
- a. L Number of litter patient
 - b. A Number of ambulatory patients
 - c. E Number of Escorts
93. What information is outlined in LINE 6?
- a. N No enemy
 - b. P Possible enemy contact
 - c. E Enemy Area
 - d. X Escort Required
94. What information is outlined in LINE 7?
- a. A Panels
 - b. B Pyrotechnics
 - c. C Smoke
 - d. D None
 - e. E Other
95. What information is outlined in LINE 8?
- a. A U.S. Military
 - b. B U.S. Civilian
 - c. C Non Coalition Military
 - d. D Non Coalition Civilian
 - e. E Enemy Detainee
 - f. F Child
96. What information is outlined in LINE 9?
- a. N Nuclear
 - b. B Biological

- c. C Chemical
97. What is the format for a MIST report?
- a. M - MECHANISM OF INJURY AND TIME OF INJURY (IF KNOWN)
 - b. I - INJURY OR ILLNESS
 - c. S - SYMPTOMS AND VITAL SIGNS
 - d. T - TREATMENT GIVEN
98. Casualties need to be disarmed after being given what treatments?
- a. OTFC, IV/IO fentanyl, ketamine, or midazolam.
99. What are the characteristics of Tactical Evacuation care?
- a. Care rendered once the casualty has been picked up by an evacuation platform. Additional medical personnel and equipment that have been pre-staged should be available in this phase of casualty management.
100. What are the goals of fluid resuscitation therapy?
- a. 1) Improved state of consciousness,
 - b. 2) Palpable radial pulse,
 - c. 3) Avoid overresuscitation of shock. Basing the titration of fluids upon a monitored physiologic response may avoid the problem of excessive blood pressure elevation and fatal re-bleeding from previous clotted injury sites. BLOOD and blood products are the only fluid for trauma resuscitation!
101. What are the characteristics of acetaminophen?
- a. Class: CNS agent - non-narcotic, analgesic, antipyretic
 - b. 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)
 - c. DOSE: 325-650 mg PO q4-6h (max: 4 g/d)
 - d. Onset / Peak / Duration: Onset Varies / Peak 1-3 hours / Duration 3-4 hours
 - e. Administration Instructions: PO
 - f. Contraindications: Acetaminophen hypersensitivity; use with alcohol; pregnancy category B
 - g. 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
 - h. Interactions: Cholestyramine may decrease absorption; barbiturates, carbamazepine, phenytoin, rifampin, and excessive alcohol use may increase potential for hepatotoxicity
 - i. Mission Impact: None to minimal mission impact
 - j. K-9 Dosage: DO NOT GIVE
102. What are the characteristics of ERTAPENEM (INVANZ)?

- a. Class: Antimicrobial - antibiotic, carbapenem, beta-lactam
 - b. TCCC Indications: Recommended for all open combat wounds if unable to take PO meds
 - c. DOSE: 1 gram IV/IM q24h
 - d. Administration Instructions: For IV reconstitute with 10mL NS; for IM 3.2mL 1.0% lidocaine without epinephrine
 - e. Contraindications: Carbapenem, beta-lactam, or amide-type local anesthetic (ie. Lidocaine) hypersensitivity; pregnancy cat B
 - f. 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
 - g. Mission Impact: GROUNDING medication for personnel on flight status
103. What are the characteristics of FENTANYL ORAL LOZENGE / ORAL TRANSMUCOSAL FENTANYL CITRATE (OTFC)?
- a. Class: CNS agent - potent narcotic (opiate) agonist
 - b. 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.
 - c. DOSE: 800 mcg oral transmucosally, reassess in 15 min, add a second lozenge in other cheek as necessary.
 - d. 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.
 - e. Contraindications: MAOIs; myasthenia gravis; pregnancy category C
 - f. 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
 - g. Interactions: Alcohol and other CNS depressants potentiate effects; MAOIs may precipitate hypertensive crisis
 - h. Mission Impact: Casualty weapons, communications and sensitive equipment should be secured. GROUNDING medication for personnel on flight status
104. What are the characteristics of KETAMINE (KETALAR)?

- a. Class: Nonbarbiturate anesthetic, Dissociative
 - b. 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.
 - c. 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)
 - d. Onset /Duration: IM - Onset in 3-4 minutes / Duration 12-25 minutes IV - Onset in 30 seconds / Duration 5-10 minutes
 - e. Administration Instructions: Document AVPU prior to administration. IV Ketamine should be administered slowly over 1 minute.
 - f. 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.
 - g. Contraindications: Head injury (may worsen severe TBI), Hypersensitivity to ketamine, Pregnancy Category B
 - h. Adverse/Side Effects: Hypertension, Respiratory Depression, Emergence Reactions (delirium, hallucinations, confusion), Increased Intra-cranial pressure, Increased intra-ocular pressure
 - i. Interactions: Effects of ketamine are increased when combined with other analgesics or muscle relaxants
 - j. 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)
105. What are the characteristics of MELOXICAM (MOBIC)?
- a. Class: NSAID; COX2 Inhibitor, anti-inflammatory, analgesic, antipyretic TCCC
 - b. 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)
 - c. DOSE: 7.5-15 mg PO daily
 - d. Administration Instructions: PO
 - e. 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)
 - f. 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

- g. 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.
 - h. Mission Impact: None to minimal mission impact
 - i. K-9 Dosage: DO NOT GIVE
106. What are the characteristics of MORPHINE SULFATE (MSO4)?
- a. Class: CNS agent - narcotic (opiate) agonist; analgesic
 - b. 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.
 - c. DOSE: 5 mg IV/IO, Reassess in 10 min, repeat dose every 10 min as necessary to control severe pain.
 - d. Onset / Peak / Duration: IV - Onset in 5-20 minutes / Peak in 20 minutes / Duration 4-5 hours
 - e. 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.
 - f. 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
 - g. 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
 - h. 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.
 - i. Mission Impact: Casualty weapons, communications and sensitive equipment should be secured. GROUNDING medication for personnel on flight status.

- j. K-9 Dosage: 2-3mg IV OR 10-20mg IM/SQ. Nausea/emesis and defecation common. Reverse with 1mg Nalaxone IV/IM/SQ.
107. What are the characteristics of MOXIFLOXACIN (AVELOX)?
- a. Class: Antimicrobial - antibiotic; fluoroquinolone
 - b. 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
 - c. Onset / Peak / Duration: Onset Varies / Peak 1-3 hours / Duration 3-4 hours
 - d. Administration Instructions: PO
 - e. Contraindications: Quinolone hypersensitivity; hepatic insufficiency; syphilis; arrhythmias; myocardial ischemia or infarction; QTc prolongation, hypokalemia, or those receiving Class IA or Class III antiarrhythmic drugs; pregnancy category C.
 - f. Adverse/Side Effects: Dizziness, headache, peripheral neuropathy, nausea, diarrhea, abdominal pain, vomiting, taste perversion, abnormal LFTs, dyspepsia, tendon rupture. Interactions: Iron, zinc, antacids, aluminum, magnesium, calcium, sucralfate decrease absorption; atenolol, cisapride, erythromycin, antipsychotics, TCAs, quinidine, procainamide, amiodarone, sotalol may prolong QTC interval; may cause false positive on opiate screening tests.
 - g. Mission Impact: GROUNDING medication for personnel on flight status.
 - h. K-9 Dosage: DO NOT GIVE
108. What are some of the characteristics of NALOXONE (NARCAN)?
- a. Class: CNS agent - narcotic (opiate) antagonist
 - b. TCCC Indications: For narcotic opiate overdose and reversal of effects, including respiratory depression, sedation, and hypotension.
 - c. DOSE: 0.4-2.0 mg IV, repeat q2-3min up to 10 mg prn
 - d. 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
 - e. Administration Instructions: Have available when administering opioids. Titrate to effect to manage negative opioid effects, but use caution that pain is still managed.
 - f. Contraindications: Non-opioid drug respiratory depression; pregnancy category B
 - g. Adverse/Side Effects: Analgesia reversal, tremors, hyperventilation, drowsiness, sweating; increased BP, tachycardia; nausea, vomiting.
 - h. Interactions: Reverses analgesic effects of narcotic (opiate) agonists and agonist-antagonists.
 - i. Mission Impact: GROUNDING medication for personnel on flight status
109. What are some of the characteristics of ONDASETRON ORAL DISSOLVING TABLET (ZOFTRAN)?

- a. Class: GI agent - 5-HT3 antagonist, antiemetic
 - b. TCCC Indications: For prevention and management of nausea and vomiting associated with pain management medications.
 - c. DOSE: 4 mg ODT PO q8h PRN (max: 8 mg in an 8 hour period)
 - d. Administration Instructions: PO
 - e. Contraindications: Hypersensitivity to ondansetron; pregnancy category B
 - f. Adverse/Side Effects: Dizziness, light-headedness, headache, sedation; diarrhea, constipation, dry mouth
 - g. Interactions: Rifampin may decrease ondansetron levels
 - h. Mission Impact: GROUNDING medication for personnel on flight status
110. What are some of the characteristics of ONDASETRON INJECTION (ZOFTRAN)?
- Class: GI agent - 5-HT3 antagonist, antiemetic
- a. TCCC Indications: For prevention and management of nausea and vomiting associated with pain management medications.
 - b. DOSE: 4 mg q8h PRN (max: 8 mg in an 8 hour period)
 - c. Administration Instructions: Slow IV Push or IM Contraindications: Hypersensitivity to ondansetron; pregnancy category B
 - d. Adverse/Side Effects: Dizziness, light-headedness, headache, sedation; diarrhea, constipation, dry mouth
 - e. Interactions: Rifampin may decrease ondansetron levels
 - f. Mission Impact: GROUNDING medication for personnel on flight status.
111. What are some of the characteristics of TRANEXEMIC ACID (TXA, CYKLOKAPRON)? Class: Antifibrinolytic agent
- a. 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.
 - b. 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.
 - c. 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.
 - d. Contraindications: subarachnoid hemorrhage, active intravascular clotting, Pregnancy Category B.
 - e. 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.

- f. Interactions: should not be administered concomitantly with Factor IX Complex concentrates or Anti-inhibitor Coagulant concentrates, as the risk of thrombosis may be increased.
112. What is the MARCH algorithm for K9?
 - a. muzzle
 - b. massive bleeding
 - c. airway management
 - d. respiration
 - e. circulation
 - f. hypovolemia
 - g. hypothermia
 - h. hyper thermia
 - i. head injury
 113. Why is it a sound practice to apply a muzzle when treating a canine casualty?
 - a. Think about applying a muzzle, as even the best dogs can get hostile while in pain. improvise with bandage if necessary
 114. What is the process for massive bleeding control for canines?
 - a. Recheck all applied interventions CAT tourniquets don't really work all that well with dogs, but do sometimes stop the bleeding at all costs
 115. What is the process for conducting blood sweeps on a K9?
 - a. start with the neck
 - b. x pockets
 - c. inguinal area
 - d. head
 - e. torso
 - f. tail
 - g. legs
 116. When turning a dog over, why should you turn them abdomen down?
 - a. It prevents a potential gastric dilatation volvulus aka bloat where the dogs stomach may spin around itself and become twisted.
 117. How do we maintain airways for canine casualties?
 - a. Take off dog muzzle and extend neck to place in line with neck.
 118. How do we maintain respiration for canine casualties?
 - a. Check for breathing, look for holes, and place occlusive dressing
 119. How do you maintain circulation for canine casualties?
 - a. Recheck all previous interventions, check pulse, look for femoral artery which is in inner thigh.
 120. How do you check the capillary refill time?
 - a. Press on gums and check for blood to refill color in area
 121. How do we prevent hypothermia due to hypovolemia in a canine casualty?

- a. limit exposure to the elements
 - b. move to a cooler place
 - c. take off muzzle
 - d. wrap paws and pour water on them
 - e. bandage all head injuries
 - f. singed hair may indicate facial injuries
122. What does the acronym PAWS mean?
- a. PAIN
 - b. ANTIBIOTICS
 - c. WOUNDS
 - d. SPLINTING

Intellectual Infantryman