

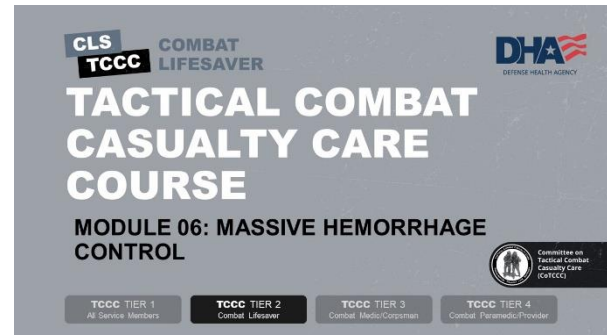
SPEAKER NOTES

MODULE 06 – MASSIVE HEMORRHAGE CONTROL IN TFC

SLIDE 1 – TITLE SLIDE

Good morning/afternoon, my name is (insert here) and I will be your lead trainer for Module 6: Massive Hemorrhage control in the Tactical Field Care (TFC) environment.

Before we get started are there any questions?



SLIDE 2 – TCCC ROLES

Tactical Combat Casualty Care is broken up into four roles of care. The most basic is taught to All Service Members (ASM), which is designed to instruct in the absolute basics of hemorrhage control and to recognize more serious injuries.

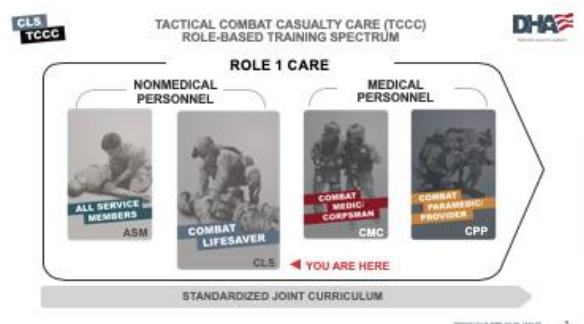
You are in the Combat Lifesaver (CLS) role.

This teaches you more advanced care to treat the most common causes of death on the battlefield, and to recognize, prevent, and communicate with medical personnel the life-threatening complications of these injuries.

The Combat Medic/Corpsman (CMC) role includes much more advanced and invasive care requiring significantly more medical knowledge and skills.

Finally, the last role, Combat Paramedic/Provider (CPP) is for Combat paramedics and advanced providers, to provide the most sophisticated care to keep our wounded warriors alive and get them to definitive care.

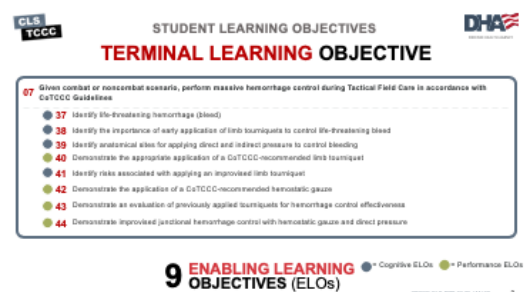
Your role as a CLS is to treat the most common causes of death on the battlefield, which are massive hemorrhage and airway/respiratory problems. Also, you are given the skills to prevent complications and treat other associated but not immediately life-threatening injuries.



SLIDE 3 – TLO/ELO

The TCCC-CLS course is built on a foundation of learning objectives. These objectives lay out the basic structure of the course and describe the knowledge and skills you are expected to acquire by the end of the course.

The module has one Terminal Learning Objective, or TLO. The TLO is supported by a series of Enabling Learning Objectives, or ELOs. This graphic shows how the ELOs are



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mapped to the TLOs. The blue dots are the four cognitive or knowledge learning objectives, which include identifying:

1. Life-threatening hemorrhage (bleeding)
2. Importance of early application of limb tourniquets to control life-threatening bleeding
3. Anatomical sites for applying direct and indirect pressure to control bleeding
4. Risks associated with applying an improvised limb tourniquet.

The green dots are the four performance objectives focused on skills, which include demonstrating:

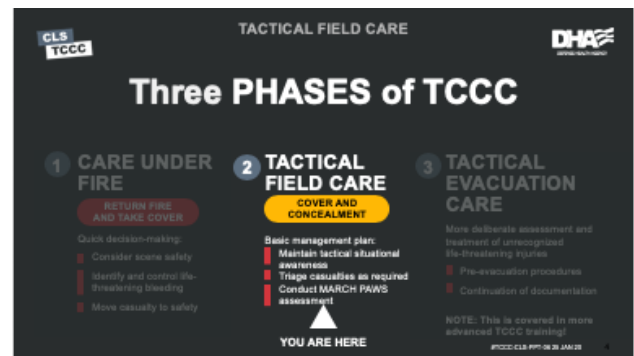
1. Appropriate application of a CoTCCC-recommended limb tourniquet
2. Application of a CoTCCC-recommended hemostatic dressing
3. Evaluation of previously applied tourniquet(s) for hemorrhage control effectiveness
4. Improvised junctional hemorrhage control with hemostatic dressing and direct pressure

The critical aspects are to identify life-threatening hemorrhage and the importance of prompt intervention and to demonstrate the appropriate interventions for life-threatening hemorrhage in accordance with the CoTCCC guidelines.

SLIDE 4 – THREE PHASES OF TCCC

TCCC is organized into Phases of Care that start at the point of injury. These phases are relevant to combat and noncombat trauma scenarios:

1. **Care Under Fire or Care Under Threat** is the aid rendered at the trauma scene while there is still an active threat. Available medical equipment is limited to that carried by an individual or found in a nearby first aid kit. Massive bleeding is the only medical priority that requires your attention during this phase, as you are actively dealing with an ongoing threat in a potentially chaotic and dangerous situation.
2. **Tactical Field Care** is the care provided once the threat has been neutralized and/or the scene is safe or the casualty has moved/been moved out of the immediate threat situation. During this phase a rapid casualty assessment should be performed. Bleeding control should be assessed/reassessed, and airway/breathing issues addressed. Other injuries such as burns, fractures, eye trauma, and head injuries should now be identified and treated. Medical equipment is still limited. Time to arrival of medical personnel or evacuation may vary considerably, depending on the tactical situation, etc.



SPEAKER NOTES

3. **Tactical Evacuation Care** is the care rendered during and once the casualty has been moved by an aircraft, vehicle, or other mode of transportation for evacuation to a higher level of care. Additional medical personnel and equipment are typically available in this phase of casualty care

Remember: The goal of TCCC and the role of the CLS is to rapidly assess casualties to identify and treat potentially life-threatening injuries to keep them alive long enough to reach a higher level of medical care.

SLIDE 5 – MARCH PAWS

Massive bleeding assessment and management is the “M” in the MARCH PAWS sequence and the **#1 priority**.



SLIDE 6 – HEMORRHAGE OVERVIEW IN TFC (VIDEO)

Play video

Summary:

1. Use CoTCCC-approved limb TQ
2. Use hemostatic dressings
3. Use junctional TQs
4. Use pelvic compression device
5. REASSESS all interventions
6. DO NOT apply a TQ and forget it



SLIDE 7 – SECURITY AND SAFETY IN TACTICAL FIELD CARE

Remember to maintain **security** and tactical situational **awareness** during TFC.

Casualties with altered mental status (*due to shock, head injury, or medications*) who can no longer fight effectively should have weapons and sensitive items secured so they do not cause harm to themselves, their teammates, or the mission.



SLIDE 8 – PRIORITIZING MULTIPLE CASUALTIES

When you come upon a casualty, multiple injuries may need interventions. However, remember **Massive bleeding is the #1 priority!**

CLS TCCC TACTICAL FIELD CARE

PRIORITIZING MULTIPLE CASUALTIES

Casualties with these injuries must be treated first:

- #1 **Massive bleeding**
- #2 **Penetrating** trauma into the box (torso)
- #3 **Airway** compromise
- #4 **Respiratory** distress
- #5 **Altered** mental status



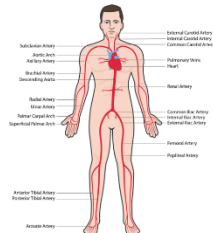
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SLIDE 9 – WHEN IS BLEEDING LIFE-THREATENING? THE VASCULAR SYSTEM (ARTERIES)

The human body is a network of blood vessels over 60,000 miles in length. There are three types of blood vessels – arteries, veins, and capillaries and each one has a significant role in moving blood throughout the body. Arteries are vessels throughout the body with thick walls and a muscular layer that carry oxygenated blood away from the heart. Arteries have smaller branches called arterioles and the largest artery is the aorta. The arteries and arterioles change in size to maintain the body's blood pressure.

CLS TCCC WHEN IS BLEEDING LIFE-THREATENING?

THE VASCULAR SYSTEM



CHARACTERISTICS OF ARTERIES
Arteries carry oxygenated blood away from the heart (except the pulmonary artery)
Aorta is the largest artery in the human body
Arterial injuries require rapid treatment
Arteries have smaller branches called arterioles
Arteries have thick walls and a muscular layer that keep blood moving

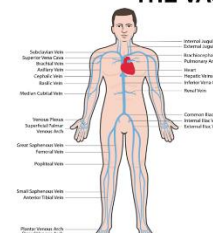
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SLIDE 10 – WHEN IS BLEEDING LIFE-THREATENING? THE VASCULAR SYSTEM (VEINS)

Veins do not have a muscular layer like arteries. Veins carry deoxygenated blood back toward the heart apart from the pulmonary blood vessels. Veins rely on valves to keep blood moving throughout the body. Veins start as tiny blood vessels called venules and turn into full-size veins as they get closer to the heart. Veins are closer to the surface of your body.

CLS TCCC WHEN IS BLEEDING LIFE-THREATENING?

THE VASCULAR SYSTEM



CHARACTERISTICS OF VEINS
Veins carry deoxygenated blood towards the heart and are located close to the skin
The Inferior Vena Cava is the largest vein in the human body
Veins rely on valves to keep blood moving
Veins start as tiny blood vessels called venules
Veins have thin vessel walls and a thin layer of muscular tissue inside

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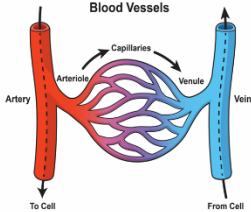
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SLIDE 11 – WHEN IS BLEEDING LIFE-THREATENING? THE VASCULAR SYSTEM CAPILLARIES

Capillaries connect arteries to veins and are the smallest type of blood vessel. Capillaries can be as tiny as 5 micrometers, which is less than a third of a hair's width. Capillary walls are thin to allow oxygen, nutrients, and waste to pass back and forth between tissue cells. Capillaries are located inside of all tissues. Capillary vessels do not have muscle tissue or valves. Capillaries transport both oxygenated and deoxygenated blood.

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WHEN IS BLEEDING LIFE-THREATENING?
THE VASCULAR SYSTEM



CHARACTERISTICS OF CAPILLARIES
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Capillaries vessels walls do not have muscle tissue or valves

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SLIDE 12 – WHEN IS BLEEDING LIFE-THREATENING? THREE MAIN TYPES OF HEMORRHAGE

The arteries, veins, and capillaries are responsible for moving blood throughout the body. When one or multiple types of these vessels are injured, you will see bleeding in different presentations and severities.

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WHEN IS BLEEDING LIFE-THREATENING?
THREE MAIN TYPES OF HEMORRHAGE

THREE MAIN TYPES OF BLEEDING				
SOURCE	COLOR	PRESENTATION	SEVERITY	INJURY TYPES
CAPILLARY/ Capillary	Red or Dark Red	Oozing or trickling from injury	Non-life-threatening • Easy to control	Abrasions, scrapes to the surface of the skin e.g., road rash
VENOUS/ Vein	Dark Red	Steady flow from injury	Non-life-threatening* • Easier to control	Superficial lacerations, gunshot wounds, etc.
ARTERIAL/ Artery	Bright Red	Spurting from injury	Life-threatening • Urgent & often difficult to control	Amputations, penetrating trauma, shrapnel wounds, etc.

*Venous bleeds are less severe than arterial bleeding but can still be life-threatening and depend on the amount of blood lost.

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Arterial bleeding is often the most difficult to control and the most urgent in priority to control. Arterial bleeding is life-threatening bleeding and often caused by traumatic amputations, penetrating trauma, shrapnel wounds, etc. The bleeding from arterial wounds is often bright red and spurts in a pulsating projectile rhythm that matches the casualty's heart rate.

Venous bleeding is considered easier to control than arterial bleeding and is often non-life-threatening if treated early. Venous bleeding is typically caused by superficial lacerations, gunshot wounds, etc. in the TFC environment. The bleeding from venous wounds is usually dark red and flows steadily from the injury. CAUTION: Venous bleeds can still be considered life-threatening bleeds depending on the injury location and the amount of blood loss.

Capillary bleeding is easy to control and less severe of the bleeding types, often caused by abrasions like road rash or scrapes to the skin. The bleeding color can range from red to dark red and ooze or trickle from the injury.

SPEAKER NOTES

SLIDE 13 – WHEN IS BLEEDING LIFE-THREATENING? CHARACTERISTICS OF Non-Life-Threatening bleeds.

As a CLS in the TFC, one of your primary roles is early recognition of hemorrhage and control all sources of bleeding. Identification and treatment of non-life-threatening bleeding should be completed in accordance with the MARCH PAWS sequence. Continued casualty assessment and reassessment of non-life-threatening injuries and interventions ensures any treated injury has not escalated to a life-threatening bleed.

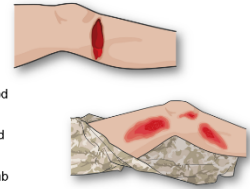
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WHEN IS BLEEDING LIFE-THREATENING?

NON-LIFE-THREATENING BLEEDING

Characteristics of Non-Life-Threatening Bleeds:

- Absence of pulsating (arterial) or steady bleeding (venous) from the wound
- Absence of blood pooling on the ground
- Overlying clothes are NOT soaked with blood
- Bandages or improvised bandages are effective and NOT becoming steadily soaked with blood
- Absence of partial or complete traumatic limb amputation



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SLIDE 14 – WHEN IS BLEEDING LIFE-THREATENING? EARLY CONTROL OF SEVERE HEMORRHAGE IS CRITICAL

This slide show signs of ongoing life-threatening bleeding that **may not have been noted or appropriately addressed** in CUF.

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WHEN IS BLEEDING LIFE-THREATENING?

EARLY CONTROL OF SEVERE HEMORRHAGE IS CRITICAL

- BRIGHT RED BLOOD is pooling on the ground
- The overlying clothes are SOAKED with blood



- Bandages or makeshift bandages used to cover the wound are INEFFECTIVE and steadily becoming soaked with blood



- There is a traumatic amputation of an arm or leg

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SLIDE 15 – MASSIVE HEMORRHAGE REASSESSMENT

The TFC phase allows the time and relative safety for a more deliberate assessment and treatment (MARCH PAWS). All casualties should be reassessed with a full tactical trauma assessment.

Assessment for massive hemorrhage includes a visual and manual blood sweep of the front and back of the casualty from head to toe (including neck, armpits, and groin).

Any massive hemorrhage identified (newly identified or ineffectively treated during CUF) should be addressed **immediately**.

All *tourniquets* placed during CUF should be reassessed for effectiveness, tightened if needed, and/or a second tourniquet placed adjacent (side-by-side) to the first to ensure bleeding is effectively stopped.

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MASSIVE HEMORRHAGE CONTROL

MASSIVE HEMORRHAGE REASSESSMENT



- Reassess any interventions performed in CUF
- If a tourniquet was previously applied, assess for effectiveness (bleeding has stopped and distal pulses are absent)
- If ineffective, apply a second tourniquet side-by-side with the first



- Perform a blood sweep and expose the casualty to look for other life-threatening bleeding, stopping to immediately treat anything identified, and look for non-life-threatening bleeding to address later

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SPEAKER NOTES

SLIDE 16 – TOOLS FOR LIFE - THREATENING HEMORRHAGE CONTROL

Describe items on the slide and their use.

Direct Pressure: After packing the wound with hemostatic dressing or gauze, hold pressure for 3 minutes.

Gauze/Other Dressings & Pressure Bandages:

These items are all CoTCCC-approved hemostatic dressing, etc.

CoTCCC Recommended TQ: They are either windlass or ratchet but have been proven effective in use.

Pressure Delivery Device: A PDD is made using improvised materials, such as a shoe/boot, full water bottle, or canteen, and applies additional pressure to the wound after it has been packed.

Hemostatic Dressing: CoTCCC-recommended hemostatic dressings are safe and contain active ingredients that assist with blood clotting at the bleeding site. Non-CoTCCC-recommended supplies may be available; however, they have not been shown to be effective in controlling massive hemorrhage.



SLIDE 17 – INITIAL DIRECT PRESSURE BEFORE INTERVENTION

Direct pressure can and should be used as a temporary measure until a tourniquet or dressing is in place. It is difficult to use direct pressure alone to control significant bleeding or while moving the casualty. While packing a wound, maintain constant, direct pressure at the source of bleeding to be effective.



SLIDE 18 – TOURNIQUETS

Remember: A tourniquet is a **one-time** use device.

Never deploy with or use a tourniquet that has been used previously in training, as there is an increased risk of device failure.



SLIDE 19 – DELIBERATE TOURNIQUETS

In TFC, there is more time to expose the wound and determine the actual site of bleeding.

All tourniquets applied during TFC should be deliberate tourniquets, **applied 2 to 3 inches above the wound** and directly on the skin. This maximizes the effectiveness of the TQ in stopping bleeding and minimizes the amount of healthy tissue that might be impacted by a TQ unnecessarily placed too high on the limb.

Reassess any tourniquets that were applied in CUF for effectiveness. These tourniquets are rapidly applied and may have been placed “high and tight” (for example, high on the leg when the actual site of bleeding is near the ankle), and this will need to be addressed by medical personnel as they respond.

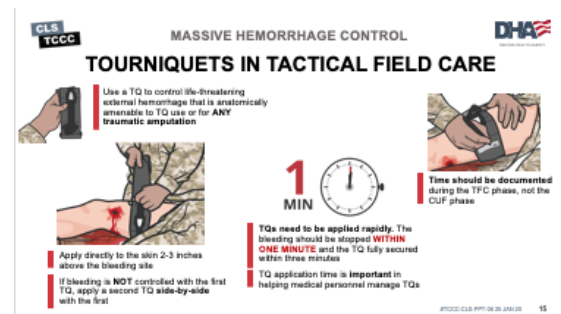
Remember: DO NOT put tourniquets over the knee, elbow, holster, or cargo pocket containing bulky items, as the tourniquet will be inadequate.



SLIDE 20 – TOURNIQUETS IN TACTICAL FIELD CARE

Tourniquets applied during TFC should be **deliberate tourniquets**. They are anatomically amenable to a CoTCCC-approved tourniquet.

If bleeding is **not controlled** with the first tourniquet, apply a second tourniquet side-by-side with the first, which is further away from the wound.



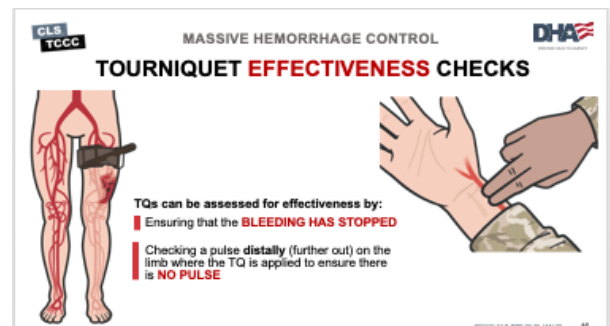
Remember: Bleeding should be **stopped** within **1 minute** and the tourniquet was fully **secured** within **3 minutes**.

The time the tourniquet was placed should be documented on the tourniquet itself and on the **DD Form 1380** in TFC (not during CUF). This is important for medical personnel as the casualty is moved to higher echelons of care.

SLIDE 21 – TOURNIQUET EFFECTIVENESS CHECKS

Check for circulation below the tourniquet by feeling for **distal pulse** (a pulse *below* the tourniquet).

If bleeding continues or you detect a distal pulse, **tighten the existing tourniquet** further or apply a second tourniquet next to the first.



SLIDE 22 – TWO-HANDED RATCHET TOURNIQUET APPLICATION IN TFC (VIDEO)

Play video



SLIDE 23 – TWO-HANDED WINDLASS TOURNIQUET APPLICATION IN TFC (VIDEO)

Play video(s)

1. *SOFT-T buddy looped*
2. *SOFT-T buddy routed*
3. *C-A-T buddy looped*
4. *C-A-T buddy routed*



SLIDE 24 – TOURNIQUET PITFALLS/MISTAKES

1. The longer you wait to apply a tourniquet the more blood the casualty loses.
2. If you do not pull all the slack out, you will not be able to tighten the tourniquet effectively.
3. Tourniquets should be tight and **will hurt a lot** when applied properly.
4. If one tourniquet is not effective, apply a second. This may be necessary in casualties with large extremities.
5. When in doubt, apply a tourniquet. However, the need for a tourniquet should be reassessed as soon as possible.
6. In CUF, a tourniquet is placed 'high & tight' but in TFC the tourniquet should be placed 2-3 inches above the wound.
7. **DO NOT loosen!**

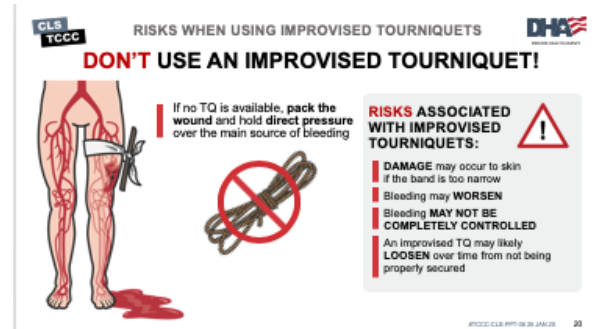


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8. Leave the tourniquet in place even if loosened by medical personnel. You **DO NOT** want to have rebleeding occur and not have a tourniquet available.
9. **DO NOT** put tourniquets over joints...they **DO NOT** work over joints. If the wound is directly below a joint, place the tourniquet 2-3 inches above the joint.

SLIDE 25 – IMPROVISED TOURNIQUETS

Remember: DO NOT use an improvised tourniquet except as an **absolute last resort** when there is **no other option** to control life-threatening bleeding. If no tourniquet is available, pack the wound and use direct pressure. Improvised tourniquets can cause damage to skin if they are too narrow (less than 2 inches), they may loosen, and may not completely control bleeding. Improvised tourniquets that are 2 inches wide may be more successful in controlling bleeding.



Continue to check the tourniquet, as improvised tourniquets are prone to loosening due to (but not limited to) casualty movement, shift fluid, and quality of improvised material.

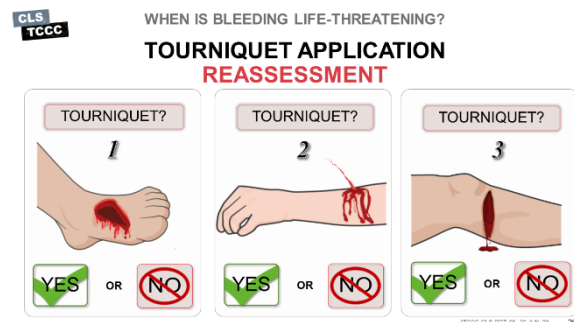
SLIDE 26 – TOURNIQUET APPLICATION REASSESSMENT

The following slides are examples of extremity wounds. The goal is to identify which wound requires a tourniquet based on the criteria for life-threatening bleeding.

Life-Threatening Bleeding:

- There is pulsatile or steady bleeding from the wound.
- There is blood pooling on the ground.
- The overlying clothes are soaked with blood.
- The bandages or makeshift bandages used to cover the wound are ineffective and steadily becoming soaked with blood.
- There is a traumatic amputation of an arm or leg.
- There was prior bleeding, and the patient is now in shock (unconscious, confused, pale).

REMEMBER: If the bleeding is not life-threatening, the extremity does **not** need a tourniquet!



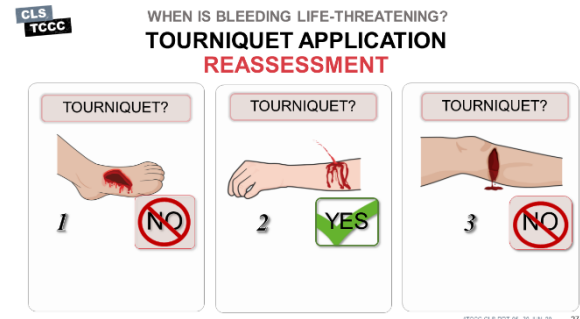
SLIDE 27 – TOURNIQUET APPLICATION REASSESSMENT

Injury #1: Does not require a tourniquet

Injury #2: Does require a tourniquet.

Injury #3: Does not require a tourniquet.

Continue to the next slide to read the rationale of why.



SLIDE 28 – TOURNIQUET APPLICATION REASSESSMENT

The goal of this exercise was to identify which wound requires a tourniquet based on the criteria for life-threatening bleeding.

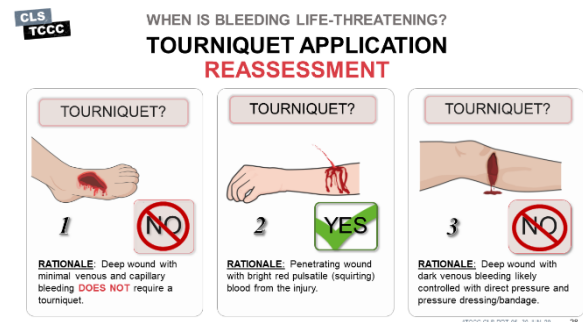
Life-Threatening Bleeding:

- There is pulsatile or steady bleeding from the wound.
- There is blood pooling on the ground.
- The overlying clothes are soaked with blood.
- The bandages or makeshift bandages used to cover the wound are ineffective and steadily becoming soaked with blood.
- There is a traumatic amputation of an arm or leg.
- There was prior bleeding, and the patient is now in shock (unconscious, confused, pale).

Injury #1: Though the injury on the foot is a deep wound with minimal venous and capillary bleeding this wound **DOES NOT** require a tourniquet.

Injury #2: This injury appears to be a penetrating wound with bright red pulsatile (squirting) blood from the injury. Remember to reassess applied tourniquets frequently.

Injury #3: Don't be distracted by the blood that has leaked from the wound on the ground, the criteria for life-threatening bleeding is blood is pooling on the ground and pulsatile or steady bleeding from the wound. The wound is deep wound with dark venous bleeding likely controlled with direct pressure and pressure dressing/bandage.



SLIDE 29 – SKILL STATION

At this time, we will break into skill stations to practice the following skills:

- Two-Handed Ratchet Tourniquet Application in TFC
- Two-Handed Windlass Tourniquet Application in TFC



SLIDE 30 – HEMOSTATIC DRESSING

Familiarize yourself with the items in your JFAK.

A JFAK contains one hemostatic dressing and one dry sterile gauze.

CoTCCC-recommended hemostatic dressings are safe and contain active ingredients that assist with blood clotting at the bleeding site.

Dressings include:

- **Combat Gauze®**, a 4-yard-long roll of gauze about 3 inches wide, used to control hemorrhage. The material has a chemical in it that causes a clot to form when it comes into contact with blood. This action, along with packing it into a bleeding wound and applying manual pressure, forms a clot and stops the bleeding.
- **Celox gauze**, with Celox granules bonded to its surface. Celox granules are Chitosan-based products that absorb fluid from blood, swell, and form a binding gel. The adherent gel plug seals the wound.
- **ChitoGauze**, a Chitosin-based hemostatic dressing that binds red and platelets on the dressing's surface, which provides clotting at the point of bleeding.

Note: Although Chitosin is a shellfish derivative, it will **NOT** cause an allergic reaction in casualties with a shellfish allergy.

Note: When packing larger wounds, more than one hemostatic dressing and/or gauze may be needed to control bleeding. If bleeding has not stopped, remove prior hemostatic packing material and repack with a new hemostatic dressing, if available. Apply additional gauze and pressure (for at least 3 minutes) until bleeding has stopped. Watch for rebleeding.



SLIDE 31 – HEMOSTATIC DRESSING (CONT.)

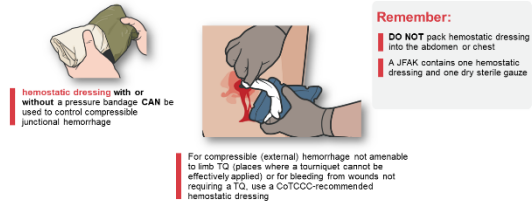
While hemostatic dressings should be packed into wounds of the limbs, *when the source of bleeding is too high on limb for tourniquet application such as neck, armpit, and groin*, they should **NOT** be packed into the **abdomen** or **chest**.

For compressible (external) hemorrhage **not amenable to limb tourniquet**, places where a tourniquet cannot be effectively applied like **neck, armpit, and groin** areas, use a CoTCCC-recommended hemostatic dressing.

Even with the active hemostatic agents in hemostatic dressings, direct pressure **must be applied** for at least 3 minutes.

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MASSIVE HEMORRHAGE CONTROL HEMOSTATIC DRESSING



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SLIDE 32 – WOUND PACKING

DO NOT blindly pack a wound.

Make an effort to locate the source of bleeding and immediately apply direct pressure while retrieving gauze.

While packing a wound with gauze, maintain **constant**, direct pressure at the source of bleeding within 90 seconds. Once the dressing is applied, hold direct pressure on the gauze over the wound for **at least 3 minutes**. Then, carefully observe for blood continuing to flow from under the gauze to determine if bleeding has been controlled. Once you are sure the bleeding has stopped, apply a pressure bandage over the hemostatic dressing.



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SLIDE 33 – WOUND REPACKING FOR FAILED CONTROL

If bleeding has not been stopped, **remove the hemostatic dressing/packing material**. **Immediately**, repack with a new hemostatic dressing, if available. Each dressing works differently, so if one fails to control bleeding, it may be removed and a fresh dressing of the same type or a different type applied.

Alternatively, additional hemostatic or nonhemostatic dressings can be applied on top of the first dressing. Apply additional gauze and pressure **for at least 3 minutes**, until bleeding has stopped. Watch for rebleeding.

NOTE: *When packing larger wounds, more than one hemostatic dressing and/or gauze may be needed to control bleeding.*

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MASSIVE HEMORRHAGE CONTROL WOUND REPACKING FOR FAILED CONTROL



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SLIDE 34 – PRESSURE BANDAGES

Once bleeding has been controlled with a hemostatic dressing/packing material you must maintain pressure on the wound.

Place the pressure dressing directly on top of the hemostatic dressing/packing material and wrap around the limb, ensuring you cover all the wound and gauze previously applied.

Be sure to secure the pressure dressing tail either by hooks or with a knot. Tape both to ensure they do not come loose.



SLIDE 35 – PRESSURE BANDAGE ASSESSMENT

1. Pressure bandages **should not** have a tourniquet effect.
2. If there is **no pulse** below the pressure bandage, it has been applied too tightly and will need to be loosened and retied.
3. Another sign the pressure bandage has been applied to tightly is the color of the skin will have a **bluish tint**, the skin may be **cool to touch** or the casualty will complain of **numbness** in the extremity below the bandage.

Remember: REASSESS any and all bandages after the casualty has been moved.



SLIDE 36 – MASSIVE HEMORRHAGE CONTROL PRESSURE BANDAGE (VIDEO)

Play video - Pressure Bandage

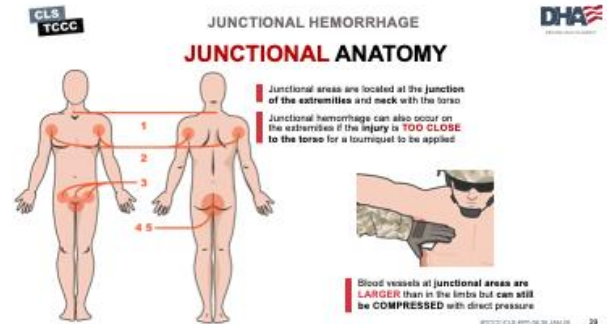


SLIDE 37 – JUNCTIONAL ANATOMY

This is a key concept for the CLS learner to understand.

Areas **NOT** amenable to extremity tourniquets are neck, axilla (arm pit), groin, and perineal. These areas are known as '**JUNCTIONAL**' areas and are difficult to stop bleeding even though the vessels are larger than in the extremities.

***Have the students locate the junctional areas on each other.*



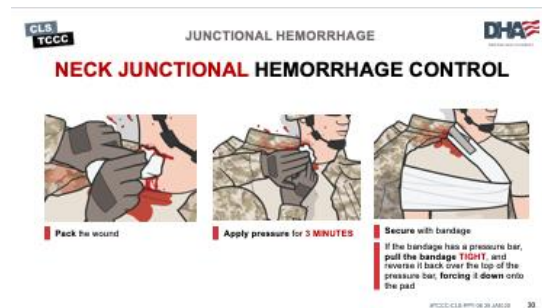
SLIDE 38 – NECK JUNCTIONAL HEMORRHAGE CONTROL

Carefully pack the wound with hemostatic dressing using your fingers to ensure that the gauze is packed in all parts of the wound.

The wound should be packed sufficiently to ensure that the **gauze extends 2-3 inches above skin surface**. Maintain direct pressure continuously **for 3 minutes**, and maintain pressure throughout the application of the dressing. Apply a pressure dressing on top of the gauze.

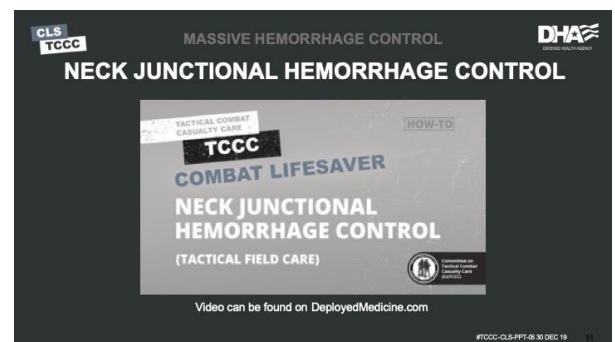
Wrap the tail under the armpit of the noninjured side, continue to wrap around the arm on the injured side. Finally, the last wrap should be tied to the tails of the bandage on the neck for pressure.

NOTE: If the bandage has a pressure bar, pull the bandage tight, and reverse it back over the top of the pressure bar forcing it down onto the pad.



SLIDE 39 – NECK JUNCTIONAL HEMORRHAGE CONTROL (VIDEO)

Play video

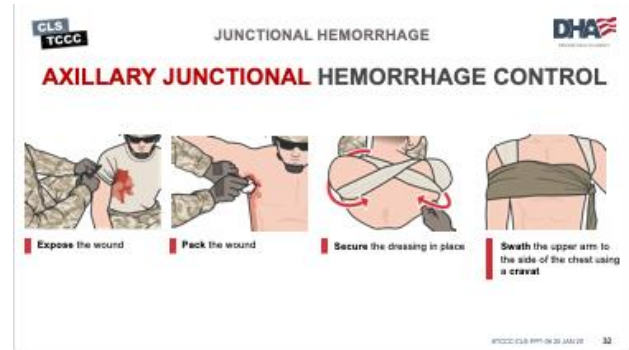


SPEAKER NOTES

SLIDE 40 – AXILLARY JUNCTIONAL HEMORRHAGE CONTROL

If there is a suspected 'axillary' wound, compressible (external) hemorrhage **not amenable to limb tourniquet**.

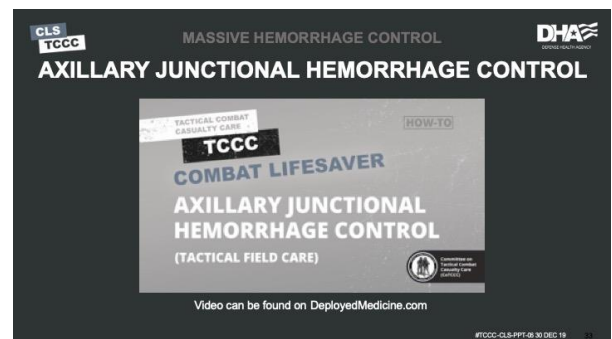
1. Expose the wound to assess it (*Remove only the gear you need to*).
2. Make an effort to locate the source of bleeding and immediately apply direct pressure while retrieving gauze.
3. Carefully pack the wound with hemostatic dressing using your fingers to ensure that the gauze is packed in all parts of the wound. **DO NOT blindly pack a wound.**
4. While packing a wound with gauze, maintain **constant**, direct pressure at the source of bleeding within 90 seconds. The wound should be packed sufficiently to ensure that the **gauze extends 2-3 inches above skin surface**.
5. Once the dressing is applied, hold direct pressure on the gauze over the wound for **at least 3 minutes**.
6. Then, carefully observe for blood continuing to flow from under the gauze to determine if bleeding has been controlled.
7. Once you are sure the bleeding has stopped, apply a pressure bandage over the hemostatic dressing and wrap the long end around the injured shoulder twice ensuring the gauze underneath is completely covered, next wrap the elastic bandage across, back and under the opposite armpit, anchoring around the opposite shoulder in a "figure 8" pattern.
8. Finally, secure the bandage. This will depend on the type of bandage used (either a closure bar or tie tails) and wrap tape a minimum of 1½ times.
9. Swath the upper arm on the injured side to the side of the chest to add pressure to the dressing.



SLIDE 41 – AXILLARY JUNCTIONAL HEMORRHAGE CONTROL (VIDEO)

Play video

1. SAM Junctional Tourniquet
2. Combat Ready Clamp (CRoC)
3. Junctional Emergency Treatment Tool



SPEAKER NOTES

SLIDE 42 – JUNCTIONAL HEMORRHAGE CONTROL WITH A PRESSURE DELIVERY DEVICE (PDD)

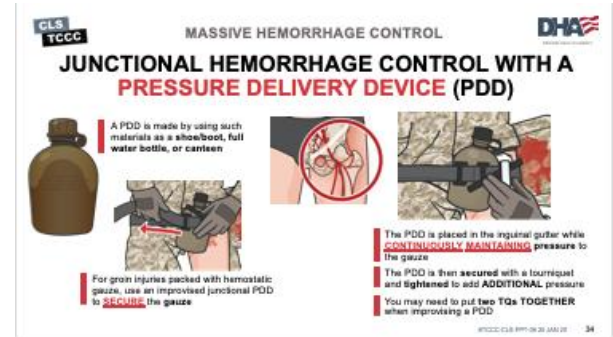
A **Pressure Delivery Device** may be needed to apply additional and targeted pressure to control inguinal/groin hemorrhage.

For groin injuries packed with hemostatic dressings, use an improvised junctional PDD to secure the dressing.

A PDD is made using improvised materials, such as a shoe/boot, full water bottle, or canteen, and applies additional pressure to the wound after it has been packed.

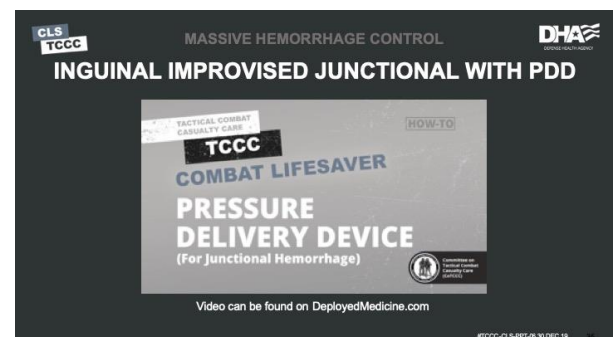
The PDD is placed in the inguinal gutter while continuously maintaining pressure to the dressing. The PDD is then secured with a tourniquet, which is wrapped over the hips with the windlass or ratchet placed directly over the improvised device and tightened to add additional pressure. You may need to put two tourniquets together when improvising a PDD.

Remember: *These are larger blood vessels requiring more pressure (and targeted pressure) than can be applied with a pressure dressing alone.*



SLIDE 43– INGUINAL JUNCTIONAL HEMORRHAGE CONTROL WITH IMPROVISED PRESSURE DELIVERY DEVICE (VIDEO)

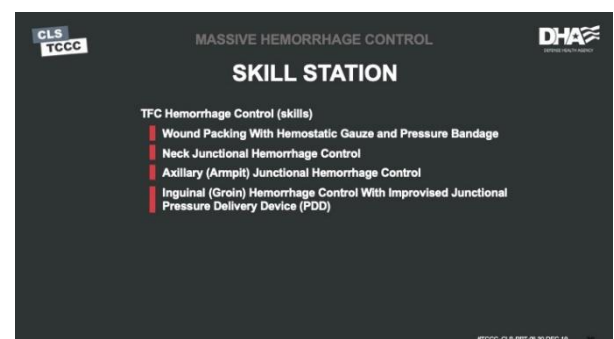
Play video



SLIDE 44 – SKILL STATION

At this time, we will break into skill stations to practice the following skills:

- Wound Packing with Hemostatic dressing and Pressure Bandage
- Neck Junctional Hemorrhage Control
- Axillary (Armpit) Junctional Hemorrhage Control



- Inguinal (Groin) Hemorrhage Control with Improvised Junctional Pressure Delivery Device (PDD)

SLIDE 45 – SUMMARY

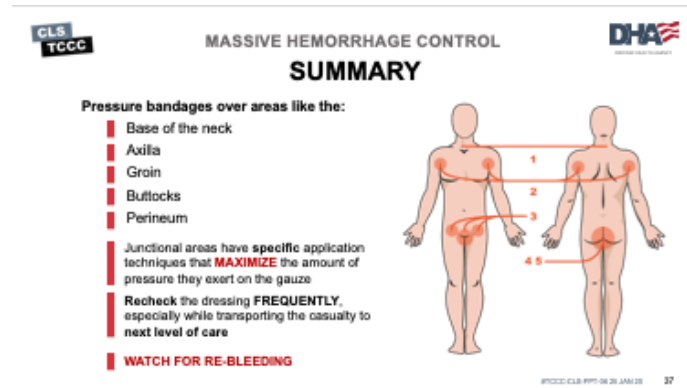
TCCC is broken up into four roles of care.

We covered four Cognitive ELOs, and four Performance ELOs that taught you how to control massive hemorrhage control in TFC.

REMEMBER, Massive bleeding is your #1 priority in treating casualties.

Some of the tools you have available to you are

1) direct pressure, 2) gauze/other dressings, 3) CoTCCC-recommended tourniquets, 4) Pressure Delivery Devices, and 5) hemostatic dressing, and pressure bandages.



You now know the difference between a deliberate and hasty tourniquet and where to apply them and avoid the common pitfalls/mistakes. You have learned that an 'improvised tourniquet' should **ONLY** be used as a **LAST** resort...they **DO NOT** work.

Everyone should have had the chance to apply both a 'ratchet' and 'windlass' tourniquet. What did you learn while applying these tourniquets? We covered the proper technique in packing 'hemostatic dressing', applying direct pressure, and proper application of a pressure bandage in all anatomic locations.

What do you do if the hemostatic dressing you applied has rebleeding? We learned there are certain areas that are **NOT** amendable to limb tourniquets. Where are these areas located?

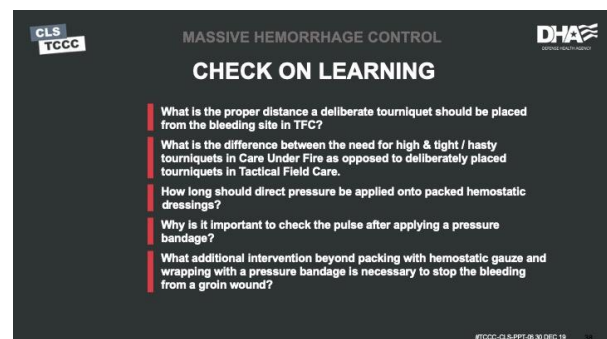
Everyone should have had a chance to practice 1) wound packing with hemostatic dressing and pressure bandage, 2) Neck junctional hemorrhage control, 3) axillary (armpit) junctional hemorrhage control, and 4) inguinal (groin) hemorrhage control with improvised junctional pressure delivery device (PDD).

SLIDE 46 – CHECK ON LEARNING

Ask questions of the learners, referring to key concepts from the module.

Now for a check on learning.

- What is the proper distance a deliberate tourniquet should be placed from the bleeding site in TFC?
 - 2 to 3 inches above the bleeding site
- Highlight the difference between the need for high & tight (hasty) tourniquets needed in CUF as opposed to deliberately placed tourniquets in Tactical Field Care.



SPEAKER NOTES

- A high & tight (hasty) tourniquet is placed above the clothing as high as possible on the extremity. A deliberate TQ is applied after the wound has been exposed, 2–3 inches above the bleeding site.
- High & tight (hasty) TQs are applied during CUF, and deliberate TQs are applied during TFC.
- 3. How long should direct pressure be applied onto packed hemostatic dressings?
 - 2 minutes
- 4. Why is it important to check the pulse after applying a pressure bandage?
 - If the bandage is too tight, it could block circulation and the bandage should be loosened.
- 5. What additional intervention beyond packing with hemostatic dressing and wrapping with a pressure bandage is needed to stop the bleeding from a groin wound?
 - PDD is needed to secure the dressing.

SLIDE 47 – QUESTIONS

