CMC TCCC

COMBAT MEDIC/ CORPSMAN

DHA Defense Health Agency JOINT TRAUMA SYSTEM

TACTICAL COMBAT CASUALTY CARE COURSE

MODULE 09: CIRCULATION AND HEMORRHAGE CONTROL IN TFC

Committee on Tactical Combat Casualty Care (CoTCCC)

TCCC TIER 1
All Service Members

TCCC TIER 2
Combat Lifesaver

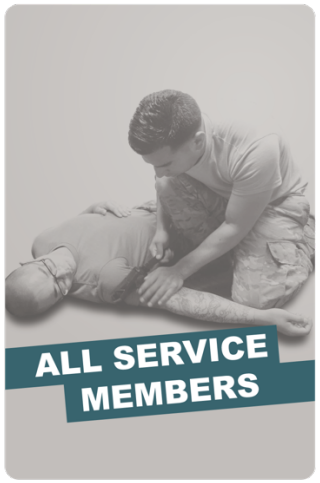
TCCC TIER 3
Combat Medic/Corpsman

TCCC TIER 4
Combat Paramedic/Provider

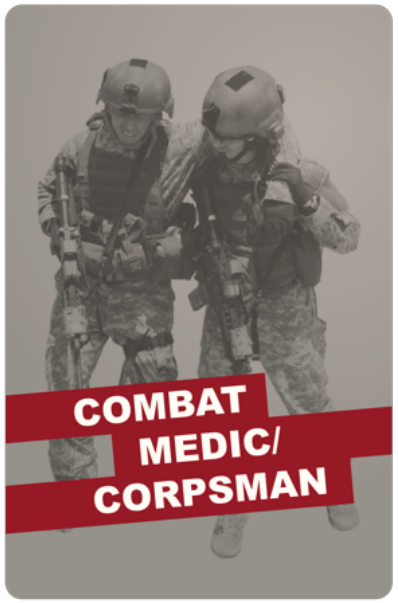
TACTICAL COMBAT CASUALTY CARE (TCCC) ROLE-BASED TRAINING SPECTRUM

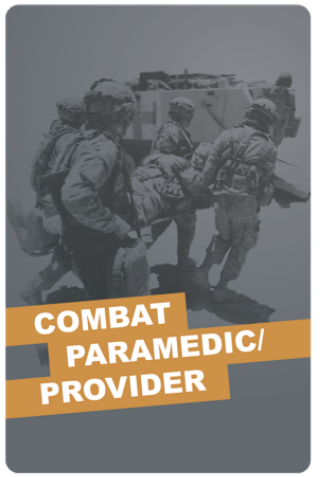
ROLE 1 CARE

NONMEDICAL PERSONNEL



MEDICAL PERSONNEL





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STANDARDIZED JOINT CURRICULUM

1 x TERMINAL LEARNING OBJECTIVES

10 **Given a combat or noncombat scenario, perform hemorrhage control during Tactical Field Care in accordance with CoTCCC Guidelines.**

- **10.1** Identify the signs, symptoms, and considerations of a pelvic fracture.
- **10.2** Identify the indications, contraindications, and application methods of pelvic compression devices in Tactical Field Care.
- **10.3** Demonstrate the application of a CoTCCC-recommended pelvic compression device in Tactical Field Care.
- **10.4** Demonstrate the application of an improvised pelvic compression device in Tactical Field Care.
- **10.5** Identify progressive strategies, indications, and limitations of controlling external hemorrhage in Tactical Field Care.
- **10.6** Identify the indications and methods of tourniquet replacement in Tactical Field Care.
- **10.7** Identify the indications and methods of tourniquet conversion in Tactical Field Care.
- **10.8** Demonstrate limb tourniquet replacement in Tactical Field Care.
- **10.9** Demonstrate limb tourniquet conversion in Tactical Field Care.
- **10.10** Identify the principles of wound packing and applying a pressure bandage.
- **10.11** Demonstrate wound packing and applying a pressure bandage.

11 x ENABLING LEARNING OBJECTIVES

= **Terminal Learning Objectives** = Cognitive ELOs = Performance ELOs

MARCH PAWS

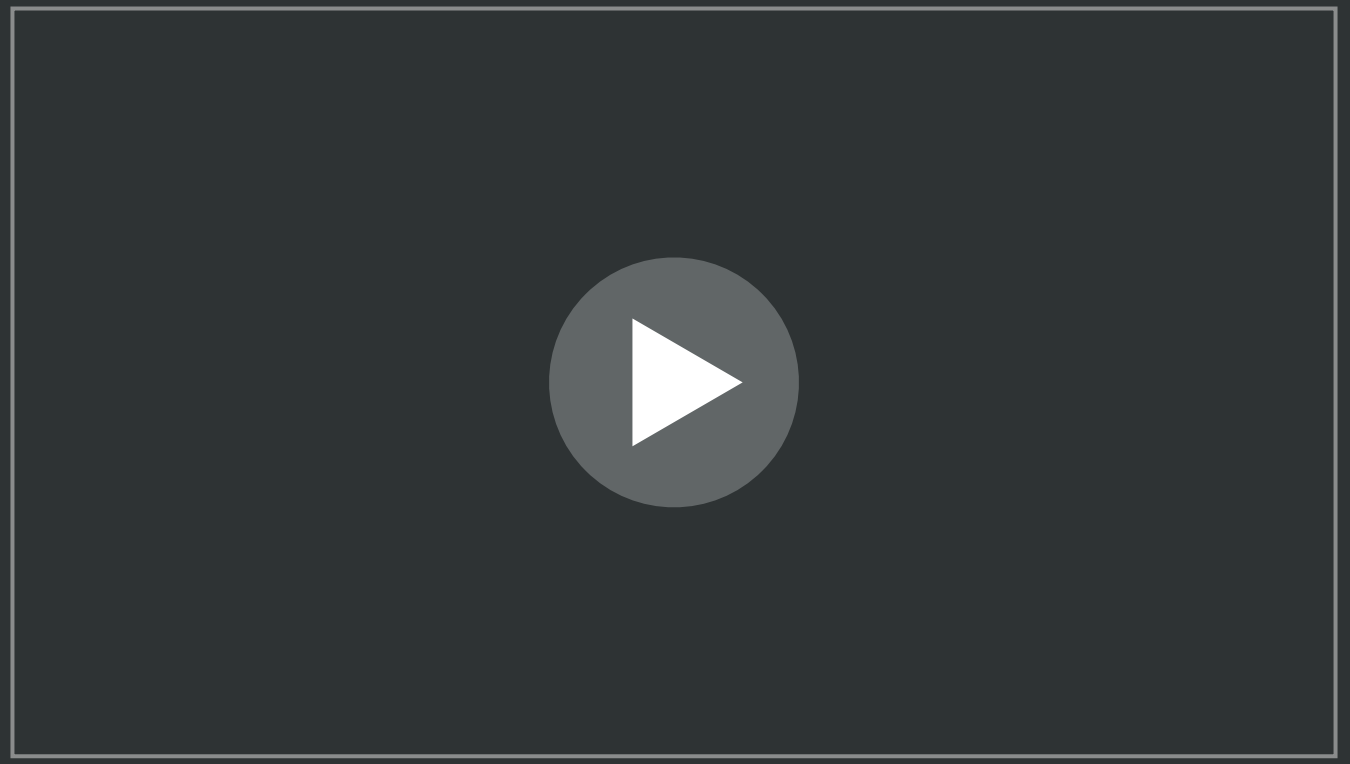
LIFE-THREATENING

- **M** MASSIVE BLEEDING — #1 Priority
- **A** AIRWAY
- **R** RESPIRATION *(Breathing)*
- **C** CIRCULATION
- **H** HYPOTHERMIA / HEAD INJURIES

AFTER LIFE-THREATENING

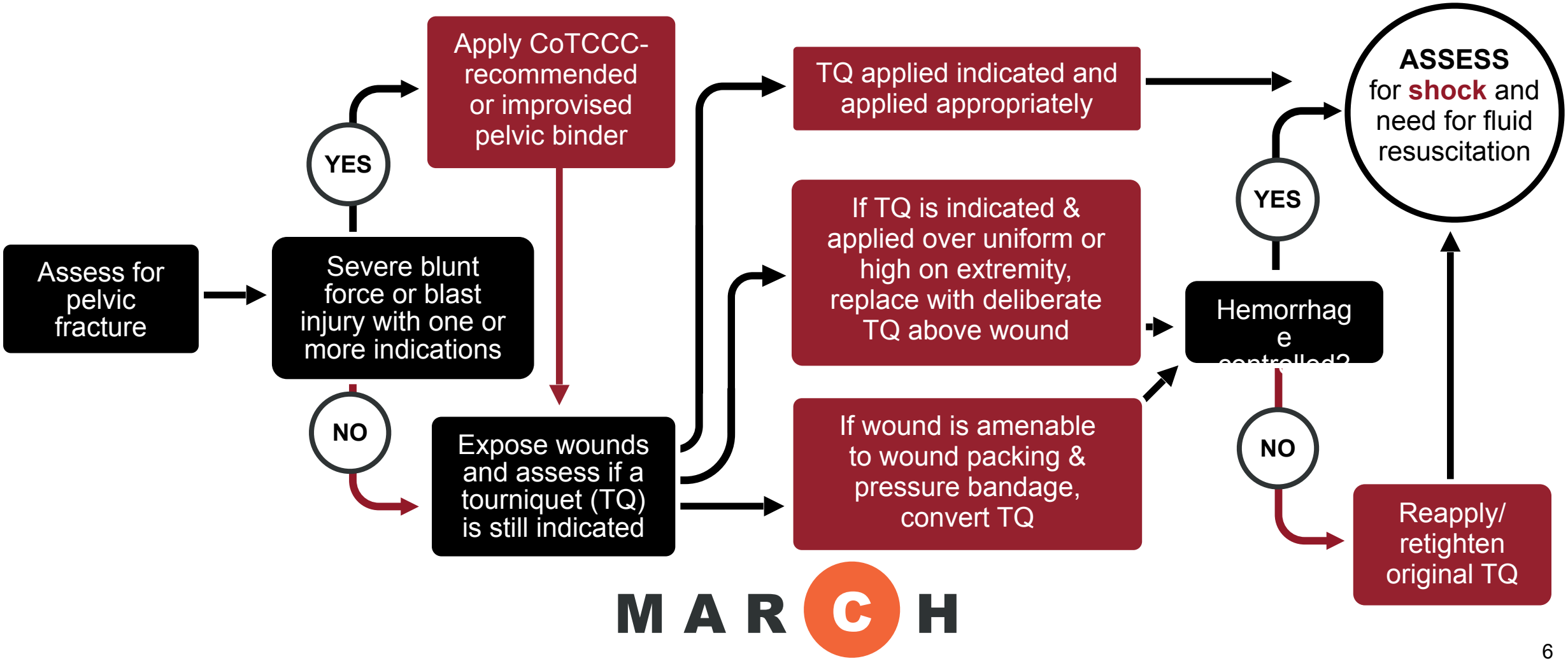
- **P** PAIN
- **A** ANTIBIOTICS
- **W** WOUNDS
- **S** SPLINTING

HEMORRHAGE CONTROL IN TFC



Video can be found on deployedmedicine.com

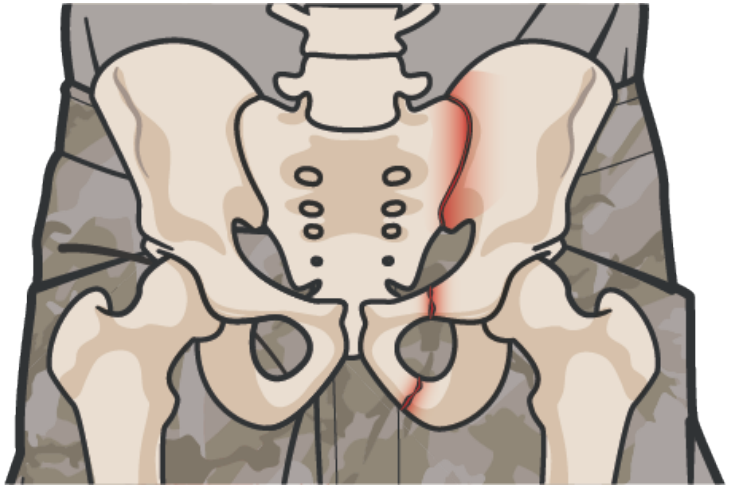
PROGRESSIVE STRATEGIES FOR CONTROLLING EXTERNAL HEMORRHAGE



SIGNS & SYMPTOMS OF PELVIC FRACTURES

Pelvic fracture may be **suspected** if the casualty's injuries are a result of severe blunt force or blast with **ONE OR MORE** of the following indications suggesting a pelvic fracture:

- **Pelvic pain**
- Any **major lower limb** amputation or **near amputation**
- Physical exam findings **suggestive** of a **pelvic fracture**
- **Pelvic instability, crepitus** or unequal leg lengths
- **Unconsciousness** or **shock**



⚠ Bleeding pelvic fractures with hemodynamic instability have up to a **40% mortality**

MARCH

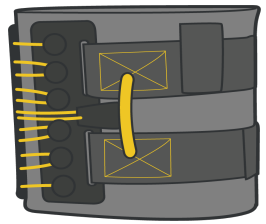
CONSIDERATIONS AND APPLICATION METHODS OF PELVIC COMPRESSION DEVICES (PCDs)

Apply PCD when:

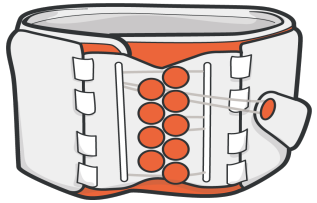
- Mechanism of injury includes **severe blunt force trauma** and/or **blast injury**
- and casualty has **one or more of the indications** previously mentioned

⚠ **PLACE** at the level of greater trochanters, NOT the iliac crests. In one study, 40% of the pelvic binders were placed too high

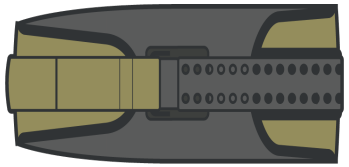
⚠ **SECURE** knees and/or feet together to prevent external rotation of the legs



PelvicBinder®



T-POD™ Pelvic Stabilization Device



SAM® Pelvic Sling II

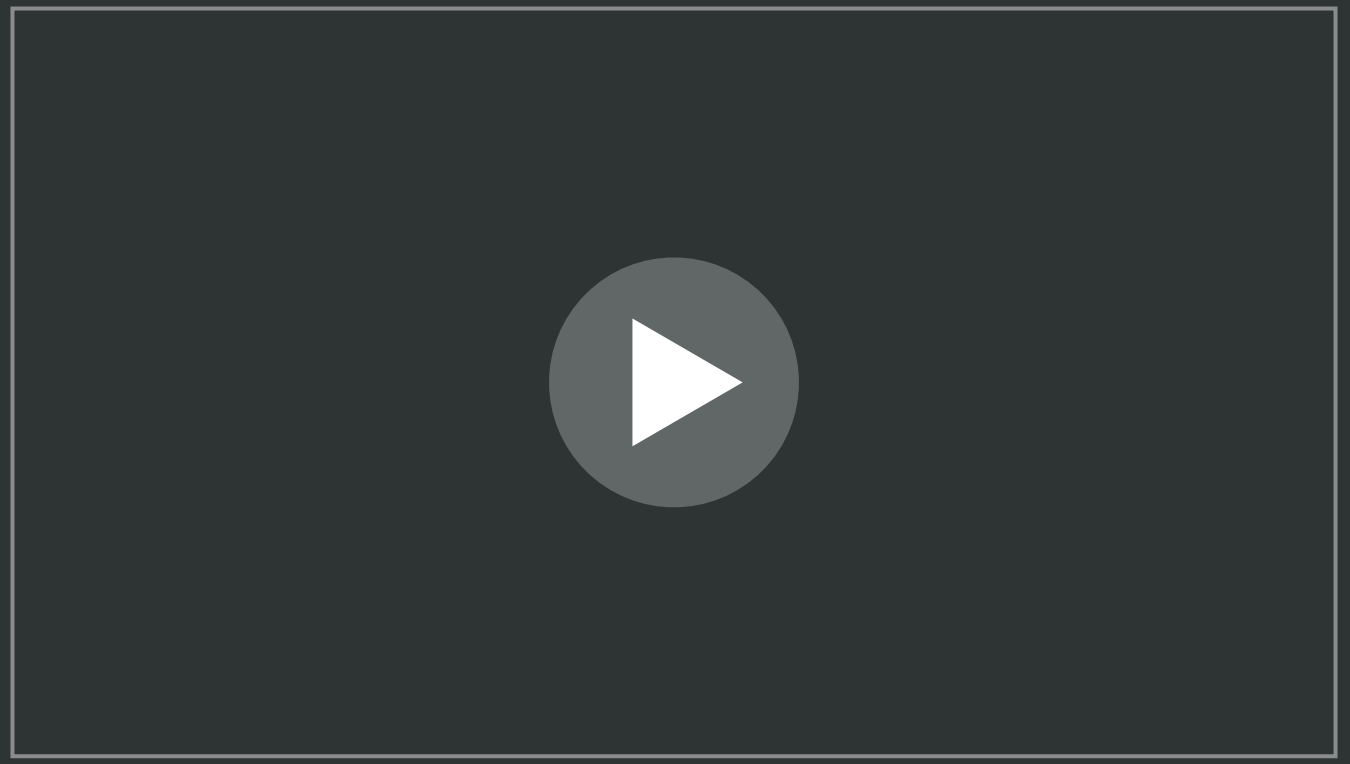
MARCH

Considerations for Pelvic Compression Device:

- Open Pelvic Fractures
- Perineal Lacerations
- Intraabdominal injuries requiring surgery
- Burns
- Severe associated pelvic soft tissue injuries

⚠ Every effort should be made to control bleeding coming from an open pelvic fracture or associated injuries

PELVIC COMPRESSION DEVICE



Video can be found on deployedmedicine.com

IMPROVISED PELVIC COMPRESSION DEVICES

Use casualty's uniform pants:

- **CUT** from the ankles to the greater trochanters
- **SPREAD** them out to the sides
- **DRAW** them tightly across the pelvis

Use other materials that can go around the circumference of the pelvis (sheets, blankets, tourniquets linked together, etc.)

- Place them under the casualty, encircling the pelvis at the level of the trochanters
- Tighten and secure in place
- **SECURE** knees and/or feet together to prevent external rotation of the legs

MARCH

SKILL STATION

CoTCCC-Recommended and Improvised PCDs

- CoTCCC-Recommended PCD Application
- Improvised PCD Application

WOUND EXPOSURE & ASSESSMENT

Key Points:

- **EXPOSE** all wounds, if not previously accomplished
- Use trauma shears, not unguarded sharp blades, to avoid causing additional injuries
- Assess whether tourniquet has been applied close enough to wound to minimize loss of viable tissue
- Determine if wound bleeding might be controlled without requiring a tourniquet
- Conditions unlikely to be amenable to tourniquet replacement (or conversion)
  - Amputations
  - Severed arteries
  - Deep arterial wounds in difficult to pack or apply pressure locations

MARCH

MASSIVE HEMORRHAGE
REASSESSMENT

If a tourniquet was applied in the **CARE UNDER FIRE / THREAT** phase or earlier in your **MARCH** sequence, **assess** for effectiveness (bleeding has stopped and distal pulses are absent)

If **INEFFECTIVE**, apply a **second tourniquet side-by-side** with the first

If a wound was packed in the beginning of **TACTICAL FIELD CARE**-the **MARCH** sequence, **assess** for effectiveness

If **INEFFECTIVE**, **repack** the wound and/or replace it with a tourniquet, as appropriate

MARCH

TOURNIQUET REPLACEMENT
INDICATIONS AND METHODS

INDICATIONS
for tourniquet replacement:

- Tourniquets applied over the uniform
- Tourniquets applied too proximal on the extremity (>3” above the wound
- >2 hours to surgery

Determine if a tourniquet replacement is indicated

Apply replacement tourniquet 2-3” proximal to wound directly on the skin

Slowly release original tourniquet, ensuring no rebleeding occurs

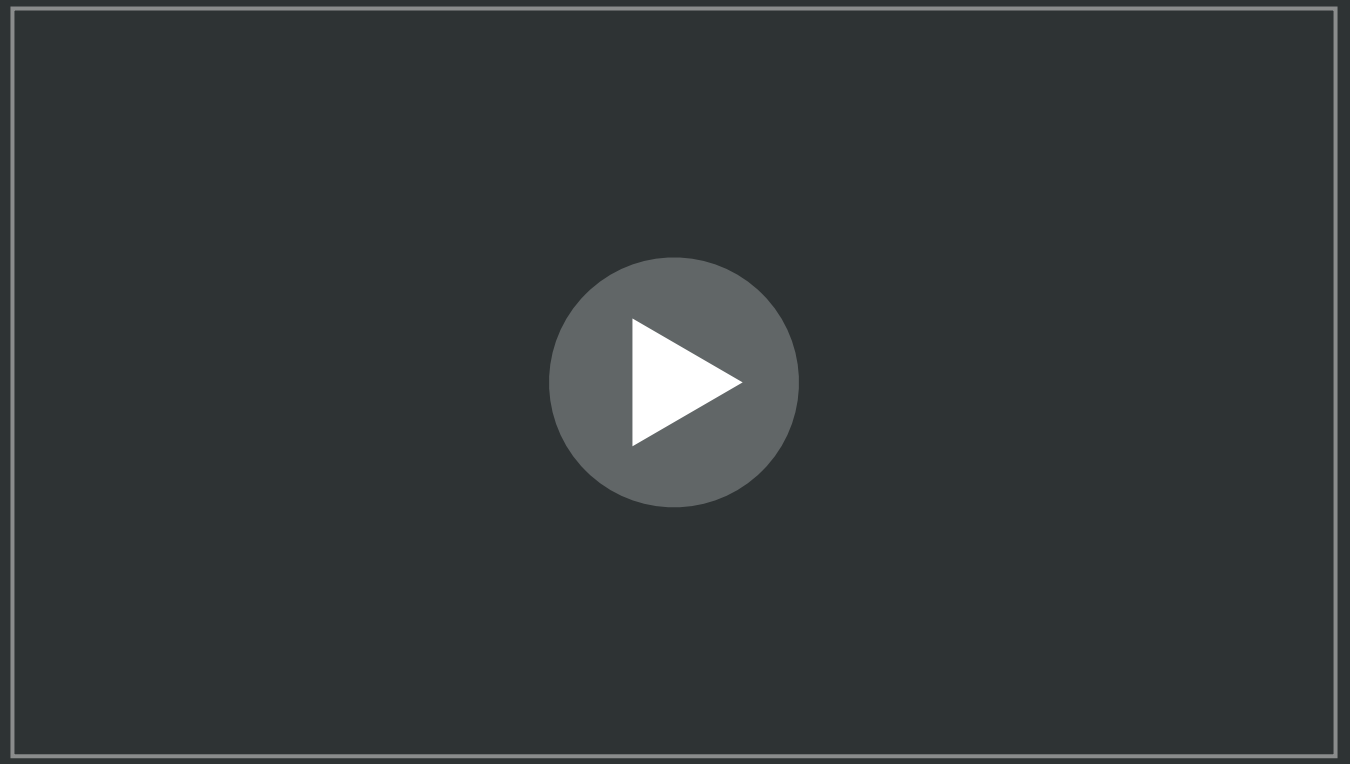
Slide original tourniquet down proximal to the newly placed tourniquet and annotate time

Annotate time of new tourniquet placement

⚠ If tourniquet replacement cannot prevent bleeding, revert back to original tourniquet

MARCH

TOURNIQUET REPLACEMENT



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TOURNIQUET CONVERSION
INDICATIONS AND METHODS

CONTRAINDICATIONS
for tourniquet conversion:

- Shock
- Inability to closely monitor for rebleeding
- Amputation

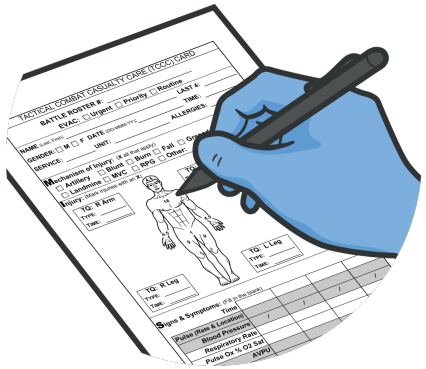
Also, consider not converting a tourniquet if:

- If the tourniquet has been in place more than 6 hours
- Tactical or medical considerations make transition inadvisable

Pack wound and hold pressure for 3 minutes

Apply pressure bandage

Slowly release tourniquet over 1 minute, ensuring no rebleeding occurs

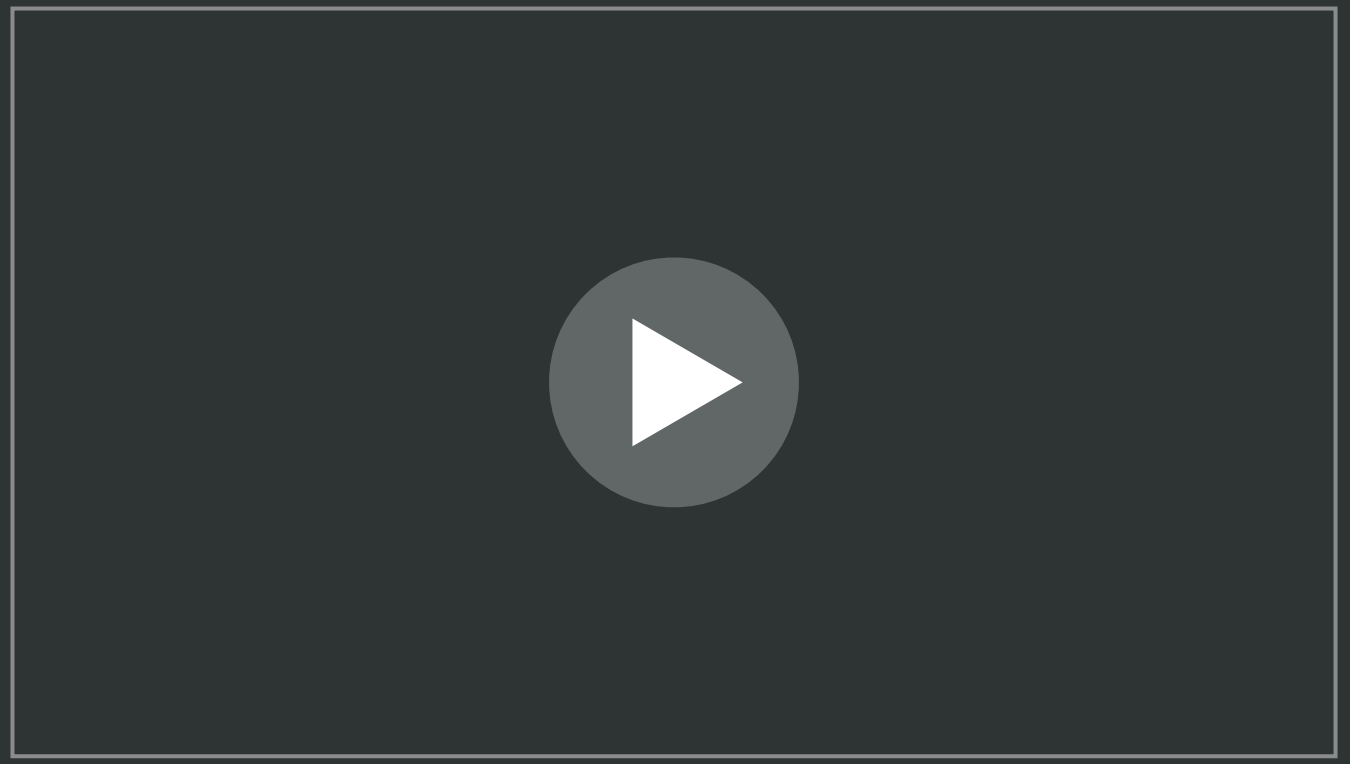


Document all findings and treatments on a DD Form 1380 TCCC Casualty Card

⚠ If tourniquet conversion does not control bleeding, revert back to a tourniquet

MARCH

TOURNIQUET CONVERSION



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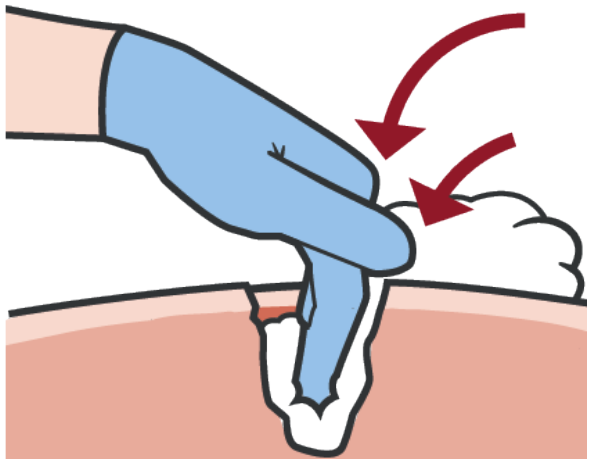
SKILL STATION

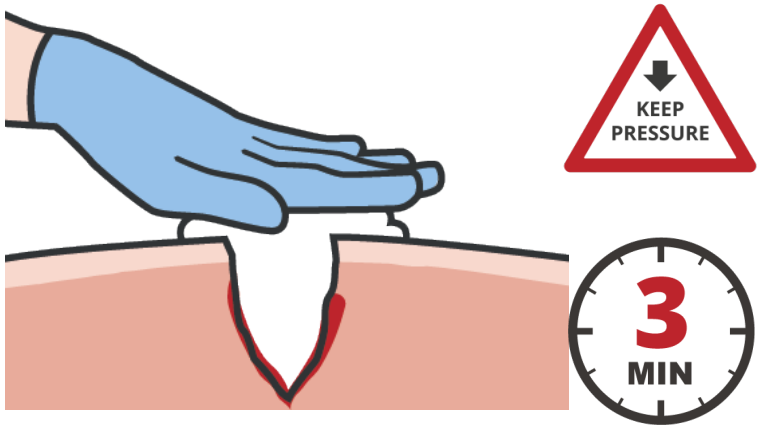
Tourniquet Replacement and Tourniquet Conversion

- Tourniquet Replacement
- Tourniquet Conversion (Using Wound Packing With Hemostatic Dressing and Pressure Bandages

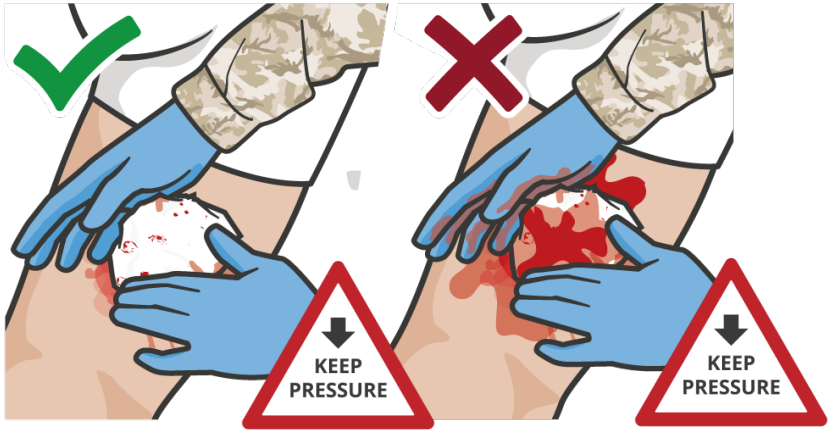
WOUND PACKING AND PRESSURE BANDAGES



- Identify **exact source** of bleeding and **APPLY direct pressure UNTIL** gauze is placed
- Pack the wound **maintaining CONSTANT** direct pressure to be effective
- Fill and pack the wound tightly, ensuring gauze extends 1-2 inches above the skin



- **HOLD** direct pressure for a minimum of **3 MINS** ***(this is necessary****, even with the active ingredient in hemostatic gauze)*
- When packing a large wound, more than one hemostatic dressing and/or **additional** gauze may be **needed**



- **Reassess** to ensure **bleeding** has been **controlled** while maintaining pressure

WOUND PACKING AND PRESSURE BANDAGES

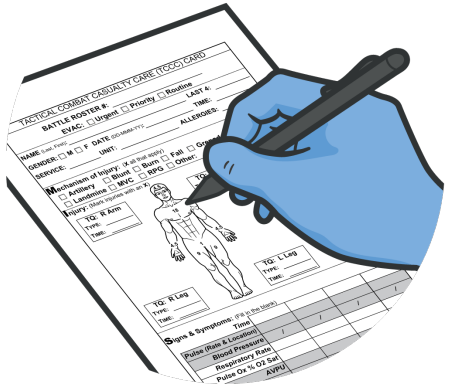
Bleeding has not been controlled:

a) Hemostatic dressing, remove prior packing material and repack

b) Gauze or other materials, apply additional gauze/ materials, apply pressure (another 3 minutes) until bleeding has stopped.

Once you are sure the bleeding has **stopped**, apply a pressure bandage

Check for circulation below the pressure bandage by feeling for distal pulse (if skin becomes cool to the touch, bluish, numb, or distal pulse not present, bandage may be too tight and should be loosened or reapplied)



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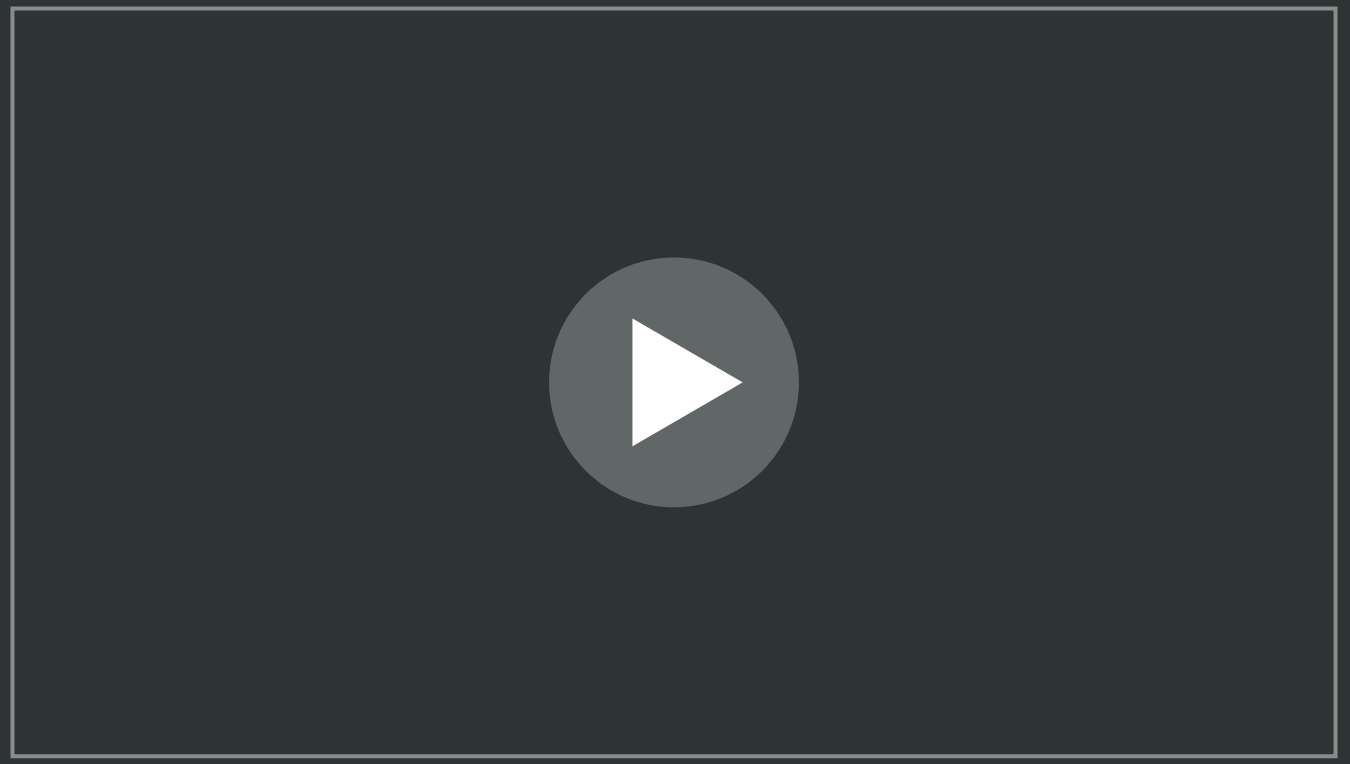
WOUND PACKING & PRESSURE BANDAGES



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SUMMARY

- Progressive strategies for controlling external hemorrhage
- Signs and symptoms of a pelvic fracture
- Implications for placing a pelvic compression device
- Indications and methods for wound packing and pressure bandages, tourniquet replacement and tourniquet conversion
- Application of both CoTCCC-recommended and improvised pelvic compression devices
- Wound packing and pressure bandage application
- Tourniquet replacement
- Tourniquet conversion

MARCH

CHECK ON LEARNING

What are the initial actions that should be taken in the circulation phase of the MARCH-PAWS sequence?

What indications are suspicious for pelvic instability?

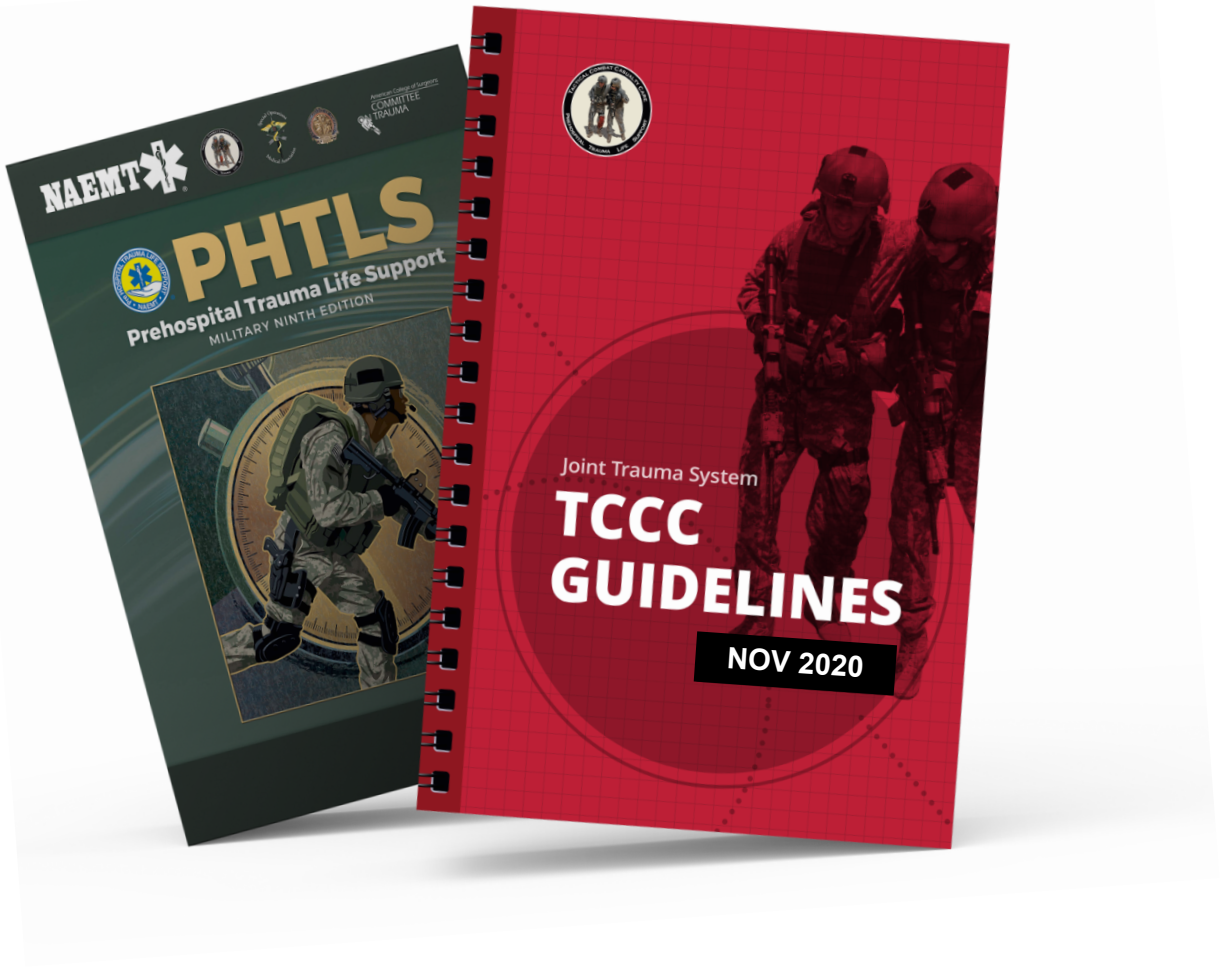
How do you prevent dislocation of pelvic fragments from external rotation of the lower extremities?

Where should you apply a deliberate tourniquet when replacing one that was placed over the uniform, like a high and tight tourniquet from Care Under Fire/ Threat?

What are the contraindications for converting a tourniquet to wound packing and a pressure bandage?

ANY QUESTIONS?

REFERENCES



TCCC: Guidelines

by JTS/CoTCCC

Updated regularly – latest edition dated 5 November 2020

These guidelines are the result of decisions made by the Committee on Tactical Combat Casualty Care as they explore evidence-based research regarding best practices

PHTLS: Military Edition, Chapter 25

by NAEMT

Prehospital Trauma Life Support, Military Ninth Edition