1. **INTRODUCTION:** Controlling severe bleeding from an extremity injury can be challenging (especially in the lower limbs). Use of a tourniquet can assist in the care of patients with uncontrollable bleeding in the extremities safely and effectively when the appropriate precautions are taken. Approved for both ALS and BLS.

2. **INDICATIONS:**
   - Amputation
   - Failure to stop bleeding with pressure dressing(s)
   - Injury does not allow control of bleeding with pressure dressing(s)
   - Impaled foreign body with ongoing extremity bleeding
   - Under difficult or dangerous situation for responding caregivers
   - Mass casualty event
   - Significant extremity hemorrhage in the face of any or all of:
     - Need for airway management
     - Need for breathing support
     - Circulatory shock
     - Need for other emergent interventions or assessment
     - Significant bleeding from multiple locations

3. **PROCEDURE:** The Combat Application Tourniquet (CAT™) is approved for use in Alameda County

   3.1 Place around limb, at least 2 inches above injury (**not over a joint**)  
   3.2 Pass the band through the outside slit
   3.3 Pull band tight
   3.4 Twist the windlass rod
   3.5 Lock the rod with the clip
   3.6 Secure the rod with the strap
   3.7 If placing around upper extremity, adhere the band over the rod (A), then secure both the rod and the band with the strap (B)
HEMORRHAGE CONTROL

4. **HEMOSTATIC AGENT:** After tourniquet placement, and to aid in severe arterial bleeding; or to control severe bleeding where tourniquets are not indicated (trunk, head, neck, etc), use of a hemostatic agent is indicated. The only hemostatic agent approved for use in Alameda County is the QuikClot Combat Gauze. **Use of combat gauze is optional. Additional training is required for use of Combat Gauze.** If your agency decides to implement the use of QuikClot Combat Gauze, it’s use is limited to ALS personnel only.

5. **INDICATIONS:**
   - Bleeding that is not controllable with the use of a tourniquet or other means.

6. **PROCEDURE:** QuikClot Combat Gauze is approved for use in Alameda County

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**DIRECTIONS FOR USE**

1. Open package and remove Combat Gauze. Keep the empty package.

2. Pack Combat Gauze into wound and use it to apply pressure directly over bleeding source. (More than one Combat Gauze may be required).

3. Continue to apply pressure for 3 minutes or until bleeding stops.

4. Wrap and tie bandage to maintain pressure. Seek medical care immediately. Show PRODUCT REMOVAL directions on package to medical personnel.

**PRODUCT REMOVAL:** 1. Gently remove gauze from wound. 2. Thoroughly irrigate wound.
HEMORRHAGE CONTROL

**Tourniquet Reassessment Algorithm**

- Patient in circulatory shock?
  - Yes: Leave on and transport
  - No: Unstable clinical situation?
    - Yes: Go to tourniquet reassessment algorithm
    - No: Limited personnel or resources?
      - Yes: Go to tourniquet removal algorithm
      - No: Go to tourniquet reassessment algorithm

- Significant Extremity Bleeding with need for other interventions?
  - Yes: Apply tourniquet to bleeding limb(s) on proximal segment
  - No: Go to appropriate protocol

- Transport time > 30 minutes expected?
  - Yes: Go to tourniquet reassessment algorithm
  - No: Leave on and transport

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**Tourniquet Removal Algorithm**

- Amputated extremity?
  - Yes: Apply pressure dressing before loosening tourniquet.
  - No: Leave on and transport

- Significant Bleeding from site?
  - Yes: Retighten tourniquet and transport
  - No: Reassess as needed

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*Before applying a tourniquet and if time permits, attempt to control bleeding via:

- Direct pressure
- Elevation
- Pressure point

**NOTE:** Do not go to the Tourniquet Removal Algorithm unless transport time is greater than 30 minutes AND criteria have been met in the Tourniquet Reassessment Algorithm for removal.