I. Purpose:

A. The purpose of hemorrhage control is to control life or limb-threatening bleeding

II. Authority:

A. Health and Safety code, Section 1792.220, 1798. Title 22, Section 100170.

III. Policy:

A. Hemorrhage control should only be utilized for the management of patients that have an external injury that has damaged arterial or venous blood vessels resulting in large volume blood loss. Hemorrhage control is not intended for the management of smaller lacerations where traditional methods of bleeding control may be effective.

IV. Compressible Wounds and Lacerations:

A. Direct Pressure (Any Wound)

1. Indications: First-line bleeding control during wound assessment and/or in patients with minor to moderate bleeding/hemorrhage. Apply direct pressure using appropriate gauze or dressing to wound. If bleeding becomes controlled, provider may address additional patient issues as needed.
2. If direct pressure and traditional dressing is insufficient in controlling the bleeding or hemorrhage, continue to wound packing and/or compression bandage.

B. Wound Packing and Compression Bandage

1. **Indications:** Patients with moderate hemorrhage from wound or lacerations large enough to pack. Wound or laceration may not be potentially open to a body cavity (chest, abdomen or flank). If wound or laceration is located on an extremity and has major hemorrhage, is too large to pack, or in a resource-poor scenario (i.e. MCI), go directly to tourniquet if bleed necessitates.
2. **Direct Pressure:** Insert finger(s) into laceration and locate the source of the hemorrhage. Apply direct pressure to source of bleeding with finger(s) to slow bleeding.
3. **Wound Packing:** Pack either gauze or hemostatic impregnated gauze deep inside the wound using the other hand. Continue to pack gauze into the wound creating firm pressure to the source of the bleeding. Remove the fingers holding pressure and continue to pack the wound with gauze until no more gauze can be placed in the wound. This packing should be tight in the wound and fill all voids, so pressure is

maintained to the source of the bleeding. If the wound is large enough to accept multiple gauze, a count should be maintained and communicated to the receiving hospital. Once wound has been sufficiently packed, continue to compression bandage/emergency bandage. Wound packing should NOT be limited to extremity and junctional wounds. Packing should not be completed if there is concern for tracking to intraabdominal or intrathoracic involvement.

4. **Compression Bandage:** Place trauma dressing(s) over the packed wound and apply compression bandage or emergency bandage (i.e. Israeli bandage, H bandage) to affected area. Ensure the bandaging has been tightly placed to ensure continuous pressure to the hemorrhage while maintaining the wound packing.
5. **Reassessment:** Reassess wound every five (5) minutes to ensure hemorrhage has been controlled. Pulses and perfusion distal to the bandage should be checked and maintained. If hemorrhage is not controlled proceed to tourniquet if wound or laceration is located on an extremity.
6. If hemorrhage continues after placement of tourniquet:
    1. Consider Tranexamic Acid (TXA) administration in patients 15 years old or older. See **TXA Administration Protocol.**

V. Non-Compressible Junctional Wounds or Uncontrolled Extremity Hemorrhage:

A. Tourniquet:

1. Indications: Adult or pediatric patient with uncontrolled extremity hemorrhage or major hemorrhages where wound packing and compression bandaging would be insufficient in controlling bleeding.
2. Application: County approved tourniquets shall be placed proximal to the wound, not over a joint and in accordance with manufacturers' specifications.
    1. The most proximal application is preferred, prioritizing placement over single bone aspects of the limbs (overlying the humerus and femur), rather than more distal portions of the limb with two bones (overlying the tibia and fibular, and ulna and radius)
    2. Tourniquets may be used in conjunction with wound packing and/or compression dressings or emergency bandages. If compression bandaging or emergency

bandaging become insufficient and tourniquet is elected, do not remove bandaging. Once tourniquet has been applied, document the time of application.

3. If hemorrhage continues after placement of tourniquet:
    1. Consider TXA administration in patients 15 years old or older. See **TXA Administration Protocol**
    2. Consider placement of a second tourniquet, distal to the first

IX. Non-Compressible Truncal Hemorrhage:

A. Indications: Due to the location(s) of non-compressible hemorrhages, mechanical hemorrhage control will be difficult to complete. Rapid transport to surgical intervention is the priority for these patients. The following care is to be completed en-route.
    1. Direct pressure: If applicable
    2. Wound Packing: If applicable provider may attempt to pack the wound or laceration.
    3. Consider TXA administration in patients 15 years old or older. See **TXA Administration Protocol**

APPROVED:
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