Procedure Guidelines

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<th>Protocol Title:</th>
<th>Tourniquet Application</th>
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<td>Medical Director</td>
<td>Chad Torstenson M.D.</td>
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**Purpose:** To guide the application of tourniquets and the management of arterial bleeding.

**Indications:** Arterial bleeding isolated to an extremity, in a location which facilitates the application of a tourniquet 2-4 inches proximal to the site of bleeding, and which is uncontrolled by direct pressure.

**Procedure:**
1. Expose the site.
2. Confirm the presence of arterial bleeding, uncontrolled by direct pressure.
3. If arterial bleeding is present and the site of bleeding is isolated to an extremity, place tourniquet 2-4 inches proximal to the wound, not covering a joint.
4. Tighten windlass until distal pulse is no longer palpable, or until bleeding stops.
5. After arterial bleeding is controlled, confirm no other life threatening bleeding is present and bandage the wound. Do not cover tourniquet with bandage.
6. Write “TK” and the exact time (Hour and Minute) of application on a piece of adhesive tape, and securely fasten the tape to the patient’s forehead.
7. Re-assess effectiveness of tourniquet every 5 minutes.
8. Re-assess vital signs every 5 minutes and treat hypotension if indicated.
9. Consider pain management.
**Device Instructions:** Combat Application Tourniquet (CAT)

**Step 1 (Figure 2):**
The C-A-T® is applied over the extremity proximal to the bleeding site routing the self – adhering band around the extremity. Lower extremity wounds require feeding the strap through the inner slit and outer slit of the buckle. Upper extremity wounds typically require less pressure to control and do not require feeding the strap through both inner and outer slits of the buckle, though doing so is usually the optimal strategy. If a single slit is used for arm wounds, the inner slit (closest to windlass) is to be used.

**Step 2 (Figure 3):**
For all lower extremity wounds (and any upper extremity wounds desired), additionally pass the band through the outside slit of the buckle utilizing the friction adaptor buckle which will lock the band in place.

**Step 3 (Figure 4):**
Pull the self - adhering band tight and secure the band back on itself with the Velcro adhesive strap.
Step 4 (Figure 5):
Twist the windlass until the bleeding has stopped. This will typically be at or less than 3 complete rotations of the windlass. More could be required, but be careful not to exert too much torque on the windlass to avoid breakage.

Step 5 (Figure 6):
Lock the rod in place with the windlass clip.

Step 6 (Figure 7):
Secure the rod with the strap by pulling it tight and adhering it to the opposite hook on the windlass hook. Indicate the time of tourniquet application on tape.