A. INTRODUCTION

Tourniquets may be necessary to control bleeding from potentially fatal, hemorrhagic wounds after all other means of bleeding control have failed or in situations of significant extremity bleeding with the need for additional interventions.

PRECAUTIONS

A tourniquet applied incorrectly can increase blood loss and lead to death. Applying a tourniquet can cause severe nerve and tissue damage whether or not it was applied correctly. Proper patient selection for the use of a tourniquet is of the utmost importance. Permanent damage is unlikely if the tourniquet is removed by a physician within 2 hours. Lower risk of tissue damage is acceptable over death secondary to hypovolemic shock. Tourniquets should never be covered up by patient clothing.

B. PROCEDURE

BLS

1. Attempt to control hemorrhage with direct pressure or pressure dressing.

2. If unable to control hemorrhage using the above means, apply the Combat Application Tourniquet (C-A-T):

   a) The Combat Application Tourniquet is applied to the injured extremity 2 to 4 inches proximal to the wound, preferably on single-bone structures (humerous and femur) above wound. Do not place over joints.

   b) Apply the tourniquet proximal to the bleeding site. Route the band around the limb and pass the tip of the band through the inside slit of the buckle. Pull the band tight.

   c) Pass the tip of the band through the outside slit of the buckle. The friction buckle will lock the band in place.

   d) Pull the band very tight and securely fasten the band back on itself.

   e) Twist the rod until bright red bleeding has stopped and the distal pulse is eliminated.

   f) Place the rod inside the clip; locking it in place. Check for bleeding and distal pulse. If bleeding is not controlled, consider additional tightening or applying a second tourniquet proximal side by side to the first and reassess.

   g) Secure the rod inside the clip with the strap. Record the time of application.

   h) The time of tourniquet application (“TK 20:30”) should be written on the tourniquet itself or written directly on the patient’s forehead. Should also be documented on a triage tag (if applicable).

   i) The tourniquet should be left uncovered so that the site can be monitored for recurring hemorrhage.

j) Keep the tourniquet on throughout transport – a correctly applied tourniquet should only be removed by the receiving hospital.

k) Continue to monitor patient vitals and wound.

l) Ensure all receiving personnel are aware of tourniquet placement.

m) If the existing tourniquet is ineffective, tighten the existing tourniquet further or apply a second tourniquet side-by-side and if possible proximal to the first tourniquet.

C. TOURNIQUET DOWNGRADE OR CONVERSION

1. If there will be a more than **two (2) hours** delay in evacuating patient (e.g. Active shooter, MCI), consider tourniquet downgrade or conversion.

   The Four Criteria for tourniquet downgrade or conversion are:

   1. Patient is not in hemorrhagic shock;
   2. It is possible to monitor the wound closely for bleeding;
   3. The tourniquet is not being used to control bleeding from an amputated or partially amputated limb;
   4. There are **NO** prior unsuccessful attempts to remove the tourniquet.

2. To downgrade, expose the wound fully, identify an appropriate location at least 2-3 inches above the most proximal injury (not over a joint) and apply a new tourniquet directly to the skin. Once properly applied, the prior tourniquet can be loosened but left in place.

3. For conversion, expose the wound, fully pack the wound, apply a pressure dressing, and then the prior tourniquet can be loosened but left in place. Assess for bleeding.