Performance Standard	7314
Effective April 1, 2018	**Expires** March 31, 2019
Category I Skill – Low Frequency/High Risk: **Tourniquets**	Approval: Medical Director **Reza Vaezazizi, MD** — Signed
Applies To: **PSP, EMT, AEMT, PM, MICN, BHP, EMS System**	Approval: REMSA Director **Bruce Barton** — Signed

Terminal Performance Objective

Hemorrhage control via the appropriate use of and correct application of an extremity arterial tourniquet.

Before applying an arterial tourniquet:

1. Determine presence of probable life-threatening bleeding extremity injury(ies).
2. Immediately attempt to control bleeding using dressings and direct pressure.
3. **Tourniquets are *only* to be used if direct pressure does not control the hemorrhage.**
4. Remove any other articles of clothing and jewelry from the affected extremity(ies) .

Application of an arterial tourniquet must be accomplished as soon as possible—blood lost cannot be replaced:

1. ***Do not*** delay tourniquet application to extricate/load patient, establish IVs, or other treatments.
2. Place tourniquet at least 2”-4” proximal to site of hemorrhage. [1]
    a. Tourniquets that are narrow and band-like should be avoided. Wider tourniquets are more effective at controlling bleeding, and they control hemorrhage at a lower pressure. [2]
    b. Avoid obvious fractures—place tourniquet proximally to avoid creating further injury/pain.
    c. If joint is closer than 4” to hemorrhage site, apply tourniquet 2”- 4” proximal to that joint.
3. Tighten tourniquet until bleeding is stopped, then secure it in place.
4. Leave the tourniquet uncovered so that the site can be monitored for recurrent hemorrhage.
5. Pain management should be considered unless clinically contraindicated.
6. Note the time of tourniquet application.
    a. Clearly identify location of tourniquet(s) on turnover to other care providers.
    b. Document the time of tourniquet application and results on the PCR/ePCR.
    c. In multi-patient situations (i.e. MCI) clearly mark triage tags with a “T” (for tourniquet) and the time using 24-hour format, e.g. T-13:40 Aug. 6, 2011. Label or otherwise identify the tourniquet(s) the same way.
7. Provide oxygen at 10-15 LPM.
8. Initiate transport to trauma center or as otherwise directed by base hospital.
9. If a tourniquet was applied appropriately prior to the arrival of ALS providers, keep the tourniquet in place.
    a. If bleeding control has not been achieved, ALS providers should be prepared to apply a tourniquet proximal to existing tourniquet.

Critical Success Targets for Application of an Arterial Tourniquet

1. Recognize probable life-threatening extremity hemorrhage.
2. Bleeding control is not possible via any other methods (i.e., direct pressure).
3. Successful hemorrhage control within 2 minutes is achieved using an arterial tourniquet.

System Benchmark

[1] Www.ArmyStudyGuide.com, retrieved 11/09/11

[2] PHTLS , Seventh Edition, Chapter 8 Shock p 200

% of patients whose critical extremity hemorrhage is controlled via treatment with arterial tourniquet.

Applicable protocols

1. REMSA Treatment Protocol for Shock Due to Trauma
2. REMSA Treatment Protocol for Traumatic Injuries

Core Competency Requirements to be covered during education/training on tourniquets

1. Hemorrhagic shock—recognizing critical patients requiring immediate bleeding control.
2. Definition of arterial vs. constricting band vs. venous tourniquets.
3. Indications/contraindications for arterial tourniquet application.
4. Review of current research on tourniquets.
5. Proper application of tourniquets.
6. Importance of complete bleeding control.
7. Importance of securing the windlass.

Equipment Requirements

1. PPE
2. Commercially available tourniquets (e.g. CAT) or blood pressure cuff
3. Trauma dressings

Instructor Resource Materials

1. Applicable manufacturer's guidelines
2. Applicable REMSA Treatment Protocols
3. Prehospital Trauma Life Support (PHTLS), seventh edition

Application of Tourniquets Validation

PERFORMANCE OBJECTIVE: To achieve hemorrhage control via the appropriate use of an correct application of an extremity arterial tourniquet.

PERFORMANCE CRITERIA: 100% accuracy required on all items marked with an *

Before applying a tourniquet, the PSP, EMT, AEMT, or paramedic must:

Points	Score	Performance Steps	Additional Information
1		Take or verbalize body substance isolation. *	Selection: gloves, goggles, mask, gown, booties, P100 PRN
1		Determine the presence of probable life-threatening bleeding extremity injury(ies). *	
1		Immediately attempt to control bleeding using dressings and direct pressure. *	***Tourniquets are only to be used if direct pressure does not control the hemorrhage.***
1		Remove any other articles of clothing and jewelry from the affected extremity(ies).	
1		Do not delay tourniquet application to extricate/load patient, establish IVs, or other treatments.	

While applying a tourniquet, the PSP, EMT, AEMT, or paramedic must:

Points	Score	Performance Steps	Additional Information
1		Place tourniquet at least 2" – 4" proximal to site of hemorrhage. *	• Tourniquets that are narrow and band like should be avoided. Wider tourniquets are more effective at controlling bleeding, and they control hemorrhage at a lower pressure. • Avoid obvious fractures – place tourniquet proximally to avoid creating further injury/pain. • If joint is closer than 4" to hemorrhage site, apply tourniquet 2" – 4" proximal to that joint.
1		Tighten tourniquet until bleeding is stopped, then secure it in place. *	
1		Leave the tourniquet uncovered so that the site can be monitored for recurrent hemorrhage. *	
1		Pain management should be considered unless clinically contraindicated.	
1		Note the time of tourniquet application. *	• Clearly identify location of tourniquet(s) on turnover to other care providers. • Document the time of tourniquet application and results on the PCR • In multi-patient situations (i.e. MCI) clearly mark triage tags with a "T" (for tourniquet) and the time using 24-hour format, e.g. T-13:40 Aug. 6, 2011. Label or otherwise identify the tourniquet(s) the same way.
1		Provide oxygen at 10 – 15 LPM.	

1		Initiate transport to a trauma center or as otherwise directed by base hospital.	
1		If a tourniquet was applied appropriately prior to the arrival of ALS provides, keep the tourniquet in place. *	If bleeding control has not been achieved, ALS providers should be prepared to apply a tourniquet proximal to existing tourniquet.

Critical Failure Criteria

____Failure to take or verbalize BSI appropriate to the skill prior to performing the skill.
____Failure to recognize probably life-threatening extremity hemorrhage.
____Failure to attempt to control hemorrhage via the use of dressings and direct pressure prior to use of tourniquet.
____Any procedure that would have harmed the patient.