Medical Directive

Directive Number	**17-07**
Publish Date	**05 December 2017**
Effective Date	**05 December 2017**
Subject	**Wound Packing for Penetrating Junctional and Extremity Trauma**
Update to Clinical Operating Guidelines v 03.08.17	

Credentialed System Responder	**Action**
Credentialed EMT	**Action**
Credentialed EMT-Intermediate	**Action**
Credentialed EMT-Paramedic	**Action**
Credentialed EMD	**Information**

Our System has been using direct pressure and tourniquets for bleeding control for extremities for many years now. With the occurrences of national tragedies relating to active shooters and other MCIs; the System has decided to add wound packing to our System standard of care for SR/ECA Responders/Providers and above. Initial training is taking place with all EMS Department Credentialed Providers. We anticipate this training will spread thought out the System over the next 12 months. As stated on the new Clinical Procedure CP-70:

> Use of this procedure is immediately approved for System SR/ECA (and above) Credentialed Providers who are appropriately equipped and, have successfully completed a competency verification process that is on file with their Organization.

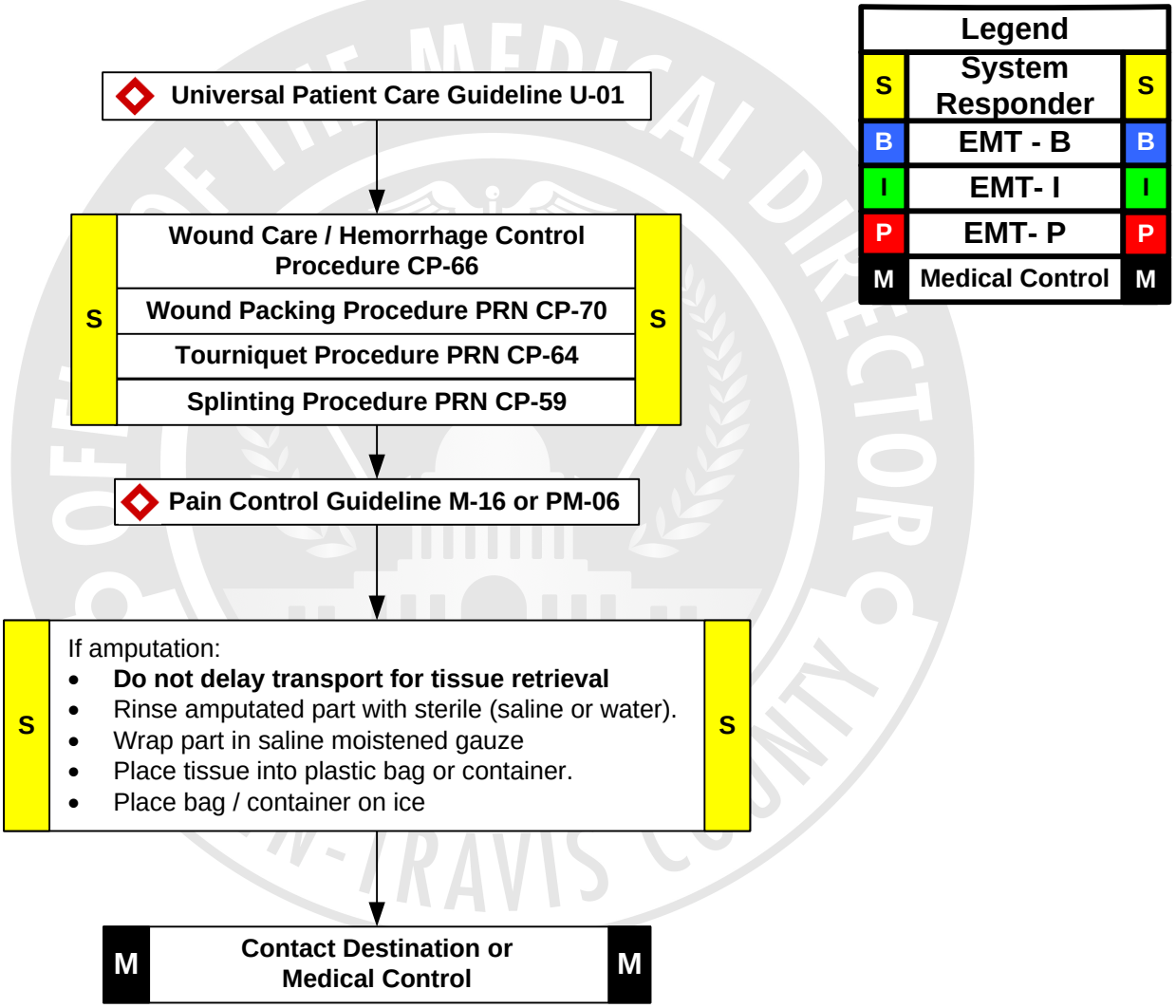
Thanks for all you do. Questions relating specifically to the COGs can be sent to cogs@austintexas.gov

Larry Arms, LP
Clinical Operations, Practices and Standards Coordinator
Office of the Medical Director, Austin - Travis County EMS System

Mark E. Escott, MD, MPH, FACEP, NRP
EMS System Medical Director
Office of the Medical Director
City of Austin/Travis County
ESV#120517743

Extremity Trauma Adult/Pedi

History:	Signs & Symptoms:	Differential:
• Type of injury • Mechanism: crush / penetrating / amputation • Time of injury • Open vs. closed fracture • Wound contamination • Medical history • Medications	• Pain, swelling • Deformity • Altered sensation / motor function • Diminished pulse / capillary refill • Decreased extremity temperature	• Abrasion • Contusion • Laceration • Sprain • Dislocation • Fracture • Amputation



Pearls:

- Peripheral neurovascular status should be documented on all extremity injuries and before and after splinting procedures.
- In amputations, time is critical. Transport and notify medical control immediately, so that the appropriate destination can be determined.
- If an amputation is incomplete, splint affected digit or limb in physiologic position.
- Hip dislocations and knee and elbow fracture / dislocations have a high incidence of neuro-vascular compromise.
- Urgently transport any injury with vascular compromise.
- Blood loss may be concealed or not apparent with extremity injuries.
- Lacerations should be evaluated for repair as soon as possible after injury.

Wound Packing for Penetrating Junctional and Extremity Trauma

Use of this procedure is immediately approved for System SR/ECA (and above) Credentialed Providers who are appropriately equipped and, have successfully completed a competency verification process that is on file with their Organization.

Legend		
S	System Responders	S
B	EMT - B	B
I	EMT- I	I
P	EMT- P	P

Clinical Indications:

- Uncontrolled hemorrhage for Penetrating Junctional and Extremity Trauma

Procedure:

1. Use appropriate personal protective equipment, including gloves, gown, eye protection and mask as indicated.

2. **Stop the bleeding. Now!** Immediately apply direct pressure to the wound, using gauze or clean cloth to slow or stop the hemorrhage-until you have time to get out your wound packing supplies. Place your gloved fingers-with or without a dressing-into the wound to apply initial pressure to the target area (with your target being the vein, artery or both) and compress the source of bleeding. Keep in mind that the body's anatomy presents with major vessels running close to bones. So, whenever possible, utilize a bone to assist with vessel (i.e., bleeding) control. This will also give you an idea of which direction the wound travels and you can insert the gauze accordingly.

3. **Pack the wound with gauze. Tightly!** Your goal is to completely and tightly pack the wound cavity to stop hemorrhage. Begin packing the gauze into the wound with your finger, while simultaneously maintaining pressure on the wound. **When no more gauze can be packed inside the wound, hold direct pressure on the wound for 3 minutes.** It's critical that the gauze be packed as deeply into the wound as possible to put the gauze into direct contact with the bleeding vessel. By doing so, you're simultaneously putting direct pressure onto the bleeding vessel and allowing the hemostatic agent to do work its magic.

4. **Keep packing!** The key to successful wound packing is that the wound be *very* tightly packed, applying as much pressure as possible to the bleeding vessel. This pressure against the vessel is the most important component of hemorrhage control. This explains why plain gauze (without an impregnated hemostatic agent), when tightly packed, is also quite effective.

5. **Apply very firm pressure to the packed wound for 3 minutes.** This step pushes the packing firmly against the bleeding vessel and aids in clotting.

6. **Secure a snug pressure dressing and transport.** After applying pressure for 3 minutes, place a snug pressure dressing over the wound. You may consider splinting or immobilizing the area, if possible because movement during transport can dislodge the packing and allow hemorrhage to restart.

Continued Hemorrhage

7. Should the bleeding continue, hemostatic gauze manufacturers recommend removal of the original packing and repacking with fresh gauze. The rationale for this is that they assume it wasn't packed properly the first time, or perhaps the packing didn't quite get to the bleeding vessel.

8. Prior to repacking, another option is to pack more gauze into the wound, if possible. If no further packing is possible, you must decide whether to remove the gauze and start over or simply apply as much direct pressure to the wound as possible and get the patient to a trauma center quickly. **This decision should be made during transport; transport shouldn't be delayed for extensive packing and repacking of the wound.**

9. **Apply a tight pressure dressing to the packed wound. Once the bleeding is controlled, consider splinting or immobilizing the area to avoid dislodging the packing during transport.**

10. Monitor wounds and/or dressings throughout transport for bleeding.

11. Document the wound and assessment and care in the patient care report (PCR).

Authorized Skills
Credential Level

Every credentialed provider that delivers medical care within the System must be able to perform skills consistent with the expectations of their system credential. Each Credential level builds on all previous Credential levels (i.e., EMT-Intermediate is responsible for all System Responder, EMT-B & EMT-I skills). The following defines the approved skills by credential level for Providers in the ATCEMS System. Providers/Responders "**must not**" practice outside their System Credentialed Scope of Practice.

The following skills/interventions are authorized by Credential Level in our System:

Emergency Medical Dispatch (EMD) Credentials

- Pre-arrival instructions as defined by MPD
- Determination of response codes by MPD
- Post-dispatch instructions
- Determination of obvious death by MPD

System Responder Credential (DSHS ECA or EMT-B)

- Patient Assessment
- Spinal Motion Restriction
- CPR/AED application
- Oropharyngeal airway
- Oropharyngeal suctioning
- Nasopharyngeal airway
- Pulse Oximetry
- External Patient Cooling
- Kendrick Traction Device (KTD)
- BURP Procedure
- Bag-valve Mask Device
- Wound Packing (Junctional/Extremity)
- Blood Glucose Assessment
- Aspirin
- Oral glucose administration
- Bandaging/Splinting
- Emergency Childbirth
- Patient Asst. Epinephrine Auto-injector
- Oxygen administration
- Tourniquet
- Pelvic Binder (Sam Sling)
- Determination of obvious death
- Impedence Threshold Device

(**DSHS EMT – B Only** Assist patient with prescribed medications: SL NTG, MDI)

Emergency Medical Technician – Basic Credential (Enhanced Skills/Medications)

All System Responder requirements/skills/interventions plus:

Medication administration: all medications and routes as outlined in System Responder and EMT-B level Guidelines

- Small volume nebulizer
- Epinephrine IM 1mg/mL (draw and inject)
- Adult BIAD in Cardiac Arrest only
- 12 Lead ECG Placement
- Continuous Positive Airway Pressure (CPAP) device
- 12 Lead ECG acquisition if trained

Upon decision by a Credentialed Intermediate or Paramedic Provider/Responder to administer PO, SL, Topical, or Nebulized Medications per Guideline; an EMT-B Credentialed Provider/Responder is approved to facilitate the physical delivery of these medications.

EMT-B Transport Qualified Providers are authorized to prepare medications during Cardiac Arrest and:

- Administer: Ipratropium Bromide (Atrovent)

Authorized Skills
Credential Level

Emergency Medical Technician – Intermediate Credentials
All System Responder and EMT-B requirements/skills/interventions plus:
Medication administration: all medications and routes as outlined in System Responder, EMT-B and EMT-I level Guidelines

- Peripheral intravenous access (IV) (No EJ)
- Intranasal Medication Route (IN)
- Tracheal suctioning
- Intramuscular Injection Medication Route
- FBAO with direct laryngoscopy
- Intraosseous access (IO) (Cardiac Arrest only)
- Gastric tube insertion
- End-tidal CO2 assessment
- Adult BIAD Airway
- Eye Irrigation with Lidocaine

Paramedic
All System Responder, EMT-B, EMT-I requirements/skills/interventions plus:
Medication administration: all medications and routes as outlined in System Responder, EMT-B, EMT-I and Paramedic Guidelines

- Pleural decompression
- Manual cardioversion, defibrillation and pacing
- Therapeutic Hypothermia (ROSC)
- Nasotracheal intubation
- Cetacaine (Hurricane topical anesthetic spray)
- Needle cricothyrotomy (Pedi)
- External jugular vein cannulation
- Determination of Death Pronouncements
- ECG monitoring (3, 4 and 12 Lead) and interpretation
- Alternate vascular access (indwelling catheter)
- Flex guide Endotracheal Tube Introducer (a.k.a. gum-elastic bougie)
- Orotracheal Intubation
- Topical nasal vasoconstrictor
- Beck Airway Airflow Monitor (BAAM)
- Surgical cricothyrotomy
- King Vision if trained and equipped