Status **Active** PolicyStat ID **18066960**

Origination	04/2025
Last Approved	04/2025
Effective	04/2025
Last Revised	04/2025
Next Review	04/2028

Contact	Stephanie Spain: Trauma Prgm Mgr Adult
Area	Trauma Surgical Critical Care
Applicability	Tennessee Hospitals ONLY

Enhanced Operative Intervention For Peripheral Vascular Injury Guideline

1. Process/Procedure Description

Peripheral vascular injuries constitute a surgical emergency due to ischemic limb loss and hemorrhage. Timely deployment to the operating room (OR) is essential for best outcomes. Vascular surgeons are the technical experts in this area but are not always immediately available due to their expertise in many other time sensitive areas. Taking into consideration these concerns, this guideline outlines a course of action for trauma surgeon initial stabilization with a vascular shunt.

2. Who Should Read This Process/Procedure?

Trauma Surgeon Attending Physicians, Surgical Residents/Fellows, Vascular Surgeon Attending Physicians, Trauma Services, Trauma Critical Care Nurse Clinicians

3. Definitions

PVI - Peripheral Vascular Injury: Injury to a named artery in the upper or lower extremity.

JVI - Junctional Vascular Injury: Injury to the external iliac artery or proximal common femoral artery at the inguinal ligament or subclavian or brachial artery where a tourniquet or direct pressure does not adequately control blood loss.

4. Process/Procedure

A. If there is boney instability notify orthopedics and follow the Extremity Vascular Trauma guideline in conjunction with the following procedures.

B. For stable patients with preserved arterial flow and controlled bleeding, consult Vascular

Surgery for further management plan which may include observation in the ICU with or without anticoagulation or planned intervention in the endovascular OR.

C. For patients with external hemorrhage requiring manual control or a frankly ischemic limb, notify the on-call Vascular Surgeon of the injury and need for emergent operative intervention.

D. If the vascular surgeon is immediately available, they can assume full responsibility including the decision to use the endovascular room and vascular call team provided the patient is stable without ongoing blood loss.

E. For exsanguinating JVI the trauma surgeon should notify the vascular surgeon and take the patient emergently to the designated Trauma OR after the necessary workup. For JVI at the inguinal ligament, consider retroperitoneal iliac control or contralateral Zone 3 REBOA placement. For exsanguinating upper extremity JVI, position the patient on the OR table so that fluoroscopy can be performed around the chest and shoulder in case proximal endovascular control is indicated. Be prepared to perform a sternotomy with cervical extension or a high left anterior thoracotomy for proximal control depending on the scenario.

F. For patients with PVI above the knee or elbow and limb ischemia or active bleeding, the trauma surgeon on duty can take the patient emergently to the designated Trauma OR and perform proximal and distal control, thrombectomy as indicated and place a temporary vascular shunt.

G. If flow to the extremity is reestablished, timing of definitive vascular repair can be discussed with vascular surgery. Warming and further resuscitation in the ICU may be appropriate. Definitive repair should usually be undertaken within 24 hours.

H. Systemic anticoagulation with heparin during shunt dwell time is up to the discretion of surgeon of record.

I. Fasciotomies should be used liberally for ischemic times > 2 hours.

5. References:

1. Fox CJ, Feliciano DV, Hartwell JL et. al. Extremity vascular injury: A Western Trauma Association critical decisions algorithm. J Trauma Acute Care Surg; 2023: 265-269.

2. Inaba K, Aksoy H, Seamon MJ et. al. Multicenter evaluation of temporary intravascular shunt use in vascular trauma. J Trauma Acute Care Surg; 2016: 359-364.

Approval Signatures

Step Description	Approver	Date
VP Approval	Jessica Holladay: VP & ACNO Surg & Trauma Svcs	04/2025
Trauma Services Committee Approval	Stephanie Spain: Trauma Prgm Mgr Adult	04/2025

Applicability

Erlanger Health - Baroness, Erlanger Health - Bledsoe, Erlanger Health - Children's, Erlanger Health - East, Erlanger Health - North, Erlanger Health - System