Pulmonary Embolism Management Guideline

Background: Pulmonary embolism remains a significant cause of mortality in the trauma population. Prevention of PE via appropriate chemical and mechanical DVT prophylaxis and early mobilization remain the mainstay of our prevention efforts. This guideline is designed to outline appropriate initial management of diagnosis of Pulmonary Embolism.

Patients initial chemical DVT prophylaxis should be managed in accordance with the Trauma service guidelines outline in the First Dose Lovenox guideline and DVT prophylaxis in TBI guideline.

Diagnosis:
CTA of the Chest is the definitive imaging study to diagnose a PE. A high index of suspicion for PE is required in the trauma population. PE should be included in the differential of patients with unexplained O2 requirement, increasing O2 requirements, new or persistent tachycardia and increasing dead-space ventilation by PaCO2/ETCO2 assessment.

Note: (PaCO2-ETCO2)/PaCO2 x 100% provides a dead space calculation.

Management:
PE confirmed with CTA:

1. Initiate therapeutic anticoagulation if no contraindication

   This may utilize heparin gtt, therapeutic lovenox, or DOAC depending on patients trauma burden and risk factors and should be determined by the Trauma Attending.

2. If therapeutic anticoagulation is contraindicating, obtain BLE U/S to assess for DVT and place IVC filter if DVT identified

If patient is clinically **unstable** (shock, pressor requirement, cardiac arrest, respiratory failure)

1. Continue stabilization efforts and consult PE response team (**PERT**) via hospital paging

   PERT assists with: anticoagulation recommendations, systemic thrombolysis, catheter directed thrombolysis +/- USAT, catheter based aspiration thrombectomy, VA ECMO, surgical pulmonary embolectomy

If patient is clinically **stable**

1. Risk stratify using sPESI*

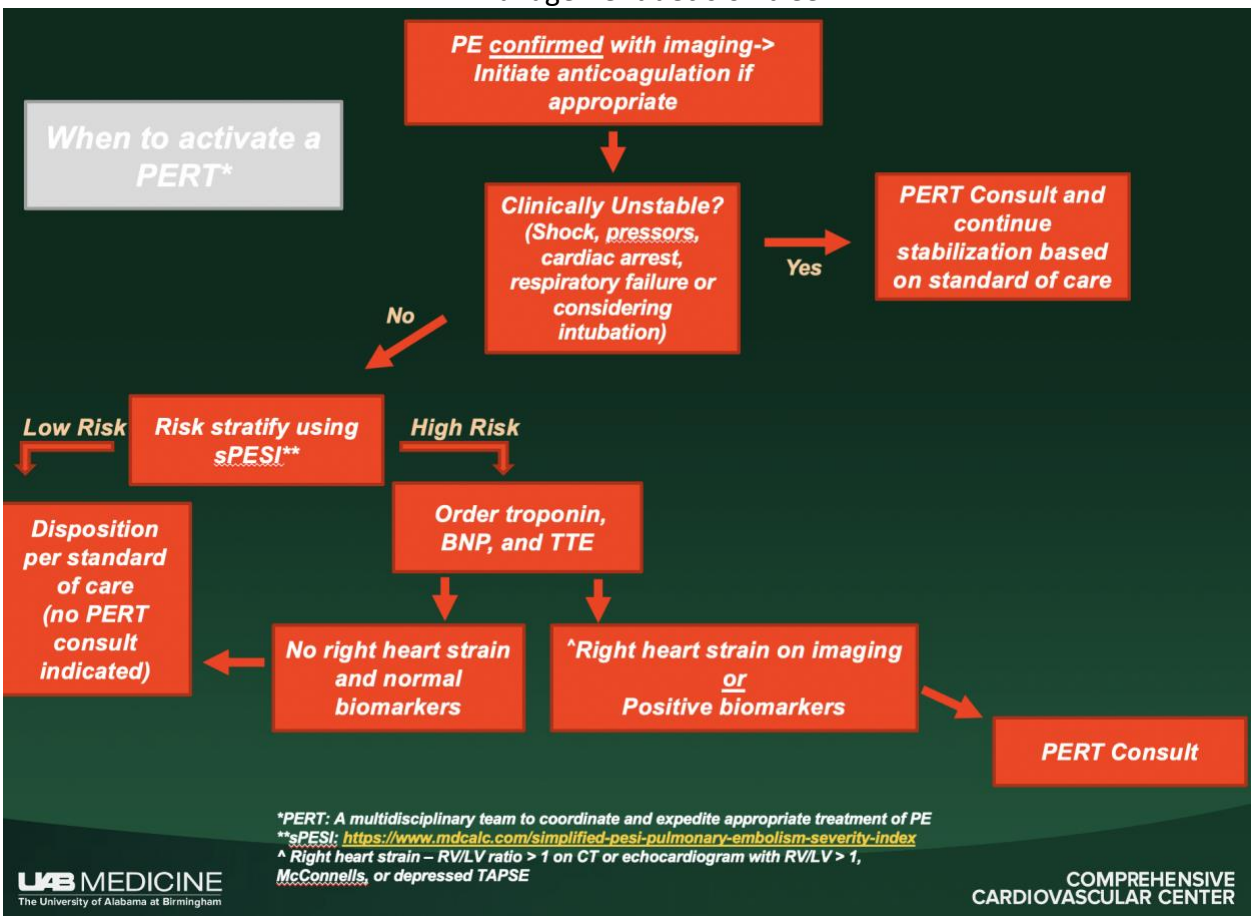
   https://www.mdcalc.com/simplified-pesi-pulmonary-embolism-severity-index

   High risk by sPESI:
1. Obtain troponin, BNP and TTE
2. If **right heart strain** on imaging or **positive biomarkers** obtain **PERT consult**

Low risk by sPESI:

1. Continue standard management and additional work-up with TTE and biomarkers is not indicated.

PE management decision tree



Note: PERT activation occurs through paging operator. If issues obtaining on call PERT, backup is Dr. Sam McElwee at 256-613-6856