

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.

Diagnosis:

CTA of the Chest is the definitive imaging study to diagnose a PE. 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: $(\text{PaCO}_2 - \text{ETCO}_2) / \text{PaCO}_2 \times 100\%$ 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 patient's underlying diagnosis and risk factors and should be determined by the SICU Attending in conjunction with the primary service.

2. If therapeutic anticoagulation is contraindicated, obtain bilateral lower extremity duplex ultrasound to assess for DVT and place IVC filter if DVT identified

If patient is clinically **unstable** (i.e., 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*

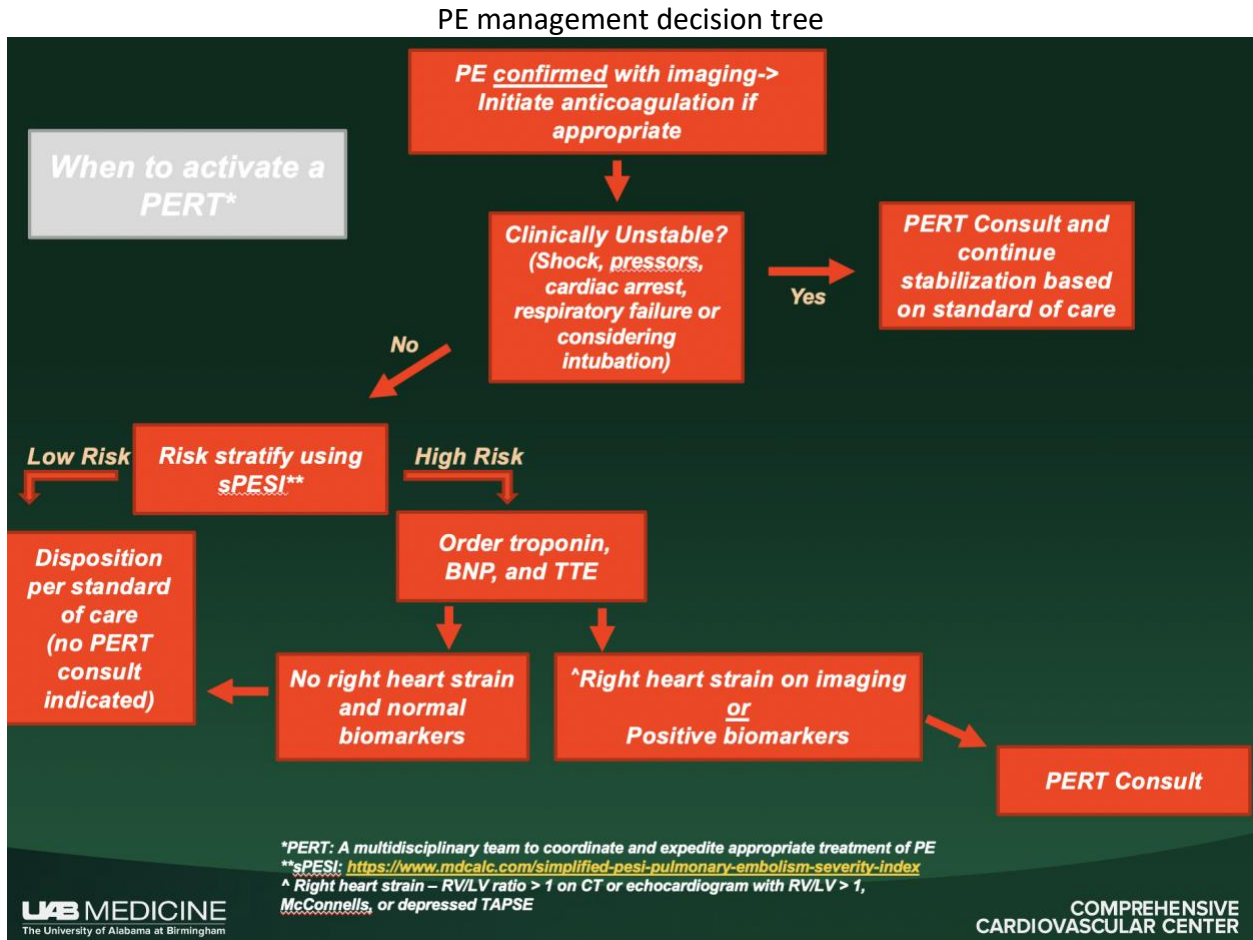
*<https://www.mdcalc.com/simplified-psi-pulmonary-embolism-severity-index>

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.



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