



3.2 Study Population

Emergency department patients with new or recurrent VTE deemed low-risk by modified Hestia or clinician discretion and sPESI (-).

3.2.1 Inclusion Criteria

Criteria for initial VTE diagnosis require a filling defect interpreted as positive on computerized tomographic pulmonary angiography, a ventilation-perfusion lung scan interpreted as high probability, or an incompressible vein observed on venous ultrasound of an extremity or jugular vein. Screening includes electronic surveillance of the "VTE home treatment order set" which ensures low risk criteria and then provides appropriate medication, including apixaban as an option, and discharge instructions. Enrollment occurs at the time of written informed consent.

1. Patients must be **low risk**, as defined by either A or B below:

A. The modified Hestia criteria:

- Systolic blood pressure > 100 mm Hg
- No thrombolysis needed
- No active bleeding
- SaO₂ >94% while breathing room air
- Not already anticoagulated
- No more than two doses of IV narcotics in the emergency department
- Other medical or social reasons to admit
- Creatinine clearance >30mL/min
- Not pregnant, severe liver disease or heparin induced thrombocytopenia

OR

B. The physician opinion that a patients' overall social and medical situation is favorable for home treatment and the patient has a zero score on the simplified pulmonary embolism severity index (sPESI).

All of the following must true:

- Age < 81 years
- No history of cancer
- No history of heart failure or chronic lung disease
- Pulse < 110 beats/min
- SBP > 99 mm Hg
- O₂ sat >89%

We have chosen either criteria because both have been found equal in terms of safety for outpatient treatment of PE.^{6,22} Hestia includes implicit questions that most emergency physicians would use as criteria for discharge (e.g., overall medical status and social situation), whereas sPESI does not. For that reason, we have added the additional gestalt assessment question about physician discretion.

2. Patients must be discharged in <24 hours after triage in an ED visit with diagnosis of VTE using objective criteria in the emergency department.

3.2.2 Exclusion Criteria

- VTE diagnosis while taking anticoagulants with evidence of compliance (e.g., physician opinion that patient is taking a Eliquis®, Xarelto® or Pradaxa®, low molecular weight heparin injections or warfarin as prescribed for any condition)
- Sensitivity or contraindication to use of apixaban
- Physician judgment that bleeding risk is high OR Ruiz-Gimenez (RIETE) score >2.³

<https://www.mdcalc.com/riete-score-risk-hemorrhage-pulmonary-embolism-treatment> (Note that several criteria are already excluded by Hestia):

- Recent major bleeding, 2 points
- Creatinine levels >1.2 mg/dl, 1.5 points
- Anemia, 1.5 points
- Cancer, 1 point
- Clinically overt PE, 1 point
- Age >75 years, 1 point