Acute PE Protocol

Diagnosed Acute PE (symptoms <14 days)

Any of the following criteria met?
- HR < 40 with evidence of shock
- SBP < 90 for at least 15 minutes or requiring inotropic support
- Pulselessness

YES → Go to Massive PE protocol
NO → Evidence of right heart strain (BOX A)

YES → Go to Submassive PE protocol
NO → Is patient appropriate for outpatient therapy? Go to DVT/PE Outpatient Management Protocol

BOX A
- RV dilation or RV dysfunction on echo
- RV dilation on CT
- BNP > 90 pg/mL
- NTproBNP > 500 pg/mL
- New complete or incomplete RBBB
- Anteroseptal ST elevation or depression
- Anteroseptal T wave inversion
- Troponin I > 0.4 ng/mL
- Troponin T > 0.1 ng/mL
**Diagnosed Massive PE**

1. SBP < 90 for at least 15 minutes or requiring inotropic support not due to cause other than PE such as:
   - Arrhythmia
   - Hypovolemia
   - Sepsis
   - LV dysfunction
2. Pulselessness
3. Profound bradycardia (HR < 40 with signs and symptoms of shock)

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**NO**

**YES**

**Start heparin:**
- 80 U/kg bolus
- 18 U/kg/hr infusion
- Goal hPTT 90-130
- Use Heparin Weight-based Protocol Orderset

**Contraindication to thrombolysits (Box B)**

**NO**

**tPA per pharmacy protocol:**
- > 65kg: 100mg/2hr
- < 65kg: 50mg/2hr

**Admit to ICU**

**Discuss other interventions with PERT:**
- Risks vs. benefits of systemic thromolytics
- Catheter-directed fibrinolysis
- Surgical or catheter embolectomy
- ECMO

**Continued reassessment while in ED**

**BOX B: Contraindications to tPA (from ACC/AHA guidelines)**

- Any prior ICH
- Known intracranial cerebrovascular disease (i.e. AVM)
- Known malignant intracranial neoplasm
- Ischemic stroke within 3 months
- Suspected aortic dissection
- Recent surgery on spinal cord or brain
- Active bleeding or bleeding diatheses
- Recent closed head/facial trauma w/ radiographic injury of bony fractures or brain injury

**Admit to ICU**
**Submassive PE Protocol**

**Diagnosed Submassive PE**

Acute PE (<14 days) w/o sustained hypotension with any of the following:
- RV dilation or RV dysfunction on echo
- RV dilation on CT
- BNP > 90 pg/mL
- NTproBNP > 500 pg/mL
- New complete or incomplete RBBB
- Anteroseptal ST elevation or depression
- Anteroseptal T wave inversion
- Troponin I > 0.4 ng/mL
- Troponin T > 0.1 ng/mL

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**Activate PERT**

**Start Heparin:**
- 80 U/kg bolus
- 18U/kg/hr infusion
- Goal hPTT 90-130
- Use Heparin Weight-based Protocol Orderset

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**Lower Risk**

- Radiographic RV dysfunction
  - OR
  - Troponin T > 0.1 ng/mL
    - OR
    - BNP > 90 pg/mL
      - OR
      - NTproBNP > 500 pg/mL

  **Admit to Step Down vs ICU after further discussion with PERT**

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**Higher Risk**

- Radiographic RV dysfunction
  - AND
  - Troponin T > 0.1 ng/mL
    - OR
    - BNP > 90 pg/mL
      - OR
      - NTproBNP > 500 pg/mL

  **Discuss other interventions with PERT:**
  - Catheter-directed fibrinolysis
  - Surgical or catheter embolectomy
  - Consider systemic thrombolytics