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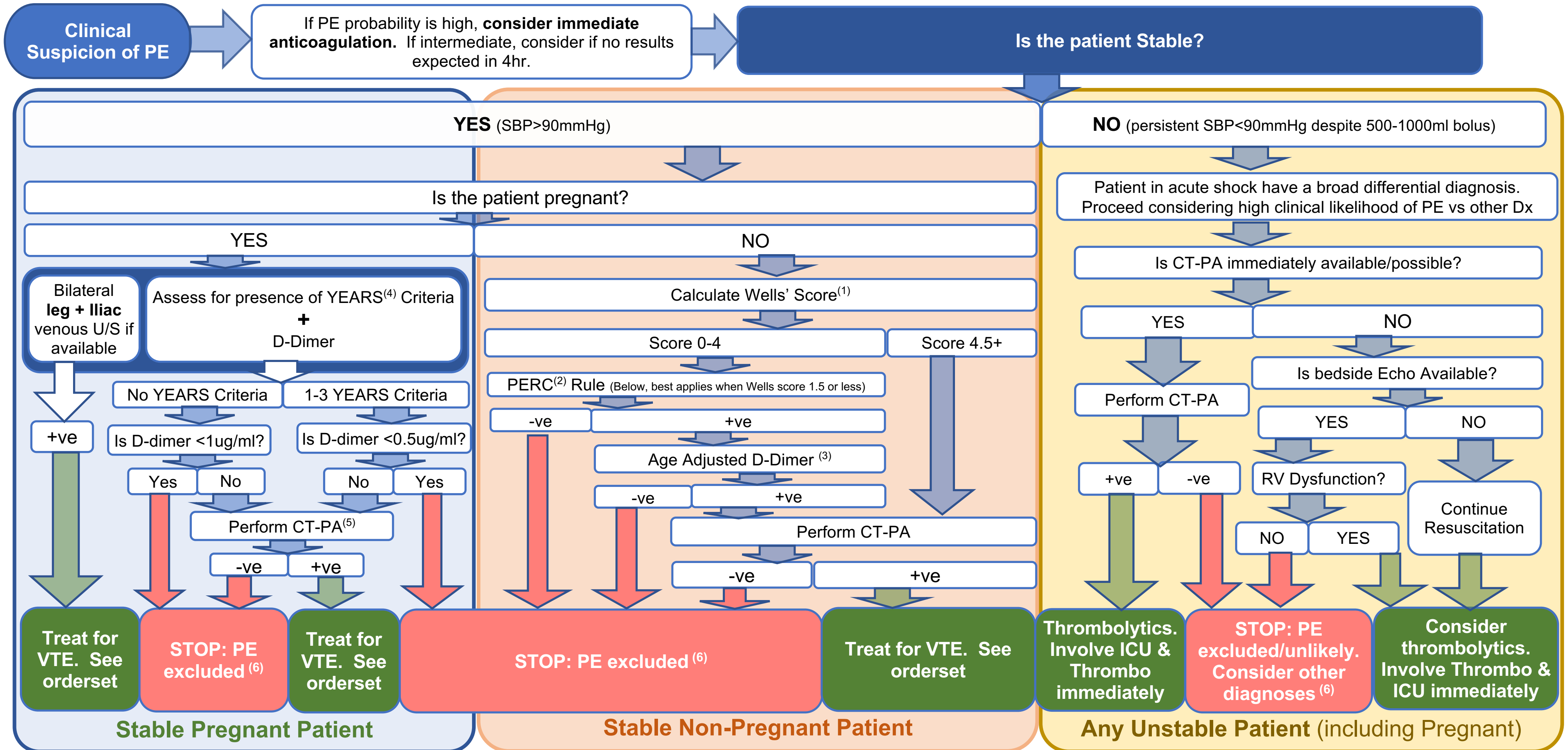
Emergency Department Pulmonary Embolus Assessment/Diagnosis Algorithm



(1) Wells Criteria

Criteria	Points
Clinical signs and symptoms of DVT	☐ +3
PE is #1 diagnosis OR equally likely	☐ +3
Heart rate > 100	☐ +1.5
Immobilization at least 3 days OR surgery in the Previous 4 weeks	☐ +1.5
Previous, objectively diagnosed PE or DVT	☐ +1.5
Hemoptysis	☐ +1
Malignancy w/ treatment within 6 months or palliative	☐ +1
TOTAL	______

(2) PERC Rule, is negative when all apply:
best applies when Wells score 1.5 or less

Criteria
Age 50yr or under
Heart Rate 100 or less
Room air Saturation more than 95%
No unilateral leg swelling
No hemoptysis
No Surgery or Trauma in past 4wks requiring GA
No prior DVT or PE
No exogenous hormone use

(3) Age-Adjusted D-Dimer:

Age <50yr:
Cutoff = 0.5 ug/ml
Age>50:
Cutoff = Age/100 ug/ml

(4) YEARS Criteria

Any clinical signs of DVT
Hemoptysis
PE is the most likely diagnosis

- **(5)** V/Q Scanning: In pregnant patients with normal CXR, especially those with higher breast cancer risk, V/Q scan can be considered instead of CT-PA. The reduced radiation dose to the breasts will have to balanced with reduced availability, reduced diagnostic utility, delayed testing with interval anticoagulation, and the need for admission or O/P care.
- **(6)** Dx is excluded for current ED workup purposes but might still require further evaluation by ICU/Thrombo/Med.
- **This algorithm is not intended to replace clinical judgment**
- Abbreviations: PE= Pulmonary Embolism, DVT=Deep Vein Thrombosis, CT-PA=CT Angiography of the Pulmonary Artery

- Thrombolytics Dose: tPA 10mg Push then 90mg infusion over 2h IV (In arrest 50mg in 2min, repeat in 15 min if no ROSC)
- References: ***1*** British Thoracic Society Standards of Care Committee Pulmonary Embolism Guideline Development Group (2003). British Thoracic Society guidelines for the management of suspected acute pulmonary embolism. *Thorax*, *58*(6), 470–483. ***2*** Chan WS, et al. (2014). Venous thromboembolism and antithrombotic therapy in pregnancy: SOGC Clinical Practice Guideline. *J Obstet Gynaecol Can,* 36(6):527–553. ***3*** Thrombosis Canada. (2018, Sept 17). *Pregnancy: Diagnosis of DVT and PE*. Retrieved from: https://thrombosiscanada.ca/wp-content/uploads/2019/04/Pregnancy-Diagnosis-of-DVT-and-PE-05Oct18.pdf ***4*** Van der Pol LM, et al. (2019, Mar 21). Pregnancy-Adapted YEARS Algorithm for Diagnosis of Suspected Pulmonary Embolism. *N Engl J Med,* 380(12):1139-1149.

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