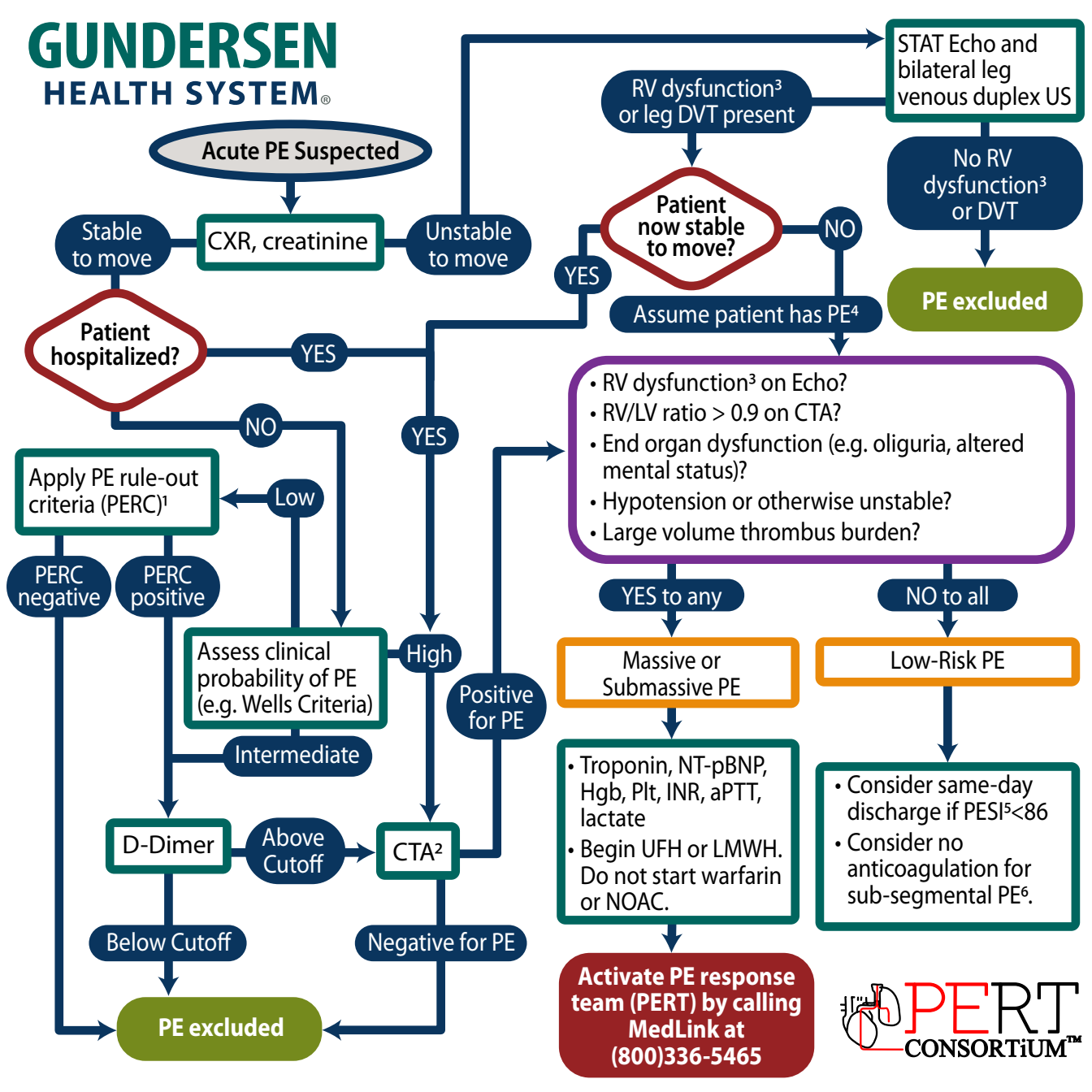
GUNDERSEN
HEALTH SYSTEM®
Acute PE Suspected
Stable to move
CXR, creatinine
Unstable to move
STAT Echo and bilateral leg venous duplex US
RV dysfunction[3] or leg DVT present
No RV dysfunction[3] or DVT
Patient now stable to move?
NO
YES
PE excluded
Assume patient has PE[4]
Patient hospitalized?
YES
NO
YES
• RV dysfunction[3] on Echo?
• RV/LV ratio > 0.9 on CTA?
• End organ dysfunction (e.g. oliguria, altered mental status)?
• Hypotension or otherwise unstable?
• Large volume thrombus burden?
Apply PE rule-out criteria (PERC)[1]
Low
PERC negative
PERC positive
Assess clinical probability of PE (e.g. Wells Criteria)
High
Intermediate
Positive for PE
YES to any
NO to all
Massive or Submassive PE
Low-Risk PE
D-Dimer
Above Cutoff
CTA[2]
• Troponin, NT-pBNP, Hgb, Plt, INR, aPTT, lactate
• Begin UFH or LMWH. Do not start warfarin or NOAC.
• Consider same-day discharge if PESI[5]<86
• Consider no anticoagulation for sub-segmental PE[6].
Below Cutoff
Negative for PE
Activate PE response team (PERT) by calling MedLink at (800)336-5465
PE excluded
PERT CONSORTIUM™

FOOTNOTES

1. PE rule-out criteria (PERC) can be performed on patients at low-risk (<10% risk of PE) for PE to reduce the number of unnecessary d-dimer tests. Acute PE can be excluded in low-risk patients who are PERC-negative. Patients are considered "PERC positive" and require a d-dimer test to exclude acute PE if any of the following are true:
   - Age≥50
   - HR≥100 bpm
   - SaO2≤94%
   - Unilateral leg swelling
   - Hemoptysis
   - Recent surgery or trauma
   - Prior history of VTE
   - OCP/exogenous estrogen us
2. Special populations: In patients unable to receive IV iodinated contrast dye, consider VQ scan if CXR is normal. If VQ scan is positive, risk-stratify PE severity with troponin and BNP. If CXR is abnormal, begin with bilateral leg venous duplex US and, if positive, risk stratify with troponin and BNP. In pregnant patients, bilateral leg venous duplex US should be performed instead of CTA or VQ. If positive, then risk stratify with troponin and BNP. If negative then proceed with CTA. Radiation dose to fetus is lower with modern CTA than with VQ scan.
3. Echocardiographic criteria of RV dysfunction include RV dilation, increased end-diastolic RV–LV diameter ratio >0.9; hypokinesis of the free RV wall; increased velocity of the tricuspid regurgitation jet
4. RV infarction due to coronary artery disease or ascending aortic dissection can present similarly to acute PE with cor pulmonale. If patient cannot undergo CTA, and RV infarction is suspected, right-sided EKG leads may be helpful. If ascending aortic dissection is suspected, and patient cannot undergo CTA, perform bedside echocardiography.
5. In the setting of a patient with renal failure or severe comorbidities, clinical judgement should be used over the PESI, as these patients were excluded in the validation study. PESI is meant to aid in decision making, not replace it. Clinical judgement should always take precedence
6. ANTICOAGULATION FOR SUB-SEGMENTAL PE
   Anticoagulation for sub-segmental PE is recommended if any of the following are true
   - DVT in popliteal vein or higher
   - Intermediate or High risk for recurrent VTE
   - Hospitalized
   - Reduced mobility
   - Active cancer
   - No identifiable reversible risk factor , such as recent surgery
   - Low cardiopulmonary reserve
   - Marked symptoms that cannot be attributed to another condition other than PE.
   - Risk of untreated sub-segmental PE outweighs bleeding risk on anticoagulation

   If avoidance of anticoagulation is an option after shared decision-making between the provider and patient, then:
   - Bilateral lower extremity venous duplex US must be negative for acute DVT. Repeat weekly for 1-2 weeks as part of clinical surveillance.
   - Acute DVT should also be excluded in other high-risk areas (i.e. upper extremities in patients with central venous catheters)
   - If symptoms worsen or persist, then patient needs to return for re-evaluation