

# FOCUS may lower PE diagnosis in ED patients with suspected PE and abnormal vitals

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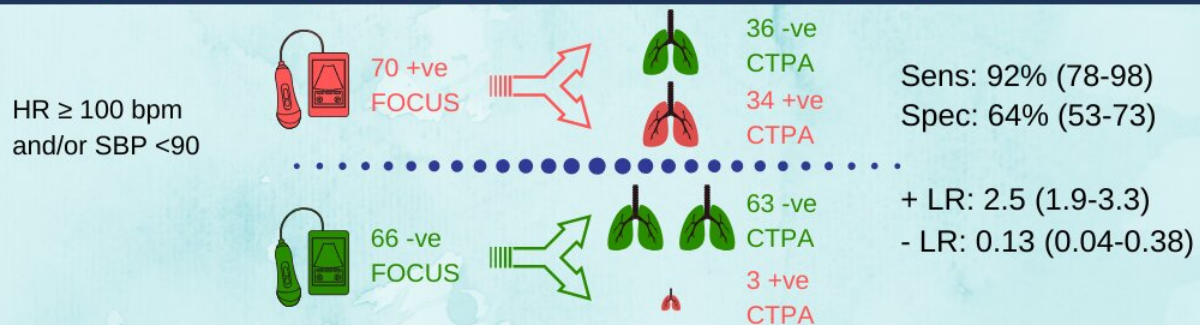
## Focused Cardiac Ultrasound for Pulmonary Embolism in ED patients with abnormal vitals



Prospective observational multicenter cohort study, 136 patients

Adults  $\geq 18$ y with heart rate  $\geq 100$  bpm and/or systolic blood pressure  $<90$  mmHg undergoing CTA for possible PE.  
Exclusions: Prisoners, wards of the state, non-English speaking patients, those in whom US images could not be obtained

**Focused cardiac ultrasound (FOCUS)** included assessment for: right ventricular dilation, McConnell's sign, septal flattening, tricuspid regurgitation, and tricuspid annular plane systolic excursion.



Sensitivity analysis: patients with HR  $\geq 110$  bpm

Sens: 100% (88-100) | Spec: 63% (51-74)  
+ LR: 2.7 (2.0-3.7) | -LR: undefined

Daley doi 10.1111/acem.13774

Sens: sensitivity Spec: specificity LR: Likelihood ratio

A prospective observational multicenter cohort study of 136 patients. Credit: Josh Lupton, MD, Oregon Health & Science University and resident editor, Academic Emergency Medicine journal

Focused cardiac ultrasound (FOCUS) performed by emergency physicians with advanced training in emergency ultrasound may significantly lower the likelihood of the diagnosis of pulmonary embolism (PE) in most patients who are suspected of PE and have abnormal vital signs. This was especially true in those patients with a heart rate > 110 beats/min. That is the conclusion of a study to be published in the November 2019 issue of *Academic Emergency Medicine* (AEM), a journal of the Society for Academic Emergency Medicine (SAEM).

The lead author of the prospective observational multicenter cohort study is James I. Daley MD, MS, MPH, an instructor in the Department of Emergency Medicine at Yale School of Medicine. Daley et. al suggest that further study in a larger cohort of patients (which would yield narrower 95% [confidence intervals](#)) is required before focused cardiac ultrasound can be used to reliably exclude pulmonary embolism in this patient population.

The results suggest that FOCUS can be an important tool in the initial evaluation of emergency department (ED) patients with suspected PE and abnormal vital signs.

Commenting on the study is Robert R. Ehrman, MD, MS, the director of emergency ultrasound research at Wayne State University School of Medicine/Detroit Medical Center in Detroit, MI:

"This is an important study as it is the first to demonstrate that point-of-care echocardiography can meaningfully reduce the likelihood of [pulmonary embolism](#) when clinical suspicion is high, potentially obviating the need for CT scanning in some patients. Moreover, the skills required to perform this exam are within the scope of all Emergency Physicians and thus the potential benefits at the population level are immense."

**More information:** James I. Daley et al, Increased Sensitivity of Focused Cardiac Ultrasound for Pulmonary Embolism in Emergency Department Patients With Abnormal Vital Signs, *Academic Emergency Medicine* (2019). [DOI: 10.1111/acem.13774](https://doi.org/10.1111/acem.13774)

Provided by Society for Academic Emergency Medicine

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