

# Bridging the gap: Predictors of anticoagulation persistence after pulmonary embolism

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## INTRODUCTION:

- Pulmonary embolism (PE) affects up to 900,000 people annually in the United States and is the third most common cause of cardiovascular death.<sup>1</sup>
- Advances in PE management include improvement in therapies but also treatment models like Pulmonary Embolism Response Team (PERT) and Anticoagulation (AC) clinics.<sup>2</sup>
- While PERTs improve acute care, persistence to AC is key to prevent recurrent VTE and reduce mortality. Persistence remains a challenge, especially in vulnerable populations.<sup>3</sup>
- Understanding the gaps that lead to poor persistence represents an opportunity to reduce morbidity and mortality related to PE.

## STUDY OBJECTIVE:

To evaluate predictors of 90-day persistence to anticoagulation after PERT activation.

## METHODS:

**Design:** Retrospective chart review

**Setting:** An urban academic safety-net hospital that employs both a multidisciplinary PERT and AC clinic

**Period:** May 2021 – December 2022

**Inclusion Criteria:** PERT Activation

**Exclusion Criteria:** Discharged to facility or AMA, prescription sent to outside pharmacy, lives greater than 50 miles away, death during hospitalization.

**Primary Outcome:** 90-day anticoagulation persistence.

**Secondary Outcomes:** Emergency department (ED) visits or hospitalizations within 90 days after PE.

## References:

1 Raskob GE, et al. Surveillance for deep vein thrombosis and pulmonary embolism: recommendations from a national workshop. Am J Prev Med. 2010 Apr;38(4 Suppl):S502-9. doi: 10.1016/j.amepre.2010.01.010. PMID: 20331950.

2 Kabrheil C, et al. A Multidisciplinary Pulmonary Embolism Response Team: Initial 30-Month Experience With a Novel Approach to Delivery of Care to Patients With Submassive and Massive Pulmonary Embolism. Chest. 2016 Aug;150(2):384-93. doi: 10.1016/j.chest.2016.03.011. Epub 2016 Mar 19. PMID: 27006156.

3 Kang HR, et al. Trajectories of adherence to extended treatment with direct oral anticoagulants and risks of recurrent venous thromboembolism and major bleeding. J Manag Care Spec Pharm. 2023 Nov;29(11):1219-1230. doi: 10.18553/jmcp.2023.29.11.1219. PMID: 37889866; PMCID: PMC10776268.

## CONCLUSION:

**In-system persistence to AC after pulmonary embolism was low.**

**Attendance at a dedicated AC clinic was the only significant predictor of persistence to AC, while PE severity, interventions, and social risk factors were not.**

**These findings highlight the potential impact of structured follow-up in improving AC persistence in high-risk populations.**

## RESULTS:

Figure 1. Pulmonary embolism management continuum

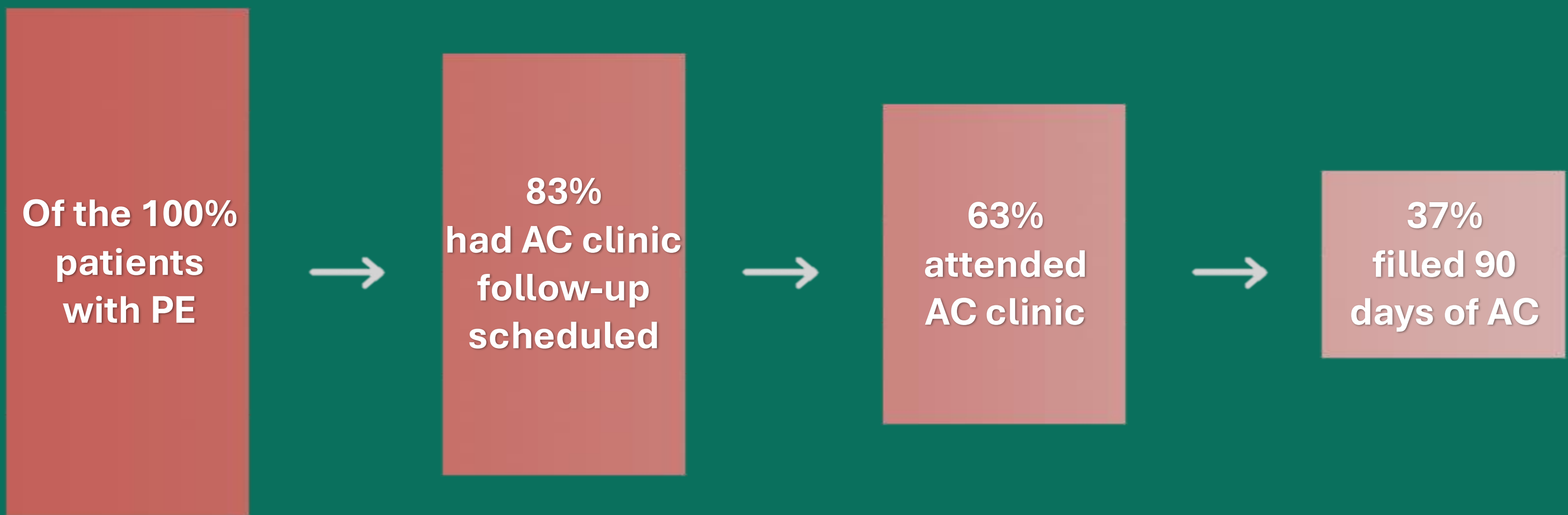
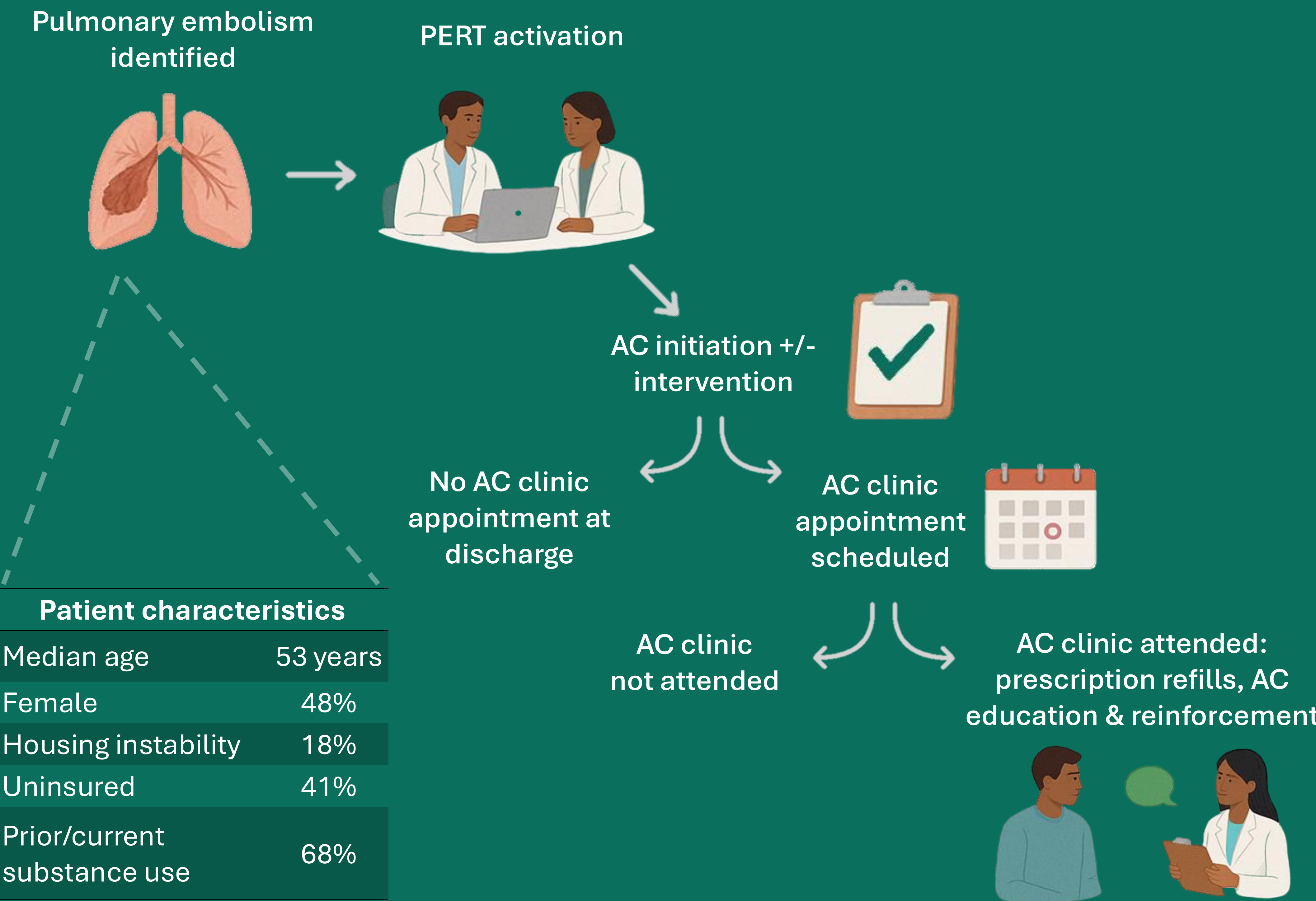


Figure 2. Cascade of care following pulmonary embolism



## RESULTS (continued):

PE characteristics	
Medically provoked	51%
Surgically provoked	17%
Unprovoked	31%

PE interventions	
Systemic thrombolysis	11%
Suction thrombectomy	11%
Catheter directed thrombolysis	5%

Anticoagulation initiated	
Apixaban	50%
Rivaroxaban	44%
Warfarin	6%

- Only 26.8% filled 90 days of AC.
- In univariate analysis, AC clinic attendance was significantly associated with 90-day AC fills (7.1% vs 12.5% vs 36.5%, respectively for not scheduled, no show, and visit completed patients (p=0.031).
- No association was found for PE severity, intervention type, clot burden, provocation status, sPESI score, housing instability, substance use, or insurance status.

Table 1. Univariate analysis of factors associated with 90-day anticoagulation persistence following pulmonary embolism

