

Underdocumented and Unaligned: Gaps in Intermediate-High Risk PE Risk Stratification and Inter-Specialty Variation in Decision-making



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Introduction

- Intermediate-high risk PE management varies significantly from monitoring to procedural intervention¹
- Lack of standardization may contribute to care inequities, as non-white and female intermediate-risk PE patients are less likely to receive advanced therapies and experience higher mortality²
- While clinical guidelines recommend standardized PE risk stratification tools (e.g., BOVA, sPESI/PESI), their real-world use remains unknown

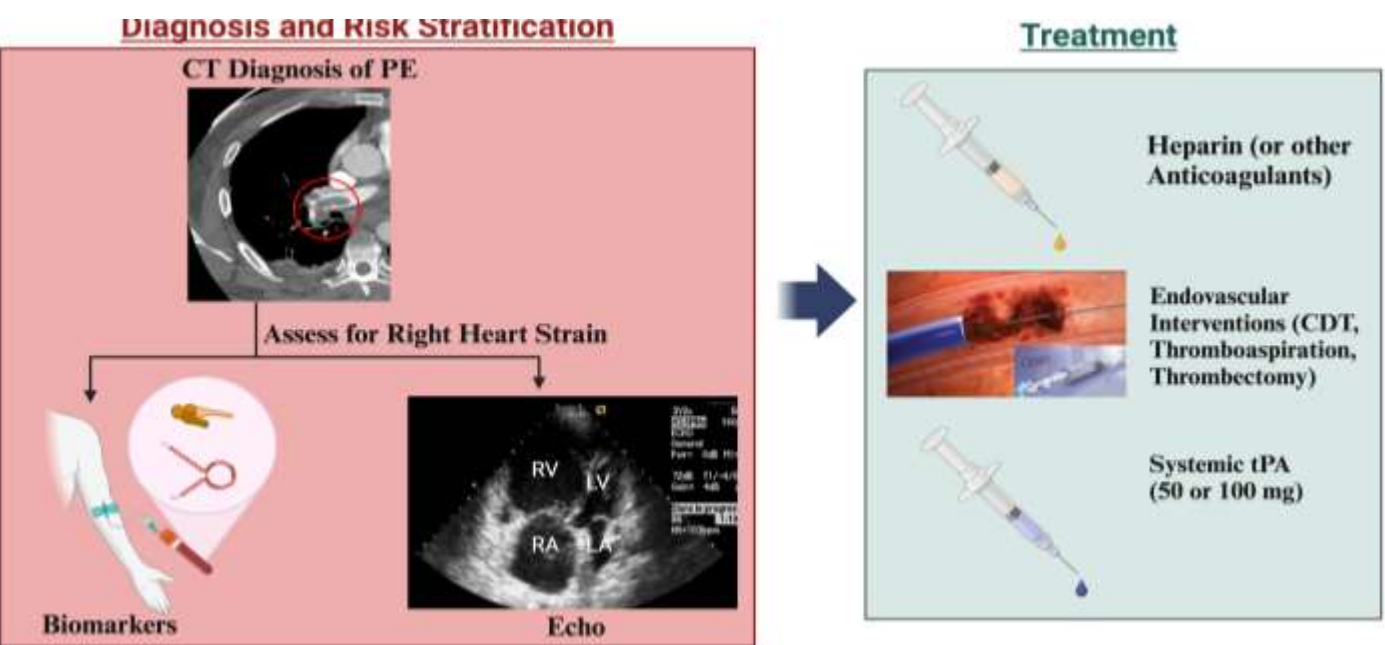


Fig 1. PE diagnosis, risk stratification, and treatment options

Methods

- A retrospective chart review of patients diagnosed with PE via chest CT at a single center, urban safety-net hospital from January-November 2024 identified intermediate-high risk cases via CHEST guidelines
- Use of risk stratification tools was assessed by searching clinical notes for BOVA, sPESI, and PESI
- A survey distributed to emergency medicine (EM), internal medicine (IM), interventional radiology (IR), and critical care physicians assessed for differences in diagnostic and treatment preferences and confidence in managing intermediate-high risk PE (i.e., PE with normotension, right heart strain, and elevated cardiac biomarkers) based on four clinical vignettes.

Results

- We identified 92 patients with PE, 23 (25%) of which were intermediate-high risk
- Of these, 14 (60.9%) lacked documented risk stratification. Intermediate-high cases (9/23) were less often risk-stratified compared to intermediate-low (15/20, $p = 0.018$) and high cases (8/9, $p = 0.010$)
- Risk stratification did not differ by race, ethnicity, or gender. Survey responses ($n = 18$) revealed a mean confidence score of 2.7/5 in managing intermediate-high risk PE

Fig 2. Distribution of risk stratification methods among patients with intermediate-high risk pulmonary embolism (PE) ($n=23$)

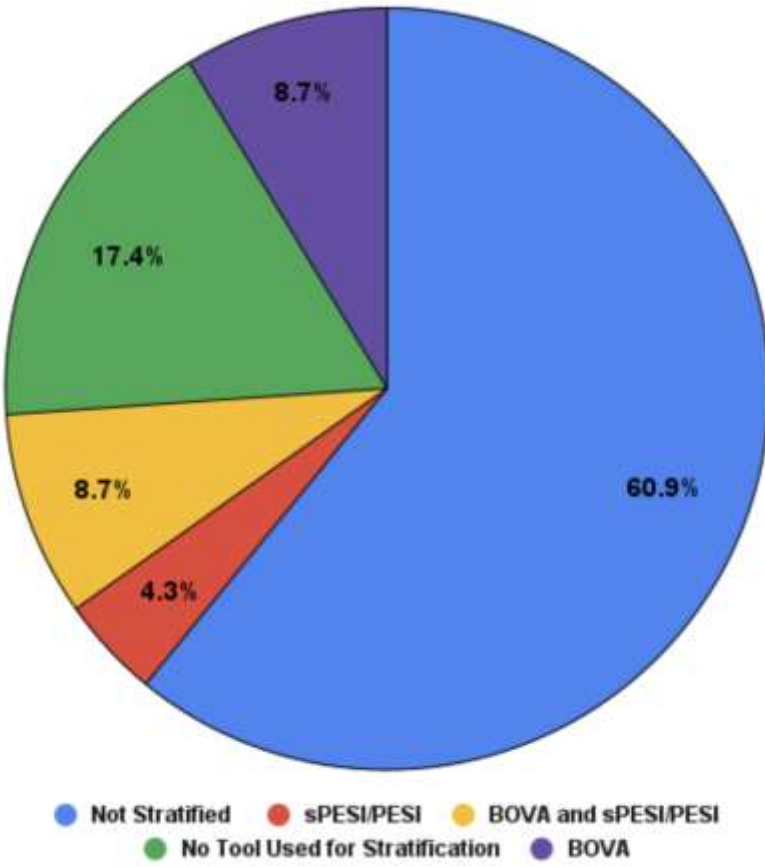


Fig 3. Swim Lane Diagram

* Non-standardized evaluation, can be performed by attending or resident

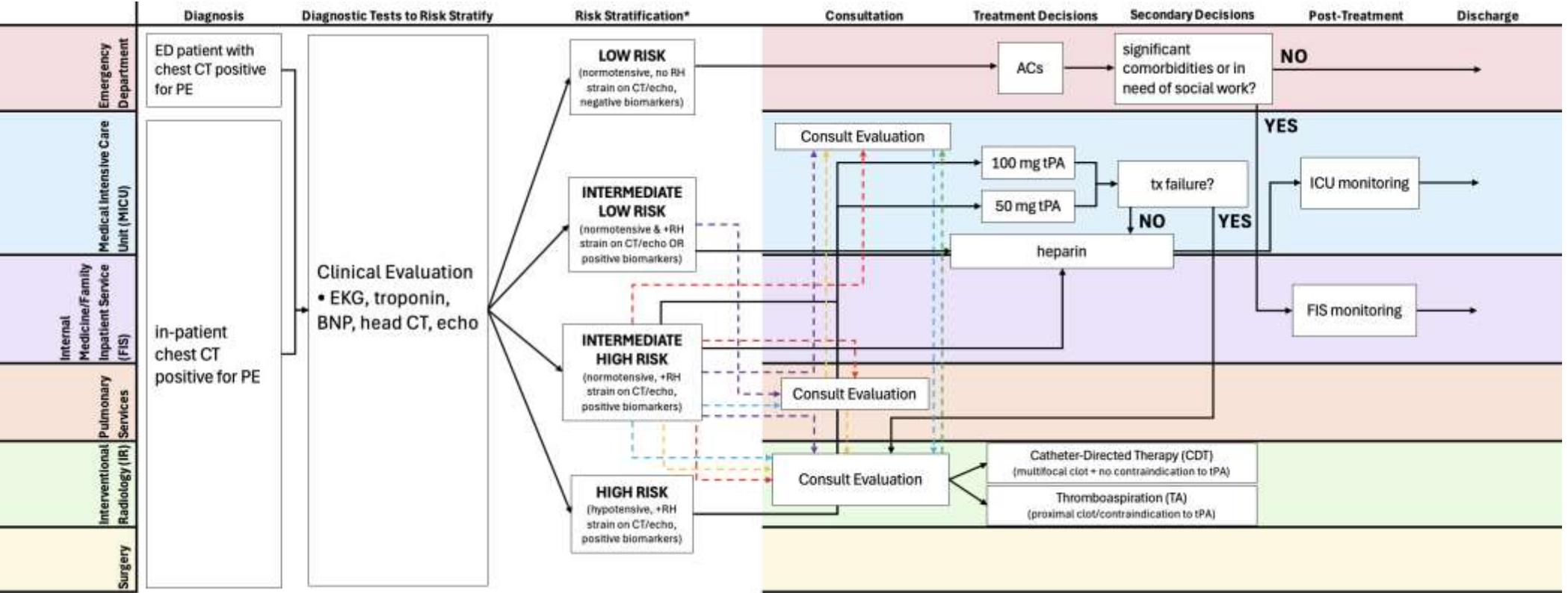
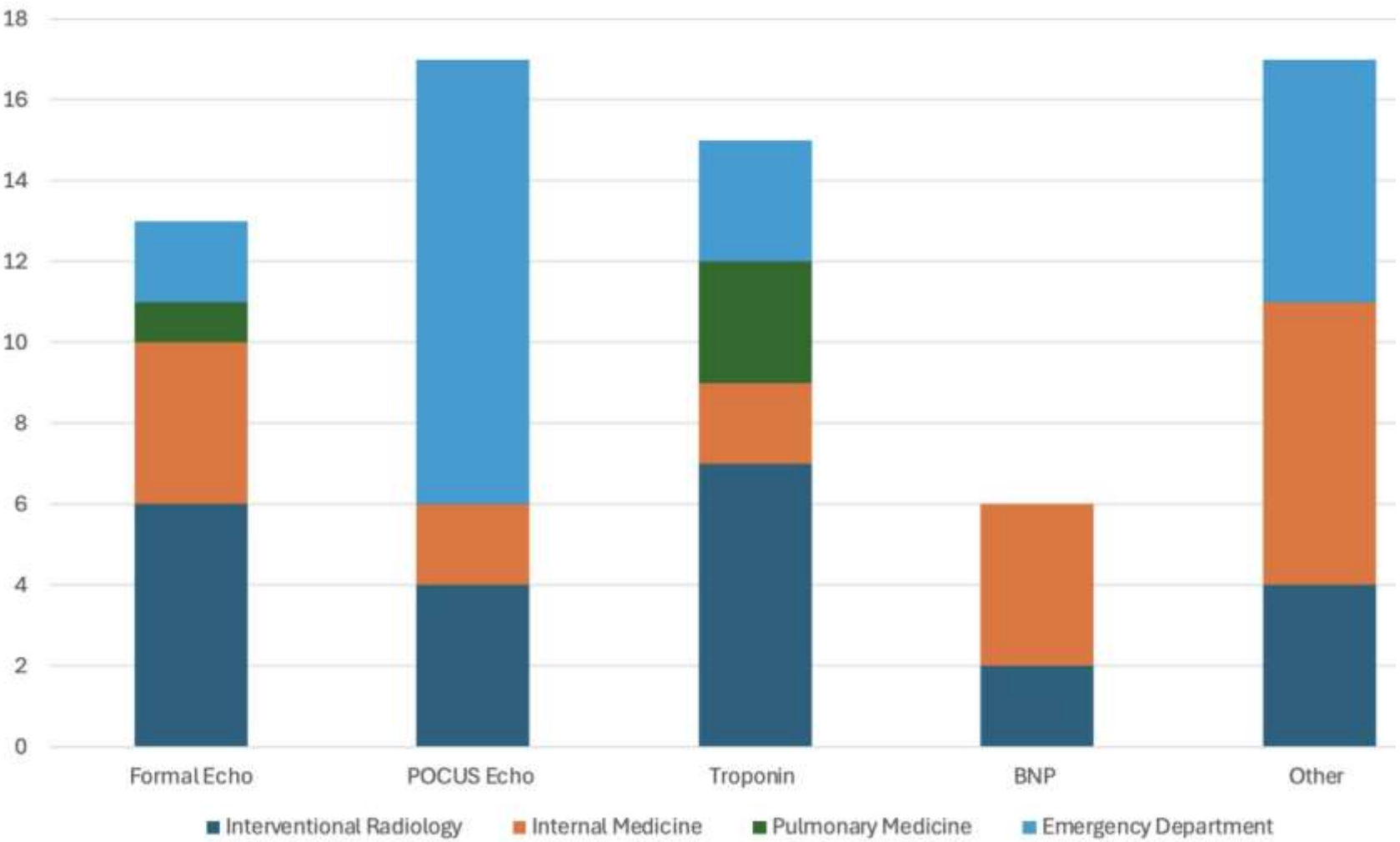


Fig 4. Departmental Diagnostic Marker Preferences



- Variability was observed in both intra and inter-departmental management strategies for intermediate risk PE across all four cases.
- The average confidence level in managing intermediate high-risk PE was recorded at 2.7 out of 5.
- Only 42% of providers utilized a risk stratification tool, with the most common being PESI/sPESI.
- There was variability in diagnostic markers used within departments (Figure 6): POCUS Echo was predominantly used in the ED, while Interventional Radiology favored formal echo and troponin levels.

Discussion

- High variability of inter-departmental management strategies, including for both diagnostic tools and treatment decisions, coupled with low confidence levels
- Multiple pathways for PE risk stratification and treatment can lead to confusion and lack of confidence in medical decision-making
- Lack of documented risk stratification for majority of patients can lead to uncoordinated care outcomes

Conclusion

- This study highlights inter-specialty variation in the utilization of risk stratification tools and diagnostic approaches in intermediate-high risk PE
- Future research is needed to evaluate whether these differences impact clinical outcomes and equity in care delivery

References

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