

Balancing safety and efficiency: outcomes of a low-risk PE discharge pathway

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RESEARCH WEEK

20-24 OCTOBER 2025

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Background

Low-risk pulmonary embolism (PE) accounts for approximately 30–50% of all PE presentations and is associated with low mortality. Studies have supported the safety of outpatient management for this cohort, although its practice remains limited in Australia.

Aim

Examine the outcomes of patients discharged via our low-risk discharge pathway (LRP).

Methods

A retrospective review was conducted on patients diagnosed with PE and discharged within 24 hours at Northern Health, Victoria, Australia, between January 2021 and December 2023. LRP discharges required the patient to meet criteria as shown in table 1. These patients received expedited outpatient clinic and pharmacist follow-up. Medical records were reviewed to assess clinical outcomes.

PESI class I – II (score ≤ 85) and all the below criteria:

- Age < 80
- Weight > 50 kg and < 150 kg
- Not pregnant
- No known active malignancy
- No angina or shortness of breath on exertion
- No parenteral opioid requirement
- PE not diagnosed on anticoagulation
- Not high bleeding risk including platelets > 50 x 10⁹/L
- No social risks of non-compliance
- No clinical suspicion of major DVT (proximal/iliofemoral DVT)
- Systolic blood pressure > 100 mmHg and < 180 mmHg
- O₂ saturation > 92% without O₂ support
- No evidence of right heart strain (RHS) on CTPA
- No evidence of concerning/significant clot burden (eg. saddle PE) on imaging
- Negative troponin
- CrCl > 30 ml/min and no severe liver impairment

Table 1. Criteria for the LRP.

Results

	LRP (n=58)	Did not meet criteria (n=80)	p-value
Median age (IQR), years	52.5 (41.3–62.5)	64 (50.5 – 75.0)	< 0.001
Male, n (%)	30 (51.7)	40 (50.0)	0.841
PESI class I-II, n (%)	58 (100.0)	41 (51.3)	< 0.001
Active malignancy, n (%)	0 (0)	18 (22.5)	< 0.001
DOAC on discharge, n (%)	58 (100.0)	72 (90.0)	0.021
30-day readmission rate, %	1.7	8.8	0.138
VTE recurrence, n (events/100-patient-years)	3 (3.7)	8 (8.3)	0.219
Major bleeding, n (events/100-patient-years)	0 (0)	4 (4.1)	0.097

Table 2. Comparison between LRP discharges and those not meeting criteria.

- 58 patients (median age 52.5 years, 51.7% male) met criteria for LRP discharge; this included 28 direct discharges from the emergency department.
- 54 LRP patients (93.1%) received clinic follow up at a median of 42 days (95% CI 26.8 – 57.2 days) and 23 received pharmacist follow up (median 3 days; IQR 2 – 5).
- For the 80 patients not meeting LRP criteria, decisions for discharge were based on clinical discretion. This included 41 (51.3%) patients with PESI III – V (table 2).
- 30-day readmission rate was similar for LRP discharges vs. those not meeting criteria (p = 0.138). PESI class did not impact 30-day readmission (LRP vs not meeting criteria PESI I-II, p = 0.157; vs PESI III-V, p = 0.299).
- VTE recurrence was similar in the LRP cohort compared to those not meeting criteria (HR 0.47, 95% CI 0.12 – 1.54, p = 0.219). Similarly, there was no significant difference in major bleeding events (HR 0.14, 95% CI 0.00 – 1.34, p = 0.097). 3 patients with major bleeding had active malignancies.

Conclusions

- Our low-risk discharge pathway appears safe, with no increased complications or readmissions.
- While most discharged patients not meeting criteria had favourable outcomes, major bleeding events in this group highlight the importance of adhering to discharge criteria for patient safety.