

Secondary analysis of major postpartum haemorrhage thromboprophylaxis timing

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Major obstetric haemorrhage rates in Ireland reached 3.4 per 1,000 in 2021, a 58% increase since 2011. Venous thromboembolism (VTE) remains a leading cause of maternal death (16% of deaths 2020-2022), with two-thirds occurring postpartum. Guidelines recommend thromboprophylaxis with low molecular weight heparin (LMWH) as soon as haemostasis is achieved after Postpartum haemorrhage (PPH).



Study Design

Retrospective chart review of all major PPH cases (n=34) over 30 days in a single maternity center. Data captured: patient demographics, PPH characteristics, thromboprophylaxis, neuraxial and haemostasis timings.

Institution

The Coombe Hospital is a specialised maternity hospital in Dublin, established more than 200 years ago. 6506 life births were recorded in 2024. An annual audit of PPH rate was carried out in September 2025 (PPH month).



Why?

Implementation of a standardised timing for LMWH is complex due to multiple factors such as neuraxial access (4-hour wait post-spinal/epidural removal), surgical haemostasis and potential coagulopathy and haemodynamic instability, particularly after major PPH (> 1000ml blood loss).

Objectives

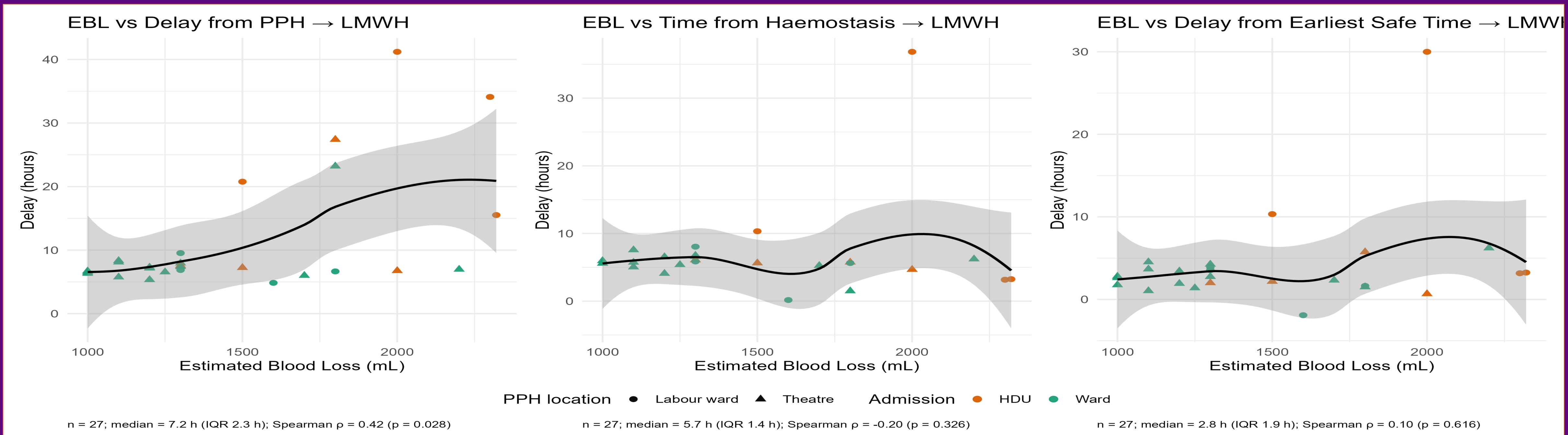
- How timely is LMWH administration after a major PPH?
- Does measured delay differ by timing anchor: PPH onset, haemostasis, or earliest safe time?
- Does higher blood loss predict delayed LMWH?
- Where is the potential modifiable delay?

Results

- Thirty-four women had major PPH. Mean Estimated blood loss (EBL) was 1.4 L and 60% were attributed to uterine atony. 26% required HDU admission.
- Thromboprophylaxis was indicated in 29/34 (85%) and administered in 27/34 (79%).
- Of the 27 women who received LMWH, 66% had LMWH between 5-8 hours after PPH.
- The median time to thromboprophylaxis administration was 7.2 h from PPH onset, 5.7 h from haemostasis, and 2.8 h from earliest safe time (appropriate time after haemostasis and neuraxial administration/catheter removal).



Our data



Key Findings

- While mean LMWH administration time was 7.2 hours from PPH, an overall range of 4.8–41.2 was observed
- LMWH administration was delayed less when timed from haemostasis or earliest safe time.
- Larger blood loss only predicted delay from PPH onset: correlation weakened when timing was measured from haemostasis or earliest safe time.
- Potentially modifiable delay was the time between LMWH being safe to start and actual administration.

Conclusion

- *LMWH timing after major PPH depends on the clinical anchor used. Our secondary analysis showed that much of the apparent delay from PPH onset reflected haemostasis and neuraxial safety requirements, but a residual gap remained after the earliest safe time.*
- *A structured post-PPH thromboprophylaxis prompt that accounts for haemostasis and neuraxial administration timings may improve timely LMWH administration in the context of major PPH.*

References:
1. Byrne B, Spring A, Barrett N, et al. National Clinical Practice Guideline: Prevention and Management of Primary Postpartum Haemorrhage. National Women and Infants Health Programme and Institute of Obstetricians and Gynaecologists; 2022.
2. Felker A, Patel R, Kotnis R, et al. Saving Lives, Improving Mothers' Care: Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2021–23. Oxford: National Perinatal Epidemiology Unit, University of Oxford; 2025. doi:10.5287/ora-4jav692x



Following Major PPH

- 93% of patients received LMWH
- 94% had a neuraxial procedure
- Haemodynamic stability was maintained in all patients



Our data suggests that 5–8 hours after PPH is a practical review window to reassess eligibility for LMWH administration.

Communication of haemostasis and neuraxial times is key for timely administration of LMWH