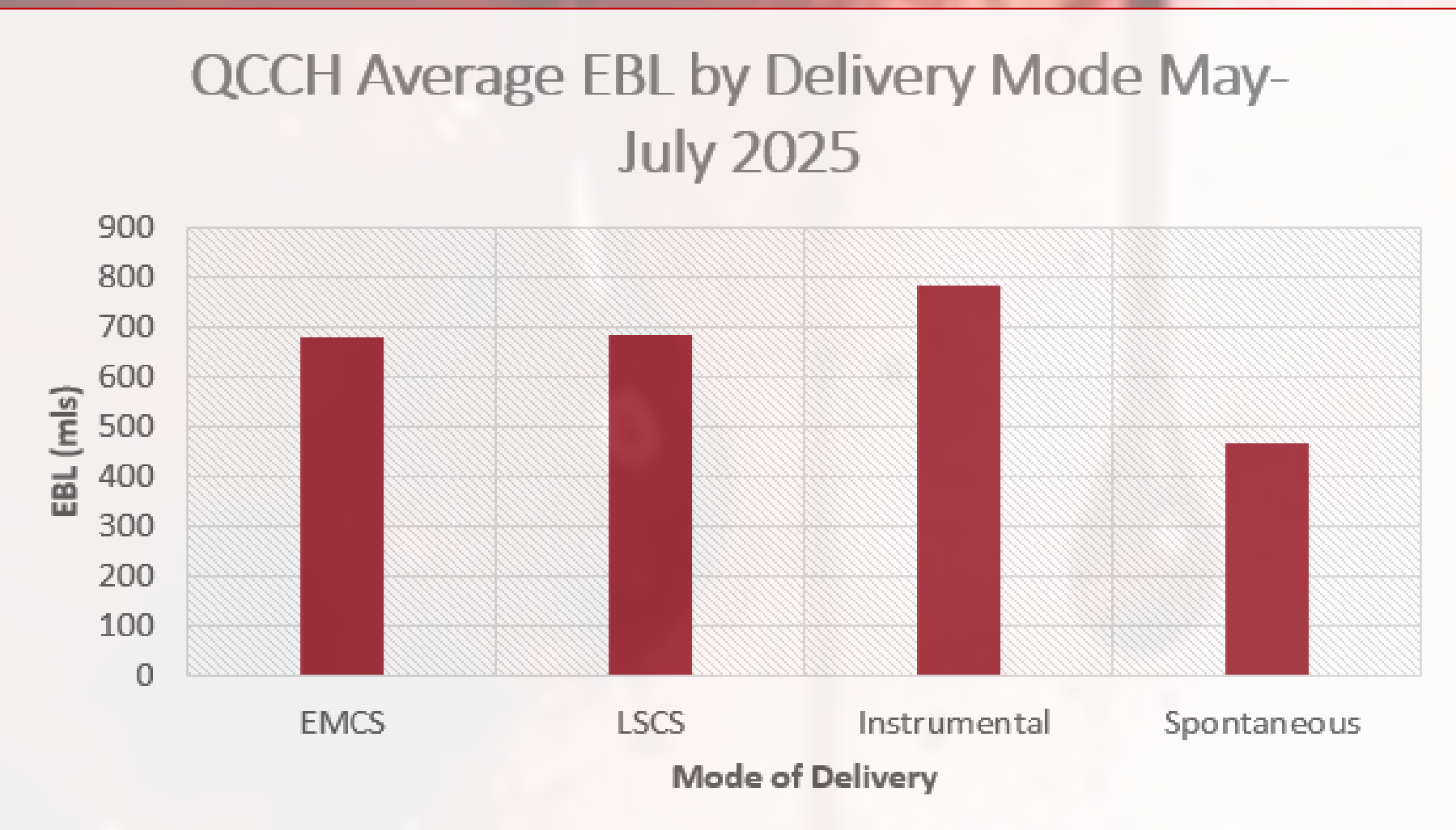
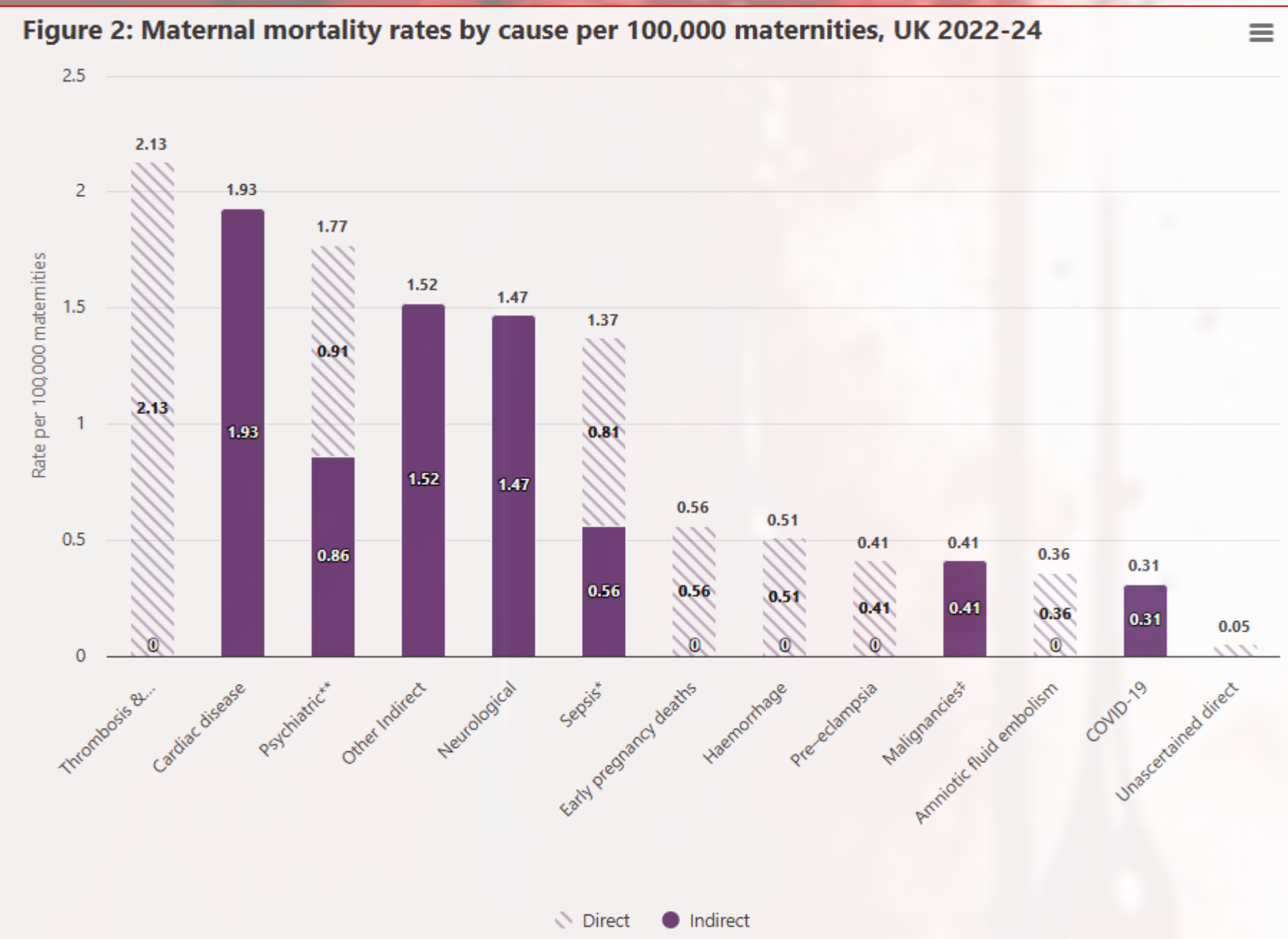
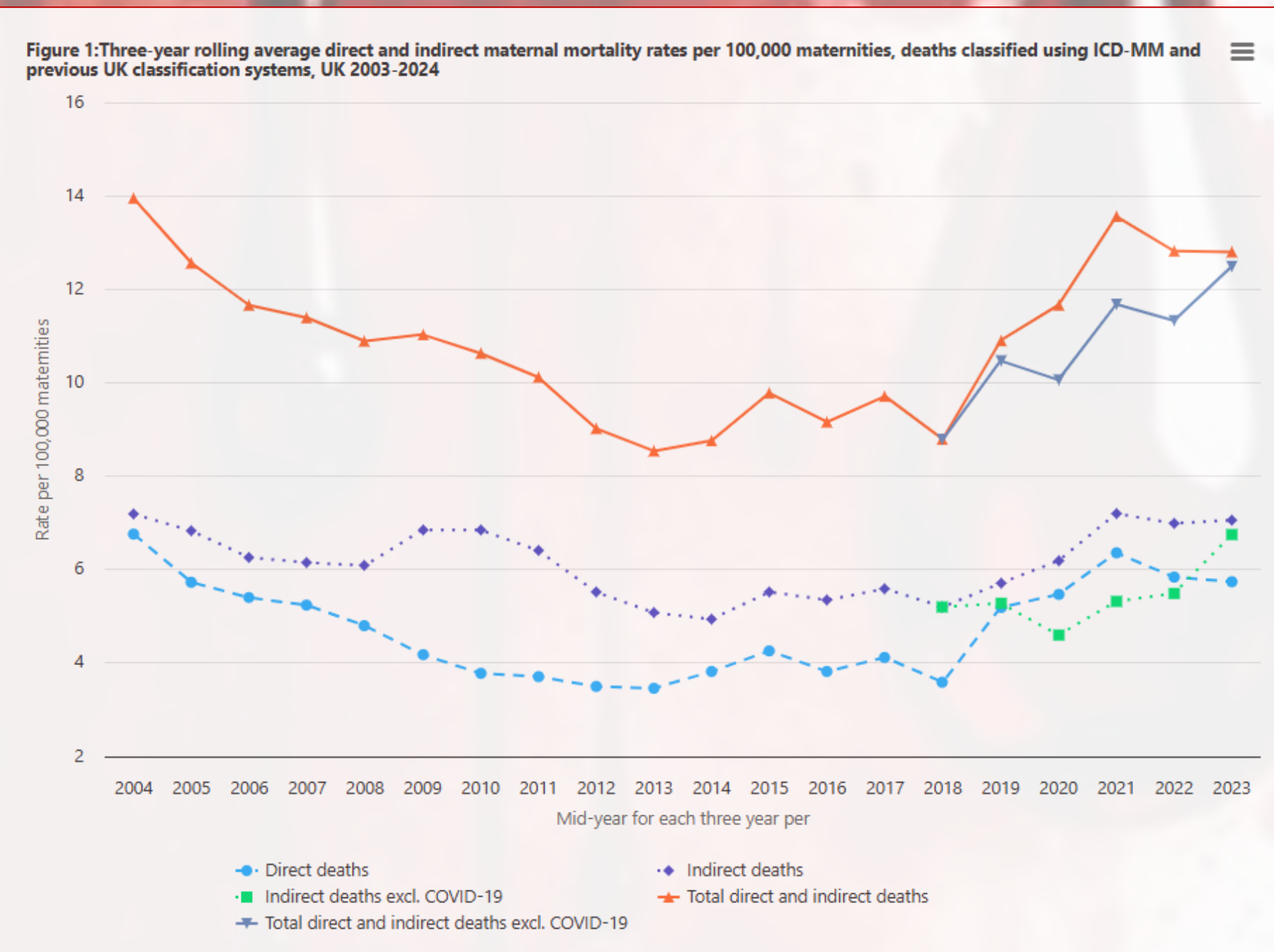




# Improving outcomes in major obstetric haemorrhage: a tertiary maternity centre experience

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## Introduction

Major obstetric haemorrhage (MOH) remains a leading cause of maternal morbidity and mortality in the United Kingdom. MBACE-UK reports highlight delays in recognition, escalation and multidisciplinary coordination as key modifiable factors.

Rising incidence of postpartum haemorrhage (PPH), driven by obstetric trends such as increasing maternal age, caesarean section rates, and placenta accreta spectrum disorders underscores the need for proactive quality improvement initiatives.

National guidance exists, but compliance with timely tranexamic acid (TXA) administration, quantitative blood loss measurement, and structured escalation remains variable.

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## Methods

A quality improvement project (QIP) was conducted at Queen Charlotte & Chelsea Hospital reviewing all deliveries between May–July 2024 (n=1402) and May–July 2025 (n=1397).

Cases were stratified by estimated blood loss (EBL) into 500–999 mL, 1000–1500 mL, and >1500 mL, and analysed by mode of delivery.

Documentation of MOH calls, consultant presence, administration of TXA, uterotonics, and blood products were assessed. A review of the anaesthetic chart, obstetric operation note and midwifery documentation was undertaken for every patient reviewed within the QIP time period. Where documentation was missing or deemed inadequate, the author determined that the action did not happen. When focusing on MOH documentation, a review of the EBL at the time the call was made, in addition to the total EBL of the delivery was made.

Interventions introduced between cycles included enhanced MOH documenta on macros, increased use of rapid transfusion, cell salvage, point-of-care thromboelastography and structured escalation protocols.

## Results

Average EBL decreased from 601 mL in 2024 to 563 mL in 2025.

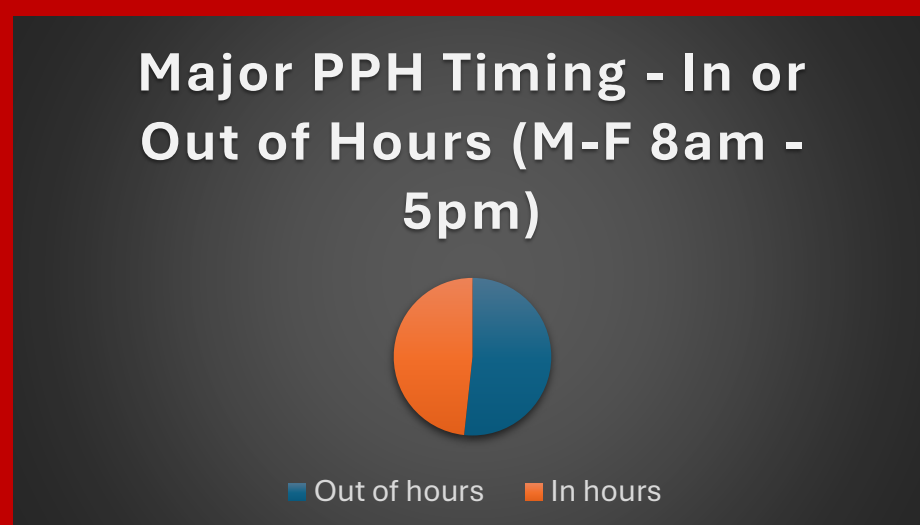
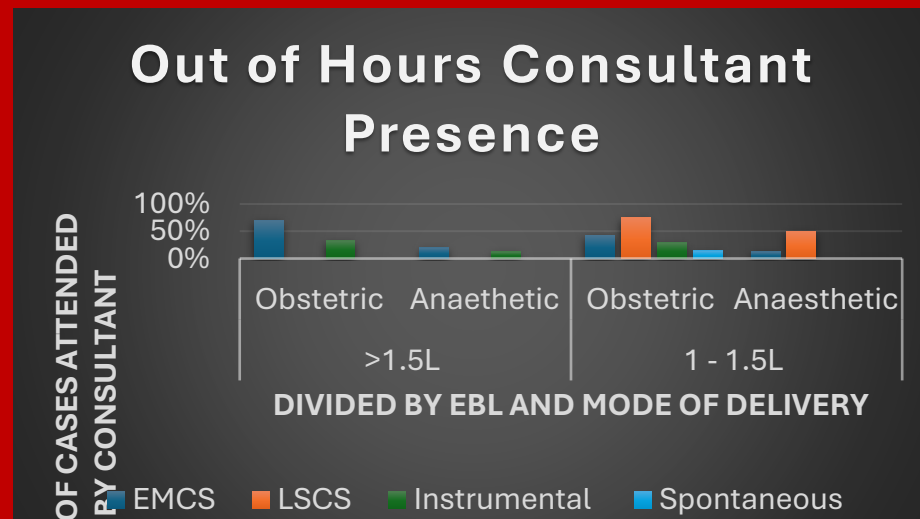
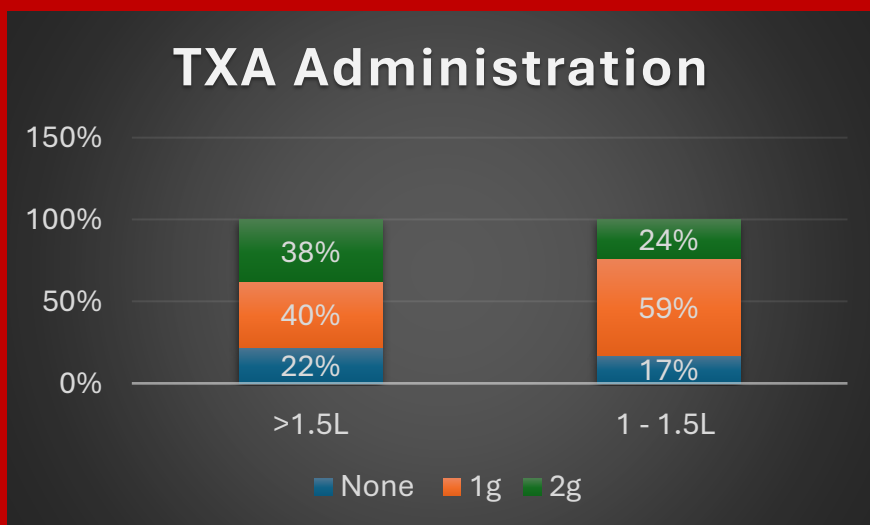
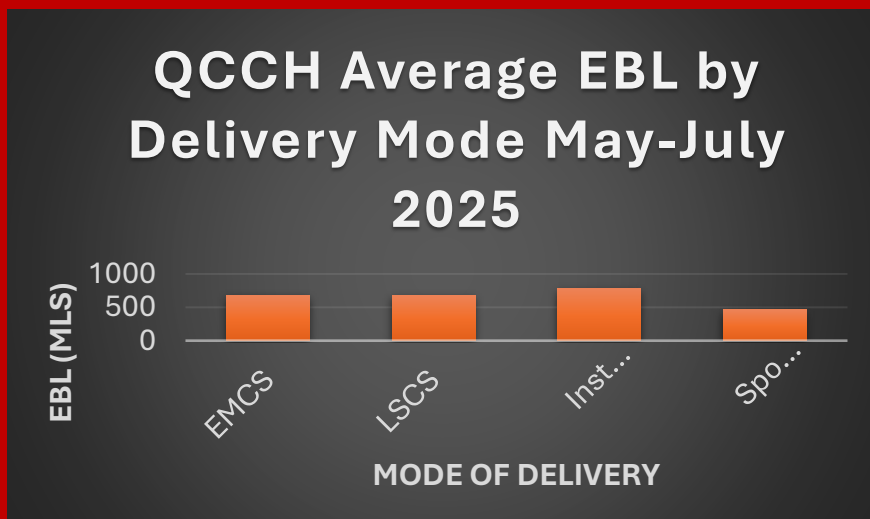
The proportion of deliveries with EBL >1000 mL fell across all modes, most notably in instrumental deliveries (29.9% to 22.2%).

Out-of-hours (OOH) burden increased (51.7% to 60%), with consultant presence documented less frequently in 2025 (obstetric: 42.4% to 24%; anaesthetic: 17.9% to 5.2%).

TXA administration remained high (>80% of major PPH cases), while blood product use was stable (20% in 2024 vs 18.8% in 2025).

## Key messages

Early TXA ✓ Early senior escalation ✓ Good communication ✓ Use of thromboelastography to guide balanced transfusions ✓ Thorough documentation ✓ System based, team-orientated changes ✓



## Discussion

This QIP demonstrated modest reductions in average blood loss and improved documenta on of MOH escalation, reflecting the impact of structured interventions, even over a short timeframe. These findings support the importance of early recognition, structured escalation, and standardised haemostatic management, consistent with national recommendations and MBRRACE learning themes.

## Limitations

Several limitations were encountered when completing this project. Persistent challenges include consultant availability during OOH events, limited documentation, and reliance on PRBC transfusion without balanced component therapy. This QIP had limited statistical power given a data sample of only two 3-month periods was reviewed, which may impact generalisability and significance. Due to multifactorial intervention implementation during the action phase of this QIP, it is difficult to isolate which component drove the improvement in EBL.

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## Future work

Future work should focus on embedding quantitative blood loss measurement, advocating early fibrinogen replacement, and ensuring consistent consultant-led multi disciplinary management, particularly during OOH periods. Further development could include a larger, multicentre evaluation to improve generalisability, alongside refinement of individual components of the bundle to identify the most effective drivers of change.

## → Early fibrinogen replacement

Fibrinogen <2g/L is strongly associated with severe PPH and worse outcomes. Low fibrinogen identifies a high-risk subgroup early in haemorrhage and supports early measurement and early targeted replacement as part of MOH management. Thromboelastometry guided transfusion in PPH is associated with a significant reduction in fibrinogen concentrate use and overall blood product transfusion, including packed red blood cells, plasma and platelets.

## Reflections

This quality improvement project demonstrated a modest but measurable reduction in intraoperative blood loss following targeted interventions for major obstetric haemorrhage (MOH). Although the absolute reduction was small, it is clinically meaningful in a high-risk population where outcomes are influenced by multiple interacting factors.

These findings emphasise the impact of standardisation, early recognition, and coordinated team response. Even incremental improvements in haemorrhage control can reduce transfusion requirements and enhance patient safety at scale.

