

Comparative Analysis of Caesarean Section Trends Across Ireland’s Four Largest Maternity Hospitals 2015-2021

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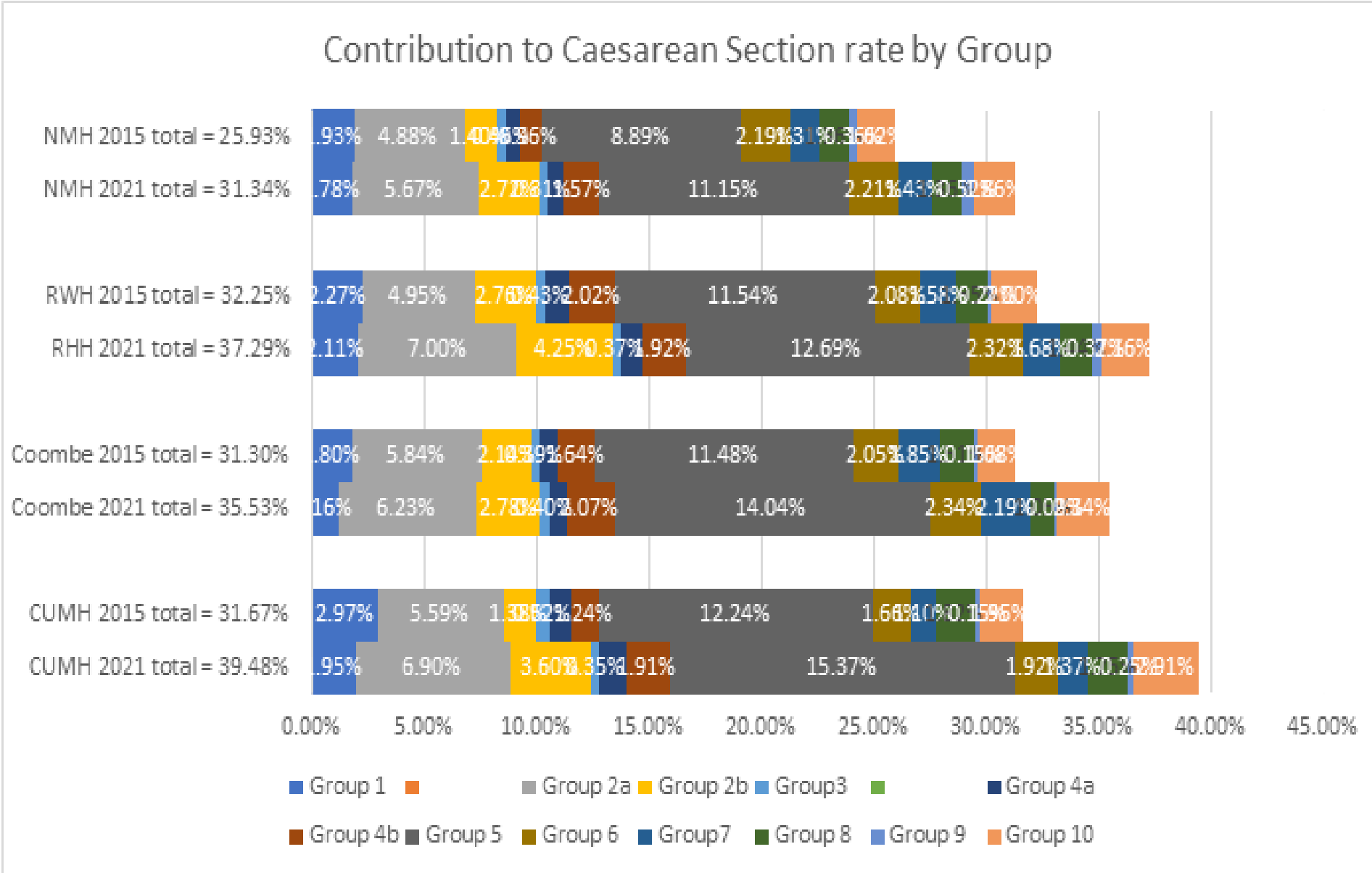
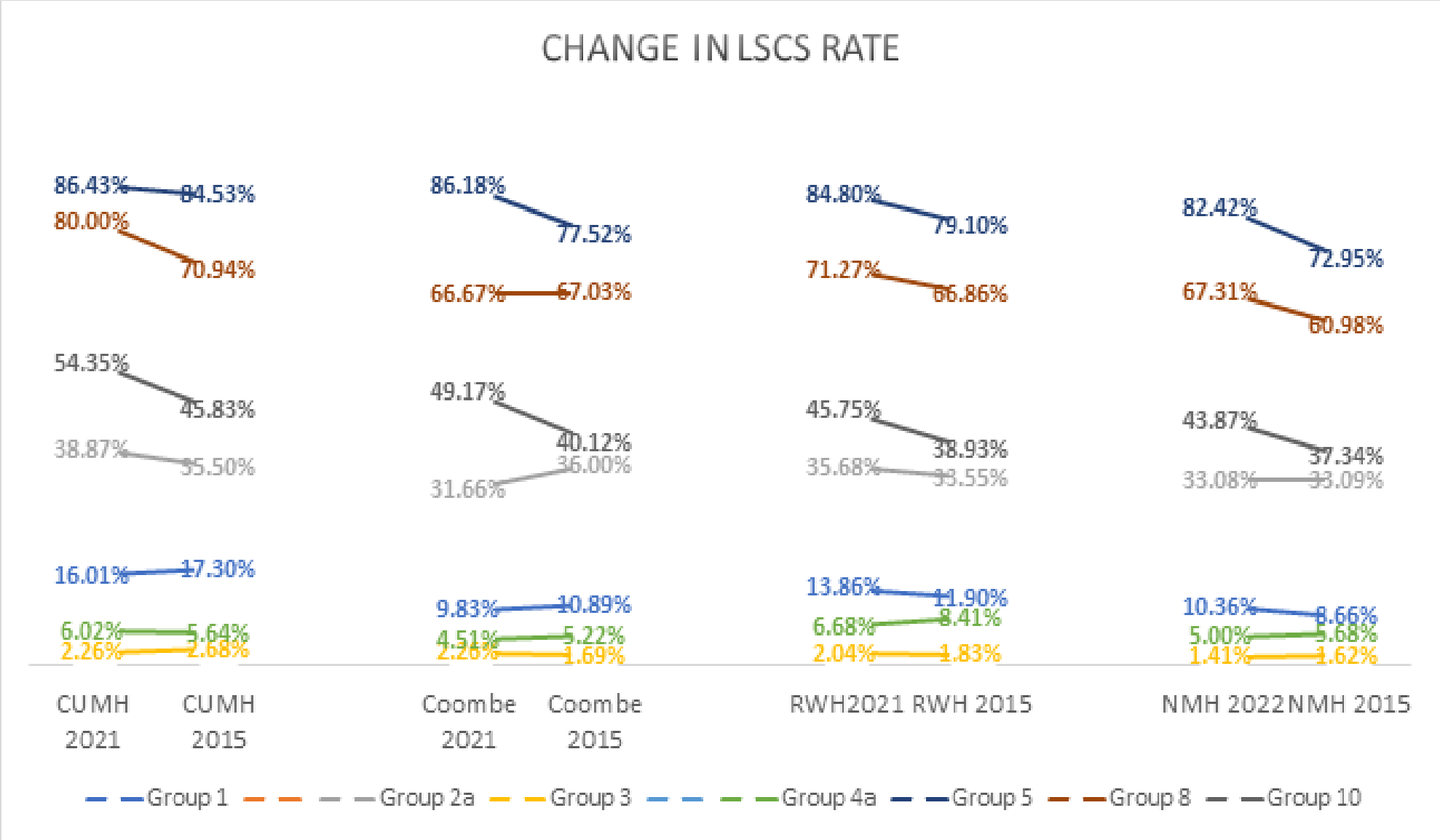
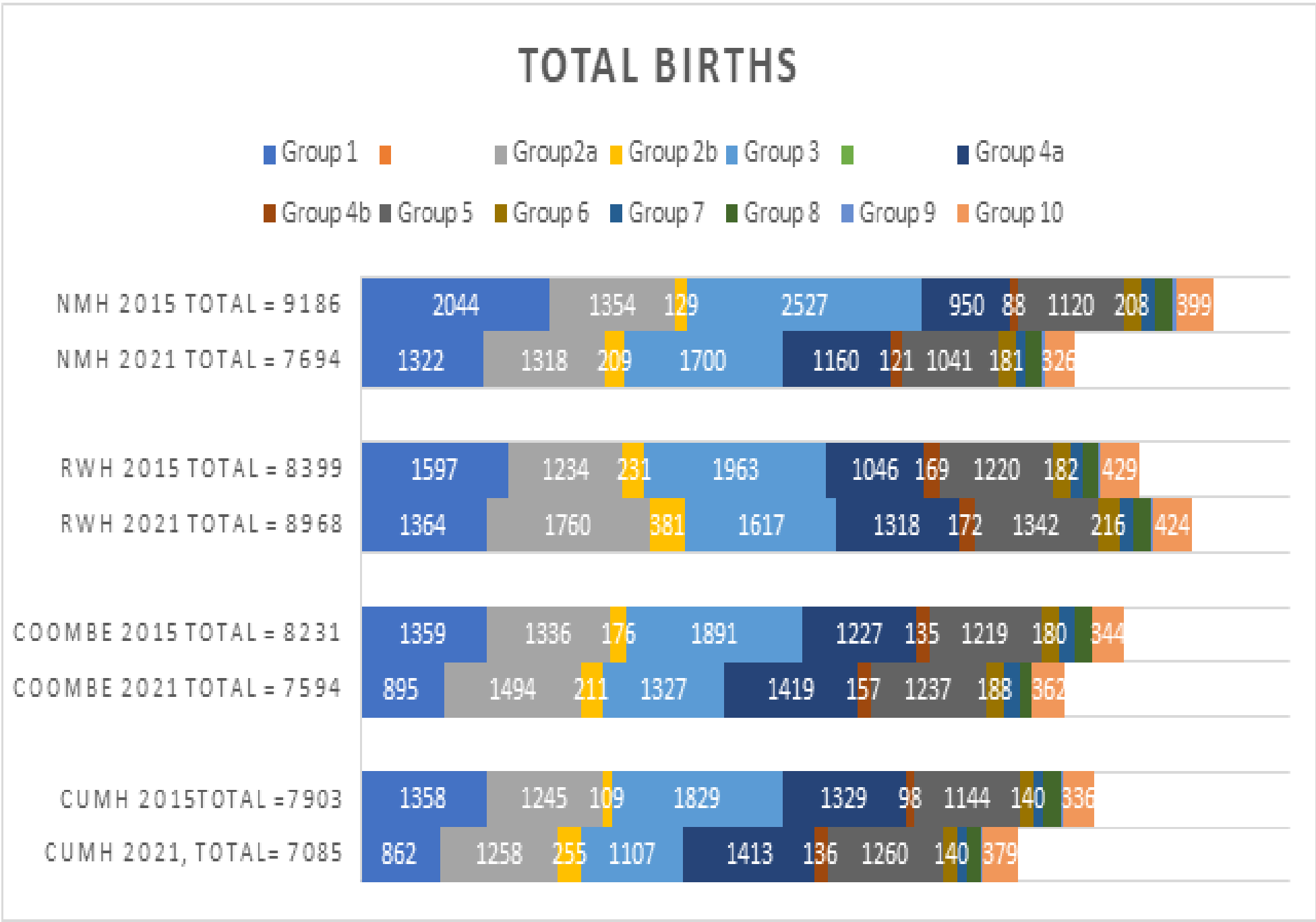
INTRODUCTION

- Caesarean section rates have increased substantially across developed healthcare systems over recent decades, including in Ireland.
- Multiple factors may contribute to this trend, including increasing maternal age, rising maternal obesity, changing labour ward practice, patient preference, and medico-legal concerns. However, crude caesarean section rates alone do not identify which obstetric populations are contributing most to the increase.
- The Robson Ten Group Classification System provides a standardised method for comparing caesarean section rates by clinically meaningful obstetric groups. This study used Robson classification data from Ireland’s four largest maternity units to identify which groups are driving the observed rise in caesarean section rates.

METHODS

- A retrospective comparative analysis was performed using prospectively collected delivery data from Ireland’s four largest maternity units between 2016 and 2021.
- Births were classified according to the Robson Ten Group Classification System, which categorises women by parity, previous caesarean section, onset of labour, gestational age, fetal presentation, and plurality.
- For each unit and Robson group, we examined trends in total births, caesarean section rate, and relative contribution to the overall caesarean section rate. Particular attention was given to changes in nulliparous term cephalic pregnancies undergoing induction of labour or pre-labour caesarean section, and multiparous women with a previous caesarean section.
- Trends were compared across units to identify groups contributing most to the overall increase and to highlight variation in caesarean section practice between hospitals.

RESULTS



DISCUSSION

- The rise in caesarean section rate was not uniform across Robson groups or maternity units.
- Group 1 CS rates declined in all four units, with CWH and NMH having the lowest rates at 9.83% and 10.38%, respectively.
- Group 2a births increased in Rotunda, CWH, and CUMH, despite falling overall birth numbers in CWH and CUMH. Although CS rates in this group changed only modestly, its increasing size contributed to the overall CS rise. Notably, CWH reduced its Group 2a CS rate by 4.33%.
- Group 2b contributed increasingly to the overall CS rate in all units, but with marked inter-unit variation. The smallest increase was seen in CWH at 19.9%, while the largest was in CUMH at 13.9%.
- Group 5 was the largest contributor to the overall CS rate in all units. Births in this group increased in all units except NMH, and the CS rate rose across all hospitals.
- Group 10 trends differed between units: preterm births increased in CUMH and CWH despite falling overall births, decreased in RWH despite rising overall births, and declined in NMH alongside an overall fall in births.

CONCLUSIONS

NMH had the lowest overall CS rate and a lower contribution from Group 5, suggesting potential differences in management of women with a previous caesarean section. Inter-unit comparison using the Robson classification highlights opportunities for shared learning, particularly around induction of labour, primary CS prevention, and VBAC pathways. Standardised recording of indications for induction and caesarean section would allow more targeted audit and quality improvement.