

Implementation of Programmed Intermittent Epidural Boluses (PIEB) for Labour analgesia in a District General Hospital

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Introduction

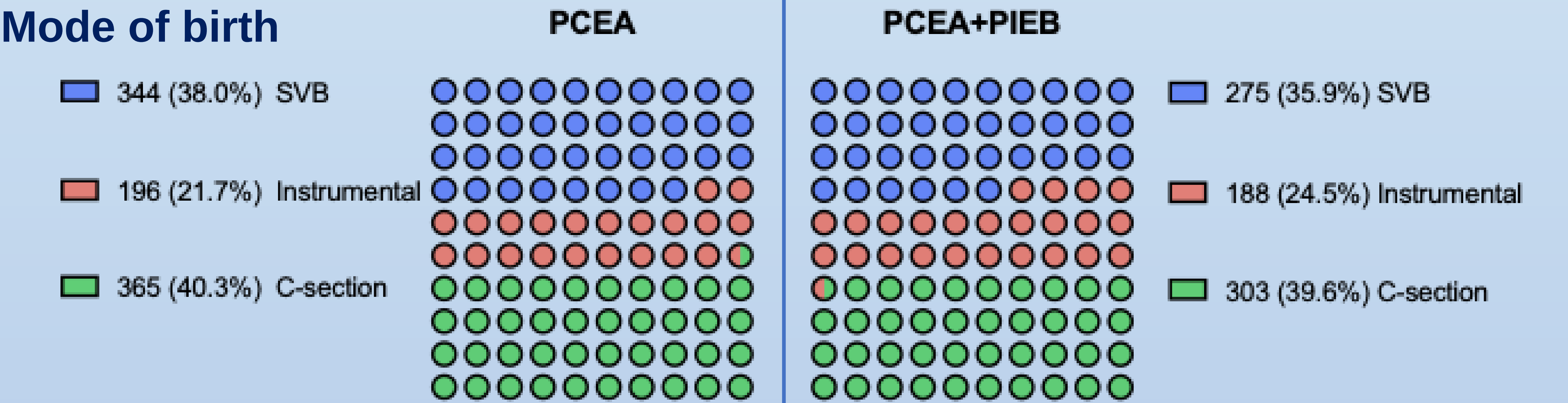
- PIEB + patient controlled epidural analgesia (PCEA) is commonly used for labour analgesia in North America, where benefit over continuous epidural infusion (CEI) + PCEA has been demonstrated¹
- This evidence is less applicable in the UK, where CEI for labour is rarely used
- Evidence that PIEB + PCEA reduces breakthrough pain and motor block when compared with PCEA alone is emerging²
- We designed a QIP to change from PCEA alone (a delivery method used widely in the UK) to PIEB + PCEA and analysed key outcomes

Methods

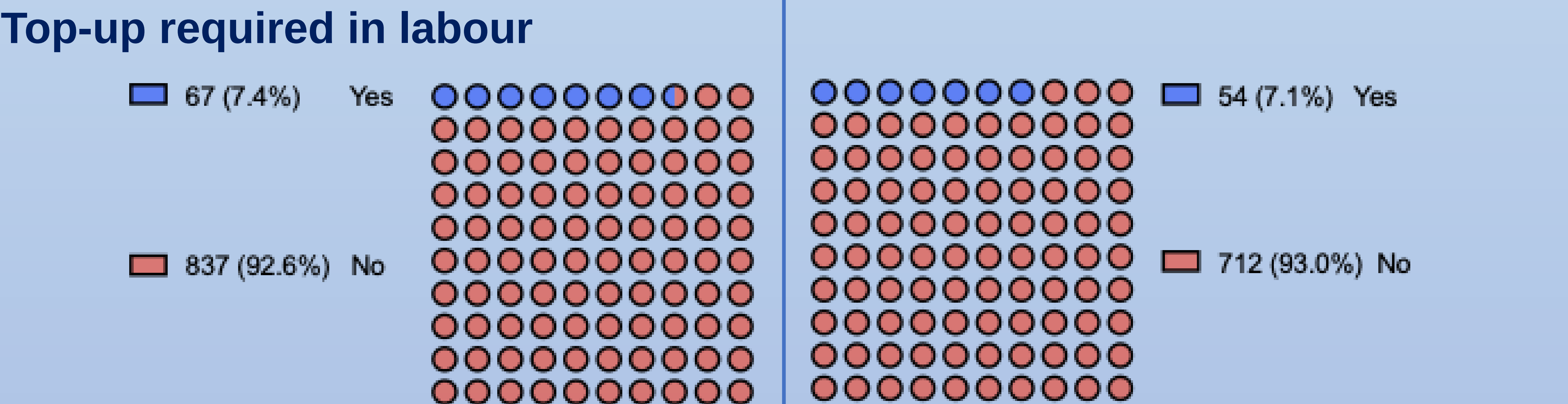
- Retrospective data collection over 6 months using PCEA as standard analgesia (bupivacaine 0.1% + fentanyl 2mcg/ml: 8ml bolus with 15 minute lockout)
- We reprogrammed all epidural pumps to PIEB (6ml bolus with 45 minute interval) plus PCEA as before
- We extracted data retrospectively for a 6 month period following implementation of PIEB + PCEA
- Data was analysed using two-sample tests of proportions, with p<0.05 regarded as statistically significant

Results

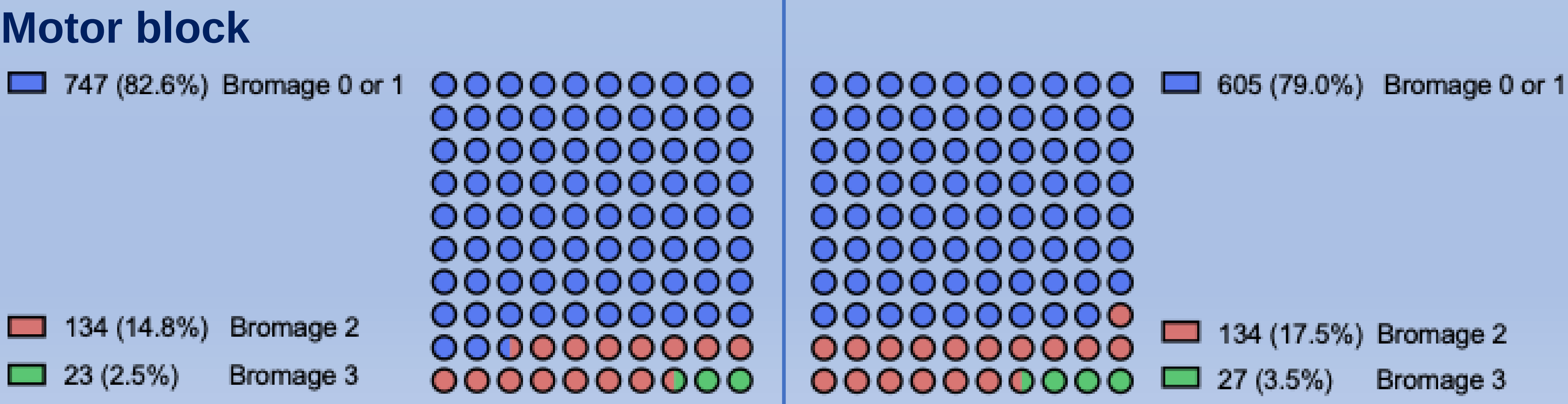
Mode of birth



Top-up required in labour



Motor block



Discussion

- We found no statistically significant differences in breakthrough pain requiring physician top-up, motor block or mode of delivery before and after implementation of PIEB + PCEA.
- We identified the following limitations when implementing PIEB in our unit:
 - We purposefully used a ‘one size fits all’ pre-set regimen to avoid drug errors given our high turn-over of anaesthetic staff who may not be familiar with PIEB. This limited our ability to tailor individual regimes for patients at extremes of size.
 - Despite education before implementing the change from PCEA alone to PIEB + PCEA, it is possible that many of our midwifery staff were encouraging PCEA use according to previous experience, resulting in overuse. This may have negated any potential benefit of the PIEB.
- Our future work in this field includes analysing patient use of PCEA using machine software and adjusting the regimen based on that in order to decrease the motor block

References

- George R, Allen T, Habib A. Intermittent epidural bolus compared with continuous epidural infusions for labor analgesia: a systematic review and meta-analysis. Anesthesia & Analgesia. 2013; 116:133–144.
- Roofthoof E, Barbé A, Schildermans J, et al. Programmed intermittent epidural bolus vs. patient-controlled epidural analgesia for maintenance of labour analgesia: a two-centre, double-blind, randomised study. Anaesthesia. 2020; 75:1635-1642