

Induction of labour: A 5-year retrospective review

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Introduction: Induction of labour is a common obstetric practice. In Australia in 2021, 34% of labours were induced[1]. One important aspect of care for women in labour is the provision of adequately experienced staff, free from fatigue. Studies show notable impairment in fatigued clinicians and those who have an altered circadian phase, and that this impairment is often underestimated by clinicians[2]. A recent Cochrane review also noted the impact of different labour onset times and birth outcomes[3]. This study attempts to aid clinicians with anticipating labour times in induced labours, thus assisting with estimating timing of births.

Methods: An integrated electronic medical record is used at Logan Hospital, Queensland. This facilitates the input of key data points, and relies less on ad-hoc freeform notetaking, particularly for labour metrics. This allows for easy review of performance indicators by simple data extraction.

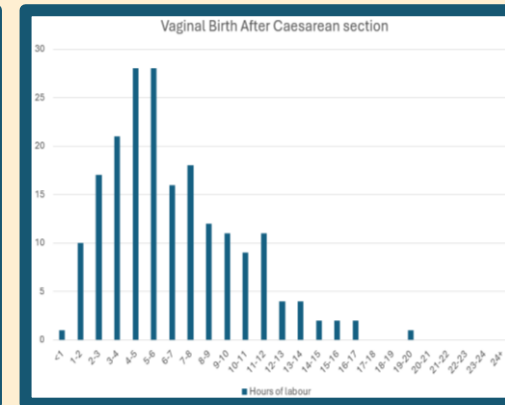
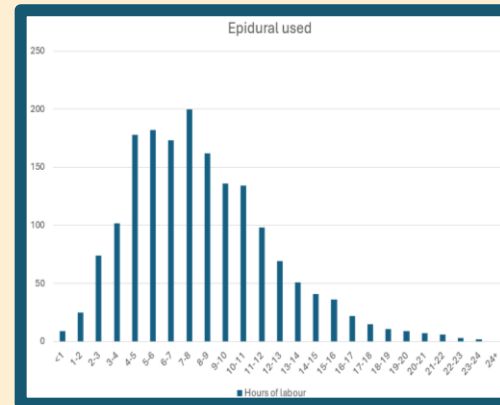
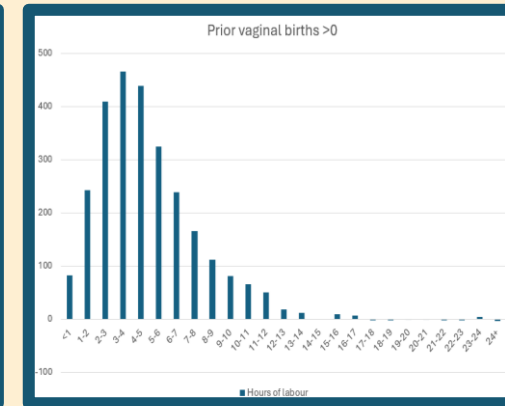
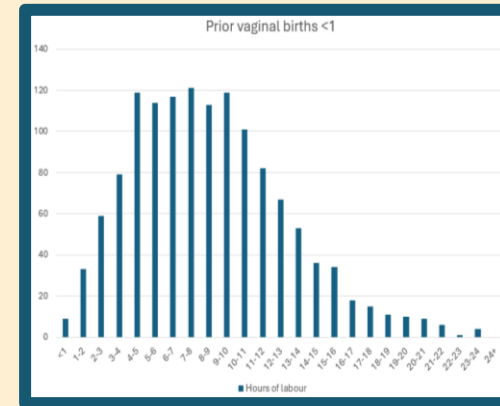
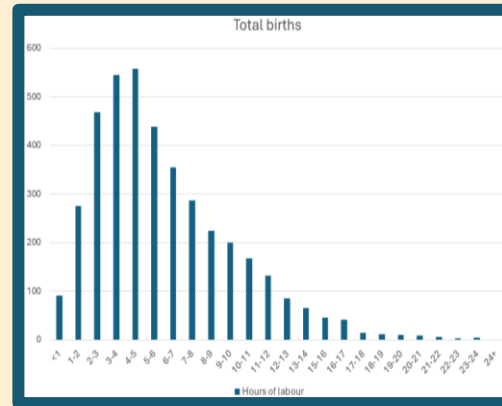
In a retrospective study spanning 6 years, various labour metrics were pulled from this electronic medical record from 2018 to 2023.

Specific inclusion criteria were

- 1) Induced labour at 37+ weeks gestation
- 2) Known labour onset and/or membrane rupture time, and known birth time input to the iEMR
- 3) Delivery achieved by spontaneous or assisted vaginal birth

Results: 22,016 births took place across 6 years. 10,131 were vaginal births above 37 weeks. 4625 of these were induced. 4,063 of these births had adequate data input for review. Labour duration was notably longer in those who had not had a vaginal birth before, and those who had an epidural in labour. The vast majority of nulliparous patients birthed between 1 and 16 hours of labour. Most multiparous women gave birth prior to 9 hours of labour. A prior caesarean section did not significantly affect the duration to a successful vaginal birth.

Discussion: With the introduction of an electronic medical record, data analysis such as this is easily accessible to allow for identification of areas for workflow optimisation. It would be reasonable to apply the results of this analysis when planning induction of labour timing protocols for hospitals, to ensure deliveries take place during hours when adequate staffing is present and to avoid fatigue



[1] Australian Institute of Health and Welfare. Australia's mothers and babies, Onset of labour [Internet]. Australian Institute of Health and Welfare. 2022. Available from: <https://www.aihw.gov.au/reports/mothers-babies/australias-mothers-babies/contents/labour-and-birth/onset-of-labour>

[2] Fatigue risk management in obstetric and gynaecological practice (WPI 18) Fatigue risk management in obstetric and gynaecological practice [Internet]. [cited 2024 Mar 19]. Available from: <https://anzog.edu.au/wp-content/uploads/2022/05/Fatigue-and-the-Obstetrician-Gynaecologist.pdf>

[3] Bakker JJ, Mei BW, Pei M, van der Post JA. Morning versus evening induction of labour for improving outcomes. The Cochrane Database of Systematic Reviews [Internet]. 2009;(2):CD007707. Available from: <https://pubmed.ncbi.nlm.nih.gov/25267893/>