Timing of planned birth in NSW

The Clinical and Population Perinatal Health Research group at The Kolling Institute works closely with the NSW Ministry of Health to: (i) ensure alignment between its research and the Ministry's priorities; and (ii) feedback results of relevance to services and policies. Their research findings have highlighted the need to prioritise strategies that ensure the healthiest possible start to life.

Using linked NSW administrative hospital and educational data, they have described that timing of birth is critical to maximising infant health and developmental outcomes. As they have reported that over 1 in 4 births in NSW are planned and before the estimated due date, this had relevance to the NSW Ministry of Health's former (2007) Policy Directive: *Maternity - Timing of elective or pre-labour caesarean section*. That Policy Directive recommended that, where there are no compelling medical indications, elective or pre-labour caesarean section should not occur prior to 39 completed weeks gestation due to increased risk of respiratory morbidity in infants born before 39 weeks.

Biostatistics trainees, funded through the NSW Biostatistics Training Program, examined variations in clinical practice. Using Perinatal Data Collection and Admitted Patient Data Collection data that were linked by the Centre for Health Record Linkage, multilevel modelling was undertaken to investigate the impact of patient, intervention and hospital factors on between-hospital variation in caesarean rates and timing of birth. It was clear that there was poor uptake of the policy regarding timing of pre-labour caesareans, with high rates of delivery prior to 39 weeks across hospitals (adjusted average 35%). Large between-hospital variation persisted despite adjustment for casemix and hospital characteristics, suggesting that non-medical factors have been influencing the timing of low risk, pre-labour caesarean sections. This (and prior work) informed development of a new guideline, *Maternity - Timing of Planned or Pre-labour Caesarean Section at Term*, released in 2016.

Researchers at The Kolling Institute have extended this work and contributed important new knowledge that has been incorporated in the major initiative of The First 2000 Days Framework. Appreciation of the importance of timing of planned birth, which has relevance to a quarter of all births in NSW, is being propagated across all NSW local health districts as the First 2000 Days Framework is being presented. Their researchers have produced materials that have translated research findings into a format that has been well received by clinicians and pregnant women and their families. Originally in a paper form, funding from the Prevention Research Support Program has allowed these to be developed into a web form (https://www.everyweekcounts.com.au). Through funding from Sydney Health Partners and the NSW Translational Research Grant Scheme this intervention is being evaluated to ascertain whether planned births can be closer to 40 weeks and outcomes improved.

Funding has realised significant mutual benefit. For researchers it has leveraged further research funding and facilitated new collaborations and expertise in research translation, and for NSW Health it has provided high quality evidence from population data that can be used to underpin a major initiative in raising awareness about pregnancy and birth strategies to optimise health and educational outcomes. This body of work demonstrated *Population Health Research Strategy 2.1* (*Facilitate synthesis of and access to research evidence)*, and also *Strategy 2.3* (*Foster research environments that promote the use of research evidence)*.

Further reading

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Nippita TA, Lee YY, Patterson JA, Ford JB, Morris JM, Nicholl MC, Roberts CL. Variation in hospital caesarean section rates and obstetric outcomes among nulliparae at term: a population-based cohort study. *BJOG* 2015; 122(5): 702-11.

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