

# Assessing Threatened Preterm Labour – Should Ultrasound Measurement of Cervical Length be Considered Prior to Antenatal Corticosteroids?

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## Introduction

Threatened pre-term labour (TPTL) is a common presentation to hospitals and maternity centres across Australia. Management includes admission (or transfer), tocolysis, antenatal corticosteroid administration (e.g. betamethasone). Steroid administration is time sensitive and significantly reduces risk of neonatal morbidity and mortality<sup>1</sup>, however, evidence suggests that steroid use can impact on neurodevelopment<sup>2</sup>. In addition to clinical history and examination, point-of-care testing including Actim Partus, foetal fibronectin (fFN) and ultrasound (USS) measurements of cervical length. Despite this, it remains difficult to predict preterm labour.

## Aim

To assess the incidence of TPTL, steroid administration and timing of ultrasound measurements with delivery outcomes at the Gold Coast University Hospital. Only Actim Partus is available for use as point-of-care testing, however fFN may be used in referring hospitals.

## Methods

A retrospective audit was conducted for patients admitted with TPTL to the maternity inpatient ward between July 2022 – July 2023. Cases with PPROM were excluded. Electronic medical records were accessed to determine risk factors for preterm birth, examination findings and investigations. Specifically, timing of steroid administration to ultrasound cervical length was assessed.

### References

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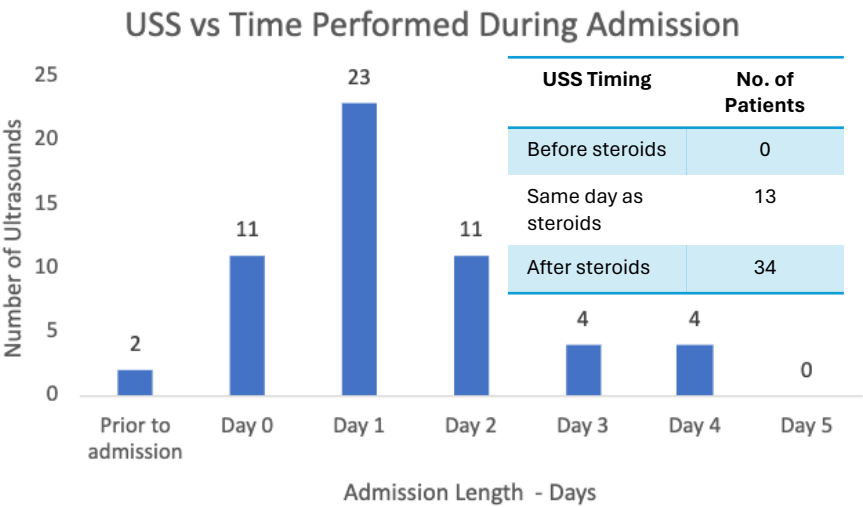
## Results

92 patients were identified for admission with TPTL. Overall outcomes:

- 9 deliveries total <36 weeks (11%) including 3 deliveries <30 weeks (3%)
- 1 delivery within 48 hours of admission (known short cervix)
- 5 interhospital transfers from GCUH (NICU not available)

Point-of-Care testing	No. of patients	Steroids given	Steroids not given	Delivery <36 weeks
Actim Partus - positive	53 (57%)	43	7	4
Actim Partus - negative	6 (7%)	3	2	0
fFN	11 (12%)	11	0	1
No testing	22 (24%)	10	12	4

Ultrasound and cervical measurements: 55 ultrasounds performed – 42 reported cervical length (45%)



## Discussion

Overwhelmingly, most patients admitted over a period of 12 months with TPTL and intact membranes did not have a preterm birth. 67 patients received betamethasone steroid loading on admission during this time, with an additional 9 admitted, but received steroids prior to July 2022. From available birth records, 61% of patients went on to deliver at a gestation >37 weeks, with only 11% delivering <36 weeks (delivery data not available for 20 patients) .

This is in keeping with available literature regarding the incidence of preterm birth in Australia, but the difficulty arises in the use of point-of-care testing when evaluating patients. Although Actim Partus is easily performed with results available within 5 minutes, it has a poor positive predictive value, so ultrasound can be a valuable tool for objective measurement. For patients who had an ultrasound cervical length during admission, 71% had a cervical length of at least 25mm. Patients with short cervix and TPTL accounted for 2 of 3 deliveries under 30 weeks, and all received steroids. Despite most patients having a long and closed cervix, they received steroids prior to this ultrasound measurement.

It is suggested from this audit that training clinicians to perform translabial cervical measurement be considered . Translabial approach is comparable to transvaginal cervix measurements<sup>3</sup> but has the benefit of accessibility while awaiting a formal ultrasound. By ensuring cervical length is routinely included in assessment and risk stratification, this may reduce unnecessary steroid administration, and will be the subject of an ongoing audit.