

In-utero transfer requests in Yorkshire and the Humber between January 2018 and December 2020



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BACKGROUND

IN-UTERO TRANSFER (IUT)

IUT ensures that a neonate is in the correct place of birth for their gestational age.

Preterm delivery is difficult to predict
 → less than 10% of women who present with threatened preterm labour (TPTL) go on to deliver preterm [1]

Current NICE guidance: all women presenting with clinical symptoms of TPTL at 30+0w or less should be treated for preterm labour without further predictive testing [2]

This causes women to receive unnecessary interventions such as being transferred to another neonatal unit [3-5]

Unnecessary transfers cause a huge burden to women and the neonatal transport service [4]

PREDICTIVE BIOMARKER TESTING

Predictive biomarker testing (fFN, Actim Partus, PartoSure) has a high NPV for prediction of preterm delivery within 7 days in women presenting with TPTL

Previous literature has found an extremely low use of predictive biomarker testing in Yorkshire and the Humber [3-5]

AIMS

- To explore the use of predictive biomarker testing prior to IUT in a large cohort over a period of three years
- To evaluate the current triaging methods of women presenting with TPTL

METHODOLOGY

IUT requests were identified retrospectively from the Embrace Yorkshire and Humber Neonatal Transport Service database between 1st January 2018 and 10th December 2020.

Embrace handles all IUTs within Yorkshire and the Humber

Figure 1: Table showing each neonatal unit within the Yorkshire and Humber region, by level of neonatal unit

Level 1	Level 2	Level 3
Bassetlaw District General Hospital	Airedale General Hospital	Jessop Wing, Sheffield
Harrogate District Hospital	Barnsley Hospital	Bradford Royal Infirmary
Scarborough General Hospital	Calderdale Royal Hospital	Hull Royal Infirmary
St James's University Hospital, Leeds	Diana, Princess of Wales Hospital, Grimsby	Leeds Royal Infirmary
	Doncaster Royal Infirmary	
	Pinderfields Hospital	
	Rotherham General Hospital	
	Scunthorpe General Hospital	
	York Hospital	

RESULTS

There were a total of **1,524 IUT requests** during the study period

135 cases were excluded due to missing data, leaving 1,389 requests for review.

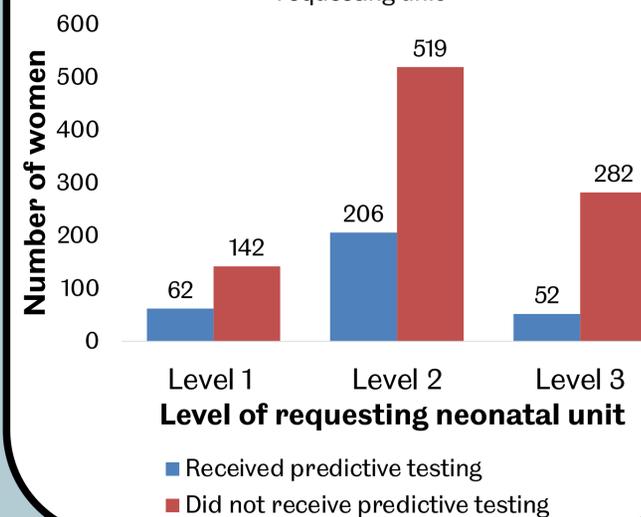
- Predictive testing was used **24.55%** of women

- 83.87% received a positive result
- 16.13% received a negative result

Use by year:
 2018: 25.6%
 2019: 22.5%
 2020: 26.3%

Use by level of neonatal unit:
 Level 1 unit: 30.8%
 Level 2 unit: 27.3%
 Level 3 unit: 15.8%

Figure 2: Graph showing number of women who received predictive biomarker testing by level of requesting unit



DISCUSSION

More than three quarters of all women were referred for IUT without receiving any predictive testing

Clinicians are still transferring women who have received a negative predictive biomarker result – suggesting clinicians are not willing to trust the results

LIMITATIONS

Lack of delivery outcome data – how many of these women went into preterm labour following transfer?

FURTHER WORK

Prospective analysis has also been conducted to include full delivery outcome data

CONCLUSION

Clinical symptoms of TPTL are a poor indicator of preterm delivery

Despite this, very few women are receiving predictive biomarker testing prior to IUT request in Yorkshire and the Humber

The use of predictive biomarker testing prior to decision-making on managing women in TPTL must increase to optimise the triaging of these women

REFERENCES

- Iams JD, Newman RB, Thom EA, Goldenberg RL, Mueller-Heubach E, Moawad A, et al. Frequency of uterine contractions and the risk of spontaneous preterm delivery. *N Engl J Med.* 2002;346(4):250-5.
- Preterm labour and birth: National Institute for Health and Care Excellence; 2015 [Available from: <https://www.nice.org.uk/guidance/ng25/resources/preterm-labour-and-birth-pdf-1837333576645>].
- Babarao S, Harrison CM. In utero transfers across Yorkshire and the Humber by Embrace transport service. *Archives of Disease in Childhood - Fetal and Neonatal Edition.* 2011;96(Supplement 1):Fa38-Fa9.
- Musson RE, Harrison CM. The burden and outcome of in utero transfers. *Acta Paediatr.* 2016;105(5):490-3.
- Munthali K, Harrison C. The continuing impact of capacity on a region's in utero transfer requests. *Acta Paediatr.* 2020;109(6):1148-53.