~~Embrace~~ Yorkshire and the Humber In-Utero Transfer Guideline

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Maternity Clinical Network Approval:

Note this guideline was previously known as 'Embrace In-Utero Transfers (Yorkshire) Guideline.

Purpose

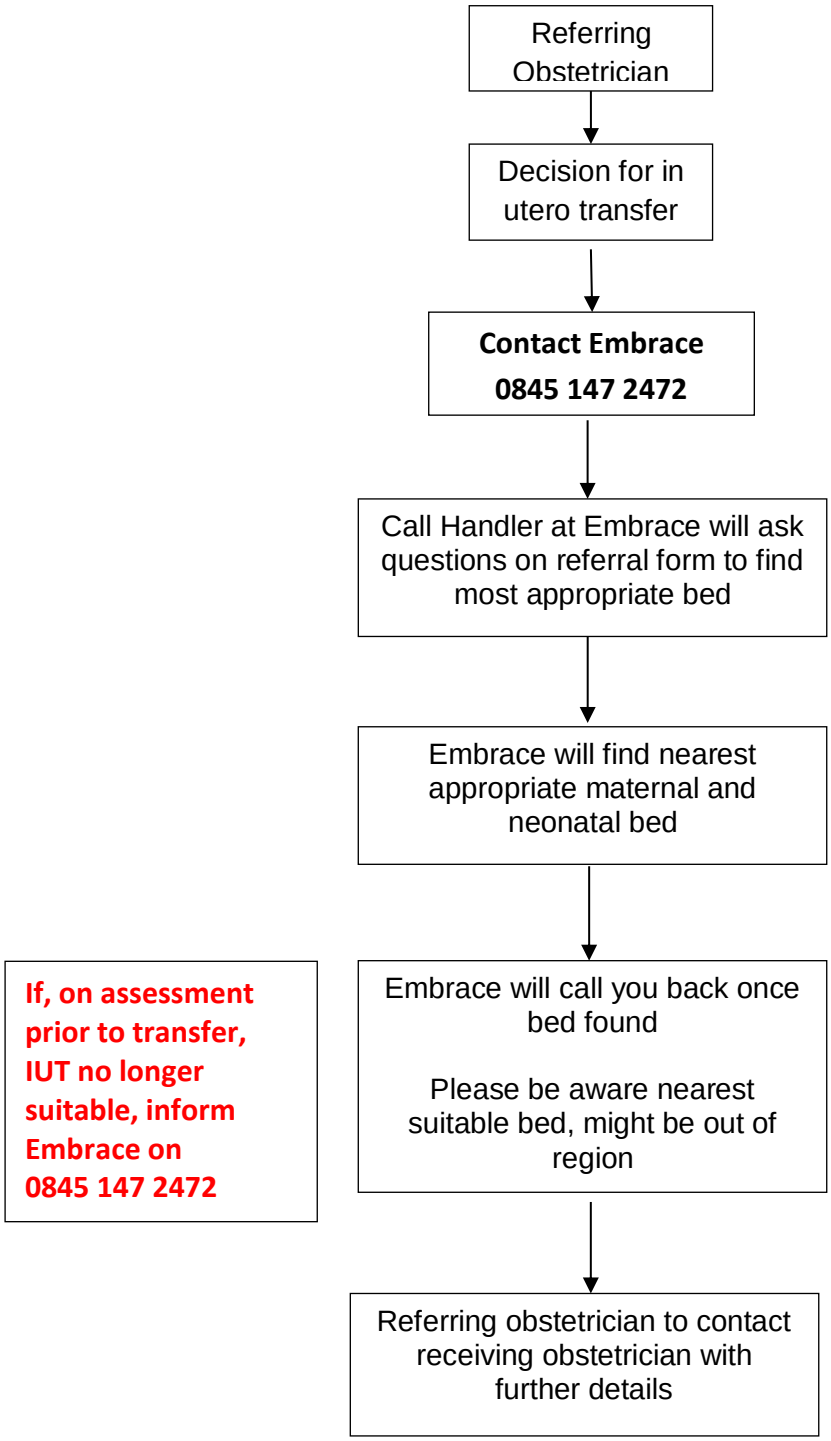
Embrace Infant and Children's Transport Service offers the ability to provide advice and facilitate the process for the in-utero transfer of mother and baby within Yorkshire and the Humber. The purpose of this document is to provide guidance on in-utero transfers for Yorkshire and the Humber.

Intended Audience

Embrace staff, maternity and neonatal clinical staff in Yorkshire and the Humber.

Contents – to be added prior to publication

Embrace In-Utero Transfers (Yorkshire & the Humber) Flowchart



1. Statement of intent

1.1. It is generally accepted that in-utero transfer has clinical advantages for the fetus/neonate over ex-utero transfer. The purpose of this guideline is to help provide enhanced care for the mother, her baby or both.

2. Introduction

2.1. A need for a transfer will arise if the referring unit is unable to cope with the particular clinical condition at the time of transfer for a variety of reasons including:

- Neonatal gestational thresholds (**Appendix 1**)
- Antenatal diagnosis requiring specialist postnatal care
- Specialist maternal care
- Bed/cot capacity or staffing

3. General guidance

3.1. All cases:

- Should be discussed with a consultant prior to arranging transfer
- Where possible consultant to consultant handover will occur
- It is recognised that there are circumstances (e.g. out of hours) where the resident obstetrician will have all the relevant information to hand compared to the non-resident consultant
- It is accepted that the registrar can then discuss the transfer with the receiving unit provided they have first discussed it with their own consultant
- If any problems are perceived with the transfer there should be a consultant to consultant discussion
- It is essential that both transferring and receiving consultants are fully aware of the transfer

3.2. Any mother or fetus might be in need of a transfer and it is not possible to provide an exhaustive list:

3.2.1. For a pregnant woman to be suitable for transfer, the staff at the referring hospital need to balance the risks of the transfer against the

potential benefits. Compromising the maternal health or a significant risk of delivery en route would be an absolute contraindication to transfer and consideration should then be given to delivery on site and postnatal ex-utero transfer.

3.2.2. The parents/mother must consent to the transfer.

3.3. Indications for transfer can broadly be split into the following groups:

- Preterm labour (**Appendix 1**)
- Transfer for a maternal indication
- Transfer for specialist paediatric services

3.4. The care pathways of this guideline should be referred to (**Appendix 1**). Transfers have become harder to arrange as pressure has increased on both the neonatal and delivery suite services. We are fortunate in this region to have Embrace that are charged with finding the most appropriate maternal bed and co-located neonatal cot. Embrace will aim for this to be as close to the mothers home address as possible, but it could be out of area. The Embrace cot bureau is run by non-medical staff and therefore to arrange the most appropriate referrals they need to be provided with all the necessary information (**Appendix 2**).

3.5. Women being transferred should be escorted by a midwife but there is no requirement for medical staff either obstetric or paediatric. If there is sufficient concern for a doctor to be required for transfer then the condition of mother or fetus is such that delivery should occur locally and a postnatal ex-utero transfer arranged.

3.6. The number of qualified staff required to escort women with a multiple pregnancy should be individualised depending on the clinical situation.

3.7. It is recommended that a basic neonatal resuscitation kit is taken on the transfer. See Appendix 3 for an example of content.

4. Preterm labour

4.1. The diagnosis of genuine preterm labour can be difficult. Ideally the diagnosis will be made based on the findings of regular uterine contractions and a change in the cervix. Waiting for the latter might mean that the opportunity to arrange a transfer is missed. As more hospitals within the region introduce

predictive test screening (Fetal fibronectin (fFN) and Actim Partus (AP)), our ability to become more selective will improve. Negative predictive value of these tests are around 99%, however, positive prediction is modest (<20%). The use of quantitative fibronectin is the most sensitive and improves the sensitivity if the test.

4.2. Women in PTL (or threatened PTL) between 23+0 and 35+6 weeks of gestation should be given betamethasone 12mg by intramuscular injection, two doses, 12 hours apart. If this is unavailable then dexamethasone is a suitable alternative (same dosage/administration). *Last part of paragraph removed.*

4.3. The administration of Magnesium Sulphate for neonatal neuroprotection should be offered in gestations at 30 weeks or less (and can be considered up to 33+6 weeks). In meta-analysis use of magnesium sulphate reduces the likelihood of cerebral palsy from 10 to 7% in babies born at less than 30 weeks. It is likely that benefit is conferred even after the loading dose has been given so administration to mothers should be considered even if delivery appears imminent. It would be reasonable to administer the loading dose and commence the maintenance dose prior to transfer.

~~4.2.~~4.4. Consideration should be given to the use of tocolytics for the transfer even with Preterm Pre-labour Rupture of Membranes (PPROM), although the women should be advised that their use might only be for the duration of transfer.

~~4.3.~~4.5. PPROM – the median latency between rupture of the membranes occurring between 25 and 31 weeks and delivery is 10 days. Indication for transfer will not therefore necessarily be because of PPROM per se but because of evidence of uterine activity or signs of chorioamnionitis.

~~4.4.~~4.6. Cases where fFN/AP and cervical length not indicated. It is recognised that some women are transferred for indications where these tests are not indicated such as pre-eclampsia or severe fetal growth restriction with abnormal fetal dopplers. In these cases a decision to transfer will be made between the referring and accepting obstetric team at consultant level.

~~4.5.~~4.7. If a woman is felt to be too unstable to transfer then this decision should be reconsidered at intervals of no longer than 6 hours and if the

clinical situation changes to permit transfer this should be facilitated as soon as possible

4.6.4.8. Cases where there is uncertainty whether to transfer complex cases. There may be times when discussions are required between referring and receiving obstetric and neonatal teams prior to transfer. Embrace can facilitate these discussions using multidisciplinary call conferencing facilities with digital recording.

5. Transfer for a maternal indication

5.1. The maternal condition must be such that it is safe for the women to be transferred. The ambulance crew and midwife cannot be expected to deal with women with unstable blood pressure or with a significant ante partum haemorrhage. The women must therefore be in a stable condition prior to transfer.

5.2. There may be occasions where the woman needs to stay at the current hospital due to certain maternal conditions (e.g. severe liver or renal disease) and therefore require specialist MDT care. This should be discussed with the neonatal team as it may mean that a preterm baby will need to be transferred ex-utero for maternal safety.

6. Transfer for specialist paediatric services

6.1. In this situation assuming there are no maternal issues the only major concern is ensuring that delivery does not occur en route. It would be far more sensible, for example, to deliver a baby with a known cardiac defect in the local hospital and then stabilise the baby pre transfer than for it to deliver en route.

7. Is the in-utero transfer feasible?

7.1. This realistically depends on the time taken to arrange and execute travel. As some transfers can take longer to arrange and the transfer time itself can be lengthy, the in-utero transfer may become impracticable. If this is the case please keep the Embrace cot bureau informed.

8. Management prior to in-utero transfer

8.1. The referring unit is responsible for the safe, efficient and rapid transfer. In particular if the transfer has taken time to arrange a reassessment of the case, including a repeat vaginal examination if appropriate, should occur prior to transfer.

8.2. The receiving unit obstetric registrar, neonatal unit, and delivery suite coordinator should be informed of the indication for transfer and be fully aware of the clinical history. The need for the obstetric consultant to be informed will depend on the individual case. For example we would expect both obstetric consultants to be involved in the transfer of severe PET at 24 weeks but in the main would not expect this for the transfer of an otherwise uneventful 34 week preterm labour with a cephalic presentation.

8.3. A photocopied set of case notes should be sent with the woman along with her hand held notes. In women who do not deliver the hand held notes must be sent home with the woman, along with information about treatment and plans made during the admission. Appropriate follow up should be arranged. When delivery has occurred it is still important to inform the referring hospital and again a clear plan needs to be made with regard to required follow up.

~~8.3.~~8.4. If the unborn baby is subject to a child protection plan or if there is Children's Social Care involvement, the receiving hospital needs to be made aware of this. The relevant Social Worker should be informed that the woman will be moving out of area for a temporary period.

9. Transfer back to the original referring unit in cases where delivery does not occur and continuing care is required.

9.1. As a general rule, 48 hours after transfer, if delivery is not imminent and there are no active problems that would contraindicate a journey, transfer back to the original unit for expectant management (whether as in or outpatient) should be considered and facilitated.

9.2. It is advised that this discussion occurs between the on call consultants for each unit as the transfer back will usually be within normal working hours. The receiving doctor will then ensure that communication occurs to their relevant colleagues within the unit and confirm follow up for the patient.

9.3. The consultant referring the patient back to their original unit will provide a clear written discharge plan. This should also be copied to the patient's own

consultant so that they are aware of the management plan for continuing care.

References

ACOG (2016) *Preterm (Premature) Labor and Birth*.

NICE (2015) *Preterm Birth and Labour CG25*

Travers Colm P, Clark Reese H, Spitzer Alan R, Das Abhik, Garite Thomas J, Carlo Waldemar A et al. *Exposure to any antenatal corticosteroids and outcomes in preterm infants by gestational age: prospective cohort study* BMJ 2017; 356 :j1039

Appendix 1

Transfer Thresholds for In-Utero and Postnatal Babies

Known major abnormality, any gestational age

- Leeds General Infirmary
- Sheffield, Jessop Wing

Level 3 'Tertiary' centres (Neonatal Intensive Care Units)

- Leeds General Infirmary
- Bradford Royal Infirmary
- Hull Royal Infirmary
- Sheffield, Jessop Wing

In-Utero transfers:

- Between 22+6 and less than 27 weeks - singletons
- Between 22+6 and less than 28 weeks - twins
- Estimated birth weight less than 800g (any gestation)

Postnatal Babies

- Less than 27 weeks - singletons
- Less than 28 weeks - twins
- Birth weight less than 800g (any gestation)
- Any baby needing more than 48hrs of ventilation to be discussed
- Any baby requiring complex intensive care with symptoms of multi organ failure

Level 2 (Local Neonatal Unit)

- **Calderdale – cooling centre**
- St James, Leeds (30+0 or above)
- Pinderfields
- York
- Airedale
- Barnsley
- Scunthorpe
- Grimsby
- Doncaster
- Chesterfield
- Rotherham

In-Utero transfers:

- 27 weeks and over - singletons
- 28 weeks and over - twins
- Estimated birth weight must be more than 800g

Postnatal Babies

- 27 weeks and over corrected gestational age - singletons
- 28 weeks and over corrected gestational age - twins
- Current weight must be more than 800g

Level 1 (Special Care Unit)

- ~~Dewsbury~~
- Harrogate
- Scarborough
- Bassetlaw

No In-utero transfers to a level 1 Centre.

Postnatal Babies:

Full feeds and classified as special care
32 weeks and over corrected gestational age
Can discuss babies more than 30 weeks corrected gestational age if consultants are in agreement

Appendix 2

Embrace
Yorkshire & Humber Infant & Children's Transport Service

IN-UTERO

EMBRACE NUMBER	2	0	1	8					PATIENT NAME	

NHS NO.										DOB	D	D	M	M	Y	Y	Y	Y	DATE	D	D	M	M	2	0	1	8

Pregnancy details		
Gestation: weeks	☐ Primip ☐ Multip Gravida:..... Para:	Presentation: ☐Cephalic ☐Breech ☐Other .....
Singleton	☐Yes ☐ No	Multiples ☐ Number.....

Problems in pregnancy			
Hypertension	☐Yes ☐ No	If yes:	Most recent BP...../..... Proteinuria.....
At risk of pre term labour (only ask if <37 wks)	☐Yes ☐ No	If yes:	Antenatal steroids: ☐Yes ☐ No If yes date/time last dose:..... Tocolysis: ☐Yes ☐ No Name:..... Fibronectin: positive/negative/not done
If <30 weeks have you given Magnesium: ☐Yes ☐ No			
Rupture of membranes:	☐Yes ☐ No	If yes:	Date:.....
Any signs of maternal infection	☐Yes ☐ No	If yes:	Maternal pyrexia: ☐Yes ☐ No Highest temp °C..... Maternal antibiotics ☐Yes ☐ No Name:..... CRP: ..... (number)
Established labour	☐Yes ☐ No	If yes:	Cervical dilatation ..... cm Contracting: ☐Yes ☐ No 1 in.....
Any significant bleeding	☐Yes ☐ No		

Fetal scans/growth problems:				
	Intra-uterine growth retardation (IUGR) ☐Yes ☐ No	Estimated weight, if known		g
	Doppler abnormality Absent EDF / Reduced EDF			
	Anomaly scan details:			

Is referring clinician aware of possibility that bed might be out of region? ☐Yes ☐ No

Any additional relevant information regarding this referral? (clinical or non clinical)

Reason for referral
☐Capacity ☐Uplift in Care

Appendix 3

NHS
Yorkshire and the Humber
Clinical Networks

Basic Neonatal Resuscitation Kit

Suggested contents for In utero transfer 'grab bag':

- Plastic bag
- Hats
- Transwarmer
- Stethoscope
- Ambu bag
- Term and preterm masks
- Towels / blankets