All Wales

In-Utero Transfer Guideline

Welsh Executive / NSAG In Utero Transfer Guideline Working Party (alphabetical order)

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Terms of Reference

The Working Party outlined above has produced an All Wales In Utero Transfer Guideline which was approved by the National Specialty Advisory Group for Obstetrics and Gynaecology, January 2011
Background:

1. **NICU Cot Provision.** One of the primary aims of the development of networks for the provision of neonatal intensive care is to ensure an adequate provision of neonatal intensive care cots within the local regions, thereby reducing the need for long distance transfers of mothers and their babies as well as ensuring adequate local capacity and occupancy of cots and appropriate staff. It is accepted that the ability to accurately predict those pregnant women who will deliver an infant requiring neonatal intensive care is limited.

For those obstetric units that are not co-located with neonatal intensive care, there is the need to consider transfer of expectant mothers during pregnancy. This can be elective e.g. in the situation of an antenatally diagnosed congenital malformation which will require NICU admission such as congenital diaphragmatic hernia, or, more commonly, in the emergency situation of an obstetric complication which renders the pregnancy at risk of premature delivery.

2. **Emergency In Utero Transfer:** In the emergency situation, it is well recognised that the outcome following delivery of a sick, preterm infant is enhanced if that delivery occurs in the same unit that provides the neonatal intensive care, particularly for infants of low and very low birth weight (*Watkinson and McIntosh* BJOG 1986 93:711-6, *Chiem et al Obstet Gynecol* 2001 98:247-52, *Hohlagschwandtner et al Arch Gynecol Obstet* 2001 265:113-8).

Studies on the outcome following *in utero* transfers have demonstrated no adverse events from transfers (*Fenton et al Paediatr Perinat Epidemiol* 2002 16:278-85) but a significant number of women transferred to a tertiary centre remain undelivered. This has been estimated to be between 25 - 35% (*Roberts et al Aust NZJ Obstet Gynaecol* 2000 40:377-84, *Fenton et al Paediatr Perinat Epidemiol* 2002 16:278-85).

Given the costs of antenatal transfers, and the disruption to the life of the mother and her family, it is important that unnecessary transfers are kept to a minimum, whilst those transfers where delivery within a few days of transfer is likely are maximised.

With the development of the All Wales In Utero Transfer Guideline it will be necessary to ensure that the receiving labour wards can always accommodate reasonable requests for *in utero* transfers which will also require the number of transfers which do not deliver being kept to a minimum.

3. **All Wales In Utero Transfer Guideline:** This guideline will address the procedure for emergency transfers.

4. **Emergency Transfers:** Emergency antenatal transfers are required when delivery of either a very preterm or other sick baby is anticipated because of spontaneous preterm labour or when obstetric complications have arisen which indicate a need for preterm delivery. These complications may be maternal e.g. severe early onset pre-eclampsia or fetal e.g. severe intrauterine growth restriction with signs suggestive of fetal compromise. In all cases, maternal safety is paramount, particularly in the situation where maternal disease and deterioration in maternal condition are the precipitating factors. It is therefore evident that good communication between midwifery, obstetric and neonatal staff on both sides of the proposed transfer is essential.

5. **Decision to Request Transfer:** The decision to request a transfer will be made after discussion between the referring obstetric team and their local neonatal team. There is considerable debate as to whose responsibility it is to find a neonatal cot and obstetric bed, but given the fact that the referral will be made on obstetric grounds, the referring obstetric team will have the overall responsibility. Decisions to request a transfer must only be made after consultation with, and with the agreement of, the duty consultant or responsible consultant obstetrician at the referring hospital. If the referring consultant obstetrician is of the opinion that antenatal transfer is inappropriate for reasons of maternal or fetal safety, then the referring neonatologists will be required to arrange postnatal
transfer. Accurate assessment of need for transfer is essential to minimise both unnecessary and repeat transfers (i.e. a mother who is transferred from her booked unit to the tertiary unit on more than one occasion which can account of up to 15% of transfers (Gill et al. Arch Dis Child Neonatal Ed 2004 89:F220-3)).

6. NICU and Labour Ward Availability: The referring team will contact the neonatal intensive care unit to enquire about cot availability. If a cot is available, the referring team will then enquire of the labour ward co-ordinator about availability of a suitable bed for the mother. If the labour ward coordinator can accommodate the mother, then the referring team must speak to the on-call obstetric SpR prior to booking transport etc. If the receiving obstetric SpR or labour ward co-ordinator is concerned about the advisability of accepting a transfer (e.g. concerns over safety, capacity issues) then they must discuss the case with the duty receiving consultant obstetrician who may speak to the referring consultant if appropriate. The receiving unit must ensure that all three points of contact (neonatal intensive care unit, labour ward coordinator and duty obstetric SpR) have agreed to the transfer. The receiving on call consultant should be informed by the receiving duty obstetric SpR and the transfer sanctioned.

7. Documentation: The referring team must send, as a minimum, a photocopy of the mother’s obstetric notes and complete the All Wales In Utero Transfer Form (See Appendix). Ideally, the referring hospital notes and the mother’s hand held notes should accompany the other at transfer. If this is the case, the notes must be returned after delivery, and this is the responsibility of the receiving obstetric team.

8. Threatened Preterm Labour: The diagnosis of preterm labour is difficult and inaccurate. Whilst the definition of labour is clear (regular painful uterine contractions with progressive effacement and dilatation of the cervix with descent of the presenting part), preterm labour can be extremely rapid and silent. There is therefore a tendency to treat all women who complain of uterine tightenings before term as being in preterm labour. Not only does this lead to unnecessary administration of corticosteroids and tocolytics, but it also accounts for a significant proportion of the number of women who undergo antenatal transfer but who do not deliver.

9. Accurate Tests for Preterm Labour: There are, however, well-established tests to help differentiate between those women who appear to be in threatened pre-term labour and who will deliver and those who will not deliver in the immediate future. These include measurement of cervical length using transvaginal ultrasound (Sanin-Blair et al Ultrasound Obstet Gynecol 2004 24:756-60, Daskalakis et al J Matern Fetal Neonatal Med 2005 17:309-12, Tekesin et al J Perinat Med 2005 33:383-91), cervical fetal fibronectin (fFN) (Peaceman et al Am J Obstet Gynecol 1997 177:13-8) and cervical IgF binding protein (Actim Partus) (Lembet et al Acta Obstet Gynecol Scand 2002 81:706-12). In order for a test to be of clinical value in screening women who are potentially in preterm labour, it must have not only good sensitivity, specificity and positive predictive value but also be simple to use as a bedside test. Ideally, it should also be inexpensive but as it is to be used to minimise the use of more expensive options (tocolysis and in utero transfer), the cost can be offset to some degree. The use of cervical length measurement using transvaginal ultrasound would be inappropriate as a screening test in this circumstance. However the Hologic fFN test is a simple objective bedside test which could be performed by either a doctor or midwife.

10. Preterm Labour: For women who are suspected to be in preterm labour, fFN should be used and, if positive, referral made. Maternal corticosteroids should be administered with tocolytics cover. Given the high negative predictive values for fFN for delivery within seven days (99.5% and 94.1% respectively), a negative result would indicate that transfer was not appropriate in the absence of any other complicating factors and indeed the role for steroids carefully considered.
11. **Antepartum Haemorrhage:** Vaginal bleeding during pregnancy is a recognised risk factor for premature labour and delivery. However, in the absence of maternal or fetal compromise, management will usually be tailored to maximise gestation before delivery. In the presence of acute maternal or fetal compromise, transfer to a tertiary unit will usually be inappropriate. Therefore, the indications for *in utero* transfers for women experiencing this complication of pregnancy are relatively few. Although no mother should be transferred if there is significant active bleeding, it may be appropriate to transfer some cases of symptomatic placenta praevia as long as it is deemed safe to do so. Careful assessment of the suitability for transfer is essential and sanctioning at consultant level.

12. **Maternal disease:** Pre-existing medical conditions and some pregnancy complications e.g. pre-eclampsia may require urgent or semi-elective preterm delivery. Such transfers will often be possible during the working day. If delivery out-of-hours is contemplated because of maternal compromise, very careful consideration must be given to the safety of both mother and fetus before *in utero* transfer. If such a transfer is effected, it is essential that all information relating to the maternal and fetal assessment is made available to the receiving unit to prevent unnecessary duplication of investigations and sanctioning at consultant level.

13. **Fetal compromise:** Intrauterine growth restriction accounts for a significant number of referrals. Receiving units all have full fetal assessment capability within the in-house fetal medicine service. Decisions about timing of delivery will usually be made on the basis of a number of factors including estimated fetal weight, evidence of central redistribution of blood flow, changes in venous Dopplers, fetal activity, liquor volume and cardiotocogram. Frequently, a more detailed assessment by feto-maternal specialists will permit prolongation of the gestation by a number of days, and weeks in some circumstances. Referring obstetricians are encouraged to utilise the fetal medicine service in order to gain additional information about fetal wellbeing if this is feasible. It is not uncommon for a mother to be transferred for delivery, only to find that the receiving unit assesses the need for delivery as less urgent. Therefore, in circumstances where there is any uncertainty about the need for urgent delivery (which will be in the majority of cases where delivery is contemplated before 34 weeks or where the estimated fetal weight is less than 1.5 Kg) transfer can be arranged via the elective pathway, which will include outpatient referral. It is advisable to inform the mother that, whilst delivery is likely to be effected soon, the decision about timing of delivery will lie with the receiving unit. This approach can reduce the distress and anxiety caused by a transfer for delivery when the need to deliver is not urgent.
Algorithm I
In-Utero Transfer Roles and Responsibilities

1. Obstetric SpR at referring hospital
to contact receiving Neonatal Unit and check cot availability

**Decision that transfer is appropriate**
(Confirmed by referring consultant obstetrician and local neonatal team and documented in notes)

2. Obstetric SpR at referring hospital
to contact Delivery Suite Coordinator at receiving unit if cot available

3. Obstetric SpR at referring hospital
If bed available on Delivery Suite, call to be transferred to Obstetric SpR at receiving unit
to pass on all relevant clinical details.

4. Receiving unit Obstetric SpR
to inform receiving consultant obstetrician that transfer has been requested and ascertain if approved.

Acceptance documented in notes with time and date.

If necessary referring consultant and receiving consultant to discuss the case directly.

5. Referring unit
to arrange transport and either photocopy of mother’s notes or send notes with her,
including relevant investigations etc.

Final arrangements discussed between referral unit Delivery Suite Coordinator and receiving unit Delivery Suite Coordinator

All units (receiving and referring) to have checklist of all steps to be kept as central record of all transfer requests with times, dates and names or relevant staff.

If any doubt about suitability of transfer, receiving consultant obstetrician to discuss with referring consultant obstetrician.
Algorithm II

*In utero* transfer for spontaneous preterm labour

### History suggestive of preterm labour

**Clinical and pelvic examination**

- **fFN**

**POSITIVE Ffn**

- **Cervix > 4cm dilated**
  - +/- ruptured membranes
  - +/- fFN +ve

  - **Steroids**
  - **Tocolytics**

  - **Arrange in utero transfer if suitable**
    (ie delivery NOT imminent)

**NEGATIVE Ffn**

- **Cervix < 4cm dilated**
  - +/- intact membranes
  - +/- fFN -ve

  - **Other Risk Factors**
    - eg previous history, multiple pregnancy

  - **Consider Transfer**

  - **No other indication to consider delivery**
    - **No Transfer**
Para ............ Gestation....... EDD....................
Consultant (name).................................
Transfer Request  Date.......... Time......... hrs
Departure  Date.......... Time......... hrs
Arrival  Date.......... Time......... hrs
Tel:.................................................
Job Title:............................................
Name:..............................................
Name:..............................................
Name:..............................................
Receiving Unit..............................
Recipient:...........................................
Tel:.................................................
Job Title:............................................
Name:..............................................
Name:..............................................
Name:..............................................
Mode of Transfer  □ Ambulance  □ Own Transport
Arranged by:  □ Midwife  □ Woman

Maternal Checklist:
Blood Group.......... Rh............
Last Hb .......... g/dl  on .......... 
Steroids Date.......... Time.........
Tocolytics.................
In Labour?:  NO / YES
Infection?  NO / YES
APH?:  NO / YES
V/E: Cervix.....cm  Vx / Bx / ..........
Membranes:  Ruptured  Intact  NK
ROM Date.......... Time.........
fFN:  POS  NEG  NK

Fetal Checklist:
Number::  Single / Multiple
IUGR?:  NO / YES
Fetal Distress?:  NO / YES
Anomalies?:  NO / YES
Fetal Med Issues?:  NO / YES
Child Protection Issues?  NO / YES
Congenital Anomaly?  NO / YES

Relevant Antenatal or Past Obstetric History
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.....................................................................
PPROM / IUGR / Preterm Labour / Other (specify)

Relevant  Clinical Details
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