Induction of labour (IOL) including oxytocin Infusion (V10)

Guideline Readership
This guideline applies to all women booking within University Hospital Birmingham NHS Foundation Trust, attending clinicians; obstetricians, anaesthetic teams, midwives and specialist midwives.
All care is tailored to individual patient needs alongside trust guidelines, incorporating the most up-to-date evidence for best practice. All information provided to the woman and her partner, should include an in-depth discussion of the intended risks and benefits of either undergoing the procedure or declining intervention.

Guideline Objectives
This guideline aims to ensure a recognised management process for the induction of labour (IOL). It is imperative that all midwives and obstetricians are able to care for women undergoing induction of labour, taking timely and appropriate action, including escalation to senior team members as and when required. This guideline incorporates the decision making processes for IOL, the methods of induction, use of oxytocin and care required. This also encompasses the safe and effective management of prolonged pregnancy and pregnancies where medical conditions indicate that early delivery would be beneficial.

Other Guidance
This guideline is compliant with and incorporates recommendations from:
Please refer to full reference listing at end of guideline.

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Clinical Guideline for the Management of Induction of Labour (IOL), including oxytocin infusion

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1. Flowchart 1: Planning for Induction of labour (IOL)

IOL being considered

- **Uncomplicated pregnancy**
  - Offer induction of labour at 40 weeks + 10 days to 40 weeks + 12 days gestation
  - Offer sweep at:
    - 40+0 weeks and 41 weeks gestation (nulliparous)
    - 41+0 weeks gestation onwards (parous)

- **Complicated pregnancy AND/OR under 40 weeks + 10 days gestation**

  - Decision for IOL must be made by a Consultant, or ST6-7, ideally with Consultant input.
  - Document indication, date and place of IOL

**Book for IOL at 40 weeks + 12 days gestation**

Booking can be done by:
- community/antenatal clinic midwives or any doctor

**When planning IOL:**
- Counsel patient regarding the risks associated with IOL process as well as those associated with delaying the timing of IOL.
- Document discussion, indication & planned IOL date on Badgernet.
- Before booking check availability on relevant ward/delivery suite; where possible, adhere to agreed daily limit of women for IOL.
- Complete the IOL booking form and file it in patient’s hospital notes.
- No IOLs are to take place in Netherbrook Birthing Unit (NBU, Solihull).
- Booking of IOL should be done via Ultragenda.
Flowchart 2: Place for IOL

Good Hope Hospital

IOL areas:

Ward 4
- Postdates
- Gestational diabetes on diet
- Reduced Fetal Movements (RFM)
- Symphysis pubic dysfunction (SPD)
- Maternal request >39+0 weeks
- Uncomplicated pre-labour rupture of membranes (PROM)
- Uncomplicated obstetric cholestasis (OC)
- Some maternal medical conditions may be considered, this will be determined by the named lead consultant

Delivery Suite
- Will need Consultant decision:
  - Hypertension
  - Pre-eclampsia
  - Diabetes (on medication)
  - Maternal infection or medical disorders
  - Small for gestational age (SGA)
  - Multiple pregnancy
  - Prematurity (IOL <37+0 weeks gestation)
  - Antepartum haemorrhage (APH)
  - Intrauterine infection
  - Para 6 or more
  - Morbid obesity ≥ 45 BMI

This list is not exhaustive. If there is any doubt regarding place of IOL please discuss with Consultant.

Birmingham Heartlands Hospital

IOL areas:

Cedar Ward
- Postdates IOL with no identified risk factors
- Uncomplicated prelabour rupture of membranes at term
  Maximum 2 IOL to be booked for Cedar ward per day.

Delivery Suite

All other IOL's in bay on Delivery suite regardless of risk
### Flowchart 3: Delay in IOL

<table>
<thead>
<tr>
<th>Potential delays in IOL pathway &amp; acceptable time frame:</th>
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<tr>
<td>• Administering vaginal prostaglandin</td>
<td>Aim to do within 120 minutes (2 hours) of arrival in hospital</td>
</tr>
<tr>
<td>• Assessment of progress</td>
<td>Aim to do within 60 minutes (1 hour) of planned assessment time</td>
</tr>
<tr>
<td>• Transfer to Delivery suite for ARM +/- oxytocin infusion following informed consent &amp; assessment to perform ARM</td>
<td>Aim to do within 6 hours</td>
</tr>
<tr>
<td>• Transfer to Delivery suite for oxytocin infusion following confirmation of SROM</td>
<td>Aim to do within 6 hours</td>
</tr>
<tr>
<td>• Assessed &amp; ARM performed once transferred to Delivery suite</td>
<td>Aim to do within 60 minutes (1 hour)</td>
</tr>
<tr>
<td>• Oxytocin infusion commenced as per regime</td>
<td>Aim to do within 60 minutes (1 hour) documented decision for oxytocin infusion</td>
</tr>
</tbody>
</table>

**ARM- Artificial rupture of membranes**
**SROM- Spontaneous rupture of membranes**
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Flowchart 4: Methods and procedure of IOL

1. Admission for IOL
2. Assessment of maternal & fetal wellbeing
   - Check indication for IOL
   - Maternal observations: Full obstetric MEWS score
   - Fetal observations, including lie, presentation, engagement & cardiotocograph (CTG)
3. Refer to fetal monitoring Guideline for guidance on auscultation and continuous monitoring of the fetal heart
4. Assessment within normal limits?
   - YES
     - Confirm with delivery suite if IOL can continue
     - If Yes...
     - Cervical assessment, including Bishops Score (BS)
       - Document on induction sheet (to be filed as part of intrapartum notes)
       - BS < 6
         - Artificial rupture of Membranes (ARM) on Delivery Suite
         - If not in established labour in 2 hours following ARM, continue with oxytocin infusion as per regime; earlier if indicated
         - NB: Previous caesarean section/grand multiparity – discuss with Consultant
         - Options:
           1. PG E2 (Prostin) 3mg vaginal tablet into posterior fornix once & commence oxytocin infusion in 6 hours if not in established labour
           2. Commence oxytocin
       - BS ≥ 6
         - Prelabour rupture of membranes (PROM)
         - Vaginal birth after caesarean section (VBAC)
         - All other patients apart from PROM & VBAC
     - NO
     - If No...
       - Explain rationale for delay to woman and document
6. For obstetric review
   - Plan & actions to be clearly documented
   - Follow Flowchart 5
   - Grand multiparity (Parity ≥ 5)
   - Seek Consultant advice
7. Insert Foley’s catheter OR *PG E2 (Prostin) 3mg See box below
   - *PG E2 (Prostin) vaginal tablets in VBAC:
     - associated with 2-3 increase risk of scar rupture compared to ARM and oxytocin.
     - administration should be avoided if possible
     - administration has to be a Consultant decision with careful patient counseling
     - if given, avoid giving more than once

*NB: Previous caesarean section/grand multiparity – discuss with Consultant
Flowchart 5: Dinoprostone vaginal pessary (Propess) Induction

Dinoprostone (Propess) vaginal pessary (releasing dinoprostone approx. 0.3mg / hr up to 24 hours)

Contraindications:
1. History of hypersensitivity to prostaglandins
2. When labour has started
3. Previous lower segment or vertical caesarean section (VBAC)
4. Pre-labour rupture of membranes (PROM)

While Dinoprostone (Propess) vaginal pessary in-situ seek Senior Registrar / Consultant review if:
- PV bleed
- Tachysystole
- Uterine hyperstimulation with fetal heart rate (FHR) abnormalities
- Evidence of fetal compromise – abnormal cardiotocograph (CTG)

If Dinoprostone (Propess) vaginal pessary falls out & contaminated, a new one to be inserted to complete the 24 hour duration after discussion with the on-call team

Uterine palpation and assessment of frequency of contractions is vital.
A growth restricted (SGA) baby will tolerate far less tachysystole than a normally grown baby. Consider CTG more frequently than 6 hourly with SGA.

When to remove Dinoprostone (Propess) vaginal pessary
1. 24 hours after insertion
2. As soon as woman goes into labour with cervical changes allowing for ARM (BS ≥6).
3. Remove Propess immediately with medical review if:
   - PV bleed
   - Uterine hyperstimulation with CTG abnormalities
   - Abnormal CTG
4. At least 30 minutes before starting oxytocin infusion
5. Spontaneous rupture of membranes (SROM)

ARM- Artificial rupture of membranes
SROM- Spontaneous rupture of membranes
Flowchart 6: Failed IOL with Dinoprostone (Propess) Vaginal pessary

Failed IOL with Dinoprostone (Propess) vaginal pessary

Bishops Score <6 after 1 cycle of pessary

Review by on-call team & discuss with Consultant
Review indication for IOL: maternal wishes, maternal condition, CTG findings
Vaginal assessment by Registrar

Options
1. Repeat Dinoprostone (Propess) after 4 hours rest, & reassess after 24 hours of insertion.
2. Consider PG E2 (Prostin) 3mg vaginal tablet.

Bishops Score <6 – review by on-call Consultant
Options:
1. Transcervical Foley’s catheter
2. Artificial rupture of membranes (ARM) followed by oxytocin infusion, regardless of Bishops Score
3. Caesarean section within 24 - 48 hours

Bishops Score ≥ 6 ➔ Artificial Rupture of membranes (ARM)
2. Executive summary / Overview

These guidelines have been produced to encompass recommendations for induction of labour (IOL) and oxytocin use published by the National Institute of Clinical Excellence (NICE) in 2007, 2008 and 2014. Locally agreed adaptations have been made where necessary. This guideline covers the interventions designed to artificially initiate uterine contractions leading to progressive dilatation and effacement of the cervix and birth of the baby. This also includes the use of oxytocin.

3. Body of the Guideline

Definitions

Labour

- Is the process of uterine contractions leading to progressive effacement and dilatation of the cervix and birth of the baby.
- The term is usually restricted to pregnancies at gestations greater than the legal definition of fetal viability (24 weeks in the United Kingdom [UK]).

Induction of Labour (IOL)

- Induction of labour is an intervention designed to artificially initiate uterine contractions leading to progressive dilatation and effacement of the cervix and birth of the baby. This includes both women with intact membranes and women with spontaneous rupture of the membranes but who are not in labour.
- The term is usually restricted to pregnancies at gestations greater than the legal definition of fetal viability (24 weeks in the UK).

Cervical Ripening

- Cervical ripening is a component part of induction of labour employed when the cervix is unfavourable in order to facilitate dilatation when labour is established.

Augmentation

- Augmentation is an intervention designed to increase the rate of progress of labour.

Initiation and booking of Induction of Labour (see Flowchart 1)

Women should be informed at the 38 week antenatal visit that most women will go into labour spontaneously by 42 weeks and informed about the risks associated with pregnancies that last longer than 42 weeks (NICE, 2008).

NICE (2008) states that in women with uncomplicated pregnancies, IOL should be offered between 41+0 and 42+6 weeks to avoid the risk of prolonged pregnancy. Exact timing should take into account the woman’s preferences and local circumstances. The local procedures are described below.

- Induction of labour for medical indications and before 40+10 is a consultant decision
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- A senior obstetric registrar (ST 6-7) may decide but should discuss with a consultant.
- Document the discussion, indication and IOL date clearly in maternal handheld notes and Badgernet Maternity Information Software (if hospital notes available)
- Before IOL, women should be routinely offered a membrane sweep at 40+0 and 41+0 weeks for nulliparous and 41+0 weeks for parous women.
- In low-risk women, the membrane sweep and booking for IOL can be arranged by the community midwife.
- Doctors and community/hospital midwives can book routine IOL for prolonged pregnancy from 40+10 onwards (gestational age from first trimester scan).
- IOL is booked via UltraGenda. Complete the IOL proforma and prescribe the appropriate medication once decision made for IOL.

The minimum dataset is the woman’s name, PID, gestation, indication, and high risk factors if any must be recorded.

Information on the process of IOL should be supported by giving the patient a leaflet, available from i-care electronically. See booking form in Appendix 1.

Unless specifically requested, women being admitted for routine IOL do not require review by an obstetrician. However, the admitting midwife should review the notes and the woman. If she has concerns about a previously unrecognised problem from the history or clinical examination, these should be raised with an obstetrician before attempting to induce labour.

For Place of Induction see Flowchart 2

Patients receiving Low Molecular Weight Heparin (LMWH)

For women receiving high prophylactic or therapeutic doses of LMWH the dose of LMWH should be reduced to the normal thromboprophylactic dose on the day before induction of labour. Any women on thromboprophylaxis antenatally should stop LMWH on the day of Induction.

NO LOW MOLECULAR WEIGHT HEPARIN TO BE ADMINISTERED ON THE DAY OF INDUCTION.

VTE Risk assessment should be done immediately after delivery and appropriate thromboprophylaxis should be prescribed.

Maternal observations and fetal surveillance (refer to fetal monitoring guideline)

Maternal observations should aim to be undertaken before starting induction, following the Modified Early Warning System (MEWS) procedure, documented on a MEWS chart. Repeat 12-hourly thereafter until onset of labour, or frequency reset.

Monitoring of fetal wellbeing during IOL

All women will need Cardiotocograph (CTG) within 30 minutes prior to insertion of prostaglandin.

Uncomplicated pregnancy
There is limited evidence as to the most appropriate protocol for fetal monitoring after vaginal prostaglandin insertion in low risk women. It should be stopped after 30 minutes of normal trace. Once CTG is confirmed as normal, intermittent auscultation should be used unless there are other indications for continuous monitoring. NICE recommends that a CTG should be done when contractions begin.

**Complicated pregnancy**

- The frequency of fetal monitoring should be in liaison with the Obstetrics on-call consultant. There is no robust evidence to support any protocol.
- CTG should be done every 6 hours or more frequently if clinical situation requires.
- CTG should be stopped after 30 minutes if the trace is normal.
- CTG should also be undertaken once the contractions begin to ensure fetal well-being and should be continuous once the contractions are regular.

A growth restricted baby will tolerate far less tachysystole than a normally grown baby. Consider CTG more frequently than 6 hourly with SGA.

**Intrapartum fetal monitoring.**

Low risk women undergoing IOL should have a minimum 30 min CTG at onset of labour, if normal and no new risks identified, intermittent auscultation can be used. High risk women undergoing IOL require continuous CTG monitoring.

When oxytocin is being used for either induction or augmentation, continuous electronic fetal monitoring should be used from commencement of the infusion.

**Indications for IOL / Special Circumstances**

**In the presence of obstetric complications**

Refer to relevant guidelines for the management of individual obstetric conditions including diabetes in pregnancy. In pre-existing diabetes delivery should be planned between 37 and 40 weeks gestation (NICE, 2014). This will either be by induction of labour or by Caesarean Section depending on obstetric considerations.

**In the presence of medical / surgical complications**

When significant recognised risk factors are present, the decision, method and timing of the intervention should be taken at consultant/senior registrar (ST6-7) level.

**Induction of labour for maternal request**

Maternal request for IOL should be considered when there are compelling psychological or social reasons and the woman has a favourable cervix. These cases should be few in number and should be treated individually and be dealt with at Consultant level. In exceptional cases a second opinion from a Consultant colleague may be appropriate. IOL may be considered from 40 weeks gestation: however, women should be aware that early IOL increases the risk of failure, instrumental delivery and caesarean section (NICE, 2014).

**Prolonged pregnancy**

All women with uncomplicated pregnancies should be offered induction of labour at 40+10 weeks or earliest possible date after this, ideally with gestation established from the first trimester scan.
Prelabour rupture of membranes (PROM): preterm and term

- IOL should not be carried out before 34 weeks unless there are additional obstetric indications.
- If after 34 weeks the following factors should be discussed with the woman and taken into consideration, with consultant input:
  - Risks to the woman (e.g. sepsis, possible caesarean section)
  - Risks to baby (e.g. sepsis, related preterm birth problems)
  - Local availability of neonatal unit (NNU) facilities
  - In the absence of overt signs of infection or fetal compromise, a policy of expectant management with appropriate surveillance of maternal and fetal wellbeing should be followed in pregnant women who present with ruptured membranes close to term (34 weeks and 36 weeks and 6 days). PPROMT trial, Lancet 2016.
- At or over 37 weeks, women should be offered a choice of induction or expectant management. IOL is appropriate at approximately 24 hours after ROM. The method should be decided by registrar or consultant. The options are either a single dose (3mg) of PGE2 Prostin followed by the oxytocin infusion after 6 hours or commence oxytocin infusion at the outset.
- PGE2 tablet (Prostin) should be inserted high into the posterior vaginal fornix, care being taken to prevent the tablet being placed into the cervical canal.

Women with previous caesarean section (CS)
Options for IOL in women with previous CS include membrane sweep, amniotomy, and Foley catheter. The use of prostaglandins and oxytocin are relatively contraindicated for IOL for women with previous CS within the Trust, therefore the decision to use them must be a Consultant decision with clear documentation in the hand-held notes/Badgernet or intrapartum notes. Women should be informed of the increased risks of emergency CS and uterine rupture related to IOL (NICE 2008). Women admitted for IOL with previous CS must have a physical review by the Consultant and a plan of care. See below for further details on use of Foley catheter for IOL.

Breech presentation
NICE (2008) does not recommend IOL if the baby is in the breech presentation. If external cephalic version (ECV) is unsuccessful, declined or contraindicated, and the woman chooses not to have elective CS, offer IOL if delivery is indicated. A consultant must discuss the associated risks with the woman (refer to breech guideline).

Fetal growth restriction (FGR)
In the presence of severe FGR with confirmed fetal compromise such as abnormal liquor volume or umbilical artery Doppler, IOL is not recommended especially in the preterm fetus (NICE, 2008). Caesarean delivery should be arranged. Discuss with fetal medicine team for further advice on timing of delivery. In other cases, induction for FGR is a consultant decision.

Precipitate labour
Induction of labour to avoid an unattended birth should not be routinely offered to women with a history of precipitate labour (NICE, 2008).

Intrauterine death (IUD)
In the event of an IUD offer support and information on specialist support. If the woman appears to be physically well, her membranes are intact and there is no evidence of infection or bleeding, she should be offered a choice of immediate IOL or expectant management. Immediate IOL is the preferred management option if there is evidence of ROM, infection or bleeding. The preferred method is Mifepristone (RU-486) followed by vaginal prostaglandins or Misoprostol (PGE1).

The risk of uterine rupture is increased with women with an IUD and a previous CS; therefore the prostaglandin dose should be reduced accordingly, particularly in the third trimester. Misoprostol should only be offered as a method of IOL to women who have an IUD (NICE, 2008) (refer to Administration of Mifepristone and Misoprostol for termination of pregnancy or induction for Intrauterine Death guideline).

**Fetal macrosomia (large for gestational age)**
This is usually defined as an estimated fetal weight \( \geq 4.5 \) kg or above the 95th centile at delivery.

The management of these patients is complex and should be individualized taking into account risk factors such as previous caesarean delivery, advanced maternal age, maternal diabetes (increased risk of shoulder dystocia) etc.

One must acknowledge that there is a margin of error of approximately 10-15% with ultrasound scan performed in the late third trimester.

The patient should be thoroughly counseled about the risks associated with fetal macrosomia including labour dystocia, shoulder dystocia, obstetric brachial plexus injuries (OBPI), maternal injury (third/fourth degree and complex perineal tears), postpartum hemorrhage, need for instrumental delivery and caesarean section. The risks associated with the process of IOL should also be discussed. This discussion must be documented in Badgernet and/or the intrapartum notes.

It is reasonable to offer IOL between 39-40 weeks in these cases. Caesarean delivery is a valid option and should be discussed with the patient. The final decision regarding the timing and mode of delivery is made at the discretion of the Consultant jointly with the patient.

During labour, the patient must be observed for slow progress and it is advisable for a Registrar to be present at delivery in such circumstances.

**Maternal age** – 40 years and above (RCOG, 2013)
In nullipara, Afro-Caribbean women or those who have concurrent comorbidities, offer IOL at 39+0 – 40+0 weeks gestation.

**Unexplained polyhydramnios:**
Discuss with Consultant regarding timing and method of IOL.

**Recurrent reduced fetal movements (RFM)**
Timing of and decision for IOL should be made by a Consultant in line with the Trust guideline on Reduced Fetal Movements.

**Obstetric Cholestasis**
IOL at 37+0 – 38+0 weeks gestation.

**Insignificant meconium**
- Immediate IOL is recommended
- Is not a reason for continuous CTG (NICE, 2014); however during the process of IOL the woman will require continuous CTG monitoring

**IOL in patients with critical asthma**
Individual cases should be discussed with Maternal Medicine Specialists.
Misoprostol is a PGE1 analogue with minimal reported side effects. PGE1 is mainly bronchodilatory in its action but very small amounts of PGF2α can be produced as a result of metabolism which is a bronchoconstrictor. This effect is less than described with PGE2 (Prostin) and hence Misoprostol may be a better induction agent than Prostin in the induction of patients with critical asthma. However, because of the practical difficulties with administering lower doses of Misoprostol (50 mcg. as used in the research setting) from the commercially available 200 mcg, individual cases should be discussed with the maternal medicine specialists.

**Failure of IOL**

- Reassess the woman’s condition and pregnancy
- Assess fetal wellbeing with CTG
- Provide support and make decisions in accordance with woman’s wishes and clinical situation.
- Options include a further attempt at IOL depending on situation and woman’s wishes and caesarean section. See Flowchart 6.

**Documentation**

Management plan for IOL must be documented in
- patient’s hand-held notes
- Badgernet Maternity Information Software
- Transferred to the intrapartum notes under the ‘management plan’ section
...depending on timing of discussion

**Uterine hyperstimulation and CTG abnormalities with induction/augmentation**

-Uncomplicated uterine hyperstimulation is defined as uterine tachysystole (over 5 contractions per 10 minutes for at least 20 minutes) or uterine hypertonus (contractions lasting at least two minutes), without fetal heart rate (FHR) abnormalities.

**ACTION**

- Observe maternal and fetal well-being with continuous CTG
- Obstetric review should be obtained

-Uterine hyperstimulation syndrome occurs when tachysystole or hypertonus occurs with abnormalities in the CTG, which may include persistent decelerations, tachycardia or decreased short term variability.

**ACTION:**

- Remove the Dinoprostone (Propess) vaginal pessary or stop the oxytocin infusion (NICE 2014)
- Urgent obstetric review
- Tocolysis should be urgently considered. Give subcutaneous Terbutaline Sulphate 250 micrograms (vials contain 500 micrograms/ml). Tocolysis may also be used for hyperstimulation due to oxytocin infusion if clinically indicated and requested by Registrar or Consultant. If the CTG changes continue, follow electronic fetal monitoring guideline for further management.

**Delay in Induction of Labour (IOL) See Flowchart 3**
Women who have prolonged pregnancy or who decline IOL with a gestation of more than 42+0 completed weeks should be offered increased antenatal monitoring consisting of at least twice-weekly CTG and ultrasound estimation of maximum amniotic pool depth (NICE, 2008).

Patients declining IOL should be counselled by a Consultant regarding increased risk of fetal distress and fetal mortality from 42 weeks onwards. Content of the discussion and an individualised management plan must be carefully recorded both in the hand-held notes and in Badgernet and the booking consultant must be informed.

**The Delivery suite Coordinator and on call consultant should prioritize the women for IOL / awaiting transfer to labour ward at start of each shift.**

Any bed capacity issues or delays in transfer to Delivery Suite must be clearly documented in maternal hospital notes. If the clinical picture raises any concerns regarding the delayed IOL the on call Registrar and/or Consultant labour ward should be informed.

**For auditable standards see Flowchart 3.**

**Methods of IOL that available evidence does not support:**
- Herbal supplements
- Acupuncture
- Breast stimulation (further research required)
- Homeopathy
- Castor oil/hot baths/enemas
- Sexual intercourse

**Laminaria tents** are not currently used for induction of labour.

**Assessment prior to IOL**
This should include:
- Fully informed and documented discussion with the woman of risks and benefits for both the mother and baby; including any sensitive issues, if present.
- Ensure gestational age is correct (from first trimester scan)
- Cervical assessment based on the Modified Bishops Score
- Inform woman that IOL is not always successful, and discuss the likely management if induction is unsuccessful
- Confirm presentation and placental site.

**Methods and procedure of IOL (see flowchart 4)**
All women undergoing IOL should have their Bishop Score documented on relevant paperwork (addendums to intrapartum notes) at the time of membrane sweep while in hospital, each insertion of vaginal prostaglandins and review vaginal examinations. The Modified Bishop Score records the length of the cervix rather than the subjective percentage effacement.
THE MODIFIED BISHOP SCORE

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**BISHOP SCORE ACTION**

- **<6**: refer to flowchart 4 for management
- **≥6**: ARM: see below for further management & oxytocin

**Membrane sweeping**

Women being considered for IOL should be routinely offered a membrane sweep at 40 and 41 weeks for nulliparous women and 41 weeks for parous women. They should be informed of the following NICE (2008) recommendations:

- What a membrane sweep is...
- Membrane sweeping makes spontaneous labour more likely, and so reduces the need for formal IOL
- That discomfort and vaginal bleeding are possible following procedure

Additional membrane sweeping may be offered if labour does not start spontaneously.

**Prostaglandin vaginal preparations**

1. **Prostin (PGE2) vaginal tablets**

In most circumstances IOL will be performed either by using prostaglandin vaginal tablets/pessary or performing amniotomy. If oxytocin is required it should not be commenced less than 6 hours since the last prostaglandin insertion. NICE (2008) states that amniotomy and oxytocin should not be used as a primary IOL method unless there are contraindications to prostaglandin use such as a risk of hyperstimulation. Discuss with Registrar/Consultant as needed on individual case basis.

When offering prostaglandin for IOL women should be informed about the associated risks of uterine hyperstimulation. Oral and intravenous prostaglandin should not be used for IOL.

It is preferable not to use lubricating gels if possible but if needed water soluble gel can be used. **Hibitane obstetric cream should NOT be used as this can prevent release of the prostaglandin from the tablet.**
Oxytocin infusion should be commenced 6 hours from Prostin insertion.

2. Dinoprostone (Propess) Prostaglandin PGE2 (Flowchart 5)

Propess (Dinoprostone) PGE2 is a slow release 10 mg vaginal delivery system. It acts by delivering a constant dose of dinoprostone at approximately 0.3 mg/hour for up to 24 hours in women with intact membranes.

The experience of Propess in patients with ruptured membranes is limited. Therefore, Propess should not be used in those patients.

Since the release of Dinoprostone from the insert can be affected in the presence of amniotic fluid, special attention should be given to uterine activity and fetal condition. Propess should be removed irrespective of cervical state to avoid the risk of uterine hyperstimulation in the case of spontaneous rupture of the membranes or amniotomy.

**Indications for use**

ALL IOL patients, except for vaginal birth after Caesarean section (VBAC), Prelabour rupture of the membranes (PROM) and Grand multiparous patients.

This method will maximise the chance of a vaginal birth by giving them 24 hours with a slow release of prostaglandin before identifying the true non responders and making a decision for Caesarean section.

**Contraindications:**

1. History of hypersensitivity to prostaglandins
2. When labour has started
3. Previous lower segment or vertical caesarean section
4. Pre-labour rupture of membranes

**Method:**

- Perform CTG and ensure it is normal before Propess insertion, minimum 30 minute trace.
- Propess pessary 10 mg is inserted high up in the posterior fornix and positioned in such a way that it lies transversely in the posterior fornix. After insertion, the patient should remain flat for 20-30 minutes to allow for the Propess pessary to swell and this will help it remain in situ.
- If the propess falls out on a clean sheet or into woman's underwear within 24 hours, it can be reinserted to complete the 24 hours duration. If the propess falls out and is considered to be contaminated a new one may be inserted to complete the 24 hours duration after discussion with the on-call team
- The excess tape outside the vagina may be cut if necessary
- It has been shown in clinical trials that Propess is not affected by a bath or shower.

**When to remove Propess:**

1. After 24 hours of insertion for re-assessment
2. As soon as patient goes into spontaneous labour
Clinical Guideline for the Management of Induction of Labour (IOL), including oxytocin infusion

3. Remove Propess immediately and arrange medical review if:
   - PV bleeding
   - Uterine hyperstimulation with FHR abnormalities
   - Evidence of fetal compromise – Pathological CTG trace
   - Maternal side-effects such as hypotension, significant tachycardia, vomiting

4. At least **30 minutes** before starting oxytocin infusion

**Failed Induction of Labour (see Flowchart 6):**

If the administration of one cycle of Propess has not resulted in the onset of labour and the Bishop Score remains <6 or artificial rupture of membranes is not possible, then the initial induction process has been unsuccessful, refer to flowchart 6.

If B.S. <6 after 2 Propess, options are:
- Insertion of a transcervical Foley catheter
- ARM followed by oxytocin infusion regardless of the Bishop Score
- Performing a caesarean section either as an emergency if the clinical situation warrants, or as an elective procedure within 24 – 48 hours if there is no concern about fetal or maternal well being (refer to CS guideline).

**Documentation:**
All management decisions should be clearly documented by the obstetrician making decision on the induction of labour sheets/management plan; this includes the removal or reinsertion of Propess.

**Oxytocin infusion**

The woman should be informed that the use of oxytocin following spontaneous or artificial rupture of membranes (ARM) will advance the birth but will not influence the mode of birth or other outcomes. Where delay in the established first stage is suspected assess parity, cervical dilatation and rate of change, uterine contractions, station and position of presenting part, emotional state of the woman and obstetric opinion as indicated below (NICE 2007). See intrapartum care guideline for more details of definition of delay in first and second stage of labour.

**Indications:**

Oxytocin for **induction** of labour is used when there is:
- Delay in the onset of contractions following spontaneous rupture of membranes at term or following ARM during induction process.
- Delay in the onset of contractions following spontaneous pre-term rupture of membranes when there is active or threatened infection (chorioamnionitis) and vaginal delivery is considered possible. This requires a Consultant decision.
- Delay in the latent phase of spontaneous labour

**Note:** Following induction of labour with prostaglandin, the minimum interval before starting oxytocin infusion should be 30 minutes from the removal of Propess. Aim to start oxytocin within 2 hours following ARM if not in established labour, earlier if indicated.

Oxytocin for **augmentation** of labour is used when there is:
- Delay in the active phase of labour, spontaneous or induced.
- Delay in the second stage of labour (see below)
NB: Regarding delay in second stage (and the use of either epidural and/or oxytocin) NICE guideline on intrapartum care states:

- Where there is delay in the second stage of labour, or if the woman is excessively distressed, support and sensitive encouragement and the woman’s need for analgesia/anaesthesia are particularly important and should be addressed.
- Consideration should be given to the use of oxytocin, with the offer of regional analgesia, for nulliparous women if contractions are inadequate at the onset of the second stage. Following vaginal examination (VE), amniotomy should be offered if the membranes are intact.
- Women with confirmed delay in the second stage should be assessed by an obstetrician but oxytocin should not be started.
- Following initial obstetric assessment for women with delay in the second stage of labour, ongoing obstetric review should be maintained every 15–30 minutes.

Any deviation from the above, especially relating to use of second-stage oxytocin infusion in multiparous women, should be discussed with the Consultant.

**Contraindications to use of oxytocin:**

**Absolute contraindications**
- Possible obstructed labour
- Significant feto-pelvic disproportion (e.g. large fetal head or body, suspected pelvic contraction after pelvic fracture etc.)
- Malpresentation (e.g. brow, mento-posterior face, transverse lie, oblique lie)

**Relative contraindications**
- Scar on uterus (e.g. previous caesarean section) must be a Consultant decision
- Known or suspected potential for feto-placental insufficiency

**Preconditions and expected standards of care during oxytocin infusion:**

- Intravenous oxytocin alone, with or without amniotomy, should **not be used** for IOL (NICE 2008).
- The decision to offer a woman oxytocin infusion must be made by a Registrar or Consultant, according to the circumstances of the case and after adequate counselling. A full assessment including abdominal and vaginal examination findings and assessment of CTG should be made before starting oxytocin. Document an individual management plan in the intrapartum notes, management plan section. To receive oxytocin infusion consent can be verbal, documented in the management plan in the intrapartum notes.
- The amniotic membranes must be ruptured and liquor observed.
- Oxytocin infusion should not be started unless the co-ordinating midwife on delivery suite agrees, taking into account a safe environment and adequate staffing levels for appropriate supervision.
- Once a decision has been taken to commence oxytocin infusion, the patient should be managed individually and as high-risk. Perform VE after 4 hours of regular contractions. If less than 2 cm progress in cervical dilatation after 4 hours of regular contractions, request obstetric review, to consider whether caesarean is needed. If progress is 2 cm or more, repeat VE 4 hourly. This should be documented in the intrapartum notes.
- Continuous electronic fetal monitoring (EFM) must be used, except for toilet breaks. Maternal refusal for continual fetal monitoring should be documented clearly in the intrapartum notes, following a discussion of potential risks associated with reduced fetal monitoring (refer to fetal monitoring guideline).
Routine maternal observations should be undertaken following the Obstetric Modified Early Warning System (MEOWS) procedure, within 1 hour of admission and at least 12 hourly unless indicated otherwise (refer to escalation pathway on MEOWS chart). Follow Normal Birth Guideline for maternal monitoring/observations in labour. NB Maternal pulse must be taken prior to commencement of EFM and during any fetal heart rate anomaly to differentiate the two heart rates (refer to EFM guideline).

Offer support and effective pain relief as appropriate.

Registrar and/or Consultant (if available) should review before starting a second bag of oxytocin. Consultant review is essential if a third bag is considered.

When conducting a vaginal examination:

- Be sure that the examination is necessary and will add important information to the decision-making process
- Recognise that a vaginal examination can be very distressing for a woman, especially if she is already in pain, highly anxious and in an unfamiliar environment
- Explain the reason for the examination and what will be involved
- Ensure the woman’s informed consent, privacy, dignity and comfort
- Explain sensitively the findings of the examination and any impact on the birth plan to the woman and her birth companion(s). [NICE Intrapartum care, 2014]

**Uterine hyperstimulation and CTG abnormalities with induction/augmentation**

- The minimum dose possible of oxytocin should be used and this should be titrated against uterine contractions aiming for a maximum of 4-5 contractions every 10 minutes. The myometrium becomes more sensitive to oxytocin in later stages of labour. The oxytocin dose may need to be reduced.
- Uncomplicated uterine hyperstimulation is defined as uterine tachysystole (over 5 contractions per 10 minutes for at least 20 minutes) or uterine hypertonus (contractions lasting at least two minutes), without fetal heart rate (FHR) abnormalities.
- Uterine hyperstimulation syndrome occurs when tachysystole or hypertonus occurs with abnormalities in the CTG, which may include persistent decelerations, tachycardia or decreased short term variability.

**ACTION:** Reduce oxytocin to the previous dose level (see table) if contractions are more frequent than 5 contractions in 10 minutes. Reduce to previous dose again every 15 minutes if the problem persists.

**ACTION:** If FHR trace is suspicious, obstetric review is needed and oxytocin should be stopped (NICE 2014).

**ACTION:** If FHR trace is pathological, oxytocin should be STOPPED and a full assessment of the fetal condition undertaken by an obstetrician before oxytocin is recommenced (NICE 2014). The infusion should be recommenced at 12 mls per hour, or half or less of the pre-stoppage dose.

**ACTION:** With a suspicious or pathological FHR trace and uterine hypercontractility not secondary to oxytocin infusion, tocolysis should be urgently considered. Give subcutaneous Terbutaline Sulphate 250 micrograms (vials contain 500
Clinical Guideline for the Management of Induction of Labour (IOL), including oxytocin infusion

micrograms/ml). Tocolysis may also be used for hyperstimulation due to oxytocin infusion if clinically indicated and requested by Registrar or Consultant. If the FHR changes continue follow electronic fetal monitoring guideline.

When induction of labour is undertaken with oxytocin the recommended regimen is:
- a standard dilution should always be used i.e. 10 IU Oxytocin in 500 ml of Sodium Chloride 0.9%.
- a starting dose of 1–2 milliunits per minute.
- increment interval should be no more frequent than every 30 minutes.

Suggested standardised dilutions and dose regimen:

10 IU in 500 ml of Sodium Chloride 0.9%; hence 3ml/hr = 1milliunits per minute.

<table>
<thead>
<tr>
<th>Time after starting (minutes)</th>
<th>Oxytocin dose (milliunits per minute)</th>
<th>Volume infused (ml/hr)</th>
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30 IU in 500 ml as below should be considered in women on fluid restriction to reduce the risk of fluid overload.

30 IU in 500 ml of Sodium Chloride 0.9%; hence 1ml/hr = 1milliunits per minute.

<table>
<thead>
<tr>
<th>Time after starting (minutes)</th>
<th>Oxytocin dose (milliunits per minute)</th>
<th>Volume infused (ml/hr)</th>
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The minimum dose possible of oxytocin should be used and this should be titrated against uterine contractions aiming for a maximum of 4-5 contractions every 10 minutes.
Clinical Guideline for the Management of Induction of Labour (IOL), including oxytocin infusion

- In the summary of product characteristics the licensed maximum dose is 20 milliunits per minute. If higher doses are used the maximum dose used should not exceed 32 milliunits per minute.
- Other intravenous fluids for re-hydration or any other purpose must be given by a separate giving set when they are needed.

Water intoxication and electrolyte imbalance

As oxytocin has anti-diuretic properties, prolonged use at high dosage with high volumes of non-electrolyte containing fluids can result in hyponatraemia with water intoxication which present as occasional epileptiform fits and rarely pontine myelinolysis. Patients should hence, be monitored for symptoms of headache and drowsiness.

Exceptions to standard dose-rate regimen

Any concentration, rate or giving method other than the standard dose must have Consultant authorisation on a case by case basis, or be part of a research trial or study approved by an ethics committee and subject to maternal informed consent. Examples where a higher dose may be authorised include management of intrauterine death (IUD) of the fetus, refer to relevant guideline. Consultant decision is required prior to using Oxytocin in cases of previous Caesarean section.

Use of trans-cervical balloon catheter for induction of labour

Trans-cervical placement of a Foley catheter can be used to induce cervical ripening and labour. According to the NICE guideline for Induction of Labour (2008), mechanical methods (including Foley catheter) should not be used *routinely* for IOL. However, a recent publication from the World Health Organisation (WHO), 2011 recommends the use of a balloon catheter for IOL (moderate-quality evidence, strong recommendation, p.21).

Indications

Foley (balloon) catheter is not used *routinely* for IOL (in accordance to the NICE recommendations). However, it can be used in the following circumstances after discussion with a Consultant:

- Previous lower uterine segment scar where Prostin is a relative contraindication
- Failed initial induction of labour with Prostin
- Intra-uterine demise/death

Contraindications

- Ruptured membranes
- Vaginal bleeding and placenta praevia
- Malpresentation
- Fetal distress

Technique

After explanation of the procedure and verbal consent, an admission CTG is performed to ensure fetal wellbeing (refer to fetal monitoring guideline). With the woman in lithotomy position and under aseptic conditions, the Foley catheter (18Ch) is grasped with sponge forceps and inserted into the endocervical canal under direct visualization using a speculum. Approximately 5 cm of the catheter tip needs to be inserted to ensure that the balloon is past the internal Os. The balloon is then inflated with 30 ml. of sterile water or Sodium Chloride 0.9%. The catheter is then pulled down so that it is placed against the internal Os without traction. The catheter spigot
is then inserted into the open end of the catheter tube and the external end is taped to the maternal thigh.

**Subsequent Management**

After placement of the Foley catheter, subsequent management of the woman is similar to other methods of IOL. A CTG is performed for 30 minutes to ensure fetal well-being. Mobilisation is encouraged and the woman examined every 6 hours to document any change in Bishop’s Score with adjustment of the Foley catheter, if necessary. Although there is no evidence to support this practice, this will ensure consistent management for all IOL patients, irrespective of the mode of induction.

If there is progressive cervical change the Foley catheter may be expelled spontaneously. If that happens, the patient needs to be examined with a view to perform amniotomy. In any case, the Foley catheter should not be left in-situ for more than **18 hours**.

The WHO guideline states that when using the trans-cervical balloon catheter for induction of labour ‘it is important to monitor the woman and her fetus closely once labour is established’. Accordingly, continuous CTG is recommended as per trust guideline.

**Documentation:**

*Management plan for IOL must be documented in:*

- patient’s hand-held notes during the antenatal clinic assessment
- Badgernet
- transferred to the intrapartum notes management plan section once admitted to hospital and contemporaneous records during the induction process

*Document fully* in the intrapartum notes the assessment prior to starting oxytocin infusion, dose schedule including frequency of increment, monitoring for mother and fetus, individual management plan at start of infusion, and when oxytocin should be stopped.

Key points of delivery including onset of labour, indication for induction, gestational age and mode of delivery should be documented in the postnatal notes.

4. **Reason for development of the Guideline**

The guideline provides information to all clinicians as to the most appropriate management of women undergoing IOL.

5. **Methodology**

Development of all guidelines adheres to a process of examining the best available evidence relevant to the topic, and by incorporating guidance and recommendations from national and international reports.

Finalised guidelines will ultimately be approved and ratified by the O&G Guideline Group.
6. Implementation

Following approval the guideline will be disseminated and available for reference to all members of the multidisciplinary team via the Trust intranet site. A paper copy will be stored in a marked folder within a designated clinical area.

7. Monitoring & suggested quality standards

The clinical guideline will be monitored through regular clinical audit.

Auditing of a clinical guideline will be multidisciplinary, allocated and overseen by the Clinical Audit Lead.

<table>
<thead>
<tr>
<th>Element to be monitored</th>
<th>Tool</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Induction of labour (IOL)</td>
<td>Proforma</td>
<td>IOL (Annually 1% or 10 sets (whichever greater) of all health records of women who have had their labour induced)</td>
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<tr>
<td>When membrane sweep should occur</td>
<td>Maternity information system</td>
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<tr>
<td>Gestational age when IOL should occur</td>
<td>Hand-held, Intrapartum and hospital notes</td>
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<tr>
<td>IOL in specific circumstances:</td>
<td>Booking/referral proforma for IOL</td>
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<td>prolonged pregnancies</td>
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<td>Use of Oxytocin</td>
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<tr>
<td>preterm and term prelabour rupture of membranes</td>
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<td>(Annually 1% or 10 sets (whichever greater) of all health records of women who have delivered and received oxytocin in labour)</td>
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<td>previous caesarean section</td>
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<td>intrauterine death</td>
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<td>Methods of IOL</td>
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<td>Maternal and fetal observations during IOL, prior to onset of established labour</td>
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<td>Development of individual management plan when IOL is unsuccessful</td>
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<td>Process for dealing with maternal requests for IOL</td>
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<td>Development of individual management plan when IOL declined</td>
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<td>Outcome of IOL</td>
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<td>Use of Oxytocin</td>
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<td>Documentation of assessment prior to commencing oxytocin</td>
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<td>Documentation of when oxytocin should be stopped</td>
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<td>Also documentation of: frequency of increment, monitoring arrangements for mother and fetus and individual management plan for commencement of oxytocin</td>
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<td>Delay in IOL</td>
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<td>Administering vaginal prostaglandin</td>
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<td>Time frame: 2 hours from arrival</td>
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<td>Assessment of progress</td>
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<td>Time frame: within 1 hour of planning</td>
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<tr>
<td>Transfer to delivery suite for ARM +/- oxytocin infusion</td>
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<tr>
<td>Time frame: within 6 hours</td>
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</table>
Clinical Guideline for the Management of Induction of Labour (IOL), including oxytocin infusion

- Transfer to delivery suite for oxytocin infusion with confirmed SROM
  Time frame: within 6 hours
- Assessment & ARM performed once transferred to delivery suite
  Time frame: within 1 hour
- Oxytocin infusion commenced
  Time frame: within 1 hour from decision

<table>
<thead>
<tr>
<th>Reporting arrangements</th>
<th>Acting on recommendations and lead(s)</th>
<th>Change in practice and lessons to be shared</th>
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<tbody>
<tr>
<td>The completed reports will go to the clinical governance group and be presented at the departmental audit meetings.</td>
<td>The leads will use the electronic tracker system for audit to track action plans, which will have stated time frames. To ensure completion of actions, monthly updates will be reported to the clinical governance group by the clinical audit lead or deputy.</td>
<td>Required changes to practice will be identified and actioned within a specific time frame. A lead member of the team will be identified to take each change forward where appropriate. Lessons will be shared with all the relevant stakeholders. Non-compliance to actions from audit will be escalated to the Directorate governance meetings; further non-compliance will be finally escalated to the Women’s and Children’s Quality and Safety for resolution.</td>
</tr>
<tr>
<td>Action plans will be documented in minutes.</td>
<td></td>
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</table>

Following clinical audit of a guideline an addendum to change in clinical practice may be necessary. Any change to a clinical guideline requires that it must be ratified by the O&G Guideline Group.

Review dates will be set at a period of three years; however this set period can be overridden in light of new clinical evidence.

All unused/previous guidelines will be logged and archived electronically, and in paper format within the trust.

8. References

- Hospital Episodes Statistics. ‘Maternity Data in HES’. HES Online Database. NHS Information Centre for Health and Social Care. Available at: [www.hesonline.nhs.uk](http://www.hesonline.nhs.uk)
- National Health Service Litigation Authority. (2009). NHS Litigation Authority Study of Stillbirth Claims. Available at: [www.nhsla.com](http://www.nhsla.com)
Clinical Guideline for the Management of Induction of Labour (IOL), including oxytocin infusion

- National Perinatal Epidemiology Unit (NPEU) (2014) Saving lives, improving mothers’ care. Lessons learned to inform future maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2009-2012. Available from: [www.npeu.ox.ac.uk/mbrace-uk](http://www.npeu.ox.ac.uk/mbrace-uk)

9. **Meta Data**

<table>
<thead>
<tr>
<th>Guideline Title:</th>
<th>Induction of labour (IOL), including oxytocin infusion</th>
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<tr>
<td>Guideline Sponsor:</td>
<td>Obstetrics and Gynaecology Directorate</td>
</tr>
<tr>
<td>Date of approval at directorate:</td>
<td></td>
</tr>
<tr>
<td>Approved by:</td>
<td>Obstetrics and Gynaecology Directorate</td>
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<td>Effective from:</td>
<td></td>
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<td>Review date:</td>
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| Related Policies/Topic/Driver | • Caesarean section  
  • Diabetes in pregnancy  
  • Fetal Growth Restriction  
  • Fetal monitoring in labour  
  • Intrauterine Death  
  • Preterm and term prelabour rupture of membranes  
  • Vaginal Birth after Caesarean Section (VBAC)  
  • Normal birth |

**Revision History**

<table>
<thead>
<tr>
<th>Version No.</th>
<th>Date of Issue</th>
<th>Author/Reviewer(s)</th>
<th>Reason for Issue</th>
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<tbody>
<tr>
<td>1</td>
<td>November 2007</td>
<td>K Das</td>
<td>Merger</td>
</tr>
<tr>
<td>Date</td>
<td>Authors</td>
<td>Addendum Details</td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</table>
| March 2009   | K Das                            | Addendum following launch & review of NICE Guidelines  
|              |                                  | p.14 – women with previous C/S  
|              |                                  | p.15 – women who have asthma                                                                                                                                  |
| January 2010 | K Das, S. Chakravarti, M. Dobson, C. Rhodes | Review / Addendum:  
|              |                                  | p.4 – decision for delivery differences in site practices  
|              |                                  | p.5 – inclusion of Midwifery PGD - Prostin for low-risk women  
|              |                                  | p.7 – routine IOL, membrane sweep from 38/40, booking facilities & admission for IOL, place of IOL across trust sites  
|              |                                  | p.13 – use of prostaglandin/oxytocin in previous C/S - delay in IOL, actions to take                                                                 |
| September 2011 | K Das                          | p.15-16 trans-cervical balloon catheter for induction of labour                                                                                                                                             |
| March 2012   | R. Kalkat, S. Chakravarti       | Addendum  
|              |                                  | p. 6 Propess flowchart  
|              |                                  | p.12-14 Propess management                                                                                                                                         |
| October 2012 | S. George, M. Dobson            | Addendum  
|              |                                  | p. 14 High risk women - CTG should also be undertaken once the contractions begin to ensure fetal well-being and should be continuous once the contractions are regular.  
|              |                                  | Monitoring/audit updated                                                                                                                                                |
| July 2012    | S. Chakravarti, M. Dobson       | p. 3 Propess flowchart  
|              |                                  | p. 15 Propess management for failed IOL                                                                                                                               |
| November 2013 | S. Chakravarti, A. Chaudhuri    | Change to practice:  
|              |                                  | • No further ‘rest day’ (24 hour break)  
|              |                                  | • No Propess for Multip's with failed Prostin for IOL  
|              |                                  | • Removal of Propess with SROM  
|              |                                  | • Removal of PGDs                                                                                                                                            |
| Mar 2017     | M. Gaber – ST7 O&G, E. Howland – Cons. O&G with contribution from P. Karkhanis | Review/addendum to practice:  
|              |                                  | p.8 completion of IOL proforma & prescribing prostaglandin  
|              |                                  | p9. Indications for IOL in the presence of obstetric complications, gestational age reduced from 38 to 37 weeks (NICE, 2014)  
|              |                                  | p9. IOL may be considered from 40 weeks gestation, however women should be aware that early IOL increases the risk of failure, instrumental delivery and caesarean section (NICE, 2014).  
|              |                                  | p9. Prelabour ROM, Management: either x1 Prostin or commence oxytocin infusion.  
|              |                                  | p.10 Maternal age – 40 years and above (RCOG, 2013). In nullips, afro-caribbean or have concurrent comorbidities offer IOL at 39+0 – 40+0 weeks gestation.  
|              |                                  | Idiopathic polyhydramnios: discuss with Consultant re: timing and method of IOL.  
|              |                                  | Recurrent diminished fetal movements (DFM):  

| 10 November 2017 | Hayley Butler | IOL should be Consultant decision. **Obstetric Cholestasis**: IOL at 37+0 – 38+0 weeks gestation. **Insignificant meconium:**
- Is not a reason for continual cardiotocograph CTG (NICE, 2014)
- Commence immediate IOL p.12 Bishop's score addendum from >6 to ≥6
- p.15 If the administration of two 3mg vaginal tablets 6 hours apart or x1 Propess (Propess including as part of management)
Incorporates new NICE Intrapartum guidance 2014, NPEU 2014 & RCOG scientific paper recommendations 2013
- P15. Management of fetal macrosomia

Addendum-Operational amendment to flow chart 2 – two IOL to be booked on Cedar ward at BHH per day
Removal of requirement for low risk IOL to have continuous CTG in intrapartum period
Removal of enoxaparin as LMWH
Removal of reference to supervisor of midwives

**Lead for Clinical Guidelines- Dr Pallavi Karkhanis**

**Clinical Director:**

**Signed:**

**Name:** Dr Richard Kennedy

**Date:** 14 May 2018
10. Appendices

Appendix 1. Referral for IOL

Referral for Induction of labour (IOL)

Please complete for ALL women referred for IOL and file in patient notes

<table>
<thead>
<tr>
<th>Gravida &amp; Parity:</th>
<th></th>
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<tbody>
<tr>
<td>Gestation (at time of planned IOL):</td>
<td></td>
</tr>
<tr>
<td>Reason for IOL:</td>
<td></td>
</tr>
<tr>
<td>Ward area where IOL can occur:</td>
<td>Delivery suite / Ward 4</td>
</tr>
<tr>
<td>Any previous Caesarean section:</td>
<td>YES / NO</td>
</tr>
<tr>
<td>Cervical assessment:</td>
<td>YES /NO /NA (Reason if NO)</td>
</tr>
<tr>
<td>Intended mode of IOL:</td>
<td>Propess / Prostin / Foley catheter / ARM</td>
</tr>
<tr>
<td>Date of planned IOL:</td>
<td></td>
</tr>
<tr>
<td>Name &amp; designation of clinician requesting IOL:</td>
<td></td>
</tr>
<tr>
<td>Discussed with Consultant if required</td>
<td>Name of Consultant &amp; date discussed:</td>
</tr>
</tbody>
</table>

Please circle/answer all of the above

ALL women for planned IOL must receive a trust IOL leaflet

Criteria for IOL:

**GHH (IOL on Ward 4):**
- Postdates
- Gestational diabetes on diet.
- RFM/DFM
- SPD
- Maternal request> 39+0 weeks
- Uncomplicated PROM & OC
- Some maternal medical conditions may be considered, this will be determined by the named lead Consultant

**GHH (IOL on Delivery suite):**
- Hypertension
- Pre-eclampsia
- Diabetes (on medication)
- Maternal infection or medical disorders
- SGA
- Multiple pregnancy
- Prematurity (IOL <37+0 weeks gestation)
- APH
- Intrauterine infection
- Para 6 or more
- Morbid obesity ≥45 BMI.

_NB. This list is not exhaustive, if there is any doubt regarding place of IOL please discuss with Consultant._
Appendix 2. List of abbreviation used

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>IOL</td>
<td>Induction of labour</td>
</tr>
<tr>
<td>ARM</td>
<td>Artificial rupture of membranes</td>
</tr>
<tr>
<td>SROM</td>
<td>Spontaneous rupture of membranes</td>
</tr>
<tr>
<td>PROM</td>
<td>Prelabour rupture of membranes</td>
</tr>
<tr>
<td>CS</td>
<td>Caesarean Section</td>
</tr>
<tr>
<td>RFM</td>
<td>Reduced fetal movements</td>
</tr>
<tr>
<td>SPD</td>
<td>Symphysio-pubic dysfunction</td>
</tr>
<tr>
<td>OC</td>
<td>Obstetric cholestasis</td>
</tr>
<tr>
<td>CTG</td>
<td>Cardiotocography</td>
</tr>
<tr>
<td>VBAC</td>
<td>Vaginal Birth after caesarean section</td>
</tr>
<tr>
<td>FGR</td>
<td>Fetal growth restriction</td>
</tr>
<tr>
<td>IUD</td>
<td>Intrauterine death</td>
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