Milton Keynes University Hospital NHS Foundation Trust

# Induction of Labour

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## Disclaimer

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.

The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

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## Guideline Statement

Induction of labour is an intervention to artificially initiate uterine contractions leading to progressive effacement and dilatation of the cervix and birth of the baby. In 2012/2013 approximately 23% of women had their labour induced in the United Kingdom (NHS Maternity Statistics, England: 2012-13).

Induction of labour is a major intervention in pregnancy and should only follow informed consent by the woman. This Guideline will support the decision making and care of a woman during Induction of Labour.

Whilst induction is a relatively common procedure it has impact on the birth experience of women and can place more strain on labour wards. In a study of claims relating to stillbirth conducted by the NHS Litigation Authority there were a number of claims relating to induction of labour (NHS LA- Jan 2012).

Definitions:

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| Induction: | The process of starting labour medically |
| Stimulation: | The process of inducing contractions when rupture of membranes (ROM) has occurred pre-labour |
| Augmentation: | The correction of inefficient uterine action once labour has started |

**Methods used:**

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|---|---|
| Induction: | Membrane sweeping, Prostaglandin-dinoprostone ($PGE_2$), Artificial Rupture of Membranes (ARM), oxytocin, balloon catheter |
| Stimulation: | Prostaglandin, oxytocin |
| Augmentation: | ARM, oxytocin |

### Background

This guideline reflects evidence based recommendations following National Institute for Health and Clinical Excellence (NICE) Intrapartum care: Care of healthy women and their babies during childbirth (2007), NICE Induction of Labour (2008) and current NHS Litigation Authority Clinical Negligence Schemes for Trusts 2013/2014 Standard 2 criterion 7.

Induced labour has an impact on the birth experience of women, and on their health and that of their babies. This guideline provides advice for health professionals on induction of labour and the recommended pathway.

### Objectives

- To ensure induction of labour in specific circumstances is managed appropriately
- To outline process for outpatient IOL
- To outline process of use of balloon catheter in women with previous c/s.
- To ensure the development of an action plan when IOL fails
- To outline the process for dealing with maternal requests for IOL appropriately
- To outline the process for development of action plans when IOL is declined.

## Executive Summary


- Induction of labour is an intervention to artificially initiate uterine contractions leading to progressive dilatation and effacement of the cervix and birth of the baby
- Women and their partners should be informed that most women will go into labour spontaneously by 42 weeks.
- At the 38 week antenatal visit, all women should be offered information about the risks associated with pregnancies that last longer than 42 weeks and their options
- Induction of labour is commenced with either artificial rupture of membranes, Dinoprostone as either a Prostin pessary, Propess vaginal device or mechanical method ( either Cook's Balloon (CCRB) or Foley's catheter).
- Induction of labour in low risk pregnancies can take place in ADAU on an outpatient basis, with the woman going home after PGE2 insertions. A

A = Auditable Standard

**FLOW CHARTS ARE INCLUDED AT THE END OF DOCUMENT**


## 1.0 Roles and Responsibilities:

**Obstetricians:** counsel women and arrange induction of labour according to the care pathway when it is considered that prolonging the pregnancy is detrimental to the health of the mother and/or baby. Provide information to women about the induction process and undertake or arrange for stretch and sweep of the cervix when indicated. Prescribe prostaglandins or insert / remove balloon catheter, review induction progress as clinically indicated and review care plan where induction of labour is unsuccessful.

**Midwives:** counsel women and arrange induction of labour according to the care pathway in uncomplicated low risk pregnancy with midwifery led care where pregnancy advances beyond 41 weeks gestation. Provide information to women about the induction process and undertake or arrange for stretch and sweep of the cervix when indicated. Initiate induction of labour process on woman's admission to hospital.

## 2.0 Implementation and dissemination of document

Guideline to be published on Intranet.
All medical staff (ST3 or above) will undergo training for using mechanical methods of induction.
Company representative will come to train for Cook's Cervical Ripening Balloon (CCRB) and ensure required competency is achieved.

# 3.0 Processes and procedures

## 3. 1 Induction processes

- At the 38 weeks' antenatal visit, women should be offered information about the risks of pregnancies lasting longer than 42 weeks gestation.
- Pregnancies with complications or potential complications should be considered as high risk and induction of labour for these women must take place in an in-patient setting; commencing either on the maternity ward or if risk factors warrant on the labour ward. A clear management plan must be documented in the woman's maternity notes.
- Induction of labour in low risk pregnancies can take place in ADAU on an outpatient basis. This is referred to as cervical ripening.
- If women decline cervical ripening, arrangements should be made for an admission for induction as an inpatient directly where the Induction of labour diary is kept and maintained (labour ward out of hours and in antenatal clinic during working hours.

### 3.1.1 Information and decision making

Women who are being offered induction of labour are given personalised verbal and written information about the benefits and risks for them and their babies and the alternatives to induction. A

### 3.1.2 Time for discussion

- Women should have time to discuss information with their partner and look at other sources of information before coming to a decision.

- During discussion, women should be encouraged to ask questions and should be supported in the decisions they make.

### 3.1.3 Process for dealing with maternal request for induction of labour

- Induction of labour should not be routinely offered on maternal request alone. However, under exceptional circumstances (for example, if the woman's partner is soon to be posted abroad with the armed forces), induction may be considered at or after 40 weeks. Maternal request for Induction of Labour should only be considered when there are compelling psychological or social reasons.

- The decision to offer induction of labour for maternal request must be documented as this reason in the induction of labour diary.

- Consideration should be given to the obstetric history, gestation and cervical assessment findings. The mother should be counselled regarding these and the likelihood of a successful delivery.

- Cervical assessment should always be performed and documented prior to an induction of labour for maternal request. If the cervix is unfavourable (Bishop's score <4) induction should be avoided/counselled against.

### 3.1.4 Individual management plan when induction of labour is declined

- Respect the woman's decisions and discuss further care with her.
- When a woman declines induction of labour the risks of not being induced should be discussed.
- Women declining induction must have an individual management plan by the obstetric registrar/consultant regarding the pregnancy. .
- The individual management plan should be documented in the maternal records to include as a minimum:
  - electronic fetal monitoring on alternate days after 42 weeks gestation and
  - twice weekly ultrasound scans to assess liquor volume and umbilical artery doppler's.
- The woman must be given the opportunity to ask questions and encouragement given to think about her options.
- The woman should be offered an appointment with a consultant obstetrician and if appropriate referral to a Birth Choices Clinic for discussion regarding her options.

## 3.2 Specific circumstances for induction of labour

### 3.2.1 Prolonged uncomplicated pregnancy

- Women should be given every opportunity to go into labour spontaneously.

- At the 38 week antenatal visit women with low risk pregnancies should be offered information about the risks associated with pregnancies that last longer than 42 weeks gestation and their options. Women should be informed that most women will go into labour spontaneously by 42 weeks gestation. All discussions must be documented in the maternity records.

- Women with low risk pregnancies should be offered an initial membrane sweep at 40-41 weeks gestation and given information about this procedure. Information should include:
  - Explanation of membrane sweep and what the procedure involves.
  - Explanation that spontaneous labour is more likely to occur following a membrane sweep and that it may reduce the need for formal induction of labour to prevent prolonged pregnancy.
  - Explanation of discomfort and vaginal bleeding that may occur normally following a membrane sweep.

- All women should be offered membrane sweep at the 41 week antenatal visit. Before assessing the cervix, check for low-lying placental site and Group B Haemolytic Streptococcus risk: Membrane sweeping is not contra indicated in women who are carriers of Group B Haemolytic Streptococcus.

- Offer additional membrane sweep if labour does not start spontaneously

- Offer induction between 41+5 and 42+0 weeks, depending on woman's preference and local circumstances. Early ultrasound scan dating (≤ 22 weeks) should be used to calculate estimated date for delivery (EDD). If the cervix is unfavourable, the need for induction of labour should be reviewed by the duty Consultant Obstetrician. The choice of the woman should be taken into account and fetal surveillance instituted if a mutual decision to postpone IOL is reached. All discussions and management plans should be clearly documented in the maternity notes.

- Women being offered Induction of Labour should be counselled regarding:
  - The indications for Induction of Labour.
  - When, where and how induction is to be carried out.
  - Arrangements for support and options available for pain relief.
  - Options if the woman declines Induction of Labour.
  - Risks and benefits associated with Induction of Labour, taking into account any specific circumstances and the methods used for induction.
  - That induction of labour may be more painful than spontaneous labour, and epidural and assisted delivery are more likely to be required.
  - That the induction may not be successful and what the woman and her partner's options would be.
  - Realistic timeframes regarding the induction of labour process.
  - An information leaflet on Induction of labour should be given to support the discussion between healthcare professionals and women and their partner's
  - Induction of labour is commenced with either artificial rupture of membranes, Prostin pessary, Propess vaginal device or balloon catheter.

### 3.2.2 Preterm pre-labour rupture of membranes at term

- If a woman has preterm pre-labour rupture of membranes, induction of labour should not be carried out before 34 weeks unless there are additional obstetric indications (for example, infection or fetal compromise).

- After 34 weeks, induction of labour is a consultant level decision and should be carried out only after discussion with an Obstetric Consultant.

- The following factors should be discussed with the woman before a decision is made to induce labour with vaginal $PGE_2$

  - Risks to the woman (for example; sepsis, possible need for caesarean section.
  - Risks to the baby (for example; sepsis, problems relating to preterm birth).
  - Availability of neonatal intensive care facilities.
  - The option to wait till 37 weeks gestation if no further complications.

### 3.2.3 Pre-labour rupture of membranes at term (at or over 37 week's gestation)

- Women with pre-labour rupture of membranes at term (at or over 37 weeks) should be offered a choice of induction of labour with vaginal $PGE_2$ or expectant management.

- Induction of labour is appropriate approximately 24 hours after pre-labour rupture of the membranes at term. If the woman chooses to wait for more than 24 hours, the management should be discussed with the consultant and a **plan** should be documented in the maternal records.

- Induction of labour can be commenced with either Prostin pessary or Propess Vaginal device– Refer to appendix for Propess IOL),

- Stimulation of labour can be commenced with the oxytocin infusion if the cervical findings are favourable ( Bishop Score ≥ 7)

See MKHFNHST Guideline: Rupture of Membranes (Pre-term Pre-labour)

### 3.2.4 Previous caesarean section

- The decision to induce labour following a previous caesarean section must be made by a consultant obstetrician and a clearly documented discussion and management plan included in the woman's medical records. A clear plan should be made regarding the use of oxytocin in Induction of labour.

- Women who have had a previous LSCS may be offered induction of labour with vaginal $PGE_2$ or a mechanical method on an individual basis, taking into account the woman's circumstances and wishes.

- Labour should not be undertaken where a woman has had a previous classical uterine caesarean section or where there is any doubt about the integrity of the previous uterine scar.

- Women should be informed of the following risks with induction of labour:

    - Increased risk of need for emergency caesarean section during induced labour.
    - Increased risk of uterine rupture (same as background risk if mechanical methods like balloon catheter is used).

### 3.2.5 Multiple Pregnancy

- Please refer to induction of labour guidance within the Multiple Pregnancy and Birth Guideline.

### 3.2.6 Breech presentation

- Induction of labour is not routinely recommended if a woman's baby is in a breech presentation.
- If external cephalic version is unsuccessful, declined or contra-indicated and the woman declines a caesarean section if delivery is indicated she should be seen and counselled by a Consultant Obstetrician.
- Induction of labour should only be offered after a discussion of the associated risks and a clear plan of care documented in the woman's medical records.

### 3.2.7 Fetal growth restriction

- If there is severe fetal growth restriction with confirmed fetal compromise, induction of labour is not recommended.

- Where intrauterine growth retardation has been identified any decision to induce labour must be made by a Consultant Obstetrician, based on assessment of risk and the likelihood of success following an assessment of a Bishop's score.

### 3.2.8 History of precipitate labour

- Induction of labour to avoid a birth unattended by healthcare professionals should not be routinely offered to women with a history of precipitate labour.

### 3.2.9 Suspected fetal macrosomia

- In the absence of any other indications, induction of labour should not be carried out simply because a healthcare professional suspects a baby is large for dates

### 3.2.10 Intrauterine fetal death

Please refer to MKUHNHSFT Care for Stillbirth, Termination of Pregnancy, and Neonatal Death after 24/40 Gestation guideline.

### 3.2.11 Maternal diabetes

- Please refer to MKHNHSFT Maternal Diabetes.
- Pregnant women with diabetes who have a normally grown fetus should be offered birth through elective induction of labour, or by elective caesarean section if indicated, after 38 completed weeks.
- A Consultant obstetrician should make decision regarding the appropriate mode of birth, taking into account her individual circumstances and preferences for labour and birth.
- Diabetes should not in itself be considered a contraindication to attempting vaginal birth after a previous caesarean section.
- Pregnant women with diabetes who have an ultrasound-diagnosed macrosomic fetus should be informed of the risks and benefits of vaginal birth, induction of labour and caesarean section.

### 3.2.12 Advanced Maternal Age

There is some evidence that the risk of fetal intrauterine death almost doubles where maternal age is between 40 and 44 years compared to younger women. It is therefore reasonable practice to offer these women earlier induction of labour.

- After discussion with the woman IOL will be recommended at or after 40 years of age around 40 week's gestation.
- Earlier delivery (before 40 weeks) is recommended if maternal age is more than 44 years old.
- However management of each case will be individualised by the consultant managing her care depending on the woman's bishop score, parity and maternal choice and documented in maternity records.

### 3.2.13 Maternal Obesity

Higher maternal body mass index at booking is associated with an increased risk of prolonged pregnancy and increased rate of IOL. Vaginal delivery and labour complications in obese women with prolonged pregnancies appear largely comparable to those of normal weight women with prolonged pregnancies. Induction of labour for prolonged pregnancy in obese women is a reasonable and safe management option but is a consultant decision.

## 3.3 Antenatal management

- It is considered best practice for an ultrasound to confirm gestation before 20 weeks gestation preferably at 10-13 weeks. This reduces the possibility of an inaccurate post mature diagnosis.

### 3.3.1 Cervical assessment

- All women should have their Bishop's Score assessed and documented, prior to being booked for induction of labour, unless membranes are ruptured.

**Modified Bishop's score:**

| Score | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| Cervical dilatation (cms) | 0 | 1-2 | 2-4 | >4 |
| Length (cms) | >4 | 2-4 | 1-2 | <1 |
| Consistency | Firm | Medium | Soft | |
| Position of the cervix | Posterior | Mid-anterior | Anterior | |
| Level of presenting part in relation to ischial spines | -3 | -2 | -1 / 0 | +1 / +2 |

- Women with a Bishop's Score of below 7 should be given vaginal PGE2 or balloon catheter.

- Women with a Bishop's Score of ≥7 should have an Artificial Rupture of Membranes

### 3.3.2 Membrane sweep

This is a simple procedure and is done during a vaginal examination. It involves the examining finger passing through the cervix to rotate against the wall of the uterus, to separate the chorionic membrane from the decidua. If the cervix will not admit a finger, massaging around the cervix in the vaginal fornices may achieve a similar effect.

- Membrane sweep can be undertaken at the 40 week antenatal visit for nulliparous women.
- All women should be offered sweeping of the membranes at a 41 week antenatal visit.
- Post 41 weeks of pregnancy offer individual membrane sweeps if labour does not start spontaneously.
- A membrane sweep is not associated with increased maternal or neonatal infection.
- A membrane sweep is not associated with an increased risk of operative delivery.

#### 3.3.2.1 Preparation of the woman prior to a membrane sweep

- Women should be aware that a membrane sweep can increase the level of discomfort during the vaginal examination.
- Women should be advised of the risks and benefits prior to agreeing to the procedure.
- It is important to consider the environment where a membrane sweep will be undertaken as in any other intimate examination the woman requires privacy and safety.

### 3.3.3 Process for booking an induction of labour

- Induction of labour is booked through consultation with midwifery team. The induction diary is kept and maintained in antenatal clinic in hours and in labour ward out of hours

- Community midwives can arrange post-dates induction of labour for women with uncomplicated pregnancies directly with the labour ward.

- Decisions for booking induction of labour for women with maternal or fetal complications should be made by the Obstetric Consultant.

- **No more than 3 inductions of labour per day** should be booked (regardless of the method of induction). If exceptional circumstances arise it may be possible to facilitate the booking of 4 inductions via a discussion with a senior midwife on labour ward and the labour ward consultant but this must not be considered a routine practice.

- **Only women with uncomplicated pregnancies should have their planned inductions arranged for the weekend.**

- The gestation at which induction of labour should take place will be dependent on the clinical situation, but for women with uncomplicated pregnancies induction of labour should be offered at 40 weeks gestation+ 12 days gestation to avoid the risks of prolonged pregnancy. The exact timing should take into account the woman's preferences and local circumstances.

- In uncomplicated pregnancies, outpatient cervical ripening with vaginal PGE2 may be offered,

- The process of induction of labour should be discussed with the woman concerned to include realistic expectations of the procedures and processes involved. Women should be aware that induction may take 48-72 hours or longer, may sometimes fail and that due to the unpredictable nature of the labour ward it may be occasionally necessary to temporarily delay the process to ensure patient safety. Pain relief should also be discussed. A

- Women should be offered a patient information leaflet on induction of labour to support discussions between the woman and healthcare professional. A

- **A clear plan of care should be documented in the woman's maternity records**. A proforma is available in the antenatal clinic for cervical assessment findings to be documented. Vaginal PGE2 (Propess vaginal device or Prostin pessary) should be prescribed by a doctor if necessary.

- Mechanical methods of induction of labour need to be used by doctor trained in using this method and should be ST3 or above.

### 3.4. Induction of labour – General Principles

- Women suitable for artificial rupture of membranes to be booked for admission direct to Labour Ward and asked to telephone the labour ward at 07:30 when a time for the woman to come into hospital for induction of labour will be agreed.

- Explain the induction method and the procedures involved and obtain verbal consent.

- If delay to the induction process is required due to capacity and activity in the maternity unit then the Registrar should review the women's records and appropriateness of delaying the induction and document decision in maternal records. All women to be seen during morning ward round and vaginal $PGE_2$ prescribed appropriately. A care plan should be clearly documented in the woman's maternity records.

- Confirm normal fetal heart rate pattern with electronic fetal monitoring 10 minutes prior to insertion of Prostin / Propess/ mechanical methods, providing Dawes Redman criteria is met**.** A (Please refer to the Trust Fetal Monitoring guideline).

If a suspicious or pathological fetal heart rate pattern is identified prostaglandins should not be administered and the following actions taken:

- Maternal observations should be performed as per fetal monitoring guidance
- The CTG should be reviewed by Registrar, or Obstetric Consultant and an appropriate plan of care made to take into account concerns regarding the CTG.
- The labour ward co-ordinator should be informed.
- Women with suspicious or pathological fetal heart patterns should not be managed and cared for on the maternity ward and arrangements should be made for the woman to be transferred to labour ward or if the situation warrants to theatre for delivery.

- If the woman is experiencing uterine contractions prior to planned administration of prostaglandins this should be discussed with the Obstetric Registrar.

Maternal and fetal wellbeing should be assessed as minimum every 4 hours and documented whilst an inpatient. For outpatient IOL , follow outpatient IOL pathway

### 3.4.1 Inpatient Induction

- In-patient induction of labour is indicated if women do not fulfil the criteria for out-patient induction or for women who decline outpatient induction.
- For high risk pregnancies, the setting for induction of labour (maternity ward or labour ward) depends on the woman's condition and should be discussed with and planned in conjunction with a Consultant Obstetrician.
- If following cervical assessment the Bishops Score is 7 or above then the woman should be booked into delivery suite for an ARM.
- In the inpatient setting, induction of labour using vaginal PGE2 should be carried out as early as possible in the morning because of higher maternal satisfaction.
- On the day of Induction of Labour, women will be advised to contact the maternity ward by telephone at 07.30am when a time for the woman to come into hospital for induction of labour will be agreed. Whilst this will usually be early morning, this decision must be based on the clinical workload on the morning of Induction of labour.
- The processes and timings for inpatient induction of labour follow those for outpatient induction.
- Induction of Labour must not occur unless facilities are available to continuously monitor the fetal heart and uterine contractions.

#### 3.4.1.1 Documentation

Induction of labour should be documented in e – care as per current practice and ensure following are included:

- Indication for induction.
- Pre-PGE2 CTG for 30 minutes
- Bishop's Score (for comparison later).
- Dose of Prostin pessary or Propess vaginal device given.
- Time administered.
- Repeat CTG trace for 60 minutes after insertion of PGE2.

Please fill in the pro forma for mechanical methods of IOL which is not currently on e- care.

#### 3.4.1.2 Monitoring Maternal observations

- Maternal observations must include an assessment of temperature, pulse, respiratory rate, blood pressure and where appropriate oxygen saturation. A
- An abdominal palpation must occur prior to the commencement of induction.
- Before induction of labour is carried out the Bishop Score should be assessed and recorded.
- All maternal observations must be documented in the maternal records.

### 3.4.1.3 Pain relief

- Women to be informed of the availability of pain relief options and provide support and analgesia appropriate for them. This can range from simple analgesics to parenteral analgesia. If Pethidine or an epidural is required the mother must be transferred to labour ward. **A**
- Women who have their labour induced should have pain relief that is appropriate to their level of pain and the type of pain relief they request (NICE 2008).
- Encourage women to use their own coping strategies for pain relief.

### 3.4.1.4 Fetal monitoring

- Minimum of 30 minutes of CTG monitoring before insertion of vaginal PGE2 or use of mechanical methods.
- Following insertion of vaginal PGE2 or use of mechanical methods, continuous CTG monitoring should be commenced for a period of 60 minutes.
- If the CTG is classified as normal, intermittent auscultation should then be used, unless there are indications for continuous fetal monitoring. With use of mechanical methods of IOL, monitor only if complaining of contractions.
- If there are concerns regarding the CTG these must be referred to the Obstetric Registrar (Refer to MKHNHSFT fetal monitoring guideline).
- If the CTG shows suspicious or pathological fetal heart patterns the woman should be managed and cared for on the labour ward or if the situation warrants to theatre for delivery.

### 3.4.1.5 Contraction monitoring

- Monitor contractions and assess vaginal loss.
- **In cases of uterine hypercontractility with or without fetal heart rate change, inform the Registrar Consultant Obstetrician immediately.**

Definitions:

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| Tachysystole | = / > 5 contractions in 10 minutes with normal CTG |
| Hypertonus | Painful contraction lasting ≥ 90 seconds: normal CTG |
| Hyperstimulation | Tachysystole or hypertonus with abnormal CTG |

- Actions:
  - Continue CTG monitoring
  - Liaise with labour ward co-ordinator and consider transfer to labour ward
  - If CTG is normal wait for 15-30 mins then reassess.
  - If hyperstimulation persists administer 250 micrograms subcutaneous Terbutaline, (NICE,2014).
  - Identify a clear management plan after discussion with the duty Consultant Obstetrician and ensure that this is clearly documented in the maternity notes.

### 3.4.1.6 Management after one cycle of treatment

- Commence CTG and make a full assessment of mother and baby.
- Perform a vaginal examination:
  - If cervix is 2cm or more dilated and fully effaced transfer to labour ward for amniotomy (ARM) +/- infusion of oxytocin.
  - If the woman is a primigravid and cervix is 2cm or more dilated, but not effaced consider administration of further Prostin.
  - If cervix is closed and an amniotomy is not possible the woman should be assessed and further management planned by the on call Obstetric Registrar / Consultant.
- The plan of care should be discussed with the woman and clearly documented in the maternity records.

### 3.4.1.7 Recommendations if induction of labour fails

- The criteria for failed induction are not generally agreed. It is estimated that a failed induction in the presence of an unfavourable cervix is found in 15% of cases. In this guideline, failed induction is defined as failure to establish labour after one cycle of treatment, consisting of the insertion of two Prostin 3mg pessaries, at 6 hourly intervals , or one Propess 10 mg vaginal device over 24 hours (NICE 2008).

- Prior to commencing the induction process the possibility of failure of induction should be discussed with the woman.

- Antenatally a personalised plan should be documented in the woman's maternity records of recommendations for management should the woman's cervix be unsuitable for ARM after use of mechanical methods of IOL or after administration of two Prostin 3mg pessaries, at 6 hourly intervals, or one Propess 10mg vaginal device over 24 hours. Unless clinical circumstances change this plan should be followed.

- If induction fails, healthcare professionals should discuss this with the woman and provide support. The woman's condition and the pregnancy in general should be fully reassessed, and fetal wellbeing should be assessed using electronic fetal monitoring. Should a woman's preference be to go home before a second cycle, a clear plan must be discussed and documented by a consultant, and the woman must be aware of the potential risks and benefits involved

- The decisions regarding the management of a failed induction should be made in accordance with the woman's wishes and with regard to clinical circumstances. These must be clearly documented as a personalised plan in the woman's maternity records.

- A management plan should be finalised and implemented in conjunction with the on call Obstetric Consultant.

- If induction fails, the management options are:

    - A second cycle of vaginal PGE2 administration may be undertaken in discussion with the duty Consultant, provided 12 hours had elapsed since the last dose or 24 hours after the first, whichever is longer. **Prostin should be used as the chemical induction method in a second induction cycle regardless of whether Propess or Prostin was the chosen method for the first cycle**.

    - Caesarean section (Please refer to the Caesarean Section guideline).

    - Oxytocin infusion prior to ARM or a cervical balloon to dilate the cervix may be considered in exceptional circumstances after full assessment by the on call Consultant Obstetrician and following full discussion with the woman undergoing induction of labour.

- Use of Prostin is advised after discussion with on call consultant if mechanical method has failed. No time interval needs to elapse before using Prostin in cases where Mechanical method has failed.

- Individualised management plans should be discussed with the woman and be documented in her maternity records.

- Maternal and fetal wellbeing should be assessed and documented as minimum every 4 hours with pharmacological methods but not with mechanical method.

### 3.4.1.8 Continuous Management

- Once cervical ripening has occurred, if contractions ensue then follow Birth at Milton Keynes guideline.
- If contractions do not commence and on assessment of the cervix, the bishop score is found to be greater than 7 perform ARM, encourage mobilisation where appropriate. If contractions not adequate after two hours commence oxytocin infusion as per regime (see Appendix 4)

### 3.4.1.9 Augmentation of labour

The Registrar must review the woman and fetal wellbeing must be assessed and where applicable should perform an abdominal palpation and vaginal examination.

A management plan should be clearly documented in the maternity records where the:

- Cervical dilatation of less than 2 cm in 4 hours for first labours (NICE clinical guideline 55).
- Cervical dilatation of less than 2 cm in 4 hours or a slowing in the progress of labour for second or subsequent labours.

**Please refer to the Oxytocin Regime (Appendix4)**

## 3.5 Methods of Induction of Labour:

### 3.5.1 Pharmacological

- Vaginal PGE2 (Prostin or Propess) is the preferred method of induction of labour where a woman has intact membranes, unless there are specific clinical reasons for not using it (in particular the risk of uterine hyperstimulation).

- The recommended regimens are:

**Primigravida** - One cycle of vaginal PGE2 controlled-release pessary 10mg vaginal device (Propess): one dose over 24 hours. Propess can be used in an outpatient and in-patient setting.

**Primigravid or multiparous women** - One cycle of vaginal PGE2 3mgs tablets (Prostin): one dose, followed by a second dose after 6 hours if labour is not established (up to a maximum of two doses).

#### 3.5.1.1 General principles of Prostaglandin administration

- Propess should be prescribed and given by suitably trained midwives or obstetricians (ST3 or above).

- Antenatal assessment and CTG prior to proposed PGE2 administration. The CTG can be discontinued after 10 minutes if the Dawes Redman criteria is met. A

- Assess Bishop Score:
  - Score of <7 insert vaginal $PGE_2$ (Propess or Prostin) '

  - Cervical score of ≥7 or more, transfer to labour ward for artificial rupture of membranes.

- CTG for 60 minutes following insertion of PGE2. It is not appropriate to use Dawes Redman CTG analysis post prostin.

### 3.5.1.2.1 For Propess induction pathway - see Appendix 2.

Propess is presented as a thin, flat semi-opaque polymeric vaginal delivery system which is rectangular in shape with a tape attached. Each propess vaginal device contains 10mg of dinoprostone (Prostaglandin E2®) within in a hydrogel delivery system which releases approximately 0.3mg/hr over 24hours. In studies it has been shown to be as effective as existing methods of induction, with similar side effect profile, but there is also evidence that less syntocinon may be required.

The rate of hyperstimulation is similar to other prostaglandin preparations (approximately 4%) but Propess has the advantage of being easy to remove (by means of the retrieval tape) reversing this complication within minutes (half-life 1-3 minutes).

The main advantages are that with a single administration in a 24 hour period, less vaginal examinations are required and delays associated with the administration of subsequent prostin tablets are avoided. Propess aims to reduce the induction to delivery interval and hopefully reduce the number of hours spent in hospital. Fewer internal examinations and delays may improve women's satisfaction.

- Propess should only be used for those with an unfavorable cervix (Bishops Score < 7), where it is likely that more than one prostin pessary would be used.
- Propess must be stored in a freezer at -10-25 degrees Celsius.
- Infusion of oxytocin should not be started until > 30 minutes after removal of Propess.
- If Propess falls out it should be repositioned.
- If Propess has fallen and not re-usable consider administering Prostin 3mg pessary after 6 hours of rest. Do not insert a new propess vaginal device as this will result in drug overdose.
- Propess should not be used in the presence of a uterine scar, where contractions are already present, or if the CTG is not thought to be reassuring.
- Pre and post propess CTG monitoring

### 3.5.1.2.2 Propess insertion:

- Remove propess from the freezer 20 minutes before administering(although thawing is not required before use).
- Insert Propess high into the posterior fornix using aquagel (NOT Hibitane).
- The pessary should lie transversely in the posterior fornix.
- After Propess has been inserted the withdrawal tape may be cut but ensure that there is sufficient tape outside the vagina to allow removal. No attempt should be made to tuck the end of the tape into the vagina.

### 3.5.1.2.3 Post Propess Insertion:

- The woman will remain recumbent for 30 minutes after insertion
- Continue CTG for one hour.
- Note any adverse effects (nausea, vomiting, tachycardia, hypotension, fever, vaginal irritation, abdominal pain, vaginal bleeding, hypertonic uterine activity, abnormal CTG). If any adverse effect, the woman must be reviewed by an obstetrician.

**3.5.1.2.4 Reasons to remove Propess (or for the woman to contact the labour ward if outpatient induction**)

- Regular contractions > 4 in 10
- Cervix is dilated ≥ 3cm and fully effaced and contracting
- Contractions are = ≥ 5 contractions in 10 minutes.
- Painful contraction lasting ≥ 90 seconds.
- Concern about the fetal movements or post Propess CTG
- Vaginal bleeding
- There is evidence of maternal systemic adverse effect such as severe nausea and vomiting.

**3.5.1.2.5 When to remove Propess**

Propess is designed to remain in the vagina for up to 24 hours; however, it should be removed immediately in the following instances:

- When labour is established (cervix > 3 cms with regular contractions)
- PV bleeding
- Uterine hyperstimulation (uterine contractions with CTG abnormalities)
- Evidence of fetal compromise
- Evidence of maternal adverse dinoprostone effects
- At least 30 minutes prior to starting an intravenous infusion of oxytocin
- Following 24 hours, even if labour is not established
- If rupture of membranes and if labour is not established in 24 hours (>3cm with regular contractions)
- Amniotomy

To remove Propess, apply gentle traction on the retrieval tape (the insert will have swollen to 2-3 times its original size and be pliable). The time of the Propess removal should be documented in the maternity records.

**3.5.1.2.6 After 24 hours**

- The propess should be removed and the woman assessed. ARM should be performed if possible. Oxytocin can be started **within 30 minutes** of removing the pessary.

- Decisions regarding how to proceed with management of failed propess IOL where ARM is not possible will be made by the Consultant led team and further management plan must be clearly documented in maternity notes.

- Options:
  - Prostin pessary (once only) to be inserted following propess removal.
  - Abandon induction and try again at a later date.
  - Deliver by caesarean section if labour does not establish and the cervix remains unfavourable
  - **No further Propess should be given**.
  -

### 3.5.1.2.7 Ruptured membranes

It is possible to use propess for induction of labour with ruptured membranes and an unfavourable cervix, although it should be recognized that there is a foreign body in the vagina. This should be discussed with the Consultant on call. The reduced number of VEs will potentially reduce the risk of infection. It can be removed when contractions establish and the cervix is favourable, following which Oxytocin can be used in the absence of regular contractions. There does however appear to be variable absorption rates from the vagina and the woman and fetus should be observed closely. Continuous electronic fetal monitoring should be performed from the time regular when contractions commence.

### 3.5.1.3 Prostin Pessary

**Prostin pessary induction pathway - See Appendix 1**

- Prostin should only be used for those with an unfavorable cervix (Bishops Score < 7).
- A 3mg Prostin pessary is administered 6-8 hourly (maximum total dose - 6mg/24 hrs for all women).
- Reassess Bishop Score 6 hours after each prostin pessary
- Oxytocin must NOT be started for 6 hours following administration of vaginal prostin.

**Prostin pessary regime**

| | |
|---|---|
| 1st $PGE_2$ | Prostin Pessary (vaginal tablet) 3mg |
| 2nd $PGE_2$ 6 hours after | Prostin Pessary (vaginal tablet) 3mg |
| 6 hours following 2nd $PGE_2$ | Review by Obstetric Consultant for decision regarding further management |

### 3.5.2 Surgical (Amniotomy)

- Amniotomy / Artificial rupture of membranes (ARM) alone or with oxytocin, should not be used as a primary method of induction of labour unless there are specific clinical reasons for not using vaginal $PGE_2$
- ARM is ideally offered for women who have a completely effaced cervix and at least 2-3 cms dilated or Bishops score ≥ 7.
  - Perform an abdominal palpation to confirm presentation and engagement.
  - Fetal heart rate must be auscultated and recorded before and after ARM. If assessed as high risk a CTG should be performed
  - Perform a vaginal examination and rupture the membranes using an amnihook.
  - If the presenting part is high, the decision to perform ARM needs to be reviewed (discuss with the Consultant / Registrar).
  - Record observations of the liquor (clear, blood stained, meconium, no liquor)
  - If labour is not established 2 hours after Artificial Rupture of Membranes (ARM), an oxytocin infusion should be started.

- Oxytocin infusion can be commenced in primigravid women immediately after an ARM. This should be discussed with the registrar or consultant.

### 3.5.3 Mechanical procedures

Any decisions made to use mechanical methods (e.g. Foley catheter, CCRB catheters) should be made by the **Consultant Obstetrician** managing the woman's care and a clear plan documented by the Consultant must be included in the maternity records.

1. Ensure woman has been informed of the risks and benefits of achieving vaginal birth and agrees to having vaginal birth after Caesarean (VBAC)

2. Decide a suitable date for initiating labour (routine will be term +12 days). Consider earlier induction if medical concerns are present

3. Book induction in induction of labour diary

4. Women should call at 08:00 for a time to attend

5. Suitably trained clinicians will insert the Foley's catheter in Delivery Suite or Ward 9. If the fetal head is 4/5ths palpable or more then cervical ripening can be considered

6. Perform standard length pre- insertion (30 min) CTG and post insertion (60 min) CTG, perform observations and history as per usual induction protocol

7. Book bed on ward 9 for overnight stay with minimal need for CTG unless contracting

8. At 0600 onwards, ward 9 to contact Labour Ward coordinator with aim to bring woman to the Labour Ward so that an out of hours induction can be avoided

9. The balloons should be deflated and the catheter removed by Obstetricians

10. Amniotomy should be performed. The device has reported high success at achieving a favourable cervix for amniotomy.

11. The woman has a 30 minutes post amniotomy CTG and either sits up or mobilises for up to 2 hours

12. If no significant uterine activity results, oxytocin induction should commence under continuous electronic fetal monitoring (refer to CTG policy).

13. It is the duty Obstetrician's decision for how long to continue oxytocin induction but usually no longer than 6 hours in absence of any uterine activity.

14. Audit of numbers and success at VBAC induction using this new agent must commence

Note: Foley's catheter stays in for 24 hours. It may expel naturally, indicating that amniotomy is possible. It is a single use device.

Other potential uses only at a Consultant's discretion:

15. Grand Multiparity (P4 or greater) – avoidance of Propess is recommended

16. Failed induction of labour with Propess - including prematurity complicated by in-utero demise (IUD)

17. Outpatient IOL is a potential service change once confidence is reached with inpatient use of the Foley's catheter. It is envisaged that low risk women who have reached term +10-12 with no other risk factors could attend in the afternoon to ADAU for mechanical method of IOL and go home to await labour or return the following day to Labour Ward to have catheter removal and amniotomy

18. Any high risk induction that would usually commence with Propess insertion on the Labour Ward due to enhanced surveillance and midwifery input needs (e.g. SGA and IUGR) could receive mechanical Catheter (non-drug) induction and rest overnight on ward 9 with minimal intervention and monitoring.

### 3.5.3.1 Use of a double-balloon catheter for cervical ripening

The Cook Cervical Ripening (double) balloon (CCRB) is a double catheter device that is able to be inserted through a small and potentially closed cervical os. The uterine balloon is inflated with 50-80mls of sterile saline and pulled back. A second vaginal balloon is then inflated with the same quantity of fluid. The device aims to ripen the cervix over a 12-18 hour time period. After this time, or when the catheter falls out, it is usually possible to perform amniotomy and initiate induction with oxytocin infusion as per standard protocol.

The CCRB is also unlicensed for use in previous Caesarean section, however, its' use and safety in this process worldwide is encouraging. Importantly, it does not involve prostaglandin drugs and is not linked to hyperstimulation and thus avoids the need for continuous electronic monitoring during use.

- The double balloon should be used where mechanical cervical ripening prior to labour induction is required, i.e. in the setting of failed pharmacological methods using prostaglandins or in the context of IOL in a woman who has previously had 1 Caesarean section delivery.

- Use of the balloon should be undertaken only after appropriate training by the manufacturer or a suitable obstetric colleague.

- The double-balloon audit package (3 forms including „insertion and operator experience", „removal and outcome" to be completed by the doctor and the „maternal views" questionnaire to be completed by the woman) must be completed after each use.

**CAUTION** Only sterile if the package is unopened or undamaged. Do not use if the package is broken.

- **Potential benefits:** Remains in situ for 24h, introducer to facilitate ease of insertion, licensed for use in pregnancy for cervical ripening and has a better outcome of cervical ripening in nulliparous women.

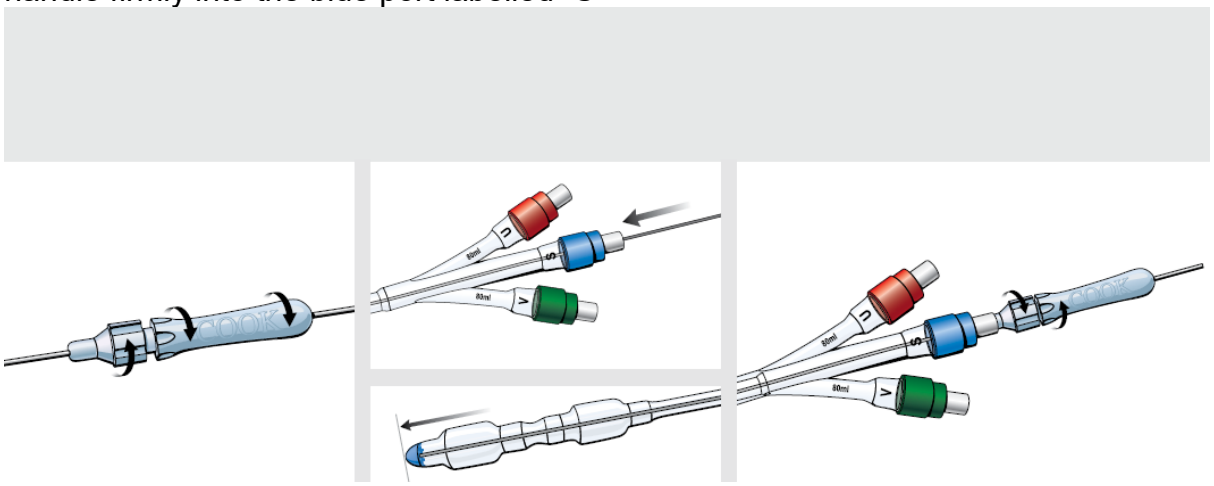
- **Contraindications:** Any contraindication for a vaginal birth.

**Warning:**
If the woman becomes very uncomfortable after inflation of both balloons, it may be secondary to the vaginal balloon and it can be deflated to 60 ml (instead of 80 ml).

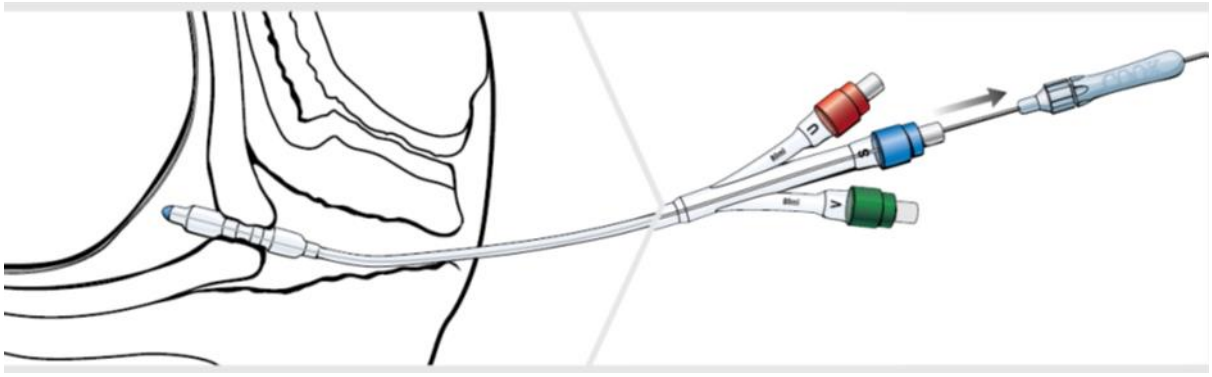
### 3.5.3.1.1 Instructions for use

**STEP 1**
Loosen the fitting on the proximal hub of the stylet and adjust the wire so that the distal tip of the stylet is even with the distal tip of the Cervical Ripening Balloon.

**STEP 2**
Tighten the fitting so that the wire does not move during manipulation, and seat the adjustable handle firmly into the blue port labelled "S"

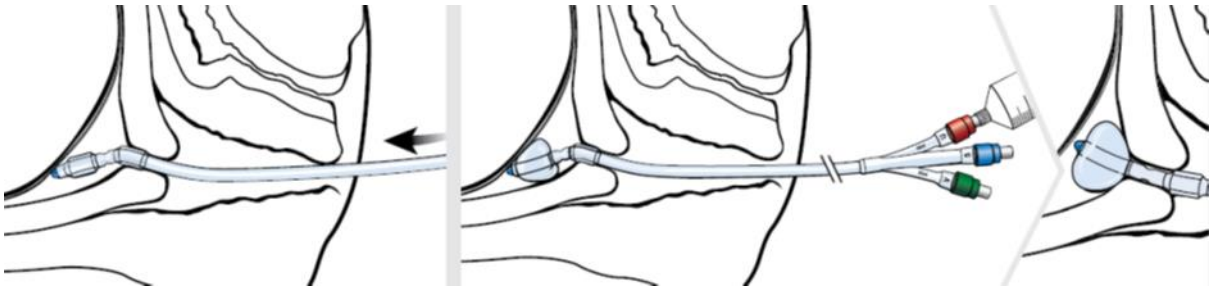


**STEP 3**
If necessary, use the stylet with the Cervical Ripening Balloon to transverse the cervix. *Note:* Once the cervix has been traversed and the uterine balloon is above the level of the internal uterine opening (internal os), remove the stylet before further advancing the catheter.



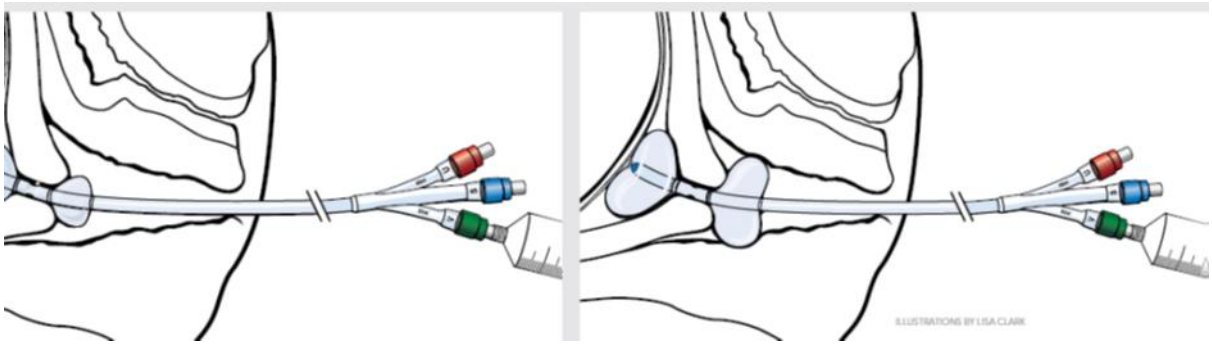
**STEP 4**
Advance the Cervical Ripening Balloon through the cervix until both balloons have entered the cervical canal.

**STEP 5**
Inflate the uterine balloon with 40 mL of saline. Once the uterine balloon is inflated, pull the device back until the balloon abuts the internal cervical os.



**STEP 6**
The vaginal balloon is now visible outside the external cervical os and should be inflated with 20 mL of saline.

**STEP 7**
Once the balloons are situated on each side of the cervix and the device has been fixed in place, add more fluid to each balloon in turn, until each balloon contains a maximum of 80 mL of fluid. Remove the balloon after 12 hours or when the patient is in active labour.



**STEP 8 REMOVAL**
After 12 hours, deflate both balloons and remove the catheter. The patient should be able to have an ARM. Follow the induction of labour guideline at this stage. The device should now be discarded and disposed of in a safe manner.

## 3.5.3.2 Use of a Foley Catheter for Induction of Labour

A Foley catheter can be used as an alternative to vaginal prostaglandins for cervical ripening as part of the induction of labour process in ADAU or Labour Ward.

The use of a Foley catheter eliminates the risks of hyperstimulation associated with the use of vaginal prostaglandins. This makes it ideal for use in women who have hyperstimulated with the use of vaginal prostaglandins or who have had a previous delivery by CS.

### 3.5.3.3 Equipment needed

- Vaginal pack
- Cusco"s speculum
- Aseptic cleaning solution
- Foley catheter 16F
- 30ml sterile saline or water in 50ml syringe
- Sponge holder
- Sterile gloves
- Cord clamp
- Light source

### 3.5.3.4 Procedure

- 30 min CTG prior to procedure
- Clean perineum and vagina
- Use Cusco"s speculum to visualise cervix [an amnioscope can be used when the cervix is obscured by vaginal wall]
- Clean the cervix with aseptic solution
- Using sponge forceps insert tip of Foley catheter through external os
- Feed catheter through the internal os
- Once past the internal os inflate the Foley catheter balloon with 30ml N/saline or water
- Use the cord clamp to occlude the open, external end of the catheter [where the urine bag would normally be attached]
- Tape the lower 1/3 of the catheter under slight traction to the inner thigh
- 60 min CTG after insertion of Foley catheter
- Once the balloon is expelled from the vagina spontaneously perform a vaginal examination & artificial rupture of the membranes and proceed with IOL.
- If after 24 hours the balloon has not been spontaneously expelled, the balloon should be deflated and removed. A vaginal assessment should be made to see if an ARM is possible. If an ARM is not possible, following discussion with the obstetric consultant on call delivery by LSCS could be considered.

## 3.6 Outpatient Induction of labour (cervical ripening) for women with uncomplicated pregnancies

### 3.6.1 Criteria for outpatient IOL

It is essential that there is a careful risk profiling of women eligible for outpatient induction of labour and it is offered to low risk women who meet the following criteria:

- Uncomplicated pregnancy requiring induction for prevention of prolonged pregnancy (between 41+0 and 42+0 weeks).
- 18 or over in age and under 40 years at EDD.
- Woman has transport available and lives within 30 minutes of the hospital.
- Patient has a functional home telephone.
- Ability to communicate with clinical ward staff.
- Number of previous births less than or equal to four.
- Reassuring pre and post prostaglandin fetal heart rate monitoring.

### 3.6.2 Patient exclusions

This is not exhaustive list.

- Gestational age below 41 weeks or greater than 42 weeks
- Parity greater than 4
- Age under 18 or over 40 years at due date
- Child protection issues
- Poor English (must be able to understand, communicate effectively and be able to read the patient information)
- Multiple gestation
- Malpresentation
- Previous uterine surgery (including caesarean section, myomectomy and hysterotomy)
- Previous precipitate delivery (labour less than 2 hours – confirmed by EDM record)
- Ruptured membranes
- Symphsio-fundal height (SFH) measuring under 10th centile on GROW chart or confirmed estimated fetal weight on ultrasound of less than 10th centile
- Non reassuring pre-Propess CTG
- Induction of labour due to maternal co-morbidities
- Induction of labour due to fetal concerns
- Lives over 30 minutes from hospital in traffic (allow the patient to judge this)
- No phone
- No responsible adult to stay with them
- Lack of consent
- Lack of comprehension/reading of Outpatient IOL leaflet
- Significant APH from 24 weeks (Obstetrician to decide)
- Bishops score over 7
- Medical disorders which have led the patient to require consultant led care during the pregnancy (for example epilepsy, severe asthma, diabetes) – confirm with Obstetrician if uncertain
- BMI over 35 or less than 18 at booking
- Any contraindication to the use of Prostaglandins.

### 3.6.3 Information given to patients

Women should be given clear verbal and written information by Obstetricians and Midwives at booking and at various points of contact during pregnancy on outpatient induction of labour containing:

- The reasons for induction being offered.
- When, where and how induction could be carried out.
- The alternative options if the woman chooses not to have induction of labour.
- The risks and benefits of outpatient IOL in specific circumstances and the proposed induction.
- That induction may not be successful and what options are available to the woman.
- An information leaflet with clearly marked contact details and information about when to return to hospital.
- What to expect after the procedure, what to look for and when to return or contact the labour ward or ADAU.

**A woman should be advised to contact hospital if:**

- She is having contractions every 5 minutes or more frequently
- She becomes uncomfortable with the contractions
- has vaginal bleeding
- Her membranes rupture
- She is experiencing unwanted side-effects from the prostaglandins (documented in the patient information leaflet)
- She has concerns about fetal movements

## 3.6.4 Recommended methods of Outpatient IOL

The recommended regime is:

- One cycle of vaginal PGE2 10mg controlled-release pessary (Propress): one dose over 24 hours.

  or
- One cycle of vaginal PGE2 3mg tablets (Prostin): one dose followed by a second dose after 6hours if labour is not established (up to a maximum of two doses)

**For Cervical Ripening (Outpatient induction) pathway - See Appendix 3**
**Monitoring**

### 3.6.5 Criteria for use

Primigravidae and multigravidae ( para 4 or less) with an unfavourable cervix (Bishops score < 7)

### 3.6.6 Prostaglandins should not be used in the following circumstances in outpatient setting:

- Presence of a uterine scar
- Where established, regular contractions are already present
- Suspicious or pathological CTG

### 3.6.7 Procedure

Prostaglandins should be given by a suitably trained midwife or obstetrician

- Ensure the woman has emptied her bladder
- 30 minutes CTG immediately prior to administration of Prostaglandins with Dawes Redman criteria met
- Vaginal examination to assess the favourability and ripeness of the cervix using the modified Bishop score:

- Bishop score 7 or greater, transfer to Labour Ward for ARM
- Bishop score <7 insert Propess vaginal device

**3.6.7.1 PROPESS:**

The Propess 10mg vaginal device should be inserted into the posterior fornix and rotated into a transverse position behind the cervix. The fingers should then be removed carefully so that the tape unravels to hang outside of the vulva.

**3.6.7.2 PROSTIN:**

A Prostin pessary (3mg) should be administered following CTG in the normal manner.

### 3.6.8 Monitoring

- Remain in bed for continuous CTG for one hour
- Thereafter mobilise as normal, shower or bath (do not add toiletries to the bath water)

**3.6.8.1 PROPESS:**

- When going to the toilet take care not to pull on the tape attached to the pessary. Women should pat themselves dry rather than wipe to avoid pulling on the tape.
- Further vaginal assessment is unnecessary unless regular contractions establish or membranes rupture. Once contractions are established, the woman needs to attend hospital immediately as a CTG should be performed

**3.6.8.2 PROSTIN**

If all well the woman can go home with instructions to return to ADAU in the afternoon for assessment and administration of a 2nd Prostin pessary if indicated. (6 hours after first Prostin administration).

### 3.6.9 When Propess should be removed:

- Regular contractions are established and the cervix is dilated greater than 3 cms
- PV bleeding
- Evidence of fetal compromise
- Uterine hyperstimulation
- 24 hours after insertion

### 3.6.10 Onset of labour

**3.6.10.1 PROPESS:**

Women who go into labour with Propess in situ should ring ADAU and attend hospital for review as the Propess is removed at 3-4cm. ADAU can direct to Labour Ward as necessary.

**3.6.10.2 PROSTIN:**

Women who labour after the administration of Prostin should contact the labour ward directly to arrange admission to hospital in the usual way

### 3.6.11 After 24 hours

- Ask women to return to ADAU
- If the woman was given Propess then remove it and carry out cervical assessment
- ARM should be performed on labour ward
- Oxytocin can be started after 30 minutes of removing the Propess pessary
- If not suitable for ARM the woman should be reviewed by the registrar and discussed with the consultant. A plan can be made to continue with the IOL as inpatient, using Prostin pessary or a mechanical method, after a well-documented review of the individual case, indication for induction and state of mother and baby.

## 4.0 Statement of evidence/ references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18. NICE (July 2015) Insertion of a double balloon catheter for induction of labour in pregnant women without previous caesarean section (IPG528)

# 5.0 Governance

## 5.1 Record of changes to document

| Version | Date | Author | Reason |
|---|---|---|---|
| 1 | January 2003 | Mary Plummer | New guideline |
| | June 2005 | Mary Plummer | Reviewed – no change required |
| 2 | August 2008 | Merja Thomas | Update – with minor changes |
| 3 | November 2010 | Miss Thampi | Additional information included in the document; changes made to include best practice |
| 3.1 | November 2011 | S Mahoney & Miss Thampi | Reviewed and minor amendments made |
| 3.2 | June 2013 | Miss Thampi & Mary Plummer | Review and addition of use of Propess |
| 3.3 | January 2015 | Carolyn Rooth | Section 11 added |
| 4.0 | April 2015 | Carolyn Rooth | Guideline review and update, to include outpatient induction. |
| 5.0 | December 2016 | Premila Thampi | Guideline review and update |
| 6.0 | October 2018 | Erum Khan | Guideline review and update |
| 6.1 | January 2019 | Erum Khan | Section 3.6.2 Patient exclusions; gestational age updated to below 41 weeks and greater than 42 weeks |

## 5.2 Consultation History

| Stakeholders Name | Area if Expertise | Date Sent | Date Received | Comments | Changes Made |
|---|---|---|---|---|---|
| Miss Whitelaw | Consultant | May 2013 | | | |
| Mr Stock | Consultant | May 2013 | | | |
| Mr Hanna | Consultant | May 2013 | | | |
| Miss Gupta | Consultant | May 2013 | | | |
| Miss Thampi | Consultant Labour Ward Lead | May 2013 | | | |
| Miss Pezeshki | Consultant | May 2013 | | | |
| Mr Yeh | Consultant | May 2013 | | | |
| Mr Nakade | Consultant | May 2013 | | | |
| Tracey Payne | Head of Midwifery | May 2013 | | | |
| Mary Plummer | Matron | May 2013 | | | |
| Molly Brew | Supervisor of Midwives | May 2013 | | | |

| | | | | | |
|---|---|---|---|---|---|
| Di Summersgill | Supervisor of Midwives | May 2013 | | | |
| Beverley Edwards | Sister | May 2013 | | | |
| Pat Carter | Sister | May 2013 | | | |
| Julie Howarth | Sister | May 2013 | | | |
| Karen Tysoe | Sister | May 2013 | | | |
| Julia Richmond | Sister | May 2013 | | | |
| Katrina Caen | Sister | May 2013 | | | |
| Suzanne Barber | Infant feeding advisor | May 2013 | | | |
| Helen Robinson | Risk Midwife | May 2013 | | | |
| Ed Neale | Clinical Director | January 2014 | | | |
| Tracey Payne | Head of Midwifery | February 2014 | | | |
| Carolyn Rooth | Consultant Midwife | Nov 2016 | | | |
| Ed Neale | Divisional Director | Sept 2018 | Sept 2018 | Comments sent to author | Yes |
| Julie Cooper | Head of Midwifery | Sept 2018 | Sept 2018 | Comments sent to author | Yes |
| Stephanie Smith | Pharmacist | Sept 2018 | Sept 2018 | Comments sent to author | Yes |
| Laura Andrews | Midwife | 2.5.18 | | Comments sent to author | Yes |
| Melissa Coles | ADAU midwife | Sept 2018 | | Comments sent to author | Yes |
| Jasmine Branch-Milne | Midwife | | 2.5.18 | Comments sent to author | Yes |
| Laura Jewell | midwife | | 4.5.18 | Comments sent to author | Yes |
| Alison Ruth | midwife | | 4.5.18 | Comments sent to author | Yes |
| Charlotte Auker | Midwife | | | Comments sent to author | Yes |
| Julie Cooper | Head of Midwifery | Sept 2018 | Sept 2018 | Comments sent to author | Yes |
| Wendy Bryant | Midwife | Sept 2018 | Sept 2018 | Comments sent to author | Yes |
| Kailash Nakade | Consultant | Sept 2018 | Sept 2018 | Approve: No comments | N/A |
| Joanne Caux | Midwife | Sept 2018 | Sept 2018 | Approve: No comments | N/A |

| | | | | | |
|---|---|---|---|---|---|
| Caredous Masters | Midwife | Sept 2018 | Sept 2018 | Approve: No comments | N/A |

### 5.3 Audit and monitoring

This Guideline outlines the process for document development will be monitored on an ongoing basis. The centralisation of the process for development of documents will enable the Trust to audit more effectively. The centralisation in recording documents onto a Quality Management database will ensure the process is robust.

| Audit Criteria | Tool | Audit Lead | Frequency of Audit | Responsible Committee | How changes will be implemented | Responsibility for Actions |
|---|---|---|---|---|---|---|
| a) Women who are being offered induction of labour are given personalised information about the benefits and risks for them and their babies, and the alternatives to induction. *Was IOL leaflet/information given @ 41 weeks* | Audit | Midwives and doctors as designated by audit leads | Annually | Labour Ward Forum, Clinical Improvement Group | Action plan to be completed | Midwives and doctors as designated by audit leads |
| b) Women only have their labour induced as outpatients if safety and support procedures, including audit, are in place. | | | Annually | | | |
| c)Number of Women who have labour induced by mechanical method and success rate. | | | Annually | | | |
| d) Women who have their labour induced have access to pain relief that is appropriate to their level of pain and to the type of pain relief they request. | | | | | | |
| e) Number of patients with evidence of Consultant involvement in decision regarding mode of delivery. | | | Annually | | | |
| f) Rates of successful vaginal delivery. | | | Annually | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| g) Use of prostaglandins and oxytocin<br><br>h) Maternal observations that should be carried out during induction prior to the establishment of labour - BP, P, T, urine analysis, palpation, VE<br><br>i) Fetal observations that should be carried out during induction prior to the establishment of labour<br><br>j)Establishment of labour - Normal CTG in notes prior to starting IOL<br><br>k) Evidence of counselling re: uterine hyperstimulation in notes?<br><br>l) Vaginal examination repeated 6 hours after prostin given Y/N (if not, reason for delay) | | | Annually<br>Annually<br><br>Annually<br><br>Annually<br><br>Annually<br><br>Annually | | | |

### 5.4 Equality Impact Assessment

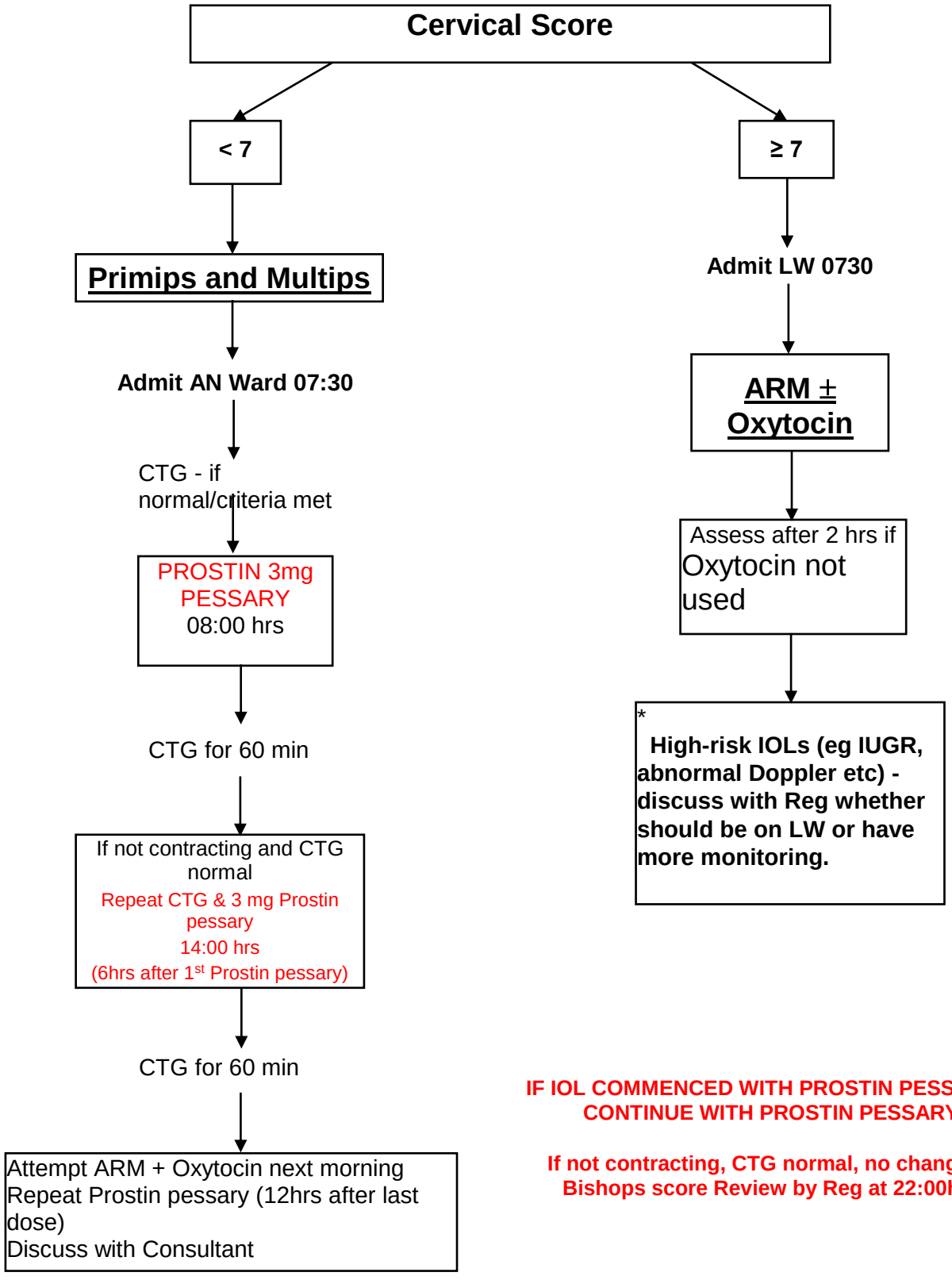
This document has been assessed using the Trust's Equality Impact Assessment Screening Tool. No detailed action plan is required. Any ad-hoc incident which highlights a potential problem will be addressed by the monitoring committee.

| **Impact** | **Age** | **Disability** | **Sex (gender)** | **Gender Reassignment** | **Race** | **Religion or Belief** | **Sexual orientation** | **Marital Status** | **Pregnancy & Maternity** |
|---|---|---|---|---|---|---|---|---|---|
| Do different groups have different needs, experiences, issues and priorities in relation to the proposed policy? | N | N | N | N | N | N | N | N | N |
| Is there potential for or evidence that the proposed policy will not promote equality of opportunity for all and promote good relations between different groups? | N | N | N | N | N | N | N | N | N |
| Is there potential for or evidence that the proposed policy will affect different population groups differently (including possibly discriminating against certain groups)? | N | N | N | N | N | N | N | N | N |
| Is there public concern (including media, academic, voluntary or sector specific interest) in potential discrimination against a particular population group or groups? | N | N | N | N | N | N | N | N | N |

## Appendix 1: Prostin Method of Induction Flowchart (IN Patient)

These guidelines apply particularly to women booked for induction electively.

In particular circumstances where there is a high risk to fetus or mother (eg IUGR/urgent medical problems) other management strategies may apply



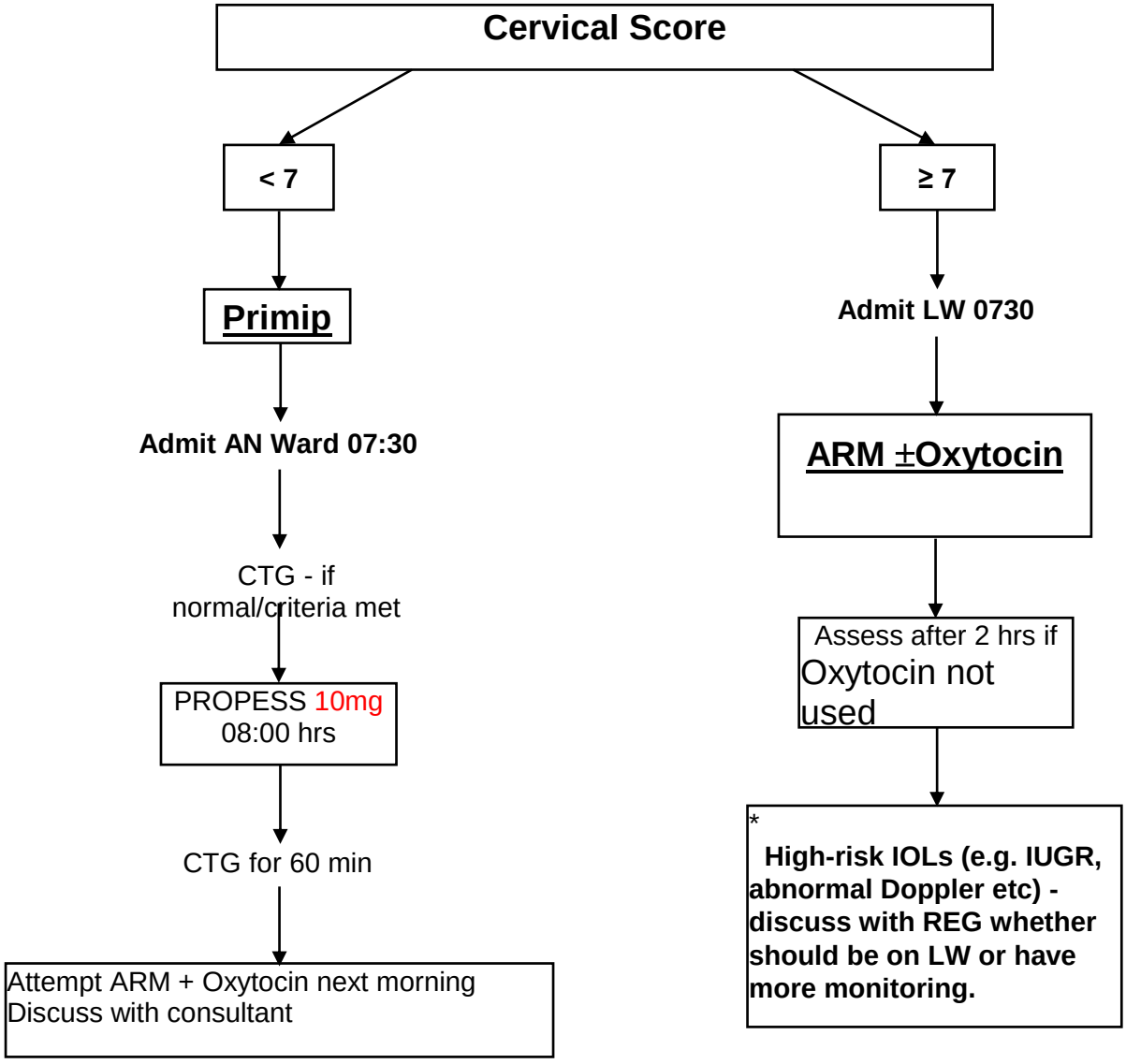

**IF IOL COMMENCED WITH PROSTIN PESSARY – CONTINUE WITH PROSTIN PESSARY**

**If not contracting, CTG normal, no change in Bishops score Review by Reg at 22:00hrs**

## Appendix 2: Propess Method of Induction Flowchart (Inpatient)

These guidelines apply particularly to women booked for induction electively.

In particular circumstances where there is a high risk to fetus or mother (e.g. IUGR / urgent medical problems) other management strategies may apply



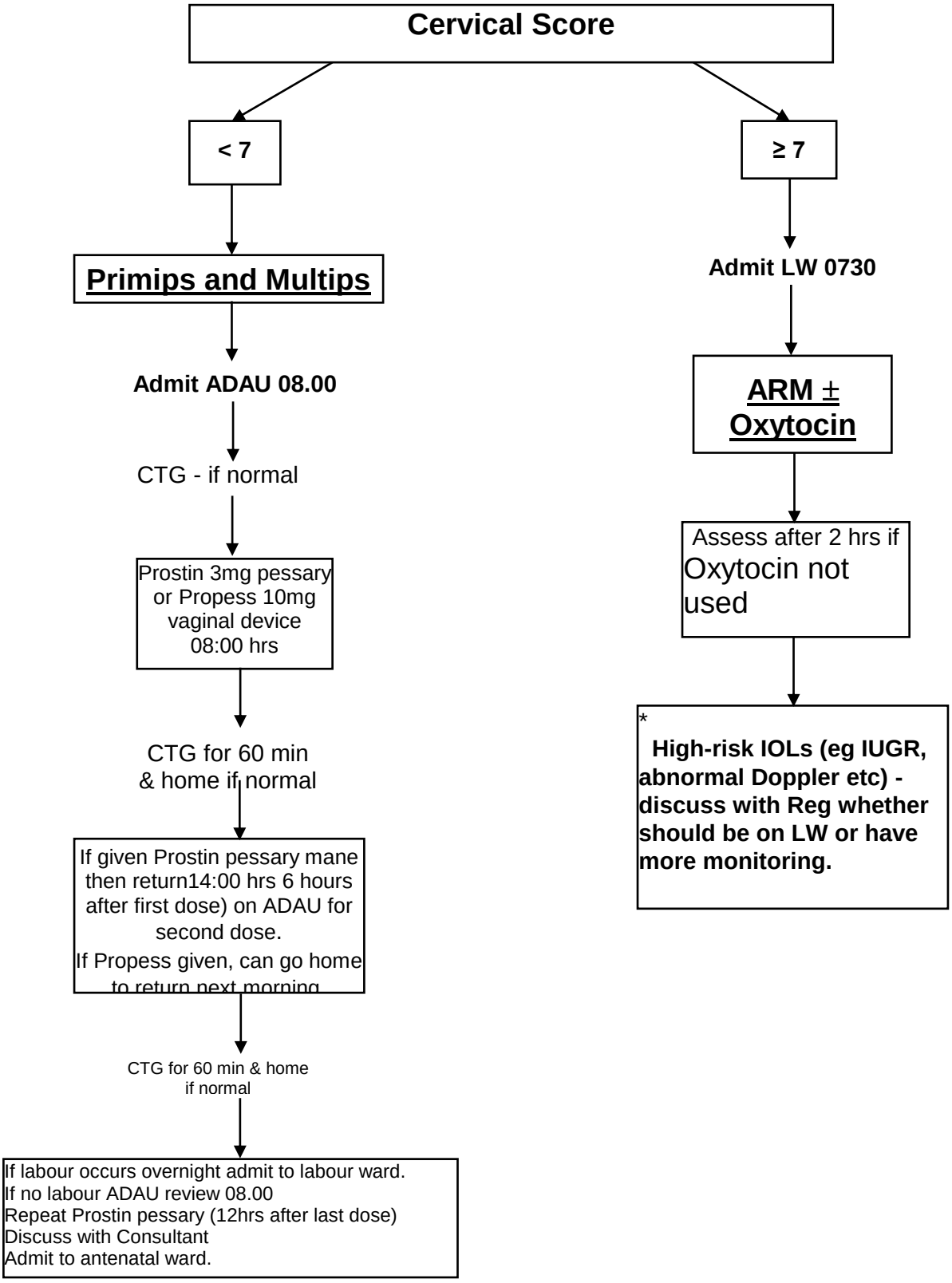

**IF IOL COMMENCED WITH PROPESS – NO FURTHER PROPESS**

**If not contracting, CTG normal, no change in Bishops score Review by Reg at 22:00hrs**

Milton Keynes University Hospital NHS Foundation Trust

# Appendix 3: Prostin Method of Cervical Ripening (OUTPATIENT INDUCTION) Flowchart

**These guidelines apply to low risk women booked for induction electively**



# Appendix 4: Regimen for Oxytocin infusion

- Oxytocin (Syntocinon) 10 IU is added to 500mls Sodium Chloride 0.9%.
- No other intravenous fluid required unless medically indicated or an epidural is required.
- Document / watch fluid intake / output in prolonged labour**.**

Contractions should not be more than **4 in 10 minutes** and should not last longer than 60 seconds. The uterus should relax adequately between contractions.

**REGIMEN: For induction / augmentation (10 IU Oxytocin in 500 mls sodium chloride 0.9%)**

**Rate:**

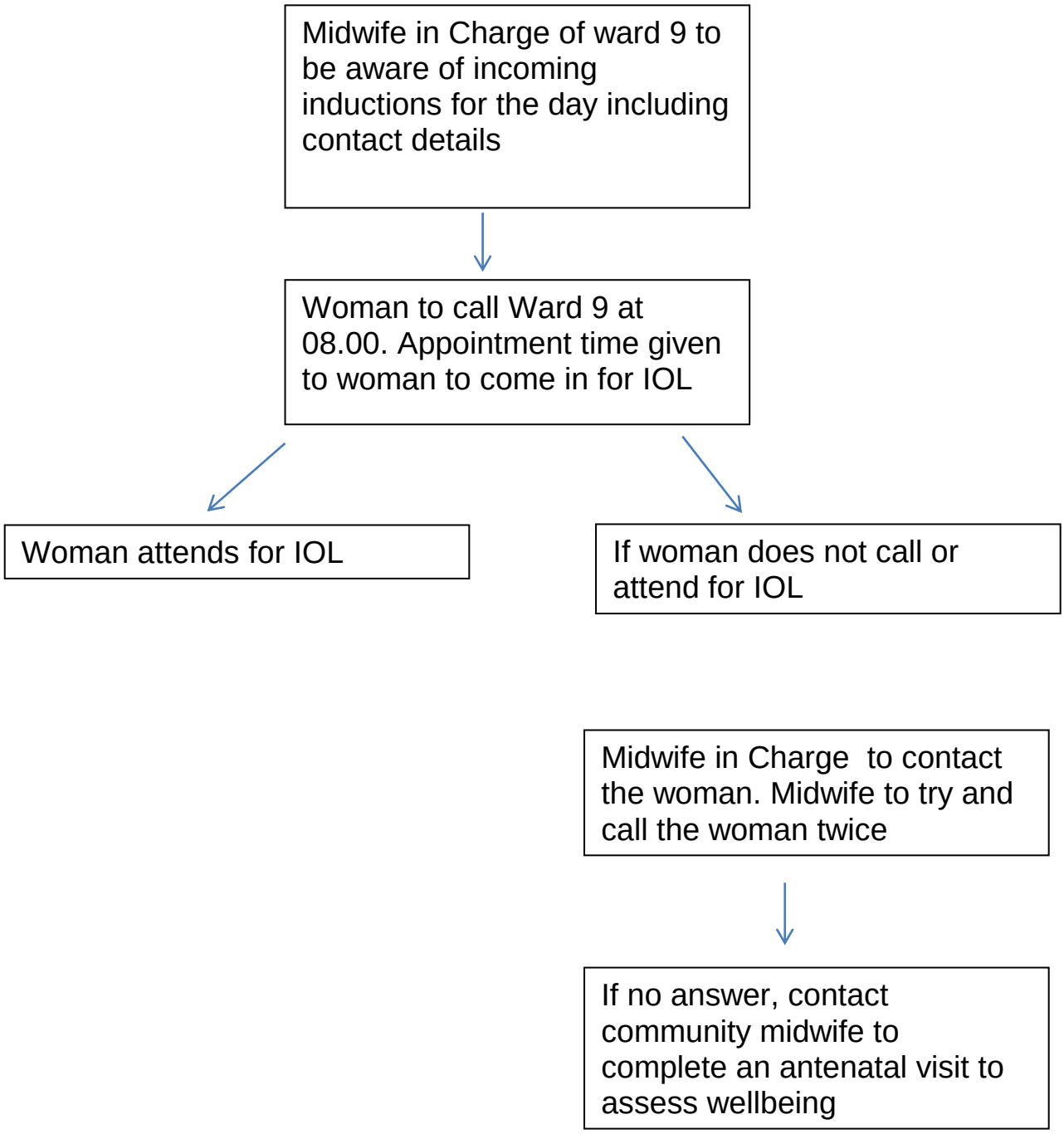
- Start infusion at **1mU/min *(or 3ml/hr),***
- Increase the rate every **30 minutes until 12 mU/min (*or 36mls/hr*)**
- Then increase the rate by **4mU/min** (or 12mls/hr) to a maximum of 20 mU/min (or 60mls/hr)
- If satisfactory contractions are not achieved after 1 hour at maximum rate, management must be discussed with Registrar
- If a second bag of oxytocin is required the registrar needs to see and assess the woman

**OXYTOCIN DOSE REGIME**

| Time after starting (minutes) | MU/min | Volume infused (mls/hour) |
|---|---|---|
| 0 mins | 1 | 3 mls/hour |
| 30 mins | 2 | 6 mls/hour |
| 60 mins | 4 | 12 mls/hour |
| 90 mins | 8 | 24 mls/hour |
| 120 mins | 12 | 36 mls/hour |
| 150 mins | 16 | 48 mls/hour |
| 180 mins | 20 | 60 mls/hour (Max licensed dose) |
| **REGISTRAR REVIEW AND DISCUSSION WITH CONSULTANT PRIOR PROCEEDING TO HIGHER DOSAGE** | | |

* **The maximum dose used should not exceed 96 mls/hour (32 mU/min)**

## Appendix 5: Flowchart for non-attending IOL



## Appendix 6: Suggested audit tool for outpatient induction of labour

1. Does this woman meet the inclusion criteria for MKUH guidelines? Yes ☐ No ☐
If not, please record why:
2. Place of birth
3. Provision of information leaflet Yes ☐ No ☐
4. Documentation of consent Yes ☐ No ☐
5. Documentation of vaginal assessment prior to IOL Yes ☐ No ☐
6. Offered a membrane sweep Yes ☐ No ☐
7. Documentation of satisfactory maternal and fetal observations prior to discharge home
Maternal observations Yes ☐ No ☐
Electronic fetal monitoring Yes ☐ No ☐
8. Documentation of discharge advice given Yes ☐ No ☐
9. Parity
10. Prostaglandin used Prostin ☐ Propress ☐
11. Dilation of cervix when readmitted at 24 hours? cm
12. Additional prostaglandins required on re-admission Yes ☐ No ☐
13. Method of membrane rupture ARM SROM
14. Syntocinon required Yes ☐ No ☐
15. Analgesia
16. Mode of delivery
Spontaneous vaginal birth
Assisted delivery with forceps ventouse
Caesarean section, urgent emergency
17. APGAR score 1 minute ☐ 5 minutes ☐ 10 minutes ☐
18. Time interval from induction of labour to delivery (time)
19. Admission to neonatal unit? Yes ☐ No ☐
20. Risk incident Yes ☐ No ☐
If yes, please detail
21. Patient satisfaction
Was a patient questionnaire completed? Yes ☐ No ☐
Would she recommend outpatient induction to friends/family? Yes ☐ No ☐

Insert patient ID label

## Appendix 7: Checklist for OP IOL restructure with yes, no, date time and sign.

| **For completion at time of Prostin/Propess insertion** |
|---|
| Confirmation that suitable for Outpatient IOL |
| Verbal information given (document this in eCARE) |
| Written information given (document this in eCARE – read and understood) |
| Patients return location and time written on the patient information leaflet |
| Pre-Prostin/Propess CTG and full set of observations recorded on MEOWS chart |
| Examination including bishops score documented |
| Post Prostin/Propess (60 min) full set of observations recorded on MEOWS chart and FH recorded |
| Pass details to Labour Ward:<br>Name,<br>Hospital No,<br>Parity,<br>Indication for IOL<br>Time of Prostin/Propess insertion,<br>Patient telephone number.<br>Enter into OP IOL diary |
| **For completion by midwife at delivery** |
| Provide patient satisfaction survey to patient, explain that it relates purely to the OP IOL |

**Assessing suitability**

| | |
|---|---|
| Gestational age | 37-41+6 |
| Indication | IOL for reasons other than fetal or maternal compromise. E.g. post-dates, social reasons, SPD |
| Maternal age | >18 years,<40 years at EDD |
| Language | Fluent English |
| Current Findings | • Singleton<br>• Cephalic 4/5 or more engaged SFH measures appropriate on GROW chart<br>• recent scan confirming EFW >10th centile<br>• Intact membranes<br>• Reassuring pre-Prostin/Propess CTG Bishops score ≤7 |

| | |
|---|---|
| Past Obstetric/gynaecological History | Para<3<br>No previous Caesarean section<br>No previous uterine surgery<br>No previous precipitate delivery<br>Uncomplicated antenatal period (no APH/PET etc.) |
| Past Medical History | Well-controlled asthma, thyroid diseases are suitable. If unsure, ask a Consultant. |
| BMI | >18 and <35 at booking |
| Social | Lives within 30 mins of hospital in traffic (patient can judge this), has transport, a phone and a responsible adult to stay with them at all times and has no complex social factors |
| Patient consent, provide PIL | Verbal consent, document discussion and provision of leaflet with phone numbers added |
| Allergies | Exclude all who are allergic to Prostin/Propess |

# Appendix 8: Double cervical ripening balloon or Foley's catheter – insertion

| Operator details |
|---|
| **Name of operator:** |
| **Grade of operator:** |
| **No. of previous successful insertions (please circle):**<br>0 1-5 6-10 10+ |

| Current patient | | |
|---|---|---|
| **Hospital number:** | **Failed prostaglandin induction?**<br>Y N | |
| **Date of birth (dd/mm/yy):** | **Maternal age (years):** | **Parity**: |
| **Previous vaginal delivery?**<br>Y N | **Previous CS?** Y N | |
| **If this woman had a previous CS and vaginal delivery, was the vaginal delivery before or after the CS?**<br>(please circle) | N/A Before After | |
| **Indication for induction:** | | |

| Insertion of catheter | | | | | |
|---|---|---|---|---|---|
| **Date of insertion:**<br>(dd/mm/yy) | **Time of insertion:**<br>(hh:mm) | | | | |
| **Grade of operator:** | **Bishop score at time of insertion:** | | | | |
| **Gestational age at time of insertion (ww+dd):** | | | | | |
| **Length of cervix at insertion (cm):** | **Dilatation of cervix at insertion (cm):** | | | | |
| **SROM at time of insertion?**<br>Y N | | | | | |
| **Ease of insertion (1 = easy, 5 = difficult)** | 1 | 2 | 3 | 4 | 5 |
| **Comments regarding insertion** | | | | | |
| | | | | | |

# Appendix 9: Double cervical ripening balloon or Foley's catheter – removal

| Operator details |
|---|
| **Name of operator:** |
| **Grade of operator:** |
| **No. of previous successful removals (please circle):**<br>0 1-5 6-10 10+ |
| **No. of previous attempts at removal (please circle):**<br>0 1-5 6-10 10+ |

| Current patient | |
|---|---|
| **Hospital number:** | **Date of birth (dd/mm/yy):** |

| Insertion of catheter | | | | | |
|---|---|---|---|---|---|
| **Date of removal:**<br>(dd/mm/yy) | | **Time of removal:**<br>(hh:mm) | | | |
| **Gestational age at time of removal (ww+dd):** | | | | | |
| **Length of cervix at removal (cm):** | | **Dilatation of cervix at removal (cm):** | | | |
| **SROM at time of removal?**<br>Y N | | **Bishop score at time of removal:** | | | |
| **Ease of removal (1 = easy, 5 = difficult)** | 1 | 2 | 3 | 4 | 5 |
| **Comments regarding removal** | | | | | |
| | | | | | |

## Appendix 10: Double cervical ripening balloon or Foley's catheter – outcomes

| | | |
|---|---|---|
| **Spontaneous expulsion of catheter:** | Y | N |

| **Augmentation methods** | | |
|---|---|---|
| **Artificial rupture of membranes** | Y | N |
| **Oxytocin** | Y | N |
| **Epidural** | Y | N |

| **Delivery mode** | | |
|---|---|---|
| **Vaginal delivery** | Y | N |
| **Caesarean section** | Y | N |
| **Gestational age at delivery (ww+dd):** | | |
| **Date of delivery:** (dd/mm/yy) | **Time of delivery:** (hh:mm) | |

| **Caesarean section indication** | | |
|---|---|---|
| **Failed induction of labour** | Y | N |
| **Fetal distress during labour** | Y | N |
| **Arrest of first stage** | Y | N |
| **Arrest of second stage** | Y | N |
| **Malpresentation** | Y | N |
| **Bleeding** | Y | N |
| **Failed operative delivery** | Y | N |
| **Chorioamnionitis** | Y | N |

| **Neonatal outcomes** | | |
|---|---|---|
| **Apgar score at 5 mins <7** | Y | N |
| **Meconium** | Y | N |
| **NICU admission** | Y | N |