Clinical Guideline

MANAGEMENT OF THE INDUCTION OF LABOUR

SETTING Maternity, St Michael's hospital, UHBW.

FOR STAFF This guideline is aimed at all healthcare practitioners who book women for induction of labour and those who care for women undergoing the induction of labour process.

PATIENTS Pregnant women who may have labour induced.

1.0 INTRODUCTION / PURPOSE OF POLICY

1.1 Background

This guideline aims to provide information regarding induction of labour (IOL) and provide a standard care pathway for those women undergoing the induction of labour process.

Induction of labour is indicated when the risks of continuing pregnancy outweigh the benefits of continuing the pregnancy. If offered appropriately, it has been shown to reduce perinatal deaths, caesarean section rates, NICU admissions and has little or no impact on the rates of postpartum haemorrhage, instrumental birth, perineal trauma or breastfeeding rates at discharge (Cochrane, 2018).

1.2 Purpose

This guideline offers best practice advice on the care of women who are having or being offered induction of labour.

Treatment and care should take into account women's individual needs and preferences. Women who are being offered induction of labour should have the opportunity to make informed decisions about their care, in partnership with their healthcare professionals. If a woman does not have the capacity to make decisions, healthcare professionals should follow the Department of Health guidelines (NICE CG 108, 2018).

The purpose of this document is to provide obstetricians and midwives with clear guidance on the indications for induction of labour and to provide a clear and safe pathway for the care of women who are having or being offered Induction of Labour within the UHBW Trust. The document includes guidance on the use of the Cook Ripening Balloon (CRB), and/or Prostaglandins (PGE2) 'Propess®' (Dinoprostone 10mg) and Prostin 1or 2mg as induction agents, artificial rupture of membranes (ARM) and suitability for outpatient IOL.

2.0 ROLES/RESPONSIBILITIES

This guideline is intended to inform decision making for healthcare professionals responsible for booking induction of labour.

Regular audit of induction of labour processes and selected outcomes will be undertaken in order to provide high quality evidenced based care for women. This guideline will be revised on a 3 yearly rolling basis to allow implementation of change in line with evolving evidence.

3.0 KEY POLICY PRINCIPLES

3.1 Key Policy Statement(s)

Good communication between healthcare professionals and women is essential. It should be supported by evidence-based written information tailored to the needs of the individual woman.

Women should be informed that most women will go into labour spontaneously by 42 weeks. All women should be offered information about the risks associated with pregnancies that last longer than 42 weeks, and their options. This should be carried out at the 36 week antenatal visit or as close to this gestation as feasible.

The information should cover:

- Membrane sweeping
- Post dates induction of labour
- Expectant management

Women should be provided with UHBW IOL information in paper form or encouraged to find this in the My Pregnancy App @ St Michael's->Assisted Birth ->Induction of Labour **(Appendix 1)** and given the opportunity to ask questions. A record of the discussion should be made in the Maternity Hand-Held Record (MHHR).

3.2 Policy Principles

a. Information and Decision-making
b. Induction of Labour in specific circumstances
c. Methods of Induction of Labour
d. Process of Induction of Labour
e. Analgesia
f. Prevention and Management of Complications

3.2.1 Information and Decision making

Good communication between healthcare professionals and women is essential. It should be supported by evidence-based written information tailored to the needs of the individual woman. Treatment and care, and the information women are given, should all be culturally appropriate. It should also be accessible to women, their partners and families, taking into account any additional needs such as physical or cognitive disabilities, and inability to speak or read English.

Women should be informed that most labours begin spontaneously by 42 weeks. At the 36 weeks antenatal visit, all women should be offered information about the risks associated with pregnancies that last longer than 42 weeks, and their options of management should be discussed.

Healthcare professionals should explain the following points to women being offered induction of labour:

- The reasons for induction being offered
- When, where and how induction could be carried out
- The arrangements for support and pain relief
- The alternative options if the woman chooses not to have induction of labour

- The risks and benefits of induction of labour in specific circumstances
- Proposed induction methods
- Women's options should induction process not be successful

Process for booking induction of labour

General indications & who should oversee care:

If IOL is required for a reason other than: (1) post maturity (offered from 41+5 weeks), (2) IOL at term for women aged over 40 (3) prelabour prolonged rupture of membranes, then, please ensure that the obstetric consultant or SR at the antenatal clinic has agreed to IOL.

Urgent IOLs required on the same day also need to be discussed with the on call team including consultant and midwife in charge on Central Delivery Suite (please telephone 28424 to speak to the IOL midwife to enable this process). It may require reorganisation of the planned workload for the day. If an urgent IOL cannot be facilitated, the patient should be admitted to the antenatal ward for monitoring until the induction can be accommodated.

- Check that the estimated date of delivery matches dates from the booking and 20 week anomaly scan
- Check record of the placental site from the 20 week anomaly and any subsequent scan
- Discuss practical details of induction of labour:
- Suitability for outpatient IOL
- The possibility of delay dependent on activity within the unit at that time

Offer membrane sweep:

- We should endeavour to offer all women at least one sweep, starting one week prior to the planned IOL date, or from 38 weeks gestation if awaiting spontaneous onset of labour
- Women should be advised that the sweep may be uncomfortable and cause a small amount of bleeding
- Women should be advised that the sweep will increase the chance of spontaneous labour, particularly in the subsequent 48 hours.

Complete the electronic IOL booking form (Appendix 2)

Information required will include

- Woman's name, T number, BMI
- Current phone number
- EDD and gestation at induction
- Risk factors (maternal medical problems, fetal concerns, BMI, obstetric concerns, maternal age, previous caesarean section)
- The obstetrician approving the IOL (except in postmaturity/ IOL at term in women >40, and PROM)
- Agreed method of induction (PGE2, CRB, ARM +/- oxytocin) **(Appendix 3)**
- Give the woman the UHBW IOL information or direct them to the 'My Pregnancy App' **(Appendix 1)**

Complete the fetal monitoring during IOL sticker and place in the medical notes (green for OP IOL and red for IP IOL) (Appendix 4)

The antenatal team is still responsible for all care until the woman is admitted for IOL.

For non-urgent IOL, women should be made aware that we will aim to commence IOL within a 72 hour time frame

Prioritisation & admission planning

Inductions will be prioritised on a daily basis by the IOL team in conjunction with the SR or consultant on delivery suite & the co-ordinating midwife (see **Appendix 5** for guidance). Women will be contacted by a nominated staff member after 10am and informed of the proposed time and location for the admission or appointment.

Women will be seen on the Induction suite on level E or directly on CDS according to their plan. If the decision is made to delay induction because of excessive workload, women should be offered an assessment at DAU if clinically indicated, and offered the next possible induction slot.

3.2.2

Induction of Labour in Specific Circumstances (See Appendix 5)

IOL may be indicated for a variety of indications, most commonly postmaturity or prelabour rupture of membranes. IOL planned for reasons other than these should be discussed with a consultant or SR, for example maternal medical conditions or fetal concerns including growth restriction.

i) Prevention of Prolonged Pregnancy

Women with uncomplicated pregnancies should be given every possible opportunity to go into spontaneous labour. All women should be offered a membrane sweep from 38 weeks gestation, or one week prior to the date given for IOL. All low risk women be offered IOL after 41+5 weeks gestation to avoid the risks of prolonged pregnancy. The exact timing should take into account the woman's preferences and circumstances.

It is recommended in MLU admission criteria that low-risk women can birth in the MLU if their pregnancy is between 37 and 42 weeks (up to and including 14 days past 40 weeks). Labour occurring after this should be managed on the delivery suite.

Women under community midwife led care

The community midwife will

- Give the leaflet “Care in late pregnancy” before the 40 week appointment
- Offer a membrane sweep on depending on circumstances

- Women should be informed that sweeping:
  - Makes spontaneous labour more likely, thereby reducing the need for formal induction
  - Is not associated with increased risk of maternal or neonatal infection
  - Is associated with discomfort during the examination
  - May cause mucousy loss, a small amount of bleeding and some tightenings

- Verbal consent should be obtained before the sweep
- Examination findings and fetal heart rate should be recorded in the MHHR

Explain options of

- IOL after 41+5
- Expectant management

The CMW will perform an antenatal check at 41 weeks (+/- 2 days)

- If there are any concern regarding maternal or fetal wellbeing refer to DAU
- If pregnancy remains low risk, IOL should be arranged by the CMW using the criteria form and discussing a time and date with the team on delivery suite (Band 7).

Women under consultant-led care

- Women under consultant led care require an individualised plan regarding late pregnancy
- If suitable for the midwife-led pathway in late pregnancy, this should be clearly documented in the MHHR at the last consultant appointment
- Before formal IOL, women can be offered membrane sweeping either in ANC, DAU and/ or by CMW if also stated clearly by obstetric team in the handheld notes

If women are required to have follow up appointments in DAU, the midwife will assess maternal and fetal wellbeing by

- History and clinical assessment
- BP & urinalysis
- Abdominal palpation
- CTG and AFI

Management of women who choose expectant management

If a woman chooses not to have an induction of labour her decision should be respected. The consultant obstetrician or SR should discuss and plan the woman's care with her from then onwards and record the plan in the MHHR.

From 42 weeks, all women who decline induction of labour should be offered increased antenatal monitoring until spontaneous onset of labour or the offer of induction of labour is accepted. Discussion around alternative mode of delivery, for example, caesarean section, should also be documented.

There should be a discussion of

- Increased risk of perinatal mortality (from 1 per 3000 ongoing pregnancies at 37 weeks, to 3 per 3000 ongoing pregnancies at 42 weeks, to 6 per 3000 ongoing pregnancies at 43 weeks)
- Increased risk of meconium-stained liquor/ aspiration
- Increased risk of caesarean section and operative delivery

Increased antenatal surveillance should consist of at least twice weekly cardiotocography and ultrasound estimation of amniotic fluid index (NICE, 2008), which can be arranged in the DAU. Relevant advice should be provided regarding monitoring of fetal movement. The woman should be provided with the contact number for the DAU should she wish to seek advice at any stage.

(i) Preterm Prelabour Rupture of Membranes (below 37 weeks) (see UHBW Prelabour Rupture of Membranes (PROM) guidance)

(ii) Prelabour Rupture of Membranes at Term (over 37 weeks) (See UHBW Prelabour Rupture of Membranes (PROM) guidance)

Women with PROM over 37 weeks, in the absence of other risk factors, should be offered either immediate induction or expectant management with IOL if labour does not establish in 24-36 hours.

(iii) Previous Caesarean Section

Women with a history of caesarean section who wish to attempt Vaginal Birth after Caesarean Section (VBAC) and require IOL should be reviewed by a senior registrar or consultant obstetrician.

At the 39 week antenatal visit a discussion regarding the benefits of waiting for a spontaneous onset of labour should take place between the woman and the most senior obstetrician in the antenatal clinic (Consultant or SR). A membrane sweep should be offered and an appointment arranged for review at 40 weeks gestation in the antenatal clinic.

At the 40 week review a further membrane sweep may be offered and suitability for induction of labour assessed by the obstetric consultant or SR.

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 when undergoing induction process compared to spontaneous onset of labour (1:250 using PGE2 and oxytocin, 1:290 with PGE2 alone, 1:770 in spontaneous labour- UKOSS 2011)

The woman should be counselled on the basis of the findings which must be clearly documented in the VBAC Pathway/Proforma within the MHHR.

Regarding the methods of IOL for women with previous uterine scar:

- There is evidence that prostaglandins increase risk of uterine rupture
- The preferred method of IOL is artificial rupture of membranes (ARM), followed by oxytocin infusion where possible. If ARM is not feasible, a mechanical method of IOL (Cook® balloon) may be used to dilate the cervix prior to ARM
- The decision to use prostaglandins on women who have undergone uterine surgery is a consultant-only decision and should be clearly documented

An individualised plan of care including clear guidance on frequency of maternal obs and fetal monitoring, and when to transfer to CDS should be documented by an experienced obstetrician.

(iv) Suspected Fetal Macrosomia

Please refer to the trust guidance on management of large for gestational age: management for delivery “Managing the Big Baby at St Michael’s hospital” infographic.

(v) Maternal Request

Induction of labour should not routinely be provided following maternal request. However, under exceptional circumstances, induction may be considered at or after 40 weeks gestation.

This decision must be taken after discussion with an Obstetric Consultant and rationale clearly documented in the MHHR.

The possibility of a failed Induction of labour process and management plan in that situation should be fully discussed with the woman and documented in the MHHR.

(vi) Breech Presentation

Induction of labour is not recommended if a woman's baby is in the breech presentation. If external cephalic version is unsuccessful, declined or contraindicated, and the woman chooses not to have an elective caesarean section, management should be discussed on an individual basis with the obstetric consultant with explicit documentation in the MHHR.

(vii) Fetal Growth Restriction

Decisions for induction of labour in the context of fetal growth restriction should be consultant led, with a clearly documented individualised plan of care regarding method of induction and fetal monitoring requirements.

Induction of labour is not recommended where there is evidence of chronic hypoxia on an antenatal computerised cardiotocograph (cCTG).

Management of fetal growth restriction should be discussed on a case-by-case basis with the obstetric consultant with explicit documentation in the MHHR.

In cases of SGA fetuses (<10th centile) who are moving normally and where there is no evidence of compromise on ultrasound or CTG, direct ARM or use of Cook Ripening Balloon are recommended to avoid uterine hyperstimulation, with use of continuous CTG once the woman is contracting (Familiari et al. 2020).

Timings for delivery should follow guidance from Saving Babies’ Lives Version 2

EFW <3rd centile	Initiate delivery by 37+0 weeks (or earlier if additional concerning features)
EFW 3rd-10th centile	Initiate delivery by 39+0 weeks

	(or earlier if additional concerning features)
EFW <10th centile / AC <10th centile with exclusion of FGR	Offer IOL at 39 weeks

For women who decline induction of labour or delivery after 39+0 weeks, counselling must include a discussion regarding evidence that there is no increase in risk for the baby or for the mother from delivery/induction at this gestation and that there is no evidence to determine how fetuses with SGA/FGR should be monitored if pregnancy continues.

(viii) Diabetes- please refer to guidance "Diabetes in Pregnancy, Gestational" and "Diabetes in Pregnancy, types 1 & 2"

Pregnancies complicated by diabetes are at an increased risk of perinatal morbidity and mortality. Women with gestational diabetes should be offered IOL between 38-40 weeks gestation. Women with type one or two diabetes and no other complications should aim for delivery between 37+0 - 38+6 weeks gestation.

Decisions on mode and exact timing of delivery for women with all types of diabetes should be made by the consultant obstetrician taking into consideration the type of diabetes, treatment required, hypoglycaemic control, fetal growth and any other complications.

(ix) 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.

(x) Maternal Age

Advanced maternal age is found to be independently associated with an increase in antenatal and intrapartum stillbirth. Epidemiological studies show that women aged 40 years or older have a similar stillbirth risk at 39 weeks of gestation to 25–29 year olds at 41 weeks of gestation. At 41 weeks of gestation the risk of stillbirth is 0.75 in 1000 women under the age of 35 years old, and 2.5 in 1000 women aged ≥ 40 years old. The effect of maternal age persisted despite accounting for medical disease, parity, race and ethnicity.

Women who are nulliparous have a higher rate of stillbirth compared with multiparous women in all maternal age groups. The risk is higher where there are concurrent medical co–morbidities, nulliparity or Afro-Caribbean ethnicity; all are known to have higher stillbirth rates.

The risk and benefit of IOL at 39 – 40 weeks should be discussed and offered if appropriate and the discussion must be documented within the MHHR.

(xi) Intrauterine Fetal Death (see separate UHBW guideline, Management of Late Fetal Loss)

3.2.3 Methods of Induction of Labour:

(i) Membrane Sweeping

Membrane sweeping is regarded as an adjunct to induction of labour rather than an actual induction method. 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 then massaging around the cervix in the vaginal fornices (cervical stimulation) may achieve a similar effect. It should be explained that discomfort and vaginal bleeding are possible following this procedure.

Membrane sweeps may be offered in ANC or another appointment arranged, dependent on the patient's care pathway.

Planned IOL at 37 – 42 weeks:

It is reasonable to offer a membrane sweep one week prior the date of IOL and this may be performed by the midwife if the woman is 37+0 weeks or above and it is clearly documented in the notes by the obstetrician. In view of prolonged pregnancy midwives should follow NICE guidance.

Women having IOL prior to 37 weeks:

1. Membrane sweeping in this group of women should be performed by an obstetrician
2. Consent to procedure and presence/absence of chaperone must be obtained and documented
3. Cervical massage can be offered if the cervix is unfavourable.

Membrane sweeping is not contraindicated in women who are carriers of GBS (RCOG, 2017).

Document the findings of the vaginal examination and the fetal heart rate following the procedure in the MHHR.

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

(ii) Mechanical Methods

The Cook ripening balloon (CRB) catheter is the first line IOL agent in the UHBW

IOL using mechanical methods has been shown to be an efficient method of induction of labour and is associated with a low incidence of uterine hyperstimulation. It is also the only method approved for outpatient induction. It is a licensed mechanical IOL agent. It has a stylet to aid insertion and so can be inserted into an unfavourable cervix.

Advantages of a CRB compared with PGE2 include:

- Reduced rates of uterine hyperstimulation associated with fetal distress (RR 0.16; 95% CI 0.06-0.39)
- Reduced chance of instrumental birth (RR 0.79; 95% CI 0.64-0.98)
- Comparable rates of caesarean section (RR 1.07; 95% CI 0.91-1.25)
- No proven increase in neonatal or maternal morbidity
- Patient satisfaction (once in situ, mechanical methods are better tolerated with less discomfort than vaginal PGE2)

The Cook® balloon is licensed for 12 hours use post insertion, however there is no evidence of increased infection if left in situ up to 24 hours. If capacity cannot facilitate ARM after 24 hours indwell time, the CRB should be lift in situ and women informed that there may be a slight increased risk of infection. The catheter will remain in situ until it is expelled, the membranes rupture, or for at least 12 hours after which time ARM will be performed on the induction of labour suite if capacity allows or on Central Delivery Suite (CDS) after discussion with consultant on call and coordinating midwife.

Caution should be exercised in the context of a high free head as there is a risk of conversion to non-cephalic presentation. In these circumstances, consider instead use of PGE2 agents, or controlled ARM on CDS after discussion with obstetric SR or consultant.

For instructions and diagrams on how to insert a CRB, see Appendix 6

(iii) Pharmacological Methods

Propess®

The vaginal prostaglandin Dinoprostone 10mgs / Propess® (controlled release pessary) is the second line IOL agent in UHBW.

The licensed period of time and recommended regime is one pessary which should remain in situ for twenty- four hours until the onset of labour (but can remain in situ for up to thirty-six hours,
depending on clinical activity on Delivery Suite). All women requiring Propess must remain for inpatient IOL.

Contraindications to Propess® administration include:

- Uterine contractions/early labour
- Previous major uterine surgery, e.g. Caesarean Section or myomectomy
- Fetal malpresentation
- Current pelvic inflammatory disease, unless adequate prior treatment has been instituted.
- Parity >3 (more than three full term births)
- Existing contraindications e.g. hypersensitivity to Prostaglandins (i.e. Allergy)
- Pathological CTG
- Bishop Score ≥7
- Any issue that is a contraindication to induction of labour (i.e. placenta praevia, severe fetal growth restriction with fetal compromise)

Cardiotocograph (CTG) is recommenced in the event of regular uterine activity or if a woman requests analgesia.

The woman should be instructed to inform the midwife if:

- Contractions become regular
- She becomes uncomfortable with contractions
- She has vaginal bleeding
- Membranes rupture
- Propess® falls out – the woman should be advised to save the Propess®
- Gastrointestinal effects such as nausea, vomiting or diarrhoea

(iv) Oxytocin – see UHBW "Oxytocin (Syntocinon) use in labour"

May be used as primary method of induction of labour in women with pre-labour rupture of membranes if the cervix is favourable.

(V) Artificial Rupture of Membrane

Amniotomy may be used as primary method of induction of labour in specific circumstances and if it can be accommodated on CDS

- Bishop score ≥7
- History of hyperstimulation
- Grand multiparous (Parity >4) and favourable cervix
- Previous caesarean section and favourable cervix

(Vi) Pain relief during IOL- see "Pain Relief in labour- Non epidural"

Women undergoing IOL should be encouraged to remain mobile and well hydrated prior to the onset of labour.

Options for analgesia are the same as for women in the early or latent phases or labour and include

- Simple analgesia i.e. Paracetamol PO 1g 4-6 hourly when required (max 4g/24 hours)
- Opioids i.e. Dihydrocodeine PO 30-60mg 4-6 hourly when required (maximum of 240mg/24 hours). Morphine Sulphate (10mg/5ml) PO – One dose of 20mg. If booking weight <50kg, give 10mg, *see morphine sulphate PGD for Women requesting pain relief in the latent phase of labour*.
- TENS
- Bathing
- Opioids e.g. Morphine Sulphate 10-20mg. Pethidine 50-100mg (inpatient only)

Senior obstetric review (ST3 or above) should be sought if a second dose of opioid analgesia is required and the woman is not in established labour. A plan for ongoing care should be made including requirements for fetal monitoring and timing of the next vaginal assessment and obstetric review.

3.2.4 Process of IOL

(i) Setting, Timing and Environment

The induction suite on level E in St Michael's hospital is the dedicated area for women undergoing induction of labour, unless requiring an ARM.

Each day (07.30-20.00) the ward is staffed by a member of the core team (Band 6 or 7 Midwife). Overnight, a midwife will have responsibility for any inpatient inductions and will carry the IOL mobile phone which is the first point of contact for outpatient inductions. Midwives from other areas of the service may rotate through the service for experience or due to clinical workload.

A discussion is required by either an obstetrician or midwife in the antenatal period, regarding the reason for, timing of IOL and method of IOL. Women will have the opportunity to ask

questions and raise any concerns they have about IOL. A stretch and sweep will be offered to assess the cervix and encourage spontaneous onset of labour. A planned date and time for IOL is then provided based upon clinical risk and other planned workload. If there are queries regarding the planned IOL these can be raised with the named consultant or the on call team. A subsequent sweep may be scheduled prior to IOL if the cervix is unfavourable.

(ii) Admission for IOL:

Timings of induction are determined as per UHBW guidance and IOL should only be carried out if safety and support procedures are in place. Good communication between the delivery suite coordinator and the midwife in the induction suite is required to manage the workload while ensuring patient safety.

On admission for IOL the Midwife will:

- Individually assess each woman's risk factors and document these on the intrapartum risk assessment sheet.
- Ensure each woman has an understanding of the induction process.
- Perform a set of baseline maternal observations as recommended in the guideline "Severely Ill Pregnant Woman- Recognition of"
- Perform an abdominal examination: do not proceed if head 5/5ths palpable/ non cephalic presentation.
- Perform CTG. Where possible a computerised CTG analysis should be performed (see Antenatal fetal monitoring guideline). IOL should only proceed if a normal antenatal CTG is obtained. The checklist to exclude chronic hypoxia and pre-existing fetal injury must be completed and the overall impression must be that the antenatal CTG is normal.

IOL must not proceed if there is evidence of hypoxia on CTG. The induction suite is not an appropriate location to monitor a CTG suggestive of hypoxia. If there are any concerns regarding a CTG, senior obstetric review (ST3 and above) +/- transfer to delivery suite must be arranged as quickly as possible.

Vaginal examination will be undertaken after ascertaining fetal wellbeing. Cervical status is assessed using the Bishop's score (below), with a Bishop's score sticker placed in the MHHR.

Points	0	1	2	3	Score
Dilation	<1cm	1-2cms	2-4cms	>4cms	
Cx length	>4cms	2-4cms	1-2cms	<1cms	
Station	-3	-2	-1/0	+1/+2	
Consistency	Firm	Average	Soft		
Position	Post	Mid/ Ant			
Total					

If it is possible to perform ARM, do not insert a CRB or prostaglandins, but perform a membrane sweep (after discussion with the woman) and inform CDS that cold ARM is appropriate.

i) Insertion of Cook balloon (Bishop score <7)

- See SOP **(Appendix 6)**
- Confirm if suitable for outpatient IOL as per the IOL Booking Form **(see Appendix 2)**: if so provide leaflet **(Appendix 1)**

If any members of the IOL or on call obstetric teams have a concern about the suitability of outpatient IOL, the patient must remain as an inpatient. A plan must be documented regarding the frequency of subsequent monitoring and the safest location for ongoing care.

An ARM should be performed as quickly as delivery suite can accommodate once the Cook Ripening balloon falls out. Women at home should call the IOL mobile phone if the catheter falls out at home and be invited to re-attend for assessment.

If the Cook balloon is still in situ after 24 hours as an outpatient, women will called to re-attend the induction suite for assessment and ARM. This CDS coordinator should be aware when women are being invited in for assessment. Occasionally, if the Delivery Suite is busy and there are no other concerns regarding maternal or fetal well-being, a woman may be asked to remain at home and await a phone call when ARM can be performed. There should be discussion between the IOL midwife and the delivery suite sister prior to performing any ARM. Following ARM a woman may remain on the Induction suite for up to 4 hours to await spontaneous labour. If this occurs and the woman is otherwise low risk, she can be transferred to the MLU. If there is no spontaneous onset of labour, she will transfer to delivery suite for oxytocin augmentation.

Higher risk women e.g. those with medical comorbidities or fetal concerns can be transferred to delivery suite within 4 hours of ARM for augmentation with oxytocin. Women with Group B Strep should be given the option of oxytocin augmentation as soon as possible post ARM or to wait up to four hours post ARM before oxytocin, provided they have appropriate antibiotic cover.

In the context of very high-risk women e.g. BMI>50, significant medical comorbidity or likelihood of the baby requiring NICU admission; timing of IOL should be carefully planned. ARM should be performed overnight to ensure the women are in delivery suite and commenced on oxytocin by early morning.

ii) Administration of Propess®

- Prior to vaginal examination Propress® MUST be prescribed by medical staff on the prescription before administration.
- Propess® should be removed from the freezer and can be inserted immediately
- A vaginal examination will be performed, using ONLY water based lubricant gel for lubrication. Once the cervix is located and assessed insert the Propess® pessary in-between fingers and slide pessary into the posterior fornix
- Turn pessary into transverse position in the posterior fornix, withdraw fingers carefully and tuck the remaining tape into the vagina
- Advise the woman to stay on the bed for 30 minutes following insertion (a standard CTG should continue during this time and be discontinued only when evaluated as a normal trace) and to take care when visiting the toilet not to pull on the tape. Ask the woman to inform a midwife immediately if pessary falls out
- Once labour has been diagnosed on vaginal examination, or 24 hours has passed since insertion, retrieve the pessary by giving gentle traction to the protruding tape at the vulva, until completely removed

- Oxytocin (Syntocinon®) can be administered 30 minutes after removal of Propess®

If analgesia is required, perform antenatal assessment and VE and remove Propess® and transfer to Delivery Suite for ongoing care if ARM possible or in established labour. If unsuitable for ARM, observe uterine activity, if no contractions after 30 minutes, consider reinsertion of Propess®.

There should be clear documentation of time of insertion and removal of Propess® on the partogram in the MHHR.

Post Propess® Insertion

The woman should be instructed to inform the midwife if:

- Contractions become regular, every 5 minutes or more frequent
- She becomes uncomfortable with contractions and requires analgesia
- She has vaginal bleeding or constant abdominal paina

Action: Remove Propess®, complete a set of maternal and fetal observations and inform the delivery suite co-ordinator +/- obstetric staff.

Spontaneous rupture of membranes.

Action: Remove Propess®, complete a set of maternal and fetal observations and record these and the colour of liquor draining. Commence fetal heart rate monitoring for 20 minutes. If there are no concerns then continue with observations and inform the delivery suite co-ordinator.

Propess® falls out or drops lower in the vagina.

Action: A vaginal examination should be performed prior to re-insertion. If ARM is possible do not re-insert the Propess® and inform the delivery suite co-ordinator. If the cervix is unfavourable then replace the Propess® in a transverse position in the posterior fornix of the cervix. Commence fetal heart rate monitoring prior to re-insertion to help ascertain fetal well-being and continue with fetal heart monitoring for 20-30 minutes post re-insertion or until the CTG can be assessed as normal.

In all cases, regular maternal and fetal observations should be carried out and if the midwife is concerned, the Propess® should be removed and continuous fetal heart rate monitoring commenced whilst Obstetric review is requested.

If Propess® requires reinsertion on more than two occasions the woman should be referred to obstetric staff to assess regarding the transfer to delivery suite for Oxytocin (Syntocinon ®) or for ARM.

Any adverse effects should be noted and recorded (nausea, vomiting, fever, diarrhoea, vaginal irritation, abdominal pain, vaginal bleeding, hypertonic uterine activity, abnormal fetal heart rate). The Propess® should be removed if maternal and / or fetal observations have been affected.

Subsequent Maternal and Fetal Monitoring:

Inpatient observations on the induction suite should be performed as per **Appendix 4**. A consultant can request that additional observations be performed if this is clinically indicated.

These observations should continue until uterine activity is established.

Observations should include maternal temperature, maternal pulse, maternal blood pressure, colour and amount of vaginal discharge, uterine activity and auscultation of the fetal heart rate.

If the woman is asleep these observations may be omitted, however, consideration must be given to the individuals risk factors and clinical picture and this must be documented in the MHHR.

In women with no obstetric or fetal complication of pregnancy i.e. having IOL for the indication of prolonged pregnancy ONLY, after the administration of Propess®, when uterine activity begins, fetal wellbeing should be assessed with continuous electronic fetal monitoring for a minimum of 40 minutes. When the cardiotocogram trace is evaluated as normal, intermittent auscultation (IA) may be employed as described below. The woman may choose to labour and birth on the MLU.

In women who are having IOL for medical indications; after the administration of Propess®, if uterine activity begins, continuous fetal heart monitoring should be commenced and maintained throughout labour and the woman should be down on delivery suite.

After administration of Propess® in ALL women, if any of the following occur then the delivery suite co-ordinator and the on-call obstetrician should be informed if:

- Contractions more frequent than 4 in 10 minutes
- Concern about the fetal heart rate pattern / suspicious / pathological CTG
- Vaginal bleeding
- Severe nausea and vomiting

Once labour is established, the partograph within the MHHR should be commenced and the provision of midwifery care should be facilitated.

(v) Propess® is to be removed in the following circumstances:

Onset of established labour. For the purposes of induction of labour with Propess®, the onset of labour is defined as the presence of regular painful uterine contractions occurring every 3 minutes irrespective of any cervical change. There are two important points to note:

1. Once regular, painful contractions have been established with Propess® they will not reduce in frequency or intensity as long as Propess® remains insitu because Dinoprostone is still being administered.

2. Multiparous women may develop regular painful contractions without any apparent cervical change. Effacement and dilatation of the cervix may not occur until uterine activity is established. Because of this, once regular painful uterine contractions are established with Propess® insitu, a vaginal examination should be performed and the Propess® should be removed irrespective of cervical state to avoid the risk of uterine hyperstimulation.

- Any suggestion of uterine hyperstimulation or hypertonic uterine contractions
- Evidence of fetal distress
- Evidence of maternal systemic adverse Propess® reactions such as nausea, vomiting, hypotension or tachycardia.

3.2.5 Analgesia: please refer to “Pain relief in labour, non-epidural” on the DMS

During induction of labour women should be facilitated to discuss their pain relief preferences with their midwife. Women's preferences for analgesia in labour should be recorded. Reference should be made to any existing birth preferences.

Analgesic options are wide-ranging from non-pharmacological to pharmacological options and include change of position, warm bath, use of TENS machine and simple oral analgesia to stronger oral analgesia or systemic opioid analgesia. Women should be offered support and analgesia as required, and should be encouraged to use their own coping strategies for pain relief.

Methods other than pharmacological options e.g. warm baths, Transcutaneous Electronic Nerve Stimulation (TENS), birthing balls, mobilisation should be encouraged.

If pharmacological methods of pain relief are required / requested, vaginal examination and provision of midwifery care should be considered.

3.2.6 Prevention and Management of Complications

(i) Tachysystole, hypertonus or hyperstimulation

Definitions:

Tachysystole - > 5 contractions in 10 minutes with normal CTG

Hypertonus - painful contraction lasting > 60 seconds with normal CTG

Hyperstimulation - Tachysystole or hypertonus with abnormal CTG

In the presence of uterine tachysystole, hypertonus or hyperstimulation the following actions should be taken:

- Remove Propess®
- Perform CTG
- Place the woman in the left lateral position.
- Inform delivery suite co-ordinator and on-call obstetrician

Consider:

- Use of tocolysis (Terbutaline 250micrograms subcutaneously as a one off dose)
- Transfer to delivery suite
- Provision of one-to-one midwifery care
- Obtaining intravenous (IV) access and obtain blood samples for full blood picture, group and save and any other bloods considered to be relevant

If the CTG does not normalise following these resuscitation measures, consideration should be given to the optimal method of delivery.

After removal of Propess® if the CTG is normal, consider artificial rupture of membranes or reinsertion of Propess® after 30 minutes. Alternatively use of a Cook Ripening Balloon may be considered to continue the induction process.

(ii) Failed attempt at Induction of Labour

Failed attempt at IOL is defined as labour not starting after one cycle of treatment with Cook Ripening Balloon or Propess® and inability to perform ARM.

- Woman should be reviewed by a consultant obstetrician
- Consideration may be given to use Propess or Cook as alternative. There is no benefit in administering additional prostaglandin after Propess® is removed)

(iii) Failed induction of labour

Failed attempt at induction of labour is defined as unable to perform amniotomy following oxytocin infusion due to lack of dilation of the cervix.

Failed induction of labour is defined as failure to enter the active phase of labour following an induction process.

Decisions about further management should be made by the consultant obstetrician taking into account the woman's wishes and the clinical circumstances.

The woman's condition and the pregnancy in general should be fully reassessed, and fetal wellbeing should be assessed using electronic fetal monitoring.

The subsequent management options include:

- A further attempt to induce labour (the timing should depend on the clinical situation and the woman's wishes, use of alternative IOL agent may be considered)
- Caesarean section

(iv) Cord Prolapse

To reduce the likelihood of cord prolapse, which may most commonly occur at the time of amniotomy, the following precautions should be taken:

- Before induction, engagement of the presenting part should be assessed.
- Obstetricians and midwives should palpate for umbilical cord presentation during the preliminary vaginal examination and avoid dislodging the presenting fetal head
- Amniotomy should be avoided if the presenting fetal head is high
- Controlled amniotomy may be performed on delivery suite when the fetal head is high
- This should only be done after consultation with the obstetric consultant in charge of delivery suite. It will require second person involvement and gentle pressure to stabilise the head.

(v) Uterine Rupture

If uterine rupture is suspected during an induction of labour, the baby should be delivered by Category 1 caesarean section with the decision to delivery interval below 30 minutes.

Indications of imminent uterine rupture include:

- Changes in pattern of CTG: persistent variable or late decelerations, bradycardia and/or tachycardia with shallow decelerations
- Change in maternal observations: tachycardia, scar pain, hypotension, vaginal bleed

- Change in the station of the presenting fetal head

Fetal Blood Sampling (FBS) should NOT be undertaken in women with uterine scar pain undergoing process of IOL as it may delay diagnosis of uterine rupture and delivery.

(vi) Conversion to non-cephalic presentation

This can occur during the IOL process, particularly after insertion of a Cook Ripening Balloon. Caution should be exercised if the woman has a history of unstable lie or high head. The presenting part must be confirmed prior to ARM in such patients.

3.2.7 Oxytocin Intravenous Infusion for Induction or Augmentation of Labour- Please refer to "Oxytocin use in labour" on the DMS

4.0 IMPLEMENTATION OF POLICY

4.1 Dissemination

Following ratification by the Standards and Guidelines Committee and approval by the Policy Committee this guideline will be published on the UHBW Intranet Site and midwives, obstetricians, anaesthetists and neonatologists will be informed. The policy and guidelines section is regularly accessed by staff.

4.2 Resources

Staff awareness on this guideline will be provided by the Practice Development Team and included in Multidisciplinary Mandatory Training Sessions.

4.3 Exceptions

There are no exceptions to this guidance.

5.0 MONITORING

"Induction of Labour" outcomes are included within medical and midwifery audits, via data from the BHSCT maternity dashboard.

6.0 CONSULTATION PROCESS

This guideline was widely circulated amongst Antenatal working party, the consultant obstetric body and the IOL group.

7.0 APPENDICES / ATTACHMENTS

Appendix 1: UBW IOL information for women

Appendix 2: UHBW IOL booking form

Appendix 3: Criteria for outpatient IOL

Appendix 4: Monitoring during IOL

Appendix 5: UHBW IOL indications and timing

Appendix 6: Cook balloon insertion SOP

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AUTHORISING BODY	Antenatal working party
SAFETY	
QUERIES AND CONTACT	[redacted]

Appendix 1: UHBW IOL information for women

Introduction
This leaflet has been written to give you an overview about the procedure of induction of labour. Most of your questions should be answered by this leaflet, but it is not a replacement for an individualised discussion between you and your midwife or doctor. If after reading it you have any concerns or require further explanation, please discuss this with the midwife or doctor.

What is induction of labour?
For most women, labour will start naturally between 37-42 weeks. In order for a baby to be born, first the cervix (the neck or opening to the womb) has to shorten, soften and open, and then there must be contractions. Your womb has a powerful muscular wall that tightens and then relaxes; these contractions gradually open your cervix. In some cases your doctor/ midwife will recommend that labour is induced. Induction of labour is a process used to encourage labour to start artificially.

Why might induction be offered?
- Prolonged pregnancy.
- Prolonged rupture of membranes. If your waters break but there is no signs of labour after 24 hours there is a slight increased risk of infection.
- Medical reasons (e.g. high blood pressure, concerns over the baby's growth/ movements, diabetes).

Membrane sweeps ('stretch and sweep')
Membrane sweeps have been shown to increase the chances of going into labour naturally in the 48 hours following the sweep. They are offered one week prior to your planned delivery date. A midwife or doctor will perform a vaginal examination to try to separate the membranes from the inside of the cervix. It may be uncomfortable or cause a small amount of bleeding but does not increase risk of infection to baby, and is *not* considered an induction of labour. A further membrane sweep can be offered after 48 hours if there are no signs of labour.

Can I decline induction of labour?
After considering all the facts around induction of labour, if you decide you do not want to be induced, you should discuss this decision further with your midwife or doctor. You will be offered an individualised plan to attend hospital so we can check you and your baby's wellbeing and discuss your care with a midwife or doctor.

How is labour induced?
When your midwife/ doctor examine you, they will assess how "favourable" the cervix is (how ready it is to go into labour). If it is not possible to "break the waters" you will be offered methods to prepare the cervix.

Cervical ripening balloons (CRB) or prostaglandins or are used to soften and open the cervix in order to be able to "break the waters" around the baby. They may sometimes cause contractions to start as well. Occasionally if one method does not work, you may be offered the other.

Cervical ripening balloon ("Cook Balloon")
This is the only method suitable for outpatient induction of labour. This is because it is drug-free and cannot cause your womb to over contract; therefore you do not need to be monitored as closely as

when using medical prostaglandins. Outpatient induction is available to many women. Your midwife or doctor will advise if this is a safe option for you.

This method involves a soft silicone tube being inserted into the opening of your womb (cervix) through your vagina. Two balloons near the tip are inflated with sterile fluid once it is in place. The catheter stays in place for at least 12 hours, with the balloons putting gentle pressure on your cervix. The pressure should soften and open your cervix enough to start labour or to be able to break the waters around your baby. Sometimes the balloon catheter may fall out by itself. If this does not happen, the balloon will be deflated and removed by a midwife the following day.

Breaking waters (Artificial rupture of membranes 'A.R.M.')
If the cervix requires no preparation, labour can be induced by "breaking your waters". This is done on the Induction suite or delivery suite depending on your circumstances. It is carried out by using a small plastic hook, which releases the fluid around your baby and allows the pressure of your baby's head to press on your cervix and stimulate contractions. It will not harm you or your baby. Some women find this uncomfortable. You may be given some time to see if contractions start or we may recommend starting an artificial hormone drip straight away.

Prostaglandin pessaries ('Propess®'/ 'Prostin®')
Prostaglandin is a hormone that is naturally produced by the body. It is involved in starting labour. We use two methods to deliver an artificial version of prostaglandin.
1. A pessary known as Propess® is inserted into your vagina, attached to a string. It releases the hormone slowly over 24 hours. It will be removed earlier if labour starts or there are any concerns about you or your baby's health. If more prostaglandin is needed after this, Prostin® is used.

2. A gel called Prostin® is inserted into the vagina. You will be re-examined six hours after the first dose; if the cervix is still not ready for the waters to be broken or you have not started in labour then a second Prostin® gel can be inserted into your vagina.

You will have to stay in hospital if these methods are used, as your baby will need to be monitored every six to eight hours. Between monitoring, you will be encouraged to be upright and mobile, as being active can help to encourage labour to start.

These methods are usually used if your baby's head is not well engaged in the pelvis, or your waters have broken but you do not go into labour naturally within 24 hours.

Monitoring your baby during induction
Before starting the induction of labour process, a midwife from the induction of labour team will ask your permission to monitor both your wellbeing and that of your baby. Monitoring after starting the induction of labour process will depend on whether you are an inpatient or outpatient and the method used to induce labour.

On Delivery Suite

Oxytocin hormone drip
This is an artificial form of the hormone that causes your uterus (womb) to start having contractions. It is given through a tiny tube into a vein in your hand (drip). It is usually given once your waters have

broken. The drug is increased very slowly until your uterus is stimulated to contract regularly and strongly.

During labour, it is recommended that your baby's heart rate is monitored continuously by cardiotocography (CTG). Although your ability to walk around may be limited by the drip and monitor, we do have mobile CTG's for use on request. You do not have to lie on the bed, and you do not necessarily have to have an epidural (unless you would like to have one).

What if I have had a caesarean birth previously?
If you have chosen to have a VBAC (vaginal birth after caesarean) you will not be offered prostaglandins to induce labour, because this increases the chances of the scar on the womb coming apart from 1 in 100 to 2 in 100. A cervical ripening balloon reduces this risk (RCOG 2015). We would recommend that you are an inpatient during the induction process rather than at home to monitor you and your baby more closely.

Monitoring your baby during labour
If you are on a low risk pathway, your midwife would typically listen into baby's heartbeat with a handheld Doppler.

If you require use of the hormone drip in labour then continuous CTG monitoring is recommended.

Are there any complications or risks?

Cervical Ripening Balloon Catheter
The procedure can be uncomfortable but it should not be painful. There is a very small risk of infection which is minimised by careful infection control procedures. If an infection is suspected, your baby may need to be delivered by the quickest possible method.

Prostaglandin ('Propess®'/ 'Prostin®')
Inserting the prostaglandin pessary can be uncomfortable. Prostaglandin may cause soreness in and around your vagina. It can also cause strong contractions, which can be painful; having these contractions does not always mean you are in labour. Your midwife will discuss ways to help you manage this.

On rare occasions prostaglandins can cause your uterus to contract too frequently and this may affect the pattern of your baby's heartbeat. This is usually treated by giving a drug that helps the uterus to relax. Sometimes the uterus continues to contract too frequently, which may mean an emergency caesarean birth is necessary.

Oxytocin (Syntocinon®)
As with prostaglandin, the main risk is that your uterus can contract too strongly/frequently and affect the baby's heartbeat. Reducing the rate of the Oxytocin can have an immediate effect on easing the contractions, which will improve the baby's heartbeat. If the baby's heartbeat does not recover, your doctor will discuss what is required. This may mean an emergency caesarean birth is advised.

What happens if induction of labour is unsuccessful?

For a small number of women induction of labour does not work. Your ongoing care will be discussed with you and an obstetrician and a plan for your birth can be agreed. It may be that a caesarean birth is recommended, or, if you and the baby are well, you may be offered a rest day before trying again.

How do I prepare for induction of labour?
Please read this information leaflet and share the information it contains with your partner and family (if you wish) can be of help and support you. There may be information they need to know, especially if they are supporting you as your birth partner/s.

We recommend making family, especially children and those caring for them aware that the procedure can take a long time (up to 4 days) before your baby is born. You may want to nominate one person to give the rest of the family updates on how things are progressing.

It is advisable to wear looser clothing when coming in for your induction as it will be more comfortable when you are being examined. It is not necessary to wear night clothes in the day as in most cases we actively encourage you to be mobile.

Some women find the early stages of an induction uncomfortable. You will be offered a range of options for pain relief. We would encourage you to eat and drink as normal unless specifically advised to do otherwise.

You may bring books, magazines and games to keep you occupied due to the length of time the procedure may take. However please be aware bed space is limited and you are responsible for your own personal belongings.

You are welcome to have one birth partner with you on the Induction Suite. They are welcome to stay 24 hours a day, however, no beds or meals are provided for partners.

What happens next?
When the Induction of Labour (IOL) team receive your referral they will contact you by mobile phone and you will be given the date we plan to commence your induction. If possible, you will also be offered a date and time for a Pre-Induction Assessment Appointment before your induction.

What will happen at the Pre-Induction Assessment Appointment?
You will meet with a member of the IOL Team and they will answer any questions and ensure you are making an informed decision.

You will be offered a vaginal examination so we can give you an individualised induction plan and if possible also perform a membrane sweep to encourage spontaneous labour.
Your midwife on IOL suite will then explain the induction process and ensure you know what to expect when your induction begins.

When should I expect to receive a call?
A member of the maternity team should make contact with you within 1-2 days. The team has a dedicated mobile phone, expect a call from the mobile number below.

What should I do if I have not received a call from the team?

If you have not received a phone call from the team after 2 days please contact them by mobile to ensure they have received your referral.

Where are the team based?
St Michael's Maternity Hospital, Level E

What will happen on the day of induction?

- **Inpatient induction**

Your plan of induction is reviewed on your induction date by the obstetric team. Expect a phone call at any time on the day of your induction to discuss your admission. Please be aware that on some occasions in St Michael's inductions may have to be delayed due to emergencies. Our call will be displayed as 07825960440. We will advise you what time to arrive or if your induction is delayed and the next steps to take. If your waters have already broken and you are being induced for prolonged rupture of membranes ("PROM") please be aware that we may call at any time of day or night to invite you in to start your induction. A midwife will ensure you and your baby are well, and offer a vaginal examination to assess your cervix.

- **Outpatient induction**

If you are suitable for outpatient induction of labour, you will be invited to attend the induction suite at an appointed time to have a cervical ripening balloon inserted. After the balloon is inserted, you can go home for up to 24 hours. We will give you an appointment to come back for assessment and following this "break the waters" around the baby if there is space on delivery suite.

Going home after cervical ripening balloon catheter
During the time you are at home, you can continue your daily activities. You may bathe as normal, however, please avoid penetrative sex. After going to the toilet please wash your hands, make sure the catheter is clean and change underwear regularly.

If you have any of the following, you are advised to call Central delivery Suite by phone to speak directly with a midwife so they can triage you (TEL: 07825960440).

- Bleeding
- Regular contractions and you think you are in labour
- Concerns about your baby's movements
- You feel unwell
- The waters around your baby break
- The balloon falls out

Occasionally the Induction suite or Central Delivery Suite are very busy and it is not possible to start your induction on the day we had arranged, or continue to the next stage of your induction once started. Senior staff involved in your care will make a decision based on the safety of you and your baby. In these circumstances we will call to explain the delay and arrange to monitor you and your baby's wellbeing if it is indicated.

Contact numbers:

Central Delivery Suite: [redacted]

Induction midwife: [redacted]

Appendix 2: IOL booking form

IOL Booking form
Please complete this form when booking women for outpatient IOL

Date of referral	
Patient name	
Hospital number	
Contact number	
Parity	
EDD	
Gestational age at time of IOL request	
BMI	
Previous caesarean section	
Gestation window for IOL	
Consultant team (if not PROM at term/ T+12)	
Interpreter required? Language?	
Person booking + role	
Provisional date for IOL	

Indication for IOL	Please select
Post maturity	
Prelabour rupture of membranes	
Reduced movements	
Fetal growth restriction	
Large for gestational age	
Fetal abnormality	
Maternal diabetes	
Hypertension/ PET	
Multiple pregnancy	
Obstetric cholestasis	
Maternal age	
Other maternal medical condition including psychiatric	
Late booker	
Maternal request/ social	
Other (please d/w consultant)	
Is inpatient induction required? If so, why?	
Is additional CTG monitoring required? See standard policy below	

Appendix 3: Criteria for outpatient induction

Will the patient have someone at home with them?	
Do they have access to transport in an emergency?	
Is the patient able to communicate via telephone?	
Do they live within 30 minutes' drive of the hospital?	
The patient has no fetal/ maternal concerns requiring inpatient CTG monitoring/ additional maternal observations? (See table for clarification)	
If these conditions are not met, please state approving consultant	

Suitability for outpatient induction*

YES	NO (unless consultant approved)
Prolonged pregnancy (offer from T+7)	Pre-gestational diabetes
History of precipitate labour	Gestational diabetes on treatment
Advanced maternal age (≥40 years)	PIH/PET requiring BP monitoring
Late booker	Multiple pregnancy
Social/ maternal request	Reduced fetal movement **with CTG concerns, abnormal AFI or Doppler on scan**
Gestational diabetes (diet only)	Recurrent or persistent reduced fetal movement
Obstetric cholestasis (if bile acids <100)	Previous caesarean
Maternal medical condition (if agreed by maternal medicine consultant)	Any IOL with propess / prostin
LGA baby	Evidence of IUGR • AC / EFW <3rd centile • EFW 3rd-10th centile • AC/EFW crossing centiles (≥30 centiles)
Fetal abnormality (in discussion with fetal medicine team)	
Single episode RFM which has resolved and no other concerns (**with normal cCTG, normal growth, AFI & Dopplers within 48 hours)**	
Deteriorating maternal mental health	
Hypertension (not requiring monitoring)	

*In alignment with patient choice

Appendix 4: Monitoring during IOL

Standard* monitoring on induction suite	
All	Baseline cCTG at start of IOL and CTG post ARM
All inpatients	BD CTG
Balloon catheter inpatient	4 hourly observations including FH auscultation
Balloon catheter outpatient	CTG on return prior to ARM
Propess/ PGE_2	4 hourly observations including FH auscultation and assessment of uterine activity

*Any change in baseline circumstances would necessitate re-evaluation of maternal and fetal condition and monitoring during the induction process

Outpatient Induction Labour – Risk Assessment		Comments
Provisional date Ideally within Plan if delayed Leaflet given/ accessing App	____ / ____ / ____ /40 24hrs / 48hrs / 72hrs Telephone Call / DAU / Admission Yes / No EDD: ____ / ____ / ____	Clinician booking IOL: Date: ____ / ____ / ____ *Please inform when booking that IOL may be delayed*
Indication for induction		Urgent ☐ High ☐ Moderate ☐ Low ☐
Maternal risk factors (*Refer to suitability criteria)		i.e. T+7, precipitate labour, ≥40 years of age, late booker, mat request
Fetal risk factors (*Refer to suitability criteria)		i.e. LGA baby, single episode RFM which has resolved with normal cCTG, growth, AFI & Doppler within 48 hours
Method of IOL	Successful S&S performed: Y ☐ N ☐ Cervical balloon ☐	Mechanical induction reduces risk of fetal distress in SGA / at-risk fetuses
Frequency of maternal observations during IOL	Full assessment on return prior to ARM ☐	
Frequency of fetal monitoring during IOL	Baseline cCTG at start of IOL and CTG post ARM ☐ As soon as regularly or painfully contracting: IA ☐ CEFM ☐	
Additional comments		

Inpatient Induction of Labour – Risk Assessment		Comments
Provisional date Ideally within Plan if delayed Leaflet given/ accessing App	____ / ____ / ____ /40 24hrs / 48hrs / 72hrs Telephone Call / DAU / Admission Yes / No EDD: / /	Clinician booking IOL: Date: ____ / ____ / ____ *Please inform when booking that IOL may*
		Urgent ☐ High ☐ Moderate ☐ Low ☐
Maternal risk factors (*Refer to suitability criteria)		i.e. GDM on treatment, PIH/PET, maternal medical condition, previous C/S
Fetal risk factors (*Refer to suitability criteria)		i.e. NICU requirement, IUGR, factors that risk placental dysfunction
Location of IOL	IOL Suite ☐ CDS ☐	
Method of IOL	Successful S&S performed: Y☐ N ☐ Cervical balloon ☐ ARM +/- Oxytocin ☐ Prostaglandins ☐	Mechanical induction reduces risk of fetal distress in SGA / at-risk fetuses
Frequency of maternal observations during IOL	4 hourly observations including FH auscultation ☐	Continue frequency of inpatient observations if applicable (i.e. 4 hourly if hypertensive)
Frequency of fetal monitoring during IOL	Baseline cCTG at start of IOL and CTG post ARM ☐ BD CTG ☐ CEFM as soon as regularly or painfully contracting ☐ No additional monitoring needed ☐	
Additional comments		

Appendix 5: IOL indications, timings and prioritisation

The co-ordinating midwife on CDS and the senior obstetrician in conjunction with the IOL team will prioritise inductions when the number exceeds 6 per day or when the existing workload and bed capacity prevents all the planned inductions being undertaken.

Priority	Indication for Induction of Labour
Urgent	• SROM>24 hours Maternal medical conditions e.g. • Cardiac disease with maternal compromise/ metal valves requiring full anticoagulation • Inpatient with mod/ severe PET (abnormal bloods/ proteinuria) • Poorly controlled insulin-dependent diabetes Fetal concerns • IUGR (<5th centile or static growth) • Abnormal CTG &/ Dopplers • Reduced fetal movements • Fetal anomaly e.g. gastroschisis/ hydrops as advised by FMU team • Post maturity >14 days
High	Maternal medical conditions e.g. • Diabetes on insulin • VTE on treatment • Severe psychiatric conditions (this *may* not preclude outpatient induction) Past obstetrics history such as stillbirth or neonatal death Fetal conditions required NICU/ PICU (including multiples) Cholestasis with bile acids >40mmol/ litre
Moderate	Term +7 SROM <12 hours in absence of any evidence of infection including GBS Oligohydramnios in the presence of normal fetal movements Maternal medical conditions e.g. • Cholestasis with bile acids <40, or ALT > 32 • GDM on medication • PIH/ mild PET Maternal age
Low	Symphisis pubis dysfunction Maternal request/ social grounds when pregnancy is progressing normally

Record any delay and action e.g. review in DAU on the induction booking form.

Careful discussion should take place with the women about the pros and cons of earlier induction of labour, particularly in the light of recent data suggesting there may be a difference in neonatal and paediatric outcomes for babies born at 37-38 weeks compared to 39 weeks and over.

Studies have shown an increased incidence of admission to neonatal unit and higher rates of persistent pulmonary hypertension and respiratory morbidity.

Follow-up studies have detected an increase in disease burden at 3 years and 5 years old, and a trend towards poorer school performance aged 5 years for those babies born at 37 weeks compared to >39 weeks.

Appendix 6: Cook balloon insertion SOP

Equipment required

- Cervical ripening balloon & stylet
- Lubrication
- 160mls of sterile water/ saline (room temp or warmer)
- 4 x 20mls syringes
- Inco sheet
- Sterile gloves
- Speculum
- 2 x bowls

Procedure

- Confirm singleton cephalic presentation, fixed and stable lie, Bishop score less than 7
- Insert stylet in to balloon (blue) and fix in place with ¼ twist (***ensure the distal tip of the stylet is flush with the distal tip of the balloon***, NB the tip of the stylet buttresses up against the end of the balloon, there is no recess for it to fit into).
- Place 80ml sterile water in to each bowl. Use two 2 x 20ml syringes for the uterine balloon and 2 for the vaginal balloon. Draw up 40ml from each bowl to start
- Place the woman into lithotomy postion if required
- Perform exam PV
- Introduce the CRB as per poster (see attached). NB – when removing the stylet, pull it from the neck of the balloon, do not twist, this will result in the hub becoming loose, sliding off the wire and giving you nothing to grip with. Remember if you have a posterior cervix or stenotic os you can pre curve the stylet to aid in placement
- Use both uterine syringes to fill uterine balloon 40ml (red).
- ***Pull back*** on the device until the uterine balloon is against the internal cervical os
- Use both vaginal syringes (40ml) to fill the vaginal balloon (green)
- Add more fluid in 20ml increments, until each balloon contains a maximum of 80mls of sterile water
- Take care not to overinflate the balloons
- If the woman finds it uncomfortable, it is likely to be the vaginal balloon pressing on the bladder. Remove 10-15ml water from vaginal balloon and document
- **Ensure woman has passed urine before going home**
- Double underwear system is preferable to taping CRB to inside leg
- ***The woman must attend St Michael's immediately and balloon removed if membranes rupture***
- Advise woman to ring the IOL team number if labour commences, altered fetal movements or any concerns
- Advise woman to attend induction suite at 08:00 if not in established labour
- If there is no capacity to perform ARM after 12 hours, please leave the CRB in situ and inform the woman that there may be a small increased risk of infection
- If the CRB is still in place at 24 hours then all women should be invited in to Level E for assessment

For inpatients:

Maternal observations and fetal heart rate auscultation should be performed as per the obstetric plan

Once the CRB falls out, please contact CDS for continuation of IOL when possible. When there is a delay in transfer to BBC, perform a vaginal examination to assess the Bishop Score to determine the plan for continued IOL.

If the CRB does not fall out or there is no capacity to perform ARM after 12 hours, please leave the CRB in situ and inform the woman that there may be a small increased risk of infection.