

<b>CLINICAL PROCEDURAL DOCUMENTS</b>				
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<b>Reason for minor amendments?</b> 1 mg Prostin gel may be given to women with previous Caesarean section (pages 7-8); correction 2 <sup>nd</sup> Prostin for primigravida- 2 and 1 mg (pages 16-18); extra paragraph about Dilapan -pages 22 and 23 and more clarity on page 25- first paragraph: CTG monitoring during for IOL				
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## **Abbreviations:**

ARM- artificial rupture of membranes  
BS- Bishop score  
CMW- community midwife  
CTG- continuous  
DAU- Day Assessment Unit  
EDD- estimated due date  
GDM- gestationnel diabetes mellitus  
IOL- induction of labour  
LV- liquor volume  
MEOWS- Maternity Early Warning Score  
MW-midwife  
RFM- reduced fetal movements  
SRM- spontaneous rupture of membranes  
USS- ultrasound scan  
VE- vaginal examination

## **Introduction**

Induction of labour (IOL) involves the artificial interruption of a pregnancy in circumstances in which it is believed that the outcome for the pregnancy will be improved. It has an impact on the birth experience for the women/ birthing people. Induction of labour is dramatically increasing in the UK with 34% of women/ birthing people being induced in the period 2020-21 (NHS Digital, 2021).

Although a variety of specific clinical circumstances may dictate the need for IOL with a greater or lesser degree of urgency, the essential judgement that the clinicians and the pregnant women/birthing people must make is whether the interests of the mother or the baby, or both, will be better served by ending or continuing the pregnancy. In making that judgement, it is necessary to factor in the attitude and wishes of the woman in response to her understanding of the actual risk of continuing the pregnancy, as well as the possible consequences of the method employed and the response to induction of labour.

IOL is not without risk and these include:

- Delivery of a preterm infant if expected date of delivery (EDD) not calculated accurately
- Failed induction (15%)
- Hypertonic uterine activity (1-5%)
- Cord prolapse at amniotomy

## **Scope**

This guideline is an adaptation of the NICE guideline [NG207] published: 04 November 2021.

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/ birthing people going through Induction of Labour within Bedfordshire Hospital.

## **Information and Decision Making**

The midwives and obstetricians should discuss and record in the maternity notes the preferences about mode of birth with women/ birthing people early on in their pregnancy, taking into account their individual circumstances. Their options for birth can include: expectant management **or** induction of labour **or** planned caesarean birth.

At their antenatal visits towards the end of pregnancy, the midwives and/or obstetricians should confirm the preferences for birth, as these may have changed since earlier discussions.

They must explain to women/ birthing people that induction of labour is a medical intervention that will affect their birth options and their experience of the birth process. This could include that:

- vaginal examinations to assess the cervix are needed before and during induction, to determine the best method of induction and to monitor progress.
- their choice of place of birth will be limited, as they may be recommended interventions (for example, oxytocin infusion, continuous fetal heart rate monitoring and epidurals) that are not available for home birth or in midwife-led birth units
- there may be limitations on the use of a birthing pool.
- there may be a need for an assisted vaginal birth (using forceps or ventouse), with the associated increased risk of obstetric anal sphincter injury (for example, third- or fourth-degree perineal tears).
- pharmacological methods of induction can cause hyperstimulation which can lead to changes in fetal heart rate and result in fetal compromise.
- an induced labour may be more painful than a spontaneous labour.
- their hospital stay may be longer than with a spontaneous labour.

Women/ birthing people should be informed that most of them will go into spontaneous labour by 42+0 weeks. At the 36-38 weeks antenatal visit, the information provided should cover:

- Membrane sweep - see site specific SOP: Membrane Sweeping in community at Bedford site.
- IOL between 41+0 and 42+0 weeks.
- Expectant management, and risks of intrauterine fetal death (IUFD) should pregnancy continue beyond 42 weeks gestation.

Explain to women/ birthing people who are being offered IOL:

- Reasons for IOL.
- When, where, how it would be carried out.
- Arrangements for support and pain relief.
- Alternative options if they choose not to have IOL or if later they change their mind regarding the IOL.

- Risks and benefits of IOL in specific circumstances and proposed induction methods.
- their options in case IOL was unsuccessful (see section – Management of Failed Induction in this guideline).

When offering IOL, the midwives or obstetricians should:

- give women/ birthing people time to discuss this information with others (for example, their partners, birthing companion or family) if they wish to do so before making a decision.
- encourage women/ birthing people to read all the detailed information -by providing them our IOL information leaflet.
- ensure women/ birthing people have the opportunity to ask questions, and time to think about their options.
- recognise that women/ birthing people can decide to proceed with, delay, decline or stop the IOL process. Respect their decision, even if healthcare professionals disagree with it, and do not allow personal views to influence the care they are given. Record their decision in the notes.

Provide information on induction of labour in line with the NICE guideline on patient experience in adult NHS services (see reference 11).

## **Indications for IOL**

### **Pregnancy lasting longer than 41 weeks**

Women/ birthing people with uncomplicated pregnancies should be given every opportunity to go into spontaneous labour. The midwives should assess their individual risk status at the routine visit at 40-41 weeks.

IOL should be offered between 41+0 and 42+0 gestation. If women/ birthing people choose not to have IOL, their decision should be respected.

Midwives/ Obstetricians should explain that some risks associated with a pregnancy continuing beyond 41+0 weeks may increase over time and these include:

- increased likelihood of caesarean birth.
- increased likelihood of the baby needing admission to a neonatal intensive care unit.
- increased likelihood of stillbirth and neonatal death.

Discuss with women/ birthing people that induction of labour from 41+0 weeks may reduce these risks, but that they will also need to consider the impact of induction on their birth experience when making their decision.

Be aware that, according to the 2020 MBRRACE-UK report on perinatal mortality, women/ birthing people from some minority ethnic backgrounds or who live in deprived areas have an increased risk of stillbirth and may benefit from closer monitoring and additional support. The report showed that across all births (not just those induced):

- compared with white babies (34/10,000), the stillbirth rate is
  - more than twice as high in black babies (74/10,000)
  - around 50% higher in Asian babies (53/10,000)
- the stillbirth rate increases according to the level of deprivation in the area the mother lives in, with almost twice as many stillbirths for women/ birthing people living

in the most deprived areas (47/10,000) compared with the least deprived areas (26/10,000).

If women/ birthing people choose not to have induction of labour, discuss their options from this point on (for example, expectant management or caesarean birth) and record the decision in the notes. Discuss additional fetal monitoring from 42 weeks:

- monitoring only gives a snapshot of the current situation, and cannot predict reliably any changes after monitoring ends, but provides information on how their baby is at the moment and so may help them make a decision on options for birth
- adverse effects on the baby (including stillbirth), and when these events might happen, cannot be predicted reliably or prevented even with monitoring
- fetal monitoring with twice-weekly cardiotocography in Day Assessment Unit and ultrasound estimation of maximum amniotic pool depth.

Offer women/ birthing people who choose to await the spontaneous onset of labour the opportunity to discuss their decision again at all subsequent reviews, if they wish to do so. Advise them to contact their midwife or maternity unit if they change their mind before their next appointment, or as soon as possible if they have concerns about their baby (for example reduced or altered fetal movements).

### **Pre-term pre-labour rupture of membranes (PPROM)**

Preterm prelabour rupture of membranes (<37 weeks of gestation) occurs in approximately 3% of pregnancies and is responsible for a third of all preterm births.

- Induction should not be carried out before 34 completed weeks unless medically indicated (e.g. maternal infection, fetal compromise).
- If rupture of membranes occurs after 34 weeks, please refer to the CG 420T: Guidelines for the Management Preterm Prelabour Rupture of Membranes (PPROM).
- To determine whether pre-term pre-labour rupture of the membranes (PPROM) has occurred, offer the woman a speculum examination. Avoid digital vaginal examination in the absence of regular contractions. If confirmed then discuss the options of:
  - Expectant management until 37+0 weeks or
  - Induction of labour

Women/ birthing people whose pregnancy is complicated by PPRM after 24+0 weeks' gestation and who have no contraindications to continuing the pregnancy should be offered expectant management at least until 34+0 weeks; timing of birth should be discussed with each woman on an individual basis with careful consideration of patient preference and ongoing clinical assessment.

- When making a shared decision, take into consideration the following factors:
  - risks to the women/ birthing people (for example, sepsis, possible need for caesarean birth)
  - risks to the baby (for example, sepsis, problems relating to preterm birth)
  - local availability of neonatal intensive care facilities
  - their individual circumstances and preferences
- If PPRM happens after 34+0 weeks (but before 37+0 weeks), and a positive group B streptococcus test was diagnosed at any time in their current pregnancy, offer immediate induction of labour or caesarean birth (for obstetric indications).

### **Pre-labour rupture of membranes at term**

Prelabour rupture of membranes at term is defined as rupture of the membranes prior to the onset of labour in women/ birthing people at or over 37 weeks of gestation with an overall incidence of 8–10% of all pregnancies.

Do not carry out a speculum examination if it is certain that the membranes have ruptured. If it is uncertain whether prelabour rupture of the membranes (ROM) has occurred, offer a speculum examination to determine whether the membranes have ruptured. Avoid digital vaginal examination in the absence of contractions.

Offer women with prelabour rupture of membranes at term a choice of:

- IOL as soon as possible, or
- Expectant management for up to 24 hours of ruptured membranes

Discuss the benefits and risks of these options and take into account individual circumstances and preferences.

Respect women/birthing people's decision if they choose to wait for spontaneous onset of labour for over 24 hours after prelabour rupture of membranes at term. Discuss the options for birth from this point onwards.

If prelabour rupture of membranes at term (at or after 37+0 weeks) happened and a positive group B streptococcus test was diagnosed at any time in their current pregnancy, offer immediate induction of labour or caesarean birth (for obstetric indications)

**IOL for Pre-labour rupture of membrane: use Prostin® gel.**

Depending on the Bishop Score, give only 1 (one) dose of either 2mg or 1mg followed by oxytocin infusion, if not in labour.

### **Previous caesarean section**

For the management of women/ birthing people who are opting for an IOL please see VBAC guideline (CG 130L: Management of Pregnant Women with Previous Lower Segment Caesarean Section or Other Uterine Scar at Luton site; and Birth Planning following a Caesarean section -formerly VBAC- guideline at Bedford site- these guidelines are due to be merged).

Advise women/ birthing people who have had a previous caesarean birth that:

- induction of labour could lead to an increased risk of emergency caesarean birth.
- induction of labour could lead to an increased risk of uterine rupture especially if oxytocin is used -up to 2% risk of uterine scar rupture.
- the methods used for induction of labour will be guided by the need to reduce these risks (for example, by using mechanical methods).
- some methods used for induction of labour may have more risks (**for example, both dinoprostone (Propess and Prostin) and misoprostol are to be used with caution due to risk of uterine rupture in women/ birthing people with a uterine scar. This decision requires clear documentation of discussion between consultant and women/birthing people of all the risks and plan of management agreed.**)
- **While the marketing authorisations for dinoprostone and misoprostol do not recommend their use for inducing labour in women with a uterine scar, because they increase the risk of uterine rupture, the Bedfordshire Hospital decided that Prostin gel 1 mg only may be offered to women who had ONE previous low segment Caesarean section on an individual basis, taking into account the circumstances and wishes of the birthing people once the**

**increased risk of uterine rupture was discussed. Women /birthing people who had 2 or more previous Caesarean sections will have a care outside guidance should they chose induction of labour with Prostin.**

If birth needs to be expedited, offer women/ birthing people who have had a previous caesarean birth a choice of:

- induction of labour, **or**
- planned caesarean birth.

Take into account their circumstances and preferences and record the discussions and plan in the notes. Also, the obstetrician should make a clear plan regarding use of oxytocin and consideration to reduce it or stop it once women/ birthing people have regular contractions/ are in labour. Inform women/ birthing people that they may choose to discontinue an induction and opt for a caesarean section at any stage of the process and this decision should be respected by clinical staff.

When women/ birthing people choose not to have induction of labour or caesarean birth, even when it may benefit their or their baby's health, the obstetricians must ensure they make a plan of care with the women/ birthing people and document this plan clearly in their notes.

The obstetricians may inform women/ birthing people about their success rate of VBAC from this table from RCOG Green-top Guideline No. 45:

Appendix V: VBAC success and uterine rupture risks of planned VBAC labours

		Spontaneous	Induced	Augmented
AHRQ meta-analysis <sup>9</sup>	VBAC success	*74% (95% CI 72–75%)	63% (95% CI 59–67%)	68% (95% CI 64–72%)
	Uterine rupture	*0.47% (95% CI 0.28–0.68%)	1.2% (95% CI 0.7–1.9%)	1.1% (95% CI 0.9–1.5%)
NICHD study <sup>18,103</sup> (n = 17 898 VBACs)	VBAC success	80.6%	67.4%	73.9%
	Uterine rupture	0.36%	1.02%	0.87%
Australian population study <sup>22</sup> (n = 10 958 VBACs)	VBAC success	52.6%	51.4%	61.6%
	Uterine rupture	0.15%	0.68%	1.91%
UK Obstetric Surveillance System case-control study <sup>20</sup>	Uterine rupture	0.13%	0.36%	0.28%

\*refers to overall rates when spontaneous, induced and augmented labours are combined, although the large majority of data are derived from spontaneous labour.

### Maternal Age 40 at booking

Unexplained stillbirths increase with advancing maternal age and with increasing gestational age in both nulliparous and multiparous women/ birthing people. The overall stillbirth rate by maternal age in the UK is shown in the table below (see reference 7).



Maternal age (years)	Stillbirths <sup>a</sup>		Neonatal deaths <sup>a</sup>	
	Rate (95% CI) <sup>b</sup>	Absolute risk (95% CI)	Rate (95% CI) <sup>c</sup>	Absolute risk (95% CI)
25-29	4.6 (4.3, 4.9)	1/ 217 (1/204, 1/233)	2.9 (2.7, 3.2)	1/345 (1/312, 1/370)
30-34	4.7 (4.4, 5.0)	1/213 (1/200, 1/227)	2.6 (2.4, 2.8)	1/385 (1/357, 1/417)
35-39	5.5 (5.1, 5.9)	1/182 (1/169, 1/196)	2.9 (2.6, 3.2)	1/345 (1/312, 1/385)
≥40	7.6 (6.6, 8.7)	1/132 (1/115, 1/152)	3.8 (3.1, 4.6)	1/263 (1/217, 1/323)

<sup>a</sup> Second and subsequent deaths from pregnancies with multiple losses are excluded  
<sup>b</sup> Rates per 1000 maternities  
<sup>c</sup> Rates per 1000 live births

Afro-Caribbean women/ birthing people have been shown to have rates of stillbirth almost two fold higher in nearly all maternal age groups compared to women/ birthing people of Asian (0.63%) and Caucasian (0.47%) ethnicity. Clinicians must take this into consideration when making decisions about induction of labour for maternal age.

A recent randomised trial showed that in women/ birthing people of advanced maternal age, induction of labour at 39 weeks of gestation, as compared with expectant management, had no significant effect on the rate of caesarean section and was not associated with adverse short-term effects on maternal or neonatal outcomes (see reference 7).

### Maternal request

IOL should not routinely be offered for maternal request alone. However, under exceptional circumstances IOL may be considered at or after 40 completed weeks of gestation. The women/ birthing people should be referred to antenatal clinic for a consultant opinion/decision to allow a full discussion of the induction procedure, possible outcomes & risks. An individual management plan should be made and documented in the notes. An information leaflet should also be provided. At Luton site the request should be sent to the IOL Review Panel for review prior to IOL date being given.

The ARRIVE Trial published by Grobman et al in August 2018 concluded that induction of labour at 39-weeks in low-risk nulliparous women/ birthing people provides benefit with no harm to them and their infants.

### Women/ birthing people declining IOL

- Explore reason(s) for declining IOL
- Explain the potential risks of their decision and of a prolonged pregnancy beyond 42 weeks including death to their baby
- Refer them to a Consultant Obstetrician for further discussion and documentation of an individual management plan, including monitoring of fetal wellbeing
- Offer a membrane sweep

### Previous precipitate labour

Not an indication for IOL

### Fetal growth restriction (FGR) with confirmed fetal compromise

Induction is not recommended. Caesarean section should be offered.

For fetal growth restriction without fetal compromise the timing and method of IOL should be decided by the Obstetrician, following discussion with the women/ birthing people, as per RCOG guidance (Management of the Small-for-Gestational-Age fetus - January 2014) and our local Small for Gestational Age guidelines.

### **Suspected fetal macrosomia**

Please refer to CG 443T: Large for Gestational Age

Discuss with the women/ birthing people:

- the options for birth are expectant management, induction of labour or caesarean birth
- there is uncertainty about the benefits and risks of induction of labour compared to expectant management, but:
  - with induction of labour the risk of shoulder dystocia (410 babies per 10,000) is reduced slightly compared with expectant management ( 680 babies per 10,000 )
  - with induction of labour the risk of third- or fourth-degree perineal tears (260 per 10,000 women/ birthing people) is increased compared with expectant management (69 per 10,000 women/ birthing people)
  - there is evidence that the risk of perinatal death, brachial plexus injuries in the baby, or the need for emergency caesarean birth is the same between the 2 options
- they will also need to consider the impact of induction on their birth experience and on their baby

Discuss these options, taking into account the individual circumstances and preferences, and respect their decision. Obstetricians should discuss with women/birthing people that fetal growth scans may be less accurate and they may therefore have an induction for a baby who proves not to be Large for Gestational Age.

### **Breech presentation**

IOL is not recommended.

In the very rare case when external cephalic version (ECV) is unsuccessful, declined or contraindicated and caesarean section is also declined, individual management is appropriate. If, however, birth needs to be expedited, the Obstetrician must discuss the benefits and risks associated with induction of labour and document clearly this discussion.

### **Intra-uterine fetal death (IUFD)**

In the event of an intrauterine fetal death, healthcare professionals should offer support to help the women/ birthing people, their partners and/or family cope with the emotional and physical consequences of the death.

If they appear to be physically well, the membranes are intact and there is no evidence of infection or bleeding, discuss the options for birth (expectant management, induction of labour or caesarean birth) and respect their decision. If there is evidence of ruptured membranes, infection or bleeding, offer immediate induction of labour or caesarean birth.

If they choose an induced labour, use manual assessment to monitor the uterine contractions and provide one-to-one midwifery care during labour and birth.

In the event of an intrauterine fetal death, the options of IOL for women/ birthing people with a non-scarred uterus are:

- oral mifepristone 200 mg given orally followed by vaginal misoprostol **or**
- a mechanical method of induction

In the event of an intrauterine fetal death, inform women/ birthing people with a scarred uterus (for example: women/ birthing people who have had a previous caesarean birth) that IOL could lead to an increased risk of uterine rupture and that pharmacological methods may not be suitable therefore they may be offered mechanical options. Provide them appropriate information including the suitability of mechanical methods of induction, including the risk of infection and the risks and consequences of caesarean birth, including both short- and long-term morbidity to enable them to make an informed decision about the most appropriate choice

- For further management refer to CG186T Dealing With Pregnancy Loss Including Medical Termination Of Pregnancy Guideline

### **Maternal Diabetes**

Refer to the CG 307L: Guideline for Management of Pregnant Women with Diabetes at Luton site; and to Diabetes Pre-Existing And Gestational Diabetes: Care Of Mother From Pre-Conception To Postnatal/Neonatal at Bedford site.

### **Methods that are not recommended for induction of labour**

Midwives and obstetricians must be aware that the available evidence does not support the use of the following methods for induction of labour:

Pharmacological methods:

- oral dinoprostone
- intravenous dinoprostone
- extra-amniotic dinoprostone or PGF2
- intracervical dinoprostone
- vaginal PGF2
- intravenous oxytocin alone
- hyaluronidase
- corticosteroids
- oestrogen
- relaxin
- mifepristone (except in combination for intrauterine fetal death)
- vaginal nitric oxide donors.

Non-pharmacological methods:

- herbal supplements
- acupuncture
- homeopathy
- castor oil
- hot baths
- enemas
- sexual intercourse

### **Pain relief**

Women/ birthing people should be informed that induction of labour may be more painful than spontaneous labour.

Healthcare professionals should provide women/ birthing people with the pain relief appropriate for them and their pain as described in CG 114T: Care of the woman/birthing people in Labour (Intrapartum care). It can range from simple analgesia to opiates.

All drugs should be prescribed on the EPMA system.

Birth attendants (carers and healthcare professionals) should encourage and empower women/ birthing people to use, if they have any, their own coping strategies for pain relief.

## **Complications of IOL**

In all cases where complications arise and specific circumstances, including those listed below, an individual management plan should be documented in the records by a senior obstetrician.

**Failed induction:** the definition used by NICE for failed induction with prostaglandin is “the failure to establish labour after one cycle of treatment”. In practice this means following the insertion of one Propess® over 24 hours or two doses of Prostin® at 6 hourly intervals, a review is required by a senior Obstetrician.

### **Management of failed induction**

A full assessment of the women/ birthing people's condition and fetal wellbeing should be made. An individual management plan when IOL fails should be made and clearly documented in the notes.

Subsequent management options include:

- Go home with an agreed plan of when to return to Ward 32/ ANC at Luton site and Delivery Suite at Bedford site if spontaneous labour does not occur.
- Repeat induction with 2<sup>nd</sup> cycle Prostin (3<sup>rd</sup> and 4<sup>th</sup> Prostin gel). A management plan must be in place by the Consultant Obstetrician regarding the options of offering a 2<sup>nd</sup> cycle of Prostin® after at least 24 hours of rest post 1<sup>st</sup> cycle of Prostin® (the timing should depend on the clinical situation and individual circumstances).
- Offer a caesarean section

If there is a delay between the decision to perform LSCS and its execution, a vaginal examination should be offered in case there have been significant cervical changes in the interim.

### **Uterine hyperstimulation**

See CG 252: Management of Uterine Hyperstimulation Guideline for Luton site; and Augmentation of Labour Guideline for Bedford site- in process of being merged.

Uterine tachysystole is defined as more than 5 contractions in 10 minutes without any fetal heart rate abnormality, continuing for at least 20 minutes.

Uterine hypertonus or hypersystole is defined as contraction lasting for 2 minutes or more.

Uterine hyperstimulation syndrome is any of the above with fetal heart rate abnormality such as deceleration, bradycardia, tachycardia or reduced base line variability.

If Propess® is in situ, it should be removed by pulling the draw string when there is hyperstimulation, uterine hypertonus and hypersystole. Propess should not be removed when contracting less than 5 in 10 minutes.

### **Cord prolapse**

To reduce the risk of cord prolapse:

- The presenting part should be confirmed as engaged prior to starting the induction process.
- During the preliminary VE, if the cervix is dilated obstetricians and midwives should palpate for umbilical cord presentation and avoid dislodging the head. In this case IOL is contraindicated.
- Amniotomy should be avoided if the baby's head is high. If necessary, it should be carried out in theatre, with the woman prepared for a caesarean section should the need arise.

If cord prolapse is diagnosed after ARM during IOL then the obstetrician should perform category 1 caesarean section with maternal consent.

### **Uterine rupture**

If suspected the baby should be delivered by category 1 caesarean section with maternal consent.

## **IOL as outpatient (see flowcharts for outpatients)**

Eligibility criteria:

<ol style="list-style-type: none"><li>1. transportation available and within the local midwifery service support</li><li>2. They have a functional phone</li><li>3. Able to speak and understand English</li><li>4. No learning difficulties</li><li>5. No more than four previous vaginal deliveries</li><li>6. No previous Caesarean section or myomectomy</li><li>7. No other maternal or fetal concerns</li></ol>	<ol style="list-style-type: none"><li>8. No safeguarding concerns</li><li>9. Adult &gt; 18 years old to accompany them home and to stay at home with them until labour occurs or until up to 24 hrs after Propess/Prostin insertion with planned return to hospital</li><li>10. Normal observations on MEOWS chart</li><li>11. Reassuring CTG pre and post Propess® or Prostin®</li></ol>
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- NB: If they live further than 30 minutes from the hospital or they require an interpreter, they should stay as an inpatient for IOL.

### **The IOL should not proceed and obstetrician review sought if:**

- The CTG is abnormal. In such cases the midwife must call an obstetrician to review urgently, inform the senior midwife and consider transfer to Delivery Suite
- Uncertainty regarding abdominal palpation, presentation, or fetal position
- SROM has recently occurred
- Staff or monitoring equipment not available (inform Delivery Suite Coordinator)
- Regular uterine activity
- Meconium has recently occurred (risk of meconium aspiration must be discussed)

In the case the midwife has any concerns about malpresentation or a high presenting part she should escalate this to the obstetric team for review and USS prior to induction commencement.

## 1. Flowchart for IOL- OUTPATIENTS using Propess®

Confirm eligibility criteria for outpatient IOL are met and no contraindication to Propess.  
 Confirm: gestation age, placental clear of cervical os, cephalic presentation, indication of IOL and consent. Palpate the abdomen for fetal lie, presentation, engagement and size. Record observations on MEOWs chart. Perform CTG Dawes Redman

↓

If CTG is normal:  
 Perform a VE within 1 hour of the CTG,  
 and document the Bishop score

↓

Bishop score 0 to 6, insert Propess for  
 both primigravida and multigravida  
 Leave in situ for 24 hours

↓

Keep the women in semi- recumbent  
 position for 20-30 mins whilst on CTG  
**(not Dawes Redman)** post Propess  
 insertion

↓

Normal CTG: allow women to go home.  
**Provide them appropriate advice -IOL leaflet**

At any time:

If Auscultation abnormal - perform  
 CTG - do not use Dawes Redman

If CTG abnormal - call Obstetric  
 Team to review and inform Senior  
 Midwife- may need urgent delivery

Propess accidentally fallen out: If clean – reinsert the same Propess and leave it in total up to 24 hours  
 If contaminated – insert a new Propess and leave it in total up to 24 hours

Remove Propess and perform CTG **(not Dawes Redman)**:

- 24 hours post insertion
- In establish labour: transfer to Delivery Suite/ MLBU if eligible
- If SROM – with normal CTG, then proceed to oxytocin augmentation  
**(oxytocin augmentation can start any time after 30 minutes of Propess removal).**  
 – if abnormal CTG, contact obstetric team
- If Hyperstimulation, hypertonus or hypersystole – with abnormal CTG persists then consider tocolysis.
- If contracting 5 or more in 10 minutes with normal CTG (tachysystole)

Whenever uterine activity detected or reported - Perform **CTG (not Dawes Redman)** – If normal CTG, but regular uterine activity confirmed then admit them and auscultate FH every 4 hours until labour is established.  
 Leave the Propess in the vagina. Only remove Propess when clinically indicated as above.

Delays with IOL:  
 Midwife to follow the escalation policy: inform Midwifery manager on call and consultant obstetrician on call.

## 2. Flowchart for IOL- OUTPATIENTS using Prostin®

Confirm eligibility criteria for outpatient IOL are met and no contraindication to Prostin  
 Confirm the gestation age, placental clear of cervical os, cephalic presentation, indication of IOL and consent. Palpate the abdomen for fetal lie, presentation, engagement and size. Record observations on MEOWs chart. Perform CTG Dawes Redman

Normal CTG  
 Perform a VE and document the Bishop score within 1 hour after the initial CTG

1<sup>st</sup> dose  
 Bishop score 0 to 6, insert Prostin 2mg for both primigravida and multigravida

Keep the women in semi- recumbent position for 20-30 mins whilst on CTG (not Dawes Redman)

Normal CTG: allow women to go home  
 Provide them appropriate advice -IOL leaflet

6 hours following 1<sup>st</sup> dose of Prostin:

- repeat CTG (not Dawes Redman)
- and assess for further Prostin or ARM

Suitable for ARM: or SROM after Prostin  
 Inform Delivery suite coordinator  
 Oxytocin augmentation should commence at least 6 hours after last Prostin insertion, not earlier

If ARM not possible then administer 2nd dose Prostin:  
 Primiparous: **2 mg** if BS ≤ 4 or **1 mg** if BS is 5 or 6  
 Multiparous: 1 mg for BS 0 to 6  
 After 2<sup>nd</sup> dose Prostin- if CTG (not Dawes Redman) for 30 minutes is normal allow women to go home and return 6 hours later for reassessment- CTG and VE- if still BS < 7 - review by Obstetrician

At any time:

If Auscultation abnormal - perform CTG - do not use Dawes Redman

If CTG abnormal - call Obstetric Team to review and inform Senior Midwife- may need urgent delivery

Whenever women contact the unit reporting uterine activity-ask them to come in.  
 Perform CTG (not Redman Dawes).  
 If normal CTG but regular uterine activity detected then admit women and auscultate FH every 4 hours until labour is established

### Delays with IOL:

Midwife to follow the escalation policy: inform Midwifery manager on call and consultant obstetrician on call.



### 3. Flowchart for IOL- inpatients using Propess®

Confirm the gestation age, placental clear of cervical os, cephalic presentation, indication of IOL and consent. Confirm no contraindication to Propess. Palpate the abdomen for fetal lie, presentation, engagement and size. Record observations on MEOWS chart. Perform CTG Dawes Redman

If CTG is normal:  
Perform a VE within 1 hour of the CTG and document the Bishop score

Bishop score 0 to 6, insert Propess for both primigravida and multigravida  
Leave in situ for 24 hours

Keep the women in semi- recumbent position for 20-30 mins whilst on CTG  
**(not Dawes Redman)**

Normal CTG: advise women to mobilise.  
Auscultate FH every 4hourly **including overnight**  
Record maternal observations on MEOWS chart every 4-6 hours

At any time:

If Auscultation abnormal - perform CTG - do not use Dawes Redman

If CTG abnormal - call Obstetric Team to review and inform Senior Midwife-may need urgent delivery

Propess accidentally fallen out: If clean – reinsert the same Propess and leave it in total up to 24 hours  
If contaminated – insert a new Propess and leave it in total up to 24 hours

Remove Propess and perform **CTG (not Dawes Redman)**:

- 24 hours after insertion
- In establish labour: transfer to Delivery Suite/ MLBU if eligible
- If SROM – with normal CTG, then proceed to oxytocin augmentation (oxytocin augmentation can start any time after 30 minutes of Propess removal).  
– if abnormal CTG, contact obstetric team
- If Hyperstimulation, hypertonus or hypersystole – with abnormal CTG persists then consider tocolysis.
- If contracting 5 or more in 10 minutes with normal CTG (tachysystole)

Whenever uterine activity detected or reported - Perform **CTG (not Dawes Redman)** – If normal CTG, then auscultate FH every 4 hours until labour is established.  
**Leave the Propess in the vagina.** Only remove Propess when clinically indicated as above.

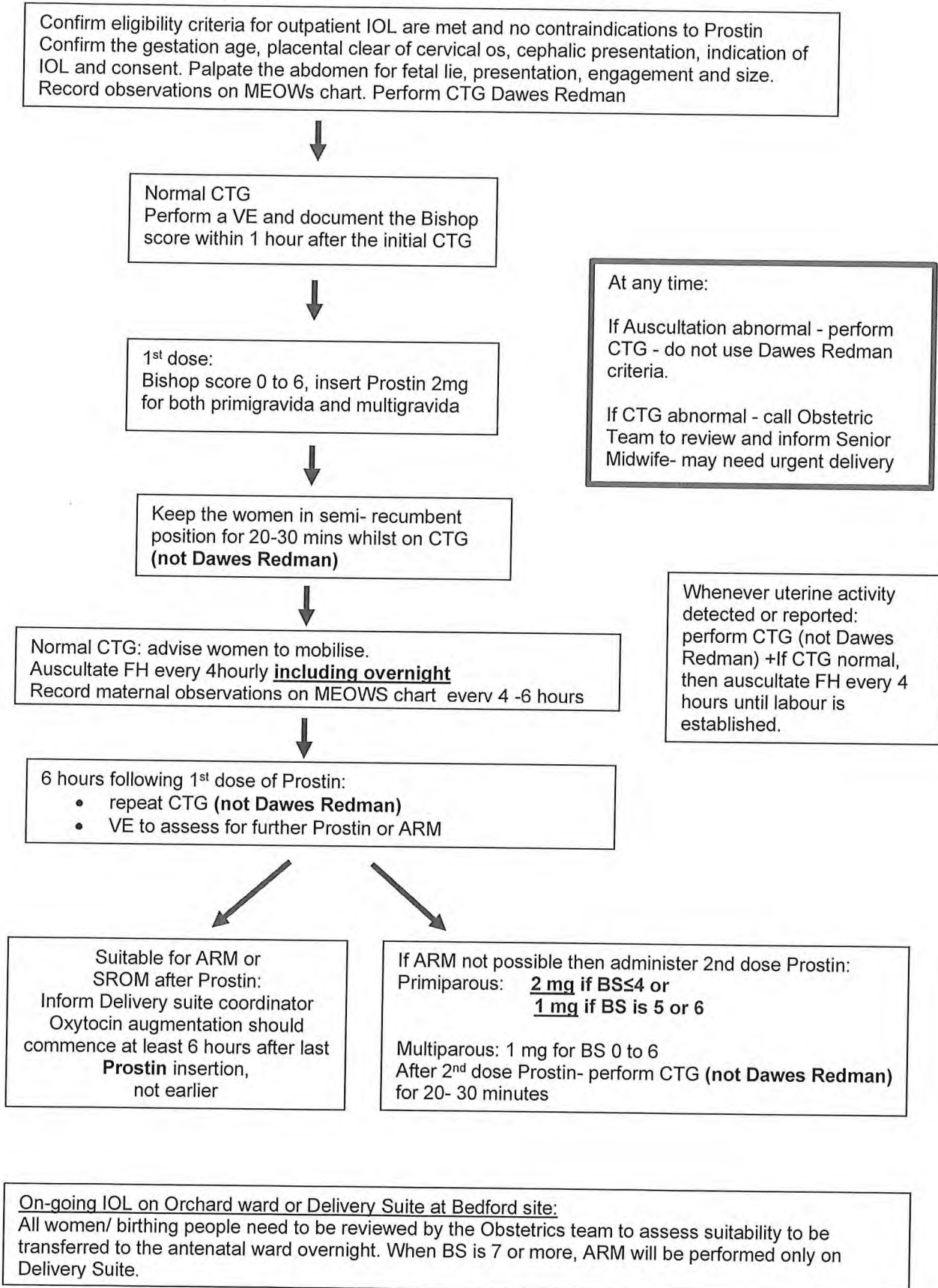
On-going IOL on Delivery Suite:

All women need to be reviewed by the Obstetrics team to assess suitability to be transferred to the antenatal ward overnight. When BS is 7 or more, ARM will be performed only on Delivery Suite.

If Propess is removed after 24 hours: perform **CTG (not Dawes Redman)** and VE ( assess BS) to offer ARM or 2<sup>nd</sup> cycle of IOL with Prostin.

If Propess is removed less than 24 hours due to contraction and not in establish labour, perform VE 6 hours later with a possibility of ARM or Prostin.

#### 4. Flowchart for IOL- inpatients using Prostin®



## Pharmaceutical method of IOL (see all flowcharts pages 3-6)

1. **Propess® is the first line as pharmaceutical method for the majority of women/ birthing people undergoing IOL.** It is a single 10mg controlled release ribbon tape.
2. **Prostin® vaginal gel is the second-line option.** The Prostin gel comes as 1mg and 2mg doses. It is used if Propess® is unsuccessful or there is an obstetric or medical reason not to give Propess® or the women/ birthing people choose to have this method of IOL.

### IOL with Propess®

#### **Storage of Propess®:**

Propess® should be stored in a freezer in the original container in order to protect from moisture. It can be used straight from the freezer and for up to 24hrs when kept at room temperature. After use, the whole product should be disposed of as clinical waste.

#### **Caution with use of Propess:**

- grand multiparous
- multiple pregnancy
- previous difficult labour and/or traumatic delivery
- asthma
- glaucoma
- aspirin must be stopped at least 4 hours prior to Propess

Refer to the individual summaries of product characteristics for each preparation of vaginal dinoprostone for further details – see reference 4.

### **Administration and Management**

One cycle of Propess:  
one device left in situ for 24 hours if BS is between 0 and 6 (including 6)

Don't give a second dose of Propess® after the first 24 hour dose.

If BS is 7 or more do not insert Propess (or Prostin) and offer ARM instead.

**Insertion of Propess®: See Appendix A**

## Contraindications to Propess

1. cephalo-pelvic disproportion
2. fetal malpresentation
3. abnormal CTG showing hypoxia of any type or evidence of fetal distress
4. hypersensitivity to dinoprostone or to any of the excipients
5. placenta praevia or placenta abruption

6. **SROM**
7. labour
8. oxytocic drugs being given
9. regular painful uterine contractions
10. previous major cervical surgery
11. previous rupture of uterus

### Post Propess® insertion

- Document VE findings in notes
- sign the EPMA drug chart that Propess was given
- *Outpatient IOL*: to look out for the symptoms below and to contact the Maternity Unit:

<ol style="list-style-type: none"> <li>1. Spontaneous rupture of membranes (SROM)</li> <li>2. Vaginal bleeding</li> <li>3. A run of contractions each lasting more than 2 minutes (hypertonus)</li> <li>4. Contracting 5 times in 10 minutes or more (tachysystole)</li> <li>5. Reduced fetal movements</li> <li>6. Severe abdominal pain</li> <li>7. Distressing side effects: nausea, vomiting, dizziness, palpitation, tachycardia or hypotension</li> </ol>	<p>They should be advised to remove the Propess® by pulling the ribbon tape and make their way to the hospital</p>
<ul style="list-style-type: none"> <li>• Experience regular distressing tightening</li> <li>• Experience 2 to 4 contractions in every 10 minutes</li> <li>• Propess® falls out</li> </ul>	<p>Do not remove Propess Make their way to the unit</p>

### Criteria for Post Induction Admission to the MLBU

The woman should:

- Meet the criteria for admission to the MLBU
- Be in labour
- Have a normal CTG (not Dawes Redman) at the onset of labour.

For more details see: M35 Guideline for Choice of Place of Birth – Homebirth, Midwifery Led Birth Centre (MLBU), Labour Ward and use of Birth Options Clinic

### SROM with Propess® in situ- see flowcharts 1 and 3

### What to do if Propess® falls out - see flowcharts 1 and 3

### When to remove Propess® - see flowcharts 1 and 3

### IOL with Prostin® (see flowcharts 2 and 4)

Prostin is stored in the fridge and can be removed just prior to insertion. The gel comes in a tubular applicator which will need to be primed prior to insertion.

Remove the top cover and place it in the neck of the applicator in preparation to 'plunge' the contents into the vagina. Using digital guidance, the vaginal delivery system should be inserted high into the posterior vaginal fornix. The plunger is then depressed to administer the gel. Care should be taken not to disturb the gel when withdrawing the plunger.

The batch number and expiry date of the product should be documented. Discard all clinical waste into the clinical waste bins.

**Contraindications and cautions to Prostin® are the same as per Propess except Prostin can be given for women/ birthing people with SROM**

### Prostin administration and management

<b>Dosage:</b>	<b>Primiparous:</b>	<b>Multips:</b>
Start dose (first dose)	2 mg	2 mg
When repeated	6 hrs later	6 hrs later
Repeated dose (second dose)	<b>2 mg</b> if BS≤4 or <b>1 mg</b> if BS is 5 or 6	1 mg
Maximum dose	4 mg (over 24 hours)	3 mg (over 24 hours)

## Mechanical methods of IOL

At Bedfordshire hospital (currently only available at Bedford site) we offer Dilapan-S, a hygroscopic cervical dilator, as mechanical options for inpatient IOL for women with a scarred uterus. Consultant obstetricians will decide if Dilapan can be offered for IOL to grand multiparous women

Midwives/ doctors should inform women/birthing people that Dilapan-S is less likely to have:

- too frequent uterine contractions (tachysystole)
- abnormalities of baby's heart rate due to uterine contractions
- uterine rupture
- opiate analgesia used during cervical ripening phase

Women having IOL with Dilapan-S are likely to have similar use of additional analgesia for labour as women who have IOL with Prostaglandins.

## Technique for Insertion of Dilapan-S

Either the speculum technique or the digital technique may be used.

Equipment

Position

1 x sponge forceps Speculum Gel or Instillagel Sterile gloves Good source of light 5x Dilapan-S 4mm x 55mm size dilators	The woman can remain on her bed with her legs folded upwards.  Lithotomy stirrups may be helpful if the woman's cervix is posterior. Instillagel may be used if a woman finds the dilator insertion uncomfortable.
---	---

**Speculum Technique:** visualise the cervix with a sterile vaginal speculum and suitable lighting.

**Digital Technique:** perform a vaginal examination, letting the cervix rest on your index finger.

### **For both methods:**

Moisten the Dilapan-S dilators with sterile water, saline or gel

Hold the first dilator with the sponge forceps and insert it through the external cervical os (for the digital method- you guide the dilator down the finger) . Gradually pass it through the internal os without undue force. It is essential that the tip of the dilator goes through the internal os. Do not insert the Dilapan-S past the handle.

4 Dilapan-S dilators (or maximum 5 dilators) are inserted into the cervical canal. Each dilator can act as a guide for subsequent dilators to be inserted. If a small amount of the brown part of the dilator is left outside the external os on the first dilator it may be easier to insert the subsequent dilators.

Check that all dilators are fully inserted (plastic handle visible outside the external os) before removing the speculum. Be careful not to dislodge the dilators when removing the speculum.

Once inserted complete Dilapan sticker:

DILAPAN INSERTED			
<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Sign/print</u>
DILAPAN REMOVED			
<u>Date</u>	<u>Time</u>	<u>Number</u>	<u>Sign/print</u>

Reasons for examining or removing the Dilapan-S dilators include:

- after at least 12 hours as per routine process (maximum 24 hours)
- Spontaneous onset of labour
- CTG concerns
- SROM with blood stained liquor
- Spontaneous expulsion of dilators
- In case less-than-optimum number of dilators are inserted (only 1-2 Dilapan-S dilators) in a highly unfavourable cervix, these can be removed at 4-6 hours. Then 4 or 5 new dilators can be inserted for 12 hours to continue cervical ripening until favourable. This will count as a single cycle of Dilapan-S.

How to remove Dilapan-S dilators:

To remove the dilators, pull gently on the threads (speculum not required) and they usually come out as a clump. Please ensure and document that all inserted dilators are removed.

Dilapan-S will achieve cervical dilation and softening, but not necessarily effacement. Prostaglandins should not be given for effacement alone, as this will occur following ARM.

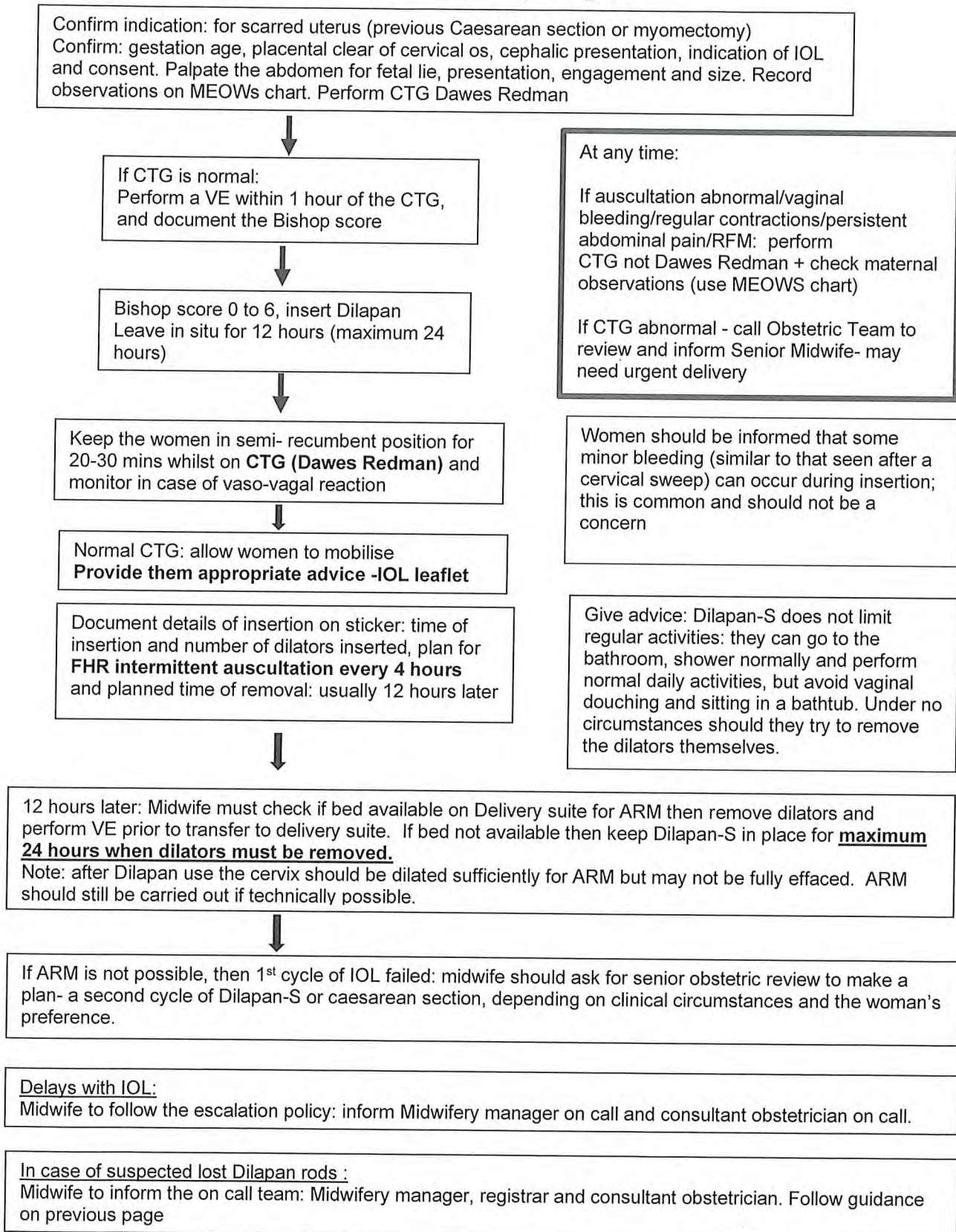
ARM after removal of Dilapan-S dilators:

Aim to perform ARM as soon as possible following removal of dilators. The cervix will remain dehydrated for a period of at least 12 hours post removal. Women can be offered a choice of 2 hours delay prior to commencing oxytocin (as mobilisation post-ARM will aid effacement) or immediate commencement of oxytocin.

#### **Suspected lost Dilapan-S dilators**

In the event that a woman reports the loss of Dilapan dilators in the toilet, and if the retrieved number does not match the initially inserted dilators, the midwife must notify the on call registrar or consultant for review. They should perform a speculum examination, with consent, to ensure no rods are retained in the cervix. Following delivery, a multidisciplinary team (MDT) should take place to determine whether a pelvic ultrasound (USS) or MRI is necessary, depending on the mode of delivery: while not required for a Caesarean section, it may be necessary following a vaginal birth.

## 5. Flow Chart for IOL- inpatients using Dilapan





## Monitoring of fetal heart during the IOL as inpatients with administration of Propess® & Prostin® & Dilapan

Women/ birthing people need to have CTG before and after the insertion of Propess, Prostin or Dilapan. If CTGs are normal (before and after the administration of the induction agent) then the fetal heart should continue by intermittent auscultation every 4 hours including overnight.

If SROM (clear liquor) while dilators are in situ:

- Leave dilators in situ for a maximum of 12 hours from insertion, then remove.
- If SROM occurs >12 hours after insertion: remove dilators immediately.

Next step: oxytocin can be started immediately after SROM or 2 hours later

### A CTG MUST BE PERFORMED IN THE FOLLOWING SITUATIONS:

- When Propess® is removed
- Whenever painful regular uterine activity is reported or detected on palpation (this may occur more than once during the IOL process)
- In the case of suspected sepsis -refer to M19 Obstetric Sepsis Management Guideline
- SROM
- Meconium
- Abnormal maternal observations- remember to escalate as per MEOWS chart
- Reduced fetal movements
- Abdominal pain that is continuous and/or inconsistent with labour

The women/ birthing people should be advised to inform the midwife if they have:

- contractions or abdominal pain
- any vaginal bleeding
- when SROM occurs
- reduced fetal movements

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

Once active labour is established, maternal and fetal monitoring should be carried out in accordance with the merged Guideline: Care of the Woman in Labour and CG563T: Intrapartum Physiological Fetal Monitoring Guideline.

### **Fetal heart monitoring during inpatient IOL**

Always check the presence of the fetal heartbeat first by using a hearing device (Pinard stethoscope or hand-held Doppler). Document type of device used in the maternity notes. Then use a CTG machine to establish a normal fetal heart rate pattern. The findings should be fully recorded in the woman's maternity notes.

Use CTG Dawes Redman: before administration of Propess® & Prostin® or Dilapan but only after Dilapan insertion, not after Propess or Prostin.

**Throughout the induction process, whenever a CTG is undertaken due to fetal heart rate concerns on intermittent auscultation and this CTG is normal, it can be discontinued after 20 minutes and be followed up with 4 hourly auscultations. Subsequent CTG is only recommenced when clinically indicated.**

### **Training: Staff and Skill competencies**

The midwives and obstetricians who are performing IOL must be competent in:

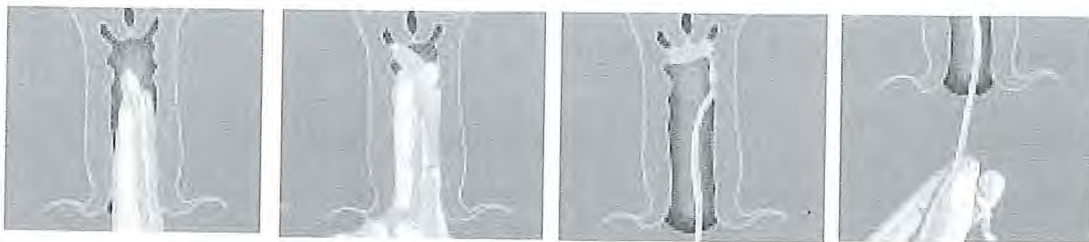
- abdominal palpation of a gravid uterus
- cervical assessment
- CTG interpretation
- Insertion of the chosen method for IOL

Appropriate training will be provided through the maternity update weeks and through the training sessions for obstetricians for the use of all methods for IOL

## Appendix A: The modified Bishop score

Cervical Features	Modified Bishop Score			
	0	1	2	3
Dilatation (cm)	<1	1 - 2	3 - 4	>4
Length of cervix (cm)	>4	2 - 4	1 - 2	<1
Station (relative to ischial spines)	-3	-2	-1/0	+1/+2
Consistency	Firm	Average	Soft	-
Position	Posterior	Mid/anterior	-	-

## Appendix B: Administration technique for Propess®



### 1. Insertion

Holding the Propess® insert between the index and middle fingers of the examining hand, insert it high into the vagina towards the posterior vaginal fornix using only small amounts of water soluble lubricants.

### 2. Positioning

The index and middle fingers should now be twisted a quarter turn clockwise, pushing the Propess insert higher up, behind the posterior fornix and turning it through 90° so that it lies transversely in the posterior fornix.

### 3. After positioning

Carefully withdraw the fingers leaving the Propess® insert in the position shown in this diagram where it should remain *in situ*. After insertion ensure that the patient remains recumbent for 20-30 minutes to allow time for the Propess® insert to swell. Again, this will help it to remain in place for the duration of the treatment. Allow sufficient tape to remain outside the vagina to permit easy retrieval.

### 4. Removal

To stop prostaglandin E2 release, gently pull the retrieval tape and remove the Propess insert.

Women/ birthing people should be encouraged to empty their bladder prior to the procedure. The Propess® pessary should be removed from the freezer immediately prior to use.

**After insertion:** cut the hanging tape to about 1 cm for easy removal. Do not tug on the tape. Alternatively, part of the hanging tape can be folded into the vagina provided sufficient tape (about 1 cm) is left outside for easy removal.

The end of the tape must NOT be tucked into the vagina. This may make retrieval more difficult.

**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). Midwives must document the date and time of removal in the maternity records and perform a CTG.

The opening on one side of the retrieval device is present only to allow the manufacturer to enclose the vaginal delivery system (pessary) into the retrieval device during manufacture. The vaginal delivery system should NEVER be removed from the retrieval device.

## Appendix C: The process of booking IOL at Bedford site- for all methods

The details of women needing IOL must be completed in the diary on Delivery suite.  
Midwives/ doctors must:

- confirm EDD, cephalic presentation, placenta clear of cervical os,
- offer VE (perform BS- see Appendix A) and membrane sweep (document consent)
- give IOL leaflet and discuss all details of the process.
- Gain and document consent for IOL
- Inform them: commencement of the induction procedure, is subject to capacity and workload consideration and may not start at the given time.

Low risk women/ birthing people  
BS 0 to 6

### Outpatient IOL -for :

1. *Postdates 41-42 weeks*
2. *Maternal age 39-40 weeks*
3. *GDM well controlled on diet with normal fetal growth & LV& Doppler 40 weeks and 5 or 6 days*
4. *maternal request for IOL ( exceptional circumstances)*

CMW, MW in DAU or doctors actions:

1. Confirm eligibility criteria for outpatient IOL
2. Book IOL at 8 am in DAU: 2 slots maximum per day

Low risk or high risk women/ birthing people  
BS 7 or more

CMW, MW in DAU or doctors action:

1. Book **inpatient IOL** at 8 am in Delivery Suite: 2 slots maximum per day for ARM

High risk women/ birthing people  
BS 0 to 6

Obstetrician or MW in DAU action:

1. Book **inpatient IOL** at 8 pm in Delivery Suite: 2 slots maximum per day – these slots include women booked for Dilapan (with previous C section)

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## Audit

Standards to be audited	Lead for the audit	Frequency, audit and Methodology	Reporting arrangements	Acting on recommendations and Lead (s)	Change in practice and lessons to be shared Dissemination of results/action plans.
<ul style="list-style-type: none"> <li>• Indications for IOL and gestational age</li> <li>• Percentage of failed IOL</li> <li>• Maternal and fetal outcome for each method</li> <li>• Individualised management plan documented when IOL is declined or fails</li> <li>• Appropriate removal of Propess for clinical indications</li> <li>• The number of women who cannot have ARM within 24 hours of Dilapan-S dilators removal</li> <li>• The time interval from transfer to DS for ARM/ oxytocin and birth.</li> </ul>	<p>Will be nominated by the maternity audit leads (Consultant or Midwife) according to the Maternity Governance Audit plan.</p>	<p>This will be performed 6-12 months initially, then review as appropriate at least annually thereafter.</p> <p>The auditors will analyse the data and develop recommendations and action plans from the audit results.</p>	<p>The audit results, recommendations and action plans will be circulated, and presented either at an audit meeting, a Clinical Governance day or at a Risk and Audit meeting.</p>	<p>The O &amp; G Risk and Governance Committee will approve recommendations and action plans to be implemented within a specific time frame.</p> <p>The auditors will implement and monitor action plans with support from the clinical leads, senior midwives and pertinent groups.</p> <p>There will be six-monthly update of action plans.</p> <p>The O &amp; G Risk and Governance Committee will oversee the implementation and monitoring of the action plans.</p>	<p>The audit results and approved action plans will be disseminated by the maternity audit team to all relevant staff groups, pertinent meetings and through the Delivery Suite newsletter, Risk and Governance newsletter, the Senior Staff meetings, the Delivery Suite Forum and by email.</p> <p>The Trust Audit and Clinical Effectiveness Group will be updated regularly by the maternity audit team.</p>

