

Clinical Management Information Template Form

Type of document

Please tick the relevant box:

Clinical Policy (must do)

Clinical Guideline (should do) ✓

Clinical Protocol (must do)

Title of document: Induction of Labour

**Author and date: Vicki Marston, Kim Melbourne, Anuradha Saxena, Greg Pearson, Sally Smith
March 2018**

Specialty

Obstetrics and Midwifery

1. Indications

1.1 Background

Labour is induced when delivery of the pregnancy will be of benefit to the health of either the mother or child or both. Induction of labour consists of the artificial initiation of uterine contractions prior to their spontaneous onset, leading to progressive effacement and dilatation of the cervix, and delivery of the baby.

1.2 Aim/purpose

To provide guidance to midwifery and obstetric staff managing situations in which women are undergoing induction of labour.

1.3 Patient/client group

Indications for induction

To improve the health of mother and/or baby, greater than if the pregnancy were to continue.

- **Prolonged pregnancy:** Prolonged pregnancy is associated with increased perinatal risks. Women with uncomplicated pregnancies should usually be offered induction of labour between 41 and 42 weeks to avoid the risks of prolonged pregnancy. Unless otherwise indicated women in Salisbury will be offered induction for prolonged pregnancy at term + 12 days.
- **Maternal Age:** Women > 40 years of age should be offered induction of labour at the latest by 40+5 because of the risk to fetal well-being of continuing with the pregnancy (RCOG Scientific Impact Paper Feb 2013).
- **Maternal or fetal indications** such as:
 - **Preterm prelabour rupture of membranes** - Timing of delivery should be made by the consultant and considered from 34 weeks of gestation, unless there are additional obstetric indications (for example infection or fetal compromise) (RCOG guideline 44). This will be decided after review of maternal condition, fetal condition and availability of neonatal cots. It is thought there is an association with increased risk of chorioamnionitis if expectant management continues after 34 weeks gestation.

- **Prelabour rupture of membranes at term** - It is recommended that induction of labour should be offered immediately on confirmation of ruptured membranes. An individual plan of care should be documented for any woman who opts to await events
- **Previous caesarean section** - The woman can be offered a membrane sweep at 40 and 41 weeks. An antenatal appointment is made with the Consultant Obstetrician at 41 weeks to discuss induction of labour or repeat elective caesarean section. If induction of labour is agreed this will be performed from 41+5 – 42 weeks. An individual plan specifically regarding the use of balloon catheters, prostaglandin gel and oxytocin infusions will be made by the consultant when induction is necessary.
- **Fetal growth restriction**– an individual management plan for induction of labour will be agreed with the consultant obstetrician. This will include any restrictions in numbers of doses of prostaglandin gel and the use of oxytocin.
- **Intrauterine death** - an individual management plan for induction of labour will be agreed with the consultant obstetrician. Refer to IUD guideline.
- **Maternal diabetes** – Refer to local diabetes guideline
- **Women declining induction** – these women should be referred to the consultant obstetrician and a plan for antenatal monitoring of maternal and fetal wellbeing should be made.

- **It is essential that the gestational age of the fetus is accurately calculated using the first ultrasound date prior to the decision being made to induce the labour, for whatever reason.**
- **Decision for induction to be discussed with Consultant where appropriate.**

IOL should not be undertaken routinely in the following situations (NICE Guideline CG70):

- **Maternal request:** In exceptional circumstances it may be considered at or after 40 weeks (for example, if the woman's partner is soon to be posted abroad with the armed forces).
- **History of precipitate labour**
- **Suspected large baby**

1.4 Exceptions/ contraindications

2. Clinical Management

2.1 Staff

Obstetric and midwifery staff

2.2 Method/procedure

2.2.1 Membrane sweeping

At the 40 and 41 week antenatal visits all women should be offered a vaginal examination for membrane sweeping prior to formal induction of labour

2.3 Unfavourable cervix.

The cervix should be assessed using the Bishop score (Bishop 1964). Prostaglandin use for an unfavourable cervix, rather than oxytocin alone, has been shown to result in decreased need for analgesia in labour, fewer cases undelivered within 12 –24 hours, decreased operative delivery BUT may result in uterine hypertonus in up to 7% of cases.

Modified Bishop's Score Cervical Feature				
	0	1	2	3
Dilatation (cm)	<1	1-2	2-4	>4
Length of cervix (cm)	>4	2-4	1-2	<
Station (cm)	-3	-2	-1/0	+1/+2
Consistency	Firm	Average	Soft	--
Position	Posterior	Mid/Anterior	--	--

3. Pathway for admission to hospital of women requiring IOL.

Admission for Induction of Labour

- Admit to Labour Ward, verbal consent should be obtained prior to commencing induction of labour
- For women considered to be at particularly high risk of complications in labour one to one midwifery care can be arranged (e.g. IDDM, severe pre-eclampsia, mental illness or any other clearly specified reason).

3.1 Management.

3.12 Review of indication for IOL.

A review of the case notes must be undertaken. If there are any changes or abnormalities not previously known about, a medical review must be obtained and documented prior to the induction process. Confirm appropriate approval for induction of labour to take place.

3.2 Maternal observations before and during IOL.

On admission:

- Physical Examination recording temperature, pulse, blood pressure, respirations, oxygen saturations and urinalysis.
- Abdominal palpation of the woman for fetal size, fetal lie, fetal presentation and level of presenting part (in relation to the pelvic brim).- Must be performed before each vaginal assessment.

- Check for low lying placenta.
- Recording of liquor colour if spontaneous rupture of membranes has occurred.
Risk Assessment.

METHODS OF INDUCTION

4. Propess (Prostaglandin E2)

This is the first choice for Primiparous women. For multiparous women a single dose of Prostin may be preferable dependant on bishops score following vaginal examination.

4.1 Vaginal Prostaglandin (PGE₂) Administration – Propess.

- Vaginal pessary containing 10mgs dinoprostone (Prostaglandin E2).
- A thin, flat, rectangular, polymetric pessary contained in a knitted polyester retrieval system.
- The release rate of dinoprostone is approximately 0.3mgs per hour over 24 hours in women with intact membranes.
- It can easily be removed in the event of hyperstimulation.
- Increased maternal satisfaction with less vaginal examinations throughout the induction process.

PGE₂ should be administered into the posterior fornix as a 10 mg Propess slow release pessary. Prostaglandins are released and act locally. In an unfavourable cervix they will cause cervical ripening, but this process may take 18 hours or even longer. In a favourable cervix they may not only ripen the cervix but may induce labour directly. Prostaglandins should be used in preference to Oxytocin when IOL is undertaken in either nulliparous or multiparous women with intact membranes, regardless of their cervical favourability.

4.2 Pre-Propess monitoring.

CTG should be performed for 30 minutes to assess fetal well-being. Findings should be fully recorded in the notes.

The induction should only proceed if the CTG is normal. If the CTG is suspicious or pathological, DO NOT continue with the induction process. Please request an obstetric review and document a plan of care.

4.3.. Administration of Propess.

Once the decision for IOL has been made a registered doctor must prescribe the Propess.

4.3.1. Vaginal insertion of Propess.

Propess should be stored in a freezer in the original container in order to protect from moisture. It can be removed from the freezer immediately before use, or up to 20 minutes before insertion.

- Perform a vaginal examination.
- If Bishop Score is 7 or less, insert Propess as per instructions below.
- Document palpation and VE findings and sign prescription chart.

If the Propess insert falls out and has remained clean, i.e. dropped onto clean bed sheets and not dropped on to the floor or into the toilet it may be reinserted and used to the 24 hour limit.

If it is not possible to re-insert the Propess due to contamination, a new one may be inserted and used up to 24 hours from the insertion of the first Propess pessary.

The excess tape outside the vagina should be cut and removed to prevent accidental removal of the Propess insert when the patient moves. However, sufficient tape should be left to allow for easy removal when required. The woman should be advised to take extra care not to pull the insert out accidentally when going to the toilet or bathing.

Experience from clinical trials suggest that dinoprostone release from the Propess insert is unaffected by bathing or showering. The manufacturer advises against excessive use of soap.

4.3.2 Post propess fetal monitoring.

CTG for 30 minutes post insertion.

CTG to be performed 6 hourly or:

- As soon as contractions are felt.
- In the presence of vaginal bleeding.
- Rupture of membranes.
- 24 hours after insertion if not in labour.

NB. CTGs must be performed more frequently than stated above where there is a clinical indication to do so, i.e. where IOL is for any reason other than post-maturity. The reason for and frequency of CTGs must be documented in the care plan. This may be determined following discussion between the obstetrician, midwife and patient. In the presence of abnormalities, the CTG must be recorded continuously and care escalated to the appropriate clinician.

4.3.3. When to remove Propess.

- When labour is established (regular, painful contractions).vaginal examination may be indicated.
- PV bleeding.
- Uterine hyperstimulation or hypertonic uterine contractions.
- Evidence of fetal compromise.
- Evidence of maternal adverse dinoprostone effects (nausea, vomiting and diarrhoea).
- At least 30 minutes prior to starting an intravenous infusion of oxytocin or inserting Prostin Gel.
- Following 24 hours, even if labour is not established.

Propess MUST be removed at least 30 min prior to commencement of Oxytocin regime or administration of Prostin Gel.

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). Document time of removal in the patient notes.

4.3.4. Spontaneous rupture of membranes with Propess in situ.

Commence CTG for 30 minutes and if normal continue induction process. If the CTG is abnormal, contact the obstetric team immediately. If there is no regular uterine activity Propess can be left in situ as per plan. Maternal pulse and temperature should be recorded 4 hourly. If there is regular uterine activity (contracting 3-4:10 over at least one hour), remove Propess. A cervical assessment is only indicated if established labour is suspected.

4.3.5. Hyperstimulation.

6 or more contractions in 10 minutes or contraction lasting 90 seconds.

- Continuous CTG.
- Propess should be removed.
- Place woman on left lateral side.

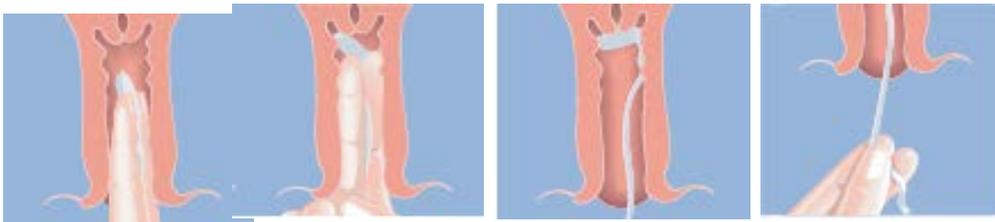
If CTG abnormal:

- Consultant or Registrar to be informed immediately.
- Terbutaline 250 mcg s/c should be considered.

4.3.6.. After 24 hours.

- Propess should be removed (but can be left in situ for up to 30 hours).
- Oxytocin can be commenced 30 minutes after removal of Propess.
- If after one cycle of Propess ARM is not possible consider use of Prostin (can be inserted 30 minutes after removal of Propess).

It is not advisable to repeat the dose of 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.

5 Prostaglandin Gel

PGE2 may also be given PV as a 1mg or 2mg gel PV but only after discussion of the reason as to its choice over Propress with a consultant. This may, however, be a first choice for women who are multiparous depending on their bishops score.

5.1. Procedure for administration of prostaglandin vaginal gel

Prior to commencing procedure:

- Ensure prostaglandin gel is prescribed by a medical practitioner.
- Cardiotocograph (CTG) for 20 minutes or longer to confirm normal fetal heart rate pattern.
- Vaginal examination to assess cervix by bishop score.
- Insert Dinoprostone (prostaglandin gel) into posterior fornix
- Primigravida with a bishop score of < 4 – an initial dose of 2mgs may be given, followed by a further 1mg dose (or 2mg if Bishop's score remains < 4/10) at 6 hourly intervals to a maximum of 4mgs in 24 hours.
- Primigravida with a bishop score of > 4 – an initial dose of 1mg, followed by further 1mg doses at 6 hourly intervals to a maximum of 4mgs in 24 hours.
- Multigravida – an initial dose of 1mg followed by further 1mg, or 2mgs if Bishop score <4, doses to a maximum of 3mgs in 24 hours.
(Pharmacia Ltd 2001)

Fetal observations following insertion of prostaglandin gel prior to the onset of labour:

- Turn the woman onto her left side and recommence the CTG immediately for at least 45 minutes. High risk cases (e.g. fetal growth restriction) should have the CTG commenced immediately after insertion of the gel for at least one hour.
- Subsequently auscultate the fetal heart rate every four hours after insertion of gel.

Maternal observations following insertion of prostaglandin gel prior to the onset of labour:

- Maternal temperature, pulse, blood pressure, respirations and uterine activity within four hours after insertion of gel.
- Blood pressure should be recorded more frequently as per individual plan of management if there have been any concerns.
- 4 hourly TPR and BP and fetal heart throughout the IOL process
- NB. Once a woman commences regular painful uterine activity a full review of maternal and fetal wellbeing should be undertaken to inform further management. This should include as a minimum maternal pulse, respirations and blood pressure and a 30 minute CTG of the fetal heart rate heart.

6. Mechanical methods of IOL

Evidence shows that balloon catheters are the safest and most economical method of cervical ripening for women who have had a previous caesarean section. Balloon catheters are in use safely and effectively in many maternity units, predominately for women who have had previous caesarean sections. They can also be used for postdates IOL as outpatients for low risk women.

Balloon catheter.

6.1 Method/procedure.

- On admission routine antenatal admission including CTG.
- Vaginal Examination and insertion of Cooks balloon by consultant or registrar if not suitable for ARM.
- Post insertion CTG for 40 minutes.
- After 12 hours VE and removal of balloon.
- If suitable perform ARM, if not for discussion with consultant.
If balloon falls out for VE as soon as possible with a view to ARM

Equipment required:

- Examination couch with lithotomy poles.
- Sterile vaginal pack and sterile gloves.
- Cusco's speculum.
- Rampley's sponge holder.
- Balloon catheter.
- Examination light.
- Saline and syringes.

Clinicians may choose to insert the balloon digitally or with a sponge holder.

It is recommended that balloons are filled with a maximum of 80mls of saline in each balloon as tolerated by the woman.

Comment [a1]: Perhaps a comment that only those who are trained can do this? Or individuals will be trained before doing this?

Comment [a2]: What about a comment about if it falls out doing an immediate VE for ARM??

6.2 Management.

CTG to be performed 6 hourly or:

- As soon as contractions are felt.
- In the presence of scar pain.
- In presence of vaginal bleeding.
- Rupture of membranes.

7. Amniotomy (Artificial Rupture of Membranes or ARM)

- Rupturing the membranes causes a release of local prostaglandins when the cervix is already ripened. A BS of 8 or more is usually enough to stimulate labour and (further) prostaglandins are not required.
- The fetal heart rate must be recorded before, during and following the procedure for ARM.

NB - Where ARM has been performed for IOL (as opposed to augmentation) for Primips, Oxytocin should be started **immediately** unless contracting regularly

Comment [a3]: Unless contracting

If an ARM is to be performed:

- assess engagement of presenting part and document.
- palpate for umbilical cord presentation and / or vasa praevia during preliminary vaginal examination (avoid dislodging the fetal head).
- the fetal heart rate must be recorded before, during and following the procedure for ARM.
-

8. IV Oxytocin

Evidence suggests that use of IV Oxytocin as primary method of induction is not as effective as PGE₂ pessaries or gel and is therefore not recommended.

8.1 Oxytocin infusion.

The decision to induce or augment labour with oxytocin should be made by the Obstetric Registrar or Consultant and prescribed on the drug administration chart.

OXYTOCIN SHOULD NOT BE COMMENCED FOR AT LEAST 30 MINUTES FOLLOWING REMOVAL OF PROPESS PESSARY OR 6 HOURS FOLLOWING ADMINISTRATION OF PROSTIN GEL.

Women with intact membranes should have an amniotomy performed prior to commencement of oxytocin. However, the Consultant may decide to commence oxytocin with intact membranes in some circumstances.

- Oxytocin infusion via volumetric infusion pump - increments should be made every 30 minutes as dictated by the number of contractions in 10 minutes.

Increase Oxytocin only as far as to give a maximum of 4-5 contractions in 10 minutes lasting over 50 seconds. Increasing to a rate in between specified incremental rates is acceptable if the next rate results in uterine hyperstimulation.

Oxytocin infusion via volumetric infusion pump
Add 10 units Oxytocin to 500ml 0.9% Sodium Chloride

OXYTOCIN DOSE (MILLIUNITS PER MINUTE)	ML/HOUR – 10 UNITS OXYTOCIN IN 500ML SODIUM CHLORIDE 0.9%
1	3
2	6
4	12
8	24
12	36
16	48
20	60
24	72
28	84
2	96

NB. Oxytocin should be recorded as the dose of drug being delivered i.e. milliunits per minute and not the volume of fluid being infused (ml/hour).

The licensed maximum dose of oxytocin is 20 milliunits per minute. If higher doses are used (as per obstetrician's instruction) the maximum dose used should not exceed 32 milliunits per minute.

Two midwives to check all stages of preparation and administration to the woman.

This should include:-

Gaining verbal consent.

- Preparation of the Oxytocin infusion.
- Loading of the volumetric or syringe pump before connection to the cannula via Y connector with non-return valve.
- Connection to the cannula via Y connector with non-return valve.
- Setting the flow rate of the pump.
- Commencing the infusion.
- Changing the bag.

Observations

Hourly maternal pulse.

½ hourly uterine activity.

Note colour of liquor when membranes rupture and if any change thereafter.

Continuous CTG with recording of fetal heart rate every 15 minutes in 1st stage of labour and every 5 minutes in 2nd stage.

4 hourly blood pressure – unless BP is elevated – then as dictated by individual plan of care.

4 hourly temperatures.

Abdominal palpation prior to vaginal examinations.

9. Potential complications / Risk Management.

Hypertonic uterine activity.

Oxytocin in progress – STOP OXYTOCIN IMMEDIATELY.

Comment [a4]: Bold print

No Oxytocin in progress – consider Terbutaline, subcutaneous 250 micrograms (prescription only).

Consider delivery if CTG remains pathological.

.10. CAUTION

- Grand multiparous women, previous precipitate labour.
- **In all cases where induction of labour is not successful the woman MUST be reviewed by the Consultant and an individual plan should be made**

11. After care.

- Women who have been induced should then receive normal postnatal care, remembering that they are at a greater risk of PPH if the labour has been lengthy in duration.

12. Patient Information

All women who are to undergo induction of labour should have been counselled as to the methods and management of induction and consented to the procedure.

13. Audit

13.1 Audit Indicators

Implementation of this guidance will be monitored through audit of the following specific standards as a minimum:

- Reasons for induction of labour documented to include prolonged pregnancy.
- Maternal observations that should be carried out during induction prior to the establishment of labour.
- Fetal observations that should be carried out during induction prior to establishment of labour.
- Appropriate removal of proppess pessary as per guidance.

13.2 .Audit design.

The annual audit will be a retrospective review of 1% of all health records of women who have delivered in whom induction of labour has been undertaken within the 6 months prior to the audit.

The audit will be conducted by a member of the midwifery or obstetric teams.

The audit findings will be presented to the Maternity/Clinical Governance meetings.

The Lead Obstetric Clinician is responsible for ensuring any action plans are implemented.

This guideline will be reaudited on a 2 yearly basis.

The percentage of women who are induced and by what methods will be analysed quarterly at the perinatal meeting.

Evidence Base

1. Bishop, E h, 1964 Pelvic scoring for elective induction. *Obstetrics and gynaecology*, 24:p266-8
2. National Collaborating Centre for Women's and Children's Health, 2008. *Clinical Guideline CG070 – Induction of labour*. RCOG, London
3. National Institute for Health and Clinical Excellence (NICE). (2008) *Induction of Labour*. London: NICE. Available at www.nice.org.uk

4. National Institute for Health and Clinical Excellence (NICE). (2008) Intrapartum Care: Care of Healthy Women And their Babies During Childbirth. London:NICE. Available at www.nice.org.uk
5. Pharmacia Limited, 2011. SPC for Prostin gel. www.emc.medicines.org.uk
6. RCOG (2013) Induction of labour at term in older mothers. Scientific Impact paper No 34 (February 2013) Available at www.rcog.org.uk