NHS North West

NORTH WEST GUIDELINE

Induction of Labour

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The authors report no conflict of interest in the development of this clinical practice guideline.

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1 Summary / Introduction

Induction of labour is a common obstetric intervention (around 30% of pregnancies in U.K. are induced)[1] whereby medical or other methods are used to artificially start labour. Typically, the intervention starts with a phase of cervical ripening (either using pharmacological or mechanical methods) followed by amniotomy and oxytocin infusion to establish labour.
As the profile of women and birthing people (age, medical conditions, artificial reproductive techniques) and their preferences change, it is of increasing importance to have a robust set of standards to refer to when discussing and performing induction of labour.

The terms "woman" and "maternal" are used hereafter in this document but care described is also applicable to a birthing parent who does not identify as female.

2 Purpose

This guideline aims to provide an overview of induction of labour in pregnancy for use in maternity units in the North-West region of England.

The document will provide an overview of indications for induction of labour, methods used for cervical ripening (units will have individual preferences for certain methods depending on experience and availability), maternal and fetal monitoring throughout the induction process and recommendations on how progress/options available should be communicated by staff to the woman and her family.

3 Scope

This document is intended for use by:

- Medical and midwifery staff caring for women undergoing induction of labour in maternity units in the North-West region of England
- Commissioners and providers
- Pregnant women and their support network

4 Responsibilities

Healthcare providers should use this guideline as a framework for care but always use clinical judgement and individualise care based on discussions with the woman and her family.

Adverse events during induction of labour should be reported in accordance with local governance systems.

5 Discussing Induction of Labour

Ideally, options regarding mode of delivery and maternal thoughts on induction of labour should be explored by health care providers throughout pregnancy. In addition to discussing the indication for expedited birth, options for birth planning should include:

- Expectant management
- Induction of labour
- Planned caesarean section.

The risks and benefits of each option should be discussed giving the woman time to consider these.

When discussing induction of labour, the following points should be covered:

- The need for repeated vaginal examinations to assess suitability for amniotomy
- Timeframe for cervical preparation prior to amniotomy (for many women this may mean a hospital inpatient stay)

- Options for place of birth more restricted i.e. not appropriate for home birth setting or midwife only birth centre. Use of birthing pool less likely.
- Need for fetal heart rate monitoring during induction process and, as in the case for most women, continuously whilst on an oxytocin infusion.
- May require more pain relief with induced rather than spontaneous labour
- Induction of labour can be associated with greater need for obstetric intervention such as instrument assisted birth.
- Risk of hyperstimulation with pharmacological methods

The indication for induction of labour should be explored with the woman (see section 6 below). Where the indication is post maturity, this can be done by the midwife providing care. In the presence of maternal or fetal concerns, it is more appropriate that the rationale for induction is discussed by an obstetrician (ST3 and above).

If induction of labour is declined when there is medical induction to offer the intervention, a discussion should take place with the woman with the input of a Consultant Obstetrician to explore her concerns and devise a care plan going forward. This should include:

- Regularity of fetal monitoring (CTG, ultrasound assessment)
- Regularity of maternal monitoring (depending on condition may include blood pressure monitoring, blood tests etc)
- A review of options available (caesarean birth, inpatients admission etc)
- Who and how to make contact should the woman change her mind regarding options

6 Indications for Induction of Labour

The most common indications for induction of labour include (NB this is not an exhaustive list):

- Prolonged pregnancy (units will have their own gestational age target but this is typically from 41 weeks to in an effort to achieve birth before 42 weeks)
- Maternal medical conditions (e.g. diabetes, hypertensive disorders)
- Reduced fetal movements (see NW guideline on Reduced Fetal Movements)
- Fetal growth restriction (see NW guideline on Management of FGR)
- Multiple pregnancy
- Pre-labour spontaneous rupture of membranes (SROM)
- Advanced maternal age (40 years +)
- Maternal request (after counselling with a Consultant Obstetrician)
- Large for gestational age – individualised management plans are advised until the results of the Big Baby trial (and resulting meta-analysis) are published

Contraindications to induction of labour:

- Placenta praevia/vasa praevia
- Non-cephalic presentation (in leading twin if multiple pregnancy)
- Previous classical caesarean section
- Previous myomectomy with uterine cavity breach
- Active genital herpes

Best practice advice on indications for induction of labour include:

- **Post maturity** this is typically from 41 weeks to achieve birth before 42 weeks

- **Diabetes**
  - type 1 or type 2 diabetes and no other complications to have an elective birth

by induced labour or (if indicated) caesarean section, between 37 weeks and 38 weeks plus 6 days of pregnancy.
  - Consider elective birth before 37 weeks for women with type 1 or type 2 diabetes who have metabolic or other maternal or fetal complications.
  - Advise women with gestational diabetes to give birth no later than 40 weeks plus 6 days. Offer elective birth by induced labour or (if indicated) by caesarean section to women who have not given birth by this time.
  - Consider elective birth before 40 weeks plus 6 days for women with gestational diabetes who have maternal or fetal complications.

- **Hypertension in pregnancy**
  - Do not offer planned early birth before 37 weeks to women with chronic hypertension whose blood pressure is lower than 160/110 mmHg, with or without antihypertensive treatment, unless there are other medical indications.
  - For women with chronic hypertension whose blood pressure is lower than 160/ 110 mmHg after 37 weeks, with or without antihypertensive treatment, timing of birth and maternal and fetal indications for birth should be agreed between the woman and the senior obstetrician.
  - Do not offer planned early birth before 37 weeks to women with gestational hypertension whose blood pressure is lower than 160/110 mmHg, unless there are other medical indications.
  - For women with gestational hypertension whose blood pressure is lower than 160/110 mmHg after 37 weeks, timing of birth, and maternal and fetal indications for birth should be agreed between the woman and the senior obstetrician.
  - Record maternal and fetal thresholds for planned early birth before 37 weeks in women with pre-eclampsia. Thresholds for considering planned early birth could include (but are not limited to) any of the following known features of severe pre-eclampsia:
    - inability to control maternal blood pressure despite using 3 or more classes of antihypertensives in appropriate doses
    - maternal pulse oximetry less than 90% progressive deterioration in liver function, renal function, haemolysis, or platelet count
    - ongoing neurological features, such as severe intractable headache, repeated visual scotomata, or eclampsia
    - placental abruption
    - reversed end-diastolic flow in the umbilical artery doppler velocimetry, a non-reassuring cardiotocograph

- **Preterm prelabour rupture of membranes offer from 37 weeks**

- **Pre-labour spontaneous rupture of membranes** (SROM), offer as soon as possible or delay 24 hours

- **Reduced fetal movements** (see GMEC guideline on Reduced Fetal Movements)

  - New guideline 2024
  - Prior to 39 weeks' gestation a decision for delivery needs to be based upon objective evidence of fetal compromise.
  - If the mother has recurrent RFM at or after 39 weeks, birth should be offered. If a mother has a single episode of RFM at or after 39 weeks, birth could be offered.

- **Fetal growth restriction**
  - When the estimated fetal weight (EFW) is <3rd centile and there are no other risk factors (see 2.20), initiation of labour and/or delivery should occur at 37+0 weeks and no later than 37+6 weeks gestation.

  - 2.19 In fetuses with an EFW between the 3rd and <10th centile, delivery should be considered at 39+0 weeks. Birth should be achieved by 39+6 weeks. Other risk factors should be present for birth to be recommended prior to 39 weeks

- **Multiple pregnancy –** uncomplicated to reduce serious outcomes
  - DCDA – by 37+6
  - MCDA – by 36+6

- **Advanced maternal age (40years +)** There is an argument for offering induction of labour at 39–40 weeks of gestation to women ≥ 40 years of age. (stillbirth risk 2:1000 cf 1:1000< 35)

- **Maternal request** (after counselling with a Consultant Obstetrician)

- **Large for gestational age** – individualised management plans are advised until the results of the Big Baby trial are published 2024 , which has shown that EFW > 90th centile at 35-38 weeks : only 40% were >90th at birth

- **Obstetric cholestasis**
  - In women with peak bile acids **19–39** micromol/L (mild ICP) and no other risk factors, advise them that the risk of stillbirth is similar to the background risk. Consider options of planned birth **by 40 weeks'** gestation or ongoing antenatal care according to national guidance.
  - In women with peak bile acids **40–99** micromol/L (moderate ICP) and no other risk factors, advise them that the known risk of stillbirth is similar to the background risk until 38–39 weeks' gestation. Consider planned birth at **38–39** weeks' gestation.
  - In women with peak bile acids **100 micromol/L or more** (severe ICP), advise them that the risk of stillbirth is higher than the background risk. Consider planned birth at **35–36** weeks' gestation.

7 Process/procedure/guidance etc. (main body)

7.1 The Bishop score

This is a numerical value obtained by performing a vaginal examination, and is based on the dilation, effacement (or length), position and consistency of the cervix and the station of the head with respect to the ischial spines of the pelvis. A score of 8 or more generally indicates that the cervix is ready to dilate, (previously the terms 'ripe' or 'favourable' were widely used) and when there is a high chance of spontaneous labour, or response to interventions made to induce labour. For the purposes of this guideline, a Bishop score of less than or equal to 6, or a score greater than 6, was used to help determine choice of pharmacological or mechanical methods to induce labour.

Modified Bishop's Score (Calder Score)	0	1	2	3
Cervical Dilation (cm)	0	1-2	3-4	5-6
Cervical length (cm)	3	2	1	0
Cervical consistency	Firm	Medium	Soft	
Position of cervix	Posterior	Centre	Anterior	
Station of fetal head	-3	-2	-1	0+

7.2 Methods for induction of labour

7.2.1 Membrane sweeping

At antenatal visits after 39+0 weeks, discuss with women if they would like a vaginal examination for membrane sweeping, and if so, obtain verbal consent from them before carrying out the membrane sweep.

Explain to women:

- what a membrane sweep is
- that membrane sweeping might make it more likely that labour will start without the need for additional pharmacological or mechanical methods of induction
- that pain, discomfort and vaginal bleeding are possible from the procedure.

Discuss with women whether they would like to have additional membrane sweeping if labour does not start spontaneously following the first sweep.

7.2.2 Pharmacological and mechanical methods for inducing labour

Explain to women that a vaginal examination to assess the readiness of the cervix (recorded as the Bishop score) will help to decide which method of induction they will be offered first and obtain consent to carry this out.

Discuss with women the risks and benefits of different methods to induce labour. Include that:

- Both dinoprostone and misoprostol can cause hyperstimulation
- When using pharmacological methods of induction, uterine activity and fetal condition must be monitored regularly (see below)
- Uterine activity should be assessed by manual palpation of the uterus to assess strength and regularity. Clinicians should not rely on uterine activity on the tocograph.
- If hyperstimulation occurs, the induction treatment should be stopped by giving no further medication, or by removal of vaginally administered products when possible
- There are differences in the ease with which different vaginal products can be removed (for example, dinoprostone controlled-release vaginal delivery systems can be more easily removed than gel or vaginal tablets)
- Hyperstimulation can be treated with tocolysis (e.g. Terbutaline 250µg s.c.)
- Mechanical methods are less likely to cause hyperstimulation than pharmacological methods.
- The preferred method of induction involves the use of vaginal prostaglandin (NICE 2021 which is administered as a slow-release pessary administered over 24 hours (Dinoprostone Vaginal Insert; this was referred to as Dinoprostone). Some units may offer dinoprostone in gel or tablet form known as Prostin.
- Most manufacturers of vaginal dinoprostone induction agents regard a scarred uterus (from previous myomectomy or caesarean section birth) as a contraindication to their use.

7.2.3 Dinoprostone (delete if not used by unit)

7.2.3.1 General information

- Dinoprostone is a slow-release prostaglandin (Dinoprostone, prostaglandin E2) delivery system used for the induction of labour.
- It is a pessary inserted vaginally into the posterior fornix. It remains in situ for up to 24 hours.
- Dinoprostone can remain in situ for 24 hours without compromising maternal or fetal well-being.
- It prevents repeated vaginal examinations during the induction process and the aim is to leave it in situ until the cervix is appropriately effaced for labour.
- It is preferable not to use lubricant gel during the insertion. However, if required water soluble gel can be used. Chlorhexidine (Hibitane) obstetric cream SHOULD NOT BE USED as this can prevent the release of prostaglandin.

The aim with Dinoprostone usage is to efface the cervix sufficiently for active labour to commence.

7.2.3.2 Contraindications to use of Dinoprostone

- Severe asthma.
- Women with previous caesarean section
- Abnormal fetal lie or presentation
- Any other contraindication to vaginal birth e.g. placenta praevia, mass obstructing cervix

7.2.3.3 Practice recommendations for use of Dinoprostone

Clinical standard	Practice Recommendations
Dinoprostone Insertion	Use Dinoprostone if Bishop's Score is LESS than 6 or not suitable for artificial rupture of membranes (ARM). If BS ≥6, suitable for ARM**.** • Remove Dinoprostone from the freezer**. It should not be left at room temperature for more than 20 minutes prior to insertion** • Holding the Dinoprostone between middle and index fingers, place pessary high into the posterior vaginal fornix. Using the examining fingers, adjust the position of the pessary so that it lies horizontally in the posterior fornix behind the cervix • Gently withdraw fingers from the vagina, leaving the Dinoprostone in situ • Tuck the string back into the vagina • Positioning- the woman should remain in a side lying or semi recumbent position for 20-30 mins following insertion of Dinoprostone to allow the pessary to swell and prevent it from becoming dislodged • **Dinoprostone should remain in situ for 24 hours** • It is possible to bathe/shower and use the toilet with

	Dinoprostone in situ • Women must be discouraged from pulling the string as this can lead to inadvertent removal
Maternal and fetal observations following administration of Dinoprostone	• A CTG should be performed for a minimum of 30 minutes following Dinoprostone insertion and only discontinued if categorised as normal.
Advice to give to women:	Advise the woman to inform the midwife if any of the following occurs: • Regular (2:10) tightening or painful contractions • Rupture of membranes • Vaginal bleeding • Dinoprostone falls out • Any concerns about maternal or fetal wellbeing

Management of deviations from normal		
If Dinoprostone falls out of the vagina:	**Inpatient IOL** • Perform a vaginal examination to check for Dinoprostone / check cervical dilatation to determine whether further Dinoprostone clinically indicated. If not required, follow pathway for ARM • If Dinoprostone requires reinsertion, a new Dinoprostone should be used. A CTG should be recommenced prior to reinsertion of Dinoprostone to confirm fetal wellbeing. • After re-insertion, a CTG should be performed for a minimum of 30 minutes and only discontinued if categorised as normal. • If a new Dinoprostone is required, the time that the initial Dinoprostone and the 2nd Dinoprostone are in situ	**Outpatient IOL** • Ask the woman to return to the IOL bay and bring Dinoprostone with her if possible. • Perform a vaginal examination to check for Dinoprostone to check cervical dilatation to determine whether further Dinoprostone is clinically indicated. If not required, follow pathway for ARM • In all circumstances a new Dinoprostone should be inserted with a new prescription • After re-insertion, a CTG should be performed for a minimum of 30 minutes and only discontinued if categorised as normal • If a new Dinoprostone is required, the time that the initial Dinoprostone and the 2nd Dinoprostone are in situ

	must not exceed 24 hours i.e. combined insertion times	must not exceed 24 hours i.e. combined insertion times • The woman may be given the option to go home to await events and return home at original appointment time or remain on the IOL bay
SROM with Dinoprostone in situ	**Inpatient IOL**: • If SROM confirmed, perform a vaginal examination to check that the Dinoprostone remains in situ (cervical dilatation may also be confirmed). Undertake a full maternal and fetal assessment and document on the MEOWS chart. **If the woman is not in established labour - leave the Dinoprostone in situ. If Dinoprostone not in situ, follow above actions**	**Outpatient IOL** • Women who are receiving outpatient IOL should be advised to return to the IOL bay if they suspect SROM • If SROM confirmed, perform a vaginal examination to check that the Dinoprostone remains in situ (cervical dilatation may also be confirmed). Undertake a full maternal and fetal assessment and document on the MEOWS chart. **If the woman is not in established labour - leave the Dinoprostone in situ. If Dinoprostone not in situ, follow above actions** • If in established labour perform a CTG in the local obstetric unit • If labour is not established the woman may be offered the choice to remain on the IOL bay and await events or return home until their original appointment time (24 hours after initial administration of Dinoprostone)
Active fresh vaginal bleeding	**Inpatient IOL:** • Remove Dinoprostone, commence CTG and request obstetrician to review	**Outpatient IOL** • Women who are receiving outpatient IOL should be advised to return to their obstetric unit if they are experiencing active fresh

		vaginal bleeding. • On attendance to the obstetric unit, remove Dinoprostone, commence CTG and request obstetrician to review

7.2.3.4 Dinoprostone Removal

Dinoprostone must be removed 24 hours after insertion or sooner if indicated as above.

To remove Dinoprostone

- Apply gentle traction on the string.
- Document time and date of removal in woman's notes
- Perform vaginal examination to determine whether ARM is possible / indicated

In women with a Bishop score of 6 or less after Dinoprostone removal, ongoing care should be discussed by an obstetrician (ST3 or above). If the woman wishes to continue with IOL, offer induction of labour with dinoprostone as vaginal tablet, vaginal gel or controlled-release vaginal delivery system or with low dose (25 microgram) or mechanical method depending on clinical circumstances and local unit preferences.

7.2.4 Prostin® (delete if not used by unit)

In women with a Bishop's score of 6 or less, cervical ripening can also begin with vaginal dinoprostone administered as gel or tablets (Prostin).

Pre-administration of Prostin:

- As with Dinoprostone, perform a routine abdominal examination to confirm fetal lie and presentation.
- Perform a pre-insertion fetal CTG for 30 minutes and ensure all parameters are normal before insertion.
- Prostin should not be inserted in the presence of regular uterine activity (more than 2 in 10)
- Once the above steps have been taken, the Prostin gel/tablet should be inserted vaginally into the posterior fornix (not directly into the cervical canal)
- The CTG should continue for a further 20 minutes after insertion and if it remains normal, can discontinue until either there is a change in the clinical scenario or until the next cervical assessment is due.
- The woman should be routinely reassessed 6 hours after the insertion of the first dose of Prostin (or sooner if the clinical picture changes)
- Manufacturer guidelines recommend maximum dosage of Prostin gel is 3mg in a multip (administered as 1mg preparations 6 hourly) and 4mg in a primiparous woman (administered as 2mg as a first dose followed by 1mg for the remaining doses 6 hours apart). If a unit offers a 4th dose, the woman should be counselled that this is outside the manufacturer guidelines and should be done only after a 24 hour rest period.
- Prostin tablets come in 3mg preparations and manufacturers guidelines suggest no more than 6mg should be administered in two dose 6 hours apart.
- Fetal monitoring before and after administration is the same for both gel and tablet preparations.

7.2.5 Misoprostol (delete if not used by unit)

Oral Misoprostol 25 micrograms every 2 hours, alternatively 50 micrograms every 4 hours, to be given in accordance with local protocols; maximum 200 micrograms per day.

Contraindications include Active labour; fetal malpresentation; placenta praevia; suspicion or evidence of fetal compromise; unexplained vaginal bleeding after 24 weeks gestation; uterine abnormality; uterine scar.

7.2.6 Cautions include For Angusta®

Before 37 weeks' gestation (limited information available); chorioamnionitis; modified Bishop score greater than 6 (limited information available), Caution in hepatic and renal impairment—risk of increased exposure; avoid if eGFR less than 15

7.2.7 Cautions For Cytotec®

Conditions where hypotension might precipitate severe complications (e.g. cerebrovascular disease, cardiovascular disease); conditions which predispose to diarrhoea (e.g. inflammatory bowel disease

7.1.6 Mechanical methods of induction of labour

For women with a Bishop score of 6 or less, consider a mechanical method to induce labour (for example, a balloon catheter or osmotic cervical dilator) if:

- pharmacological methods are not suitable (for example, in women with a higher risk of, or from, hyperstimulation, or those who have had a previous caesarean birth), or
- the woman chooses to use a mechanical method. See the NICE interventional procedures guidance on double balloon catheters for induction.

The risk of scar rupture is 0.2-0.7% in women with one previous caesarean section and in women with 2 previous caesarean sections this risk is increased to 1.36%. Induction of labour with prostaglandins increases the risk of scar rupture from hyperstimulation of the uterus.

Cervical ripening balloon induction aims to reduce the risk of uterine rupture at induction of labour. Patient experience is also improved with balloon induction. The risk of adverse events between insertion and expulsion is low making it suitable to perform as an outpatient procedure and reduce bed occupancy[3]. Pain is reduced with balloon versus prostaglandin.

Caesarean section rate is similar in balloon and prostaglandin groups.

The cervical ripening balloon works by applying pressure to the cervix and stimulating natural prostaglandins promoting labour and ripening of the cervix.

The cervical ripening balloon may be more effective than oxytocin for inducing labour and reducing caesarean section

7.2.7.1 Dilapan-S (delete if not used by unit)

Dilapan-S is a non-pharmacological cervical ripening device. The device is comprised of rods which are inserted into the cervical canal. It is covered with a patented synthetic hydrogel which draws cervical moisture into itself causing a gradual swelling of the rod which in turn

causes cervical dilation and encourages release of endogenous prostaglandins.

Insertion:

- Remove Dilapan from its packaging using sterile gloves
- The end of the rods should be moistened using sterile water/saline
- Ask the woman to position herself for a bivalve speculum examination
- Insert speculum to visualize the cervix
- Cleanse vagina and cervix with antiseptic solution
- Use sponge holding forceps to insert rods into the cervical canal, taking care not to pass beyond the maximal point of insertion marker
- More than one rod can be inserted (typically 3-5)
- Record the number of rods used

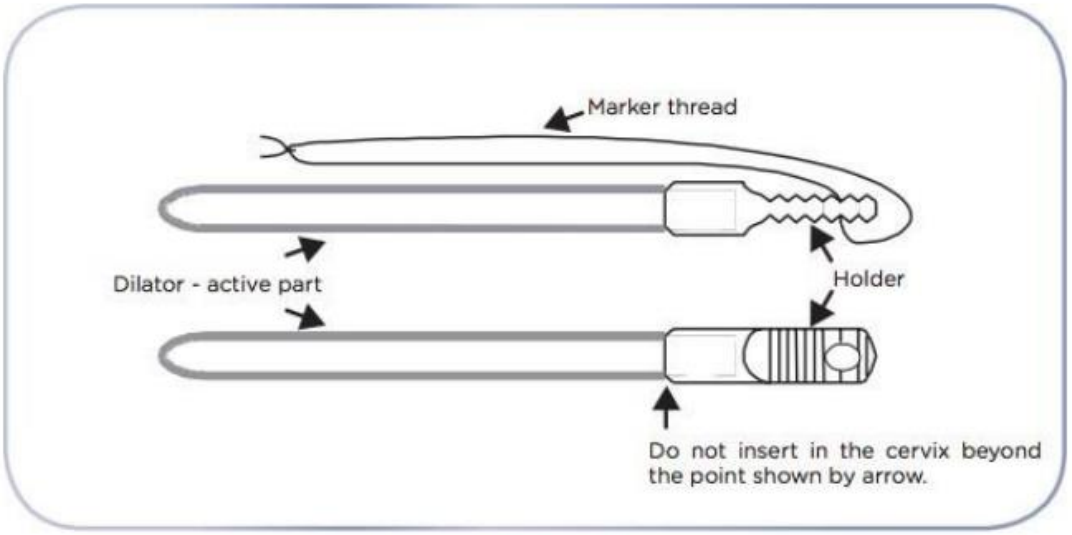

Figure 1 - DESCRIPTION

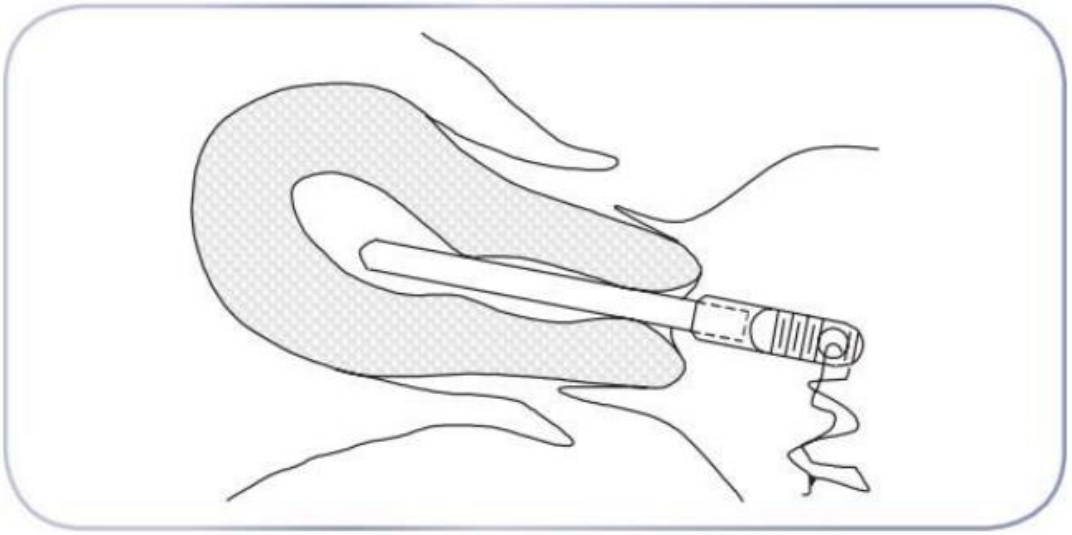

Figure 2 - CORRECT TECHNIQUE OF INSERTION

Post-insertion fetal monitoring with a CTG is recommended. Advise women that some minor bleeding may be noted but they should inform staff if there is heavy bleeding or discharge. The manufacturer recommends temperature monitoring, avoidance of bathing and intercourse post insertion.

Removal:

- Manufacturer recommends removal after 24 hours
- Ask the woman to empty her bladder.
- Perform a digital examination removing the device with the examining fingers.
- If there is difficulty in removing all the rods then remove them by direct vision utilising a speculum and sponge holder.
- Perform a repeat speculum examination
- Using sponge holding forceps, grasp the strings on the end of each rod in turn and gently pull-down longitudinal axis to remove. Care should be taken not twist or pull the collar of the rod.
- Ensure all rods are removed
- In the unlikely event that the total number of Dilapan rods cannot be identified, an ultrasound can be undertaken to identify or rule out Dilapan rod location. Dilapan is not radiopaque

Balloon Catheter (delete if not used by unit)

- Perform CTG to confirm fetal wellbeing before proceeding
- BS ≤ 6 Administer balloon
- BS 6-8 – discuss with the woman regarding possibility of ARM or balloon induction
- Balloon to remain in place up to 12 hours (Manufacturer recommends not to remain in situ for more than 12 hours)
- If ARM is not possible, an obstetrician to document plan in antenatal notes whether to continue with induction with prostaglandins /Dilapan or to perform caesarean section
- If it is not possible to fit balloon to consider prostaglandins or caesarean section after discussion with clinician responsible for care or on Consultant Obstetrician.

Criteria for balloon

- Longitudinal lie
- 3/5th palpable per abdomen or less
- No history of ruptured membranes
- Normal CTG
- Mother wishes vaginal birth after Caesarean section
- Grand multiparity
- Previous hyperstimulation with prostaglandin IOL

Equipment

- Bed/examination couch with lithotomy poles
- Sterile vaginal pack
- Cusco speculum
- Rampley's Sponge holding forceps
- Balloon catheter
- Examination light
- Sterile water / Normal saline
- 50ml syringe
- Drawing up needle

7.2.8 Procedure for inserting balloon

Prior to insertion: -

- Abdominal palpation
- Explain insertion technique to patient either palpation or by direct vision with speculum.

- Discuss plans for removal / explain procedure if balloon falls out
- Explain risks of hyperstimulation (5 in 100 compared to 17 in 100 with prostaglandin)
- Risks of bleeding, infection, PROM, discomfort
- Patients should contact the induction midwife if PROM/pain/balloon falls out/bleeding/decreased FM's/any concerns
- Obtain verbal consent

Insertion technique: -

- Ensure adequate positioning
- Aseptic technique
- Insert Cusco's speculum to visualize the cervix
- Cleanse cervix with antiseptic solution
- Use Rampley's sponge holder to pass Foley catheter/ remove speculum and insert digitally
- Inflate balloon with 50-80mls sterile water/normal saline
- Tape catheter to leg with gentle tension to ensure balloon remains at internal os
- Place spigot in the end of the catheter

Post procedure: -

- CTG monitoring for 30 minutes
- 30 minutes maternal observations
- Check temperature 4 hourly and report if >37.5 if inpatient

Removal (after 12 hours) l: -

- Perform maternal observations
- Deflate balloon and withdraw catheter
- Assess suitability for ARM
- Perform CTG

SROM: -

- If the woman reports rupture of membranes this should be confirmed by history and examination
- Once confirmed the balloon should be removed
- Induction to continue as per current induction of labour protocol.

If balloon falls out: -

- If at home patient can dispose of this and does not need to return it to the hospital.
- If no history of SROM or tightenings, or other concerns patient can remain at home until normal working hours and then to return to her obstetric unit for assessment.

For women with a Bishop score of more than 6, offer induction of labour with amniotomy and an intravenous oxytocin infusion.
Advise women that they can have an amniotomy and can choose whether to have an oxytocin infusion, or can delay starting this, but that this may mean labour takes longer and there may be an increased risk of neonatal infection. (refer to local guideline on use of oxytocin)

7.3 Methods that are not recommended for Inducing labour based on the available evidence:

• 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
• herbal supplements
• acupuncture
• homeopathy Inducing labour
• castor oil
• hot baths
• enemas
• sexual intercourse

Assessment before induction, monitoring and pain relief

Ensure the position of the baby and the woman's condition are suitable for induction by:

- Baseline observations: temperature, pulse, blood pressure, respiratory rate, and oxygen saturation. Record observations on a MEWS chart.
- abdominally assessing the level and stability of the fetal head in the lower part of the uterus at or near the pelvic brim
- carrying out an ultrasound scan if there are any concerns about the presentation of the baby (for example, if it might be in the breech position)
- assessing and recording the Bishop score
- confirming a normal fetal heart rate pattern using antenatal cardiotocography interpretation
- confirming the absence of significant uterine contractions (not Braxton-Hicks) using cardiotocography. In the absence of uterine activity, use computerised CTG.

Offer to reassess the wellbeing of the woman and baby and the Bishop score at appropriate intervals to monitor progress, depending on the method of induction being used, and the clinical condition of the woman. Recommended frequency of observation would be 4-6 hourly.

Once active labour is established, conduct maternal and fetal monitoring as described in the NICE guideline on fetal monitoring in labour.

7.4 Routine fetal monitoring during IOL:

Perform either computerised or standard 30 minute CTG (unit discretion) which must be classified as normal (all 4 features reassuring) prior to the administration of Prostin®/ Dinoprostone® or Dilapan/CRB insertion. It is reasonable to use Dawes-Redman assessment if there is no uterine activity.

If the midwife is unsure about the CTG findings, obtain a second opinion from a senior midwife or obstetrician (ST3 or above). If there is any doubt as to whether to proceed with the IOL, contact the obstetric registrar or Consultant on duty.

Following the administration of Prostin®/ Dinoprostone® or mechanical induction method the CTG must remain in progress for a minimum of 30 minutes before being discontinued and should only be discontinued if normal (all 4 features reassuring). If a midwife is unsure, obtain

a second opinion should be sought as above.

When repeated doses of Prostin®/Dinoprostone® is required , a CTG must be done for 20 minutes before the prescribed medication is administered. Following administration, the CTG must remain in progress for a total of 30 minutes before being discontinued and should only be discontinued if normal (all 4 features reassuring), there is no evidence of regular uterine activity (2 contractions in 10 minutes or more) and provided there are no other clinical concerns. Any concerns regarding the CTG should escalate as previously described. A CTG should be commenced if there is a change in the woman's clinical condition or maternal observations (documented via MEWS) during IOL prior to the establishment of labour. If regular painful uterine activity (≥2 contractions in 10 minutes or more) a CTG must also be commenced to assess fetal well-being. As a routine the FH should be auscultated 4 to 6 hourly, except if the woman is asleep overnight and there are no prior concerns. A CTG should be repeated at a minimum of 12-14 hourly intervals during the IOL process in the absence of clinical scenarios (but not exclusive to) for instance increase in pain, bleeding, meconium stained liquor or reduced fetal movements.

7.5 Pain relief

Explain to women that induced labour may be more painful than spontaneous labour.
Discuss the available pain relief options in different settings with women.
During induction of labour, provide women with the pain relief appropriate for them. This may include use of water, TENS, simple analgesia e.g. paracetamol, codeine.

If pain relief requirements increase, then a review and individualised management plan should be made.

7.6 Location of Induction:-

Most women will be suitable to have their induction commenced on the antenatal ward or induction bay. However, consider induction of labour on the obstetric delivery unit environment and not in a separate induction of labour area (this will depend on local unit capacity) in the following circumstances:

- Previous Caesarean Section if pharmacological methods are used
- Suspected or proven fetal compromise. If there is severe fetal growth restriction with confirmed fetal compromise, induction of labour is not recommended
- Severe pre-eclampsia
- Monochorionic diamniotic twins
- Intrauterine death
- Current antepartum haemorrhage
- Preterm gestation (<37 weeks' gestation)
- Any other clinical indication where increased surveillance is needed

7.7 Outpatient induction

Consider outpatient induction of labour with vaginal dinoprostone preparations or mechanical methods in women who wish to return home, and who have no co-existing medical conditions or obstetric complications including:

- Post-dates, no other risk factors > 40^{+0} weeks to $42+^{0}$ weeks
- Pelvic girdle pain > 38 weeks
- Maternal age less than or equal to 40 years prior to 40^{+0} weeks' gestation

- Large for gestational age
- Gestational diabetes controlled with diet
- The woman needs to be contactable by telephone and have somebody immediately available to drive them to Hospital
- Conduct a full clinical assessment of the woman and baby and ensure safety and support procedures are in place. The woman needs to be able to understand the outpatient induction process and when to return to hospital. Use appropriate interpretation services / leaflets as indicated.

Discuss with the woman the benefits and risks of returning home and respect her decision.
Agree a review plan with the woman before she returns home.
Ask women to contact their midwife, maternity unit or obstetrician:

- when contractions begin or,
- if there are no contractions (in an agreed timeframe, depending on the method used)or,
- if her membranes rupture, or
- if she develops bleeding, or
- if she has any other concerns, such as reduced or altered fetal movements, excessive pain or uterine contractions, side-effects or loss of the pessary.

Uterine hyperstimulation
If uterine hyperstimulation occurs during induction of labour:
• conduct a fetal assessment
• do not administer any more doses of medicines to induce labour and remove any vaginal pessaries or delivery systems if possible
• consider tocolysis

7.8 Unsuccessful induction

If induction is unsuccessful, after 48 hours. discuss this with the woman and provide support. Fully reassess the woman's condition and the pregnancy in general and assess fetal wellbeing using antenatal cardiotocography interpretation.
Discuss and agree an individualised plan considering the woman’s preferences and clinical circumstances.

Inform the consultant obstetrician.
If induction is unsuccessful, the subsequent management options include:

- offering a rest period if clinically appropriate and then re-assessing the woman
- expectant management
- further attempts to induce labour
- caesarean birth

7.9 Cord prolapse

Take the following precautions to avoid the adverse effects of cord prolapse, which may occur if labour is induced:

- before induction, abdominally assess the level and stability of the fetal head in the lower part of the uterus at or near the pelvic brim (see the recommendations on assessment before induction)
- during the preliminary vaginal examination, obstetricians and midwives should palpate for umbilical cord presentation and avoid dislodging the baby's head
- conduct continuous cardiotocography during induction after the membranes have ruptured if the presenting part is not stable and not well-applied to the cervix. In this situation, discuss the risks and benefits of induction of labour with the woman, and if

necessary, consider caesarean birth. If the presenting part stabilises and the cardiotocograph is normal, use intermittent auscultation unless there are clear indications for further cardiotocography.

7.10 Placenta praevia, low-lying placenta or a previous history of antepartum haemorrhage

Check that there is no evidence of a low-lying placenta on previous scans before membrane sweeping and before induction of labour.

7.11 Uterine Rupture

If uterine rupture is suspected during induced labour, conduct an immediate category 1 caesarean birth.

7.12 Women's preference

Women can change their mind during an induction process and would require an obstetric review to discuss the options of proceeding with the process or requesting a caesarean section.

8 Monitoring / Audit

Consider audits:- to include:

- Offer of cervical sweep
- Evidence of discussion about induction of labour
- Induction delays > 12 h to start or > 12h for ARM
- Induction delays > 24 h to start or > 24h for ARM
- Rates of hyperstimulation, use of tocolysis
- Outcomes of induction of labour by gestational age
- Mode of birth
- If induction is unsuccessful, discuss and agree a plan for further management with the woman, including whether she would like further attempts at induction, considering the clinical circumstances and her preferences.
- Request for caesarean section during induction of labour

9 Details of attachments (e.g. list of appendices)

10 Details of other relevant or associated documents (including links)

11 Supporting references & national guidance

1. Induction of labour care in the UK: A cross-sectional survey of maternity units. PLoS One 2024 Feb 28;19(2):e0297857. doi: 10.1371/journal.pone.0297857

2. Inducing labour NICE guideline Published: 4 November 2021 www.nice.org.uk/guidance/ng207

3. Diabetes in pregnancy: management from preconception to the postnatal period. NICE guideline [NG3]Published: 25 February 2015 Last updated: 16 December 2020

4. Twin and triplet pregnancy NICE guideline [NG137]Published: 04 September 2019 Last updated: 09 April 2024

5. Hypertension in pregnancy: diagnosis and management NICE guideline [NG133]Published: 25 June 2019 Last updated: 17 April 2023

6. Saving babies' lives: version 3. A care bundle for reducing perinatal mortality July 2023

7. Intrahepatic cholestasis of pregnancy. Green top guideline No 43. August 2022

8. British National Formulary 18 December 2024

References

- National maternity and perinatal audit clinical report 2019
- North West Regional Guideline for the Detection and Management of Fetal Growth Restriction 2024
- Induction of Labour at Term in Older Mothers (RCOG Scientific Impact Paper No. 34)
- Alfirevic Z, Aflaifel N ,Weeks A. Oral misoprostol for induction of labour. Cochrane Database of Systematic Reviews 2014, Issue 6. Art.No.: CD001338. DOI: 10.1002/14651858.CD001338.pub3

12 Consultation with Stakeholders

Service users' views and preferences have been sought

13 Equality Impact Assessment

Section 1: Equality Impact Assessment (EIA) Form
The EIA process allows the group to identify where a policy or service may have a negative impact on an individual or particular group of people.

Information Category	Detailed Information
Name of the strategy / policy / proposal / service function to be assessed:	Full title and version number
Directorate and service area:	Department/Speciality and Care Group or Corporate Group

Information Category	Detailed Information
Is this a new or existing Policy?	New / Existing – delete as appropriate
Name of individual completing EIA (Should be completed by an individual with a good understanding of the Service/Policy):	Name and Job Title
Contact details:	Number in full, not extension only

Information Category	Detailed Information
1. Policy Aim - Who is the Policy aimed at? (The Policy is the Strategy, Policy, Proposal or Service Change to be assessed)	
2. Policy Objectives	
3. Policy Intended Outcomes	
4. How will you measure each outcome?	
5. Who is intended to benefit from the policy?	
6a. Who did you consult with? (Please select Yes or No for each category)	• Workforce: Choose an item. • Patients/ visitors: Choose an item. • Local groups/ system partners: Choose an item. • External organisations: Choose an item. • Other: Choose an item.
6b. Please list the individuals/groups who have been consulted about this policy.	**Please record specific names of individuals/ groups:**
6c. What was the outcome of the consultation?	
6d. Have you used any of the following to assist your assessment?	**National or local statistics, audits, activity reports, process maps, complaints, staff, or patient surveys:**

7. The Impact
Following consultation with key groups, has a negative impact been identified for any protected characteristic? Please note that a rationale is required for each one.

Where a negative impact is identified without rationale, the key groups will need to be consulted again.

Protected Characteristic	(Yes or No)	Rationale
Age	Choose.	
Sex (male or female)	Choose.	
Gender reassignment (Transgender, non-binary, gender fluid etc.)	Choose.	
Race	Choose.	
Disability (e.g. physical or cognitive impairment, mental health, long term conditions etc.)	Choose.	
Religion or belief	Choose.	
Marriage and civil partnership	Choose.	
Pregnancy and maternity	Choose.	
Sexual orientation (e.g. gay, straight, bisexual, lesbian etc.)	Choose.	

A robust rationale must be in place for all protected characteristics. If a negative impact has been identified, please complete section 2. If no negative impact has been identified and if this is not a major service change, you can end the assessment here.

I am confident that section 2 of this EIA does not need completing as there are no highlighted risks of negative impact occurring because of this policy.

Name of person confirming result of initial impact assessment: Name to be included here.
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