HUTT maternity
Hutt Valley Maternity Care

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Induction of Labour Guidelines

Hutt Maternity Policies provide guidance for the midwives and medical staff working in Hutt Maternity Services. Please discuss policies relevant to your care with your Lead Maternity Carer.

Purpose
This guideline outlines the practice that relates to the procedure of induction of labour.

Scope
All medical and midwifery staff employed by Hutt Valley DHB.
All Hutt Valley DHB Maternity access holders.

Abbreviations used in this document

ARM	artificial rupture of membranes
CTG	cardiotocograph
EFM	electronic fetal monitoring
FSE	fetal scalp electrode
IOL	induction of labour
IUGR	intrauterine growth restriction
LMC	lead maternity carer
LSCS	lower segment caesarean section
SGA	small for gestational age
SROM	spontaneous rupture of membranes

Definitions
Induction of labour:
Induction of labour is an intervention designed to artificially initiate uterine contractions leading to progressive dilatation and effacement of the cervix, and birth of the baby. This includes both women with intact membranes and women with spontaneous rupture of the membranes but who are not in labour (NICE, 2001, p.18). For women with an uncomplicated pregnancy, referral in a timely manner for planned induction by 42 weeks (MOH, 2012). Refer to management of prolonged pregnancy policy for women with uncomplicated pregnancy (MATY 059).

Prolonged pregnancy:
Pregnancy continuing beyond 294 days (42 weeks gestation) (Gülmezoglu, Crowther and Middleton, 2006).

Unsuccessful induction:
When the cervical dilatation unsuccessfully reaches an arbitrary limit (4cm) after the process of induction has commenced and after the use of oxytocin for a pre-determined period of time (12 hours) (CCDHB, 2010).

Induction indications:

Women with uncomplicated pregnancies should be given every opportunity to go into spontaneous labour up until 42 weeks (referral guidelines code 4024).

Labour may be induced for either maternal or fetal indications. Induction of labor is undertaken when continuing the pregnancy is believed to be associated with greater maternal or fetal risk than intervention to deliver the pregnancy, and there is no contraindication to vaginal birth (Wing, 2010, p. 1).

Indications

- Prevention of prolonged pregnancy beyond 42 weeks.
- Pre-term, prolonged rupture of membranes <37 weeks (refer MATY 083)
- Prolonged rupture of membranes at term (refer MATY 055)
- Maternal uterine infection
- Diabetes (refer to MATY 025b)
- Hypertensive disease (refer to MATY 007)
- Advanced maternal age ≥40 years of age.
- Obstetric cholestasis
- Multiple pregnancy (refer to MATY 074)
- Suspected fetal compromise: IUGR/SGA
- Intrauterine fetal death

May be considered for:

- APH of unknown origin
- Previous stillbirth
- IVF pregnancy
- Obesity

Contraindications

- Maternal refusal
- Presence of a classical uterine incision
- History of uterine dehiscence in labour
- Malpresentation
- Cord prolapse
- Active genital herpes
- Placenta praevia
- Invasive carcinoma of the cervix
- A severely compromised fetus

(NICE, 2008; Pairman, Pincombe, Thorogood, Tracy, 2006; Wing, 2010)

The literature surrounding induction of labour for women who have had a previous LSCS is controversial. The use of vaginal prostaglandins have been used with caution and each woman needs to be assessed on an individual basis. Women should be informed of the following risks with induction of labour regarding an increased need for emergency caesarean section and increased risk of uterine rupture (NICE, 2008).

Procedure for induction of labour

Referral

- All proposed inductions of labour to be carried out within Hutt Valley DHB require consultation between the Lead Maternity Carer (LMC) and the Obstetric Specialist on for the decided day of induction (Referral guidelines, consultation) (MOH, 2012).
- Women who require induction of labour for reasons other than post dates must be referred to the secondary care clinic for consultation.

Inductions of labour are a secondary care event. As such, a three way discussion needs to occur between the LMC midwife, the woman and the Obstetric Specialist regarding reason for induction, clinical responsibility of care and provision of midwifery care. The Huttmaternity Induction of labour booking form is to be initiated by whoever books the IOL. The careplan is to be completed by whoever will be providing the midwifery care ie Maternity Assessment Unit (MAU) if care is to be provided by secondary care or the LMC.(MATF 035). Once completed, this form is then filed in the woman's notes.

Booking of the induction

- Complete documentation is required to be in the woman's notes prior to clinical consultation. This includes blood and scan results (confirming the woman's pregnancy dates)
- The induction can be booked once the woman has given informed consent.
- The LMC is responsible for providing the woman with the information to make a decision about induction. In line with the Code of Health and Disability Services Consumers Rights, the woman must be informed of the procedure of induction and the associated potential risks of the procedures involved. This should occur prior to the woman giving her verbal consent to undertake induction.
- When the woman, LMC and consultant agree that induction is to be undertaken, a booking with Hutt Valley DHB maternity unit for IOL is to be made.
- The induction must be recorded in the induction book in Hutt Valley DHB Delivery suite.
- There is a limit of **2 inductions per day**, Monday – Friday. However if clinical need dictates, there is a possibility for a third induction to be commenced. Urgent induction may at times be scheduled for the weekend.
- Booking does not automatically mean induction will take place. There may be occasions where re-prioritising may need to occur. This will be at the discretion of the consultant and the midwife in charge of delivery suite. The woman must be made aware of this possibility at the time of booking the induction.

Process for induction:

- Women with an uncomplicated pregnancy are to be referred in a timely manner for planned induction by 42 weeks (MOH, referral guidelines 2012)
- Women declining induction are offered increased antenatal monitoring: twice-weekly CTG and ultrasound estimation of amniotic fluid index from 41 weeks and daily CTG monitoring and weekly ultrasound from 42 weeks. (NICE, 2008, p. 10)
- The use of prostaglandins is a clinical decision that is based on cervical favourability not membrane status.

- Prostaglandins should be used in preference to oxytocin when induction of labour is undertaken in either nulliparous or multiparous women with intact membranes regardless of cervical favourability (NICE, 2001, p.6).
- Prostaglandins or oxytocin may be used when induction of labour is undertaken in nulliparous or multiparous women with rupture of membranes regardless of cervical status (NICE, 2001, p6). However, prostaglandins are contra-indicated if there is any evidence of chorioamnionitis in the presence of ruptured membranes.

Documentation/Care plan

The induction of labour booking form (MATF035) should include:

- Reason for induction
- The agreed time and date of induction
- The role of care providers during the induction. This decision will be agreed to by the woman, her LMC and the specialist. It will include identification of the practitioner who will carry out the clinical assessments of the woman during the induction and who will administer the prostaglandins.

Options prior to formal medical induction

Acupuncture

From 37-38 weeks, acupuncture used on specific labour preparation points have been found to reduce the need for formal medical induction (Smith and Crowther, 2004; Betts and Lennox, 2006). Women who do not have LMC midwives certified to practice acupuncture could be encouraged to attend the HVDHB acupuncture clinic. An appointment can be made at maternity reception on ext 8164.

Membrane Sweeping

Prior to formal induction women could be offered sweeping of the membranes. 'Membrane sweeping involves the examining finger passing through the cervix to rotate against the wall of the uterus, to separate the chorionic membrane from the decidua' (NICE, 2008, p. 14.).

Discussion should include that membrane sweeping:

- Makes spontaneous labour more likely
- That discomfort and vaginal bleeding are possible from the examination (NICE, 2008)
- There is no increased risk of maternal or neonatal infection (Wing, 2010)

Induction of labour – Procedure

Admission

Women are advised to come to birthing suite at 07:30 on the day of induction.

- Baseline observations: pulse, blood pressure, temperature, respirations. urinalysis
- Abdominal palpation to confirm presentation and descent of the presenting part
- Cannula size 16 preferred inserted and bloods taken for CBC and Group and Hold.
- Prior to prostaglandin induction a normal CTG trace (refer RANZCOG guidelines) **must be** obtained. If CTG normal, prostaglandin induction can proceed based on Bishops score following a vaginal examination.

- It is expected that the LMC or back-up LMC attends the 0800hr maternity team handover, in the birthing suite, on the first day of induction to make a plan for induction. A three-way discussion with the woman, the LMC and the obstetrician on call for the day occurs in the woman's room to ensure any medications prescribed and plans are documented clearly.
- Ongoing assessment of the woman is dependent on the clinical picture so the appropriate decisions regarding care are made with the woman, the midwife and the obstetrician.
- All women at high risk are to be discussed with the anaesthetist on call.

Drugs and Dosages

All drugs administered to the woman must be prescribed on the drug chart.
Drug dosage administered varies according to the woman's bishop score.

Pharmacological methods:

Prostaglandin vaginal gel (PGE2):
The purpose of using prostaglandin gel is to achieve delivery by aiding cervical softening prior to ARM or onset of regular uterine contractions.
The nominated practitioner may administer the prostaglandins after discussion and agreement with the consultant/registrar and only after it has been prescribed on the medication chart.

Note: Do not use prostaglandin gel if uterine activity is present. It is contraindicated in the presence of chorioamnionitis, severe maternal asthma and glaucoma, fetal distress and if herbal preparations have been administered to accelerate labour.

Dosage:
The dose of prostaglandin to be administered depends on the vaginal assessment/Bishops Score and the woman's parity. This table is a guide, if in doubt use a lower dose.

Recommended regimen for prostaglandin dosages (RCOG)

	Bishops Score	**Prostin Gel Dose Or Action**	**Repeat**
Primigravida	6 or less 7 to 8 > 8	2mgs 1mg ARM or 1mg	Review 6 hours later
Multigravida	7 or less > 8	1mg ARM or 1mg	Review 6 hours later

Insertion of prostaglandin gel

- Use directly from the fridge.
- Place complete dose in the posterior fornix as high as possible but not intracervical.

- Continue CTG for 1 hour post insertion of prostaglandin gel. After completion of monitoring, the woman can mobilise but must return to delivery suite if SROM or if any uterine activity.
- If repeated administration is needed, allow at least 6 hours between doses.
- Unless uterine activity starts spontaneously, or SRM occurs, the condition of the cervix should be reassessed after 6 hours. The woman must not leave hospital complex for a minimum period of six hours post-prostin administration.

No more than 4 mg prostin gel is to be used in a 24 hour period.

<u>Ongoing management</u>

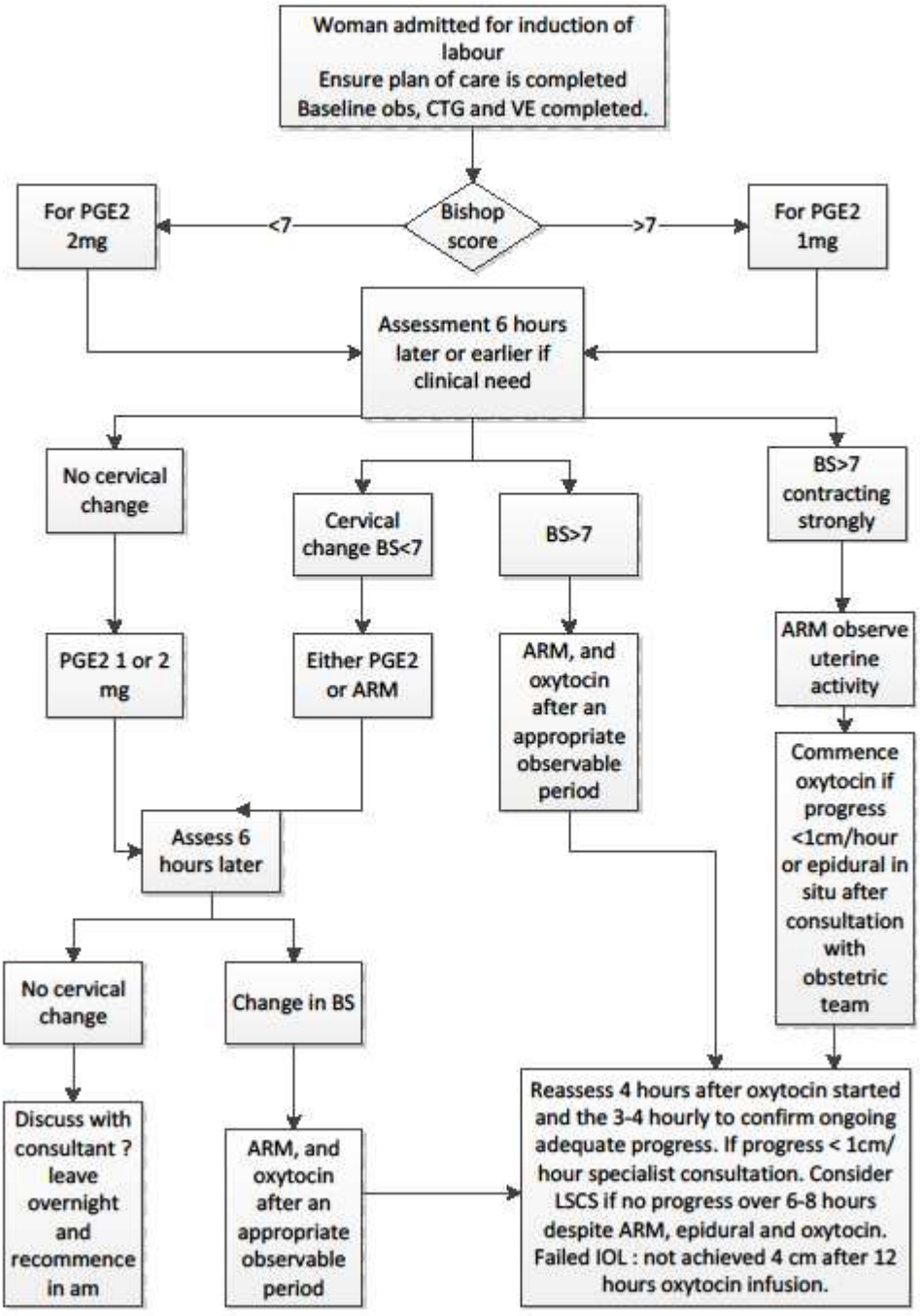
- Minimum 4 hourly temperature, pulse and blood pressure recordings
- Subsequent CTG tracings are to be done at 4 hours post prostin and at 10 hours after the last prostaglandin administration or when contractions commence.
- Uterine activity and PV loss is to be documented
- Unless there is concern regarding fetal or maternal wellbeing, it is not necessary to wake women at night for observations.
- For healthy women with uncomplicated pregnancies, intermittent monitoring can be used once a normal trace is obtained.
- If there are any abnormalities detected on intermittent auscultation then an immediate change to continuous electronic fetal monitoring should be made.
- Practitioners need to be especially vigilant about the noting and recording the frequency of contractions for women who are being induced. Women must remain in hospital during the induction process. In the event of a failed induction do not discharge until 24 hours after last prostin administration.

In the presence of uterine activity, observation of fetal heart, pulse, BP and frequency and duration of contractions **must be documented** in the clinical notes and on a partogram.

If surgical dilation is not possible 24 hours after prostaglandin or after maximum doses of prostaglandin, the woman MUST BE reviewed by an obstetrician.

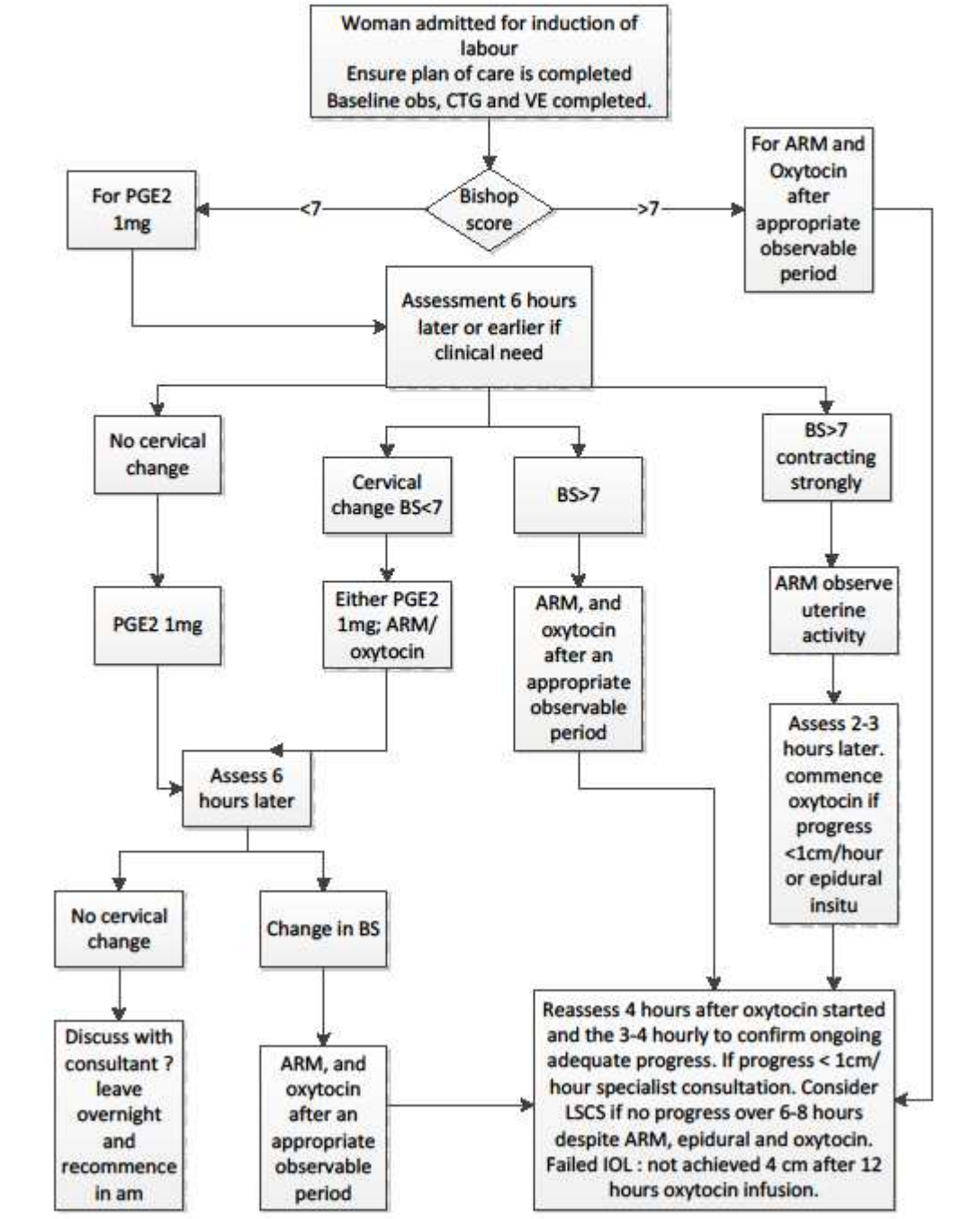
Prostaglandin E2 gel induction of labour flowchart primiparous women

Prostin dose is to be indivuallised please see notes on maximum dose per 24 hours. Acknowledgement is made to the CCDHB induction of labour algorithm for nulliparous women (Hawley, 2005).



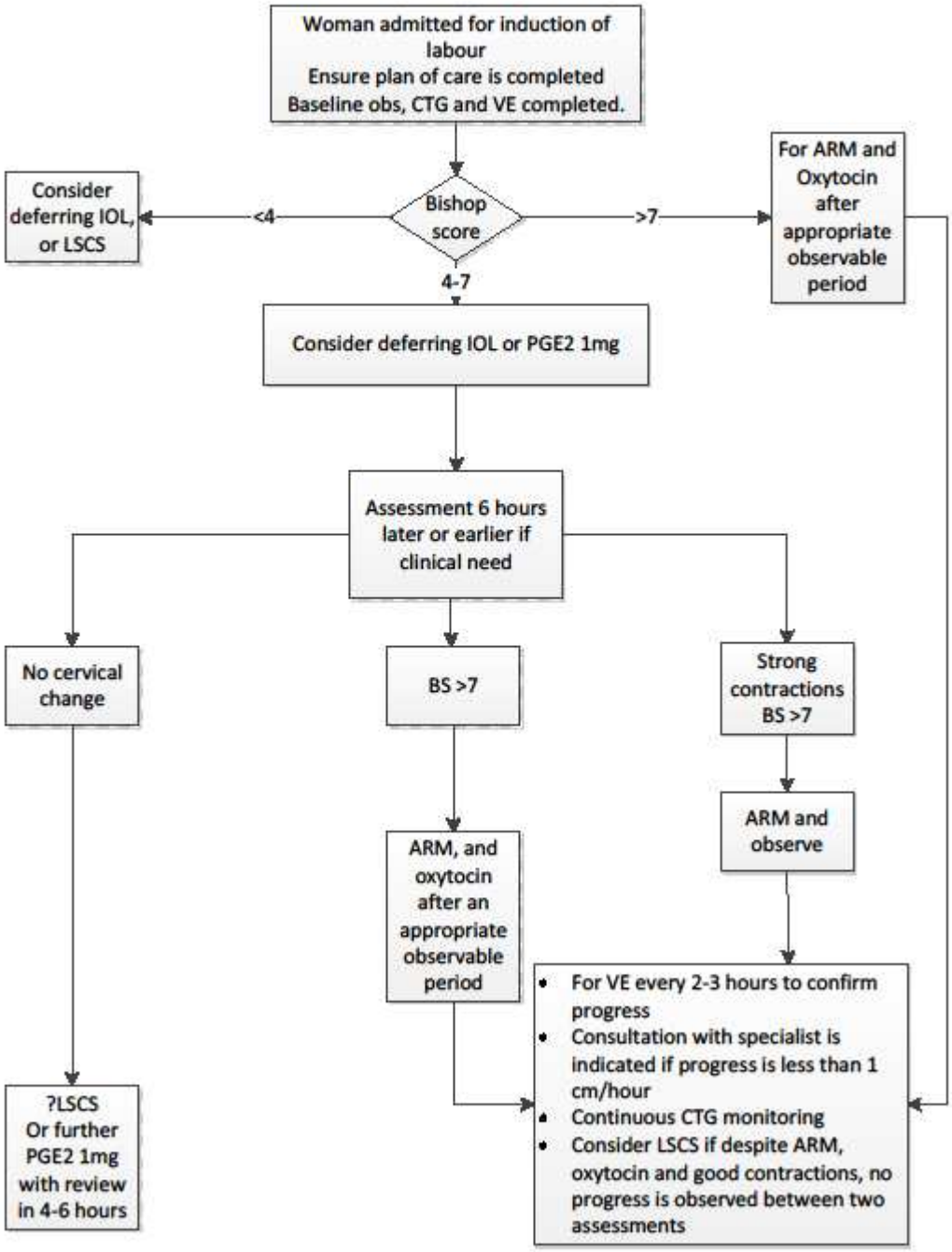
Prostaglandin E2 gel induction of labour flowchart multiparous women

Acknowledgement is made to the CCDHB induction of labour algorithm for multiparous women (Hawley, 2005).



Prostaglandin E2 gel induction of labour flowchart multiparous women with previous LSCS (at discretion of the consultant on-call for the day)

Acknowledgement is made to the CCDHB induction of labour algorithm for multiparous women (Hawley, 2005).



Mechanical Methods: Balloon catheters

Mechanical methods were developed to promote cervical ripening and the onset of labour by stretching the cervix and/or stimulating the release of prostaglandins. Balloon catheters or Foley's catheter (size 16 – 20 with tip removed with a 30cc – 50cc bulb) can be inserted. This is usually possible even if the cervix is not dilated since the pregnant cervix is soft and distensible and rarely tightly closed (Wing, 2010). Gentle traction is applied until the catheter is taut. This is then taped to the woman's thigh. She is then encouraged to mobilise thus further applying gentle traction. The use of balloon catheters, as compared with the use of prostaglandins, was associated with fewer episodes of excessive uterine contractions (Boulvain et al, 2009). If the balloon catheter (Foley's) is not expelled by 24 hours, it is to be removed and for an obstetric review.

Considerations for use

For women who have had a previous LSCS, induction of labour using a balloon catheter was not associated with an increased risk of uterine rupture (Bujold et al, 2004. cited Wing, 2010)

Artificial rupture of the membranes

Rupture of the fetal membranes causes prostaglandin release.
This can only be performed in women with partially dilated and effaced cervix.
Prior to ARM it is important to ensure that

- The presentation is cephalic and the baby's head is engaged in the pelvis.
- The Bishop score >6
- A CTG is performed pre and post procedure as part of the clinical assessment.

If the woman has an ARM it is important to observe her response to this therapy. The LMC in consultation with the obstetric team may consider commencing oxytocin if there is no effective uterine activity after an observed period of time.

If the presenting part is not engaged in the pelvis, a controlled ARM may be performed by and at the discretion of the obstetric consultant. There must be facilities for immediate caesarean section standing by, should there be a cord prolapse.

Oxytocin Regime for Induction or Augmentation of Labour

Oxytocin is used to continue the process of induction of labour or to augment labour where there is an ineffective contraction pattern. The dose of Oxytocin is most effective when it is titrated so that 3-4 effective contractions occur per 10 minutes (giving a resting time of 60-90 seconds between contractions)..
Oxytocin may be commenced within two hours of an ARM if there are no effective uterine contractions.

Caution to be taken when there are clinical factors present that predispose the mother and baby to risk. These include:

- Previous LSCS
- Suspected fetal compromise i.e. abnormal fetal heart trace

Continuous electronic fetal monitoring is required when a woman has a Oxytocin infusion (Baker, Beaves, Trickey and Wallace, 2009).
Refer to Oxytocin infusion for induction and augmentation of labour (MATY019).

Uterine Hypercontractility (with or without FHR changes)

Uterine hypercontractility without FHR changes includes:

- Tonic contractions that last for longer than 2 minutes
- Excessive uterine activity (5 or more contractions in 10 minutes over a 30 minute period)
- Lack of uterine rest between contractions (60 – 90 seconds)

When trying to induce labour with an oxytocin infusion, a contraction rate of 5 or more for a **brief period** may be required in order to achieve or establish an effective pattern of labour. Management will be dictated by FHR response and changes Baker, Beaves, Trickey, Wallace (2014)

Management of hypertonus

1—5% of women have hypertonic uterus with or without fetal heart rate changes. If foetal distress occurs as a result of a hypertonic uterus:

- call for help
- remove prostaglandin (if able) or stop oxytocic infusion
- position the woman in the left lateral position
- admin oxygen via the Hudson mask at 8 l/min ensure IV access
- maternal pulse, blood pressure, respirations
- continuous CTG
- Consider administration of nifedipine, nitrolingual spray or terbutaline. (MATY 071)

Documentation

- All drugs administered and fluids prescribed must be recorded on the woman's drug chart.
- If Oxytocin augmentation is prescribed, accurate fluid balance is essential.
- A full complete record of the induction and labour cares should be recorded in the body of the woman's notes.
- A partogram should be utilised once the woman establishes in labour or when Oxytocin is commenced.
- When electronic fetal monitoring is in place, events (e.g. Oxytocin drug dose increase, epidural top-up etc) should be recorded on the CTG as well as in the clinical notes.

Associated policies and guidelines

Acupuncture policy (MATY002)
Electronic fetal monitoring policy (MATY022)
Prolonged pregnancy in low risk women policy (MATY 059)
Oxytocin infusion for induction and augmentation of labour (MATY019)

References

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Informed Consent

The right of a consumer to make an informed choice and give informed consent, including the right to refuse medical treatment, is enshrined in law and in the Code of Health and Disability Consumers' Rights in New Zealand. This means that a woman can choose to decline treatment, referral to another practitioner, or transfer of clinical responsibility. If this occurs follow the process map on page 18 of the Referral Guidelines (Ministry of Health, 2012).

Appendix 1
Modified Bishops Score (NICE, 2008)

Clinical Feature	0	1	2	3
Cervix dilation (cm)	<1	1-2	3-4	>4
Length of cervix (cm)	>4	2-4	1-2	<1
Consistency of cervix	Firm	Medium	Soft	-
Position of cervix	Posterior	Mid	Anterior	1-2cm below spines
Station of head (relative to ischial spines)	-3	-2	-1/ at spines	

Appendix 2

Indications for overnight priming:

1. **Postdates IOL 40-42 weeks**
2. **Gestational hypertension –well controlled**
3. **Gestational diabetes- diet controlled**
4. **Advanced maternal age 40-42 (no other clinical risk factors)**

Priming – Procedure

Admission

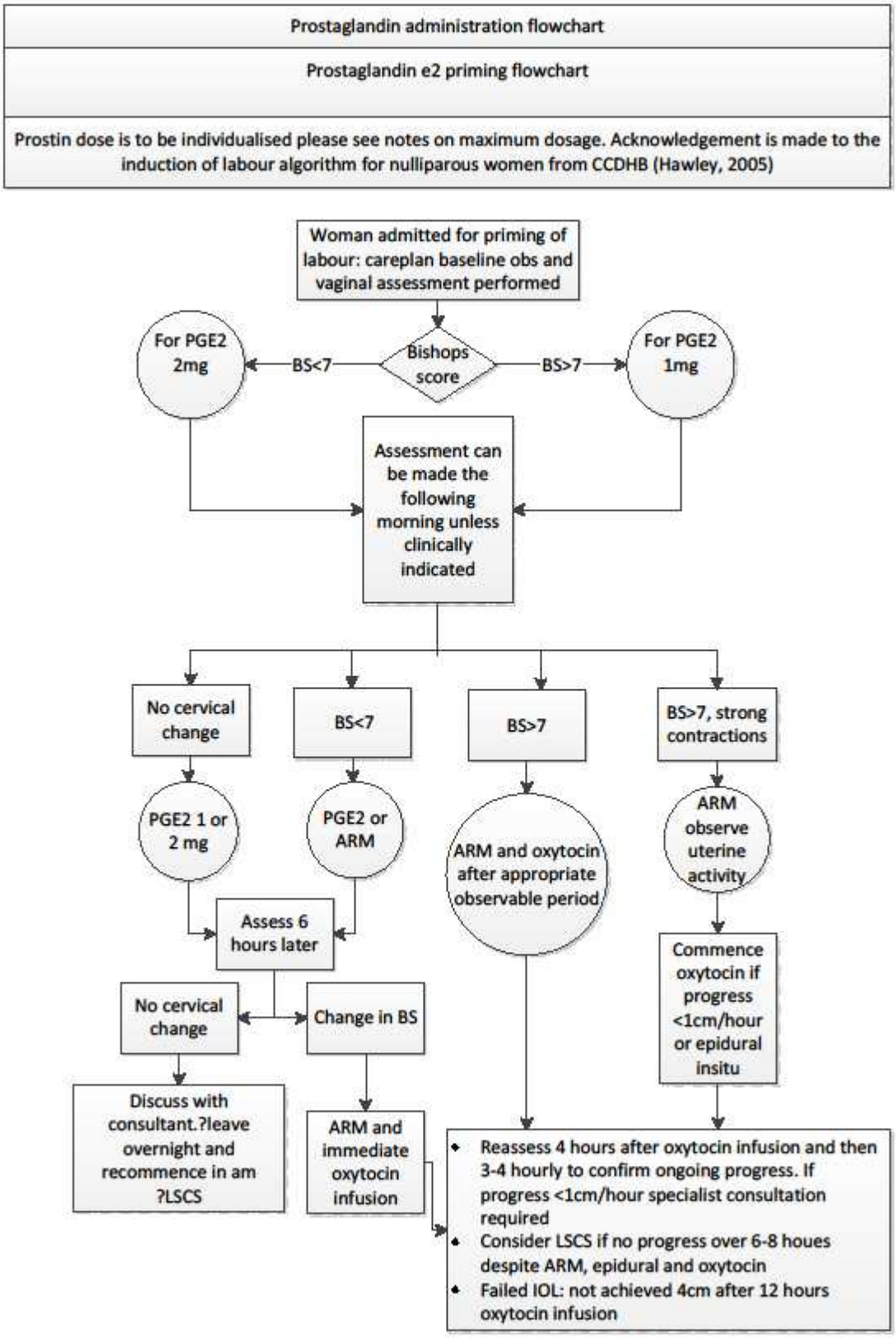
Women are advised to come to birthing suite at 1800 the evening before induction of labour.

- Baseline observations: Maternal pulse, blood pressure, temperature, urinalysis
- Abdominal palpation to confirm presentation and descent of the presenting part
- Prior to prostaglandin priming a reassuring CTG trace (refer RANZCOG guidelines) **must be** obtained. If CTG reassuring, prostaglandin priming can proceed based on Bishops score following a vaginal examination.
- Post Prostin CTG for one hour.
- Should the woman be very favourable i.e. BS>6, then no further intervention other than stretch and sweep needs to be done until the following day. Home to await labour and return in the morning.
- Ongoing assessment of the woman is dependent on how quickly she reacts to the prostin or if there is any fetal concern. Adjust care accordingly.
- Transfer to postnatal ward for overnight rest (Room 17)

Drugs and Dosages

Prostin must be prescribed on the drug chart by Obstetric RMO.
Drug dosage administered varies according to the woman's bishop score.

Appendix 3 – Prostaglandin administration flowchart



Appendix 4 – Induction of Labour Booking Form (MATF084)

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HUTT VALLEY DHB

Induction of Labour Booking Form (MATF084)

Place patient label	**Name**
	NHI
	Woman's contact phone number

LMC			
G	**P**	**EDD**	
Dates established by:	☐ LMP	☐ Scan at _____ weeks	
IOL recommended by:			
IOL booked by: **LMC/secondary care (circle)**	Planned date:	☐ birthing suite (induction book space)	
Gestation at planned IOL	Weeks	Days	
Discussed by LMC/secondary care with:	☐ Woman ☐ LMC	☐ Named consultant on-call:_____	
Indication for IOL:	☐ Prolonged pregnancy[1]	☐ Gestational / essential hypertension	
☐ Pre-eclampsia	☐ Growth restriction (IUGR)	☐ Small for gestational age (SGA)	
Diabetes: ☐ Type 1	☐ Type 2	☐ GDM	
☐ Insulin	☐ Metformin	☐ Diet-controlled	
Twins:	☐ DCDA ☐ MCDA	☐ Growth discrepancy> 25% (smaller <75% or larger)	
Prolonged pre-labour ROM:	Date of ROM:	Time:	
GBS status:	☐ Low-risk	☐ Negative	☐ Positive
Other reason for IOL:			
Background medical issues (med, surg, psych, anaesth, allergies): **Booking BMI: _____** …… **Present Weight: _____**			
☐ Appropriate for prostin/foley catheter priming			
A clear written management plan (template on reverse) for the IOL and the wishes of the woman is required			
LMC/secondary care name/signature		**Date**	**time**

Midwifery Induction of Labour Management Plan

Lead Maternity Caregiver (LMC):		Contact Details:	
LMC –Backup:		Contact Details:	
	Action	**Responsibility (circle)**	**Notes**
1	Discussion and liaison with CMM / ACMM and Obstetric Team of Day	LMC	
2	**Initial Assessment:** • Maternal observations, temp, pulse, BP, urinalysis, contractions, PV loss • Abdominal palpation - lie, presentation, position, descent • FBC, Group and Hold • VE for Bishops Score • Pre-Prostin CTG	LMC	
3	Prostin application Priming dose(if applicable): 1st dose 2nd dose	 LMC LMC LMC/ hospital Midwife	
4	Post-Prostin CTG 1st dose 2nd dose	 LMC LMC/ hospital Midwife	
5	On-going assessments including VE	LMC/ hospital Midwife	
6	Working with pain Circle where appropriate (Hospital Midwife and LMC to determine what measures can be initiated by the hospital midwife prior to calling the LMC) • non-pharmaceutical measures • TENS • Water immersion/baths/shower • paracetamol		
7	LMC wishes to be notified : • After 2nd Prostin • Before or after VEs post intial assessment • SRM • Other (Please state)		
8	**Hospital Midwife will call LMC when:** • Any concerns for the woman e.g. maternal pain worsens • Any concerns for the baby • Woman requires continuous support e.g. suspicious CTG • Woman requests LMC attendance		

[1] If the pregnancy remains low risk then a recommendation should be made to commence the IOL as close to 42 weeks as possible