Type: Policy

Name: Induction of Labour

Purpose

This document provides clear policy, roles and responsibilities based on recommended best practice when caring for women who require an induction of labour.

Scope

- Senior Medical Officers (SMO/Consultants), Registrars and Senior House Officers (SHO)
- Charge Midwife Managers (CMM) and Associate Charge Midwife Managers (ACMM)
- Facility (Core) Midwifery Staff
- Access holders (Lead Maternity Carer – LMC)
- Students

Definitions

- **Induction of labour (IOL)**: A medical and/or surgical intervention intended to stimulate the onset of regular uterine contractions, progressive cervical changes and descent of the presenting part
- **Term pregnancy:** equal to 40+0 weeks
- **Post-dates pregnancy:** equal to or greater than 41 weeks
- **Uncomplicated post-dates pregnancy:** meeting all the following criteria -
    - Aged < 40
    - BMI < 35 without excessive weight gain in pregnancy
    - No PV bleeding
    - Normal customized growth, with USS done the week prior to or up until 41 weeks, showing normal growth interval and growth proportions
    - Normal liquor
    - No medical conditions.

Background information

An IOL is undertaken when it is judged necessary to bring forward a woman's delivery date to optimise fetal and/or maternal outcomes and when a Caesarean section is not clinically indicated.

Risks of IOL

The methods of IOL are varied and success depends on appropriate assessment and treatment. The four major risks of IOL are:

- Failed induction (failure to achieve cervical dilation of 4cm)
- Uterine hyperstimulation
- Disruption of a pre-existing uterine scar
- Negative impact on breastfeeding

Separate clinical algorithms have been developed to guide clinicians in the amount and timing of interventions that will optimise fetal and maternal outcomes for nulliparous women, multiparous women and multiparous women with a uterine scar. See:

- IOL algorithm - nulliparous (appendix 2)
- IOL algorithm - multiparous woman - no scar (appendix 3)
- IOL algorithm - multiparous woman with previous LUCS scar (appendix 4)

Breastfeeding and IOL

- The use of prostaglandins and oxytocin for induction of labour [1,2] have been associated with increased formula use. Intravenous oxytocin is associated with fewer infantile feeding cues [3] and dampened primitive neonatal feeding reflexes[4]
- Antenatal milk expression (AME)[5] prior to induction of labour (from 36 weeks), and during the induction process, may be beneficial to avoiding breastfeeding difficulties, and should be encouraged where possible to counteract some of the negative implications of a woman needing IOL
- Women with low risk pregnancies may be encouraged to express:
    - An antenatal expression pack, information and education are provided at clinic appointment when IOL booked
    - With the initiation of IOL, if the woman consents
- Where there is fetal compromise, such as severe growth restriction or sub-optimal CTG, AME should be discussed with the SMO. Expressing may be acceptable whilst on the CTG

Roles and Responsibilities

- For IOLs that require SMO approval, the SMO on call decides whether or not an IOL is booked and subsequently takes place. Booking forms are authorised by an SMO or senior registrar
- The decision to book an IOL for women considered to be having an uncomplicated post-dates pregnancy is made by a midwife in consultation with the woman. For IOLs that require SMO approval; LMCs are required to liaise with the SMO on call to book an IOL. In business hours (0830-1700) LMCs should contact the SMO who will be on call on the proposed day of induction, if unable to be contacted then discuss with the SMO currently on call
- LMCs must make a timely referral for an antenatal clinic consult when criteria for referral exist at booking or arise during the pregnancy
- LMCs discuss women who require immediate assessment for IOL with the acute assessment unit registrar or the on call registrar in delivery suite
- All IOLs are booked with delivery suite. ACMMs are consulted about capacity issues and liaise with the SMO or the midwife who is booking the IOLs
- As per referral guidelines, for IOLs that require SMO approval, a three way discussion between the woman, the LMC and an SMO are required for IOL decisions. Women are given access to written and verbal information
- For an uncomplicated post-dates pregnancy, the LMC, the ACMM and the woman have a three way discussion to decide whether the IOL is booked. The woman is given full written and verbal information. Interpreting services are provided if English is not a woman's first language

- The SMO on call has overall knowledge of and responsibility for all IOLs taking place in the facility. All planned and current IOLs need to be discussed at handover
- IOL take place only at Wellington Regional Hospital
- Midwifery care of women during IOL by core midwives is negotiated at the time of booking. Responsibility for midwifery care by core and LMC midwives is documented on the booking and management forms, then reviewed during the process as necessary
- Other roles and responsibilities are incorporated in the detail of this document.

INDICATIONS FOR INDUCTION OF LABOUR

Post-dates pregnancy

- Current evidence favors arranging an IOL after 41 weeks gestation due to a reduction in perinatal mortality of approximately one perinatal death per 500 inductions with no associated increase in the Caesarean section rate.[6] However, increased fetal surveillance beyond 41 weeks may also be an acceptable approach following appropriate risk selection and discussion between the woman, her LMC (responsible core midwife) and an SMO
- Women with uncomplicated pregnancies should be offered an IOL between 41+0 and 42+0 weeks gestation to avoid the risks of prolonged pregnancy. The exact timing should take into account the woman's preferences and local circumstances[7]
- For women aged 35 years and over, the perinatal mortality at 40 weeks is equivalent to that of a younger woman at 42 weeks. This is a continuum as age increases[8]
- Consideration of IOL should be made for women aged ≥40 years and over with a gestation of 40 weeks.

Maternal Indications
These may include such conditions as diabetes or hypertensive disorders of pregnancy. Please see;
OB AL–04 Gestational diabetes, antenatal fetal surveillance, delivery and postnatal care

OB AL–08 Pre-existing diabetes in pregnancy (Type 1 or Type 2) : antenatal fetal surveillance, delivery and postnatal care

Fetal Indications
These may include a drop-off in growth or reduced fetal movements

BOOKING AN INDUCTION OF LABOUR

- Assessment prior to booking an induction may take place in LMC rooms, the acute assessment unit, Pod D assessment area, delivery suite or at an arranged antenatal clinic appointment depending on urgency
- To book an IOL there must be a discussion regarding the indication for, timing and method of induction between LMC, SMO, or the midwife responsible for booking uncomplicated post-dates pregnancy IOL, along with the informed consent of the woman. A plan must be documented and LMCs can do this on the IOL Booking and

Management form. This should be faxed to delivery suite the day prior to the IOL date or handed to the ACMM when the woman is admitted

- Women are informed verbally and given access to the IOL Patient Information Brochure. This includes the reasons for having an IOL, alongside the methods and the risks of having an IOL.
- Cervical assessment when considering an IOL allows planning to take into account the ripeness of the cervix. The Bishop score Cervical Assessment Tool (appendix 1) must be used and the result recorded on the Induction of Labour Booking & Management Form
- LMCs record the Bishop score taken the day prior to the IOL date on the Induction of Labour Management Form
- A formal ultrasound scan (USS) is recommended the week prior to or up until the 41 week assessment. This scan should include measurement of fetal growth, liquor volume and Dopplers. An IOL must be promptly arranged if there is any evidence of fetal growth restriction, reduced liquor (≤2cm) or reduced fetal activity
- Women need to be informed by the LMC that if GBS status is not known, a risk based assessment will be done as per GBS secondary care obstetric guideline.
- A discussion of:
    - 1. The implications of IOL on breastfeeding and
    - 2. Antenatal milk expression is recommended.

Booking an IOL for a woman with a low-risk uncomplicated post-dates pregnancy:

- To increase the likelihood of spontaneous labour and reduce the IOL rate, women with an uncomplicated pregnancy should be offered cervical stretch and membrane sweep from term. To avoid one formal induction eight women will need to have sweeps performed (number needed to treat = 8)[7] One sweep may be adequate to give this benefit but if spontaneous labour does not occur repeat sweeps may be offered
- Routine antenatal care (ie: weekly visits) is **not** a safe option after 41 weeks. Options for on-going care must be discussed with the woman around 40+3 and up to 41+0 weeks
- Referral Guidelines require obstetric specialist consultation on the on-going management in pregnancies continuing beyond 41 weeks[10]
- Where prolonged pregnancy is the only indication for induction the IOL should occur after 41+3 and up to 42+0 weeks
- A formal USS is recommended just prior to 41 weeks
- Women have an increased risk of stillbirth with increasing age (i.e. over 35 years) and all risk factors contributing to the woman's individualised risk profile need to be considered in planning care. For women aged 40 and over increased monitoring and consideration of induction at 40 weeks should be discussed and considered
- Women who decline IOL should be offered consultation with the obstetric team, twice weekly scans for fetal growth, liquor and Dopplers and at least twice weekly CTGs. Consultation with an obstetric specialist must occur on the same day if the CTG is non-reassuring, the deepest liquor pocket is ≤ 2.0cm or there are reduced fetal movements

- After 41 weeks, recommended best practice is that assessments should be made of fetal and maternal well-being and that CTG monitoring should be performed 2-3 times weekly. The efficacy of such monitoring in preventing fetal demise is unclear
- Where the expected date of delivery is uncertain because of late booking or late/no USS, recommended best practice is increased fetal monitoring from the best EDD estimate. An expectant approach is favoured. Consultation with an obstetric specialist is recommended[10]
- A woman with a post-dates pregnancy should have an individualised growth chart, be monitoring fetal movements and reporting to her LMC any reduction in movements.

Procedure for booking:

- An IOL may only be booked seven days in advance
- The number of IOLs performed each day is restricted to a level that can be safely supported by facility staff. There are three elective IOL slots available each day. If the number of IOLs requested on any one day exceeds facility capacity, the SMO on call and delivery suite ACMM review the clinical indications for each woman and prioritise according to level of clinical need.
- LMCs advise women at the time of booking that their IOL might be changed prior to, or on the day of induction

The method of booking depends on the reason for induction:

1. Uncomplicated post-dates women **telephone booking** (see below)
2. Women with known maternal or fetal reasons for IOL but **not** requiring IOL within the next seven days require **referral for planned clinic appointment** (see below)
3. A change in condition requiring immediate assessment and/or possible IOL in the next few days - **refer to acute assessment unit or delivery suite as advised by the on call registrar or SMO**

1. Telephone consultation/booking:

- For uncomplicated post-dates woman
- The woman has been given written and verbal IOL information by the LMC midwife
- The woman agrees to a telephone consultation between her LMC midwife and the ACMM responsible for booking uncomplicated post-dates IOLs
- **During business hours (Monday – Friday 0830-1700) the LMC calls the ACMM for the proposed date of the IOL.** A USS has been performed within 3 days of the telephone consultation and reports fetal growth, liquor volume and biophysical profile
- Growth should be plotted on a customised growth chart
- The Induction of Labour Booking & Management Form is completed, and with all results attached is faxed (04 8060 847) to delivery suite
- The ACMM is responsible for determining whether an IOL is clinically indicated and suggests a timeframe
- The LMC ensures that the plan is agreed to by the woman and documents this agreement on the IOL Booking and Management form

- When the LMC has the ACMM's agreement to an IOL and a time and date, discussion of the respective roles during the IOL process may take place and be documented on the IOL Booking and Management form
- The completed IOL Booking and Management form is placed in the woman's medical records by the ACMM or by the Delivery Suite Administrator. The IOL date is recorded in the delivery suite diary by the ACMM alongside the woman's name, DOB and NHI
- Up to the day prior to the IOL the LMC completes the IOL Booking and Management Form, with any updated results attached and faxes these to delivery suite (04 8060 847).

2. Planned clinic appointment for women with maternal or fetal indicators for IOL

- A timely referral to Women's Clinics must be made by the LMC for women with known conditions or circumstances more than one week before the proposed induction date. Examples include advanced maternal age, borderline fetal growth, psychosocial reasons
- The decision to induce and the timing, must involve a three-way discussion between the woman, SMO (or delegated obstetric team member) and LMC and will take into account all resource issues impacting on the woman, the LMC and the facility[10]
- Calling the delivery suite ACMM and booking the induction may be a medical or an LMC responsibility – this is agreed during discussion of the plan for induction
- The agreed plan is documented in the woman's medical records if readily available. If not, the agreed plan is documented in the IOL Booking and Management form which is faxed to delivery suite.
- Women under the care of the Community Midwifery Team are booked via the same process as LMC midwives which includes completing an IOL Booking and Management form the day prior to the IOL and filing this in the woman's medical records.
- When a woman requires secondary and tertiary care, the SMO or a delegated team member making the decision to induce must involve the woman and inform the woman's LMC of the plan.

3. Acute assessment unit or delivery suite review where there are urgent maternal or fetal indications for induction

- Conditions requiring same day assessment (for example pain, decreased fetal movements and unfavourable USS findings), must be referred to the acute assessment unit or to delivery suite. Obstetric assessment and management options must be discussed with the woman and her LMC
- A telephone call to the registrar on call or SMO is made. Referral information is documented on a booking form and faxed to delivery suite (04 8060 847) or acute assessment (04 8060 739)
- The medical team will liaise with delivery suite if an urgent assessment or induction is required
- A plan is documented and recorded in the woman's medical records by the medical officer assessing or reviewing the woman.

INDUCTION OF LABOUR TECHNIQUES

Induction of labour may be performed using a combination of two medications and/or two procedures. The method(s) used will depend on clinical findings, the Bishop score (appendix 1) and the overall context.

- Prostaglandins
- Transcervical balloon catheter
- Amniotomy
- Oxytocin administration

1. Prostaglandins

- Prostaglandins cause cervical ripening, increased myometrial contractility and are used when the cervix is unfavourable for labour
- Prostaglandins are used to greatest advantage pre labour and prior to amniotomy
- Cervical assessment via the Bishop score is required before prescription and use
- **Correct assessment and documenting of the Bishop score is a critical step.** If the cervix is unable to be reached and no Bishop score assessed no prostaglandin must be given
- A Bishop score of < 7 is regarded as unfavourable.
- Cervical priming, a dose of 1mg to 2mg of PGE_2, the night before the planned IOL helps to increase the chance of a favourable cervix the following day
- The recommended regimen for the IOL is one dose of PGE_2 followed by a second dose 6 hours later if labour is not established (maximum 2 doses within a 24 hour period)
- Prostaglandins **must** be medically prescribed
- **Procedure for insertion of PGE_2, including post procedure monitoring, is described in Appendix 6**
- **Caution** is required if there is uterine activity present, there is a predisposition to uterine rupture (grande multipara, uterine scar) and to precipitate the onset of labour
- **Contraindications to PGE_2: Absolute** (severe asthma, glaucoma, fetal distress, documented sensitivity to prostaglandins or components) or **Relative** (ruptured membranes)
- The decision to use a balloon catheter following prostaglandins must be made by an SMO, taking into account that at least 6 hours must have lapsed since last dose of prostaglandin was given, as well as individual risks and benefits

Best practice note - Simultaneous use of prostaglandins and oxytocin is **not** recommended

2. Transcervical balloon catheter

- This is a non-pharmacological alternative where the use of prostaglandins is contraindicated or less than optimal and the Bishop's score is <7[10]. For example, women with previous Caesarean section or a small growth restricted baby

- The use of a transcervical balloon catheter has been shown to be an efficient, safe, cost effective, reversible method of induction with similar Caesarean section rates to prostaglandins, and a lower risk of uterine hyperstimulation and infection[11,12,13]
- One randomised controlled trial found that the use of a single balloon catheter for cervical ripening was associated with significantly less maternal discomfort than either a double balloon catheter or prostaglandins[14]
- **Procedure for insertion of a transcervical balloon catheter, including post procedure monitoring, is described in Appendix 5**
- A balloon catheter may be inserted at any time, however, the optimal time is early morning. This allows the balloon to gently dilate the cervix with a view to artificial rupture of membranes the following morning.

Contraindications to using a transcervical balloon catheter

- Low lying placenta
- Placenta praevia
- HIV infection
- Active herpes lesions
- Vasa praevia
- Malpresentation
- Maternal refusal
- Ruptured membranes
- Signs of fetal compromise on CTG
- Any contraindication to vaginal birth

Where a balloon catheter fails to achieve a Bishop score > 7 or the membranes are unable to be ruptured, the SMO may consider one of the following options depending on the individual risks and benefits:

- Insertion of prostaglandins (as above)
- Reinsertion of another balloon catheter (after 24 hours)
- Caesarean section.

3. Amniotomy

- Amniotomy or artificial rupture of the membranes (ARM) causes prostaglandin release
- Amniotomy, alone or in combination with oxytocin, should not be used as a primary method of induction
- **ARM should be avoided after 1400 hours to avoid oxytocin use overnight**
- Best timed after the latent phase has begun - ideally when there is a Bishop score > 7 or cervical dilation > 2cm
- Clinical examination should ensure that the presentation is cephalic and engaged
- USS is checked to exclude placenta praevia
- A CTG must be performed prior to and after the ARM
- Using a clean technique an amnihook is used to rupture the forewaters
- **Amniotomy must be used cautiously if the presenting part is high.** A "controlled ARM" may be performed by an experienced clinician at a time when there is immediate access to the operating theatre in the event of cord prolapse.

4. Oxytocin infusion

- Oxytocin causes uterine contractions and has an anti-diuretic effect
- Oxytocin infusion is most effective when commenced promptly following ARM
- The dose is titrated as per Oxytocin Infusion
- The SMO must identify any variation of the oxytocin titration protocol
- In multiparous women the maximum dose must be established with the SMO and documented
- **Caution** is required in the presence of uterine scar, fetal compromise, high parity, previous PPH and multiple pregnancy.
- **Caution**: the use of intravenous oxytocin can impact a baby's feeding behaviours [15] and is associated with increased formula feeding. Antenatal milk expression is encouraged.

Oxytocin is contraindicated when there is:

- Fetal compromise/significantly abnormal CTG indicating a need for immediate delivery
- Diagnosed obstructed labour
- Fluid overload due to the risk of congestive heart failure
- Documented allergy to oxytocin – this is a relative contraindication.

Simultaneous use of prostaglandins or oxytocin is **not** recommended

The Oxytocin Infusion protocol fully outlines the management of this method of induction of labour

RECOGNISED IOL COMPLICATIONS

- Uterine hyperstimulation
- Tachysystole
- Hypertonus

Abnormal and excessive uterine contractions can occur with the use of prostaglandin compounds or oxytocin. While there are no uniform definition for such terms as uterine hyperstimulation, tachysystole, and hypertonus the following are offered:

- **Uterine hyperstimulation without fetal heart rate changes** is used to describe uterine tachysystole (> 5 contractions in 10 minutes for at least 30 minutes) with a reassuring fetal CTG
- **Uterine hyperstimulation with fetal heart rate changes** is used to denote uterine tachysystole (> 5 contractions in 10 minutes for at least 30 minutes) with fetal heart rate changes such as persistent decelerations, tachycardia, bradycardia, or decreased short term variability
- **Uterine hypertonus** - a contraction lasting at least 2 minutes with a normal fetal heart rate.

The various PGE_2 preparations have up to a 5% rate of uterine hyperstimulation / tachysystole, which is usually well tolerated and not associated with adverse outcomes. The reported risk of hyperstimulation/tachysystole with oxytocin varies widely. Hyperstimulation/tachysystole occurs more frequently when higher doses of oxytocin and PGE_2 are used or there is a more favourable cervix.

Increased uterine activity is associated with a significantly higher incidence of umbilical artery lactate of 5.7 mmol or more, lower fetal oxygen saturation, and more non-reassuring fetal heart rate patterns. Rarely, hyperstimulation/tachysystole may cause uterine rupture. This is more common in multigravid women than primigravid women[16]

IMMEDIATE MANAGEMENT OF RECOGNISED IOL COMPLICATIONS

- Cervical/vaginal lavage is **not** helpful for removing the drug or reversing adverse effects
- Oxytocin infusion should be stopped in the event of adverse effects and the woman is assisted into the left lateral position
- Oxygen is administered at 10 litres/minute
- Increasing the IV fluid rate has been found to be beneficial
- GTN use may be considered
- Alternative tocolysis may be considered
- A decision is made with the obstetric team on whether to restart the infusion or start at a decreased rate to restore a reassuring fetal heart pattern after fetal recovery.

Pain relief and mobility

- Induced labour is likely to be more painful than spontaneous labour. Women need to be advised of this beforehand and of the options available for pain relief. The risks and benefits of various analgesia options must be outlined
- Birth plan choices are respected
- Women are encouraged to remain mobile, use their own coping strategies and non-pharmacological options. CTG telemetry may assist mobility
- Epidural analgesia is beneficial in the management of induced labour when there is significant hypertension, concern about fetal compromise, a need for fetal scalp lactate sampling or possible urgent delivery, oxytocin infusion and maternal request. Risks and benefits of epidural analgesia are clarified prior to consent being obtained.

Antibiotics and IOL

Antibiotic treatment is limited to:

- Women with recognised risk factors for GBS
- Women with intrapartum pyrexia >38◦C
- Women with other clinical indicators

References

1. Jordan S.,, Emery, S., Watkins, A., Evans, J.D., Storey, M., Morgan, G. Associations of drugs routinely given in labour with breastfeeding at 48 hours: analysis of the Cardiff Births Survey. BJOG. 2009 Nov;116(12):1622-9
2. García-Fortea P., González-Mesa E., Blasco M., Cazorla O., Delgado-Ríos M., González-Valenzuela M.J. Oxytocin administered during labor and breast-feeding: a retrospective cohort study. J Matern Fetal Neonatal Med. 2014 Oct;27(15):1598-603.
3. Bell A.F., White-Traut, R., Rankin K. Fetal exposure to synthetic oxytocin and the relationship with prefeeding cues within one hour postbirth. Early Human Development 2013, 89, 137-143.
4. Marin Gabriel M.A., Fernandez I.O., Malalana Martinez A. M., Gonzalez Armengod, C., Costarelli, V., Santos I.M., Morillo A.F-C., Riveiro P.P., Sanchez F.L., and Murillo L.G., Intrapartum synthetic oxytocin reduces the expression of primitive reflexes associated with breastfeeding.
5. Forster, D.A., Moorhead, A.M., Jacobs, S. E., Davis, P. G., Walker, S. P., McEgan, K. M.,

   Opie, G. F., Donath, S. M., Gold, L., McNamara, C., Aylward, A., East, C., Ford, R., Amir, L.H. Advising women with diabetes in pregnancy to express breastmilk in late pregnancy (Diabetes and Antenatal Milk Expressing [DAME]): a multicentre, unblinded, randomised controlled trial. Lancet 2017; 389: 2204–13.
6. Crowley, P Cochrane Library 2000, issue 2; Interventions for preventing or improving the outcome of delivery at or beyond term.
7. Boulvain, M., Stan, C., and Irion O. Membrane sweeping for induction of labour. *Cochrane Database of Systematic Reviews* 2005;(1):CD000451 Membrane sweeping versus no treatment (for all women).
8. Effects of maternal age, parity and smoking on the risk of stillbirth. British Journal of Obstetrics and Gynaecology, April 1994, vol 101, pp 301-306.
9. Jozwiak, M., Bloemenkamp, KWM., Kelly, AJ., Mol, BWJ., Irion, O., Boulvain, M. Mechanical methods for induction of labour. Cochrane Database of Systematic Reviews 2012, Issue 3. Art. No: CD001233. DOI:10.1002/14651858.CD001233.pub2/pdf/standard.
10. New Zealand Ministry of Health. 2012. Guidelines for Consultation with Obstetric and Related Medical Services (Referral Guidelines).
11. Gelber, S., Sciscione, A. Mechanical methods of cervical ripening and labour induction. Clin Obstet Gynecol, 2006, 49:642.
12. Kashanian, M., Zazemi, M., and Malakzadegan, A. comparison of 30-ml and 80-ml Foley catheter balloons and oxytocin for pre-induction cervical ripening. International Federation of Gynecology and Obstetrics, 2009, 105,174-175.
13. Pennell, C., Henderson, J., O'Neill, M., McCleery, s., Doherty, D., Dickinson, J. Induction of labour in nulliparous women with an unfavourable cervix: a randomised controlled trial comparing double and single balloon catheters and PGE2 gel. British Journal of Obstetrics and Gynaecology, 2009;116:1443-1452.

14. King Edward Memorial Hospital (KEMH). Transcervical Foley Catheter. Section B Clinical guidelines 2009. Available from URL: http://www.kemh.health.wa.gov.au/development/manuals/O&G guidelines/sectionb/5/b5.1.4.pdf
15. Erickson E.N., Emeis, C.L. Breastfeeding outcomes after oxytocin use during childbirth: and integrative review. J Midwifery Womens Health. 2017 Jul:62(4):397-417
16. National Collaborating Centre for women's and Children's Health Induction of labour. Clinical Guideline. (2008).

Acknowledgement

South Australian Perinatal Practice Guidelines Induction of Labour Techniques (2013). Government of South Australia. ISBN 978- 0-9871042-6

Associated documents

W&CHS PPPG:

- Oxytocin Infusion guideline CapitalDocs 1.8249
- Oxytocin Infusion quick reference CapitalDocs 1.1125
- Group B Streptococcus secondary care obstetric guidelines CapitalDocs 1.1118
- Induction of Labour Booking & Management Form CapitalDocs 1.102334
- LMC induction of labour request form for uncomplicated post dates woman CapitalDocs 1.8270
- Form: induction of labour management plan CapitalDocs 1.8271
- Indications for electronic fetal monitoring in labour CapitalDocs
- IOL algorithm - nulliparous woman CapitalDocs 1.1073
- IOL algorithm - multiparous woman with no uterine scar CapitalDocs 1.1075
- IOL algorithm - woman with a previous LUSCS scar CapitalDocs 1.1074
- Appendix 1 Bishop Score Cervical Assessment Tool.docx CapitalDocs 1.1076
- Fetal heart monitoring (intrapartum intermittent auscultation and electronic) and fetal scalp blood lactate sampling to assess fetal wellbeing CapitalDocs 1.8254
- Labour dystocia CapitalDocs 1.1329
- Antenatal milk expressing CapitalDocs 1.100341

W&CHS Patient Information

- IOL Patient Information Brochure CapitalDocs 1.101167
- Group B streptococcus and pregnancy – patient information CapitalDocs 1.101164
- Membrane sweep and cervical stretch – patient information CapitalDocs 1.102079
- Antenatal Milk Expressing (AME) patient information CapitalDocs 1.100742

Appendices

Appendix 1 Bishop Score Cervical Assessment Tool.docx CapitalDocs 1.1076

Appendix 2: IOL algorithm - nulliparous woman CapitalDocs 1.1073

Appendix 3: IOL algorithm – multiparous woman – with no uterine scar CaptialDocs 1.1075

Appendix 4: IOL algorithm - woman with a previous LUSCS scar CapitalDocs 1.1074

Appendix 5: Placement of a Balloon Catheter

Appendix 6: Administration of PGE2

Appendix 1: Bishop Score: Cervical Assessment Tool

Cervical Assessment Tool:

- The initial assessment of cervical 'ripeness' and subsequent response to induction/labour management should be assessed by the most appropriate **experienced** practitioner, following discussion with the woman, her LMC (core midwife) and medical team.

- The cervical findings should be comprehensively documented at each clinical assessment

- A Bishop score must be calculated in the woman's medical records and used to guide decision making

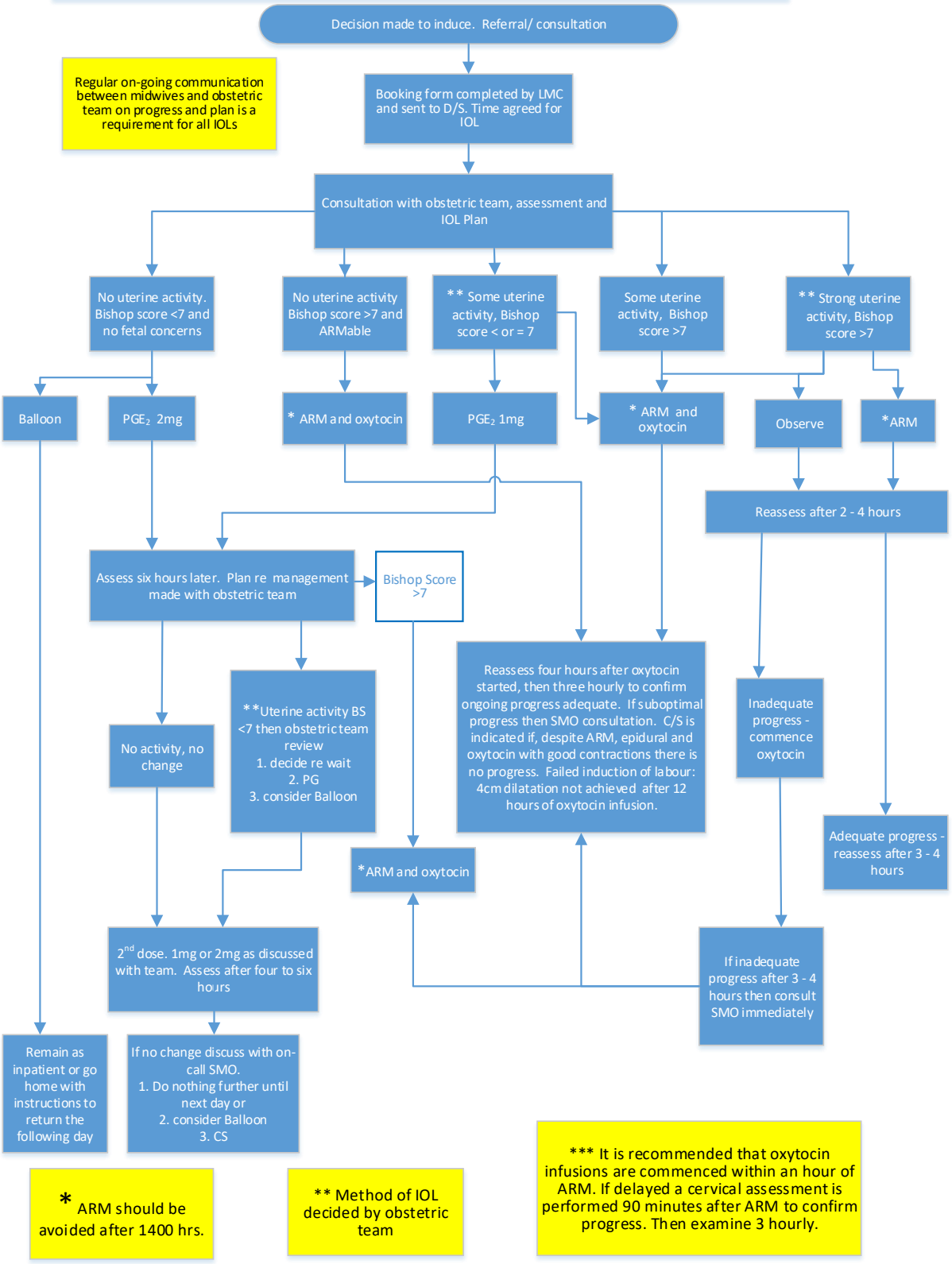
- The Bishop score template is available on the IOL booking form and as a stamp at the delivery suite workstation; practitioners may use this in the hospital records for documentation purposes

Score	0	1	2	3
Dilation	< 1 cm	1-2 cm	3-4 cm	>4cm
Length	>4cm	2- 4cm	1-2 cm	<1cm
Station	-3	-2	-1,0	+1, +2
Consistency	Firm	Medium	Soft	----
Position	Posterior	Midposition	Anterior	---

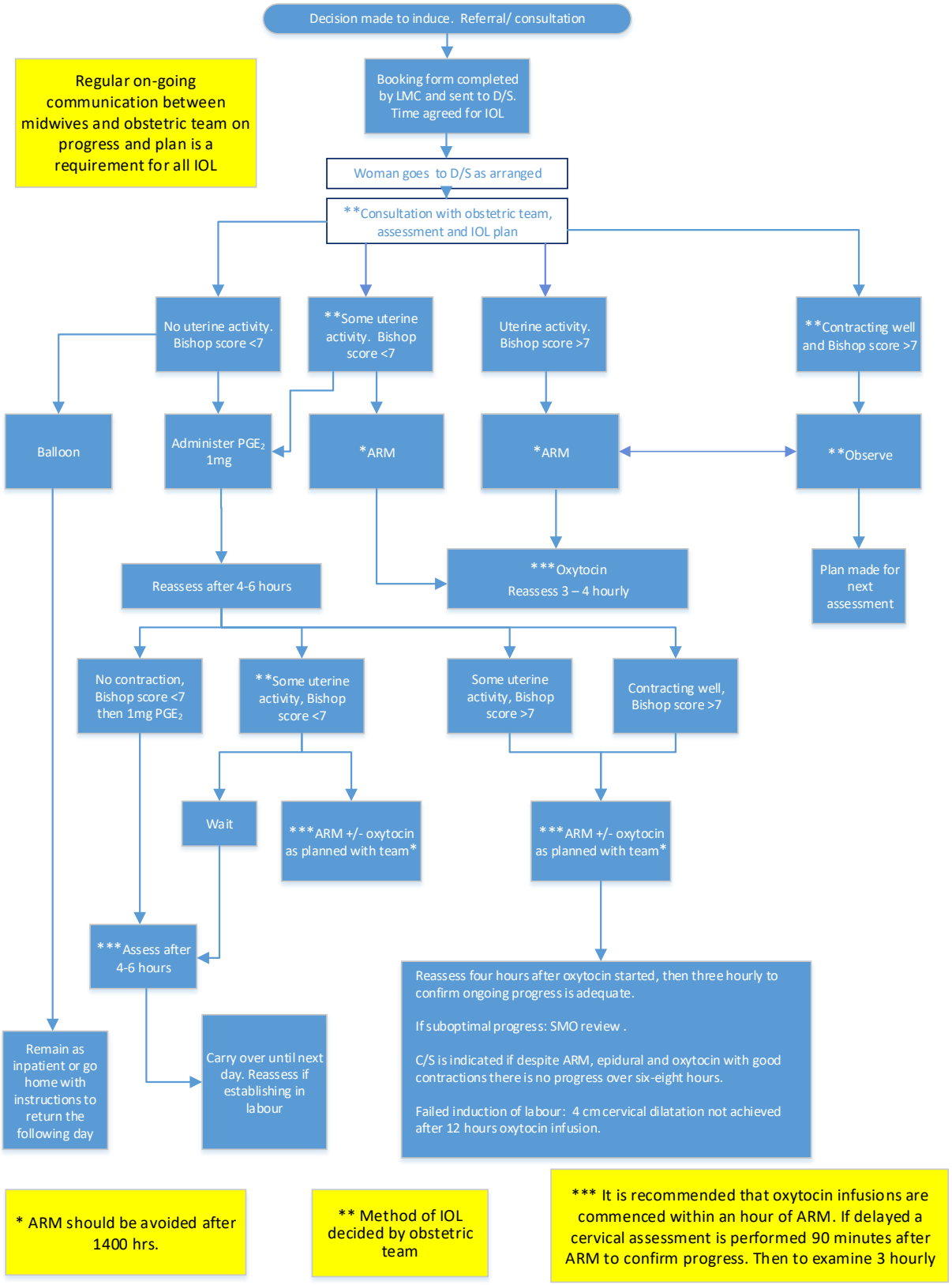
- If the practitioner is unable to reach the women's cervix then no PGE_2 should be administered. Consult with on call medical staff or senior colleague

- Appendices 2, 3 and 4 contain separate clinical algorithms of IOL with appropriate prostaglandin doses

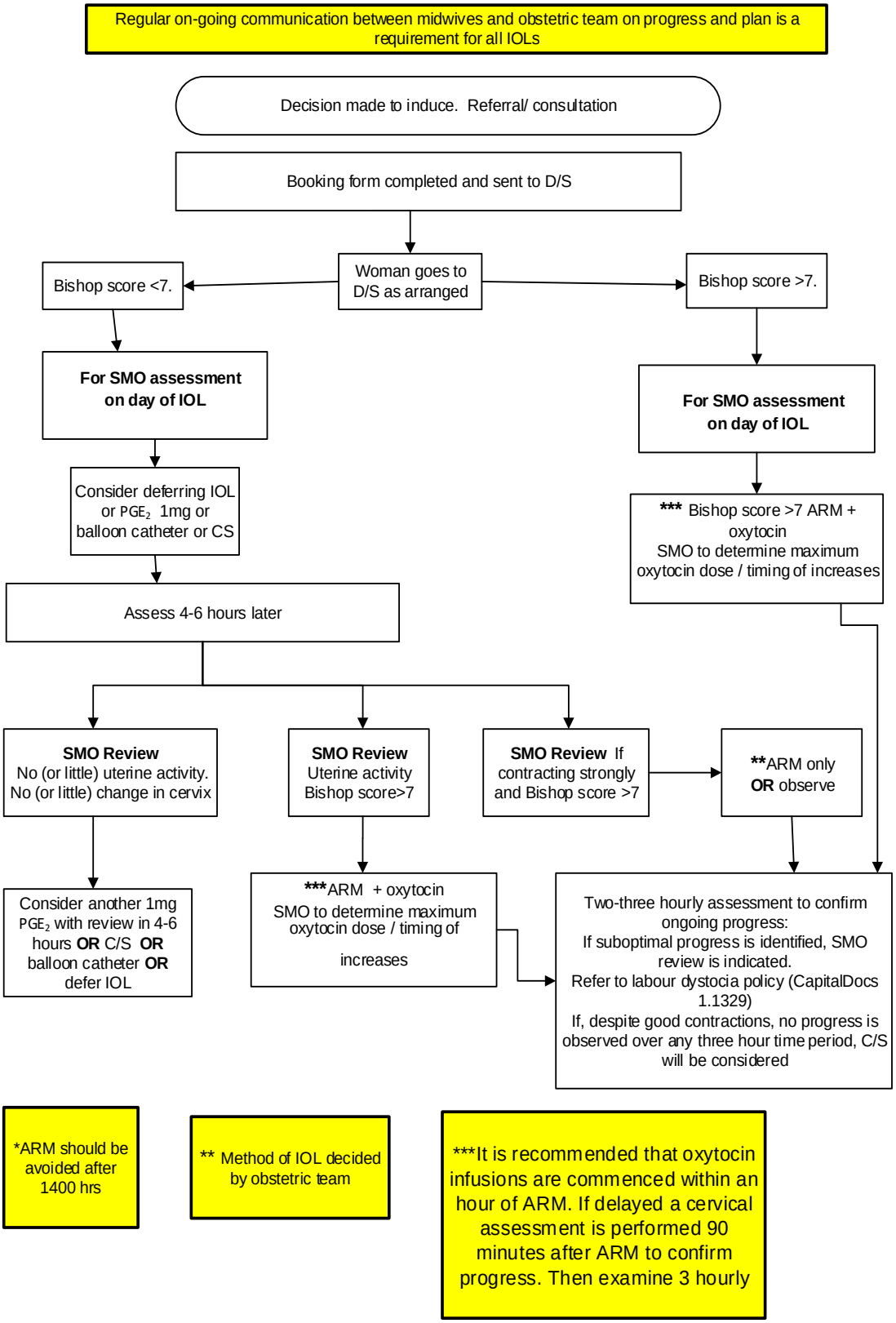
Appendix 2: Induction of labour algorithm – nulliparous woman



Appendix 3: Induction of labour algorithm – multiparous woman with no uterine scar



Appendix 4: Induction of labour algorithm –woman with a previous LUSCS scar



Appendix 5: Placement of a balloon catheter

Equipment

- Speculum (Cuscoe)
- Balloon catheter: 16 gauge catheter (50mL sized balloon) and spigot
- Sponge forceps
- Sterile water – 50ml
- Syringe (20mL)
- Lubricating gel
- Tape

Before procedure

- Abdominal palpation to confirm cephalic presentation and to confirm lie, position and descent. Document findings
- Complete 20 minute CTG tracing. Ensure that it fulfils the criteria for reassuring.
- Blood is taken and sent for a full blood count, group and hold
- Ensure most recent blood results are available, particularly for women with pre-eclampsia, other medical conditions or pregnancy complications
- Document maternal pulse, blood pressure, respiration rate and uterine activity
- Ask the woman to empty her bladder. Collect a urine sample if the woman has hypertension, diabetes or previous proteinuria
- Vaginal examination to obtain a modified Bishop score.

The procedure:

- Place woman's legs in lithotomy
- Ensure good light source
- Insert speculum and visualise the cervix
- Pass the balloon catheter through the internal os using sponge forceps to assist.
- Spigot the catheter and inflate the balloon with sterile water
- Gently withdraw the catheter until it rests at the level of the internal os
- Place slight tension on the balloon by taping it to the anterior aspect of the woman's thigh. If necessary, readjust.
- If there is bleeding noted during the procedure the midwife will check fetal heart post procedure
- All women are required to stay in hospital (unless part of the Oblige trial). The midwife will check the catheter, take observations four hourly (maternal uterine activity, pain level, vaginal loss, pulse, blood pressure, respiration rate, FHR and temperature) and document these findings
  The midwife is to advise/demonstrate how the woman can gently apply tension to the balloon every so often to stimulate and encourage the onset of labour.

After procedure

- Placement of the balloon should be timed so that it can remain in situ for 24 hours
- If the catheter has not fallen out after 18-24 hours, consult with the obstetric team of the day
- If catheter falls out and labour has not commenced, repeat maternal observations and fetal assessment and arrange a medical review.

Indications for removal of catheter

- Rupture of the membranes
- Uterine hypercontractility with associated fetal compromise

- Maternal or fetal distress
- Maternal request

Contraindications to using transcervical balloon catheter

- Low lying placenta
- Placenta praevia
- HIV infection
- Active herpes lesions
- Vasa praevia
- Malpresentation
- Maternal refusal
- Ruptured membranes
- Signs of fetal compromise on CTG
- Any contraindication to vaginal birth

Appendix 6 – Administration of PGE_2

Uncomplicated post dates women may be advised by their LMC to come to delivery suite the evening before an induction of labour. The below observations are made and one dose of PGE_2 is administered to prime the woman's cervix ready for the next day. In some cases cervical priming can instigate the onset of labour.

Observations prior to the administration of PGE_2

- Baseline maternal observations including temperature, pulse, respirations and blood pressure
- Collect a urine sample if the woman has hypertension, diabetes or there has been previous proteinuria
- For women with pre-eclampsia, other medical conditions and/or other complications of pregnancy ensure that the most recent blood results are available
- Perform an abdominal palpation. Confirm the fetal lie, presentation, position and descent of the presenting part. If the presenting part is not thought to be cephalic an obstetric specialist must be consulted
- A pre procedure CTG is commenced
- A vaginal examination is undertaken with consent and the cervix assessed. Bishop score is recorded using the template
- A full blood count, and group and hold are obtained.

Administration of PGE_2

- **PGE_2 must be prescribed by medical staff**
- The correct dose of PGE_2 is administered according to the Bishops score. If the practitioner is unable to reach the women's cervix then **no PGE_2 should be administered.** On call medical staff must be consulted
- PGE_2 is inserted into the posterior fornix (not directly into the cervix) to reduce the likelihood of hyperstimulation
- The woman should rest comfortably on the bed for 30 minutes post PGE_2 insertion to allow absorption of the gel
- The CTG is recommenced immediately after the PGE_2 has been inserted.
- The Bishop score and dose of prostaglandin administered are documented in the woman's medical records
- The maternal blood pressure and pulse rate are repeated one hour after PGE_2 insertion
- The woman may mobilise 30-40 minutes post CTG if the maternal and fetal observations are within normal limits
- If fetal distress occurs call for medical assistance, position the woman in left lateral postion and consider the use of tocolysis. An ongoing management plan needs to be clearly documented in the woman's medical records
- If hyperstimulation occurs consider the use of GTN and call medical staff
- CTG monitoring is continuous after onset of regular contractions
- Pain relief is charted and administered as required.

On-going management after cervical priming with PGE_2

- No more than 4mg of prostaglandin gel is to be administered to a nulliparous woman or 3mg to a multiparous women in a 24 hour period without obstetric specialist review
- Unless contraindicated the IOL process should not be interrupted until the maximum dose of prostaglandins has been administered for that day
- The CTG must be repeated prior to the administration of further prostaglandins

- Where cervical dilatation is not achieved 24 hours after the commencement of the IOL, the SMO must be informed and a management plan developed
- If the cervix is favourable prior to 1400 hours, an ARM (amniotomy) should be performed after discussion with the ACMM. CTG monitoring is required immediately prior to and following the ARM. If there is no liquor or meconium stained liquor is present continuous electronic fetal monitoring is required
- If spontaneous rupture of the membranes occurs CTG monitoring of fetal heart rate should be commenced. If there are variable decelerations a speculum examination must be performed to exclude cord prolapse
- An intravenous line should be in place
- Regular observations (increase in frequency when clinically indicated, and as labour progresses)
    - Maternal blood pressure, pulse, respirations and temperature
    - Frequency and strength of contractions by palpation
    - Quantity and quality of liquor
    - PV blood loss
    - An accurate fluid balance chart must be maintained
    - Cervical assessments: as per protocol or consultant request
    - FHR