Queensland Clinical Guidelines

Translating evidence into best clinical practice

Maternity and Neonatal **Clinical Guideline**

Induction of labour

Queensland Government

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- Advising consumers of their choices in an environment that is culturally appropriate and which enables comfortable and confidential discussion. This includes the use of interpreter services where necessary
- Ensuring informed consent is obtained prior to delivering care
- Meeting all legislative requirements and professional standards
- Applying standard precautions, and additional precautions as necessary, when delivering care
- Documenting all care in accordance with mandatory and local requirements

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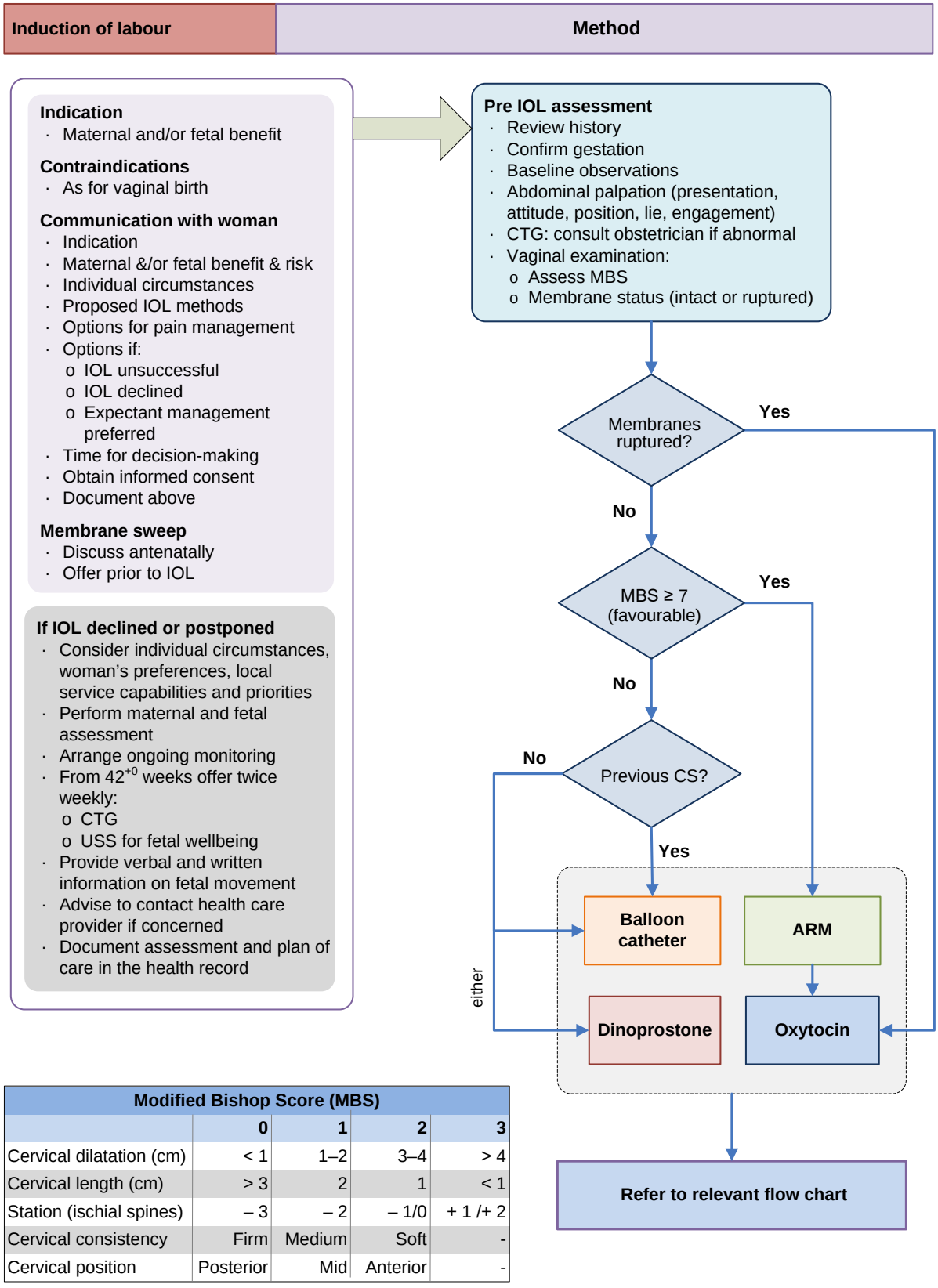
Flow Chart: Method of induction of labour

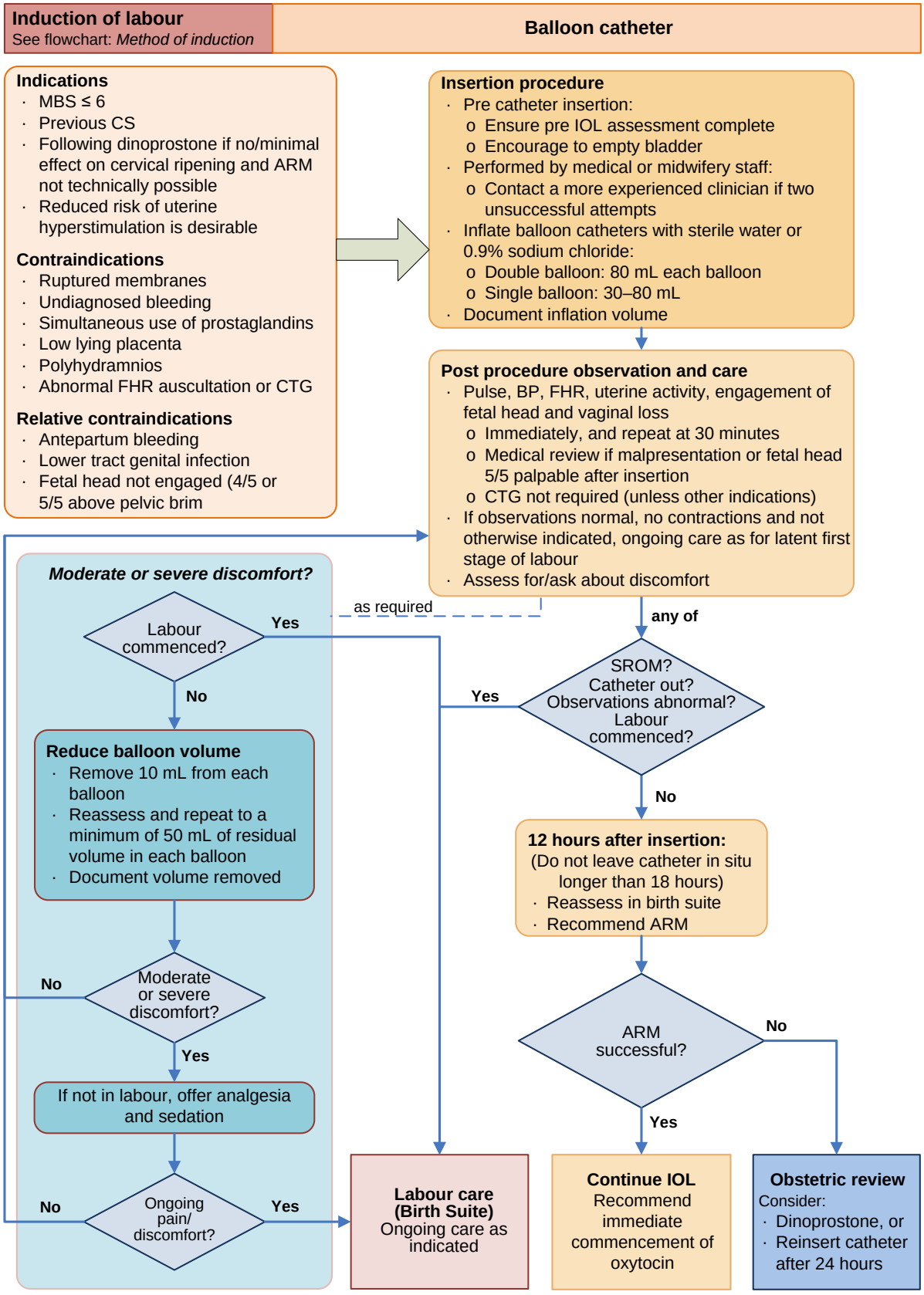


Modified Bishop Score (MBS)				
	0	**1**	**2**	**3**
Cervical dilatation (cm)	< 1	1–2	3–4	> 4
Cervical length (cm)	> 3	2	1	< 1
Station (ischial spines)	– 3	– 2	– 1/0	+ 1 /+ 2
Cervical consistency	Firm	Medium	Soft	-
Cervical position	Posterior	Mid	Anterior	-

ARM: Artificial rupture of membranes; **cm:** centimetres**; CS:** Caesarean section; **CTG:** Cardiotocography; **IOL:** Induction of labour; **MBS:** Modified Bishop Score; **USS:** Ultrasound scan; **<:** less than; **>:** greater than; **≥:** greater than or equal to

Flowchart: F17.22-1-V5-R22

Flow Chart: Balloon catheter



ARM: Artificial rupture of membranes; **BP:** Blood pressure; **CS:** Caesarean section; **CTG:** Cardiotocography; **FHR:** Fetal heart rate; **IOL:** Induction of labour; **MBS:** Modified Bishop Score; **mL:** millilitre; **SROM:** Spontaneous rupture of membranes; **≤:** less than or equal to

Flowchart: F17.22-2-V6-R22

Flow Chart: Prostaglandin E_2 (dinoprostone)

Induction of labour
See flowchart: *Method of induction*

Prostaglandin E_2 (dinoprostone)

Indications
- Unfavourable cervix (MBS ≤ 6)
- Following balloon catheter if no/ minimal effect on cervical ripening and ARM not technically possible

Contraindications
- Known hypersensitivity
- Ruptured membranes
- Multiparity ≥ 5
- Previous CS or uterine surgery
- Malpresentation/high presenting part
- Undiagnosed PV bleeding
- Abnormal CTG/fetal compromise

Cautions
- Multiple pregnancy
- Asthma, chronic obstructive pulmonary disease: may cause bronchospasm
- Epilepsy
- Cardiovascular disease
- Raised intraocular pressure, glaucoma
- Avoid concurrent oxytocin use

Post dose care
- TPR, BP, FHR, uterine activity, PV loss hourly for 4 hours
- CTG for minimum of 30 minutes
- If observations normal, no contractions and not otherwise indicated, ongoing care as for latent first stage of labour
- Continuous CTG when in active labour or when contractions are ≥ 3 in 10 minutes
- After insertion advise woman to:
  - Remain recumbent for 30 minutes
  - Inform staff as soon as contractions commence

PESSARY removal indications
- Onset of regular, painful uterine contractions, occurring every 3 minutes regardless of cervical change
- Ruptured membranes
- Fetal distress
- Uterine hyperstimulation or hypertonic uterine contractions
- Maternal systemic adverse effects (e.g. nausea, vomiting, hypotension, tachycardia)
- Insufficient cervical ripening after 24 hours

Pre dinoprostone insertion
- Complete pre IOL assessment
- Encourage to empty bladder

Dinoprostone GEL
- Nulliparous: 2 mg PV
- Multiparous: 1 mg PV
- Insert high into posterior fornix
- Wait at least 6 hours after insertion then reassess MBS

Dinoprostone PESSARY
- 10 mg PV
- Position transversely in posterior fornix
- Wait at least 12 hours after insertion then reassess MBS

Recommend ARM irrespective of MBS

ARM successful? or SROM?

Yes

No

If GEL used:
- May repeat to maximum of 3 doses at least 6 hours apart
  - Nulliparous 2 mg
  - Multiparous 1–2 mg
- Wait at least 6 hours then reassess MBS

If PESSARY used:
- Give one dose of dinoprostone GEL
- Wait at least 6 hours then reassess MBS

ARM successful? or SROM?

No

Yes

Consider balloon catheter

Recommend oxytocin
- 6 hours after GEL
- 30 minutes after removal of PESSARY (minimum)

ARM: Artificial rupture of membranes; **BP:** Blood pressure; **CS:** Caesarean section; **CTG:** Cardiotocography; **FHR:** Fetal heart rate; **IOL:** Induction of labour; **MBS:** Modified Bishop Score; **PV:** Per vaginam; **SROM:** spontaneous rupture of membranes; **TPR:** Temperature, pulse and respirations; **≥:** greater than or equal to; **≤:** less than or equal to

Flowchart: F17.22-3-V6-R22

Flow Chart: Artificial rupture of membranes

Induction of labour
See flowchart: *Method of induction*

Artificial rupture of membranes (ARM)

Indications
- After cervical ripening method
- Favourable cervix (MBS ≥ 7)
- Before oxytocin infusion commenced

Relative contraindications
- Poor application of the presenting part/unstable lie
- Fetal head not engaged

Post ARM care
- Immediately after procedure document:
  - Abdominal palpation
  - VE findings
  - FHR
  - Uterine activity
  - Vaginal loss (liquor amount, colour consistency)
- If oxytocin commenced, monitor as for oxytocin
- If oxytocin not commenced *and* observations normal *and* no contractions, then ongoing monitoring as for latent first stage
- If FHR or liquor abnormalities discuss/refer/consult
- Encourage mobilisation to promote onset of uterine contractions

Pre ARM
- Complete pre IOL assessment
- Encourage to empty bladder
- Abdominal palpation to determine:
  - Descent
  - Position
  - Presentation

VE to identify:
- Stage of labour
- MBS
- Presentation
- Position and descent
- Membranes

Assess for clinical concerns:
- Polyhydramnios
- Head not engaged
- Malpresentation
- Possible cord presentation
- Unstable lie

Clinical concerns identified?

Yes

No

ARM
- Continue to ARM from assessment VE
- Confirm passage of fluid and check for presence of blood and meconium
- Ensure good application of presenting part before completing VE
- FHR immediately following procedure

FHR or liquor abnormalities?

No

Yes

Recommend immediate commencement of oxytocin

CTG
Discuss, refer or consult as indicated

Consult obstetrician

ARM: Artificial rupture of membranes; **CTG:** Cardiotocograph**; FHR:** Fetal heart rate; **IOL:** Induction of labour; **MBS:** Modified Bishop Score; **VE:** Vaginal examination

Flowchart: F17.22-4-V5-R22

Flow Chart: Oxytocin

Induction of labour
See flowchart: *Method of induction*

Oxytocin

Indications
- IOL with ruptured membranes

Cautions
- Do not commence oxytocin within:
  - 6 hours of dinoprostone gel
  - 30 minutes of removal of dinoprostone pessary
- Discuss with obstetrician if:
  - Previous uterine surgery (e.g. CS)
  - Multiple pregnancy
  - More than 4 previous births
  - Cardiovascular disease

Potential side effects
- Uterine hyperstimulation
- Nausea and vomiting
- Water intoxication or hyponatremia with prolonged infusion (rare with isotonic infusion)
- Primary postpartum haemorrhage
- If planned VBAC: uterine dehiscence and rupture
- Rarely (< 0.1%) arrhythmias, ECG changes, anaphylaxis, tetanic contractions, transient hypotension, reflex tachycardia

Pre oxytocin commencement:
- Complete pre IOL assessment
- Verify CTG normal
- If membranes intact, perform ARM

Oxytocin administration:
- Via sideline/secondary IV access
- Volumetric pump required
- Record dose in milliunit/minute

Observation and care
- Provide one-to-one midwifery care
- Commence intrapartum record
- Commence continuous CTG at the onset of first contractions
- Maternal and fetal observations as per first stage of active labour
- Maintain fluid balance chart

Dose management
- Use minimum dose required to establish and maintain active labour
- Maternal and FHR prior to any increase
- Aim for contractions:
  - 3–4 in a 10 minute period
  - Duration of 40–60 seconds
  - Resting period not less than 60 seconds
- Titrate against uterine contractions
- Increase at 30 minute or longer intervals
- Obstetric review required:
  - Prior to exceeding 20 milliunit/minute
  - At 32 milliunit/minute if labour has not commenced
  - If infusion ceased
  - Prior to recommencing
- Document changes to dose clearly and contemporaneously on the intrapartum record and/or CTG

If recommencing infusion
- Consult with an obstetrician
- If ceased for less than 30 minutes, recommence at half the previous rate
- If ceased for greater than 30 minutes, recommence at initial starting dose

Infusion: oxytocin (30 International units in 500 mL)
1 milliunit/minute = 1 mL/hour

Time after starting (minutes)	Dose (milliunit/minute)
0	1
30	2
60	4
90	8
120	12
150	16
180	20
Prior to exceeding 20 milliunit/minute obstetrician review required	
210	24
240	28
270	32

ARM: Artificial rupture of membranes; **CS:** Caesarean section; **CTG:** Cardiotocography; **ECG:** Electrocardiograph; **FHR:** Fetal heart rate; **IOL:** Induction of labour; **IV:** Intravenous; **VBAC:** Vaginal birth after caesarean section; **<:** less than; **≥:** greater than or equal to

Flowchart: F17.22-5-V5-R22

Abbreviations

ARM	Artificial rupture of membranes
BP	Blood pressure
CI	Confidence interval
CS	Caesarean section
CTG	Cardiotocography
EFW	Estimated fetal weight
FGR	Fetal growth restriction
FHR	Fetal heart rate
IOL	Induction of labour
MBS	Modified Bishop Score
NICU	Neonatal intensive care unit
NNT	Number needed to treat
PGE_2	Prostaglandin E2
PPH	Primary postpartum haemorrhage
PV	Per vaginam
RCT	Randomised controlled trial
RR	Risk ratio
SROM	Spontaneous rupture of membranes
TPR	Temperature, pulse, respiration
USS	Ultrasound scan
VBAC	Vaginal birth after caesarean
VE	Vaginal examination
VTE	Venous thromboembolism
x^{+y}	x is number of completed weeks of pregnancy +y is the number of days past the number of completed weeks of pregnancy (e.g. 40^{+3} is 40 completed weeks of pregnancy plus 3 days)

Definition of terms

Amniotomy	Artificial rupture of membranes to initiate or speed up labour.[1]
Balloon catheter	A flexible tube with an inflatable balloon at one end. This can be introduced through the cervix and the balloon inflated, holding the catheter in place. Also known as transcervical catheter
Cervical ripening	A prelude to the onset of labour whereby the cervix becomes soft and compliant. This allows its shape to change from being long and closed, to being thinned out (effaced) and starting to open (dilate). It either occurs naturally or as a result of physical or pharmacological interventions.[1]
Expectant management	Allowing labour to develop and progress under supervision without intervention, unless clinically indicated.[1]
Favourable cervix	The cervix is said to be favourable when its characteristics suggest there is a high chance of spontaneous onset of labour, or of responding to interventions made to induce labour.[1]
Fetal growth restriction	Also known as intrauterine growth restriction (IUGR). Fetal growth restriction (FGR) indicates the presence of a pathophysiological process occurring in utero that inhibits fetal growth.[2]
Grand multipara	A woman who has given birth to five or more babies.
Induction of labour	The process of artificially initiating labour.[1]
Mechanical method	Non-pharmacological method of inducing labour.[1]
Obstetrician	Local facilities may differentiate the roles and responsibilities assigned in this document to an “Obstetrician” according to their specific practitioner group requirements; for example to General Practitioner Obstetricians, Specialist Obstetricians, Consultants, Visiting Medical Officers, Senior Registrars, Obstetric Fellows or other members of the team as required.
Prolonged pregnancy	A pregnancy past 42^{+0} weeks gestation.[1]
Transcervical catheter	Refer to the definition for balloon catheter.
Uterine hyperstimulation	Either uterine tachysystole or uterine hypertonus with FHR abnormalities.[3]
Uterine hypertonus	Contractions lasting more than two minutes in duration or contractions occurring within 60 seconds of each other, without fetal heart rate abnormalities.[3]
Uterine tachysystole	More than 5 contractions in 10 minutes without FHR abnormalities.[3]

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1 Introduction

Induction of labour (IOL) is the initiation of contractions in a pregnant woman who is not in labour. IOL is indicated when the maternal and/or fetal risks of ongoing pregnancy outweigh the risks of IOL and birth. Contraindications to IOL are consistent with those for vaginal birth. A woman's individual circumstances and preferences will influence the timing and method of IOL. In 2014 the IOL rate in Queensland was 24.9% of all births.[4]

The purpose of this guideline is to guide the IOL process in women at or near term. Refer to associated Queensland Clinical Guidelines for specific circumstances outside the scope of this guideline including:

- *Early pregnancy loss*[5]
- *Therapeutic termination of pregnancy*[6]
- *Perinatal care at the threshold of viability*[7]
- *Stillbirth care*[8]

1.1 Communication and information

Discuss the risks and benefits of IOL as they pertain to each individual woman. Take into account individual needs and preferences, to enable the woman to make an informed decision in consultation with her health care provider.[9]

Table 1. Communication and information-

Aspect	Good practice points
Maternal experience	· Provide time for questions and decision making · In 2014–2015 in Queensland, for women who had an IOL: o 27% reported having made an informed decision[10] o 91% felt the reasons for the IOL were explained in a way they could understand[11] o 21% felt they had no choice about whether their labour would be induced[11]
IOL discussion points	· Indication for IOL · Method of IOL · Potential risks and benefits o Refer to Section 5 Risks and benefits associated with IOL · Options for pain relief · Options if unsuccessful · Options if declined
Written/online information	· Consider the use of decision aids to assist the woman make informed choices[12] o Refer to Queensland Clinical Guideline parent information: *Induction of labour*[13]
Documentation	· Clear and contemporaneous documentation is required in the healthcare record including: o The indication for IOL o The content and outcome of discussions [refer to discussion points above] o Informed consent/choice o Care provided (e.g. Bishop score, observations) o Clinician signature and designation

1.2 IOL declined or postponed

Table 2. IOL declined or postponed

Aspect	Good practice points
Communication	· If IOL is declined, respect the woman's decision · Where pregnancy gestation was greater than 41 weeks gestation, women who[14]: o Waited for labour to start–38% would choose to wait next time o Were induced–73% would choose IOL next time · No form of increased antenatal monitoring has been shown to reduce perinatal mortality associated with prolonged pregnancy[15]
Plan care	· If IOL is declined or postponed (e.g. due to resourcing issues or as a result of maternal request), take into account the: o Individual clinical circumstances and preferences o Indication for IOL o Local service capabilities and priorities · Perform an assessment of maternal and fetal wellbeing · Develop a plan with the woman for continued care including: o Arrangements for ongoing monitoring o Return for IOL · From 42^{+0} weeks offer at least twice weekly assessment for fetal wellbeing[9,16], including[1]: o Cardiotocography (CTG) o Ultrasound scan (USS) assessment of amniotic fluid volume using estimation of deepest vertical pocket o Refer to Section 2.1 Prolonged pregnancy prevention · Advise the woman to contact her health care provider/facility if concerned about her wellbeing or that of her baby (including not to wait until the next day[17]) · Provide verbal and written information about fetal movements[17] · Document the discussion, assessment and plan in the health record

1.3 Clinical standards

Table 3. Clinical standards

Aspect	Good practice points
Service capabilities	· Provide care in the context of the Clinical Services Capability Framework[18] · Ensure availability of health care professionals appropriate to the circumstances · Continuous electronic fetal heart monitoring and uterine contraction monitoring is required for IOL with oxytocin and prostaglandin[3] · Establish quality and safety programs and tools to monitor care (e.g. IOL safety audits and reviews) · Provide care in accordance with the national consensus statement[19]
Outpatient setting	· There is insufficient evidence to determine if IOL is effective and safe in outpatient settings[20] · If a facility provides outpatient IOL prior to the onset of established labour (e.g. for cervical ripening), develop local protocols to support: o Appropriate clinical governance, clinical indications, inclusion/exclusion criteria, written information for women, observation/monitoring protocols and adequate follow-up and support for women o In the outpatient setting, IOL with balloon catheters may be safer than IOL with prostaglandins as studies show less uterine hyperstimulation during the cervical ripening phase[21]

2 Specific indications and circumstances

Refer to associated Queensland Clinical Guidelines, which include IOL considerations for the specific maternal circumstances of:

- Hypertensive disorders of pregnancy[22]
- Gestational diabetes mellitus[23]
- Obesity in pregnancy[24]
- Vaginal birth after caesarean (VBAC)[25]
- Early onset Group B Streptococcal disease (EOGBSD)[26], includes information related to:
  - Prelabour rupture of membranes
  - Preterm prelabour rupture of membranes
- Stillbirth care[8]
- Venous thromboembolism (VTE) prophylaxis in pregnancy and the puerperium[27]
- Perinatal substance use: maternal[28]

Considerations for other IOL indications and circumstances are outlined in the following sections.

2.1 Prolonged pregnancy prevention

Table 4. Prolonged pregnancy

Prevention of prolonged pregnancy	
Risk/Benefit	· No form of increased antenatal monitoring has been shown to reduce perinatal mortality associated with prolonged pregnancy[15] · IOL from 41^{+0} weeks, compared with expectant management, is associated with[15]: o Fewer perinatal deaths [0.4 versus 3.2 per 1000 women] o Less meconium aspiration syndrome [40 versus 66 per 1000 newborns] o No difference in neonatal intensive care (NICU) admissions o Fewer caesarean sections (CS) [168 versus 225 per 1000 women] o Most women prefer IOL at 41 weeks over serial antenatal monitoring[14]
Clinical practice point	· For uncomplicated pregnancies, recommend IOL after 41^{+0} weeks[1,16,29] · Exact timing depends on the specific risk of stillbirth, individual preferences and local circumstances[1] · Waiting after 42^{+0} weeks is not recommended[1,30]

2.2 Concern for fetal wellbeing

Concern for fetal wellbeing may arise with FGR/small for gestational age [refer to Table 5], decreased fetal movements, oligohydramnios, abnormal fetal surveillance, fetal abnormality, or isoimmunisation. The timing of birth may depend on gestational age, severity of concern and results of tests of fetal wellbeing. Increased fetal surveillance may be required with expectant management [refer to Section 1.2 IOL declined or postponed].

Table 5. Fetal growth restriction

Fetal growth restriction	
Risk/Benefit	· Although underpowered to show differences in late pregnancy loss, for term FGR, comparing IOL with expectant monitoring, studies show no significant difference in[31,32] o Rate of obstetric interventions (e.g. CS) o Maternal or neonatal morbidity and mortality o Admission to a neonatal unit if birth occurred after 38 weeks gestation
Clinical practice point	· For babies with FGR, use of umbilical artery, middle cerebral and ductus venosus Doppler may assist in improving perinatal outcome through more appropriate timing of birth[33,34] · Severity affects the decision concerning mode and timing of birth[35] · If recommending expectant management, increase fetal surveillance [refer to Section 1.2 IOL declined or postponed] · IOL at term to prevent stillbirth is appropriate

2.3 Twin pregnancy

Table 6. Twin pregnancy

Twin pregnancy	
Risk/Benefit	· Based on data from the United States, the fetal/infant mortality per additional week of expectant management at[36]: o 37 weeks is 4.39 per 1000 women 95% CI 4.07 to 4.70 o 38 weeks is 5.92 per 1000 women 95% CI 5.40 to 6.43 · A Cochrane review of elective birth at 37 weeks compared to expectant management demonstrated[37]: o No statistically significant differences in CS, perinatal death or serious morbidity, maternal death or serious maternal morbidity o Significant reduction in risk of babies being born with a birth weight less than the third percentile [one study; RR 0.30; 95% CI 0.13 to 0.68] · Monochorionic twins are at increased risk of stillbirth in the third trimester compared to dichorionic twins[38]
Clinical practice point	· In uncomplicated twin pregnancies (monochororioic[39,40] or dichorionic), plan birth after 37^{+0} weeks[36,37,41]

2.4 Fetal macrosomia

Table 7. Suspected fetal macrosomia

Fetal macrosomia	
Consideration	· In a Cochrane review, comparing IOL at 37–40 weeks to expectant management, there were[42]: o No significant differences in: § CS rate or instrumental birth § Measures of neonatal asphyxia o Lower risks of shoulder dystocia, and (any) fracture (NNT=60) o Lower birth weights [178.03 g, 95% CI 40.81 to 315.26] o Higher incidences of third and fourth degree perineal tears (one study)
Clinical practice point	· IOL on the basis of clinical suspicion of macrosomia alone is not recommended[1] · USS for estimated fetal weight (EFW) is advised[43] · With a suspected large for gestation age baby based on clinical assessment (e.g. symphysio-fundal height equals 3 cm more than expected from 36 weeks), offer an USS to measure EFW[43] · Discuss IOL after 38^{+0} weeks if EFW greater than[43]: o 3500 g at approximately 36 weeks o 3700 g at approximately 37 weeks o 3900 g at approximately 38 weeks

2.5 Advanced maternal age

Table 8. Advanced maternal age

Advanced maternal age	
Risk/Benefit	· Advanced maternal age is an independent risk factor for stillbirth[44,45,46] o Nulliparous women may be at higher risk of stillbirth, but evidence is inconsistent[45,47] · IOL at 39 weeks for advanced maternal age, compared to expectant management, had no significant effect on the CS rate and no adverse short-term effects on maternal and neonatal outcomes[48]
Clinical practice point	· For women aged 40 years or older, offer IOL at 39^{+0}–40^{+0} weeks gestation[45,49]

2.6 Obstetric cholestasis (intrahepatic cholestasis of pregnancy)

Table 9. Obstetric cholestasis

Obstetric cholestasis	
Risk/Benefit	· Associated with: o Stillbirth[50,51] § Approximately 1.2% after 37 weeks gestation (although this may be consistent with population stillbirth rates[52]) § Increases with increasing gestational age and bile acid levels o Meconium stained liquor[50,51] o Preterm birth[50,51] · No quality evidence exists to guide timing of birth[50,53] although IOL is often recommended between 37 to 38 weeks[54] due to risk of stillbirth · Identified as a medical indication for late preterm (34^{+0}–36^{+6} weeks gestational age) or early term (37^{+0}–38^{+6} weeks gestational age) birth by American College of Obstetricians and Gynaecologists[55]
Clinical practice point	· Consider IOL between 37^{+0} and 37^{+6} weeks gestation as relevant to[53]: o Individual circumstances—case for intervention is stronger with more severe biochemical abnormalities o Risk of stillbirth—cannot predict if pregnancy continues o Higher risk of neonatal respiratory morbidity from early intervention · Offer continuous fetal monitoring during labour · Consider IOL around 36 weeks for severe cases with jaundice, progressive elevations in serum bile acids and liver enzymes, and suspected fetal compromise[56]

2.7 Maternal ethnicity

Table 10. Maternal ethnicity

Maternal ethnicity	
Consideration	· Differences in ethnicity have been reported in perinatal mortality data[57-63] but whether this is entirely attributable to genetic factors is unclear · In one retrospective study, South-Asian born women (country of birth India, Sri Lanka, Bangladesh, Pakistan) compared to Australian-born women: o Had a higher antepartum stillbirth rate [2.4 times more likely, 95% CI 1.4 to 4.0] with risk increasing progressively with gestation o Were twice as likely to have a low birthweight baby (less than 2500 g)
Clinical practice point	· Insufficient evidence to recommend IOL based on maternal ethnicity alone · Consider a woman's ethnicity in the context of other risk factors when determining timing of IOL

2.8 Maternal request

Table 11. Maternal request

Maternal request	
Risk/Benefit	· For low risk women elective IOL at term is not associated with an increased risk of CS[64] · The long term population consequences of a significant proportion of low risk women receiving elective IOL are unknown · IOL requires more intensive clinical resources than spontaneous onset of labour in low risk women · Retrospective and population based studies suggest a possible association between birth prior to 39 weeks and developmental/early childhood health problems[65-68]
Clinical practice point	· Consider IOL at term based on exceptional circumstances of the woman and her family (i.e. not solely because of patient or health care provider preference[9])

3 Pre IOL assessment

Immediately prior to IOL:

- Review maternal history
- Confirm gestation
- Perform baseline maternal observations (e.g. temperature pulse, respiratory rate and blood pressure)
- Perform abdominal palpation to confirm presentation, attitude, lie, position, and engagement
- Assess membrane status (ruptured or intact)[9]
- Vaginal examination (VE) to assess the cervix [refer to Section 3.1 Cervical assessment]
- Assess fetal wellbeing:
  - FHR
  - Confirm CTG is normal[1]
  - If CTG abnormal, escalate as per local protocols
  - Refer to Queensland Clinical Guideline: *Intrapartum fetal surveillance*[69]
- Assess for contraindications to IOL
- Consider urgency for IOL

3.1 Cervical assessment

The Bishop score is commonly used to assess the cervix and to inform the choice of method of IOL. Each feature of the cervix is scored and then the scores are summed[70] [refer Table 12]. The state of the cervix is one of the important predictors of successful IOL.[9] The cervix is unfavourable if the MBS is 6 or less.[9]

Table 12. Modified Bishop score

Cervical feature	Score			
	0	1	2	3
Dilation (cm)	< 1	1–2	3–4	> 4
Length of cervix (cm)	> 3	2	1	< 1
Station (relative to ischial spines)	− 3	− 2	− 1/0	+ 1/+ 2
Consistency	Firm	Medium	Soft	–
Position	Posterior	Mid	Anterior	–

3.2 Membrane sweeping

Membrane sweeping refers to the digital separation of the fetal membranes from the lower uterine segment during VE. This movement helps to separate the cervix from the membranes and stimulate the release of prostaglandins.

Table 13. Membrane sweeping

Membrane sweeping	
Indication	· Reduce the need for IOL by encouraging spontaneous labour
Contraindication	· Consistent with contraindications for vaginal birth[71] · Preterm gestation
Risk/Benefit	· Reduced need for IOL, particularly in multiparous women[72] · Optimal gestation at which to commence is controversial[71] · Optimal frequency is unknown[71] o Serial membrane sweeping (every 2 days) reduced the number of pregnancies reaching 42 weeks [NNT=6[72]] o When performed at the onset of formal induction, membrane sweeping resulted in shorter induction to birth interval, shorter duration of oxytocin infusion and improved birth process satisfaction[73,74] · No evidence of increased risk of maternal or neonatal infection[71,75] o Is as safe in Group B Streptococcus (GBS) positive women as for women whose GBS status is unknown or negative[71,76] o No data available on HIV or hepatitis C[71] · Associated with discomfort[72,75], vaginal bleeding and irregular contractions[75] · Some studies have shown no difference in cervical length, time to onset of labour, or duration of the active phase of labour, where VBAC is planned[71,77,78]
Clinical practice point	· Discuss the benefits of membrane sweeping in the antenatal period · Offer prior to formal IOL[71] · If the cervix is closed and membrane sweeping is not possible, cervical massage in vaginal fornices may achieve similar effect[1]

4 Methods of IOL

Table 14. Methods of IOL

Aspect	Recommendation
Cervical ripening for unfavourable cervix	· Mechanical: balloon (transcervical) catheter (e.g. Foley, Cook cervical ripening balloon) · Pharmacological: dinoprostone preparations (prostaglandin E_2/prostin gel, cervidil)
After cervical ripening/ cervix favourable	· Artificial rupture of membranes (ARM) · Oxytocin
If primary cervical ripening method is unsuccessful	· If primary method was: o Balloon catheter — consider — Dinoprostone gel/pessary o Dinoprostone gel up to 3 doses — consider — Balloon catheter o Dinoprostone pessary — consider — Dinoprostone gel or balloon catheter
Insufficient evidence	· For IOL–there is insufficient evidence to support Laminaria tents, breast/nipple stimulation (particularly if high risk[79,80]), acupuncture[81], sexual intercourse[82,83], evening primrose oil, homeopathy[1], castor oil[84], nitric oxide donors[85], hyaluronidase[1], oestrogen[1], and corticosteriods[1]
Misoprostol	· Compared with placebo, misoprostol (sustained release vaginal pessary, vaginal tablet, buccal/sublingual and oral tablet) had higher odds of uterine hyperstimulation with FHR changes than 31 other active interventions (180 studies)[86] · Not currently recommended for IOL where a live birth is expected o Not included on the Queensland Health List of Approved Medicines (LAM) for IOL with a viable baby

4.1 Balloon (transcervical) catheter

Balloon catheters (e.g. Foley, Cooks) are used to ripen the cervix through applying pressure on the internal os of the cervix, thereby stretching the lower uterine segment and increasing local prostaglandin secretion.[9]

Table 15. Balloon catheter considerations

Aspect	Clinical practice point
Indications	· Unfavourable cervix (MBS of 6 or less) · May be considered with previous CS · May be used following dinoprostone when there has been no/minimal effect on cervical ripening and ARM is not technically possible · May be preferred where a reduced risk of uterine hyperstimulation is desirable (e.g. SGA, grand multipara, scarred uterus[29])
Contraindication	· Any contraindication to vaginal birth (e.g. malpresentation, abnormal placentation, HIV, active genital herpes) · Any contraindications to IOL · Ruptured membranes · Undiagnosed bleeding · Simultaneous use of prostaglandins[87] and/or oxytocin · Low lying placenta[9,87] · Polyhydramnios · Abnormal FHR auscultation or CTG
Relative contraindications	· Antepartum bleeding[9] · Lower tract genital infection[9] · Fetal head not engaged[9] (4/5 or 5/5 above the pelvic brim)
Benefit[87]	· When compared to vaginal prostaglandins: o Less uterine hyperstimulation and tachysystole[21] o No difference in CS rate o No difference in overall number not achieving vaginal birth within 24 hours, although among multiparous women the risk of not birthing within 24 hours was higher · Low cost and no specific storage or temperature requirements · No evidence of an increased risk of infection although data is limited
Risk	· Placental abruption · Uterine rupture · Device entrapment · Maternal discomfort during and after insertion · Failed dilatation and inability to perform ARM · Cervical laceration or ischaemia (if prolonged use) · There is limited data comparing single to double balloon catheter[87,88]

4.1.1 Balloon (transcervical) catheter insertion

Table 16. Balloon catheter insertion procedure

Aspect	Clinical practice point
Equipment	· Speculum · Balloon catheter, either o 16/18 gauge catheter with double balloon (e.g. Cook cervical ripening balloon) o Foley catheter with balloon capacity of at least 30 mL · Sponge forceps · Sterile water or 0.9% sodium chloride (200 mL) · Syringe (20 mL) · Sterile lubricating gel · Swabs · Tape · CTG monitor · Bed with stirrups · Chlorhexidine
Procedure	· Prior to commencement o Ensure pre IOL assessment complete including baseline observations o Encourage voiding · Performed by competent medical or midwifery staff · Contact a more experienced clinician if there are 2 unsuccessful attempts
Prepare the balloon catheter	· Stylet used with double balloon: o Loosen the fitting on the proximal hub of the stylet so that the distal tip of the stylet is even with the distal tip of the balloon o Tighten the fitting so that the wire does not move during manipulation o Seat the adjustable handle firmly into the blue port labelled “S”
Insertion	· Digital placement of the catheter is less painful than using a speculum · Pass the balloon catheter through the internal os of the cervix using sponge forceps to assist · If insertion is technically difficult: o Consider the lithotomy position o Insert speculum and visualise the cervix o Clean the cervix with chlorhexidine o Pass the catheter through the cervix (using sponge forceps) until both balloons have entered the cervical canal
Double balloon inflation	· Once the catheter has traversed the cervix and the uterine balloon is above the internal os, remove the stylet (if used) before advancing the catheter further · Inflate the uterine balloon with 40 mL of sterile water or 0.9% sodium chloride · Gently pull the catheter back until the uterine balloon is against the internal cervical os · The vaginal balloon is now visible/palpable outside the external cervical os and is inflated with 20 mL of water or 0.9% sodium chloride · Once the balloons are situated on either side of the cervix, remove the speculum (if used) and add water or 0.9% sodium chloride up to a maximum of 80 mL per balloon · Document the inflation volume
Single balloon inflation	· Spigot the catheter · Inflate the balloon with 30–80 mL sterile water or 0.9% sodium chloride · Gently withdraw the catheter until the balloon rests against the internal os · Proximal end of the catheter may be taped to the thigh to provide constant, moderate tension of the balloon · Document the inflation volume

4.1.2 Balloon (transcervical) catheter post insertion care

Table 17. Post balloon catheter insertion

Aspect	Clinical practice point
Monitoring	· Pulse, BP, FHR, uterine activity, engagement of the fetal head and vaginal loss: o Immediately following balloon catheter insertion o At 30 minutes post balloon catheter insertion o Medical review required if malpresentation or fetal head 5/5 palpable after insertion · CTG not required, unless other indications (e.g. uterine activity) · Ongoing monitoring as for latent first stage of labour[89] while: o Observations are normal o No contractions o Not otherwise indicated § Refer to Queensland Clinical Guideline: *Normal Birth*[89]
12 hour reassessment	· Schedule assessment 12 hours after insertion with plan to ARM · If the balloon catheter has not spontaneously fallen out and ARM is unsuccessful: o Obstetric review is indicated o Continuing IOL may involve dinoprostone or reinsertion of another balloon catheter after 24 hours · If there is a delay in the scheduled 12 hour assessment, remove the balloon catheter no later than 18 hours after insertion
Indications for birth suite care	· Observations abnormal · Persistent pain and discomfort · Spontaneous rupture of membranes · Labour commences
Moderate or severe discomfort	· Assess for labour · Reduce balloon volume (discuss with experienced clinician as required): o Foley catheter: remove maximum of 10 mL o Double balloon catheter: remove 10 mL from each vaginal and uterine balloon (from green stopcock marked 'V' and from red stopcock marked 'U') o Reassess and repeat ensuring a minimum of 50 mL of residual volume remains in each balloon o Document the volume removed · Offer analgesia and sedation if woman not in labour and continues to experience moderate to severe discomfort despite balloon deflation · If persistent pain and discomfort following oral analgesia o Review by an obstetrician, or o Transfer to birth suite for further assessment
Indications for early removal of balloon catheter	· Spontaneous rupture of membranes (SROM) · Uterine hyperstimulation · Maternal request
Difficulty passing urine	· Offer appropriate analgesia and comfort aids · If still unable to void, consider removing 10 mL of fluid from each of the uterine and vaginal balloons · Note: Balloon may be in the vagina
If balloon catheter falls out	· Transfer to birth suite · Perform VE o Plan ARM and oxytocin as soon as possible (due to the temporary dilatory effect of balloon catheters)
Removal of balloon catheter	· After 12 hours remove the balloon catheter by completely deflating the balloon(s) using an appropriately sized syringe (do not leave balloon catheter insitu longer than 18 hours) · Once the balloon catheter has been removed, perform an ARM and commence an oxytocin infusion

4.2 Dinoprostone

Prostaglandins promote cervical ripening and stimulate uterine contractions.[90] Dinoprostone is the most commonly used prostaglandin agent in third trimester IOL.[90] Dinoprostone preparations include:

- Vaginal gel (prostaglandin E_2, (prostin) 1 mg and 2 mg
- Controlled release vaginal pessary (cervidil)
- Refer to Table 18 and Table 19

Table 18. Dinoprostone considerations and dose

Aspect	Clinical practice point
Indication	· Unfavourable cervix[91] · May be used following balloon catheter when there has been no/minimal effect on cervical ripening and artificial rupture of membranes (ARM) is not technically possible
Contraindication [91,92,93]	· Known hypersensitivity to dinoprostone · Ruptured membranes · Grand multiparity · Previous CS or any uterine surgery · Malpresentation/high presenting part · Unexplained PV bleeding during current pregnancy · Abnormal CTG/fetal compromise
Cautions[91]	· Multiple pregnancy · Asthma, chronic obstructive pulmonary disease—may cause bronchospasm · Epilepsy · Cardiovascular disease · Raised intraocular pressure, glaucoma · Avoid combining with oxytocin [refer to Section 4.4 Oxytocin]
Risk/benefit	· Nausea, vomiting and diarrhoea may occur soon after insertion[91] · Vaginal PGE_2 compared to a placebo or expectant management[90]: o Increased vaginal birth within 24 hours with repeated doses o Increased hyperstimulation with FHR changes (4.8% versus 1.0%, RR 3.16, 95%CI 1.67 to 5.98) o Did not appear to reduce CS rate, NICU admission, serious maternal/newborn morbidity/mortality
Before administration	· Ensure pre IOL assessment complete · Encourage to empty bladder
Dinoprostone gel dose	**Initial dose**: · Nulliparous: 2 mg PV · Multiparous: 1 mg PV **Repeat dose** (if clinically indicated and only after 6 hours) · Nulliparous: 2 mg · Multiparous: 1–2 mg Do not give the repeat dose within 6 hours of the initial dose (i.e. so the maximum dose of 3 mg in a six hour period is not exceeded)
Dinoprostone pessary dose	· 10 mg PV (released at a rate of approximately 4 mg in 12 hours)[93] · A second dose is not recommended

4.2.1 Dinoprostone administration

Table 19. Dinoprostone administration

Aspect	Dinoprostone administration
Administration	· Maternal and fetal safety outcomes do not seem to differ whether prostaglandins are administered in the morning or evening, but women may prefer morning administration[94] · Pessary use may avoid repeated application of the gel · Gel may be more appropriate where cervix is favourable[1]
Dinoprostone gel[92]	· Use water soluble lubricants (not obstetric cream) · Remove from refrigeration and stand at room temperature for at least 30 minutes prior to use · Insert high into the posterior fornix of the vagina · Not for intracervical administration · Advise recumbent or left lateral position for 30 minutes after insertion
Dinoprostone pessary[93]	· Remove from freezer or fridge immediately prior to use · Can be stored in the refrigerator for up to one month (2–8 ^{O}C) after removal from the freezer · Warming is not required · Open only after decision has been made to use the pessary · Use water soluble lubricant (not obstetric cream) · Insert and position transversely in the posterior fornix of the vagina: o To minimise potential for the pessary to fall out and subsequent insufficient dinoprostone exposure · Ensure sufficient tape outside vagina to allow removal · Woman to remain recumbent for 30 minutes · Advise to report if pessary falls out
Monitoring post insertion	· Temperature, pulse, respiratory rate, BP, FHR, uterine activity, and vaginal loss o Immediately after insertion o Hourly for 4 hours · Perform CTG after insertion (minimum 30 minutes) · Advise to inform staff as soon as contractions commence · Ongoing monitoring as for latent first stage of labour while: o Observations are normal o No contractions o Not otherwise indicated § Refer to Queensland Clinical Guideline: *Normal birth*[89] · When in active labour–continuous CTG[69]
Assessment of progress	· Reassess the MBS: o Gel–wait at least 6 hours after insertion[91] o Pessary–wait at least 12 hours after insertion[91] · Irrespective of MBS, recommend ARM if technically possible[95,96] · If ARM not possible, repeat gel dose may be required (following reassuring CTG)
Indications for removal: dinoprostone pessary[93]	· Onset of regular, painful uterine contractions, occurring every 3 minutes irrespective of any cervical change · Membranes rupture (spontaneous or ARM) · Fetal distress · Uterine hyperstimulation or hypertonic uterine contractions · Maternal systemic adverse PGE_2 effects (e.g. nausea, vomiting, hypotension, tachycardia) · If starting oxytocin infusion–remove at least 30 minutes prior to starting · Insufficient cervical ripening after 24 hours

4.3 Artificial rupture of membranes

Table 20. Artificial rupture of membranes

Aspect	Clinical practice point
Indication	· Favourable cervix (MBS of 7 or more)[9,97] · ARM alone is not recommended as time to onset of contractions is unpredictable[9], particularly in nulliparous women [refer to Section 4.4 Oxytocin] · To observe the colour and amount of liquor when clinically indicated
Relative contraindication	· Poor application of the presenting part/unstable lie[9] · Fetal head not engaged[9] (5/5 above the pelvic brim)
Risk/benefit	· Risk of: cord prolapse[9] or compression[36], rupture of vasa praevia[97], pain and discomfort[97] [refer to Section 5] · ARM and immediate oxytocin compared to ARM and delayed oxytocin (commenced 4 hours post ARM) showed shorter ARM to birth interval in nulliparous[98,99] and parous women[100] · Compared to amniotomy alone, ARM and oxytocin resulted in fewer women not birthing vaginally at 24 hours[97] · Following cervical priming, early ARM (performed regardless of MBS) has been associated with a decrease in IOL to birth interval and no difference in other outcomes[96,98]
Before procedure	· If no other IOL procedure before ARM, perform pre IOL assessment · Encourage to empty bladder · Abdominal palpation to determine descent[101], position and presentation · VE to determine stage of labour, MBS, presentation, position and descent, possible cord or malpresentation, identify membranes · Consult obstetrician if the head is not engaged[101], or cord presentation, malpresentation, unstable lie or polyhydramnios
Procedure (continuing on from assessment VE)	· Maintain digital contact with presenting part · Insert amnihook–amnicot, using examining finger as guard to hook · Rupture forewaters–avoid ARM over fontanelle or face · Remove amnihook–amnicot, guarding it against index finger · Confirm passage of fluid and check for presence of blood or meconium · Sweep membranes from presenting part · Ensure good application of presenting part before completing VE · Apply fetal scalp electrode, only if clinically indicated o Refer to Queensland Clinical Guideline: *Intrapartum fetal surveillance*[69] · Following ARM for IOL, recommend commencement of oxytocin immediately[9] · Document abdominal palpation and VE findings
Post ARM monitoring	· FHR, uterine activity, and vaginal loss (liquor amount, colour and consistency) immediately after ARM · If oxytocin commenced immediately after ARM, then monitor as for oxytocin [refer Section 4.4 Oxytocin] · If oxytocin not commenced immediately after ARM (e.g. woman wishes to await onset of contractions), then ongoing monitoring as for latent first stage of labour while: o Observations are normal o No contractions o Not otherwise indicated § Refer to Queensland Clinical Guideline: *Normal birth*[89] · If FHR or liquor abnormalities (e.g. meconium/blood stained or no liquor): o Perform CTG o Discuss/refer/consult as indicated o Refer to Queensland Clinical Guideline: *Intrapartum fetal surveillance*[69] · Encourage mobilisation to promote onset of uterine contractions

4.4 Oxytocin

Oxytocin stimulates the smooth muscle of the uterus to produce rhythmic contractions.

Table 21. Oxytocin

Aspect	Clinical practice point
Indication	· IOL in the setting of ruptured membranes
Cautions	· Due to the additive uterine effects, do not commence oxytocin within[91]: o Six (6) hours of dinoprostone vaginal gel administration o 30 minutes of removal of dinoprostone vaginal pessary · Discuss with an obstetrician prior to commencement with: o Previous uterine surgery (e.g. CS) [refer to Queensland Clinical Guideline: Vaginal birth after caesarean section[25]] o Multiple pregnancy o Greater than four previous births o Cardiovascular disease
Risk/benefit	· Tachysystole or hypertonus with/without signs of FHR abnormalities o Refer to Section 5 Risks and benefits associated with IOL · Nausea and vomiting (0.1 to 1%)[91] · Rarely (less than 0.1%): arrhythmias, anaphylactoid reaction, severe (tetanic) uterine contraction leading to uterine rupture, flushing, electrocardiograph (ECG) changes (including prolonged QT interval), transient hypotension, reflex tachycardia (common with rapid IV injection)[102]
Medication safety	· The standard oxytocin preparation and administration regimen is recommended for all Queensland facilities as outlined in Section 4.4.1 Oxytocin regimen administration · If required, the same infusion solution can be continued for PPH management and as PPH prophylaxis following CS
Before administration	· Verify CTG normal · If membranes are not ruptured, perform ARM prior to oxytocin infusion · If SROM ensure forewaters are ruptured
Monitoring	· Provide one-to-one midwifery care[103] · Commence the intrapartum record when infusion is commenced · Maternal and fetal observations as per first stage of active labour [refer to Queensland Clinical Guideline: *Normal birth*[89]] · Commence continuous CTG at the onset of first contractions o Refer to Queensland Clinical Guideline: *Intrapartum fetal surveillance*[69] · Maternal pulse and FHR prior to any increase in the infusion rate[102] · Monitor fluid balance as water intoxication/hyponatraemia may result from prolonged infusion[102] (rare with the use of isotonic solutions[104]) · Planned VBAC—maintain vigilance for uterine dehiscence and rupture

4.4.1 Oxytocin regimen administration

Table 22. Oxytocin administration

Aspect	Clinical practice point
Administration	· Add oxytocin 30 International units to a 500 mL bag of either 0.9% sodium chloride or compound sodium lactate (Hartmann's solution) o 1 milliunit/minute = 1 mL/hour · Use a volumetric pump to ensure an accurate rate of infusion[103] o Program delivery pumps for correct infusion concentrations o Administer oxytocin by sideline/secondary IV access (as oxytocin infusion initiated at low volume) · Record the dose in milliunit per minute[9] · Increase dose at 30 minute or longer intervals[102] · Aim for 3–4 contractions in a 10 minute period with duration of 40–60 seconds and resting period not less than 60 seconds · Titrate dose against uterine contractions and FHR[102] · Use the minimum dose required to establish and maintain active labour · Mark changes to dose clearly and contemporaneously on the intrapartum record and/or CTG
Discontinue/ recommence	· After labour is established (cervical dilation greater than or equal to 5 cm) oxytocin infusion *may be* electively discontinued o Reduced incidence of FHR abnormalities and uterine hyperstimulation reported[105] o Inconsistent evidence about effect on active phase duration (possibly increased)[105-107] · If recommencing infusion and no local protocol, use the following guide: o If ceased for less than 30 minutes, recommence at half previous rate o If ceased for longer than 30 minutes, recommence at initial starting dose (due to short half-life[103])
Obstetrician review	· Prior to exceeding 20 milliunit/minute (manufacturer recommended maximum[103]) · At the maximum regimen dose of 32 milliunit/minute[102] and labour not commenced · If infusion ceased or recommenced
Variation to regimen	· The ideal dosing regimen of oxytocin is unknown[9] but there are well recognised complications o Refer to Section 5 Risks and benefits associated with IOL · Only vary the regimen (milliunit/minute, rate of increase and/or maximum dose) following an assessment by an obstetrician of the individual clinical circumstances and progress of labour o Processes and systems that facilitate *routine* variation are not recommended

Table 23. Oxytocin regimen

Infusion: oxytocin (30 International units in 500 mL) 1 milliunit/minute is equal to 1 mL/hour	
Time after starting (minutes)	**Dose (milliunit/minute)**
0	1
30	2
60	4
90	8
120	12
150	16
180	20
Prior to exceeding 20 milliunit/minute: Obstetrician review required	
210	24
240	28
270	32

5 Risks and benefits associated with IOL

Table 24. Risks and benefits associated with IOL

Risk	Clinical practice point
Failed IOL[1]	· The criteria for failed IOL are not generally agreed · Review the individual clinical circumstances · Assess fetal wellbeing using CTG · Discuss options for care · The likelihood of vaginal birth is significantly lower if not in active labour after 12 hours of oxytocin[108] · If appropriate consider: o An alternative IOL method, and/or o Discharge home for 24 hours followed by second attempt at IOL o Caesarean section
Tachysystole or hypertonus (without FHR abnormalities) **OR** **Uterine hyperstimulation (with FHR abnormalities)**	· Escalate as required and according to local protocols · Continuous CTG · Attempt removal of any remaining dinoprostone gel · Remove dinoprostone pessary if still in situ[91] · Cease/reduce rate of oxytocin infusion[1] while reassessing labour and fetal state · Position left lateral · Record maternal observations, including BP · Commence intravenous (IV) fluids via new administration set · VE to assess cervical dilation and exclude cord prolapse · If persists, consider use of tocolytic[1]: o Terbutaline: 250 micrograms subcutaneously or o Terbutaline: 250 micrograms in 5 mL IV over 5 minutes[3] o Salbutamol: 100 micrograms by slow IV injection[3] o *Sublingual Glyceryl Trinitrate (GTN) spray 400 micrograms[3] o Excessive uterine activity in the absence of evidence of fetal compromise is not in itself an indication for tocolysis[3] · If clinically indicated, prepare for instrumental birth or CS[1] (e.g. FHR does not return to normal)
Cord prolapse[1]	· A potential risk at the time of membrane rupture especially when the membranes are ruptured artificially · To reduce the likelihood of cord prolapse: o Before ARM, assess engagement of the presenting part o If the baby's head is high, avoid ARM o Palpate for umbilical cord presentation during the VE o Avoid dislodging the baby's head during the VE
Uterine rupture	· An uncommon event with IOL[1] · A life-threatening event for mother and baby · If suspected, prepare for an emergency CS,[1] uterine repair or hysterectomy
PPH	· IOL with oxytocin has been associated with an increased risk of PPH[109] · Refer to Queensland Clinical Guideline: *Primary postpartum haemorrhage*[109]
Increased intervention	· Compared with spontaneous labour, IOL may be associated with a higher incidence of additional interventions (e.g. electronic fetal monitoring, analgesia usage), although there is no increase in instrumental births[110-112] or CS[113-116] in randomised controlled trials · Compared with expectant management, no association found between IOL and increased rates of adverse perinatal outcomes of neonatal unit admission, maternal death, or meconium stained amniotic fluid[8-10]
Benefits	· When performed for a valid indication, IOL should result in a reduction in perinatal morbidity/mortality · Limited evidence suggests women may prefer IOL to expectant management (serial antenatal monitoring) beyond 41 weeks[14]

*Not currently listed on the Queensland Health List of Approved Medications (LAM), not Therapeutics Good Administration (TGA) approved for this purpose

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