

Induction of Labour

Summary This Policy Directive and Clinical Practice Guide provide clinical guidance on induction of labour (IOL) and supports maternity services to provide safe and evidence-based clinical practice in line with Maternity and Neonatal Service Capability throughout NSW.

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Distributed to Ministry of Health, Public Health System, Divisions of General Practice, Government Medical Officers, Private Hospitals and Day Procedure Centres, Tertiary Education Institutes

Audience Maternity Services;Midwives;Nursing and Midwifery;Midwifery Unit Managers;Midwifery and Medical staff;Obstetricians;General Practitioner Obstetricians;Aboriginal Maternity Infant Health Services;Aboriginal Community Controlled Health Organisations;other relevant Nursing and Medical staff

Induction of Labour

Policy Statement

NSW Health is committed to providing safe and evidence-based clinical practice for the induction of labour in NSW Health hospitals.

This Policy Directive and *Induction of labour: methods and approaches clinical practice guide*, provide guidance for cervical ripening and induction of labour. Compliance with the clinical practice guide will ensure compliance with this Policy Directive.

Indications for induction of labour and timing of birth are outside the scope of this Policy Directive.

Summary of Policy Requirements

Informed decision-making and valid consent

All women are to be provided with verbal and written information to ensure informed decision-making. Information on the benefits and risks of induction of labour, the woman's specific indication and timing of birth is to be discussed. Should a woman choose to decline a recommendation for induction of labour, the woman is to be supported with an alternative pathway of care.

Clinical documentation relating to the induction of labour must include the primary reason, the proposed gestation and planned date, the benefits and risks and evidence of informed decision-making.

Valid consent must be obtained in line with the NSW Health Policy and Procedure Manual [Consent to Medical and Healthcare Treatment Manual](#).

Induction of Labour

Methods

Local health districts (districts) are to have specific local cervical ripening and induction of labour care pathways and clinical governance strategies to support women.

Districts are to include both pharmacological and mechanical, as well as combination cervical ripening methods as part of local induction of labour care pathways. Districts are also to have processes to support both inpatient and outpatient cervical ripening.

Pharmacological Agents

A number of pharmacological agents for cervical ripening and induction of labour are outlined in the clinical practice guide, including intravenous oxytocin and prostaglandin analogues.

If combination methods are used for cervical ripening, an individualised collaborative care plan, involving a senior obstetric medical officer, must be in place.

Intravenous oxytocin is approved for the induction and augmentation of labour. **All districts must use the regimen for oxytocin detailed within the clinical practice guide.** This regimen is based on the best available evidence, expert consensus and inter-jurisdictional clinical practice guidelines.

An oxytocin infusion should not be routinely ceased during procedures, such as an epidural insertion, providing cardiotocograph (CTG) monitoring can be continued.

Doses of oxytocin above 20 milliunit per minute are considered 'off label'. An obstetrician needs to complete a comprehensive assessment including discussion with the woman before exceeding a dose of over 20 milliunit per minute. Ensure appropriate documentation is included in the woman's healthcare record.

It should be noted that information regarding dosing and administration of oxytocin within the clinical practice guide may differ from that in the Product Information (PI).

The concurrent use of oxytocin with prostaglandin analogues is contraindicated.

Clinicians must ensure that an appropriate interval of time has elapsed from the last dose of a prostaglandin analogue prior to administering oxytocin.

Monitoring

All women are to be monitored during an induction of labour as outlined in the NSW Health Policy Directive *Recognition and management of patients who are deteriorating* ([PD2025_014](#)).

Fetal heart rate monitoring throughout the induction of labour process is to be in accordance with NSW Health Guideline *Fetal heart rate monitoring* ([GL2025_004](#)).

Districts are to have both maternal and fetal, site-specific Clinical Emergency Response System (CERS) in place to enable early detection of deterioration, prompt escalation and timely management of any adverse event related to induction of labour.

Senior obstetric input must be sought if concerns are identified at any stage of the cervical ripening or induction of labour.

Related Documents

Document Reference	Document Title
GL2025_004	<i>Fetal heart rate monitoring</i>
PD2025_014	<i>Recognition and management of patients who are deteriorating</i>
PD2023_031	<i>Maternity - Safety and Quality Essentials</i>
Consent Manual	<i>Consent to Medical and Healthcare Treatment Manual</i>

Revision History

Version	Approved By	Amendment Notes
PD2025_034 August-2025	Deputy Secretary, Health System Strategy and Patient Experience	<ul style="list-style-type: none"> Removed 'Simultaneous use of prostaglandins and/or oxytocin' under 'Contraindications' on p.16. In footnote on p.30, 'ARM' changed to 'Oxytocin'. On p.44, the third dot point under 'Monitoring' changed to 'Assess uterine activity by palpation and review CTG before any increase in infusion rate'.
PD2025_019 May-2025	Deputy Secretary, Health System Strategy and Patient Experience	<p>Updated Policy Directive with:</p> <ul style="list-style-type: none"> Greater focus on informed decision making Addition of pathways for outpatient care Addition of combined cervical ripening methods Change to the oxytocin regime Changes to prostaglandin analogues.
PD2011_075 November-2011	Deputy Director- General, Population and Public Health	New Policy.

Induction of labour: Methods and approaches

Maternity and Neonatal Network

AUGUST 2025



The information in this document must not replace a clinician's professional judgement.

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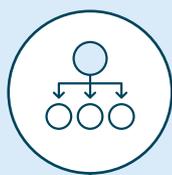
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At a glance

This guide supports maternity services to provide safe and evidence-based induction of labour clinical practice. Induction may not be a linear process and a combination of clinical interventions may be required.



Informed decision-making is essential

- Discuss benefits and risks
- Ensure the woman's collaborative care plan reflects her individual circumstances and preferences
- Obtain valid consent
- Have an alternative pathway of care to support women who decide not to accept a clinical recommendation for an induction of labour



Cervical ripening priorities

- An A-G systematic assessment including Modified Bishop Score
- Review of the most suitable pharmacological, mechanical or combination method



Oxytocin regime good practice

- Use the minimum dose required to establish and maintain active labour
- Stop infusion or reduce to lowest effective dose after labour is established and cervical dilation ≥ 5 cm

Dosing regimen for oxytocin in induction of labour using oxytocin 30 units in 500 mL Hartmann's solution

Time after starting (minutes)	Dose (milliunit per minute)*	mL per hour
0	1	1
30	2	2
60	4	4
90	8	8
120	12	12
150	16	16
180	20	20
Before exceeding 20 milliunit per minute: An obstetrician needs to complete a comprehensive assessment, including discussion with the woman. Doses above 20 milliunit per minute are considered 'off label'		
210	24	24
240	28	28
270	32	32

*Note: 1 milliunit per minute is equal to 1 mL per hour



Recognise, respond and document

- Document all assessments of maternal and fetal wellbeing
- Ask the woman about her experience of induction of labour and birth
- Provide support structures for women who require ongoing care during the postnatal period
- Monitor outcome and experience data to inform proactive quality improvement

Introduction

This clinical practice guide (the guide) provides information on induction of labour (IOL) and supports maternity services to provide safe and evidence-based clinical practice in line with [Maternity and Neonatal Service Capability \(GL2022_022\)](#)¹ throughout NSW.

The guide:

- provides guidance on IOL
- supports maternity services to consider if women may need transfer to higher level of care for IOL. Consideration is to be given to early consultation and escalation via the Tiered Perinatal Network (TPN) as per NSW Health Policy Directive [Tiered Networking Arrangement for Perinatal Care in NSW PD2023_035](#).²
- replaces NSW Health Policy Directive Maternity – Oxytocin for the Induction of Labour at or Beyond Term PD2011_075.³ Changes from PD2011_075 are documented in [Appendix 1](#).
- provides support to clinicians in provision of information on evidence-based options and approaches.

In scope	Out of scope
IOL at 37-42 weeks with a live baby	Timing of IOL
Augmentation of labour	IOL with fetal death in utero

Throughout the guide, the terms ‘woman’ and ‘women’ are used. These terms are not meant to exclude those who give birth and do not identify as female. When providing care, it is crucial to use the preferred language and terminology as described and guided by the individual.

Background

IOL is the process of artificially stimulating the uterus to start labour.⁴ IOL is a clinical process to facilitate safe and timely birth following an informed decision-making process. The guide includes pre-induction cervical ripening using mechanical methods and pharmacological agents through to induction of labour methods and post induction evaluation practices with the woman.

Intended audience

This guide is for maternity services in NSW.

Methods

The NSW Health Induction of Labour Expert Advisory Group (Advisory Group) was established in November 2022. The Advisory Group consisted of senior clinicians with expertise in obstetrics and midwifery and was supported by executive sponsors and staff from the Agency for Clinical Innovation and the Clinical Excellence Commission.

To inform the development of this guide, major guidelines on IOL from South Australia Health (SA Health)⁵, Queensland Health⁶, the National Institute for Health and Care Excellence (NICE)⁷ and the World Health Organization³ were reviewed in relation to:

- cervical ripening methods
- care settings
- fetal monitoring
- use of oxytocin
- information sharing and decision-making.

A review of the evidence in 2023 identified additional research published since the evidence searches conducted for the NICE clinical guideline in May 2020.

Principles

Informed decision-making delivers the best outcomes

Healthcare providers have a responsibility to share evidence-based information to allow the woman to make informed decisions that best suit her circumstances.

Maternity care represents personalised care that responds to a woman's unique needs and achieves the health outcomes that matter to her.⁸ It should support each woman to make evidence-based and informed decisions and choices that reflect her physical, emotional, psychosocial, spiritual and cultural needs, (including young women under 18 who fall under the scope of the [Guide to the Child Safe Standards](#))⁹.

Woman-centred care involves discussion and collaboration between the woman, her maternity care provider, and if she chooses her family and/or support network. It leads to improved safety, quality care and cost-effectiveness with greater consumer and staff satisfaction.¹⁰

Care must be:

- personalised
- trauma-informed as per [NSW Health Integrated Trauma-Informed Care Framework](#)¹¹
- at a level each woman understands, using suitable language or an interpreter service.

It also needs to:

- include other support people if the woman wishes
- be supported by the necessary resources
- be culturally appropriate.¹²

To facilitate the discussion with the woman, there are benefits in using an established decision-making tool. The benefits of using a decision-making tool include:⁶

- clarifying what is important for the woman
- a greater understanding of individual preferences and risks¹³
- easy reference to the information at any time.

The [NSW Health Consent to Medical and Healthcare Treatment Manual](#) must be used to ensure valid consent is obtained.¹⁴ Four criteria must be met:

- the woman giving consent must have capacity
- the consent must be freely given
- the consent must be sufficiently specific to the procedure or treatment proposed
- the consent must be informed.

These four criteria must be met irrespective of whether the consent is in writing or oral. The mere mechanical signing of a consent form is, of itself, of limited value and is not necessarily a evidence of a valid consent.¹⁴

To facilitate this, all women are to be provided with:

- written and verbal information on the benefits and risks associated with IOL⁸
- their specific indication and recommended timing of birth⁶
- the risks involved in the proposed IOL being undertaken or not undertaken.⁶

Should a fully informed woman choose not to accept a recommendation for IOL, she must be supported with an alternative pathway of care.⁶

The healthcare record must clearly document the discussion and decision

Confirm the following has been included in the healthcare record.

- Primary reason for IOL
- Proposed gestation for IOL
- Planned date for IOL
- Benefits of IOL
- Risks of IOL

The healthcare record also needs to document:

- information that has been shared with the woman, including any written information given and whether a decision aid was used
- evidence of informed decision-making and that informed valid consent has been obtained.

Before starting IOL, the following must be documented in the healthcare record.

- The method of cervical ripening (if required) and IOL, including any relevant clinical information that guided these choices.
- Specific considerations for an individual woman's situation or in support of her personal choices.
- Options if labour does not establish with IOL methods.

Where labour does not establish following an initial induction attempt, all management options must be discussed with the woman and recorded in the healthcare record. These may include:

- continuing with the induction
- ceasing the induction and planning a further attempt, the timing of which will be dependent on the clinical situation and the woman's wishes
- offering birth via caesarean section with the agreed timing dependent on the clinical situation and the woman's wishes.

Documentation must be consistent with the requirements outlined in the NSW Health Policy Directive [Health Care Records – Documentation and Management \(PD2012_069\)](#).¹⁵

Monitoring is vital for the safety and wellbeing of the woman and fetus

- Perform fetal heart rate (FHR) monitoring as per the [NSW Health Guideline – Fetal Heart Rate Monitoring \(GL2025_004\)](#).¹⁶
- Perform maternal monitoring, including respiratory rate, oxygen saturations, heart rate, blood pressure and temperature as per the NSW Health Policy Directive [Recognition and management of patients who are deteriorating \(PD2025_014\)](#)¹⁷ at a minimum. Minimum monitoring requirements are to be increased according to the woman's condition or as described in local procedures and guidelines.¹³
- Throughout this document each time maternal and fetal monitoring is referred to, clinical practice must be consistent with [GL2025_004](#)¹⁶ and [PD2025_014](#)¹⁷.

Prioritise thorough assessment before cervical ripening and IOL

To facilitate a safe outcome for the woman and her baby, consider the:

- maternity and neonatal service capability for the planned activity to commence
- gestation, ensuring appropriate timing of birth
- woman's understanding and ongoing valid consent
- impact on the woman's birth plan and/or preferences.

Clinical management

Induction of labour may not be a linear care process and a combination of interventions may be required to induce labour. Senior obstetric input must be sought if concerns are identified at any point during cervical ripening or IOL.

Cervical ripening and induction of labour methods may be appropriate for gestations outside 37 to 42 weeks following careful consideration of all factors as part of an individualised collaborative care plan.

Once the timing has been determined, the methods, their benefits, and risks – as well as likely experiences – must be discussed with the woman, and a collaborative plan developed.

Preparing for IOL and cervical assessment

Assessment immediately before cervical ripening and IOL

Review maternal history to identify any risks or contraindications for IOL. This review must include:

- new or existing risk factors
- pregnancy blood tests and ultrasound scans
- contraindications or precautions for IOL.

Perform:

- Baseline maternal vital signs observations
- Abdominal palpation to confirm fundal height, attitude, lie, position, engagement and fetal presentation. Consider an ultrasound scan to confirm presenting part is cephalic
- Assess fetal wellbeing, including fetal heart rate monitoring
- Assess maternal wellbeing including vital sign observations
- A vaginal examination – see cervical assessment

- Update to the healthcare record, including any unexpected clinical findings that may require senior obstetric review prior to the IOL commencing such as:
 - poor application of presenting part
 - unstable lie
 - fetal head not engaged
 - abnormal cardiotocography (CTG)
 - changes in maternal condition.

Cervical assessment in IOL

Cervical assessment during a vaginal examination, using the Modified Bishop Score, must be undertaken with valid consent and documented in the healthcare record.

Membrane sweeping must be discussed, offered and performed with a woman's valid consent when a pre-induction cervical assessment is done to assess the Modified Bishop Score.⁷

Cervical assessment must be offered:

- in line with local processes
- immediately before starting cervical ripening and/or changing the method of cervical ripening.

Modified Bishop Score

This is a numerical value based on the dilation, effacement (or length), position and consistency of the cervix and the station of the presenting part with respect to the ischial spines of the pelvis. Membrane status (intact or ruptured) must be assessed during the vaginal examination.

Table 1: Modified Bishop Score

Cervical feature	0	1	2	3	Score
Dilatation (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	middle	anterior	-	
Total					

The complete clinical picture must be considered when interpreting the Modified Bishop Score, especially in multiparous women. Cervical ripening is to be considered if the Modified Bishop Score is ≤6, and the various cervical ripening options discussed. In certain situations, artificial rupture of membranes may be considered even if MBS is ≤6.^{6,7}

Membrane sweeping

Membrane sweeping refers to the digital separation of the fetal membranes from the cervix during a vaginal examination. The aim is to stimulate the release of naturally produced prostaglandins. Evidence suggests that membrane sweeping may reduce the need for formal induction of labour and increase the likelihood of spontaneous labour especially in prolonged pregnancy.^{7, 18, 19}

As part of the consent process, the woman must be informed of the possibility of cramping and spotting following the membrane sweep. When membrane sweeping occurs, this must be specifically documented in the healthcare record.

Membrane sweeping must not be performed before 37 weeks.⁷

Management following cervical assessment

If MBS ≤6, discuss cervical ripening options which include:

- mechanical cervical ripening
- prostaglandin cervical ripening
- combination cervical ripening

If MBS ≥7

- Discuss and recommend artificial rupture of membranes.
- Refer to [Figure 1: Preparing for IOL and cervical assessment pathway](#)

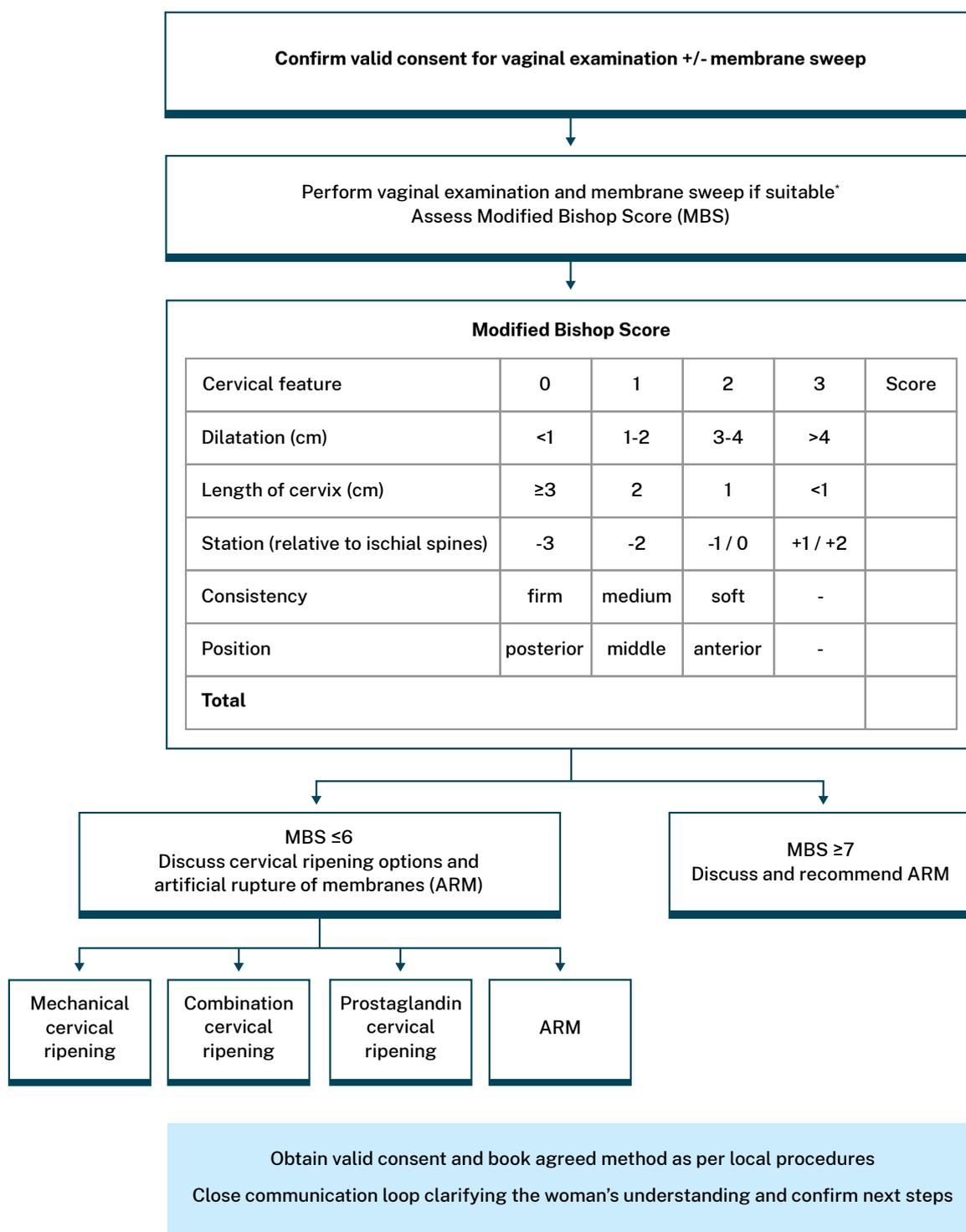
Figure 1: Preparing for induction of labour and cervical assessment pathway

This pathway must be used in conjunction with other relevant pathways in this guide, e.g. [prostaglandin analogues](#), [combined cervical ripening methods](#) and [artificial rupture of membranes \(ARM\) methods](#).

<p>Decision-making considerations</p> <ul style="list-style-type: none"> • Review maternal medical and pregnancy history • Assess any risk factors (new or existing) that might alter decision for induction of labour (IOL) • Confirm: <ul style="list-style-type: none"> – gestation – IOL – timing of proposed IOL • Assess maternal and fetal wellbeing
<p>Document informed decision-making</p> <ul style="list-style-type: none"> • IOL indication and proposed method • Maternal and fetal benefits and risks • Acknowledgement of individual circumstances and preferences • Options if IOL is unsuccessful
<p>Clinical considerations</p> <ul style="list-style-type: none"> • Senior obstetric input must always be sought when considering cervical ripening or IOL methods
<p>Monitor</p> <ul style="list-style-type: none"> • Fetal wellbeing, including fetal heart rate monitoring • Maternal wellbeing including vital sign observations must be performed throughout cervical ripening and IOL

Please see [Figure 1: Preparing for induction of labour and cervical assessment pathway](#) on the following page.

Figure 1: Preparing for induction of labour and cervical assessment pathway (cont.)



*Membrane sweeping must not be performed before 37 weeks.⁷

Pre-induction cervical ripening methods

Cervical ripening is used to facilitate the softening and thinning of the cervix in preparation for labour. Common methods include the use of pharmacological agents, mechanical methods or a combination of the two. When choosing a method, consider the woman's medical and pregnancy history, risk factors and maternal and fetal wellbeing.

Care setting

Depending on the indication for IOL, the cervical method decided upon and the woman's preferences, the care setting may include either an outpatient or inpatient setting. Outpatient mechanical cervical ripening is appropriate for low-risk women.⁵⁻⁷ It appears to have:

- a shorter membrane-rupture-birth interval²⁰
- a shorter admission-to-birth interval^{21, 22}
- significantly less time in the birth suite.²³

Outpatient mechanical cervical ripening is not associated with any significant differences in maternal, fetal or neonatal adverse outcomes.^{21, 23-26}

Inpatient care is to be considered when:

- maternal or fetal risk factors indicate an increased monitoring frequency or likelihood of clinical deterioration
- a combination method of induction agents is used
- pharmacological cervical ripening is undertaken due to the small risk of uterine hyperstimulation.

Local health districts must have pathways to support women choosing outpatient care. Risk management processes must support women and staff where inpatient care is recommended but outpatient care is preferred by the woman.

Pharmacological agents

Pharmacological IOL can play an integral role in facilitating safe and timely birth when natural initiation of labour is delayed, or when deemed necessary for maternal or fetal wellbeing.

The following guidance has been developed based on current evidence, best practice guidelines and expert consensus. Information regarding dosing and administration may differ from the approved product information for the medicines described.

Prostaglandin analogues

Prostaglandins are a group of hormone-like lipid compounds used to ripen the cervix and stimulate the contraction of the uterus, promoting the onset of labour.²⁷ Synthetic prostaglandin analogues, such as dinoprostone (also referred to as prostaglandin E2) and misoprostol (prostaglandin E1), have been shown to be effective in inducing labour.²⁸⁻³¹ See [Table 2](#) and [Figure 2](#).

Availability and indications^{28, 32}

Table 2: Prostaglandin analogues and formulations approved for use in Australia by the Therapeutic Goods Administration

Medications	Preferred preparations	Approved indications*	Use in multiple pregnancy
Dinoprostone	<ul style="list-style-type: none"> Vaginal gel (1 mg and 2 mg) Vaginal slow-release pessary (10 mg) 	For the induction of labour: <ul style="list-style-type: none"> unfavourable cervix (MBS ≤6) following balloon catheter if no or minimal effect on cervical ripening and ARM not technically possible 	Contraindicated
Misoprostol*	25 microg oral tablet	For the induction of labour in women at full-term gestation with an unfavourable cervix (MBS ≤6)	Multiple pregnancy – use with caution due to limited evidence ²⁷

*Other approved indications for use are not addressed in this guideline.

Contraindications and precautions²⁷

The list of contraindications, precautions and drug interactions provided in this guide is intended as general guidance only and can be found in [Appendix 2](#). For a full list, refer to the individual product information for specific advice.

Use in multiple pregnancy

The use of dinoprostone preparations is contraindicated in cases of multiple pregnancy. Misoprostol is recommended to be used with caution due to limited available data.²⁸

The use of prostaglandins in multiple pregnancies is not routinely recommended. According to the Australian registered product information, dinoprostone preparations are contraindicated and misoprostol is recommended to be used with caution due to limited available data. Use of these agents in multiple pregnancies is to be considered on a case-by-case basis in consultation with an obstetrician.^{33, 34}

Valid consent must be obtained, and must be documented in the woman's healthcare record.

Drug interactions

The use of prostaglandins in combination with oxytocin and/or other pharmacological induction agents is contraindicated unless sufficient time has passed (see [Table 6](#) for required interval between administration).

Non-steroidal anti-inflammatory medicines should be stopped before administering the dinoprostone pessary.

Administration and dosing²⁸

Before administration

Assess suitability of use:

- Consider maternal medical history (underlying conditions and complications)
- Indication for IOL
- Review contraindications and precautions
- Consider fetal wellbeing
- Confirm MBS ≤ 6

During administration

- Administer as per prescribed dosage and frequency.
- Use the minimum dose required to allow ARM.
- Advise the woman to remain on her side for 30 minutes after insertion of dinoprostone.
- Advise the woman to inform her maternity clinician if her contractions start, or if spontaneous rupture of membranes occurs.

Table 3. Dosing and administration of prostaglandin analogues for cervical ripening and induction of labour^{28, 32}

Medication	Dinoprostone gel	Dinoprostone pessary	Misoprostol tablet (Angusta®)*
Initial dose and route	<ul style="list-style-type: none"> • 2 mg per vaginal (PV) nulliparous • 1 mg PV multiparous 	10 mg PV	25 microg per oral
Preparation and administration advice	<ul style="list-style-type: none"> • Remove from fridge and stand at room temperature for at least 30 minutes before administering • Insert high into posterior fornix, not for intracervical use • Woman to remain lying on her side for 30 minutes after administration 	<ul style="list-style-type: none"> • Use immediately after removing from freezer • Position transversely in posterior fornix • Woman to remain on her side for 30 minutes after administration • Small amounts of water-soluble lubricant can be used to aid insertion • Ensure there is sufficient withdrawal tape outside the vagina to aid removal <p>Pessary to be removed when:</p> <ul style="list-style-type: none"> • cervical ripening is judged to be complete, or the onset of labour is achieved or regular painful uterine activity is established • spontaneous rupture of membranes or ARM occurs • suggestion of uterine hyperstimulation or hypertonic uterine contractions is apparent • there is evidence of fetal distress or maternal systemic adverse effects • at least 30 minutes before administration of other uterotonic medicines have passed. 	Swallow whole with a full glass of water
Dose repeat interval	Repeat dose only after 6 hours: <ul style="list-style-type: none"> • 1 mg (nulliparous) • 1-2 mg (multiparous) 	<ul style="list-style-type: none"> • A second dose is not recommended • Pessary may be inserted for up to 24 hours prior to removal 	<ul style="list-style-type: none"> • 25 microg every 2 hours • 50 microg every 4 hours
Maximum dose	3 mg	10 mg	200 microg

*Other brands of misoprostol are **not** indicated for pre-induction cervical ripening.

Adverse effects²⁸

Refer to [Appendix 2](#) and the relevant product information for a complete list of possible adverse effects.

Monitoring – ongoing management

Effectiveness of prostaglandin analogue

Following administration perform a cervical assessment. The timing of the assessment and ongoing management is determined by the type of prostaglandin analogue used. Refer to [Figure 2](#) for more detail.

- Dinoprostone gel – 6 hours
- Dinoprostone pessary – 24 hours (depending on local regimen)
- Misoprostol tablet – 2-4 hours (depending on dose regimen)

Ongoing management following cervical assessment

- If MBS is ≥ 7 recommend ARM.
- If MBS ≤ 6 and/or ARM not possible:
 - repeat dose of initial prostaglandin agent (if suitable)
 - consult with obstetric team if maximum dose has been reached
 - consider mechanical cervical ripening.
- If MBS ≥ 7 and ARM successful discontinue prostaglandin administration and consider initiation of oxytocin infusion.

Note: ensure appropriate time has elapsed from last dose of prostaglandin before starting oxytocin. Refer to [Table 6](#).

Maternal and fetal wellbeing

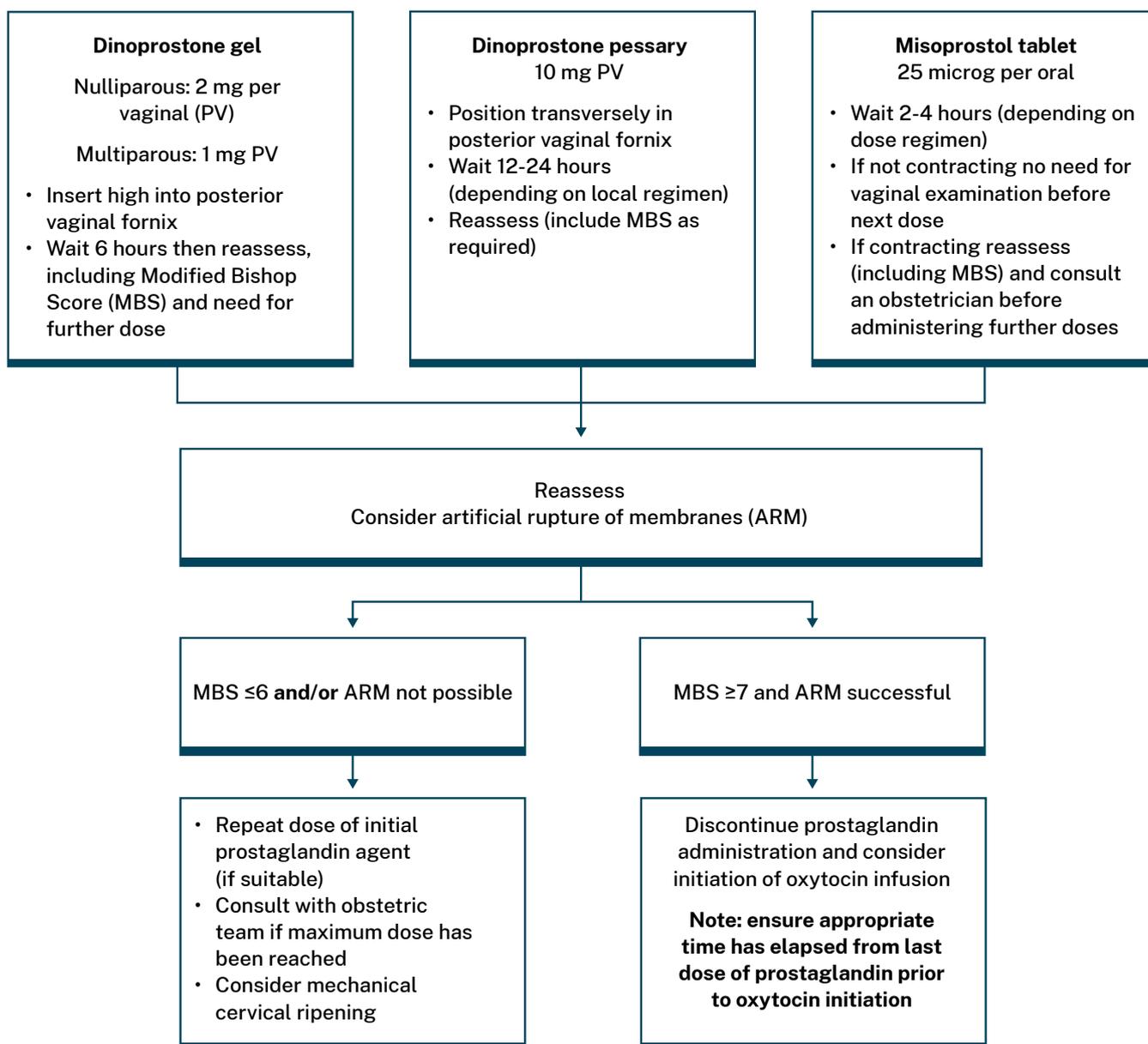
- Assess fetal wellbeing including fetal heart rate monitoring.
- Assess maternal wellbeing including vital sign observations.
- Check for signs of uterine hyperstimulation or excessive contractions.
- Watch for any medication side effects, e.g. nausea, vomiting, hypotension and tachycardia.
- The frequency of fetal and maternal assessment including vital sign observations during cervical ripening must be included in an individualised collaborative care plan.

Figure 2: Prostaglandin analogues for cervical ripening and induction of labour pathway

Before administration
Assess suitability of use: <ul style="list-style-type: none">• contraindications• cautions Assess maternal and fetal wellbeing
During administration
Advise the woman to remain on her side for 30 minutes after insertion of dinoprostone Advise the woman to inform her maternity clinician if her contractions commence, or if spontaneous rupture of membranes occurs
Monitor
<ul style="list-style-type: none">• Maternal and fetal wellbeing. The frequency of fetal and maternal observations and assessment must be included in an individualised collaborative care plan• For signs of uterine hyperstimulation or excessive contractions• For any medication side effects, e.g. nausea, vomiting, hypotension

Please see [Figure 2: Prostaglandin analogues for cervical ripening and induction of labour pathway](#) on the following page.

Figure 2: Prostaglandin analogues for cervical ripening and induction of labour pathway (cont.)



Mechanical methods – cervical ripening balloon

Balloon catheters can be used for mechanical ripening of the cervix. They act by applying pressure on the internal os of the cervix to increase the release of endogenous prostaglandins. Single balloon catheters or double balloon catheters may be used. Double balloon catheters have not been shown to have any advantage over single balloon catheters in relation to type of birth, length of labour and maternal or neonatal complications.^{35, 36}

The use of balloon catheters is associated with:

- reduced rates of uterine hyperstimulation and tachysystole
- reduced rates of operative birth due to fetal distress
- fewer neonatal intensive care admissions.^{37, 38}

Cervical ripening balloons are typically left in place for 12 hours, but there may be individual situations where this needs to be shorter. There is no evidence of benefit where cervical ripening balloons are left for longer than 12 hours.

Cervical ripening balloons are inserted through the internal cervical os using an aseptic technique. Once inserted the balloon is inflated, typically 30 mL for single balloon catheters and 50-80 mL for double balloon catheters and taped under gentle traction to the woman's thigh.

The use of Foley catheters for cervical ripening is considered 'off label' and local health districts are to develop their own risk management procedures, if used.

Valid consent must be obtained before the use of balloon catheters.

Indications

- Women with one previous low transverse caesarean scar who require IOL
- Intrauterine growth restriction
- Oligohydramnios
- MBS ≤ 6 after use of prostaglandins when induction of labour remains the management plan
- Allergy or intolerance to prostaglandins
- Clinically significant asthma precluding use of prostaglandins

Contraindications

- Any contraindication to vaginal birth including placenta praevia or vasa praevia, malpresentation, human immunodeficiency virus (HIV) and active herpes infection
- Any contraindications to IOL
- Maternal refusal
- Undiagnosed antepartum bleeding
- Rupture of membranes
- Chorioamnionitis
- Abnormal fetal heart rate pattern

Relative contraindications

- Presenting part above the pelvic inlet
- Lower tract genital infection
- Polyhydramnios
- Multiple gestation

Combination cervical ripening methods

The combination of a cervical balloon plus either oral misoprostol or intravenous oxytocin are safe and effective methods for cervical ripening.⁴³⁻⁴⁷ The use of combination methods is based on best available evidence and consensus and may not align with Australian registered product information for the pharmacological agents. There is heterogeneity in the literature around oxytocin regimens and maximum doses. Maximum doses must not exceed 16-20 milliunits per minute (mU/min) or a contraction frequency of 3-4 contractions in 10 minutes.⁵⁰ See [Table 4](#).

The combination of approaches can be useful when the cervix is initially unfavourable as it allows for a more efficient induction process. Careful monitoring and medical supervision are critical during the combined approach to ensure maternal and fetal wellbeing throughout the cervical ripening process. When combination methods are used, local care pathways must clearly outline the need for senior multidisciplinary review to plan ongoing monitoring and care when uterine activity starts.

Combination methods may be considered:

- when a shorter induction timeframe is clinically indicated
- for nulliparous women, particularly with a low MBS.

Local health districts may include combination cervical ripening methods as part of their induction of labour care pathways. See [Figure 3](#) for pathway.

Table 4: Combination methods

Combination method	Practice notes
Misoprostol with balloon catheter	<ul style="list-style-type: none"> Dosing and monitoring as required for misoprostol oral dosing Aim for 3-4 contractions in 10 minutes. Once achieved consider stopping further doses and removing the balloon catheter
Oxytocin infusion with balloon catheter	<ul style="list-style-type: none"> Dosing as per oxytocin regimen, however, dose must not exceed 20 milliunits per minute Aim for 3-4 contractions in 10 minutes. Once achieved, consider stopping oxytocin and removal of balloon catheter

Initial assessment

Assess suitability for combination method

- Maternal medical history (underlying conditions and/or complications)
- Indication for IOL
- Review contraindications and precautions
- Fetal wellbeing
- Confirm MBS ≤ 6

Contraindications

- Known hypersensitivity to oxytocin or prostaglandins
- Ruptured membranes
- Multiparity ≥ 5
- Multiple pregnancy
- Previous caesarean section or uterine surgery
- Malpresentation or high presenting part
- Undiagnosed PV bleeding
- Abnormal cardiotocography (CTG) or fetal compromise

Precautions (consult senior medical officer)

- Asthma, chronic obstructive pulmonary disease: may cause bronchospasm
- Epilepsy
- Cardiovascular disease, long QT syndrome
- Raised intraocular pressure, glaucoma
- Severe renal impairment

Before administration

- When combination cervical ripening methods are used a multidisciplinary care plan involving a senior obstetric medical officer must be in place.
- Obtain valid consent.
- Transfer to birth unit if the combination includes an oxytocin infusion.
- The start of an oxytocin infusion must follow the guidance outlined in [Intravenous oxytocin](#).

During administration

- Insert and inflate cervical ripening balloon before starting other combination agent.
- Administer medications as per prescribed dosage and frequency, monitoring uterine contraction response (no more than 3-4 in 10 minutes).
- Use the minimum medication dose required to allow ARM.
- Aim for 3-4 contractions in 10 minutes:
 - consider performing cervical reassessment every 4 hours unless required earlier
 - advise each woman to inform staff as soon as contractions start or they are concerned.
- Once contracting 3 in 10 minutes or in the presence of bleeding or spontaneous rupture of membranes (SROM):
 - reassess
 - stop oxytocin or withhold misoprostol
 - remove cervical ripening balloon if bleeding or spontaneous rupture of membranes (SROM).
- If cervical ripening has commenced outside of the birth unit, transfer to birth unit when:
 - clinically indicated (maternal or fetal indications)
 - if the woman requests analgesia that can only be administered within the birth unit
 - prior to ARM
 - if contractions become regular.
- Once MBS ≥ 7 :
 - stop oxytocin (if being used)
 - withhold further misoprostol, remove cervical ripening balloon
 - recommend ARM
 - restart oxytocin infusion, if required, at reduced dose after 60 minutes and titrate dose accordingly.
- In the absence of prior progress, at a maximum of 12 hours a comprehensive reassessment must occur with alternate multidisciplinary care plan made if ARM not possible.

Monitor

- Watch for signs of uterine hyperstimulation or excessive contractions.
- Check for medication side effects, e.g. nausea, vomiting, hypotension, tachycardia.

Following administration

- Fetal wellbeing including fetal heart rate monitoring must be assessed.
- Continuous electronic fetal monitoring must be started once oxytocin is commenced.
- Assess maternal wellbeing including vital sign observations.
- The frequency of fetal and maternal observations and assessments must be included in an individualised collaborative care plan.

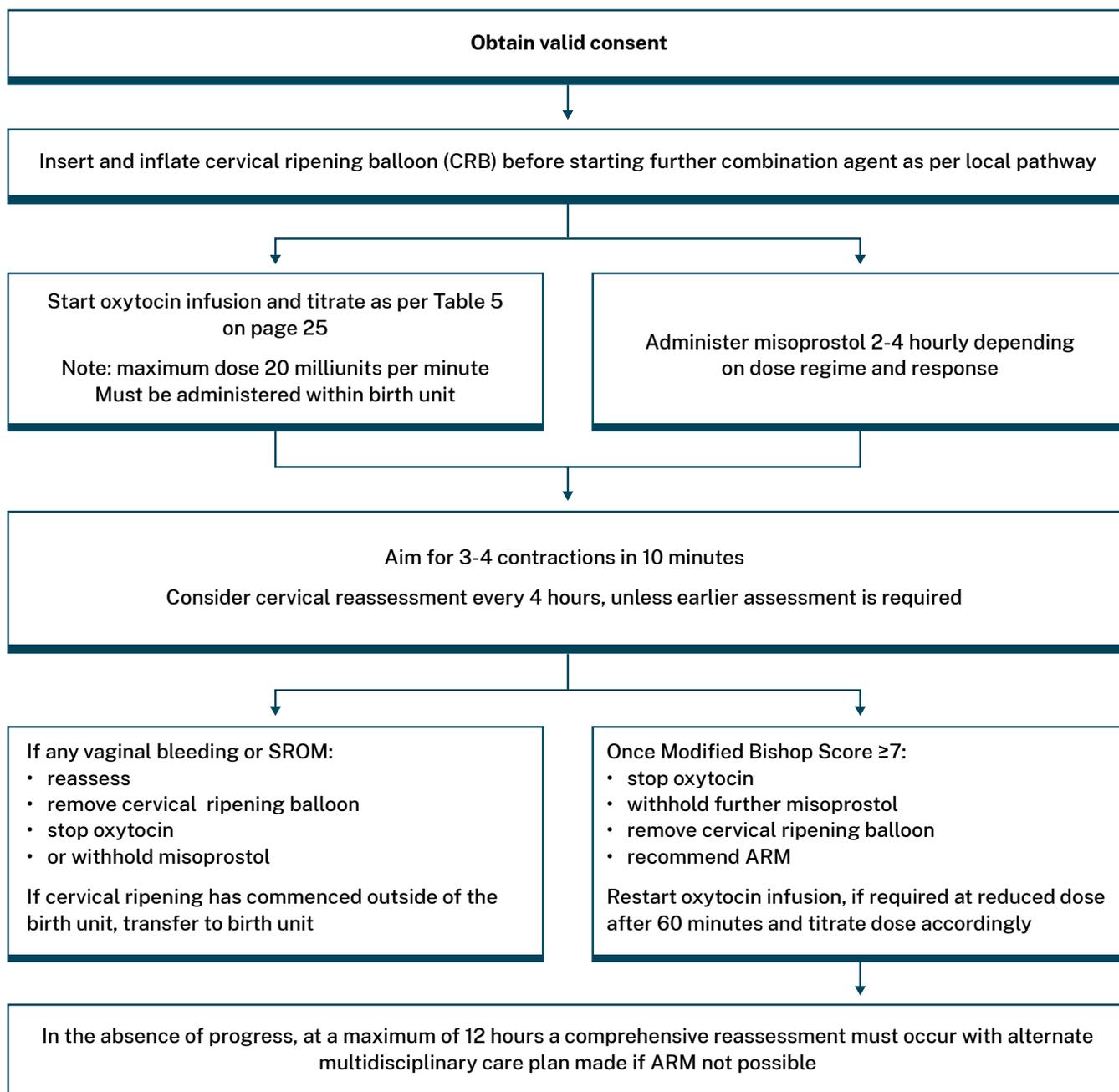
Figure 3: Combined cervical ripening methods pathway

This pathway must be used in conjunction with the [oxytocin infusions](#) and [prostaglandins](#) pathways.

Initial assessment
Assess: <ul style="list-style-type: none">• suitability for combination method• contraindications• cautions
Clinical considerations
<ul style="list-style-type: none">• A multidisciplinary care plan involving a senior medical officer must be in place when combination cervical ripening methods are used• Use the minimum medication dose required to allow artificial rupture of membranes (ARM)• Advise the woman to inform her maternity clinician as soon as contractions start or if they are concerned regarding bleeding or spontaneous rupture of membranes (SROM)
Monitor
<ul style="list-style-type: none">• Maternal wellbeing including vital sign observations• Fetal wellbeing including fetal heart rate monitoring• Continuous electronic fetal monitoring must be used during oxytocin infusion administration• For signs of uterine hyperstimulation or excessive contractions• For any medication side effects, e.g. nausea, vomiting, hypotension, tachycardia• The frequency of fetal and maternal observations and assessment must be included in an individualised collaborative care plan

Please see [Figure 3: Combined cervical ripening methods pathway](#) on the following page.

Figure 3: Combined cervical ripening methods pathway (cont.)



Critical thinking and clinical judgement should be used in conjunction with this pathway at all times.

Induction of labour methods

Artificial rupture of membranes

ARM or amniotomy is often used in conjunction with methods of cervical ripening and/or oxytocin to affect the induction of labour.^{7, 48, 49}

Induction of labour with ARM and intravenous oxytocin is recommended for women with an MBS of ≥ 7 .^{6, 7, 48, 49} ARM alone may be appropriate in some circumstances especially with a more favourable MBS.

Women must be given the option of delaying the start of an intravenous oxytocin infusion following ARM. They are made aware, however, that this may mean labour takes longer.⁷

In the absence of contractions, and with a high presenting part, ARM carries inherent risk such as compound presentation of the fetus and/or cord prolapse.⁴⁸ Appropriate risk management procedures are to be in place to deal with such clinical scenarios. See [Figure 4](#).

Assessment considerations before artificial rupture of membranes

Indications

- MBS ≥ 7
- Before oxytocin infusion

Contraindications

- Contraindication to vaginal birth
- Vasa praevia or placenta praevia
- Cord presentation

Cautions

- Poorly applied presenting part
- Unstable lie
- Fetal head not engaged

Clinical considerations

Before attending ARM

- Encourage woman to empty her bladder
- Confirm fetal presentation and engagement by abdominal palpation
- Confirm presentation with ultrasound if required
- Assess maternal wellbeing including vital sign observations
- Assess fetal wellbeing including fetal heart rate monitor
- Confirm valid consent for procedure has been obtained
- Exclude any contraindications

For ARM perform

- Vaginal examination to assess MBS and fetal presentation and membrane status
- ARM

Post ARM care

- Document all the above findings, including liquor amount and colour (noting meconium or blood staining), following ARM
- Encourage the woman to move as desired
- Monitor fetal wellbeing including fetal heart rate monitoring
- Monitor maternal wellbeing including vital sign observations
- The frequency of fetal and maternal observations and assessment must be included in an individualised collaborative care plan
- Escalate FHR or liquor colour concerns as per local Clinical Emergency Response System (CERS)
- Start oxytocin infusion as required, according to collaborative care plan

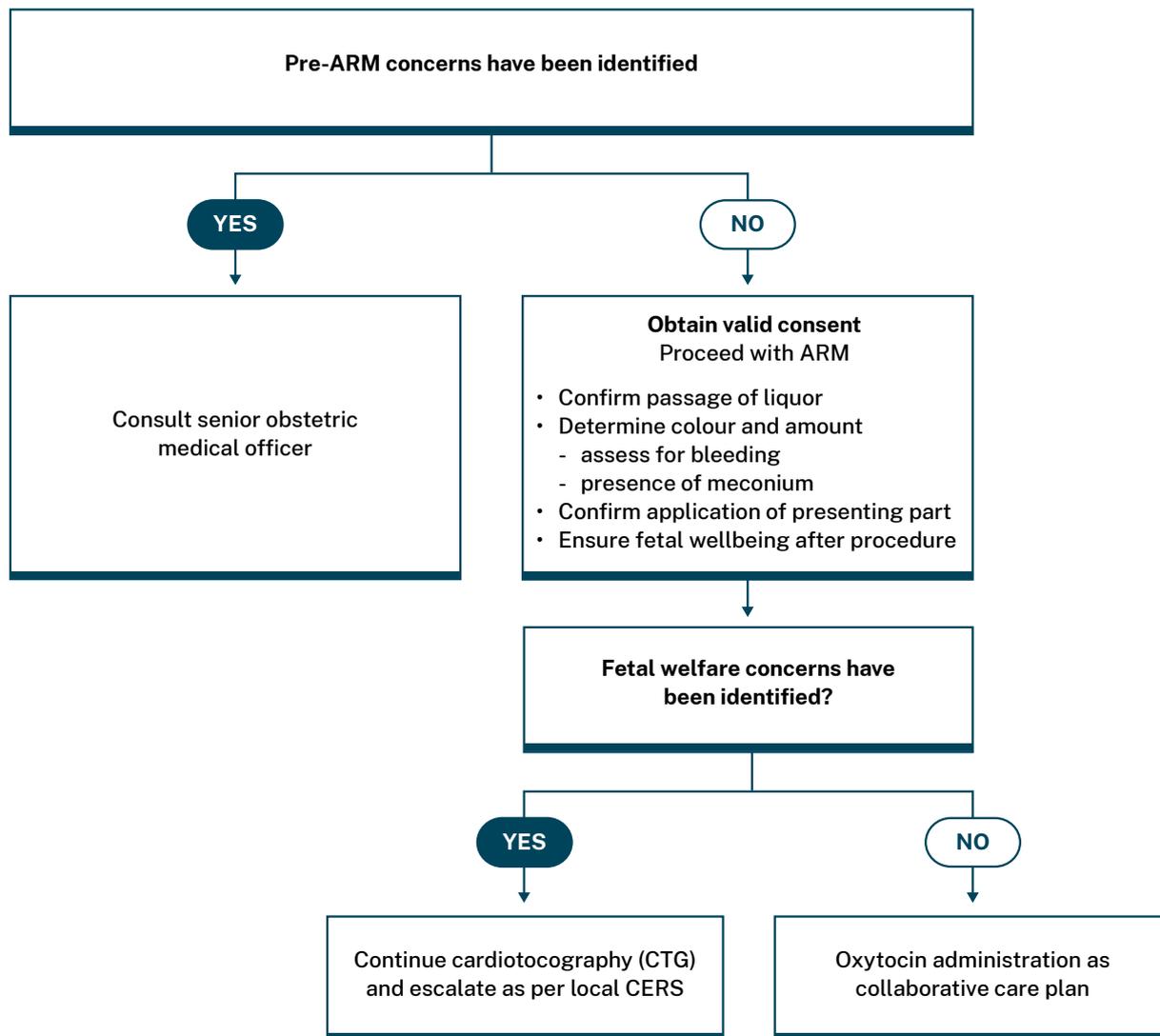
Senior obstetric input should be sought if any concerns are identified at any point.

Figure 4: Artificial rupture of membranes methods pathway

Before artificial rupture of membranes (ARM)
<p>Review:</p> <ul style="list-style-type: none"> • indications • contraindications • cautions
Clinical considerations
<ul style="list-style-type: none"> • Confirm fetal presentation and engagement • Confirm fetal and maternal wellbeing (confirm normal fetal heart rate assessment pre and post ARM) • Obtain valid consent for procedure • Assess for clinical concerns <p>For ARM perform vaginal examination to determine or confirm:</p> <ul style="list-style-type: none"> • presentation, position and station • Modified Bishop Score (MBS) • membrane status
Post ARM care
<ul style="list-style-type: none"> • Document findings including liquor amount and colour • Assess fetal wellbeing including fetal heart rate monitoring post procedure • Fetal heart rate monitoring or liquor concerns escalate as per Clinical Emergency Response System (CERS) • Assess maternal wellbeing including vital sign observations • Encourage mobilisation as desired • Start oxytocin infusion as required, according to collaborative care plan • The frequency of fetal and maternal observations and assessment must be included in an individualised collaborative care plan

Please see [Figure 4: Artificial rupture of membranes methods pathway](#) on the following page.

Figure 4: Artificial rupture of membranes methods pathway (cont.)



Intravenous oxytocin

Synthetic oxytocin is an effective agent used to stimulate rhythmic contractions in induction of labour. See Table 5.

The regimen below must be used in the induction of labour, augmentation of slow progress in labour, and where augmentation is required in the presence of prelabour ruptured membranes.

The guidance and dosing regimen is based on expert consensus, best practice guidelines and current evidence. Information on dosing and administration may differ from the approved product information. See [Figure 5](#).

Refer to [Appendix 3](#) for further information regarding storage, precautions, monitoring, drug interactions, adverse effects and additional clinical considerations. For a full list, refer to the individual product information for specific advice.

Availability and indications for use

Table 5: Current preparations of oxytocin approved for use in Australia by the Therapeutic Goods Administration^{32, 50}

Medication	Available preparations	Approved indication*
Oxytocin	<ul style="list-style-type: none"> 5 unit/mL 10 unit/mL 	<ul style="list-style-type: none"> Induction and augmentation of labour in the setting of ruptured membranes Following cervical ripening to promote uterine contractions (see Table 6 for further details regarding time to dose)

*Other approved indications are not addressed within this guideline.

Drug interactions – prostaglandins

Due to the additive effects on the uterus, oxytocin infusion must not be started while cervical ripening agents are in use. Maternity care providers must wait to administer oxytocin depending on the time of last dose for prostaglandin analogue. See Table 6.

Table 6: Timing of the start of oxytocin if prostaglandins have been used^{27, 32, 51}

Cervical ripening agent	Minimum duration of time required before starting oxytocin
Dinoprostone vaginal gel	6 hours after last dose
Dinoprostone vaginal pessary	30 minutes after removal
Misoprostol oral tablet	4 hours after last dose

Specific considerations

Multiparity: The decision to use oxytocin in multiparous women must be based on careful assessment of the woman's medical history, pregnancy history and fetal wellbeing. Maternity care providers must consider the benefits and risk on a case-by-case basis to ensure the most appropriate management plan.

Multiple pregnancy: The use of oxytocin for labour induction in multiple pregnancies may present additional challenges, including the potential higher risk of uterine hyperstimulation, and the possibility of precipitous labour.⁵⁰

Intact membranes: Oxytocin infusion can be used with intact membranes when given in combination with a cervical ripening balloon for cervical ripening (see [Figure 3](#): Combined cervical ripening methods).

Preparation

1. Dilute 30 units of oxytocin in 500 mL of Hartmann's solution (do **not** use dextrose).
2. Mix the solution thoroughly by gently inverting the bag several times. Do **NOT** shake.
3. Inspect the bag to make sure it is clear, colourless and free from visible particles, before administering.

Current best-practice evidence supports the use of oxytocin as a standardised single concentration for both antepartum and postpartum infusions.⁵² By following the preparation instructions and dosing regimen outlined within this guidance, maternity care providers can ensure continuous administration of oxytocin in women with postpartum haemorrhage.

Dosing regimen and administration^{32, 50, 52}

- Start intravenous (IV) infusion rate at **1 mL per hour (equal 1 milliunit per minute)** and record doses in milliunit per minute.
- The rate may be increased at a minimum of every 30 minutes as per [Table 7](#) until a contraction pattern similar to normal labour is established.
- Use a volumetric pump to ensure accurate rate of infusion.

Maximum dose 20 milliunit per minute. Doses above 20 milliunit per minute are considered 'off label'.⁵²

Please note: an obstetrician needs to complete a comprehensive assessment, including discussion with the woman, before exceeding a dose of over 20 milliunit per minute. Ensure appropriate documentation is included in the woman's healthcare record.

Table 7: Dosing regimen for oxytocin in induction of labour using oxytocin 30 units in 500 mL Hartmann's solution⁵⁰

Time after starting (minutes)	Dose (milliunit per minute)*	mL per hour
0	1	1
30	2	2
60	4	4
90	8	8
120	12	12
150	16	16
180	20	20
<p>Before exceeding 20 milliunit per minute: An obstetrician needs to complete a comprehensive assessment, including discussion with the woman.</p> <p>Doses above 20 milliunit per minute are considered 'off label'</p>		
210	24	24
240	28	28
270	32	32

*Note: 1 milliunit per minute is equal to 1 mL per hour

Clinical considerations^{32, 34, 50}

Before administration

- Assess maternal and fetal wellbeing.
- If membranes are not ruptured, perform an ARM (unless being used in combined cervical ripening).
- If membranes have ruptured spontaneously, ensure forewaters are ruptured.

Once infusion has begun

- Prior to increasing oxytocin dose, palpate the uterus and aim for 3-4 contractions in a 10-minute period with duration of 40-60 seconds and resting period not less than 60 seconds. CTG must not be relied on for contraction frequency or duration.
- Monitor:
 - maternal wellbeing, including vital sign observations
 - fetal wellbeing, including fetal heart rate monitoring.
- The frequency of maternal observations and assessment must be included in an individualised collaborative care plan.
- Continuous electronic fetal monitoring is indicated throughout the administration of oxytocin and once labour is established.
- Use the minimum dose required to establish and maintain active labour.
- Doses are to be titrated against uterine contractions, labour progress and fetal heart rate.
- Maintain a strict fluid balance due to antidiuretic properties.
- After labour is established and cervical dilation ≥ 5 cm, the infusion must be stopped or reduced to lowest effective dose.

When restarting an oxytocin infusion after a temporary cessation, a pragmatic approach is required to avoid adverse effects. There is a lack of evidence regarding the optimal approach to resuming the drug.

The suggested approach is to restart the infusion at half the last infusion rate if it has been discontinued for <30 minutes and at less than half the previous rate if discontinued ≥ 30 minutes (due to short half-life).^{5,47}

An oxytocin infusion **should not be routinely ceased** during procedures such as an epidural insertion, providing CTG monitoring can be continued.

Obstetric review is required for:

- tachysystole or hypertonus
- cervical dilation <4cm after 12 hours of oxytocin infusion.

Second twin and second stage augmentation, under the direction of a senior medical officer:

- infusion to start at 4 milliunits per minute (4 mL per hour) and increase at intervals of 15 minutes
- if started, consider any further increase in rate at intervals of 15 minutes.

Oxytocin has weak antidiuretic properties and may contribute to maternal and neonatal hyponatraemia if used in high doses with large volumes of fluid.

Water intoxication associated with maternal and neonatal hyponatraemia may be potentially fatal. Pulmonary oedema without hyponatraemia may also occur.

In rare cases, high doses of oxytocin may cause a rapid decrease in blood pressure and cardiovascular complications.

Additional IV fluids are **not** to be used unless clinically indicated.

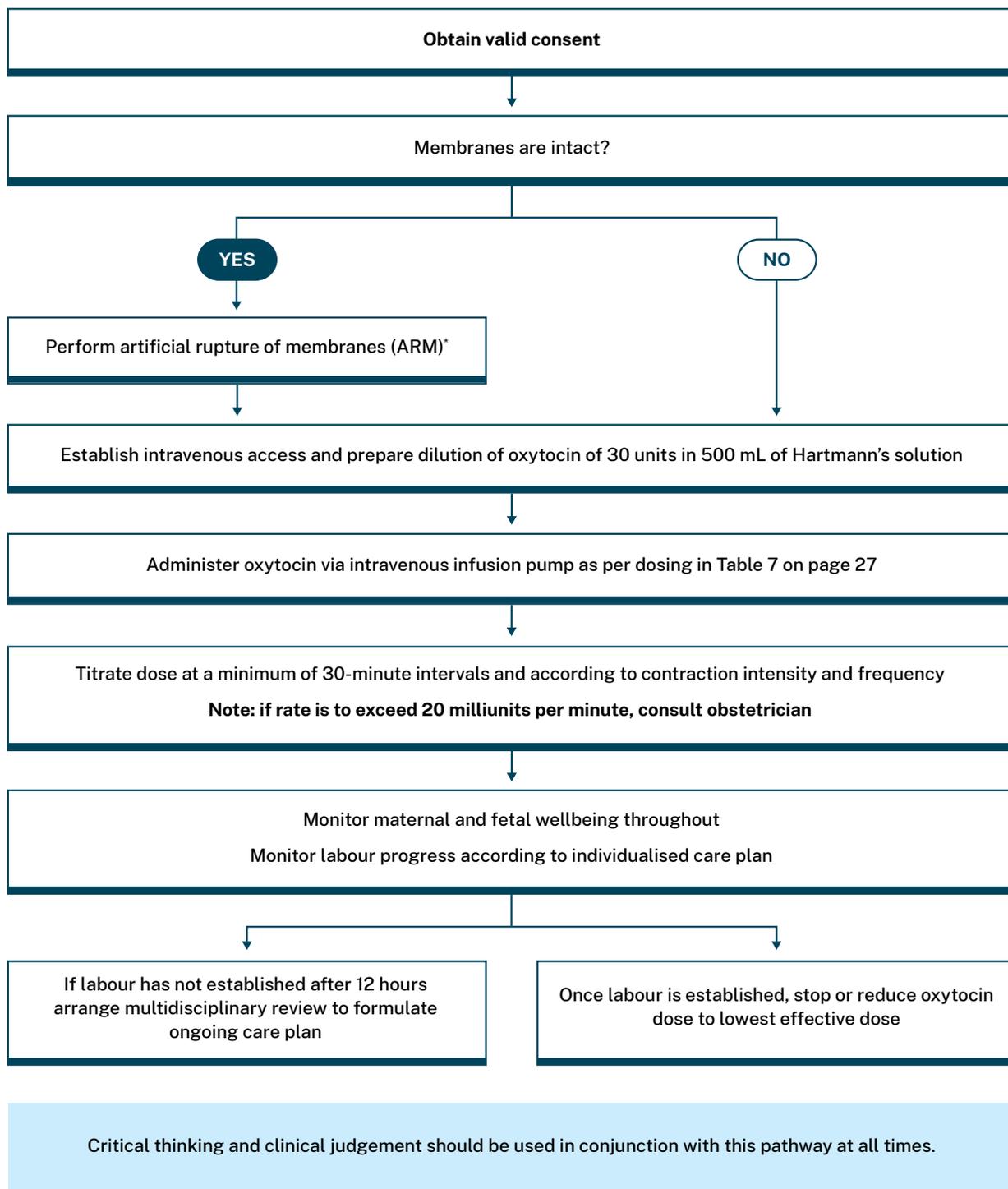
If labour has not been established after 12 hours of oxytocin administration, arrange for multidisciplinary review to formulate an ongoing care plan.

Figure 5: Oxytocin pathway

Cautions
<p>Do not start oxytocin within:</p> <ul style="list-style-type: none"> • 6 hours of dinoprostone gel • 30 minutes of removal of dinoprostone pessary • 4 hours of misoprostol
Before administration
<p>Review:</p> <ul style="list-style-type: none"> • Suitability of oxytocin use • Cautions • Maternal history • Maternal and fetal wellbeing <p>Doses exceeding 20 milliunit per minute are consider off-label</p> <p>Before exceeding 20 milliunit per minute: An obstetrician needs to complete a comprehensive assessment, including discussion with the woman</p> <p>(See Figure 3: Combined cervical ripening methods pathway)</p>
During administration
<p>Use the minimum dose required to establish and maintain active labour and titrate dose against contraction intensity and frequency</p> <p>Monitor</p> <ul style="list-style-type: none"> • The frequency of fetal and maternal observations and assessment should be included in an individualised collaborative care plan • Maternal vital sign observations • Uterine contractions – palpate the uterus and aim for 3-4 contractions in a 10-minute period with a duration of 40-60 seconds (resting period at least 60 seconds) • Fetal wellbeing including fetal heart rate monitoring • Strict fluid balance
Restarting infusion
<p>Restart the infusion at half the last infusion rate if it has been discontinued for <30 minutes and at less than half the previous rate if discontinued ≥30 minutes</p>

Please see [Figure 5: Oxytocin pathway](#) on the following page.

Figure 5: Oxytocin pathway (cont.)



*Oxytocin can be used with intact membranes for combined methods

Please see [Figure 5: Oxytocin pathway](#) on the following page for oxytocin dosing regimen.

Figure 5: Oxytocin pathway (cont.)

Oxytocin dosing regimen		
Time after starting (minutes)	Dose (milliunit per minute)*	mL per hour
0	1	1
30	2	2
60	4	4
90	8	8
120	12	12
150	16	16
180	20	20
<p>Before exceeding 20 milliunit per minute: An obstetrician needs to complete a comprehensive assessment, including discussion with the woman.</p> <p>Doses above 20 milliunit per minute are considered 'off-label'</p>		
210	24	24
240	28	28
270	32	32

*Note: 1 milliunit per minute is equal to 1 mL per hour

Following induction

Post birth discussion

It is important for women and support people to be able to provide feedback and gain further information on the maternity care they receive. This can be a formal or informal debrief.

Identifying women who have questions, or who have had a distressing or traumatic experience, is vital to ensure they are provided with individualised postnatal care and support. Early intervention can mitigate the impact and exacerbation of trauma and promote healing.

Ideally these conversations should be facilitated by the maternity clinicians involved in the woman's care to ensure the woman's understanding of the care provided and birth events. Some women may prefer to have a debrief with a healthcare professional who was not involved in the birth.

Should a woman raise concerns or staff identify issues, local health districts should have services available for women to access, or be referred into, for ongoing care and support.

Feedback from post birth discussions should be collated, interpreted and analysed to guide service development.

Safety and quality

Local health districts are responsible for monitoring and reporting IOL practices and outcomes from a safety and quality perspective as per per NSW Health Policy Directive [Maternity – Safety and Quality Essentials \(PD2023_031\)](#).⁵⁴

Data available from the quality improvement data maternity intelligence system (QIDS MatIQ), is to be used to trend IOL data. This includes rates, methods and outcomes assessed against peer facilities to identify clinical variation and adverse outcomes. This data is to be presented at the mortality and morbidity meetings as well as relevant safety and quality meetings and shared with clinical governance units.

Local health districts must use a proactive approach when unwarranted clinical variation is identified. This will support clinicians to drive quality improvement activities.

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Appendix 1: Changes in guidance since 2011

This guide is an update to NSW Health Policy Directive [Oxytocin for the Induction of Labour at or Beyond Term \(PD2011_075\)](#). The key changes in medications and protocols are listed here.

Changes since 2011 include:

- A greater focus on the importance of comprehensive assessments when planning induction of labour.
- The importance of informed decision-making, trauma-informed care and individualised care reflecting a woman's choices around the care they receive.
- Recommending documentation in the healthcare record contains evidence of informed decision-making and that valid consent has been obtained.
- Increased information on the various options for cervical ripening, including pharmacological, mechanical and combinations methods and their care considerations.
- The addition of misoprostol as a pharmacological option for cervical ripening before induction of labour. Misoprostol 25 microg tablet has been added to the NSW Medicines Formulary with the restriction: "For the induction of labour in full-term patients with an unfavourable cervix in accordance with a Drug and Therapeutics Committees approved protocol."³²
- A change to the oxytocin regime for induction of labour (dilute 30 units of oxytocin in 500 mL of Hartmann's solution), recommended incremental increases and care considerations.
- A stronger focus on the importance of senior obstetric decision-making throughout the induction of labour process.
- Recognition of the importance of post-birth discussions and acknowledging a woman's experience of induction of labour.
- Monitoring outcome and experience data to inform proactive quality improvement.

Appendix 2: Prostaglandin analogues

Table 8: Additional information regarding prostaglandin analogues

	Prostaglandin analogues	
Storage	<ul style="list-style-type: none"> • Dinoprostone gel: Refrigerate between 2-8°C • Dinoprostone pessary: Freeze below minus 18°C; if removed from freezer and not used immediately, the pessary may be stored in refrigerator for up to 1 month at 2-8°C • Misoprostol tablet: Store below 25°C, protect from light 	
Precautions	<ul style="list-style-type: none"> • Multiple pregnancy • Grand multiparty (≥5 previous births) • Asthma, chronic obstructive pulmonary disease • Cardiovascular disease • Pre-clampsia 	
	Dinoprostone <ul style="list-style-type: none"> • Ruptured membranes • High presenting part • Raised intraocular pressure or glaucoma • Polyhydramnios • For known fetal growth restriction or small for gestational age • Epilepsy 	Misoprostol <ul style="list-style-type: none"> • Use before week 37 gestation • Age <18 years (safety and efficacy not established) • Kidney failure • Severe hepatic impairment
Contraindications	<ul style="list-style-type: none"> • Known hypersensitivity to active ingredients or excipients • Previous caesarean section or uterine surgery (due to increased risk of uterine rupture) • Evidence of fetal compromise or abnormal FHR/CTG • Multiparity ≥5^{5,6} • Unexplained vaginal discharge and/or abnormal uterine bleeding • Maternal or fetal conditions where labour is inadvisable or vaginal birth is contraindicated, e.g. abnormal presentation or cord presentation, placenta praevia or active genital herpes • Estimated glomerular filtration rate (eGFR) <15 mL per min (misoprostol only) 	

Please see the continuation of [Table 8: Additional information regarding prostaglandin analogues](#) on the following page.

Appendix 2: Prostaglandin analogues (cont.)

Table 8: Additional information regarding prostaglandin analogues (cont.)

	Prostaglandin analogues	
Adverse effects	<p>Common</p> <ul style="list-style-type: none"> • Diarrhoea, vomiting and nausea • Back pain • Transient hypertension or hypotension • Bronchoconstriction • Headache • Blurred vision • Chills and fever • Tachysystole • Uterine hypercontractility and hypertonus • Altered FHR • Increased intraocular pressure • Vaginal irritation (dinoprostone only) 	<p>Rare</p> <ul style="list-style-type: none"> • Uterine hyperstimulation (may lead to uterine rupture and fetal hypoxia)
Clinical considerations	<p>Removal of dinoprostone pessary</p> <ul style="list-style-type: none"> • Onset of regular, painful contractions • Rupture of membranes • Fetal distress • Uterine hyperstimulation or hypertonic uterine contractions • Maternal systemic effects • Insufficient ripening after 24 hours <p>Repeat dosing of dinoprostone gel or misoprostol</p> <ul style="list-style-type: none"> • Following initial dose, recommend ARM once technically possible • Repeat doses must not be administered if uterine contractions are prolonged or excessive 	

Please see the continuation of [Table 8: Additional information regarding prostaglandin analogues](#) on the following page.

Appendix 2: Prostaglandin analogues (cont.)

Table 8: Additional information regarding prostaglandin analogues (cont.)

	Prostaglandin analogues	
Monitoring	<p>Baseline maternal vital sign observations, including respiratory rate, heart rate, blood pressure, temperature, uterine activity, PV loss, before insertion, then:</p> <ul style="list-style-type: none"> • immediately after insertion • 30 minutes post insertion <p>Frequency of maternal observations and assessment must be included in an individualised collaborative care plan</p> <p>Once active labour is established or oxytocin is started, carry out electronic fetal monitoring</p>	
	<p>Dinoprostone (all forms)</p> <ul style="list-style-type: none"> • After insertion CTG for minimum of 30 minutes – if normal no contractions or not otherwise indicated, ongoing care as for latent first stage of labour • CTG when in active labour or when contractions are ≥ 3 in 10 minutes 	<p>Misoprostol</p> <ul style="list-style-type: none"> • When uterine contractions begin, assess fetal wellbeing and uterine contractions using the antenatal algorithm to guide assessment of fetal wellbeing • If FHR pattern is confirmed as normal, intermittent auscultation is to be used unless there are clear indications for continuous electronic fetal monitoring
	<ul style="list-style-type: none"> • If the FHR pattern is abnormal, or there are abnormal uterine contractions, management of fetal compromise must be attended and no further doses administered • The frequency of fetal and maternal observations and assessment must be included in an individualised collaborative care plan 	

Source: [Australian Product Information – Augusta \(misoprostol\)](#). Sydney: Norgine Pty Ltd; 2022 [cited 22 April 2025].²⁸

Appendix 3: Intravenous oxytocin

Table 9: Additional information regarding intravenous oxytocin

	Oxytocin
Storage	<ul style="list-style-type: none"> Refrigerate ampoules between 2-8 °C and remove from refrigeration immediately before use Some brands have stability data regarding storage at room temperature. Refer to the individual product information for further advice Protect from light
Contraindications	<ul style="list-style-type: none"> Any condition in which spontaneous labour is inadvisable and/or vaginal birth is contraindicated Placenta praevia and vasa praevia Umbilical cord prolapse Known allergy to oxytocin, carbetocin or excipients
Precautions Careful consideration required by obstetrician before use	<ul style="list-style-type: none"> Latex allergy reports of anaphylaxis have been noted following administration of oxytocin Use with caution in patients with severe pre-eclampsia, predisposition to amniotic fluid embolus, hypertonic contractions or placental abruption Use with caution in patients with previous uterine surgery, multiple pregnancy or greater than four previous births due to increased risk of uterine rupture Use with caution in patients with known long QT syndrome or severe renal impairment, due to possible water retention and accumulation of oxytocin Oxytocin infusion may cause transient hypotension and reflex tachycardia in patients with cardiovascular disease. Monitor the patient's cardiovascular status closely during the infusion and avoid overhydration

Please see the continuation of [Table 9: Additional information regarding oxytocin](#) on the following page.

Appendix 3: Intravenous oxytocin (cont.)

Table 9: Additional information regarding intravenous oxytocin (cont.)

	Oxytocin
Drug interactions	<ul style="list-style-type: none"> Oxytocin increases the effect of ephedrine and pseudoephedrine. Concurrent use may result in additive hypertensive effects Inhalation anaesthetics that have a relaxing effect on the uterus and may enhance the hypotensive effect of oxytocin and reduce its oxytocic action. These include: <ul style="list-style-type: none"> cyclopropane enflurane halothane sevoflurane desflurane isoflurane <p>Note: cardiac rhythm disturbances have also been reported with concurrent use</p> <ul style="list-style-type: none"> When given during or after caudal block anaesthesia, oxytocin may potentiate the pressor effect of sympathomimetic vasoconstrictor agents
Adverse effects	<p>Refer to the product information for a complete list of possible adverse effects. Some are:</p> <ul style="list-style-type: none"> nausea and vomiting headache and dizziness abdominal pain flushing electrocardiogram (ECG) changes (including prolonged QT interval) transient hypotension tachycardia allergic reactions water retention uterine hyperstimulation that can lead to abnormal FHR pattern or compromise during labour

Please see the continuation of [Table 9: Additional information regarding oxytocin](#) on the following page.

Appendix 3: Intravenous oxytocin (cont.)

Table 9: Additional information regarding intravenous oxytocin (cont.)

	Oxytocin
Clinical considerations	Use in twin pregnancy. Both twins require continuous monitoring and twin 2 requires ongoing monitoring after the first is born
Monitoring	<ul style="list-style-type: none"> • The frequency of fetal and maternal observations and assessment must be included in an individualised collaborative care plan • CTG monitoring must occur with the FHR documented • Assess uterine activity by palpation and review CTG before any increase in infusion rate • Monitor fluid balance

Source: [Australian Product Information Syntocinon®\(oxytocin\)](#). Cremorne: Arrotex Pharmaceuticals Pty Limited; 2025 [cited 16 April 2025]⁵⁰

[Australian Medicines Handbook](#). Australian Medicines Handbook Pty Ltd; 2023 [updated Jan 2024; cited 12 Jun 2024].³²

[Syntocinon \(oxytocin\)](#). MIMSONline; 2023 [cited 23 May 2023].⁵⁵

Glossary

Term	Definition
ARM	Artificial rupture of membranes
CERS	Clinical Emergency Response System
Cervical ripening	Used to facilitate the softening and thinning of the cervix in preparation for labour
CTG	Cardiotocography
Fetal presentation	Presenting part of the fetus
FHR	Fetal heart rate
Forewaters	Small bag of amniotic fluid in front of the presenting part
Gestation	The period between conception and birth, measured in weeks
IOL	Induction of labour
MBS	Modified Bishop Score
Membrane sweeping	The digital separation of the fetal membranes from the lower uterine segment during a vaginal examination
Multiparous	Women having had at least one previous birth
Obstetrician	A specialist or general practice obstetrician, depending on facility service capability
Pessary	Vaginal suppository
Placenta previa	When the placenta completely or partially covers the cervical os
PV	Per vaginal

Glossary (cont.)

Term	Definition
SROM	Spontaneous rupture of membranes
Tachysystole	The presence of more than five active labour contractions in 10 minutes without fetal heart rate abnormalities
Umbilical cord prolapse	When the umbilical cord exits the cervical opening before the presenting part
USS	Ultrasound scan
Uterine hyperstimulation	Tachysystole or uterine hypertonus in the presence of fetal heart rate abnormalities
Uterine hypertonus	Tachysystole or uterine hypertonus in the presence of fetal heart rate abnormalities
Vasa previa	Unprotected fetal vessels running through the membranes over the cervical os

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