Table of Contents

List of Tables ................................................................................................................ 2

1 Introduction .................................................................................................................. 3
  1.1 Funding .................................................................................................................. 3
  1.2 Conflict of interest ............................................................................................... 3
  1.3 Guideline review .................................................................................................. 4

2 Methodology ................................................................................................................ 5
  2.1 Topic identification ............................................................................................... 5
  2.2 Scope ..................................................................................................................... 5
  2.3 Clinical questions ................................................................................................ 5
  2.4 Search strategy ..................................................................................................... 6
    2.4.1 Keywords ........................................................................................................ 6
  2.5 Consultation .......................................................................................................... 7
  2.6 Endorsement ......................................................................................................... 7
  2.7 Publication ............................................................................................................ 7

3 Levels of evidence ...................................................................................................... 8
  3.1 Summary recommendations .................................................................................. 9

4 Implementation ............................................................................................................ 10
  4.1 Guideline resources ............................................................................................. 10
  4.2 Suggested resources ............................................................................................. 10
  4.3 Implementation measures .................................................................................... 10
    4.3.1 QCG measures ............................................................................................... 10
    4.3.2 Hospital and Health Service measures ........................................................... 10
  4.4 Quality measures ................................................................................................. 11
  4.5 Areas for future research ...................................................................................... 11
  4.6 Safety and quality .................................................................................................. 12

5 References ................................................................................................................... 14

List of Tables

Table 1. Summary of change ............................................................................................ 4
Table 2. Scope framework ............................................................................................... 5
Table 3. Basic search strategy ........................................................................................ 6
Table 4. Major guideline development processes ............................................................ 7
Table 5. Levels of evidence .............................................................................................. 8
Table 6. Summary recommendations .............................................................................. 9
Table 7. NSQHS Standard 1 .......................................................................................... 11
Table 8. Clinical quality measures ............................................................................... 11
Table 9. NSQHS/EQuIPNational Criteria ....................................................................... 12

© State of Queensland (Queensland Health) 2017

This work is licensed under a Creative Commons Attribution Non-Commercial No Derivatives 3.0 Australia licence. In essence, you are free to copy and communicate the work in its current form for non-commercial purposes, as long as you attribute Queensland Clinical Guidelines, Queensland Health and abide by the licence terms. You may not alter or adapt the work in any way. To view a copy of this licence, visit http://creativecommons.org/licenses/by-nc-nd/3.0/au/deed.en

For further information contact Queensland Clinical Guidelines, RBWH Post Office, Herston Qld 4029, email guidelines@health.qld.gov.au, phone (07) 3131 6777. For permissions beyond the scope of this licence contact: Intellectual Property Officer, Queensland Health, GPO Box 48, Brisbane Qld 4001, email ip_officer@health.qld.gov.au, phone (07) 3234 1479.
1 Introduction

This document is a supplement to the Queensland Clinical Guideline (QCG) *Induction of labour*. It provides supplementary information regarding guideline development, makes summary recommendations, suggests measures to assist implementation and quality activities and summarises changes (if any) to the guideline since original publication. Refer to the guideline for abbreviations, acronyms, flow charts and acknowledgements.

1.1 Funding

The development of this guideline was funded by Healthcare Improvement Unit, Queensland Health. Consumer representatives were paid a standard fee. Other working party members participated on a voluntary basis.

1.2 Conflict of interest

Declarations of conflict of interest were sought from working party members. One working party member declared a conflict of interest and this was managed as per the Queensland Clinical Guidelines *Conflict of Interest* statement.
### 1.3 Guideline review

Queensland clinical guidelines are reviewed every 5 years or earlier if significant new evidence emerges. Table 1 provides a summary of changes made to the guidelines since original publication.

<table>
<thead>
<tr>
<th>Publication date</th>
<th>Identifier</th>
<th>Summary of major change</th>
</tr>
</thead>
</table>
| August 2010     | MN11.22-V1-R16    | First publication  
Endorsed by:  
• QCG Steering Committee  
• Statewide Maternity and Neonatal Clinical Network  
• Patient Safety and Quality Executive Committee |
| October 2011    | MN11.22-V2-R16    | Minor formatting corrections  
Table 18: Oxytocin considerations – Frequency of temperature monitoring amended from 4 hourly to 2 hourly |
| January 2014    | MN11.22-V3-R16    | Added: Section 1.5 Care if induction postponed  
Added to Table 17 Indications for removal: re use of dinoprostone gel following insufficient cervical ripening  
Added to Table 19 Administration: re use of secondary IV access  
Added to Table 21. Monitoring: Additional assessments before ARM  
Added to Table 23 Uterine hypercontractility: Use of off-licence sublingual GTN |
| April 2014      | MN11.22-V4-R16    | Flowchart: Oxytocin row: shaded blue; frequency of observations amended  
Table 4 Term prelabour rupture of membranes, Recommendations Deleted Recommend expedited IOL as contradicts Early onset Group B streptococcal disease guideline  
Table 5 Previous caesarean section, Risk/Benefit deleted content and added ‘Refer to guideline: Vaginal birth after caesarean section (VBAC)’  
Table 17: Maximum dose and Indications for removal rows: the timing for Dinoprostone gel administration amended to be based on the woman’s individual circumstances and the obstetrician’s discretion  
Table 18: Cautions Amended wording from ‘Oxytocin should be used with caution..’ to ‘Oxytocin is contraindicated in women with a previous uterine scar or high parity ..’ |
| March 2017      | MN17.22-V5-R22    | First complete guideline review  
Endorsed by:  
• QCG Steering Committee  
• Statewide Maternity and Neonatal Clinical Network |
| June 2017       | MN17.22-V6-R22    | Amendment to Table 17 Post balloon catheter insertion.  
Added to first row of table-monitoring: “engagement of the fetal head” and “medical review required if malpresentation or fetal head 5/5 palpable after insertion”  
Amendment to Flowchart Balloon catheter as above |
2 Methodology

Queensland Clinical Guidelines (QCG) follows a rigorous process of guideline development. This process was endorsed by the Queensland Health Patient Safety and Quality Executive Committee in December 2009. The guidelines are best described as ‘evidence informed consensus guidelines’ and draw from the evidence base of existing national and international guidelines and the expert opinion of the working party.

2.1 Topic identification

The topic was identified as a priority by the Statewide Maternity and Neonatal Clinical Network at a forum in 2009.

2.2 Scope

The scope of the guideline was determined using the following framework.

Table 2. Scope framework

<table>
<thead>
<tr>
<th>Scope framework</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Population</strong></td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>Exclusions</strong></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

2.3 Clinical questions

The following clinical questions were generated to inform the guideline scope and purpose:

- What are the clinical indications for IOL?
- What clinical care should be provided to pregnant women where IOL has been agreed?
- What methods of IOL are recommended?
- For each method of IOL, what are the clinical considerations?
- What are the complications of IOL?
### 2.4 Search strategy

A search of the literature was conducted during June to November 2016. The QCG search strategy is an iterative process that is repeated and amended as guideline development occurs (e.g. if additional areas of interest emerge, areas of contention requiring more extensive review are identified or new evidence is identified). All guidelines are developed using a basic search strategy. This involves both a formal and informal approach.

#### Table 3. Basic search strategy

<table>
<thead>
<tr>
<th>Step</th>
<th>Consideration</th>
</tr>
</thead>
</table>
| 1. Review clinical guidelines developed by other reputable groups relevant to the clinical speciality | • This may include national and/or international guideline writers, professional organisations, government organisations, state based groups.  
• This assists the guideline writer to identify:  
  o The scope and breadth of what others have found useful for clinicians and informs the scope and clinical question development  
  o Identify resources commonly found in guidelines such as flowcharts, audit criteria and levels of evidence  
  o Identify common search and key terms  
  o Identify common and key references |
| 2. Undertake a foundation search using key search terms | • Construct a search using common search, key and MESH terms identified during Step 1 above  
• Search the following databases  
  o PubMed  
  o CINAHL  
  o Medline  
  o Cochrane Central Register of Controlled Trials  
  o EBSCO  
  o Embase  
• Studies published in English less than or equal to 5 years previous are reviewed in the first instance. If relevant, other years may be searched  
• Save and document the search  
• Add other databases as relevant to the clinical area |
| 3. Develop search word list for each clinical question. | • This may require the development of clinical sub-questions beyond those identified in the initial scope.  
• Using the foundation search performed at Step 2 as the baseline search framework, refine the search using the specific terms developed for the clinical question  
• Save and document the search strategy undertaken for each clinical question |
| 4. Other search strategies | • Search the reference lists of reports and articles for additional studies  
• Access other sources for relevant literature  
  o Known resource sites  
  o Internet search engines  
  o Relevant text books |

#### 2.4.1 Keywords

The following keywords were used in the basic search strategy. Other keywords may have been used for specific aspects of the guideline:  
Induc* of labo*r, labo*r induc*, IOL, membran*, sweep*, strip*, guideline*, fetal macrosomia, postterm, postdates, prolonged, pregnancy, fetal growth restriction, FGR, IUGR, intrahepatic cholestasis of pregnancy, obstetric cholestasis, maternal age, maternal request, guideline, prostaglandin, dinoprostone, oxytocin, twin* pregnanc*, balloon, transcervical, catheter, amniotomy, artificial rupture of membranes, ARM, fetal growth restriction, FGR, IUGR, risks
2.5 Consultation

Major consultative and development processes occurred between August 2016 and November 2016. These are outlined in Table 4.

Table 4. Major guideline development processes

<table>
<thead>
<tr>
<th>Process</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical lead</td>
<td>The nominated Clinical Lead was approved by QCG Steering Committee</td>
</tr>
<tr>
<td>Consumer participation</td>
<td>Consumer participation was invited from a range of consumer focused organisations who had previously accepted an invitation for on-going involvement with QCG</td>
</tr>
<tr>
<td>Working party</td>
<td>An EOI for working party membership was distributed via email to Queensland clinicians and stakeholders (~1000) in August 2016 The working party was recruited from responses received Working party members who participated in the working party consultation processes are acknowledged in the guideline Working party consultation occurred in a virtual group via email</td>
</tr>
<tr>
<td>Statewide consultation</td>
<td>Consultation was invited from Queensland clinicians and stakeholders (~1000) during November 2016 Feedback was received primarily via email All feedback was compiled and provided to the clinical lead and working party members for review and comment</td>
</tr>
</tbody>
</table>

2.6 Endorsement

The guideline was endorsed by the:
- Queensland Clinical Guidelines Steering Committee in February 2017
- Statewide Maternity and Neonatal Clinical Network Queensland in February 2017

2.7 Publication

The guideline and guideline supplement were published on the QCG website in March 2017.

The guideline can be cited as:

The guideline supplement can be cited as:
3 Levels of evidence

The levels of evidence identified in the National Health and Medical Research Council (NHMRC) Levels of evidence and grades for recommendations for developers of guidelines (2009) were used to inform the summary recommendations. Levels of evidence are outline in Table 5. Note that the ‘consensus’ definition in Table 5 is different from that proposed by the NHMRC. Instead, it relates to forms of evidence that are not identified by the NHMRC and/or that arise from the clinical experience of the guideline’s clinical lead and working party.

Table 5. Levels of evidence

<table>
<thead>
<tr>
<th>Levels of evidence</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Evidence obtained from a systematic review of all relevant randomised controlled trials.</td>
</tr>
<tr>
<td>II</td>
<td>Evidence obtained from at least one properly designed randomised controlled trial.</td>
</tr>
<tr>
<td>III-1</td>
<td>Evidence obtained from well-designed pseudo randomised controlled trials (alternate allocation or some other method).</td>
</tr>
<tr>
<td>III-2</td>
<td>Evidence obtained from comparative studies including systematic review of such studies with concurrent controls and allocation not randomised (cohort studies), case control studies or interrupted time series with a control group.</td>
</tr>
<tr>
<td>III-3</td>
<td>Evidence obtained from comparative studies with historical control, two or more single arm studies, or interrupted time series without parallel control group.</td>
</tr>
<tr>
<td>IV</td>
<td>Evidence obtained from case series, either post-test or pre-test and post-test.</td>
</tr>
<tr>
<td>Consensus*</td>
<td>Opinions based on respected authorities, descriptive studies or reports of expert committees or clinical experience of the working party.</td>
</tr>
</tbody>
</table>
3.1 Summary recommendations

Summary recommendations and levels of evidence are outlined in Table 6.

Table 6. Summary recommendations

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Grading of evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Document the indication for induction¹</td>
<td>Consensus</td>
</tr>
<tr>
<td>2. Discuss with the woman:</td>
<td>Consensus</td>
</tr>
<tr>
<td>• Reason for induction</td>
<td></td>
</tr>
<tr>
<td>• Method of induction</td>
<td></td>
</tr>
<tr>
<td>• Potential risks and benefits</td>
<td></td>
</tr>
<tr>
<td>• Options for pain relief</td>
<td></td>
</tr>
<tr>
<td>• Options if unsuccessful</td>
<td></td>
</tr>
<tr>
<td>• Options if IOL declined or postponed</td>
<td></td>
</tr>
<tr>
<td>3. Assess the cervix using the Modified Bishop Score¹</td>
<td>Consensus</td>
</tr>
<tr>
<td>4. Care if IOL declined from 42⁺⁰ weeks:</td>
<td>II¹</td>
</tr>
<tr>
<td>• Offer at least twice weekly assessment for fetal well-being from 42⁺⁰ weeks², including:</td>
<td></td>
</tr>
<tr>
<td>o Cardiotocography (CTG)³</td>
<td></td>
</tr>
<tr>
<td>o Ultrasound assessment of amniotic fluid volume using estimation of deepest vertical pocket⁴</td>
<td></td>
</tr>
<tr>
<td>5. When a booked induction of labour is postponed:</td>
<td>Consensus</td>
</tr>
<tr>
<td>• Perform an assessment of maternal and fetal wellbeing</td>
<td></td>
</tr>
<tr>
<td>• Develop a plan with the woman for continued care including:</td>
<td></td>
</tr>
<tr>
<td>o Arrangements for ongoing monitoring (if required)</td>
<td></td>
</tr>
<tr>
<td>o Return for IOL</td>
<td></td>
</tr>
<tr>
<td>o Advise the woman to contact the facility if concerned about her wellbeing or that of her baby</td>
<td></td>
</tr>
<tr>
<td>• Document the assessment and plan in the health record</td>
<td></td>
</tr>
<tr>
<td>6. Prolonged pregnancy: for women with uncomplicated pregnancies, recommend IOL from 41⁺⁰ weeks⁵</td>
<td>II¹</td>
</tr>
<tr>
<td>7. After ARM, commence oxytocin early to assist with establishing labour¹</td>
<td>Consensus</td>
</tr>
<tr>
<td>8. Record oxytocin infusion rates in milliunit/minute rather than mL/hour.¹</td>
<td>Consensus</td>
</tr>
</tbody>
</table>
4 Implementation

This guideline is applicable to all Queensland public and private maternity facilities. It can be downloaded in Portable Document Format (PDF) from www.health.qld.gov.au/qcg

4.1 Guideline resources
The following guideline components are provided on the website as separate resources:

- Flowchart: Induction of labour
- Education resource: Induction of labour
- Knowledge assessment: Induction of labour
- Parent information: Induction of labour

4.2 Suggested resources

During the development process stakeholders identified additional resources with potential to complement and enhance guideline implementation and application. The following resources have not been sourced or developed by QCG but are suggested as complimentary to the guideline:

- Local protocols regarding the use of water immersion if telemetry monitoring is available
- Local protocols for oxytocin dilution preparations where close fluid monitoring is required (e.g. cardiac conditions)
- Resources (e.g. education and training, notifications) to support clinicians transition to the standard oxytocin regimen
- Local protocols for outpatient management of induction of labour (where this is an option) that include inclusion/exclusion criteria, information for women, monitoring requirements, indications for return to hospital, clinical governance and monitoring of the service and outcomes

4.3 Implementation measures

Suggested activities to assist implementation of the guideline are outlined below.

4.3.1 QCG measures

- Notify Chief Executive Officer and relevant stakeholders
- Monitor emerging new evidence to ensure guideline reflects contemporaneous practice
- Capture user feedback
- Record and manage change requests
- Review guideline in 2022

4.3.2 Hospital and Health Service measures

Initiate, promote and support local systems and processes to integrate the guideline into clinical practice, including:

- Hospital and Health Service (HHS) Executive endorse the guidelines and their use in the HHS and communicate this to staff
- Promote the introduction of the guideline to relevant health care professionals
- Support education and training opportunities relevant to the guideline and service capabilities
- Align clinical care with guideline recommendations
- Undertake relevant implementation activities as outlined in the Guideline implementation checklist available at www.health.qld.gov.au/qcg
4.4 Quality measures

Auditing of guideline recommendations and content assists with identifying quality of care issues and provides evidence of compliance with the National Safety and Quality Health Service (NSQHS) Standards⁶ [Refer to Table 7]. Suggested audit and quality measures are identified in Table 8. Clinical quality measures.

Table 7. NSQHS Standard 1

| NSQHS Standard 1: Governance for Safety and Quality in Health Service Organisations |
|---|---|
| Clinical Practice: Care provided by the clinical workforce is guided by current best practice |
| Criterion 1.7: | Actions required: |
| Developing and/or applying clinical guidelines or pathways that are supported by the best available evidence | 1.7.1 Agreed and documented clinical guidelines and/or pathways are available to the clinical workforce |
| | 1.7.2 The use of agreed clinical guidelines by the clinical workforce is monitored |

The following clinical quality measures are suggested:

Table 8. Clinical quality measures

<table>
<thead>
<tr>
<th>No</th>
<th>Audit criteria</th>
<th>Guideline section</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Proportion of women who gave birth beyond 42⁺0 weeks gestation</td>
<td>Section 2.1 Prolonged pregnancy prevention</td>
</tr>
<tr>
<td>2.</td>
<td>Proportion of women who declined IOL, who received at least twice weekly assessment of fetal well-being from 42⁺0 weeks gestation (CTG and USS)</td>
<td>Section 1.2 IOL declined or postponed</td>
</tr>
<tr>
<td>3.</td>
<td>Proportion of women who have a documented indication for the IOL in their health record</td>
<td>Section 1.1 Communication and information</td>
</tr>
<tr>
<td>4.</td>
<td>Proportion of women who have a documented modified Bishop score (MBS) in their health record before IOL commences</td>
<td>Section 3 Pre IOL assessment</td>
</tr>
<tr>
<td>5.</td>
<td>Proportion of women who had a CTG performed before IOL commences</td>
<td>Section 3 Pre IOL assessment</td>
</tr>
<tr>
<td>6.</td>
<td>Proportion of women with intact membranes and unfavourable cervix (MBS 6 or less) where an ARM was attempted/performed as the primary method of IOL (low expected)</td>
<td>Section 4 Methods of IOL</td>
</tr>
<tr>
<td>7.</td>
<td>Proportion of women who had ARM as the primary method of IOL, and commenced oxytocin within four hours</td>
<td>Section 4.3 Artificial rupture of membranes</td>
</tr>
</tbody>
</table>

4.5 Areas for future research

During development the following areas were identified as having limited or poor quality evidence to inform clinical decision making. Further research in these areas may be useful:

- Women’s experiences and preferences in relation to IOL and expectant management
- The influence of maternal ethnicity on timing of IOL for prolonged pregnancy
4.6 Safety and quality
Implementation of this guideline provides evidence of compliance with the NSQHS and Australian Council on Healthcare Standards (ACHS) EQuIP National accreditation programs.

Table 9. NSQHS/EQuIP National Criteria

<table>
<thead>
<tr>
<th>NSQHS/EQuIP National Criteria</th>
<th>Actions required</th>
<th>Evidence of compliance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 1: Governance for Safety and Quality in Health Service Organisations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical practice</td>
<td>1.7 Developing and/or applying clinical guidelines or pathways that are supported by the best available evidence</td>
<td>1.7.1 Agreed and documented clinical guidelines and/or pathways are available to the clinical workforce</td>
</tr>
<tr>
<td>Performance and skills management</td>
<td>1.12 Ensuring that systems are in place for ongoing safety and quality education and training</td>
<td>1.12.1 The clinical and relevant non-clinical workforce have access to ongoing safety and quality education and training for identified professional and personal development</td>
</tr>
<tr>
<td>Standard 2: Partnering with Consumers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumer partnership in designing care</td>
<td>2.5 Partnering with consumers and/or carers to design the way care is delivered to better meet patient needs and preferences</td>
<td>2.5.1 Consumers and/or carers participate in the design and redesign of health services</td>
</tr>
<tr>
<td>Standard 4: Medication safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication management processes</td>
<td>4.1 Developing and implementing governance arrangements and organisational policies, procedures and/or protocols for medication safety, which are consistent with national and jurisdictional legislative requirements, policies and guidelines</td>
<td>4.2.1 Policies, procedures and/or protocols are in place that are consistent with legislative requirements, national, jurisdictional and professional guidelines</td>
</tr>
</tbody>
</table>
### Standard 6: Clinical handover

**Clinical handover processes**

6.2 Establishing and maintaining structured and documented processes for clinical handover

- The workforce has access to documented structured processes for clinical handover that include:
  - preparing for handover, including setting the location and time while maintaining continuity of patient care
  - organising relevant workforce members to participate
  - being aware of clinical context and patient needs
  - participating in effective handover resulting in transfer of responsibility and accountability for care

The guideline acknowledges the need for local protocols to support transfer of information, professional responsibility and accountability for some or all aspects of care. For example, to enable appropriate level of supervision during intrapartum care during induction of labour.

### Standard 9: Recognising clinical deterioration and escalating care

**Establishing recognition and response systems**

9.1 Developing, implementing and regularly reviewing the effectiveness of governance arrangements and the policies, procedures and/or protocols that are consistent with the requirements of the National Consensus Statement.

9.1.2 Policies, procedures and/or protocols for the organisation are implemented in areas such as:

- Measurement and documentation of observations
- Escalation of care
- Establishment of a rapid response system
- Communication about clinical deterioration

The guideline is consistent with National Consensus statement recommendations.

The guideline identifies clinical circumstances during induction of labour when escalation of care is required.

### Standard 12: Provision of care

**Criterion 1: Assessment and care planning**

12.1 Ensuring assessment is comprehensive and based upon current professional standards and evidence based practice

12.1.1 Guidelines are available and accessible by staff to assess physical, spiritual, cultural, physiological and social health promotion needs

Assessment and care appropriate to the cohort of patients is identified in the guideline.

The guideline is based on the best available evidence.
5 References