Queensland Clinical Guidelines

Translating evidence into best clinical practice

Maternity and Neonatal **Clinical Guideline**

Supplement: Hypertensive disorders of pregnancy

Queensland Government

Table of Contents

List of Tables

1 Introduction

This document is a supplement to the Queensland Clinical Guideline *Hypertensive disorders of pregnancy*. 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 the Health Systems Innovation Branch, Queensland Health. Consumer representatives were paid a 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 as per the Queensland Clinical Guidelines *Conflict of Interest* statement. No conflict of interest was identified.

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 1. Summary of change

Date	Identifier	Summary of major change
August 2010	MN1008.13-V1-R13	First publication
August 2011	MN10.13-V2-R15	Review date extended. Identifier updated. Program name updated
May 2012	MN10.13-V3-R15	Section 1.1 Definition: Added requirement for clinical and laboratory assessment if rise in BP Section 10 Postpartum: Specified observations. Added reduction in frequency of monitoring requires approval from obstetric/medical team Appendix A: Reference to mercury sphygmomanometer deleted
July 2013	MN10.13-V4-R15	Section 6.1 Mild-moderate hypertension: BP levels for considering treatment with antihypertensive agents lowered from 140-169/90-109 mm Hg to 140-160/90-100 mmHg Section 6.2 Severe hypertension: BP levels requiring treatment with antihypertensive agents lowered from ≥170/110 mmHg to >160/100 mmHg Flowcharts updated to reflect above
July 2015	MN15.13-V5-R20	First full review.
August 2016	MN15.13-V6-R20	Tables 3 and 7 and Appendix B description of proteinuria changed from ‘protein to creatinine ratio greater than or equal to 30 g/mmol’ to protein to creatinine ratio greater than or equal to 30 mg/mmol’
August 2016	MN15.13-V7-R20	Missing words at 2.2 Diagnosis of preeclampsia reinserted. Appendix B: random protein to creatinine ratio units changed from ‘mg/mol’ to ‘mg/mmol’ Minor typographical corrections

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. This guideline is the first full review since original publication.

2.2 Scope

The scope of the guideline was determined using the PICO Framework (Population, Intervention, Comparison, and Outcome) as outlined in Table 2.

Table 2. PICO Framework

PICO	
Population	Pregnant women with or at risk of developing hypertension
Intervention	Diagnosis, risk management, assessment and treatment of the condition
Comparison	n/a
Outcome	• Early identification of pregnant women with hypertension • Accurate assessment and correct diagnosis of condition • Best practice management during pregnancy, labour and postpartum

2.3 Clinical questions

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

- How is hypertension in pregnancy classified and described?
- How is preeclampsia diagnosed?
- What measures reduce risks of HDP or limit disease progression (if any)?
- What is considered best practice management with regard to:
    - Initial investigations
    - Target BP
    - Antihypertensive therapy
    - Model of care
    - Antenatal surveillance
- What is best practice management with regard to planning birth and intrapartum and postpartum care?
- What are the longer term consequences of HDP?

2.4 Exclusions

The following exclusions were identified in the guideline scope:

- Management of anaesthesia
- Routine antenatal, intrapartum and postpartum care

2.5 Search strategy

A search of the literature was conducted during January and February 2015 using multiple techniques including search and review of:

- Known guideline sites (e.g. Royal Australian and New Zealand College of Obstetricians and Gynaecologists, National Guideline Clearing House, Royal College of Obstetrician and Gynaecologists, Society of Obstetricians and Gynaecologists of Canada, American Academy of Pediatrics)
- Synthesised evidence (e.g. UpToDate, Cochrane reviews)
- Summaries of relevant literature (e.g. identified using Cinahl, PubMed)
- Individual case reports, studies and trials identified in the literature
- Relevant reference lists

2.6 Consultation

Major consultative and development processes occurred between January 2015 and July 2015. These are outlined in Table 3.

Table 3. Major guideline development processes

Process	Activity
Clinical lead	• The nominated Clinical Lead was approved by QCG Steering Committee
Consumer participation	• Consumer participation was invited from a range of consumer focused organisations
Working party	• An EOI for working party membership was distributed via email to Queensland clinicians and stakeholders (~1500) in April 2015 • 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
Statewide consultation	• Consultation was invited from Queensland clinicians and stakeholders (~1500) during May 2015 • Feedback was received primarily via email • All feedback was compiled and provided to the clinical lead and working party members for review and comment

2.7 Endorsement

The guideline was endorsed by the:

- Queensland Clinical Guidelines Steering Committee in July 2015
- Statewide Maternity and Neonatal Clinical Network [Queensland] in July 2015

2.8 Publication

The guideline and guideline supplement were published on the QCG website in August 2015
The guideline can be cited as:

Queensland Clinical Guidelines Hypertensive disorders of pregnancy. Guideline No. MN15.13-V6-R20. Queensland Health. 2016. Available from: http://www.health.qld.gov.au/qcg/

The guideline supplement can be cited as:

Queensland Clinical Guidelines Supplement: Hypertensive disorders of pregnancy. Guideline No. MN15.13-V6-R20. Queensland Health. 2016. Available from: http://www.health.qld.gov.au/qcg/

3 Levels of evidence

The summary recommendations and the levels and quality of evidence reported in the following sections have been sourced from: *Magee LA, Pels A, Helewa M, Rey E, von Dadelszen P, on behalf of the Canadian Hypertensive Disorders of Pregnancy (HDP) Working Group. Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. Pregnancy Hypertension: An International Journal of Women's Cardiovascular Health. 2014; 4:105-145.*
*Consensus recommendations are the opinion of the Queensland Clinical Guideline working party.

Table 4. Levels of evidence

Quality of evidence assessment		Classification	
I	Evidence obtained from at least one properly randomized controlled trial.	A	There is good evidence to recommend the clinical preventive action
II-1	Evidence from well-designed controlled trials without randomization	B	There is fair evidence to recommend the clinical preventive action
II-2	Evidence from well-designed cohort (prospective or retrospective) or case-control studies, preferably from more than one centre or research group	C	The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making
II-3	Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in the category	D	There is fair evidence to recommend against the clinical preventive action
		E	There is good evidence to recommend against the clinical preventive action
III	Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees	L	There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making
***Consensus** Opinion based on the clinical experience of the Queensland clinical guideline working party			

3.1 Quality of evidence and strength of recommendation

Table 5. Quality of evidence and strength of recommendation

Quality of evidence	
High	We are very confident that the true effect lies close to that of the estimate of the effect.
Moderate	We are moderately confident in the effect estimate. The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.
Low	Our confidence in the effect estimate is limited. The true effect may be substantially different from the estimate of the effect.
Very low	We have very little confidence in the effect estimate. The true effect is likely to be substantially different from the estimate of the effect.
Strength of recommendation	
Strong	
For patients/public	We believe most people in this situation would want the recommended course of action and only a small number would not.
For clinicians	The recommendation would apply to most individuals. Formal decision aids are not likely to be needed to help individuals make decisions consistent with their values and preferences.
For policy makers and developers of quality measures	The recommendation can be adopted as policy in most situations. Adherence to this recommendation according to the guideline could be used as a quality criterion or performance indicator.
Weak	
For patients/public	We believe that most people in this situation would want the recommended course of action, but many would not. Different choices are acceptable for each person and clinicians should support patients and discuss their values and preferences to reach a decision. Decision aids may support people in reaching these decisions.
For clinicians	We recognize that different choices may be appropriate for individual patients. Clinicians should support each patient in reaching a management decision consistent with his or her values and preferences. Decision aids may support individuals in reaching such decisions.
For policy makers and developers of quality measures	Policy-making will require substantial debate and involvement of various stakeholders. An appropriately documented decision making process could be used as quality indicator.

Source: Magee LA, Pels A, Helewa M, Rey E, von Dadelszen P, on behalf of the Canadian Hypertensive Disorders of Pregnancy (HDP) Working Group. Diagnosis, evaluation, and management of the hypertensive disorders of pregnancy. Pregnancy Hypertension: An International Journal of Women's Cardiovascular Health. 2014; 4:105-145.

3.2 Summary recommendations

Summary recommendations and levels of evidence are outlined in Table 5.

Table 6. Summary recommendations

Recommendation		Grading of evidence Quality/Strength
1.	Use the definitions and classifications of hypertensive disorders of pregnancy provided by the Society of Obstetric Medicine of Australia and New Zealand	**Consensus**
2.	Measure BP in the sitting position, with the arm at the level of the heart Use Korotokoff phase 5 to designate diastolic BP	**II-2A** Low/Strong **I-A** Moderate/Strong
3.	Suspect significant proteinuria when urinary dipstick proteinuria is greater than or equal to 1+	**II-2A** Moderate/Strong
4.	For women at increased risk of preeclampsia recommend Aspirin 100 mg before 16 weeks gestation.	**III-B** Very low/Strong
5.	Provide inpatient care for women with severe hypertension or severe preeclampsia	**II-2B** Low/Strong
6.	For women with severe hypertension, initial antihypertensive therapy in the hospital setting should be with: • Nifedipine short-acting (capsules) or • Parenteral hydralazine or • Parenteral labetalol	 **I-A** High/Strong **I-A** High/Strong **I-A** High/Strong
7.	For women with any HDP, consider vaginal birth unless a caesarean birth is required for the usual obstetric indications	**II-2B** Low/Strong
8.	Continue antihypertensive treatment intrapartum to maintain sBP at less than160mmHg and dBP at less than110 mmHg	**II-2B** Low/Strong
9.	Actively manage the third stage of labour with Oxytocin 5 units IV or 10 units IM, particularly in the presence of thrombocytopenia or coagulopathy	**I-A** Moderate/Strong
10.	$MgSO_4$ is recommended for first-line treatment of eclampsia	**I-A** High/Strong
11.	$MgSO_4$ is recommended as prophylaxis against eclampsia in women with severe preeclampsia	**I-A** High/Strong
12.	Offer formal postnatal review for preconceptual advice, counselling, screening and lifestyle advice to women whose pregnancies have been complicated by hypertensive disorders of pregnancies	**Consensus**

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:

- Flowcharts: Management of eclampsia and Management of hypertension in pregnancy
- Education resource: Hypertensive disorders of pregnancy
- Knowledge assessment: Hypertensive disorders of pregnancy
- Auditing resources: Hypertensive disorders of pregnancy
- Parent information: Hypertension in pregnancy

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:

- Combined order and documentation of care record during administration of Magnesium Sulfate
- Antihypertensive drug protocols for local use and administration

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 2020

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)Standards[1]. Suggested audit and quality measures are identified in Table 7. NSQHS Standard 1.

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

No.	Audit criteria	Guideline section
1.	Proportion of hypertensive pregnant women whose hypertension is classified according to recommended terminology and criteria	Section 2.1
2.	Proportion of pregnant women with greater than or equal to 2+ proteinuria on urinary dipstick who have a quantitative measurement of proteinuria	Section 3.4
3.	Proportion of pregnant women with systolic BP greater than or equal to 160 mm Hg or diastolic BP greater than or equal to 100 mm Hg who are treated with antihypertensive medication	Section 4.2
4.	Proportion of women who experienced eclampsia who received Magnesium Sulfate as first line treatment	Section 5.3
5.	Proportion of women who received Magnesium Sulfate as per the recommended protocol (loading dose 4 g followed by 1 g/hour intravenously)	Appendix D
6.	Proportion of women with preeclampsia who are assessed for VTE prophylaxis	Section 5
7.	Proportion of women with gestational hypertension or preeclampsia who are informed about the potential for acute worsening of the disorder and the necessity to contact their care provider when experiencing symptoms (severe headache, pain upper right abdominal or epigastric pain, hyperreflexia, vision disorders and convulsions)	Section 3.3

4.5 Safety and quality

Implementation of this guideline provides evidence of compliance with the NSQHS and Australian Council on Healthcare Standards (ACHS) EQuIPNational accreditation programs[1,2]

Table 9. NSQHS/EQuIPNational Criteria

NSQHS/EQuIPNational Criteria	Actions required	☑ Evidence of compliance
Standard 1: Governance for Safety and Quality in Health Service Organisations		
Clinical practice 1.7 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	☑ Queensland Clinical Guidelines is funded by Queensland Health to develop clinical guidelines relevant to the service line to guide safe patient care across Queensland ☑ The guideline provides evidence-based and best practice recommendations for care ☑ The guideline is endorsed for use in Queensland Health facilities. ☑ A desktop icon is available on every Queensland Health computer desktop to provide quick and easy access to the guideline
Performance and skills management 1.12 Ensuring that systems are in place for ongoing safety and quality education and training	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	☑ The guideline has accompanying educational resources to support ongoing safety and quality education for identified professional and personal development. The resources are freely available on the internet http://www.health.qld.gov.au/qcg
Standard 2: Partnering with Consumers		
Consumer partnership in designing care 2.5 Partnering with consumers and/or carers to design the way care is delivered to better meet patient needs and preferences	2.5.1 Consumers and/or carers participate in the design and redesign of health services	☑ Consumer consultation was sought and obtained during the development of the guideline. Refer to the acknowledgement section of the guideline for details
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 recommends the use of the Maternity Early Warning Tool. The tool is consistent with principles of recognising clinical deterioration and escalating care

NSQHS/EQuIPNational Criteria	Actions required	☑ Evidence of compliance
EQuIPNational		
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

1. Australian Commission on Safety and Quality in Healthcare. National Safety and Quality Health Service Standards. 2012 [cited 2014, October 14]. Available from: http://www.safetyandquality.gov.au/.

2. The Australian Council on Healthcare Standards. EQuIPNational Guidelines. 2012 [cited 2014 October 20]. Available from: http://www.achs.org.au/programs-services/.