Queensland Clinical Guidelines

Translating evidence into best clinical practice

Maternity and Neonatal **Clinical Guideline**

Supplement: Hypoxic ischaemic encephalopathy (HIE)

Queensland Government

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1 Introduction

This document is a supplement to the Queensland Clinical Guideline (QCG) *Hypoxic ischaemic encephalopathy (HIE).* 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 as per the Queensland Clinical Guidelines *Conflict of Interest* statement. No conflict of interest was identified.

1.3 Development process

This version of the guideline followed the QCG *Peer review* process.

1.4 Summary of changes

Consider section break and landscape orientation

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

Publication date *Endorsed by:*	**Identifier**	**Summary of major change**
6/05/2010	NN1005.11-V1-R13	First publication
13/05/2010	NN1005.11-V2-R13	IV Dextrose reworded to IV Glucose
22/08/2011	MN10.11-V3-R15	New website. Name and format updates
26/10/2011	MN10.11-V4-R15	Appendix D: Anticonvulsant therapy deleted. Reference to Queensland Maternity and Neonatal Clinical Guideline Neonatal Seizures added
2/03/2016 *Statewide Maternity and Neonatal Clinical Network (Queensland)*	MN16.11-V5-R21	First full review of original publication Removed sections on general medical neonatal intensive care management Flow charts added Inclusion criteria for therapeutic hypothermia amended First Guideline Supplement published
16/03/2016	MN16.11-V6-R21	Flow chart: Criteria for therapeutic hypothermia (cooling): “pH ≤ 7.00” amended to “pH <7.00”
4/8/2017	MN17.11-V7-R21	Amendments to reference list (typos) Format of medications updated (not capitalised) Table 11 Temperature monitoring using axillary temperature and frequency clarified/reworded Appendix D amended to align with Table 11
10/01/2018	MN17.11-V8-R21	• Checklist for therapeutic hypothermia (page 3) : re-ordered criteria. • Assessment of encephalopathy severity (page 4): Added assessment codes for normal and not applicable. Added space to record time of assessment. Change requested by clinician. Supports clarity of therapeutic hypothermia criteria and documentation of Modified Sarnat assessment.

Publication date *Endorsed by:*	**Identifier**	**Summary of major change**
February 2018	MN16.11-V9-R21	• Change initiated by clinician to improve clarity around current evidence for therapeutic cooling criteria • Checklist for therapeutic hypothermia amended o Removed statement about criteria with limited evidence o Added standard criteria for cooling to checklist • Base deficit changed to base excess throughout document. • Description of base excess units of measure changed throughout document o **From** ≥ minus 12 mmol/L ' **To** 'equal to or worse than minus 12 mmol/L'
December 2021 *QCG Steering Committee* *Statewide Maternity and Neonatal Clinical Network (Qld)*	MN21.11-V10-R26	Peer review **Flowcharts**: • Updated in line with content amendments **Sections amended** • 3.1 Signs of HIE/diagnostic criteria o Table 5 Summary of signs–added clinical features; placental and cord findings; paired cord blood gas • 3.2 Investigations: added information about cord blood gas, and LFT and renal function tests • 3.5 Staging criteria: added about longer term outcomes after mild (stage 1) HIE • 4 Therapeutic hypothermia: added introduction and suggest discussing mild HIE with neonatologist regarding suitability for TH • 4.2 New section: Cautions and contraindications • 4.3.2 Assessment and monitoring o Added information about clinical assessment, pathology, Sarnat staging and scoring o From: axilla temperature every 20 minutes to: every 30 minutes • 4.3.3 Supportive care o Blood gas additional information and parameters o Antibiotics refer to NeoMedQ o Added: neurodevelopmental care • 4.4.1 Cooling baby o Added to clinical standards: cooling continues for 72 hours at target temperature with regular temperature monitoring o Option 1 and option 2 relabelled as active cooling servo-controlled or manual • 4.4.2 Care of baby during TH o From: paracetamol–preferably administer per rectum to: use with caution and administer intravenously o Midazolam deleted • 4.4.3 Rewarming baby

Publication date *Endorsed by:*	**Identifier**	**Summary of major change**
		○ Additional information about principles of rewarming ○ Rewarming option 1 and 2 relabelled as cooling and warming mattress ○ Added document temperature of baby and cot during rewarming ○ Option 2 (manual) removed as warning would be in tertiary facility with warming mattress available • 4.6 Adverse effects–new section • 5 Prognosis of HIE ○ Updated/reworded regarding current outcomes ○ Additional sections based on assessment for prognosis: 6.1 Clinical; 6.2 Neuroimaging; 6.3 Electrophysiology • 6.5 Discharge planning–added to follow up babies with mild HIE • Appendix B Checklist for therapeutic hypothermia: added caveats to criteria for gestation, birth weight and encephalopathy severity • Appendix C Assessment of encephalopathy severity: added seizures to assessment criteria • Minor formatting, changes to flow and references updated
November 2022	MN21.11-V11-R26	• Table 6 HIE staging amended to align with Flowchart Assessing baby for therapeutic hypothermia From: If three or more signs of moderate or severe HIE or seizures at any time in first six hours consult with neonatologist regarding commencing TH To: If two or more signs of moderate or severe HIE or seizures at any time in first six hours consult with neonatologist regarding commencing TH
July 2024	MN21.11-V12-R26	Amendment to Table 15 Cooling standards and methods to align with Flowchart: Passive Cooling • Table row: Passive cooling ○ From: If baby's temperature is less than 34 °C ○ To: If baby's temperature is less than 33 °C

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

Scope framework	
Population	Newborn babies greater than or equal to 35+0 weeks gestational age at risk of HIE
Purpose	Identify relevant evidence related to: • Diagnosis, assessment and management of HIE
Outcome	Support: • Early identification of HIE risk and diagnosis • Accurate assessment and correct diagnosis of HIE • Best practice management of HIE including therapeutic cooling
Exclusions	Management of: • Neonatal resuscitation • Respiratory distress • Neonatal seizures • Neonatal hypoglycaemia • Stabilisation for retrieval

2.3 Clinical questions

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

- What are the risk factors for HIE?
- How is HIE assessed and identified?
- What is the management of HIE?
- What is the prognosis of HIE?
- What is the best care of parents?
- What is appropriate care and follow-up after discharge?

2.4 Search strategy

A search of the literature was conducted during October 2020–March 2021. A further search was conducted in September 2021. 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

Step		Consideration
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 and key 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. Other years may be searched as are relevant to the topic • 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 textbooks

2.4.1 Keywords

The following keywords were used in the basic search strategy: neonat*, newborn, infant, perinatal, HIE, hypoxic-ischaemic encephalopathy, hypoxi*, diagnosis, therapeutic hypothermia, cooling, passive cooling, active cooling, hypoxic insult, intrauterine hypoxia, encephalopathy, ischaemic injury, Clinical staging, rewarming, manual cooling, Sarnat criteria, encephalopathy, morbidity, mortality, PPHN, coagulopathy.

Other keywords may have been used for specific aspects of the guideline.

2.5 Consultation

Major consultative and development processes occurred between December 2020 and December 2021.

Table 4. Major guideline development processes

Process	Activity
Original development	• Original consultative and development processes occurred between May 2015 and July 2015 • This included formation of a working party and statewide consultation as per usual QCG process • A survey of clinician opinion was also conducted

Decision for peer review	• A review of the guideline scope, clinical questions and current literature was undertaken in December 2020
	• No areas of clinical practice change were identified
	• Clinical leads
	  ○ Reviewed the previous scope and version of the guideline
	  ○ Reviewed identified areas of clinical practice change
	  ○ Confirmed aspects of the guideline for update and new inclusions
	  ○ Reached consensus agreement that a peer review process was appropriate

Consultation	• Expert clinicians and consumer representatives were identified by the clinical leads and invited to peer review the updated guideline in March/April 2021 • All invited members accepted

2.6 Endorsement

The guideline was endorsed by the:

- Queensland Clinical Guidelines Steering Committee in December 2021
- Statewide Maternity and Neonatal Clinical Network (Queensland) in December 2021

2.7 Citation

The recommended citation of Queensland Clinical Guidelines is in the following format:

> Queensland Clinical Guidelines. [**Insert Guideline Title**]. Guideline No. [**Insert Guideline Number**]. Queensland Health. [**Insert Year of Publication**]. Available from: www.health.qld.gov.au/qcg.
>
> **EXAMPLE:**
> Queensland Clinical Guidelines. Normal birth. Guideline No. MN17.25-V3-R22. Queensland Health 2017. Available from: www.health.qld.gov.au/qcg.

3 Levels of evidence

The levels of evidence identified by the GRADE system were used to inform the summary recommendations.

Note that the 'consensus' definition in Table 5. Levels of evidence (GRADE) relates to forms of evidence that are not identified by the GRADE system and/or that arise from the clinical experience of the guideline's clinical lead(s) and working party. Table 6 Levels of evidence (Centre for Evidence Based Medicine) is based on the format developed by Shekelle et al.[1]

Table 5. Levels of evidence (GRADE)

GRADE Levels of evidence	
1++	Evidence obtained from high quality meta-analyses, systematic reviews of RCTs, or RCTs with a very low risk of bias.
1+	Evidence obtained from well conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias.
1	Evidence obtained from meta-analyses, systematic reviews or RCTs, or RCTs with a high risk of bias.
2++	Evidence obtained from high quality systematic reviews of case-control or cohort studies *or* high quality case-control or cohort studies with a very low risk of confounding, bias, or chance and a high probability that the relationship is causal.
2+	Evidence obtained from well conducted case-control or cohort studies with a low risk of confounding, bias, or chance and a moderate probability that the relationship is causal.
2-	Evidence obtained from case-control or cohort studies with a high risk of confounding, bias, or chance and a significant risk that the relationship is not causal.
3	Evidence obtained from non-analytic studies, e.g. case reports, case series.
4	Expert opinion.
Consensus	Agreement between clinical lead, working party and other clinical experts.

Table 6 Table 6. Levels of evidence (Centre for Evidence Based Medicine)

Category of evidence	**Description**
Ia	Evidence for meta-analysis of randomised controlled trials
Ib	Evidence from at least one randomised controlled trial
IIa	Evidence from at least one controlled study without randomisation
IIb	From at least one other type of quasi-experimental study
III	From non-experimental descriptive studies, such as comparative studies, correlation studies, and case-control studies
IV	Evidence from expert committee reports or opinions or clinical experience of respected authorities, or both
Strength of recommendation	
A	Directly based on category I evidence
B	Directly based on category II evidence or extrapolated recommendation from category I evidence
C	Directly based on category III evidence or extrapolated recommendation from category I or II evidence
D	Directly based on category IV evidence or extrapolated recommendation from category I, II or III evidence

3.1 Summary recommendations

Summary recommendations and levels of evidence are outlined in Table 7 Summary recommendations.

Table 7 Summary recommendations

Recommendations		GRADE of evidence
1.	Assess all babies at risk of neonatal encephalopathy for HIE	Consensus
2.	If baby has signs of encephalopathy discuss care and management with neonatologist	Consensus
3.	Infants ≥35 weeks GA with moderate-to-severe HIE who meet other inclusion criteria should be considered for therapeutic hypothermia.[2]	Grade B
4.	Therapeutic hypothermia is the standard of care for infants with moderate-to-severe HIE who meet inclusion criteria.[2]	1a
5.	If baby meets criteria commence therapeutic hypothermia within 6 hours of birth	Consensus
6.	Monitor baby's core temperature during TH	Consensus
7.	Therapeutic hypothermia should be continued for 72 hours, with a target rectal (or oesophageal) temperature of 33 °C to 34 °C for whole body cooling[2]	A
8.	Rewarm baby over 12–16 hours at a rate of 0.5 ºC every 2 hours	Consensus
9.	Perform MRI at 7 days of life (or between 5 and 10)	Consensus
10.	Provide parents with verbal and written information about HIE including resuscitation, incidence, consequences, treatment, prognosis and outcomes	Consensus
11.	Refer all babies with HIE (mild, moderate or severe) for neurodevelopmental follow-up and management Follow-up of infants who received hypothermia to a minimum of 2 years, but ideally until school age, in a neonatal follow-up clinic, is recommended. Follow-up should be in conjunction with care by a community paediatrician.[2]	B

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: Assessing baby for therapeutic hypothermia
- Flowchart: HIE clinical features, investigations and management
- Flowchart: Passive cooling
- Checklist: Therapeutic hypothermia
- Record: Assessment of encephalopathy severity
- Record: Sarnat and Sarnat staging of HIE
- Education resource: Hypoxic ischaemic encephalopathy (HIE)
- Knowledge assessment: Hypoxic ischaemic encephalopathy (HIE)
- Parent information: Hypoxic ischaemic encephalopathy (HIE)

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 procedure to facilitate telehealth or other means of face time with baby in tertiary centre when mother is unable to transfer (to support guideline section 1.4 Communication)

4.3 Implementation measures

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

4.3.1 Implications for implementation

The following areas may have implications for local implementation of the guideline recommendations. It is suggested they be considered for successful guideline implementation.

- Economic considerations including opportunity costs
- Human resource requirements including clinician skill mix and scope of practice
- Clinician education and training
- Equipment and consumables purchase and maintenance
- Consumer acceptance
- Model of care and service delivery

4.3.2 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

4.3.3 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[3] [Refer to Table 8. NSQHS Standard 1]. Suggested audit and quality measures are identified in Table 9. Clinical quality measures.

Table 8. NSQHS Standard 1

NSQHS Standard 1: Clinical governance	
Clinical performance and effectiveness	
Criterion 1.27:	**Actions required:**
Evidence based care	a. Provide clinicians with ready access to best-practice guidelines, integrated care pathways, clinical pathways and decision support tools relevant to their clinical practice
	b. Support clinicians to use the best available evidence, including relevant clinical care standards developed by the Australian Commission on Safety and Quality in Health Care

The following clinical quality measures are suggested:

Table 9. Clinical quality measures

No	Audit criteria	Guideline section
1.	Baby assessed and identified as meeting criteria for TH	4.1 Criteria
2.	Baby assessed and identified as having HIE	3.3 HIE staging
3.	Baby identified as meeting TH criteria commences within 6 hours of birth	4 Therapeutic hypothermia
4.	Baby having TH has core temperature measured	4.3.2 Assessment and monitoring 4.4.1 Cooling baby
5.	Baby having TH continues treatment for 72 hours from target temperature before re-warming	4.4.1 Cooling baby
6.	Baby achieved and maintained target temperature of 33–34 ºC	4.4.1 Cooling baby
7.	Baby having TH was rewarmed over 12–16 hours	4.4.3 Rewarming baby
8.	Baby having TH had an MRI between day 5 and day 10 of life	6.2 Neuroimaging

4.5 Areas for future research

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

- Identification of biomarkers to recognise babies with mild HIE who will develop significant brain injury
- Evaluation of the safety and efficacy of neuroprotective measures (e.g. therapeutic hypothermia) in mild HIE

4.6 Safety and quality

In conjunction with the Queensland Clinical Guideline *Standard care*[4], implementation of this guideline provides evidence of compliance with the National Safety and Quality Health Service Standards.[3]

Table 10. NSQHS/EQuIPNational Criteria

NSQHS/EQuIPNational Criteria	Actions required	☑ Evidence of compliance
NSQHS Standard 1: Clinical governance		
Patient safety and quality systems Safety and quality systems are integrated with governance processes to enable organisations to actively manage and improve the safety and quality of health care for patients.	**Diversity and high risk groups** 1.15 The health service organisation: a. Identifies the diversity of the consumers using its services b. Identifies groups of patients using its services who are at higher risk of harm c. Incorporates information on the diversity of its consumers and higher-risk groups into the planning and delivery of care	☑ Assessment and care appropriate to the cohort of patients is identified in the guideline ☑ High risk groups are identified in the guideline ☑ The guideline is based on the best available evidence
Clinical performance and effectiveness The workforce has the right qualifications, skills and supervision to provide safe, high-quality health care to patients.	**Evidence based care** 1.27 The health service organisation has processes that: a. Provide clinicians with ready access to best-practice guidelines, integrated care pathways, clinical pathways and decision support tools relevant to their clinical practice b. Support clinicians to use the best available evidence, including relevant clinical care standards developed by the Australian Commission on Safety and Quality in Health Care	☑ 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 management 1.22 The health service organisation has valid and reliable performance review processes that: a. Require members of the workforce to regularly take part in a review of their performance b. Identify needs for training and development in safety and quality c. Incorporate information on training requirements into the organisation's training system	☑ 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

NSQHS/EQuIPNational Criteria	Actions required	☑ Evidence of compliance
NSQHS Standard 1: Clinical governance		
Patient safety and quality systems Safety and quality systems are integrated with governance processes to enable organisations to actively manage and improve the safety and quality of health care for patients.	**Policies and procedures** 1.7 The health service organisation uses a risk management approach to: a. Set out, review, and maintain the currency and effectiveness of, policies, procedures and protocols b. Monitor and take action to improve adherence to policies, procedures and protocols c. Review compliance with legislation, regulation and jurisdictional requirements	☑ QCG has established processes to review and maintain all guidelines and associated resources ☑ Change requests are managed to ensure currency of published guidelines ☑ Implementation tools and checklist are provided to assist with adherence to guidelines ☑ Suggested audit criteria are provided in guideline supplement ☑ The guidelines comply with legislation, regulation and jurisdictional requirements
NSQHS Standard 2: Partnering with Consumers		
Health literacy Health service organisations communicate with consumers in a way that supports effective partnerships.	**Communication that supports effective partnerships** 2.8 The health service organisation uses communication mechanisms that are tailored to the diversity of the consumers who use its services and, where relevant, the diversity of the local community 2.9 Where information for patients, carers, families and consumers about health and health services is developed internally, the organisation involves consumers in its development and review 2.10 The health service organisation supports clinicians to communicate with patients, carers, families and consumers about health and health care so that: a. Information is provided in a way that meets the needs of patients, carers, families and consumers b. Information provided is easy to understand and use c. The clinical needs of patients are addressed while they are in the health service organisation d. Information needs for ongoing care are provided on discharge	☑ Consumer consultation was sought and obtained during the development of the guideline. Refer to the acknowledgement section of the guideline for details ☑ Consumer information is developed to align with the guideline and included consumer involvement during development and review ☑ The consumer information was developed using plain English and with attention to literacy and ease of reading needs of the consumer
Partnering with consumers in organisational design and governance Consumers are partners in the design and governance of the organisation.	**Partnerships in healthcare governance planning, design, measurement and evaluation** 2.11 The health service organisation: a. Involves consumers in partnerships in the governance of, and to design, measure and evaluate, health care b. Has processes so that the consumers involved in these partnerships reflect the diversity of consumers who use the service or, where relevant, the diversity of the local community 2.14 The health service organisation works in partnership with consumers to incorporate their views and experiences into training and education for the workforce	☑ Consumers are members of guideline working parties ☑ The guideline is based on the best available evidence ☑ The guidelines and consumer information are endorsed by the QCG and Queensland Statewide Maternity and Neonatal Clinical Network Steering Committees which includes consumer membership

NSQHS/EQuIPNational Criteria	Actions required	☑ Evidence of compliance
NSQHS Standard 4: Medication safety		
Clinical governance and quality improvement to support medication management Organisation-wide systems are used to support and promote safety for procuring, supplying, storing, compounding, manufacturing, prescribing, dispensing, administering and monitoring the effects of medicines	**Integrating clinical governance** 4.1 Clinicians use the safety and quality systems from the Clinical Governance Standard when: a. Implementing policies and procedures for medication management b. Managing risks associated with medication management c. Identifying training requirements for medication management	☑ The guideline provides current evidence based recommendations about medication
NSQHS Standard 5: Comprehensive care		
Clinical governance and quality improvement to support comprehensive care Systems are in place to support clinicians to deliver comprehensive care	**Integrating clinical governance** 5.1 Clinicians use the safety and quality systems from the Clinical Governance Standard when: a. Implementing policies and procedures for comprehensive care b. Managing risks associated with comprehensive care c. Identifying training requirements to deliver comprehensive care **Partnering with consumers** 5.3 Clinicians use organisational processes from the Partnering with Consumers Standard when providing comprehensive care to: a. Actively involve patients in their own care b. Meet the patient's information needs c. Share decision-making	☑ 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 ☑ The guideline provides evidence-based and best practice recommendations for care ☑ Consumer information is developed for the guideline

NSQHS/EQuIPNational Criteria	Actions required	☑ Evidence of compliance
NSQHS Standard 6: Communicating for safety		
Clinical governance and quality improvement to support effective communication Systems are in place for effective and coordinated communication that supports the delivery of continuous and safe care for patients.	**Integrating clinical governance** 6.1 Clinicians use the safety and quality systems from the Clinical Governance Standard when: a. Implementing policies and procedures to support effective clinical communication b. Managing risks associated with clinical communication c. Identifying training requirements for effective and coordinated clinical communication **Partnering with consumers** 6.3 Clinicians use organisational processes from the Partnering with Consumers Standard to effectively communicate with patients, carers and families during high-risk situations to: a. Actively involve patients in their own care b. Meet the patient's information needs c. Share decision-making **Organisational processes to support effective communication** 6.4 The health service organisation has clinical communications processes to support effective communication when: a. Identification and procedure matching should occur b. All or part of a patient's care is transferred within the organisation, between multidisciplinary teams, between clinicians or between organisations; and on discharge c. Critical information about a patient's care, including information on risks, emerges or changes	☑ Requirements for effective clinical communication by clinicians are identified ☑ The guideline provides evidence-based and best practice recommendations for communication between clinicians ☑ The guideline provides evidence-based and best practice recommendations for communication with patients, carers and families ☑ The guideline provides evidence-based and best practice recommendations for discharge planning and follow –up care
Communication of critical information Systems to effectively communicate critical information and risks when they emerge or change are used to ensure safe patient care.	**Communicating critical information** 6.9 Clinicians and multidisciplinary teams use clinical communication processes to effectively communicate critical information, alerts and risks, in a timely way, when they emerge or change to: a. Clinicians who can make decisions about care b. Patients, carers and families, in accordance with the wishes of the patient 6.10 The health service organisation ensures that there are communication processes for patients, carers and families to directly communicate critical information and risks about care to clinicians	☑ Requirements for effective clinical communication of critical information are identified ☑ Requirements for escalation of care are identified

NSQHS/EQuIPNational Criteria	Actions required	☑ Evidence of compliance
NSQHS Standard 6: Communicating for safety (continued)		
Correct identification and procedure matching Systems to maintain the identity of the patient are used to ensure that the patient receives the care intended for them.	**Correct identification and procedure matching** 6.5 The health service organisation: a. Defines approved identifiers for patients according to best-practice guidelines b. Requires at least three approved identifiers on registration and admission; when care, medication, therapy and other services are provided; and when clinical handover, transfer or discharge documentation is generated	☑ Requirements for safe and for correct patient identification are identified
Communicating at clinical handover Processes for structured clinical handover are used to effectively communicate about the health care of patients.	**Clinical handover** 6.7 The health service organisation, in collaboration with clinicians, defines the: a. Minimum information content to be communicated at clinical handover, based on best-practice guidelines b. Risks relevant to the service context and the particular needs of patients, carers and families c. Clinicians who are involved in the clinical handover 6.8 Clinicians use structured clinical handover processes that include: a. Preparing and scheduling clinical handover b. Having the relevant information at clinical handover c. Organising relevant clinicians and others to participate in clinical handover d. Being aware of the patient's goals and preferences e. Supporting patients, carers and families to be involved in clinical handover, in accordance with the wishes of the patient f. Ensuring that clinical handover results in the 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

NSQHS/EQuIPNational Criteria	Actions required	☑ Evidence of compliance
NSQHS Standard 8: Recognising and responding to acute deterioration		
Clinical governance and quality improvement to support recognition and response systems Organisation-wide systems are used to support and promote detection and recognition of acute deterioration, and the response to patients whose condition acutely deteriorates.	**Integrating clinical governance** 8.1 Clinicians use the safety and quality systems from the Clinical Governance Standard when: a. Implementing policies and procedures for recognising and responding to acute deterioration b. Managing risks associated with recognising and responding to acute deterioration c. Identifying training requirements for recognising and responding to acute deterioration **Partnering with consumers** 8.3 Clinicians use organisational processes from the Partnering with Consumers Standard when recognising and responding to acute deterioration to: a. Actively involve patients in their own care b. Meet the patient's information needs c. Share decision-making **Recognising acute deterioration** 8.4 The health service organisation has processes for clinicians to detect acute physiological deterioration that require clinicians to: a. Document individualised vital sign monitoring plans b. Monitor patients as required by their individualised monitoring plan c. Graphically document and track changes in agreed observations to detect acute deterioration over time, as appropriate for the patient	☑ The guideline is consistent with National Consensus statements recommendations ☑ The guideline recommends use of tools consistent with the principles of recognising and responding to clinical deterioration ☑ Consumer information is developed for the guideline

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