



SW316



**Queensland  
Government**

## Head Injury (Children) Clinical Pathway

Facility: .....

(Affix identification label here)

URN:


Family name:

Given name(s):

Address:

Date of birth:

Sex:  M  F  I

Clinical pathways never replace clinical judgement. Clinical pathway **must be varied**  if not clinically appropriate for the individual patient.




This pathway is designed for use in children up to and including the age of 14 years.

Clinical judgement may require that this clinical pathway is suitable for an older patient.

### Signature Log (Every person using this pathway must supply a sample of their initials and signature below)

Initial	Print Name	Designation	Signature

### Legend

-  Enter time completed
-  Initial when completed
-  Document variance on page 4 Progress Notes (overleaf)

**Assessment**    **Date:**    /    /       **Time:**    :       **Time**    **Initial**

1. Date and time of symptom onset or accident: ____/____/____    ____:____ hrs <input type="checkbox"/> unknown		
2. Check Airway, Breathing, Circulation, Disability AVPU &/ GCS at 15-30 minute intervals Exposure and temperature.  Consider need for c-spine immobilisation  Assess pupil size and reaction to light  If GCS < 13, cease this pathway and commence alternative emergency management protocol		
3. Perform first set of neurological observations, pupil response, airway, breathing pattern and adequacy, circulation, disability, pain assessment  *If GCS less than 15 on arrival or observations cause any concern, escalate to most senior medical officer, continue pathway and regular observations.		
4. Is there a requirement for  <input type="checkbox"/> Supplemental oxygenation minimum 4 litres/min via Hudson mask  <input type="checkbox"/> Blood Glucose Level(s)  <input type="checkbox"/> Temperature maintenance  <input type="checkbox"/> Fluid Balance maintenance and monitoring		
5. Systematic examination of each region of the body from head to toe for other potential injuries		



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### Risk stratification

The following clinical factors are helpful considerations when assessing risk associated with intracranial injury.

Use the table to identify the clinical picture to assess the Overall Level of Risk below. For example, if all features are in the low risk category, consider the low risk management plan unless your clinical judgement determines otherwise.

Select Clinical Features	✓ Low Risk	✓ Intermediate Risk	✓ High Risk
<b>History</b>			
Age	<input type="checkbox"/> > 1yr	<input type="checkbox"/> < 1yr	
Witnessed loss of consciousness	<input type="checkbox"/> No	<input type="checkbox"/> < 5 mins	<input type="checkbox"/> > 5 mins
Anterograde or retrograde amnesia (where assessable)	<input type="checkbox"/> No	<input type="checkbox"/> Possible	<input type="checkbox"/> > 5 mins
Behaviour	<input type="checkbox"/> Normal	<input type="checkbox"/> Mild agitation or altered behaviour	<input type="checkbox"/> Abnormal drowsiness
Episodes of vomiting without other cause	<input type="checkbox"/> None or fewer than 3	<input type="checkbox"/> 3 or more	
Seizure in non-epileptic patient	<input type="checkbox"/> No	<input type="checkbox"/> Impact only	<input type="checkbox"/> Yes
Non accidental injury is suspected / parental history inconsistent with injury	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Yes
History coagulopathy, bleeding disorder or previous intracranial surgery	<input type="checkbox"/> No	<input type="checkbox"/> No	<input type="checkbox"/> Yes
Co-morbidities	<input type="checkbox"/> No	<input type="checkbox"/> Present	<input type="checkbox"/> Present
Headache	<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> Persistent or increasing
<b>Mechanism of injury</b> Consider age, surface, damage to vehicle or other passengers and method of restraint			
Motor Vehicle Accident (pedestrian, cyclist or occupant)	<input type="checkbox"/> Low speed	<input type="checkbox"/> < 60kmph	<input type="checkbox"/> > 60kmph
Fall	<input type="checkbox"/> < 1 m	<input type="checkbox"/> 1–3 m	<input type="checkbox"/> > 3 m
Force	<input type="checkbox"/> Low impact	<input type="checkbox"/> Moderate impact or unclear mechanism	<input type="checkbox"/> High speed / heavy projectile or object
<b>Examination</b>			
Glascow Coma Scale	<input type="checkbox"/> 15	<input type="checkbox"/> 14-15	<input type="checkbox"/> <14
Focal neurological abnormality	<input type="checkbox"/> Nil	<input type="checkbox"/> Nil	<input type="checkbox"/> Present
Injury		<input type="checkbox"/> Haematoma, swelling or laceration > 5cm	<input type="checkbox"/> Tense fontanelle in children < 1 yr of age <input type="checkbox"/> Penetrating injury <input type="checkbox"/> Suspected depressed skull fracture

After considering the clinical picture, determine the overall risk and follow the management plan according to the level of risk

### Overall risk

#### Low Risk

Time:  Initial:

#### Intermediate Risk

Time:  Initial:

#### High Risk

Time:  Initial:

DO NOT WRITE IN THIS BINDING MARGIN



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## High Risk Management Plan

CT head (and c-spine if indicated)

Normal

Abnormal / Not available

- Continuous cardio respiratory and oxygen saturation monitoring
- BP every 15–30 minutes
- GCS/AVPU every 15–30 minutes
- Full blood count - Haemaglobin
- BSL
- Pain management

Ongoing observation is required

Enter frequency:

Normal

Abnormal / Not available

- Continue observations
- Telephone neurosurgical service for advice **or**
- Telephone QCC (RFDS / RSQ) ☎ 1300 799 127, for transfer options. Document advice.

Transfer or admit

Normal

Abnormal / Not available

## Intermediate Risk Management Plan

- Half hourly observations for 4 – 6 hours until GCS 15/AVPU within acceptable range and is sustained for 2 hours.
- Then hourly observations until discharge.
- BSL; Pain management

- If symptoms are persistent or worsening:
- escalate to senior medical officer
  - order CT head if indicated
  - 15 minutely observations / constant monitoring

- When Observation period unremarkable
- No significant persistent symptoms / signs
- GCS 15/AVPU within acceptable range and is sustained for 2 hours (child has returned to normal, pre injury state)
- No concerns of non-accidental injury
- No other clinical concerns
- Parental/carer concerns addressed (teaching provided by hospital staff. Parent/carer can verbalise factors requiring return to medical attention)
- Fact sheet provided to parent/carer

- Telephone neurosurgical service for advice **or**
- Telephone QCC (RFDS / RSQ) ☎ 1300 799 127 for transfer options. Document advice.
- Admit or transfer

## Low Risk Management Plan

- Full initial assessment plus observations hourly until discharge is clinically appropriate (respirations, oxygen saturation, pulse, BP, temperature, GCS, pupillary response and size, limb strength, pain assessment, sedation score as necessary)

- If there are signs of deterioration, conduct half hourly observations / continuous monitoring and escalate to senior medical officer for re-stratification of risk. Follow identified risk pathway.

Re-stratify to intermediate or high risk

Normal

Abnormal / Not available

- When Observation period is unremarkable
- No significant persistent symptoms / signs
  - GCS 15 / AVPU within reasonable limits (child has returned to normal, pre injury state)
  - No concerns of non-accidental injury
  - No other clinical concerns
  - Parental/carer concerns addressed. (teaching provided by hospital staff. Parent/carer can verbalise factors requiring return to medical attention)
  - Fact sheet provided to parent/carer

Discharge

Normal

Abnormal / Not available

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### Discharge

**Time Initial**

- GCS 15 and stable neurological status (consider pre injury functional ability)
- Tolerating regular diet without nausea/vomiting
- Provide discharge teaching to parent/carer
- Family can verbalise an understanding of Queensland Health Emergency Department fact sheet "*Minor Head Injury in Children*" and indications for return to hospital for medical attention.
- Give parent/carer discharge letter

### Clinical Events / Variance / Progress

Date / Time	Describe variances to clinical pathway and any other patient related notes. Document as <b>Variance / Action / Outcome</b>	Initials

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