Policy Compliance Procedure

Health
Hunter New England
Local Health District

Infants and Children – Acute Management of Head Injury

This PCP relates to NSW Health PD	NSW PD2011_024 Infants and Children – Acute Management of Head Injury
PCP number	PD2011_024:PCP 1
Sites where PCP applies	All HNELHD Emergency Departments
Target audience	Clinicians in ED where infants and children present with head injuries
Description	Provides evidence based practice guidelines for the treatment of infants and children with head injury
Subject	Acute management of head injury in infants and children
Keywords	Acute, management, head injury, children, infants
Replaces Existing PCP?	Yes
Document number and/ or name of superseded document/s	PD2005 _391:PCP 1; PD2005_391:PCP 2; PD2005 _391:PCP 3; PD2005 _391:PCP 5, PD2005 _391:PCP 6 from April 2007

Related Legislation (including OHS legislation), Australian Standards, NSW Health Policy or Circular, other HNELHD Documents, Professional Guidelines, Codes of Practice or Ethics:

- NSW Health Paediatric Clinical Practice Guideline: PD2011_024 Infant and Children – Acute Management of Head Injury.

Tier 2 Director responsible for Policy and PCP	Professor Trish Davidson, Director Children, Young People and Families Services
Policy Compliance Procedure Contact Person	HNELHD - Helen Stevens, Paediatric Clinical Nurse Consultant
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Summary

- This PCP is a clinical pathway in the assessment of the severity and initial management of Head Injury in infants and children
- Provides guidelines on appropriate disposition, discharge planning, transfer/retrieval based on clinical assessment and response to initial treatment.
- PCP includes access to fact sheet for parent information: www.kaleidoscope.org.au

To be distributed to:	General Managers, DON, Paediatricians, NUM's ED, ED Physician, Director of Medical Services, CYP&FCN Stream Leaders, VMO GP's.
Date PCP authorised:	13 June 2012
Authorised by:	Professor Trish Davidson - Director CYP&F services
Date of Issue:	19 June 2012
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TRIM Number:	12/29-2-17

HNELHD Emergency Departments

Acute Management of Head Injury

March 2012

Surname_____ Sex____

Given Names_____

DOB_____ MRN_____

AFFIX PT LABEL HERE

GCS: Glasgow Coma Scale: Use the modified GCS for children ≤4 yrs age

LOW RISK
(any feature)

HISTORY
- Behaviour normal
- No or only 1 vomit
- No seizure
- No headache
- No co-morbidities
- No amnesia
- Age > 1yr
- No Non Accidental Injury (NAI)

MECHANISM
- Low speed Motor Vehicle Accident (MVA)
- < 1m fall
- Low impact force

EXAMINATION
- GCS 15
- No focal abnormality

MANAGEMENT
- Observations –RR, HR, BP, Temp, Sats GCS, Pupil response & size, limb strength, pain score 1 hourly until discharged. **Minimum four hours post injury.**
- Medical review
- Consider discharge if responsible carer and able to return to the ED readily.

INTERMEDIATE RISK
(any feature/not low or high risk)

HISTORY
- Loss of consciousness < 5 min
- Amnesia < 5 min
- Altered behaviour – mild agitation
- 2 vomits or nausea
- Seizure on impact
- No NAI
- Persistent headache
- Co-morbidities present
- Age < 1yr

MECHANISM
- < 60 kph
- Fall 1-3 metres
- Moderate impact/ unclear mechanism

EXAMINATION
- GCS fluctuating 14-15
- No focal abnormality

MANAGEMENT
- Medical review
- Consultation with paediatric expert.
- Admit for observation
- Observations ½ hrly for 4-6 hours until GCS 15 for 2 hours, then 1 hrly observations until discharged.
- RR, HR, BP, temp, Sats. GCS, Pupil response & size, Limb strength /posture, pain score

If signs of deterioration revert to ½ hrly observations, continuous monitoring.
Notify paediatric expert.
Manage as high risk.

HIGH RISK
NETS 1300 36 2500
(any feature)

HISTORY
- Loss of consciousness >5min
- Amnesia > 5 min
- Abnormal drowsiness
- 3 + vomits
- Seizures
- Suspected NAI

MECHANISM
- >60kph
- Fall > 3 metres
- High speed projectile/ object

EXAMINATION
- GCS < 14 or < 15 if < 1yr old
- Focal abnormality
- Scalp haematoma/skull/scalp trauma

MANAGEMENT

Resuscitate – A B C D E
- Airway + / -CSpine – GCS 8 or under-intubation and ventilation
- Breathing – O^2 high flow
- Circulation – IV/IO treat shock 20mls/kg normal saline. BSL
- Disability –GCS, Pupils, posture, temp.
- NETS Retrieval & consultation
- Requires urgent CT
- Continuous monitoring
- BP, HR, RR, Pupil response & size, posture & GCS 15 minutely
- Consider analgesia & sedation
- Notification to Department of Family and Community Services if NAI and Social Worker.
- Secondary survey

DISCHARGE PLAN On discharge the parent/carer should be educated on detecting changes in signs and symptoms and be aware of when to return to ED. Follow up arrangements, discharge summary and head injury fact sheet should be provided to the parent/carer (www.kaleidoscope.org.au)

Observation of Head Injured Children

	LOW RISK	INTERMEDIATE RISK	HIGH RISK
PLACEMENT			
Observation Area	Anywhere in ED	Acute area in ED	Acute or resuscitation bay
OBSERVATIONS			
• Respiratory rate, oxygen saturations • Pulse, blood pressure • Temperature • GCS, pupillary response & size, limb strength • Pain assessment • Sedation score as necessary	Hourly observations until discharge	Half-hourly observations for 4 to 6 hours until GCS 15 sustained for 2 hours, then hourly observations until discharge. **Revert to half hourly observations/ continuous monitoring if signs of deterioration occur.**	• Continuous cardio-respiratory and oxygen saturation monitoring • BP and GCS every 15 to 30 minutes
SUPPORTIVE CARE			
Patient Position	Intubated patients should be supine with bed flat. All others may be nursed in position of comfort.		
Oxygen	Maintain oxygen saturations ≥ 95%. Children in shock require 10 litres via a non rebreather mask regardless of oxygen saturation readings.		
Temperature	Aim for normothermia. Consider hypothermic management of severe head injury in consultation with neurosurgical unit. Avoid hyperthermia at all times.		
Oral intake	Nil By Mouth (NBM) until clinical review. A fluid balance chart should be kept for all children with intermediate or high risk head injuries.		
Glucose	Monitor BSL in infants at least 4th hourly if NBM or on IV fluids.		
Pain management	Consider the need for oral, intranasal, IV or IO analgesia.		

Modified Paediatric Glasgow Coma Scale

Glasgow Coma Scale (4-15 years)

Eye opening response	
Spontaneously	4
To verbal stimuli	3
To pain	2
No response to pain	1

Best motor response	
Obeys verbal command	6
Localises to pain	5
Withdraws from pain	4
Abnormal flexion to pain (decorticate)	3
Abnormal extension to pain (decerebrate)	2
No response to pain	1

Best verbal response	
Oriented and converses	5
Disoriented and converses	4
Inappropriate words	3
Incomprehensible sounds	2
No response to pain	1
No response to pain	1

Child's Coma Scale (<4 Years)

Eye opening response	
Spontaneously	4
To verbal stimuli	3
To pain	2
No response to pain	1

Best motor response	
Obeys verbal command or performs normal spontaneous movements	6
Localises to pain or withdraws to touch	5
Withdraws from pain	4
Abnormal flexion to pain (decorticate)	3
Abnormal extension to pain (decerebrate)	2
No response to pain	1

Best verbal response	
Alert, babbles, coos, words or sentences to usual ability	5
Less than usual ability and/or spontaneous irritable cry	4
Cries inappropriately	3
Occasionally whimpers and/or moans	2
No response to pain	1
No response to pain	1

Ref: APLS 4th Edition 2005 [10]