Infants and Children – Acute Management of Head Injury

This PCP relates to NSW Health PD
PCP number
Sites where PCP applies
Target audience
Description
Subject
Keywords
Replaces Existing PCP?
Document number and/ or name of superseded document/s

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

Tier 2 Director responsible for Policy and PCP
Policy Compliance Procedure
Contact Person
Contact Details

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:

Date PCP authorised: 13 June 2012
Authorised by: Professor Trish Davidson - Director CYP&F services
Date of Issue: 19 June 2012
Review Date: 19 June 2015
TRIM Number: 12/29-2-17
RISK

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.
- Medical review
- Consider discharge if responsible carer and able to return to the ED readily.

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.

LOW RISK

(Any feature)

INTERMEDIATE RISK

(Any feature/not low or high risk)

HIGH RISK

NETS 1300 36 2500

(Any feature)

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

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.

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.

RESUSCITATE – A B C D E
- Airway +/- CSpine – GCS 8 or under-intubation and ventilation
- Breathing – O₂ 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
### Observation of Head Injured Children

#### Placement

<table>
<thead>
<tr>
<th>Low Risk</th>
<th>Intermediate Risk</th>
<th>High Risk</th>
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</thead>
<tbody>
<tr>
<td>Observation Area</td>
<td>Anywhere in ED</td>
<td>Acute area in ED</td>
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</tbody>
</table>

#### 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)

<table>
<thead>
<tr>
<th>Eye opening response</th>
<th>4</th>
<th>3</th>
<th>2</th>
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<tr>
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#### Child’s Coma Scale (<4 Years)

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