GUIDELINE

Head injury management

<table>
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<tr>
<th>Scope (Staff):</th>
<th>School health</th>
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<td>Scope (Area):</td>
<td>CACH, WACHS</td>
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This document should be read in conjunction with this DISCLAIMER

Background

Head, neck and back injuries are common in childhood, the majority of those presenting at hospital emergency departments are relatively minor injuries, which require only minimal medical treatment. However, there are over 100 cases per year that are of a more serious nature. Occasionally, serious head injuries occur in schools.

Between July 2007 and June 2010, 7339 (16.69%) injury presentations to Princess Margaret Hospital Emergency Department (PMH ED) were for head, neck or back injuries; of these cases 61.38% were male and most caused by falls (4377: 59.63%), children aged 10-14 years accounted for the second highest number of injury presentations to PMH ED (40), followed by the 5-9 years age group (24) and by location schools accounted for 574 head, neck and back injuries.

Common causes of serious head injury include motor-vehicle accidents, pedestrian injuries, being hit with an object, or being tackled or hit by an object while playing sport. For all of these causes, children 10-14 years are most at risk. This may be due to the increased levels of sporting and leisure activity by older children, increased independence and decreased levels of supervision.

Most head injuries in the school setting occur in recreation areas, such as playgrounds or sports areas. Classrooms and canteens are the next most common location and passing areas, such as hallways and stairs are also noted as areas where head injury is likely to occur.

Head injuries fall into two main categories – external and internal. External head injuries include scalp injuries, and internal injuries may involve the skull, blood vessels within the skull, or the brain. Most childhood falls or blows to the head result in injury to only the scalp, which is usually more frightening than threatening. The scalp is rich with blood vessels, and so even a minor cut can lead to profuse bleeding. However, an internal head injury could have more serious implications, because the skull serves as the protective casing for the brain. Although the brain is cushioned by cerebrospinal fluid, a severe blow to the head may knock the brain to the side of the skull or tear the blood vessels.

Any internal injury, a fractured skull, torn blood vessel, or damage to the brain can be serious and possibly life threatening.

Different levels of head injuries require different levels of care and attention. A clear indicator that a child has sustained a more serious head injury is when there is a loss of consciousness or signs of confusion.
Head injury management

The symptoms of head injuries are used to determine how serious it is. Head injuries can be classified into minor, moderate or severe.

**Severe Head Injury:**
- More than a brief loss of consciousness at time of injury
- Decreased conscious state – responsive to pain only or unresponsive
- Cerebral Spinal Fluid leak from nose or ears
- Localising neurological signs (unequal pupils, lateralising motor weakness)
- Signs of increased intracranial pressure:
  - Uncal herniation: Ipsilateral dilated non-reactive pupil due to compression of the oculomotor nerve
  - Central herniation: Brainstem compression causing bradycardia and hypertension
  - Penetrating head injury
  - Seizures (other than single brief (<2 min) convulsion occurring immediately after the impact)

An ambulance must be called immediately if a severe head injury is suspected.

**Moderate Head Injury:**
- Brief loss of consciousness at time of injury
- Currently alert or responds to voice. May be drowsy
- Two or more episodes of vomiting
- Persistent headache
- Up to one single brief (<2min) convulsion occurring immediately after the impact
- May have a large scalp bruise, haematoma or laceration
- Normal examination otherwise

Individuals should be watched closely in hospital after a moderate head injury.

**Minor Head Injuries:**
- No loss of consciousness
- One or less episodes of vomiting
- Stable, alert conscious state
- May have scalp bruising or laceration
- Normal examination otherwise

If there is any doubt as to whether there has been loss of consciousness or not, assume there has been and treat as for moderate head injury.
The signs and symptoms listed in Table 1 are indicators that further evaluation is warranted following a head injury.

<table>
<thead>
<tr>
<th>TABLE 1. Indicators that Warrant Further Evaluation</th>
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<tr>
<td>• Unconsciousness</td>
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<td>• Abnormal breathing</td>
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<td>• Obvious serious wound or fracture</td>
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<td>• Bleeding or clear fluid from the nose, ear, or mouth</td>
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<td>• Disturbance of speech or vision</td>
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<td>• Pupils of unequal size and/or delayed reaction to light</td>
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<td>• Weakness or paralysis</td>
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<td>• Dizziness</td>
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<td>• Neck pain or stiffness</td>
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<td>• Seizures</td>
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<td>• Vomiting</td>
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<td>• Loss of bladder or bowel control</td>
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<td>• Irritability or other unusual behaviour</td>
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<td>• Stumbling or difficulty walking</td>
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<td>• Confusion</td>
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<td>• Unusual paleness that lasts for more than an hour</td>
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Concussion is a form of head injury that occurs immediately after a blunt force strikes the head causing the brain to move within the confines of the skull. The signs of brain injury may include headache, visual disturbances, and loss of consciousness. Any students presenting with signs and symptoms of concussion should be referred to the General Practitioner for further assessment. Should this type of injury occur outside school, it is important the school is informed so the student can be monitored in the school setting if possible.

Being knowledgeable about the management and treatment of head injuries is important for community health nurses. A prompt, accurate assessment and systematic management is essential for preventing complications. A head injury procedure, sound nursing judgement, and evidence based practices are tools and strategies which help ensure head injuries are properly attended to at school.

Head injuries need to be monitored and treated carefully, as their consequences can be severe, medical treatment should be sought for any type of head trauma, especially if the individual displays symptoms of concussion, slurred speech, disorientation, drowsiness, headaches, vomiting or if they had loss of consciousness. There is a risk of bleeding in the brain which can cause prolonged or irreversible neurological damage.

The Memorandum of Understanding between: the Department of Education and the Department of Health for the provision of school health services for school students attending public schools during the period 1 July 2010 to 30 June 2013 states, “The role of
School Health Services in specialist health expertise are to support schools in developing a whole-school approach to addressing first aid and emergency health situations.”

“All schools need to have clearly defined procedures for managing first aid and emergency situations which are independent of community health nurse availability. In the case of serious injury, altered consciousness or trauma nurses have a duty to assist if they are available on site. Refer to Head injury procedure.

**Follow up**

Symptoms are common following mild head injury and medical follow up is recommended 1-2 weeks after initial injury. Headache is the most common complaint, and nearly a third of parents report personality changes in their children. The majority of symptoms resolve within 3 months following the injury. Symptoms may however cause significant psychosocial problems for both the patient and their family, and are often exacerbated by stress, depression, or anxiety. Encouraging parents/guardian to follow-up with their GP post head injury can prevent anxiety related to symptoms and enable provision of support or referral for specialist treatment if required.
Head injury management

Head Injury to Child or Young Person at School

Child or young person presents to CHN after a hit to the head

CHN to reassure & calm child or young person.

Ask child/young person and/or witness how injury occurred and if there was any loss of consciousness

CHN performs an assessment to determine severity of injury

MINOR
escort required to take child/young person home
CHN or nominated other liaises with parent/guardian and explains warning signs to watch for, following a head injury. Issue Head Injury Info for parent/carer

MODERATE
seek further medical assessment

CHN or nominated other liaises with parent or guardian and Principal to access further medical assessment by a General Practitioner

SEVERE
Call for an ambulance (000) or (112) from a mobile

CHN or Principal informs parent/guardian about what has happened and directs them to the emergency department where the child/young person has been transferred.

CHN documents assessment and outcome on CHS 409 or 410 and liaises with principal re critical incident reporting.

CHN may monitor, provide strategies & support on return to school as appropriate

Clean and dress any wound, if appropriate, cool compress or ice pack can be applied to the injury site for comfort

CHN or nominated other reassesses child or young person every 15-30mins whilst in care.
Related internal policies, procedures and guidelines

- Working with Youth – A legal resource for community based health workers,
- **Scope of Nursing Practice – Decision Making Framework**, Nurses Board of Western Australia
- **Code of Ethics**, Department of Health WA.

References


4. CACH, PMH. Paediatric Nursing Practice Manual 3.1.7 Neurological Observations


6. **4.6.2 MOU between DOE and DOH** Memorandum of Understanding between: The Department Of Education And The Department Of Health For The Provision Of School Health Services For School Students Attending Public Schools During The Period 1 July 2010 To 30 June 2013

Useful resources


- [http://www.kidsafewa.com.au/safetyinschoolsweek.html](http://www.kidsafewa.com.au/safetyinschoolsweek.html) Safety in Schools Week” is an annual school safety awareness event which aims to provide Western Australian primary schools and the wider community with a week to focus on injury prevention.

- This South Australian government website features information for all age groups. Teen health 12 – 17 years, young adult health 18 – 25 years, parenting and child health, and kids health. [http://www.cyh.com](http://www.cyh.com) Child and Youth Health

- [www.kidsafewa.com.au](http://www.kidsafewa.com.au) Kidssafe WA is the leading Australian, non-government, not-for-
profit charitable organisation dedicated to preventing unintentional childhood injuries and reducing the resulting deaths and disabilities associated with childhood "accidents" in children under the age of 15 years.
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