8 March 2023

Te Whatu Ora
Health New Zealand

9(2)(a)

[redacted]

RE Official Information Act request ChChD 11077 / HNZ00012824

I refer to your email dated 5 March 2023, requesting the following information under the Official Information Act from Waitaha Canterbury regarding Christchurch Hospital Emergency Department policy on treating patients with head injury.

- **I would like to know what the current practice for a patient presenting with head injury particularly when being brought in by ambulance after loss of consciousness.**

The range of head injuries is extensive from minor to potentially fatal.

In lieu of specific head injury detail in your request, we can tell you:

- The person will be triaged
- They will be assessed, with a set of observations and a history and examination
- Following that depending on the injury, the patient may be discharged, or stay in the ED for a period, or indeed be admitted
- Often but not always analgesia will be given
- They may or may not have tests – usually not.
- We use a number of clinical decision rules as guidelines (not protocols) to guide us in the management of these patients.

We have attached as **Appendix 1** information from our HealthPathways[1] website. **Note:** This information is not publicly available.

I trust that this satisfies your interest in this matter.

Please note that this response, or an edited version of this response, may be published on the Te Whatu Ora website after your receipt of this response.

Ngā mihi / Yours sincerely,

KW.

Keith Wright
Senior Manager, OIAs
Waitaha Canterbury / Te Tai o Poutini West Coast.

[1]*HealthPathways is designed and written for use during a clinical consultation. Each pathway provides clear and concise guidance for assessing and managing a patient with a particular symptom or condition. Pathways also include information about making requests to services in the local health system.*
Content is developed collaboratively by general practitioners, hospital clinicians, and a wide range of other health professionals. Each pathway is evidence-informed, but also reflects local reality, and aims to preserve clinical autonomy and patient choice. HealthPathways serves to reduce unwarranted variation and accelerate evidence into practice. Information which is publicly available can be found on the HealthInfo website. www.healthinfo.org.nz;

APPENDIX 1

Head Injuries in Adults

This pathway is for adults and children older than 15 years. For children aged 15 years or younger, use the Head Injuries in Children pathway. Also consider the Mild Traumatic Brain Injury (Concussion) pathway. This pathway does not cover long-term rehabilitation following head injury.

Red Flags

- A falling or persistently reduced Glasgow Coma Score (GCS) and amnesia are associated with an increased risk of intracranial complications.
- Do not assume the signs and symptoms of a person's injury are due to intoxication from alcohol or drugs.

Background

About head injuries in adults

About head injuries in adults

- Head injuries are common – many patients do not require referral or admission.
- The principal causes for referral are existence of, or potential for, brain injury and presence of injury requiring surgical repair.
- Loss of consciousness (LOC), focal neurological signs and signs of a skull fracture are each predictive of an intracranial lesion in adults.
- Concussion is a mild traumatic brain injury, usually caused by direct or indirect force to the head. It presents with a range of symptoms and signs which may or may not include LOC.
- Head injuries are common in sport. The Sport Concussion Assessment Tool (SCAT 5) is widely used for physician assessment of sports concussion and can be used for patient education.

Assessment

1. Full history of the event, including mechanism of injury, from patient and witnesses.
2. Check alcohol or drug intake.
3. Ask about any previous head injuries.
4. Full examination including:
    - balance – heel-toe walking, bipedal walking, Rombergs
    - memory – 3 object recall, orientation in time / place / person
    - all other injuries.
5. Assess patient using the Glasgow Coma Scale (GCS).

Management

1. If GCS lower than 14, arrange acute admission by ambulance.
    - Protect cervical spine.
      Cervical spine
        - Consider this when drugs/alcohol involved or unreliable history regarding injury mechanism.
        - Discuss with ED consultant if unsure.
    - Protect airway if GCS lower than 9.
    - Check blood glucose.
2. Seek emergency department advice for consideration of admission or arranging a CT scan [1] in the community if:
    - clinical evidence of depressed, open, penetrating or base of skull fracture:
        - Haemotympanum
        - Bruising behind the ear

    - Rhinorrhoea
- any focal neurological deficit.
- seizure more than 1 hour post injury.
- high energy injury.
  High impact injury in adults
  For example:
  - Pedestrian struck by motor vehicle
  - Fall from a height of greater than 1 metre or more than 5 stairs
  - Diving accident
  - High-speed motor vehicle collision
  - Bicycle collision
  - Any other potentially high-energy mechanism.
- more than 1 episode of vomiting where each episode is discrete and separated in time.
- amnesia of events.
  Amnesia of events
  - More than 30 minutes before injury. Retrograde amnesia indicates possible severity of head injury.
  - Greater than 5 minutes after injury. A short period of anterograde amnesia is common but becomes more significant in terms of severity of possible head injury if it continues.
- any loss of consciousness or post-traumatic amnesia since injury, plus known coagulopathy (e.g., warfarin or alcoholic).
- aged older than 65 years with history or clinical features causing concern.

Emergency department specialists may recommend a CT Head under acute demand as initial step. Document their recommendation in your request. Further patient management will be informed by conversation with specialist and results of CT scan.

3. Admit to the 24 Hour Surgery Observation Unit or monitor in general practice for a minimum of 4 hours from the time of injury, if:
   - GCS = 14 but CT not indicated as in 2.
   - GCS = 15 but clinical concern with contributing factors.
   -
4. While patient is monitored in primary care:
   - undertake regular neurological observations, and
     Neurological observation
     - Neurological assessment using Glasgow Coma Scale
     - Neurological observations should be done:
       - every 30 minutes until Glasgow Coma Score = 15,
       - then every 30 minutes for 2 more hours,
       - then every hour until discharge.
     - Observations must include a minimum of Glasgow Coma Score, pupil size and reactivity, limb movements, respiratory rate, oxygen saturations, heart rate, blood pressure and temperature. See example Head injury observation chart.
     - Look for any agitation or unusual behaviours and refer to the emergency department if these are out of character for the patient.
   - give simple analgesia.
     Simple analgesia for adults
     - Includes paracetamol or paracetamol/codeine. Note that codeine affects pupillary response in neurological observation.
     - Stronger analgesia may be required in the presence of other injuries, but should be used cautiously.

- Always consider a more severe, or evolving, traumatic brain injury if stronger analgesia is required only for headache.
- Avoid aspirin or other anti-platelet medication.

- Reassess after 2 hours if GCS was lower than 14 or after 4 hours if GCS = 15.
-

5. Request acute emergency department assessment if:
   - GCS fallen more than 2 points
   - GCS less than 15 at 2 hours
   - severe headache
   - persisting abnormal mental status
   - vomiting more than 1
   - abnormal CT head

6. Going home.

   Going home

   Patient can go home under these circumstances:
   - Allow home at 4 hours if GCS = 15, symptoms have improved and vital signs are stable.
   - Recommend rest in a quiet environment for the initial 48 to 72 hours post-injury. Avoid use of alcohol or recreational drugs.
   - Give clear written advice, e.g. Knowing about your Mild Traumatic Brain Injury, Return to Play.
   - Consider a phone call to the patient the next day.
   - Suggest they stay with a responsible adult for the first 48 hours.
   - Offer other advice.

7. Consider driving restrictions. See also Fitness to Drive.

   Driving restrictions – brain injury

   Minor brain injury:
   - Advise the patient not to drive for at least 3 hours after injury, or, if they lost consciousness, for at least 24 hours after injury.
   - If the patient exhibits loss of good judgement, decreased intellectual capacity, post-traumatic seizures, visual impairment or loss of motor skills, a longer stand down period may be necessary.
   - Return to driving is subject to the extent of residual impairment and the impact of this on driving competence.
   - If there was loss of consciousness, the patient must not be allowed to drive until cleared as fit to drive by a medical practitioner.

   Serious brain injury, including post-traumatic amnesia of more than 24 hours and post-concussion syndrome:
   - Car or motorcycle licence

     Serious brain injury – car or motorcycle licence
     - Driving should cease for at least 6 months, depending on the circumstances and the range of post-traumatic problems, due to the risk of post-traumatic seizures. Any reduction in this needs to be approved by Waka Kotahi NZ Transport Agency (Waka Kotahi) Medical Section with relevant background supporting material including a neurologist report confirming there is no increased risk of seizures.
     - If patient was on anti-epileptic medication as a precaution, a stand down period applies while they are withdrawing medication and for six months following last dose.
     - The existence of post-traumatic epilepsy will require the application of epilepsy requirements.
     - Return to driving is subject to the extent of residual impairment and the impact of this on driving competence.

- A non-acute neurology assessment and an occupational therapy driving assessment may be necessary before considering whether an individual is fit to resume driving.
- A visual assessment may be necessary to ensure the absence of any significant visual field deficits.
- If unsure about functional ability in relation to driving, request an occupational therapy driving assessment to evaluate skills such as decision making, reaction speeds, judgement, proprioception, motor or sensory loss.
- Refer to Waka Kotahi guidelines or contact the Waka Kotahi Medical Section.
- Commercial licence

Serious brain injury – commercial licence

- Most severe brain injuries will result in the driver being considered unfit to drive commercial classes.
- Driving should cease for at least 12 months due to the risk of post-traumatic seizures. Any reduction in this needs to be approved by Waka Kotahi NZ Transport Agency (Waka Kotahi) Medical Section with relevant background supporting material including a neurologist report confirming there is no increased risk of seizures.
- There needs to have been adequate evidence of a recovery sufficient to allow for safe driving relative to an individual's occupation.
- A visual assessment may be necessary to ensure the absence of any significant visual field deficits. An ophthalmologist measurement of field impairment is required if any diagnosed field loss.
- A non-acute neurology assessment is required.
- An occupational therapy driving assessment is recommended to evaluate skills such as decision making, reaction speeds, judgement, proprioception, motor or sensory loss.
- If patient was on antiepileptic medication as a precaution, a stand down period applies while they are withdrawing medication and for six months following last dose.
- The existence of post-traumatic epilepsy will require the application of epilepsy requirements.
- Return to driving is subject to the extent of residual impairment and the impact of this on driving competence.
- Refer to Waka Kotahi guidelines or contact the Waka Kotahi Medical Section.

8. Follow up – See Mild Traumatic Brain Injury (Concussion) pathway.

9. If ongoing symptoms or signs suggestive of possible intracranial bleed, discuss with Emergency Medicine specialist whether a CT Head is indicated to rule this out. If a CT Head is recommended, request CT Head under acute demand and document their recommendation in your request.

Request

- Arrange acute admission to Emergency Department for observation and further management, if:
  - GCS is less than 14, or
  - recommended by an Emergency Department (ED) specialist.
- Arrange CT Head in community if recommended by ED senior medical officer.