Algorithm 1: Selection of adults for CT head scan

1. Adults presenting to the emergency department who have sustained a head injury.
2. Are any of the following risk factors present?
   - GCS < 13 on initial assessment
   - GCS < 15 at 2 hours after injury on assessment in the emergency department
   - Suspected open or depressed skull fracture
   - Any sign of basal skull fracture
   - Post-traumatic seizure
   - Focal neurological deficit
   - More than one episode of vomiting since the head injury
3. Perform CT head scan within 1 hour of risk factor being identified.
4. A provisional written radiology report should be made available within 1 hour of the CT taking place.
5. Perform CT head scan within 8 hours of the head injury.
6. Current warfarin treatment?
   - Yes
   - Is there loss of consciousness or amnesia since the head injury?
     - Yes
     - No imaging required/ further imaging required.
     - No
   - No

Are any of the following risk factors present?

- Age ≥ 65 years
- A history of bleeding or clotting disorder
- Dangerous mechanism of injury (a pedestrian or cyclist struck by a motor vehicle, an occupant ejected from a motor vehicle or a fall from height of > than 1 metre or 5 stairs)
- More than 30 minutes’ retrograde amnesia of events immediately before the head injury

Yes

No
Algorithm 2: Selection of children for CT head scan

Children presenting to the emergency department who have sustained a head injury.

Are any of the following risk factors present?

- Suspicion of non-accidental injury
- Post-traumatic seizure, but no history of epilepsy
- On initial assessment GCS <14, or for children under 1 year GCS (paediatric) < 15
- At 2 hours after the injury GCS < 15
- Suspected open or depressed skull injury or tense fontanelle.
- Any sign of basal skull fracture (haemotympanum ‘panda’ eyes, cerebrospinal fluid leakage from the ear or nose, Battle’s sign).
- Focal neurological deficit
- For children under 1 year, presence of bruise, swelling or laceration of more than 5 cm on the head

Yes

Perform CT head scan within 1 hour of risk factor being identified. A provisional written radiology report should be made available within 1 hour of the CT head scan taking place.

No

Are any of the following risk factors present?

- Witnessed loss of consciousness > 5 minutes
- Abnormal drowsiness
- 3 or more discrete episodes of vomiting
- Dangerous mechanism of injury (high-speed road traffic accident either as a pedestrian, cyclist or vehicle occupant, fall from height of > 3 metres, high speed injury from an object
- Amnesia (antegrade or retrograde) lasting > 5 minutes (assessment not possible in pre-verbal children and unlikely in any child < 5 years).

Yes, > 1 factor

No

Observe for a minimum of 4 hours post head injury.

Are any of the following risk factors present during observation?
- GCS < 15,
- further vomiting
- further episodes of abnormal drowsiness

Yes

Perform CT head scan within 8 hours of the injury. A provisional written radiologist’s report should be made available within 1 hour of the CT head scan taking place.

No

Current warfarin treatment?

Yes

No imaging required. Use clinical judgement to determine when further observation is required.