# Compliance with NICE Guidelines 2014 for Traumatic Head Injury in regard to CT

**Descriptor:**

A retrospective audit of CT-head scans to ensure compliance with 2014 NICE guidance for head injury.

**Background:**

Head injury is the most common cause of death and disability in individuals between 1-40 years in the UK, with roughly 200,000 annual admissions. Although most patients with head injuries recover without surgical intervention, others may result in long-term disability or death. Consequently, a patient’s prognosis could potentially be improved with early detection, which would promptly facilitate appropriate management.

NICE guidelines in 2003/2007 resulted in CT scanning replacing skull radiography as the primary imaging modality for head injury. The revised 2014 NICE guidelines, reviewed 2017, recommended that head injuries in adults with risk factors should have a CT head scan performed within 1 hour of the risk factors being identified. Furthermore, it also described that a provisional radiology report should be made available within 1 hour of the scan being performed.

## The Cycle

**The standard:**

A provisional written radiology report should be available within 1 hour of the scan

**Adults**

CT-head within 1 hour

• GCS <13 when first assessed

• GCS <15 2 hours after injury

• Suspected open/depressed/skull base fracture

• Post-traumatic seizure

• Focal neurological deficit

• >1 episode vomiting

CT-head within 8 hours

Some loss of consciousness or amnesia with following risk factors:

• >65 years old

• Coagulopathy

• Dangerous mechanism of injury

• >30 mins' retrograde amnesia of events immediately before head injury.

**Children**

CT head within 1 hour

• Suspicion of NAI

• Post-traumatic seizure -no history of epilepsy

• On initial assessment, GCS <14, or for children under 1 year GCS < 15

• At 2 hours after the injury, GCS <15

• Suspected open/depressed skull fracture or tense fontanelle

• Any sign of basal skull fracture

• Focal neurological deficit

• For children < 1 year, presence of bruise, swelling or laceration > 5 cm on head

or 2 or more of the following risk factors

• Loss of consciousness lasting more than 5 mins

• Abnormal drowsiness

• 3 or more discrete episodes of vomiting

• Dangerous mechanism of injury

• Amnesia lasting > 5 mins

• Development of any of the following factors during 4 hour observation period: GCS <15; Further vomiting; Further episode of abnormal drowsiness.

**Target:**

- 100% of patients should be scanned within 1 hour of risk factors being identified

- 100% of provisional radiology reports on CT-heads should be completed within 1 hour of the scan being performed

- All requests from emergency department must have clear documentation of head injury risk factor(s) justifying scan as detailed above in Standard section

## Assess local practice

**Indicators:**

1. Time from CT Head request to scan

2. Time from scan to delivery of provisional written radiology report

3. Indication for scan

**Data items to be collected:**

1. The time the CT head request was made

2. The time of the CT head

3. The time the report was generated

4. Risk factor criteria as per NICE guidelines

**Suggested number:**

1 months data or at least 30 consecutive cases

**Suggestions for change if target not met:**

• Look at cases where the target was not met

• Process into stages to identify reason for delay eg. portering, availability of escort staff, access to CT scanner, availability of radiographer and radiologist

**Resources:**

3 hours of data collection with 3 hours of data evaluation

**References:**

1. National Institute for Health and Clinical Excellence. CG176. Head Injury :assessment and early management. London. January 2014. [https://www.nice.org.uk/guidance/cg176](http://www.nice.org.uk/nicemedia/pdf/cg56niceguideline.pdf)
2. irefer. The Royal College of Radiologists. Making the best use of clinical radiology services 8th edition. 2017 <https://www.rcr.ac.uk/sso/irefer/v8>

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**Published Date:**

Tuesday 7 July 2015

**Last Reviewed:**

Wednesday 6 March 2019