Belfast Health and Social Care Trust

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Title:	**Policy for the early recognition and management of a suspected head injury.**		
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Ownership:	Brenda Creaney / Director of Nursing and User Experience		
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Date	Version	Author	Comments
28/07/2008	0.1	O Macleod	Draft 1
24/08/2008	0.2	JR Johnston	Amendments
16/02/2009	0.3	O Macleod	Amendments
6/03/2009	0.4	JR Johnston	Formatting; Rationalisation
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07/04/2009	0.6	JR Johnston	After Russell McLaughlin comments
08/05/2009	0.7	JR Johnston	RBHSC changes
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22/06/2009	0.9	H Steen	After Heather Steen comments
01/04/2009	2.0	O Macleod	Final version 2009
26/01/2014	2.1	CD Williamson	2014 Policy review and amendments incorporating safety and quality learning letters and updated NICE 2014 guidelines.
16/04/2014	2.2	CD Williamson	B Bartholome Comments: Policy adjusted to age fourteen plus attending the adult hospital. Inference to RBHSC removed from policy.
30/09/2014	2.3	CD Williamson	Standards and Guideline Committee comments: Policy readjusted to include paediatrics. Confirmation of ED observation frequency sought.
24/10/2014	2.4	CD Williamson	Hyperlink added to Warfarin – Safe Management policy and links to NOACA's policies included.
November 2014	3		Final version

1.0 INTRODUCTION / PURPOSE OF POLICY

1.1 Background

'Head injury' is defined by NICE (2014) as any trauma to the head, other than superficial injuries to the face.

A head injury can occur as a result of blunt trauma such as, a road traffic collision, sports injury, fall, workplace accidents, assaults or penetrating trauma e.g. gunshot or explosion. The most significant consequence of a head injury is traumatic injury to the brain.

This document is aimed at the large number of patients with seemingly mild head injuries admitted to general surgical, short stay and medical wards, rather than those admitted to critical care or neurological settings with more severe injuries. It uses NICE Clinical Guideline 176 as the basis for its recommendations.

As a result, it is imperative that registered nursing staff are able to accurately perform a basic neurological assessment, including the Glasgow Coma Scale, understand the significance of the findings and, if required, take prompt and appropriate action.

The Glasgow Coma Scale is a standardised system for evaluating the level of consciousness, through the use of an objective scoring system. It provides a framework for describing the state of a patient in terms of three aspects of responsiveness: eye opening, verbal response, and best motor response, each stratified according to increasing impairment.

The Glasgow Coma Score is an artificial index; obtained by adding scores for the three responses.

Neurological observations incorporating the GCS are the primary tool used by nurses to make quick, repeated evaluations of several key indicators of neurological status including:-.

- Level of consciousness by evaluating: eye opening, verbal response and motor response (Glasgow Coma Scale)
- Pupil size and response to light.
- Limb movements (motor and sensory function).
- Vital signs.
- Other signs indicative of cerebral pathology.

1.2 Purpose

This policy is based on the provision of safe, effective, timely care and treatment to patients requiring observation following a known or suspected head injury.

It relies on registered nursing staff being able:-

- To accurately perform a basic neurological assessment including the Glasgow Coma Scale.
- To understand the significance of the findings and take prompt and appropriate action.

1.3 Objectives

1. To ensure accurate recording of a patient's neurological observations, including the Glasgow Coma Scale.
2. To ensure there is a clear record of what observations have been carried out, when and by whom.
3. To monitor, through regular and accurate observations, the progress of the patient's condition by staff and ensure they understand their clinical relevance.
4. To ensure staff are aware of the immediate and subsequent steps to be taken when deterioration in the patient's condition is noted.
5. To ensure the relevant staff are kept informed of the patient's condition.
6. To ensure the patient's next of kin are kept informed of the patient's condition.

2.0 SCOPE OF THE POLICY

This document is aimed at the large number of patients with seemingly mild head injuries admitted to general surgical, short stay and medical wards, rather than those admitted to critical care or neurological settings with more severe injuries.

This policy applies to all registered nursing & midwifery staff including those contracted through an agency. The tasks described should never be delegated to an unregistered member of the nursing team or to a member of staff not deemed competent in this task.

Student nurses undertaking a placement may undertake neurological observations providing they are directly supervised by a registered member of nursing or medical staff when carrying out the task.

This policy applies to adults, children and infants.

3.0 ROLES/RESPONSIBILITIES

It is the role and responsibility of registered nurses and midwives to be aware and adhere to this policy.

Recording of the Glasgow Coma Scale is the responsibility of the registered nurse/midwife and should never be delegated to an unregistered member of the nursing team or to a member of staff not deemed competent in this task.

4.0 KEY POLICY PRINCIPLES

Definitions

Head injury is defined, by NICE (2014), as any trauma to the head, other than superficial injuries to the face.

Policy Principles

4.1 The nurse responsible for the patient's care must introduce him/herself to the patient and family. They should briefly explain the purpose of neurological observations.

4.2 Patients with a known or suspected head injury must immediately commence on neurological observations, as documented in section 4.3.

Any patient aged over fourteen years of age who is attending either of the adult emergency departments should commence on neurological observations if they

- Present with a GCS<15/15 at any stage since injury
- Have suffered a loss of consciousness
- Have vomited since injury
- Reporting headache of 7/10 or higher
- Suffered a post traumatic seizure or have a neurological deficit
- On anticoagulants or new anticoagulant agents
- History of bleeding or clotting disorder
- Felt dazed at the time of injury

4.3 When patients are admitted for head injury observation the minimum acceptable documented neurological observations are:

- Glasgow Coma Score;
- pupil size and reactivity;
- limb movements;
- respiratory rate;
- heart rate;
- blood pressure;
- temperature;
- blood oxygen saturation.

4.4 The Belfast Trust Neurological Observation Chart must be used to record and display these assessments. All of the aforementioned parameters must be recorded on a single observation chart.

4.5 Recording of the neurological observations is the responsibility of the registered nurse/midwife. It should never be delegated to an unregistered member of the nursing team or to a member of staff not deemed competent in this task. The same staff member must complete all parts of the assessment. **It is not acceptable for an unregistered**

member of staff to measure vital signs and a registered practitioner to conduct the neurological aspect of the assessment.

4.6 Record keeping in the nursing notes should reflect the continuous care of the patient and should be maintained in chronological order.

4.7 It should be remembered that a patient may present with a GCS of 15/15 but still have experienced significant trauma and will require close monitoring.

4.8 The minimum frequency of observations for patients with GCS equal to 15 should be as follows, starting at initial assessment in the emergency department:

- half hourly for 2 hours
- *then hourly for 2 hours
- *then 1-hourly for 4 hours
- *then 2-hourly thereafter.

**Where a patient has not achieved a Glasgow Coma Score of 15/15 after two hours they should remain on a minimum of half hourly observations. This should continue until such time as a CGS of 15/15 has been achieved or a supervising doctor advises otherwise. The need for more frequent observation should be decided in collaboration between nursing and medical staff.*

Neurological observations should only be reduced beyond this in consultation with supervising medical staff.

4.9 Monitoring and exchange of information about individual patients should be based on the three separate responses on the Glasgow Coma Scale (for example, a patient scoring 13 based on scores of 4 on eye-opening, 4 on verbal response and 5 on motor response should be communicated as E4, V4, M5).

Always score the best response if there is a difference between right and left sides.

4.10 Patients who are at particular risk of intracerebral bleeding such as those with a history of coagulation problems may require more regular observations. This should be decided through collaboration between nursing and medical team.

<u>Patients presenting on anticoagulant agents.</u>

4.11 Any patient presenting to ED on anticoagulants are at high risk of intracranial bleeding. They must be flagged, at the point of triage, to a senior member of medical staff and a point of care INR recorded.

4.12 If anticoagulant reversal drugs are prescribed these must be given **immediately**.

4.13 Patients on anticoagulants, non steroid anti-inflammatory drugs and/or medication known to cause drowsiness should have an early medical review to decide if these medicines should be continued. Patients on warfarin should be managed in accordance with the trust policy "BHSCT Guidelines for Safe Warfarin Management". (http://intranet.belfasttrust.local/policies/Documents/Warfarin-%20Safe%20Management.pdf).

If there is doubt as to the patient's medications history, or the patient is confused, then the Northern Ireland Electronic Care Record should be consulted.

Where available the trust guidelines for reversal of specific anticoagulants should be held in the Emergency Departments' resuscitation areas.

General Management

4.14 Patients who normally have a low baseline Glasgow Coma Scale due to underlying chronic pathology require careful consideration and management depending on the presenting clinical scenario.

Where possible, neurological observations should be carried out by the same member of staff throughout a shift. When a patient is transferring, between units, neurological should be recorded, before the patient leaves the referring department and, immediately on arrival to the receiving department. The most recent Glasgow Coma Scale must be verbally handed over to the receiving unit. Likewise, a recent coma scale should be handed over during staff handovers within the same unit.

4.15 Any of the following examples of neurological deterioration should prompt urgent reappraisal by the supervising doctor:

- Development of unexplained confusion, agitation or abnormal behaviour.
- A sustained (that is, for at least 30 minutes) drop of one point in GCS (greater weight should be given to a drop of one point in the motor response score of the Glasgow Coma Scale).
- Any drop of three or more points in the eye-opening or verbal response scores of the Glasgow Coma Scale, or two or more points in the motor response score.
- Development of severe or increasing headache or persisting vomiting.
- New or evolving neurological symptoms or signs such as
    - Seizures;
    - pupil inequality;

- asymmetry of limb or facial movement.

Staff should be vigilant in observing for these symptoms and signs which could be indicative of a rise in intracranial pressure.

4.16 If a patient has a deteriorating GCS and needs an urgent CT scan, anaesthetics advice should be sought early as the patient may need airway management during imaging and/or immediate surgery afterwards.

4.17 It is essential that staff consider the mechanism of injury to determine the possibility of an associated cervical spine injury, which would necessitate spinal stabilization/ immobilization. This should be maintained until such an injury has been safely excluded.

4.18 Patients presenting who have consumed alcohol and/or illicit drugs require particularly close monitoring. Likewise, patients with a history of alcohol abuse may develop hypoglycaemia. As such blood glucose should be measured on presentation with a depressed level of consciousness. **A depressed consciousness level should be ascribed to intoxication only after a significant brain injury and hypoglycaemia have been excluded**. (NICE 2014).

4.19 Patients should have their pain managed effectively as failure to do so may lead to an increase in intracranial pressure. Where a patient is unable to void urine and has a full bladder a urinary catheter should be inserted where needed. (NICE 2014).

4.20 Patients with seemingly minor head injuries often present with cognitive issues after discharge from hospital. Where patients aged over fourteen years, are admitted for observation following a minor/moderate head injury, consideration should be given to a head injury liaison nurse referral at an early stage of admission. The head injury liaison nurse will assist in the management of the patient, where appropriate s/he will liaise with neurosurgery and work to facilitate input from rehabilitation services on discharge.

4.21 It should be noted this is not intended to act as a replacement for any services offered by rehabilitation medicine or the neurosurgical department. Therefore, direct referral to these services can still be made particularly in the case of the more seriously injured patient.

4.22 These guidelines are not intended to cover the acute management of the non-accidental injury in a child. Nevertheless it is important that healthcare professionals are aware that the head injury examination is an important opportunity to identify this problem. Minor head injury is relatively common in young children. A head injury in any child, especially under two years of age, should have a full examination: If there are concerns raised regarding non-accidental injury the child

should be discussed with a consultant paediatrician and the child admitted for safeguarding follow up.

5.0 IMPLEMENTATION OF POLICY

5.1 Dissemination

It is the role and responsibility of registered nurses and midwives to be aware of and adhere to this policy.

Recording of the Glasgow Coma Scale is the responsibility of the registered nurse/midwife and should never be delegated to an unregistered member of the nursing team or to a member of staff not deemed competent in this task.

5.2 Resources

Neurological observations must be recorded on the approved Belfast Trust neurological observation chart.

Staff undertaking neurological observation must be competent in obtaining the observations described in 4.3. Regular update training, is recommended, and is available for registered staff on the Training Administration System.

6.0 MONITORING

Standards and Guidelines Committee
Policy Committee

7.0 EVIDENCE BASE / REFERENCES

1. NICE (2014) Clinical Guidelines, 'Head injury: Triage, assessment, investigation and early management of head injury in infants, children and adults.
2. SIGN 46 - Early management of patients with Head Injury **http://www.sign.ac.uk/guidelines/fulltext/46/index.html**
3. Waterhouse, C (2005) The Glasgow Coma Scale and other neurological observations. Nursing Standard. 19, 33, 56-64.
4. Hickey, J.V (2003). The Clinical Practice of Neurological and Neurosurgical Nursing. (5h ed). Philadelphia: J.B Lippincott, Co.
5. National Neuroscience Benchmark Group, Benchmark No. 1 Neurological Assessment
6. G Teasdale and B Jennett; Assessment of Coma and Impaired Consciousness; Lancet(1974) ii 81-84
7. The conundrum of the Glasgow Coma Scale in intubated patients: a linear regression prediction of the Glasgow verbal score from the Glasgow eye and motor scores; Journal of Trauma (1998) 44(5):839-44 and 844-5
8. Head Injuries; 3e pp4044-50
9. The Patient in Coma; OTS pp150-153

10. ROYAL MARSDEN NEUROLOGICAL ASSESSMENT (Section 26)
11. Management of head injury complicated by alcohol ingestion. (2012) Safety and Quality Learning Letter. Public Health Agency / Health and Social Care Board. LL/SAI/2013/014

8.0 CONSULTATION PROCESS

Belfast Trust Emergency Department Staff
Belfast Trust Neurosciences Staff
Standards & Guidelines Committee
Belfast Trust Rehabilitation Medicine

9.0 APPENDICES / ATTACHMENTS

Glasgow Coma Scale for adults = Appendix 1
Glasgow Coma Scale for infants of child <5 years old = Appendix 2
Glasgow Coma Scale for children >5 years old = Appendix 3

10.0 EQUALITY STATEMENT

In line with duties under the equality legislation (Section 75 of the Northern Ireland Act 1998), Targeting Social Need Initiative, Disability discrimination and the Human Rights Act 1998, an initial screening exercise to ascertain if this policy should be subject to a full impact assessment has been carried out.
The outcome of the Equality screening for this policy is:

Major impact ☐

Minor impact ☐

No impact. X

SIGNATORIES
(Policy – Guidance should be signed off by the author of the policy and the identified responsible director).

_____ **Date: _____November 2014_____**

Author

_____ **Date: _____November 2014_____**

Director

Appendix 1

The Glasgow Coma Scale for adults

The Glasgow Coma Scale is scored between 3 and 15, 3 being the worst, and 15 the best.

It is composed of three parameters: Best Eye Response, Best Verbal Response and Best Motor Response.

The definition of these parameters is given below.

Feature	Scale Responses	Score Notation
Best Eye Response.	No eye opening. Eye opening to pain. Eye opening to verbal command. Eyes open spontaneously	1 2 3 4
Best Verbal Response.	No verbal response Incomprehensible sounds. Inappropriate words. Confused Orientated	1 2 3 4 5
Best Motor Response	No motor response. Extension to pain. Abnormal flexion to pain. Normal flexion to pain. (Withdrawal) Localising pain. Obeys Commands	1 2 3 4 5 6
TOTAL COMA 'SCORE'		3/15 - 15/15

*** From**
NICE clinical guideline 176 - Head injury: Triage, assessment, investigation and early management of head injury in infants, children and adults.
SIGN 110 - Early management of patients with Head Injury

Appendix 2

The Glasgow Coma Scale for infants or child (<5 years old)

The Glasgow Coma Scale is scored between 3 and 15, 3 being the worst, and 15 the best.

It is composed of three parameters: Best Eye Response, Best Verbal Response and Best Motor Response.

Communication with the infant or child's caregivers is required to establish the best usual verbal response. A 'grimace' alternative to verbal responses should be used in pre-verbal patients or if there is no verbal (audible) response i.e. if silent or intubated.

The definition of these parameters is given below.

Feature	Scale Responses		Score
Best Eye Response	No eye opening.		1
	Eye opening to pain.		2
	Eye opening to verbal command.		3
	Eyes open spontaneously		4
Best Verbal Or Grimace Response	No verbal response	No response to pain	1
	Whimpers and/or Moans in response to pain	Mild grimace to pain	2
	Cries in response to pain	Vigorous grimace to pain	3
	Less than usual ability or spontaneous irritable cry.	Less than usual spontaneous ability or only response to touch stimuli	4
	Alert, babbles, coos, words or sentences to usual ability.	Spontaneous normal facial/oro-motor activity e.g. sucks, cough.	5
Best Motor Response	No motor response.		1
	Responds to pain with decerebrate posturing (abnormal extension)		2
	Responds to pain with decorticate posturing (abnormal flexion)		3
	Withdraws in response to pain		4
	Withdraws to touch		5

	Moves spontaneously and purposefully	6
TOTAL COMA 'SCORE'		3/15 - 15/15

Appendix 3

The Glasgow Coma Scale for children > 5 years old

The Glasgow Coma Scale is scored between 3 and 15, 3 being the worst, and 15 the best.
It is composed of three parameters: Best Eye Response, Best Verbal Response and Best Motor Response.

Communication with the infant or child's caregivers is required to establish the best usual verbal response. A 'grimace' alternative to verbal responses should be used in pre-verbal patients or if there is no verbal (audible) response i.e. if silent or intubated.

The definition of these parameters is given below.

Feature	Scale Responses		Score
Best Eye Response	No eye opening.		1
	Eye opening to pain.		2
	Eye opening to verbal command.		3
	Eyes open spontaneously		4
Best Verbal Or Grimace Response	No verbal response	No response to pain	1
	Incomprehensible words or nonspecific sounds	Mild grimace to pain	2
	Inappropriate words	Vigorous grimace to pain	3
	Confused	Less than usual spontaneous ability or only response to touch stimuli	4
	Oriented, appropriate (person, place or address)	Spontaneous normal facial/oro-motor activity e.g. sucks, cough.	5
Best Motor Response	No motor response		1
	Responds to pain with decerebrate posturing (abnormal extension)		2
	Responds to pain with decorticate posturing (abnormal flexion)		3
	Withdraws to painful stimuli		4
	Localizes to painful stimulus		5

	Obeys commands	6
TOTAL COMA 'SCORE'		3/15 - 15/15