

Benchmark No. 1
Neurological Observations
– 2nd Edition



**British Association of
Neuroscience Nurses**



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Neurological Observations

(2nd Edition)

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History

The Neuroscience Nursing Benchmarking Group (NNBG) was established in the 1990's as a result of increasing concerns over inconsistencies in practices as part of a subsidiary of BANN. The group aims to improve on the quality of care by comparing and sharing practice with each other, and set explicit standards for comparison of current practice against the ideal standard. The group is committed to searching for the best evidence related to specific areas of neuroscience practice. Membership of the group consists of representatives from neuroscience units within the UK and Ireland, together with educational colleagues from both the NHS/HSC and Higher Educational Institutes. The group is further subdivided into regions and this benchmark was developed by the national group of the NNBG in 2012.

In 2016, the NNBG consolidated back into BANN and further information about NNBG can be found on the BANN website www.BANN.org.uk.

BANN would like to acknowledge the leadership and significant contribution made by the NNBG, and all its contributors, to neuroscience nursing over the years.

Benchmark No.1 Neurological Observations

To achieve this benchmark, the following factors have been identified:

Key points

Neurological observations are used to monitor and evaluate changes in the central nervous system, monitoring the patient's level of consciousness to recognise signs of deterioration and identify trends in neurological status. Neurological observations encompass:

1. Level of consciousness
 2. Pupillary function
 3. Motor function
 4. Sensory function
 5. Cardiovascular and respiratory signs
- Neurological observations must be performed by a trained and accountable practitioner (a formal assessment of knowledge and competence should be documented according to local assessment processes).
 - The fifteen-point Glasgow Coma Scale (GCS) must be used to assess the patient's neurological status.
 - An individualised, documented care plan is available which meets needs of the patient and demonstrates evidence of on-going reassessment.
 - When paper documentation is used, dots (•) not lines or ticks, must be used to fill out the GCS chart.
 - On handover staff must communicate where the neurological deficits arise with the aim of mapping changes in clinical presentation and ensuring consistency and maintaining continuity.
 - Student nurses may only be allowed to undertake neurological observations under the direct supervision of a competent registered nurse.
 - Where possible the pre-injury baseline GCS should be established (for example, patients with a learning disability, dementia or chronic neurological disorders).
 - A standardised approach applies to the application of painful stimulus appropriate to the GCS category that is being assessed.
 - Written guidelines are available to guide practitioners on the frequency of performing GCS observations.

Benchmark Number: 1 Neurological Assessment

Date completed: July 2018

Date to be reviewed: July 2020

FACTOR 1 – Documentation

Statement of Best Practice		Evidence	Achieved	Not Achieved	Variables
1.0	Patients identified as being 'at risk' of neurological deterioration are assessed using the GCS assessment tool in conjunction with nationally and locally agreed early warning scoring tools.	NEWS2 (2017) NICE (2014)			
1.1	Education is available on how to perform and document neurological observations which includes instruction on how to apply painful stimuli.	Reith <i>et al.</i> (2017) Braine & Cook (2016)			
1.2	The neurological assessment should be documented and verbalised as a description of the three categories of the GCS.	Teasdale (2015)			
1.3	Dots (•) not lines or ticks are used to complete the GCS chart using paper documentation.				

Benchmark Number: 1 Neurological Assessment

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FACTOR 2 – Protocol

Statement of Best Practice		Evidence	Achieved	Not Achieved	Variables
2.0	The fifteen-point Glasgow Coma Scale should be used as a tool to assess the patient's neurological status.	Teasdale (2015)			
2.1	Neurological observations are performed by an accountable, trained and competent practitioner who can escalate their concerns where there is evidence of clinical change.				
2.2	Student nurses always undertake GCS observations under direct supervision of a trained and competent practitioner.				
2.3	Wherever possible the neurological assessment is performed by the same practitioner on the shift to maintain continuity and avoid any bias in decision making.	Reith et al, (2015)			
2.4	When giving verbal handover, the patient's neurological status is discussed with a focus on identifying changes from the patient's baseline.	Burton et al, (2016)			
2.5	All sections of the observation chart are completed. Any variances are documented in the patient's records.	Reith et al, (2017) Braine & Cook, (2016).			

FACTOR 3 – Education

Statement of Best Practice		Evidence	Achieved	Not Achieved	Variables
3.0	GCS observations are performed by a practitioner who has the underpinning knowledge and skill to be proficient in the procedure.	NMC (2018)			
3.1	<p>The ward/department has an evidence-based education package available; this should include:</p> <ul style="list-style-type: none"> • Anatomy and physiology of the central and peripheral nervous system with particular reference to cranial nerve function and pupillary response. • Indications for performing neurological observations. • Importance of accurate recording and documentation. • An understanding of the rationale for the application of appropriate painful stimuli: • An understanding of the amount of time that stimulation should be applied to elicit a response. • An understanding of the physiological parameters indicative of neurological deterioration i.e. <ul style="list-style-type: none"> a) changing respiratory patterns b) changing cardiovascular patterns c) changing motor and sensory patterns • Assessment of pupil reactions <ul style="list-style-type: none"> a) Direct pupil reaction b) Consensual pupil reaction • Regular updates and opportunities to discuss and review the evidence base for performing GCS. • Awareness of additional tools for neurological assessment e.g., Full Outline for Unresponsiveness (FOUR), NHISS. • Awareness of alternative tools for neurological assessment e.g. Coma Recovery Scale, Sensory Modality Assessment Rehabilitation Technique (SMART) Wessex Head Injury Matrix (WHIM) 	<p>Reith et al. (2017)</p> <p>Braine & Cook (2016)</p> <p>Teasdale <i>et al.</i> (2014)</p> <p>NIHSS Wijdicks <i>et al.</i> (2005) NIH Stroke Scale</p> <p>Giacino <i>et al.</i> (2004) Gill-Thwaites & Munday (2004) Shiel <i>et al.</i> (2000)</p>			

FACTOR 4 – Patient Information

Statement of Best Practice		Evidence	Achieved	Not Achieved	Variables
4.0	<p>Patients / carers have received information on the importance of performing frequent neurological observations including:</p> <ul style="list-style-type: none"> • Purpose • Frequency • Rationale for noxious stimuli • Level of consciousness • Effect on sleep disturbance 	Reith <i>et al.</i> (2017)			
4.1	Any information given to patients / carers is documented in the patient's nursing records.	NMC (2018)			

References

- Baker, M. (2008) Reviewing the application of the Glasgow Coma Scale: does it have interrater reliability? *Journal of Neuroscience Nursing*, 4:342–347.
- Barlow, P. (2012) A practical review of the Glasgow Coma Scale and Score. *The Surgeon* 10, 114-119.
- Braine, M.E. and Cook, N. (2016) The Glasgow Coma Scale and Evidence Informed Practice: A critical Review of where we are and where we need to be *Journal of Clinical Nursing*, 26, 280-293
- Burton, J., Norton, C., Smyth, N., Ward, H., Day, S (2016) Nurse Handover: patient and staff experiences. *British Journal Neurosurgical Nursing*, 25(7), 14-27
- Davis, D.P., Serrano, J.A., Vilke, G.M., Sise, M.J. Kennedy, F., Eastman, A.B., Velky, T. and Hoyt, D.B. (2006). The predictive value of field versus arrival Glasgow Coma Scale score and TRISS calculations in moderate-to-severe traumatic brain injury. *Journal of Trauma-Injury Infection & Critical Care*. 60(5): 985-990.
- Giacino, J.T., Kalmar, K. and Whyte, J. (2004) The JFK Coma Recovery Scale-Revised: measurement characteristics and diagnostic utility. *Archives of Physical Medicine and Rehabilitation*, 85(12), 2020-2029.
- Gill-Thwaites H, Munday R (2004) The sensory modality assessment and rehabilitation technique (SMaRT): A valid and reliable assessment for vegetative state and minimally conscious state patients. *Brain Injury*, 18(12), 1255-1269.
- Jennet, B. and Teasdale, G. (1977) Aspects of Coma After Severe Head-Injury. *The Lancet*. 8017, 878-881.
- Jevon, P. (2010) How to ensure patient observations lead to effective management of altered consciousness. *Nursing Times*; 106: 6 <https://www.nursingtimes.net/how-to-ensure-patient...lead-to...of.../5011486.article>
- Livingston, B.M., Mackenzie, S.J., MacKirdy, F N., & Howie, J.C. (2000) Should the pre-sedation Glasgow Coma Scale value be used when calculating Acute Physiology and Chronic Health Evaluation scores for sedated patients? *Critical Care Medicine*, 28(2), 389-394.
- National Institute for Clinical Excellence. (2014) *Head injury, Triage, Assessment, Investigation and Early Management of Head-injury in Infants, Children and Adults – Clinical Guidelines [CG176]*. London: NICE.
- Marmarou, A., Lu, J., Butcher, I., McHugh, G.S., Murray, G.D., Steyerberg, E.W., Mushkudiani, N.A., Choi, S. and Maas, A.I. (2007) Prognostic value of the Glasgow Coma Scale and pupil reactivity in traumatic brain injury assessed pre-hospital and on enrollment: an IMPACT analysis. *Journal of Neurotrauma*, 24(2), 270-280.
- McLernon, S. (2014) The Glasgow Coma Scale 40 years on: a review of its practical use. *British Journal of Neuroscience Nursing*, 10(4), 179-184.
- National Early Warning Score (NEWS) 2 (2017). *Royal College of Physicians. National Early Warning Score (NEWS) 2: Standardising the assessment of acute-illness severity in the NHS. Updated report of a working party*. London: RCP, 2017.
- NIH Stroke Scale/Score (NIHSS). National Institute of Health, National Institute of Neurological Disorders and Stroke. Stroke Scale. https://www.ninds.nih.gov/sites/default/files/NIH_Stroke_Scale_Booklet
- NMC (2018) *Standards of proficiency for registered nurses*. London: NMC.
- Reith, F.C., Synnot, A., van den Brande, R., Gruen, R.L., and Maas, A.I. (2017) Factors influencing the reliability of the Glasgow Coma Scale: a systematic review. *Neurosurgery*, 80(6), 829-839.

Shiel, A., Horn, S.A., Wilson, B.A., Watson, M.J., Campbell, M.J. and McLellan, D.L. (2000) The Wessex Head Injury Matrix (WHIM) main scale: a preliminary report on a scale to assess and monitor patient recovery after severe head injury. *Clinical Rehabilitation*, 14(4), 408-416.

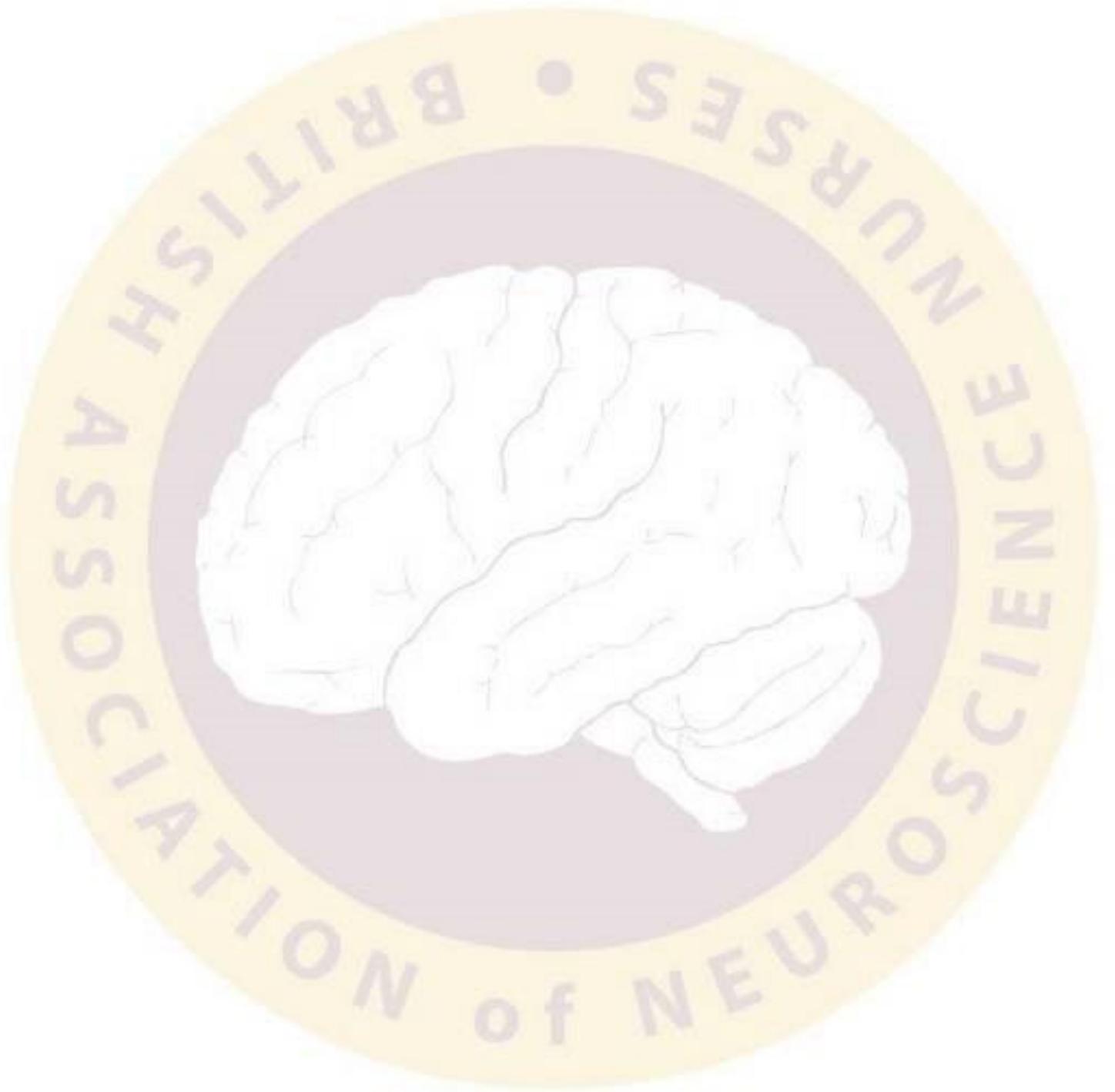
Scottish Intercollegiate Guidelines Network (SIGN) (2009) *Early management of patients with head-injury*. Edinburgh: SIGN.

Teasdale, G. Jennet, B. (1974). Assessment of Coma and impaired consciousness: A practical scale. *Lancet*. 2: 81-84.

Teasdale, G., Maas, A., Lecky, F., Manley, G., Stocchetti, N. and Murray, G. (2014) The Glasgow Coma Scale at 40 years: standing the test of time. *The Lancet Neurology*, 13(8), 844-854.

Waterhouse, C. (2009) The use of painful stimulus in relation to Glasgow Coma Scale observations. *British Journal of Neuroscience Nursing*, 5(5), 209-215.

Wijdicks, E. F., Bamlet, W. R., Maramattom, B. V., Manno, E. M., & McClelland, R. L. (2005) Validation of a new coma scale: the FOUR score. *Annals of Neurology: Official Journal of the American Neurological Association and the Child Neurology Society*, 58(4), 585-593.



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