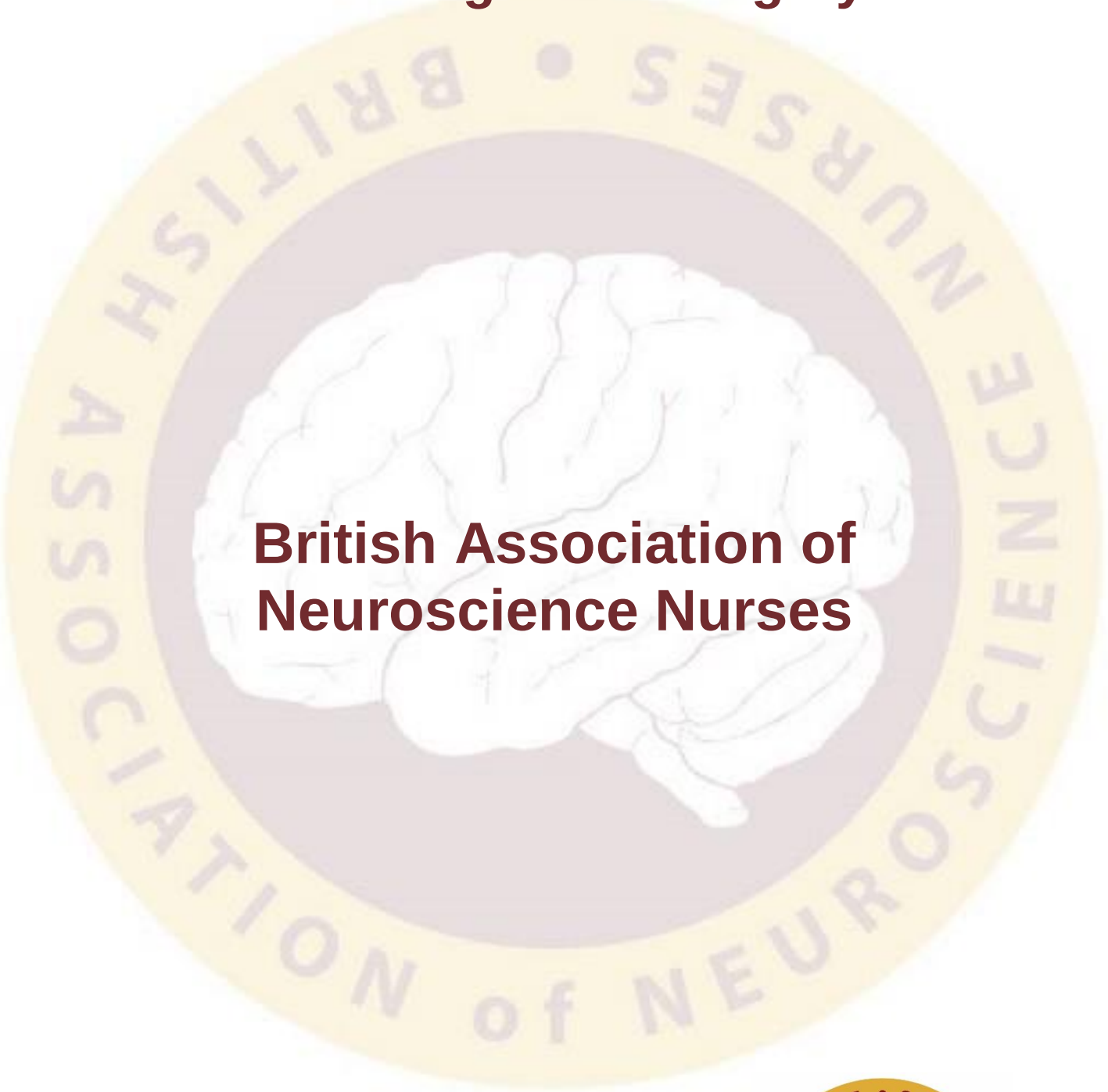
Guidance for the Frequency of Performing Neurological Observations Following Neurosurgery



British Association of Neuroscience Nurses

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Rationale

Post-operative cardiovascular and neurological observations are a significant component of patient care following neurosurgery (National Neuroscience Benchmarking Group, 2018). The World Health Organization (WHO) state that a person should be discharged to the ward with comprehensive orders regarding vital signs (WHO, 2018). In order to acknowledge potential risks and ensure early recognition of deterioration, plans of care must relate specifically to the person's condition and include required observation frequency (Resuscitation Council, 2015). There is currently no national guidance on the timing of post-operative neurological observations following neurosurgery.

Literature Review

A literature review demonstrated that the evidence base for the frequency of neurological observations following neurosurgery is weak (Knaus et al, 1981, Waterhouse, 2005; Dawes et al., 2007). National guidance from both the National Institute for health and Clinical Excellent (NICE) and Resuscitation Council on the management of acutely ill adults or people with head injury, discuss neurological observations but make no reference to post-operative observations (NICE, 2007; NICE, 2014; Resuscitation Council, 2015).

Through the British Association of Neuroscience Nurses (BANN), it was determined that only a limited number of NHS trusts have formal policies on the frequency of neurological observations following neurosurgery. Policy that does exist is often based on individual surgeon preference and nursing clinical judgement indicating a lack of consistency between institutions. A single centre study at the Queen Elizabeth Hospital Birmingham demonstrated the disparity between nursing and medical staff in defining the term 'routine post-operative observations. This study, along with communication through the National Neuroscience Benchmarking Group (NNBG) and BANN demonstrated the necessity for formal guidance.

Aim

This guidance has been reviewed by the BANN committee and the NNBG and is supported by the both the appropriate evidence base and clinical expert consensus. By standardising practice there will be alignment with aforesaid national recommendations and enhanced consistency in the performance of neurological observations following neurosurgery.

Category A	Category B	Category C
Frequency of observations:	**Frequency of observations:**	**Frequency of observations:**
➢ Hourly observations for 2 hours ➢ 2 hourly observations for 4 hours ➢ 4 hourly observations for rest of 24 hours or discharge if shorter	➢ Half hourly for 2 hours ➢ Hourly for 4 hours ➢ 2 hourly for 6 hours ➢ 4 hourly for 12 hours	➢ 15 minutes for 2 hours ➢ Half hourly for 4 hours ➢ Hourly for 6 hours ➢ 2 hourly for 12 hours ➢ 4 hourly for next 24 hours – to continue if remains level at 2 or 1a
Examples of Category A procedures:	**Examples of Category B Procedures:**	**Examples of Category C Procedures:**

• Day Case Neurosurgical Procedures
• Burrhole biopsy with no co morbidities or peri-op complications
• Insertion of ICP Bolt/Monitor on conscious people
• Device Battery change
• Insertion new VNS
• Baclofen pump insertion
• Insertion Lumber drain
• Minimally invasive spinal surgery with no pre-existing co-morbidities eg
  ○ Lumbar discectomy
  ○ Multiple level laminectomy
  ○ ACDF – 1-2 levels
	• Craniotomy for debulking of tumour (not post fossa/meningioma)
	• Lobectomy
	• Burrhole for removal haematoma or biopsy with existing co morbidities or peri-op complications
	• Transphenoidal Pituitary Surgery
	• Endoscopic third ventriculostomy
	• Insertion EVD
	• Shunt revision or insertion new shunt
	• Insertion new DBS
	• Internal EEG monitoring
	• Elective embolization
	• Head Injury
	• C1/C2 surgery
	• Spinal Surgery (Anterior or posterior) including spinal tumours with existing co-morbidities or multiple level caging/plating
		• Craniotomy for meningioma or Cranial Nerve lesion
		• Craniotomy for haematoma
		• Craniectomy
		• Post Fossa Surgery
		• Neurovascular clipping
		• Coiling ruptured aneurysm
		• Microvascular Decompression
		• Craniovertebral decompression
		• Thoracic surgery with post-operative chest drain
		• Complex multiple level spinal surgery with both anterior and posterior approaches

Key Points

➢ Full cardiovascular observations must be performed alongside neurological observations
➢ Neurological observations include – Glasgow Coma Scale, pupillary response and limb power assessment (NNBG, 2018).
  o For spinal surgery below T1 only limb powers are required, unless stated otherwise by medical team
➢ Post-operative observations, in line with categories, are to be commenced in theatre recovery
  o Cardiovascular observations may be required more frequently in line with anaesthetic guidelines (AAGBI, 2015)
➢ Following completion of categorised post-operative observation period, nursing assessment of person's condition to determine if appropriate for observations to return to pre-operative frequency
➢ If any change in limb power, pupil equality, pupil reaction or two-point drop in GCS, observations to be performed half hourly and medical team informed immediately (Resuscitation Council (UK), 2015)
➢ If the person remains intubated, then observations to continue as per routine critical care observation frequency (ICS, 2009)

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