Benchmark No. 14

Early Management of Spinal Cord Injury

British Association of Neuroscience Nurses

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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 North East group of the NNBG in 2007.

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.

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Key Points

The initial management of an acute spinal cord injury is critical to the prognosis and outcome for the patient. Immediate admission to a local SCI centre (SCIC) may be delayed due to competing co-morbidities and the need for critical care services. The care and management of a SCI is highly complex and requires a coordinated care pathway, a multi-disciplinary team approach and collaboration with specialists in the field. This benchmark will focus on acute management of SCI, prior to transfer to the SCIC.

All patients who have suffered a traumatic brain injury are initially managed as a suspected SCI until cleared radiologically and authorised by medical staff. Although the acute admission of a patient with a confirmed spinal injury is rare, metastatic, vascular and severe degenerative spinal disorders are far more common and the key principles underpinning this benchmark in regards spinal instability and on-going management will equally apply to their care.

Consideration must also be given to the management of children and older people presenting with SCI. In addition, patients suffering complex needs, for example, learning disabilities, long-term conditions including seizures and associated mental health issues such as drug and substance abuse will need referral to other support agencies for their continued support.

All local policies must be cross-reference to UK-wide good practice guidelines, (BASCIS/MASCIP/SIA). National SCI standards outline the patient's pathway, some of which will take place outside of a spinal cord injury centre..

FACTOR 1 – Documentation

	STATEMENT OF BEST PRACTICE	EVIDENCE & REFERENCES	ACHIEVED	NOT ACHIEVED	VARIABLES
1.0	Patients receive a comprehensive, multidisciplinary, holistic assessment on admission to diagnose primary problems or identify potential secondary complications to ensure the patient receives the right treatment at the right time	ASIA, 2005 NHSE. 2020 BASCIS MASCIP, 2015			
1.1	The care plan and documentation includes the following:- a) Referral to and liaison with the specialist SCI Centre b) Documentation includes the method of immobilisation, the associated care interventions and any necessary protective devices c) Specific instructions related to position changes and moving and handling techniques are documented d) Bowel care – an individualised bowel management regime is available e) Bladder care – the type and size of urinary catheter and frequency of urinary monitoring is documented f) Tissue viability is assessed using a locally recognised assessment tool g) Fluid/feeding regime, an individualised management regime is available h) Neurological assessment/limb sensation and movement with reference to ASIA chart is documented i) Vital signs – appropriate to patient status and hospital EWS requirements j) Application of mechanical thrombo-prophylaxis is prescribed Medications are prescribed (i.e., analgesia, thrombo-prophylaxis, gastric protection, aperients, rectal stimulants)	NHSE. 2020 Harrison, 2007 BOA 2006 BASCIS, 2020 MASCIP, 2015 NHS. 2013			

FACTOR 2 – Protocol

	STATEMENT OF BEST PRACTICE	EVIDENCE & REFERENCES	ACHIEVED	NOT ACHIEVED	VARIABLES
2.0	Health care professionals must have access to Spinal Cord Injury guidance from a spinal cord injury specialist 24hr, 7 day/week	NHSE. 2020			
2.1	The following elements are included in the local policy / pathway:- a) Recognising actual or potential SCI b) Admission or internal transfer of the patient c) Immobilisation / spinal protection / Log rolling d) Neck clearance e) Surface to surface transfers i.e. CT/MRI f) Application/removal and care of cervical collars g) Recognition and management of 'spinal shock' h) Mechanical & pharmacological thrombo-prophylaxis i) Respiratory & Cardiovascular management j) Gastro-intestinal tract management k) Neuropathic bladder and bowel management l) Neurological assessment – limb power and sensation m) Recognition and management of autonomic dysreflexia n) Tissue viability and use of pressure relieving devices o) Communication and emotional support p) Transfer to SCI Centre q) Access to appropriate psychological support	BASCIS, 2020 MASCIP, 2015 Hachem et al 2017 ICS, 2019 NICE, 2014			
2.2	**Respiratory** a) Assess for diaphragmatic breathing in patients with a high cervical cord injury *(i.e. strap/restraint/distension/splinting & diaphragmatic movement)* b) Assess for reduced respiratory effort that may occur as a consequence of ascending cord oedema in the first 72 hours post-trauma c) Monitor for signs of fatigue	ICS, 2019 NHS. 2013			

	STATEMENT OF BEST PRACTICE	EVIDENCE & REFERENCES	ACHIEVED	NOT ACHIEVED	VARIABLES
2.3	**Circulation** *a)* Cardio-vascular observations are monitored with specific reference to developing neurogenic shock (*can trigger gross hypotension and bradycardia in complete lesions above T2, therefore anticipate 'normal systolic BP between 70-90mmHg/ MAP>90mmHg)* b) Ensure systolic BP maintained above 90-100mmHg in c) paraplegic patient - fluid resuscitation is approached with extreme caution d) IV access is secured *(avoid placing lines in lower limbs due to increased risk of thromboembolism)* e) Adrenaline, Atropine or Glycopyrrolate is readily available	MASCIP, 2012 SIA. 2020 NHSE. 2020			
2.4	***Neurology*** a) The patient's peripheral vascular status and neurology is frequently assessed *(motor power and level of normal sensation – heat & cold, light & blunt touch (Neurotip™)* b) Limb strength & sensation is assessed before and after transfers or position changes c) Patients with spinal injury and concomitant brain injury have access to the brain injury pathway and associated support (i.e. short and long-term sequela of brain injury) d) Assess and document whether pelvic twist / 30^0 tilt is medically acceptable e) Prior to radiological clearance, staff are familiar with the local protocol to maintain spinal alignment to prevent secondary injury during manual handling (i.e. log rolling)	ASIA, 2019 ICS, 2019 NSCISB, 2015 Nunez-Patino, 2020			
2.5	***Gastro Intestinal*** a) Patients are Nil Enterally for 1^{st}.48 hours (even if bowel sounds present), *paralytic ileus is an immediate consequence of spinal cord injury* b) Oral fluids/diet are gradually introduced after 48hrs following confirmation of bowel sounds *c)* Prophylactic H_2 receptor antagonist are prescribed on admission and are continued until transfer to a specialist SCIC *(unopposed vagal nerve activity is a key factor in high risk stress ulceration)*	BASCIS			

	STATEMENT OF BEST PRACTICE	EVIDENCE & REFERENCES	ACHIEVED	NOT ACHIEVED	VARIABLES
2.6	***Neurogenic Bowel management*** a) An initial digital rectal assessment is performed to determine the status of ano-rectal sensation, anal sphincter reflex and presence of faeces or blood in the rectum b) A Daily digital removal of faeces is performed until tone returns to avoid bowel distention and faecal impaction c) A neurogenic bowel management regime, appropriate to the patient's bowel type, is implemented (minimises the risk of abdominal distention, ano-rectal complications, bowel obstruction or triggering *autonomic dysreflexia in patients with lesions above T6*	MASCIP, 2012 NHSE. 2020 NSCISB, 2015			
2.7	***Neuropathic bladder management*** Urine output is monitored hourly ensuring that the catheter is draining freely, avoiding kinks in catheter tubing, maintaining drainage bag lower than bladder to prevent distension of the bladder triggering Autonomic dysreflexia	MASCIP, 2012			
2.8	**Tissue Viability** a) The patient's pressure areas are frequently inspected for signs of redness, tissue damage or pressure from other medical devices such as splints or cervical collars.	Harrison, 2007			
2.9	**Continuing Care** a) Patient is monitored for physiological effects of environmental temperature on the patient's body temperature (poikilothermic) a) The patient is offered equipment to maintain involvement with their surroundings e.g. prism 3-D glasses, mirrors etc.	BSRM, 2008 NSF-LTC 2005			

FACTOR 3 – Education

	STATEMENT OF BEST PRACTICE	EVIDENCE & REFERENCES	ACHIEVED	NOT ACHIEVED	VARIABLES
3.0	A structured education and training programme is available for staff caring for patients with a spinal injury outside of a specialist SCI Centre. This includes:- a) Aetiology and pathophysiology of SCI b) Diagnosing and monitoring SCI c) Admission and transfer of SCI patients d) Practical moving & handling, log-rolling and surface transfer techniques including correct use of equipment e) Application, care and removal of spinal protection and immobilisation devices f) The management of physiological systems during 'spinal shock' g) Contributory causes, prevention and treatment of autonomic dysreflexia h) Specific care related to:- • Gastrointestinal tract (establishing & maintaining a bowel regime - reflexive and areflexive bowel) • Bladder care • Skin care • Thrombo-prophylaxis i) Emotional support	*ASIA, 2015* BASCIS MASCIP, 2015 SIA 2020 Harrison 2007			

FACTOR 4 – Patient Information

	STATEMENT OF BEST PRACTICE	EVIDENCE & REFERENCES	ACHIEVED	NOT ACHIEVED	VARIABLES
4.0	Patient information is available and reviewed in accordance with local policy.				
4.1	a) Patients / carers are informed of all procedures / nursing Interventions and consent obtained b) Patients and their carers / families have access to appropriate and relevant information c) The patient will receive information about their injury, prognosis and programme of management delivered by those with sufficient knowledge & expertise at the appropriate time d) All information is updated according to national / local patient information standards	BASCIS			

References

ASIA (2005). *Motor Exam Guide - ASIA International standards for neurological classification of Spinal cord injury.* American Spinal Injury Association. *https://asia-spinalinjury.org/wp-content/uploads/2016/02/Motor_Exam_Guide.pdf*

ASIA (2019). International Standards for Neurological Classification of Spinal Cord Injury (ISNCSCI)-What's new? *Spinal Cord.* 57(10): 815-817

British Association of Spinal Cord Injury Specialists (BASCIS). Guidelines on the Management of Acute Traumatic Spinal Cord Injury in a General Hospital. http://www.bascis.org.uk/

British Orthopaedic Association (2006) *The initial care and transfer of patients with spinal cord injuries*. London: British Orthopaedic Association.

British Orthopaedic Association (2006). *The Initial Care and Transfer of Patients with Spinal Cord Injuries*. London: British Orthopaedic Association.

British Society of Rehabilitation Medicine (2008). *Chronic spinal cord injury: management of patients in acute hospital settings. Concise guidance to good practice. A series of evidence-based guidelines for clinical management. No 9. National guidelines*. London: British Society of Rehabilitation Medicine.

Department of Health (2005) *The National Service Framework for Long-term Conditions*. London: Department of Health.

Hachem, L.D., Ahuja, C.S. and Fehlings, M.G. (2017) Assessment and management of acute spinal cord injury: From point of injury to rehabilitation. *The Journal of Spinal Cord Medicine*, *40*(6), pp.665-675.

Harrison, P. (2007). *Managing Spinal Cord Injury: The First 48 Hours: the Initial Management of People with Actual Or Suspected Spinal Cord Injury from Scene of Accident to A & E Department*. London: Spinal Injuries Association

ICS. Intensive Care Society (2019) *Guidance On: The Transfer of the Critically Ill Adult*. London: Intensive Care Society.

Multidisciplinary Association of Spinal Cord Injury Professionals (2015). *Moving and handling patients with actual or suspected spinal cord injuries (SCI)*. London: Multidisciplinary Association of Spinal Cord Injury Professionals

Multidisciplinary Association of Spinal Cord Injury Professionals (2012). Guidelines for Management of Neurogenic Bowel Dysfunction in Individuals with Central Neurological Conditions Multidisciplinary Association of Spinal Cord Injured Professionals. London: Multidisciplinary Association of Spinal Cord Injury Professionals

Multidisciplinary Association of Spinal Cord Injury Professionals (2015). The Patient is for Turning. The role and use of mechanical turning beds for patients with Spinal Cord Injury, associated major trauma and complex care scenarios. London: Multidisciplinary Association of Spinal Cord Injury Professionals

Multidisciplinary Association of Spinal Cord Injury Professionals (2015). National Spinal Cord Injury Strategy Board - The initial management of Spinal Cord Injury. London: Multidisciplinary Association of Spinal Cord Injury Professionals.

National Health Service (2013). Service Standards for Adults Requiring Spinal Cord Injury Care. London: NHS.

National Institute for Health and Care Excellence (2016). *Spinal injury: assessment and initial management. NICE guideline [NG41]*. London: NICE.

Nunez-Patino, R.A., Rubiano, A.M. and Godoy, D.A. (2020). Impact of cervical collars on intracranial pressure values in traumatic brain injury: a systematic review and meta-analysis of prospective studies. *Neurocritical Care*, 32(2), 469-477.

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