1. Introduction and Who Guideline applies to

This guideline is for staff caring for Adult Spinal Cord Injured (SCI) patients admitted to University Hospitals of Leicester (UHL) to ensure that they receive early recognition and timely treatment in the event of an Autonomic Dysreflexic episode.

Autonomic Dysreflexia is a potentially fatal complication for any SCI person living with spinal cord lesion above the level of 6th Thoracic vertebrae (T6). It can occur at any time following the onset of spinal cord paralysis and up to 90% of people with tetraplegia or high paraplegia will experience it at some time in their lives (Harrison, 2007). Unresolved, it can cause fatal cerebral haemorrhage.

Autonomic Dysreflexia is the term used to describe the paralysed body's autonomic response to painful stimuli perceived below the level of the spinal cord injury. The sympathetic nervous system responds to these pain signals by vasoconstriction of the blood vessels through the paralysed areas of the body resulting in gross hypertension (Harrison, 2007).

2. Guideline Standards and Procedures

Adult patients with chronic spinal cord injury who are admitted to wards/units outside of the spinal ward must be referred to the Spinal Specialist Nurses within 24 hours of their admission as they may require Digital Removal of Faeces (DRF) as part of their long-standing bowel management regime.

All patients with SCI should be identified by adding an SCI alert to the Special Register on Patient Centre. A daily report of all patients admitted to UHL with an SCI alert will be generated for the Spinal Specialist Nurses to follow up. Staff can contact the Spinal Specialist Nurses via Switchboard or email the Spinal Nurses mailbox (SpinalNurses@uhl-tr.nhs.uk) for advise and information.

Autonomic Dysreflexia is primarily diagnosed by recognising the presenting symptoms. Even if these symptoms are sparse, or only one single characteristic is present, the diagnosis is instantly confirmed, where possible, by reference to the patient. Unless this is their first occurrence, the 'expert' patient is usually intimately familiar with the symptoms.

Symptoms

- **Pounding headache:** usually frontal headache
- **Severe hypertension:** 20-30mmHg above baseline; SCI people have lower resting BP compared to non-SCI people
- **Flushed appearance of skin above the level of the cord injury:** blotched skin or redness
- **Profuse sweating above the level of the cord injury**
- **Pallor below the level of the cord injury:** pale coloured skin
- **Nasal congestion:** stuffy nose
- **Bradycardia**
- **Sensation of a tight chest**
- **Non-drainage of urine:** urine obstruction being the most common cause

Treatment

Immediate action once Autonomic Dysreflexia is identified:

- Sit upright and lower the legs, if patient is allowed to sit up
- Loosen any tight clothing or any constrictive devices. Ensure nothing is putting pressure on the skin
- Consider administering analgesia
- Perform a quick assessment to identify the cause so that the stimulus can be removed
- If Systolic BP is 150mmHg or above, consider administering Glyceryl Trinitrate 2 sprays sublingually

Causes

Bladder

- Distended bladder- usually due to catheter blockage or kinking or other form of bladder outlet obstruction like an over-full bag
- Urinary tract infection or bladder spasms
- Bladder stones
- Renal calculi

Bowel

- Distended bowel – usually due to full rectum, constipation or impaction
- Haemorrhoids
- Anal fissures
- Stretching of rectum or anus
- Having bowel care performed

Skin

- Pressure sore
- Tight clothing
- Ingrown toenail
- Contact burn, scald, sunburn, blisters

Other causes

- Menstrual pain
- Labour and delivery
- Scrotal compression
- Sexual stimulation
- Fractures below the level of the cord injury
- Pain or trauma
- Deep vein thrombosis, Pulmonary embolism
- Syringomyelia
- Acute conditions such as Gastric Ulcers, appendicitis
- Severe anxiety (eliminate all possible physiological factors first)

On occasion, the underlying cause is not obvious without further investigation. If in doubt, defer to the opinion of the patient with SCI. In the event of finding a SCI person in a collapsed or unconscious state, consider Autonomic Dysreflexia as possible cause. Seek to establish a history of the event from witnesses and identify and relieve possible harmful triggers as appropriate.

Identify and remove cause

Bladder: non-drainage of urine is the most common cause of Autonomic Dysreflexia.

If foley or suprapubic catheter in place, check if:

- Drainage bag is full
- Tubing is kinked
- Drainage bag at higher level than the bladder
- Catheter is blocked

Correct all obvious problems and if the catheter is still not draining in 2-3 minutes, the catheter must be changed immediately. Replace the catheter with a size 16ch or a bigger lumen catheter to facilitate drainage of increased sediments laid down in the paralysed bladder. A bigger lumen catheter will also reduce the risk of further blockage from happening. **Do not attempt to flush the catheter or perform a bladder washout as there is no guarantee that the fluid will return and you risk perforating the bladder and increasing the Blood Pressure further.** If a catheter is not in place, then one should be inserted urgently.

Bowel: this can be due to constipation, haemorrhoids, anal fissures or an infection.

Perform Digital Rectal Examination (DRE) using an anaesthetic lubricant gel, ensuring you allow minimum of 5 minutes before performing Digital Removal of Faeces (DRF). Gently perform DRF as per UHL Policy- Digital Rectal Examination and Digital Removal of Faeces For Non-Medical Healthcare Professionals as part of Adult Bowel Management (Trust Ref: B16/2008) to empty the rectum. If symptoms of AD appear while you are performing DRE/DRF then stop the procedure and resume once the symptoms have subsided.

See Appendix 2. Neurogenic Bowel Care plan for Spinal Cord Injured patients

Skin and Other causes: remove all harmful stimulus but if this can not be identified and systolic BP is above 150mmHg, consider:

- Administer Glyceryl Trinitrate 2 sprays sublingually

Monitoring

- Monitor and record patient's BP every 15 minutes up to at least 4 hours
- Reassure patient
- Monitor patient's condition for any relapse or return of symptoms
- Inform Spinal Specialist Nurse of episode

See Appendix 1. UHL Autonomic Dysreflexia pathway.

3. Education and Training

UHL Digital Rectal Examination competency based training and assessment programme is available for booking via HELM. Education and training needs would be in accordance with the UHL Policy- Digital Rectal Examination and Digital Removal of Faeces For Non-Medical Healthcare Professionals as part of Adult Bowel Management (Trust Ref: B16/2008)

Due to the irregularity of SCI people being admitted to general wards, nurses on the ward who have completed DRE training and competencies will be taught and assessed for DRF on an individual patient basis. The competency for DRF will only last as long as the specific patient is on the ward. Once the patient is discharged from the hospital, the nurse's competency in DRF will be no longer valid as this applies only to a specific patient.

4. Monitoring Compliance

What will be measured to monitor compliance	How will compliance be monitored	Monitoring Lead	Frequency	Reporting arrangements
Number of referrals to the Spinal Specialist Nurses of patients outside the Trauma Unit	Audit	Spinal Nurses	Annually	Spinal Team
All non-medical healthcare professionals competent in undertaking DRE	Completion of DRE competency via HELM	Spinal Nurses		Line Manager
Incidents/complaints associated with DRE/DRF	Investigate incidents/complaints	Line manager	Datix incident reporting system	Patient Safety Team

5. Supporting References

GREAT BRITAIN. NHS IMPROVEMENT (2018) *Resources to support safer bowel care for patients at risk of autonomic dysreflexia.* London: NHS Improvement, NHS/PSA/RE/2018/005.

HARRISON, P. (2000) *Managing Spinal Injury: Critical Care.* London: Spinal Injuries Association.

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SPINAL INJURIES ASSOCIATION (2013) *Living with SCI Factsheets Autonomic Dysreflexia.* [Online] SIA. Available from: https://www.spinal.co.uk/wp-content/uploads/2017/05/Autonomic-Dysreflexia.pdf [Accessed 21/10/18].

6. Key Words

Autonomic Dysreflexia

Spinal Cord Injury

Chronic Spinal Cord Injury

Digital Rectal Examination

Digital Removal of Faeces

CONTACT AND REVIEW DETAILS	
Guideline Lead (Name and Title) Rowena Alonzo, Ward Sister	**Executive Lead** Chief Nurse
Details of Changes made during review: V3	

Autonomic Dysreflexia Pathway

University Hospitals of Leicester NHS
NHS Trust

Autonomic Dysreflexia Treatment Guideline
For Adult patients with Spinal Cord Injuries APPENDIX 1

Autonomic Dysreflexia (AD) is the term used to describe the paralysed body's autonomic response to painful stimuli. The sympathetic nervous system responds to pain signals by vaso-constriction of blood vessels throughout the paralysed areas of the body resulting in extreme hypertension. It is unique to Spinal Cord Injury and can affect any SCI person with a lesion above T6 vertebrae. An increase in 20mmHg from the baseline blood pressure of a patient with SCI may indicate a Dysreflexic episode. AD can lead the cerebral haemorrhage and death.

Recognise signs and symptoms of Autonomic Dysreflexia

LISTEN:	LOOK:	TOUCH:	CHECK:
*pounding headache *nasal congestion	*blotched skin or redness above the level of lesion *pallor below the level of lesion *patient may appear to be suffering from a Stroke or Seizure	*profuse sweating	*BP 20-40mmHg higher than baseline *bradycardia

IF YOUR SCI PATIENT HAS ANY OF THESE SYMPTOMS, THINK AUTONOMIC DYSREFLEXIA!

Emergency Treatment

- Loosen clothing or any constrictive devices
- if recommended, sit patient up and lower legs
- if systolic BP is above 150mmHg, consider giving Glyceryl Trinitrate (GTN) 2 sprays sublingually
- consider administering analgesia

Monitor BP every 15 minutes for 4 hours and give further assistance

Survey for underlying causes of AD

BLADDER:
*distended bladder due to kinked/bent catheter tube, full bag or bag higher than the bladder
*UTI/ bladder spasms
*renal calculi/bladder stones

BOWELS:
*impacted bowels
*constipation
*distention
*haemorrhoids

SKIN:
*burns/ scalds
*pressure sores
*ingrowing toenails
*tight clothing

OTHERS:
*DVT/PE
*labour/ delivery
*erection
*syringomyelia
*anxiety
*fractures below the lesion

Eliminate or correct cause

BLADDER:
- Check existing catheter for any kinks, folds or obstructions
- If catheter not draining, replace with size 16ch or bigger lumen
- insert catheter if not in place
- do not flush catheter due to neurogenic bladder & risk of perforation

BOWELS:
- Perform Digital Rectal Examination and Digital removal of faeces as per UHL Policy, using anaesthetic gel ensuring you allow 5 minutes before performing procedure

Inform Spinal Specialist Nurses of episode of AD so they can review precipitating cause and educate patient, carer and family on preventative strategies

Appendix 2

First / Surname			University Hospitals of Leicester NHS NHS Trust			
S Number **NHS Number**	**Moved to**					
Date of Birth **Ward** **Site**	**Date Moved**					

NEUROGENIC BOWEL CARE PLAN for SPINAL CORD INJURED PATIENTS

Goal:

To inform the patient of the need for bowel care and obtain consent

To establish and maintain a regular and reliable bowel routine

To prevent long term problems associated with faecal impaction

After completing the patient assessment the following risks have been identified : **(please document on the evaluation)**

1. Faecal impaction
2. Autonomic Dysreflexia for upper Spinal Cord Injured (SCI) patients
3. Faecal incontinence
4. Risks associated with Digital Rectal Examination (DRE) and Digital Removal of Faeces (DRF) as outlined in the UHL Policy (B16/2008)

Action / Care Need:

a) Explain the need for bowel management to the patient. Gain verbal consent.

b) Keep Nil by Mouth for at least 48 hours if the patient is at risk of paralytic ileus.

c) Perform daily digital rectal examination (DRE) whilst patient is in Spinal Shock. Assess for changes in anal tone, return of sensation of the presence of faeces. Perform daily digital removal of faeces (DRF) if present.

d) Once Spinal Shock has settled, establish required bowel management for the patient_____(frequency)

e) Perform Reflex bowel management as appropriate_____(date)

- Administer stimulant laxative if needed, 8-12 hours before bowel management
- Provide patient with something to eat or drink 20-30 minutes before beginning
- Administer micro-enema(s) then wait until wind is passed approximately up to 45 minutes depending on type of stimulant
- Perform tummy massage while waiting
- Perform digital stimulation for approximately 30 seconds up to 3- 4 times, 5- 10 minutes between each procedure. Massage while waiting.
- Perform digital removal of faeces if stool remains in rectum after stimulation
- When bowel is empty, check again after approximately 5 minutes and repeat previous 2 stages is stool still present

f) Or perform Flaccid bowel management as appropriate_____ (date)

- Perform steps 1 and 2 as above (with reflex bowel management)
- Perform tummy massage for 5 – 10 minutes
- Perform digital removal of faeces.
- When bowel is empty, check again after approximately 5 minutes and repeat previous stage if stool is present

g) Provide reassurance throughout procedure

h) Document on the bowel chart on Nerve Centre

Other Care Needs: Ensure micro-enema is prescribed on emeds and signed once administered.

Date Reviewed:								
Care Plan Active?	**Y / N**	**Y / N**	**Y / N**	**Y / N**	**Y / N**	**Y / N**	**Y / N**	**Y / N**
Print Name								

Date / Time	Evaluation	Signature / Print Name