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(adapted for ISLHD use from SESLHDPR/291)

**KEY TERMS**: Acute Spinal Cord Injury, Spinal Cord Injury Service

**SUMMARY**: Procedure for the Transfer of Adults with Acute Spinal Cord Injury, to the Major Trauma Service and/or the Spinal Cord Injury Service (SCIS) in the South Eastern Sydney Local Health District (SESLHD), from the Illawarra Shoalhaven Local Health District (ISLHD).
1. POLICY STATEMENT

Early referral and transfer of patients with spinal cord injury (SCI) to a specialised Spinal Cord Injury Service (SCIS) improves outcomes and reduces major complications. This is in line with the NSW Policy Directive PD2010_021: Critical Care Tertiary Referral Networks & Transfer of Care (Adults) and Selected Specialty and Statewide Service Plans, NSW Trauma Services Number Six, December 2009. The purpose of this procedure is to ensure patients with SCI are able to access speciality SCIS when needed. Admission should be timely and equitable. Timely admission means as soon as is practically possible, with an ideal being a direct admission less than 24 hours following injury.

2. BACKGROUND

The NSW State Spinal Cord Injury Service for adults (age 16 years or greater) is co-located at the Prince of Wales Hospital (POWH) and the Royal North Shore Hospital (RNSH). This is a tertiary level service that delivers multidisciplinary care in an appropriate physical environment as required by the NSW Health Model of Care for SCI. This combination of expertise is not available at or transferable to other sites and so transport of patients to one of the SCIS hospitals is required.

Acute spinal cord injury
The rapid deterioration in neurological function due to injury of the spinal cord or cauda equina (covering neurological segments C1 to S5) from non-progressive disease, including trauma, intervertebral disc herniation, transverse myelitis, bacterial infection, ischaemia or haematoma. Progressive neurological disorders and metastatic neoplastic disease are specifically excluded. Unilateral injury to single nerve roots (sciatica or brachialgia) is not included in the definition of spinal cord injury.

The SCIS at POWH
The POW Hospital is the default service to provide immediate and continuing care for acute spinal cord injured patients from within ISLHD.

Non-refusal policy at POWH
The SCIS at POWH is bound to accept any appropriate referral of acute spinal cord injury that is notified within 24 hours of the injury occurring. Referrals to POWH later than 24 hours after the onset of SCI will be accommodated at the earliest possible opportunity based on availability of appropriate resources within the hospital. It is not expected that POWH will be mandated to accept all referrals of SCI, in some circumstances referral and transfer of the patient to an alternate service at RNSH, may be offered.
Appropriate Referral Type
The SCIS at POWH will accept patients with the following clinical characteristics:

- Age 16 years or older
- Sudden onset of neurological deficit affecting spinal segments from C1 to S5 (but not unilateral, single nerve root compromise).
- Presentation following trauma or presumed non-progressive pathology
- Has a reasonable expectation of surviving the acute injury and/or medical comorbidities
- Spinal cord and spinal column imaging are not required prior to referral or transfer.

Patients with the following characteristics will not be accepted

- Age younger than 16 years (refer to Sydney Children’s Hospital Network at Randwick in the first instance, or Westmead as a second alternative)
- Moribund patients or patients with such severe injury as to put their immediate survival in jeopardy
- Patients with documented or presumed progressive pathology affecting the spinal cord or cauda equina (demyelinating and degenerative conditions of the spinal cord, metastatic tumours or congenital disorders)

Network SCIS and Major Trauma Service SESLHD
The SCIS at POWH is networked with the Major Trauma Service at St George Hospital in SESLHD. The SCIS at POWH will be the primary referral centre for SCI patients referred to the Trauma Service at St George Hospital and will provide a non-refusal service to such patients. Referral of multisystem injured patients with SCI to St George Hospital is appropriate for triage directly to the most appropriate service (the Trauma Service or SCIS). Patients requiring urgent stabilisation of life threatening injuries will be initially treated at St George Hospital prior to referral to the SCIS at POWH. Patients with single system (spinal cord) injury or who have minor secondary injuries and are otherwise physiologically stable may be admitted directly to the SCIS at POWH.

NSW Aeromedical and Medical Retrieval Service (AMRS)
The need for physician-assisted transfer is determined by AMRS in consultation with the receiving SCIS and ICU. Transfer will generally require medically supervised transport which may be via AMRS. AMRS should be contacted on 1800 650 004 by the referring hospital to facilitate the medical retrieval of adults with an acute spinal cord injury.

3. RESPONSIBILITIES

3.1 Referring clinicians will:

- Refer cases of acute spinal cord injury at the time of diagnosis without delay
- Seek advice from the SCIS at POWH if uncertain of the appropriateness of referral
- Ensure adequate spinal precautions are implemented
- Ensure adequate breathing and airway patency in cases of cervical spinal cord injury
- Ensure that any imaging studies performed are sent with the patient
- Contact AMRS to arrange patient transfer
3.2 On-duty Senior Trauma Officer at St George Hospital Trauma Service will:
- Assess referred cases for physiological stability
- May refer cases of multisystem trauma with SCI that require major intervention for non-spinal injuries, to RNSH (evidence of motor and/or sensory deficit is required; paraesthesia alone is not sufficient evidence of spinal cord injury)
- May accept cases of multisystem trauma with life-threatening injuries for immediate trauma care, at St George Hospital
- Refer patients with isolated SCI or SCI with associated minor injuries, or who have been stabilised following multi system injury, to POWH SCIS

3.3 On-duty Spinal Surgeon at POWH Spinal Cord Injury Service will:
- Assess referred cases for suitability for transfer to the SCIS
- Discuss referral with the consultant on-duty in POWH ICU and the on-call POWH spinal rehabilitation specialist
- Use the POWH SCIS ‘Non-Refusal’ policy to accept urgent appropriate referrals
- Otherwise determine an appropriate time of patient transfer
- Establish suitable plan of management, if delays in transfer are expected
- Liaise with the SCIS at Royal North Shore Hospital in the event that POWH does not have sufficient resources to accept the patient at the time of referral

3.4 Receiving Spinal Surgical Team at POWH will:
- Notify POWH Emergency Department (ED) of the expected arrival of the patient
- Arrange for a ‘trauma call’ on all cases of post-traumatic SCI
- Arrange for an appropriate in-patient bed for the patient
- Review the patient in the ED within 30 minutes of arrival at POWH
- Notify the Spinal Rehabilitation team of the arrival of the patient

3.5 Receiving Spinal Rehabilitation Team at POWH will:
- Review the patient within 12 hours of arrival at POWH

4. PROCEDURE
   See flow chart in Appendix 1.

5. DOCUMENTATION
   Acute Spinal Cord Injury referral and transfer discussions, as well as relevant Neurological assessment will be clearly detailed on the patient’s eMR record.

6. AUDIT
   Problems with this procedure will be referred to the ISLHD Trauma Coordinator, for loop closure. Time to referral and delays to transfer out will be reviewed and reported on a case by case basis, to the ISHLH District Trauma Committee.
7. REFERENCES

Acute Spinal Cord Injury of the Adult – Management & Referral Procedure
SESLHDPR/291, Revision 6, January 2016

NSW Ministry of Health ‘Selected Specialty and Statewide Service Plans: NSW Trauma Services’ (Number 6) December 2009.

NSW Ministry of Health ‘Critical Care Tertiary Referral Networks & Transfer of Care (Adults)’ Policy Directive PD2010_021


8. REVISION AND APPROVAL HISTORY

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<th>Date</th>
<th>Revision No.</th>
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<tr>
<td>January 2014</td>
<td>0</td>
<td>Original SESLHD procedure, reviewed and accepted by ISLHD Medicine and Emergency Clinical Leadership Group, Area Director for Emergency Medicine and Wollongong Hospital Trauma Committee for use within ISLHD. Reformatted to ISLHD procedure by Jorge Sesperez, Trauma Coordinator. Draft for comment January 2014</td>
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<tr>
<td>April 2016</td>
<td>1</td>
<td>Reviewed, updated and endorsed by ISLH District Trauma Committee. Passed by Policy &amp; Procedure Committee. Waiting for Executive sign-off. - September 2015</td>
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Flow chart and 3.2 responsibilities of St George trauma officer, updated by Jorge Seserez, following discussions at SESLHD Trauma Network. - March 2016

Approved by ISLHD Clinical Governance Council
APPENDIX 1 – Referral procedure flow chart

Referring Hospital
Acute Spinal Cord Injury (SCI) – Adult (aged 16 years or greater)

Multi-System Trauma with SCI
Consult/Notify ISLHD Trauma & Neurosurgery (as per usual procedure)

St George senior trauma medical officer makes appropriate referral either:
- St George Hospital
- POWH
- RNSH

Refer to Trauma Service St George Hospital
Trauma Hotline: 9113 4500

POWH spinal surgeon on-call confirms appropriate transfer

Refer to SCIS at POWH
Phone: 9382 2222
Please state:
“I have an adult patient with an acute spinal cord injury; please connect me to the consultant spine surgeon on-call”

Referring Hospital
Calls AMRS to arrange patient transfer: 1800 650 004

Isolated SCI or SCI with Minor associated injuries
Acute Spinal Cord Injury of the Adult – Management & Referral Procedure

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