



الهيئة النقابية للأطباء السودانيين

بالمملكة المتحدة

**SUDAN DOCTORS' UNION**

**U.K. BRANCH**



**Date: 15<sup>th</sup> March 2022**

**STANDARD OPERATIONAL PROCEDURE (SOP)**

**SOP Reference Number: SSNR-SOP1**

**SOP Title: Hyperacute Unit – Stage (1) of the development of “The December Revolution Centre for Rehabilitation of Traumatic Spinal Cord and Brain Injuries”**

**Purpose**

The purpose of this SOP is to start the process of opening a specialist hyper-acute rehabilitation unit in Khartoum Teaching Hospital for management of traumatic spinal cord injuries (TSCI), traumatic brain injuries (TBI) and other polytrauma injuries (such as peripheral nerve injuries, multiple limb injuries, amputations etc) that require prolonged period of inpatient rehabilitation.

**Introduction**

A general introduction and the rationale of this service development project has been well covered in the following documents:

1. December Revolution Centre Project Proposal

[https://cdn-cms.f-static.net/uploads/905961/normal\\_5e1c4160cb357.pdf](https://cdn-cms.f-static.net/uploads/905961/normal_5e1c4160cb357.pdf)

2. December Revolution Centre Options Appraisal Final Report

[https://cdn-cms.f-static.net/uploads/905961/normal\\_5f70d9f5a0ed2.pdf](https://cdn-cms.f-static.net/uploads/905961/normal_5f70d9f5a0ed2.pdf)

In addition to the above, the surge in the numbers of traumatic spinal cord and brains injuries has increased significantly following the military coup on 25/10/2021. Since then, there has been 12 confirmed cases of TSCI and traumatic cauda equina injuries, of which four died over the past 5 months. In addition, there has been several TBI ranging from severe TBI with prolonged disorder of consciousness to mild TBI.

**Scope**

The main mandate and scope of practice for the proposed “December Revolution Centre for Rehabilitation of Traumatic Spinal Cord and Brain Injuries” is to provide free holistic inpatient and outpatient medical rehabilitation services and life-long follow-up for the SCI and TBI patients because of direct injuries related to the December 2018 Revolution. To this document, traumatic spinal cord injury rehabilitation also includes traumatic cauda equina syndrome rehabilitation.

Following the recent coup and subsequent mass casualties, the number of TSCI, TBI and polytrauma injuries increased and may continue to rise and hence the scope could be widened to include other polytrauma injuries (such as peripheral nerve injuries, multiple limb injuries, amputations etc) that require early inpatient rehabilitation care for a prolonged period prior to discharge to the community.

The current plan is to start the whole project with a specialist hyperacute trauma rehabilitation unit in Khartoum Teaching Hospital as stage (1) of the “The December Revolution Centre for Rehabilitation of Traumatic Spinal Cord and Brain Injuries” with the name “Hyperacute Unit”. This will be followed by stage (2) of the project which is the development of the “Tertiary Centre” in Soba University Hospital.

### **Staffing Levels**

The British Society of Rehabilitation Medicine (BSRM) recommends set a minimum staffing provision for every 20 specialist rehabilitation beds including outreach duties (Whole Time Equivalent). The recommended level of staffing for 16 – bed unit is as follows:

- Medical Department
  - Rehabilitation Medicine Consultant (2 consultants)
  - Neurology Consultant (1 consultant)
  - Resident medical team (2 doctors)
  - Visiting Neurosurgeon, Urologist, Orthopaedic and Plastics Surgeons
  - Visiting Psychiatrist
- Nursing Team (2 ward sisters, 12 nurses – 6 each ward)
- Physiotherapy Team (3 therapists)
- Occupational Therapy Team (3 therapists)
- Psychology Team (2 psychologists/ councillors)
- Speech and Language Therapy Team (2 therapists)
- Dietetic Team (1 Dietitian)
- 2 Clerical staff.
- 1 Discharge Coordinator.

Whilst it is understandable that not all the above list of disciplines and members of the rehabilitation team would be readily available, the minimum staffing level should include the Rehabilitation Medicine, nurses, and physiotherapy teams. The current agreement with Khartoum Teaching Hospital is to start the service with an 8 – bed ward which can be increased in the coming months, based on staffing and equipment availability as well as the efficiency and success of the novel unit in delivering the required rehabilitation programmes.

### **Clinical Management and Governance**

Referrals from acute hospitals to the centre should be sent to the on-call Rehabilitation Medicine Consultant who would review the referrals prior to transfer of care. Patients would be accepted for admission and added to the waiting list if they fulfil the following criteria:

1. Traumatic spinal cord/cauda equina injuries who have a stable spine and medically fit for transfer.
2. Traumatic brain injury patients who are medically stable and fit for ward management (not ITU level).
3. Other polytrauma injuries (such as peripheral nerve injuries, multiple limb injuries, amputations etc) who have clear rehabilitation goals.

As the speciality of Neurorehabilitation and Spinal Cord Injuries Medicine is not currently developed in Sudan, patients should be admitted and looked after under the joint care of Rehabilitation Medicine physicians and neurologists (or Internal Medicine physicians with interest). Support and guidance in patient management to deliver rehabilitation programmes will be guided by experts in the fields of Neurorehabilitation (3 Consultants) and Spinal Cord Injuries Medicine (3 Consultants) who are based in UK and Australia. The team of expert Consultants, who are members of the Steering Committee of the Sudanese Society of Neurorehabilitation (SSNR), will be working closely with their Rehabilitation Medicine colleagues in Sudan to deliver high standard care based on international guidelines and pathways. All the rehabilitation packages will be delivered through a goal-setting process involving goal-planning meetings with patients and families.

### List of Equipment

No.	Item	Quantity	Comment
1.	Inpatient Wheelchairs	2	Need not be configured to each patient; should be used for transport only in the facility.
2.	Pairs of crutches – adult size	20	Include extra rubber tips and gutter crutches (desirable). Ensure adjustable or a range of sizes.
3.	Walking frames	4	Consider different sizes
4.	Pressure relieving mattress	4	
5.	Incentive Spirometer	1 portable + 3 single patient use mouthpieces	
6.	Cough assist machine	2	
7.	Non-invasive ventilation machine (BiPAP/CPAP)	2	
8.	Suction Machines	2	
9.	Transfer Boards	2	Boards can be constructed or purchased in the host country. A pre- made example can be useful to ensure appropriate design if being constructed.

10.	Portable Commodes (Chairs for shower/toilet)	2	A waterproof chair with an opening in the seat can be used for both toileting and showering.
11.	Discharge Wheelchairs	10	Should meet ISO7176 standards, and be appropriate for the patient, but not bespoke. All wheelchairs should have at least a cushion and preferably a pressure-relieving (high-specification foam or gel) cushion, depending on the patient's risk for pressure sores.
12.	Pressure-relieving cushions for wheelchairs	10	Number and size depend on the wheelchairs. Ensure some high pressure-relieving cushions (made of high-specification foam and/ or gel) for patients at risk for pressure sores.
13.	Additional pillows for positioning	10	
14.	Slide sheets	10	
15.	Prefabricated wrist splints and positioning splints palmar orthosis	10	Consider range of sizes
16.	<ul style="list-style-type: none"> <li>• stethoscope</li> <li>• blood pressure monitor</li> <li>• percussion/reflex hammer goniometer (suitable for large-joint measurements; consider additional for hand and wrist measurements)</li> <li>• tape measure (suitable for measuring edema and general</li> </ul>	2 each	

	purposes).		
17.	Hand-held mirrors	5	
18.	Mobile hoist machines	4	
19.	Tilt table	2	
20.	Plinth table	2	
21.	Parallel walking bars	2	

### List of Consumables

Number	Item	Quantity	Comment
1.	Nasogastric tubes	5	
2.	Tracheostomy tubes	5	Different sizes
3.	PEG- tubes	3	
4.	Abdominal binders	16	
5.	Anti-embolism stockings	15	
6.	Indwelling catheters	20	Size 12 Fr for women Size 14 Fr for men
7.	Intermittent Catheters	60 per patient	
8.	Urine collection bags	50	
9.	Urine leg bags	50	
10.	Lubricant – for bowel care and catheter insertion	10 tubes per week per patient or 250 sachets single use per patient	
11.	Glycerine suppositories	120 per patient	
12.	Sensory and motor assessment equipment	10 boxes each	

	(Neuro-tips, Q-tips)		
13.	Prefabricated ankle and foot orthosis	# 5 right and 5 left for shoe sizes 38–45.  # 5 right and 5 left for shoe sizes 35–40.	
14.	Rigid adjustable cervical collars	5	Consider range of sizes
15.	Plaster of Paris Bandages	100	Consider a range of sizes: 10–15 cm are most commonly used. Sufficient quantity for both splinting and casting.
16.	Stump Compression Bandages	10	Suitable for both upper and lower limbs

### Frequently used Medicines

No.	Medicine	Strength and Format	Route	Quantity
1.	Gabapentin	100 mg + 300 mg or 400 tablets / caps	Oral	100
2.	Pregabalin	50 mg, 75 mg, or 150 mg tablets/caps	Oral	100
3.	Baclofen	10 mg tablets	Oral	100
4.	Oxybutinin XL or IR	5 mg or 10 mg tablets	Oral	100
5.	Solifenacin	5 mg or 10 mg tablets	Oral	100
6.	Amitriptyline	10 mg or 25 mg tablets	Oral	100
7.	Duloxetine	30 mg , 60 mg tablets	Oral	100
8.	Midodrine tablets	5 mg, 10 mg	Oral	
9.	Glycerine Suppositories	4g suppositories	Rectal	100
10.	Phosphate enemas	enema	Rectal	100
11.	Senna	7.5 mg tablet	Oral	100
12.	Movicol/Macrogol/Laxido	Sachets	Oral	100
13.	Lactulose	Liquid, bottle	Oral	50

### Training and Development

The SSNR is committed to deliver training sessions in the form of recorded videos and live sessions to all members of the multidisciplinary team including doctors, nurses, physiotherapists, occupational therapists etc. Furthermore, supporting online training material such as ISCoS and ASIA

e-learning materials will be made available for self-learning. In addition to that, training workshops and conferences opportunities could be made available for all members of the MDT.

## References

1. [Microsoft Word - StandardsMappingCoverPages-Final.doc \(bsrm.org.uk\)](#)
2. <file:///C:/Users/User/Downloads/who-minimum-technical-standards-recommendations-rehabilitation.pdf>

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