

Regional Rehabilitation Unit and associated Specialist Community Outreach Team

The North West London Hospitals NHS

Northwick Park Hospital, Harrow, London

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Jane Johnson, Ajoy Nair, Stephen Ashford, Andrew Thu, Kyaw Nyein, Lynne Turner-Stokes

Introduction

The Regional Rehabilitation Unit (RRU) and associated Specialist Community Outreach Team (SCOT) provide a tertiary specialist neurorehabilitation service for patients with more complex rehabilitation needs beyond the scope of their local rehabilitation service. It forms the hub of a network of specialist rehab services in North West London (see map) and is one of the 9 complex neurorehabilitation services commissioned by the Pan London specialised commissioning consortium.

Location of Service: Northwick Park Hospital, Harrow HA1 3UJ.

Operational since: RRU - 1992, Outreach Service - 2000.

Contact Details: Professor Lynne Turner-Stokes, Director, Phone 020 8869 2800.

Components of the Team: Interdisciplinary team consists of medical and nursing staff, physiotherapists, occupational therapists, speech and language therapists, clinical psychologists, dietitian, social worker, music therapist, computer technical instructor and researchers.

Resources: 22 bed inpatient Unit, located within an acute hospital.

Clientele served: Working age adults with severe complex disability primarily due to acquired brain injury or other neurological causes.

Services provided: Specialist tertiary inpatient rehabilitation for people whose needs are beyond the scope of their local and district rehabilitation services. Protocols are in place for management of complex clinical issues such as depression, spasticity and hemiplegic shoulder pain following brain injury.

Staffing levels are broadly in line with the recommended national guidelines providing intensive rehabilitation for inpatients. Location within the acute hospital ensures that patients can be transferred earlier for their post acute rehabilitation and have ready access to emergency care. Research is an integral part of the clinical programme.

Specialist Community Outreach Team provides support to community teams as well as specialist nursing homes (see map) in managing patients with severe complex neurological disability in the community.

Outcome measurements: Northwick Park Nursing and Therapy Dependency Scores (NPDS), Northwick Park Care Needs Assessment (NPCNA), UK FIM/FAM, Goal Attainment Scaling.

Case Study

Case report of 22yr old TBI patient with complex neuro-disability

Medical History

Suffered a fall, only being found 8-9 hours later. Admitted to the Royal London Hospital where he required tracheostomy and prolonged ventilation. Gradually emerged from low-awareness state and was admitted to the RRU 3 months after injury.

On admission to RRU he had:

- Quadriparetic and could not sit unsupported.
- Severe cognitive and communication impairments, marked distractibility and disorientation
- Marked spasticity, severe contractures in both elbows and right knee (-40°)
- Severe dysphagia - fed via a PEG and was under-nourished
- Highly challenging behavioural - physically and verbally abusive to staff, especially during physical handling.
- Incontinence and dependent on 2 carers for all self-care.
- Initially he required 3 - 4 therapists to stand.

Treatment/Progress

In addition to a full inter-disciplinary rehabilitation programme, he underwent behaviour modification to manage his aggressive behaviour. He also required manipulation under anaesthetic, botulinum toxin injections and serial casting to reduce spasticity and contractures. PEG was removed and he was able to take a normal diet.

Discharge

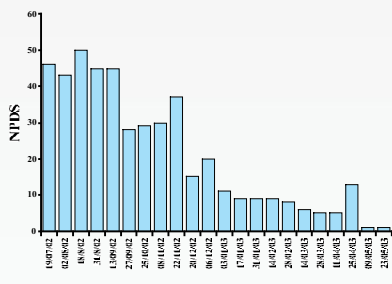
He made exceptionally good progress, was able to walk independently both indoors and outdoors and use his arms for functional activities including his personal care. He continued to have communication and cognitive difficulties, however, his behaviour was much improved and he was able to return home to live with his mother.

Outcome data

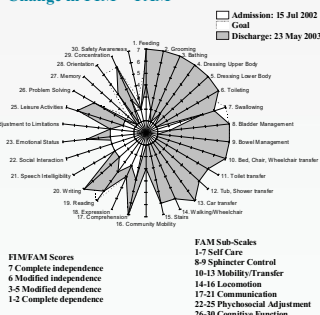
The total cost of admission was £101,400. This investment was offset within 11.6 months by savings in the ongoing cost of care in the community. Three and a half years later he is still living at home with his mother. The figures below illustrate his change in dependency (NPDS score and UK FIM+FAM)

	Admission 15 July 2002	Discharge 23 May 2003	Change LOS: 10 months
NPDS score	46	1	45
Weekly care hours	56	0	56
Weekly care costs	£2,216	£36	£2,180
UK FIM + FAM	63	161	98
Barthel Index	1	19	18

Change in NPDS



Change in FIM + FAM



Use of NPDS and NPCNA to demonstrate cost effective rehabilitation.

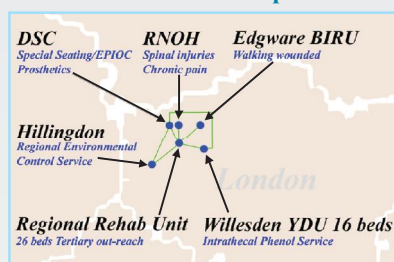
5 year cohort data (297 consecutive admissions)

Dependency on admission	High NPDS > 25	Medium NPDS >10-24	Low NPDS <10
Initial cost of rehabilitation	£41,782	£27,774	£17,226
Mean LOS	155 days	104 days	71 days
Mean weekly savings in care costs	£673	£290	£83
Time to offset cost of rehabilitation	12 months	17 months	41 months

Ref: Turner-Stokes et al. JNNP 2006;77:443-439

Highly dependent patients' FIM/FAM change scores are often not commensurate with their increased LOS. Other outcome measures are therefore required to demonstrate clinically important cost efficient gains following rehab in this group.

Map of North West London network of specialist rehab services



RRU activity and the client group

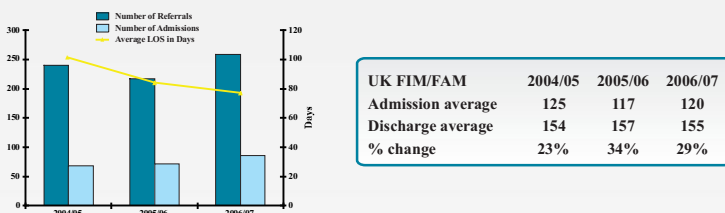
The RRU caters for working age adults with severe, complex disability, although fit older patients are included where the service is appropriate to their needs.

Main conditions managed include:

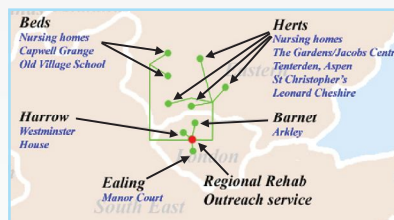
- Acquired brain injury, including stroke, trauma, anoxia, encephalitis, meningitis, vasculitis, toxic causes etc
- Partial spinal cord injuries
- Peripheral neuromuscular disease e.g. Guillain Barre Syndrome and critical illness neuropathy.

Typical length of stay is 4-6 weeks for assessments, 2-6 months for rehab or longer for more complex cases. Referrals and admissions have increased and there is a trend towards decreasing length of stay over the period 2004 to 2007, while disability scores on admission and discharge remain similar.

RRU in-patient activity data



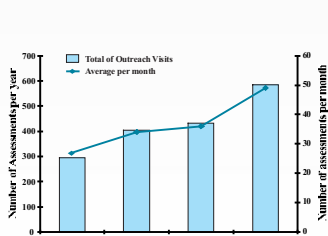
Map of RRU Outreach surveillance for patients with severe complex disability



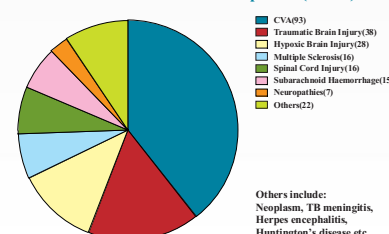
RRU Outreach activity and the client group

Four years of data were reviewed (July 2002 - June 2006) showing number of assessments per year and average number of visits per month. From October 03, although showing a substantial increase, actual numbers are under-represented as data collection at that time did not differentiate between one and several patients seen on visits to nursing homes. More recent data collection methods recording actual activity may partly account for the substantial increase in 2005-2006.

Outreach assessments



Diagnostic categories for patients assessed by the Outreach team November 06 - April 07 (n=235)



Others include: Neoplasm, TB meningitis, Herpes encephalitis, Huntingdon's disease etc.



Regional Rehabilitation Unit, Northwick Park Hospital, Watford Road, Harrow, Middlesex HA1 3UJ

Tel: +44 (0)20 8869 2800

Fax: +44 (0)20 8869 2803

