



Sussex Rehabilitation Centre

Dr Clare Mehta

Consultant in Rehabilitation
Medicine

Sussex Rehabilitation Centre



Overview

Evidence for neurorehabilitation

SRC set up and pathways

Outcomes

Community provision

Example case

Successes and opportunities



Evidence base for neurorehabilitation

- There is now strong research based evidence to show that:
 - Rehabilitation in specialist settings for people with traumatic brain or spinal cord injury and stroke is effective and provides value for money in terms of reducing length of stay in hospital and reducing the costs of long-term care
 - Early transfer to specialist centres and more intense rehabilitation programmes are cost effective, the latter particularly in the small group of people who have high care costs due to very severe brain injury
 - Clinical and cost-benefits are similar for people with severe behavioural problems following brain injury
 - Continued co-ordinated multidisciplinary rehabilitation in the community improves long-term outcomes and can help to reduce hospital re-admissions



Sussex Rehabilitation Centre

INPATIENT:

Post acute medium stay level 2a neurorehabilitation unit at Princess Royal Hospital, Haywards Heath

OUTPATIENT:

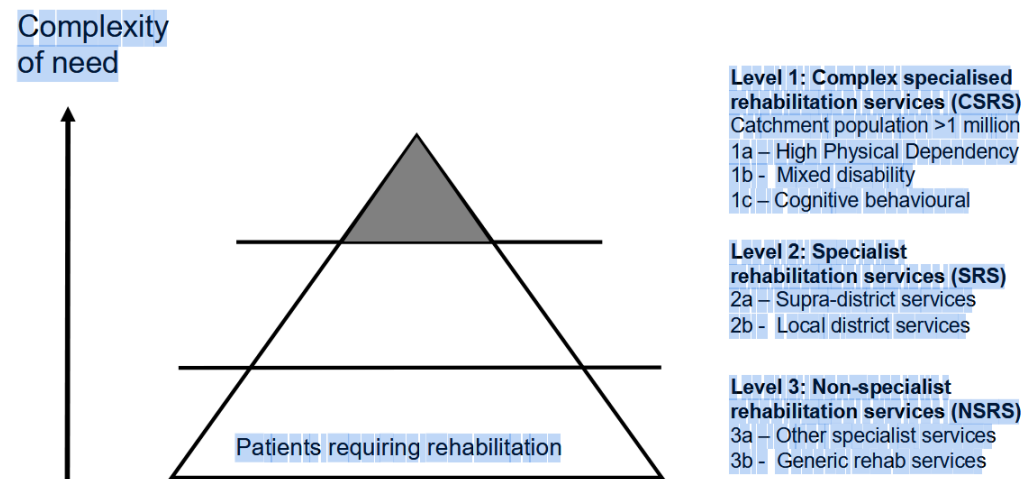
General neurorehabilitation and spasticity specific consultant led outpatient clinics at Brighton General Hospital



Inpatient - Level 2a neurorehabilitation

- Level 2a Led by consultant in RM. Serving an extended local population in areas which have poor access to level 1 services.
- Take patients with a range of complexity, including Category B and some Category A with highly complex rehabilitation needs*
- Collect and report full National Specialist Rehabilitation Dataset
- Catchment: 600K-1 million

Figure 1: Different levels of complexity in rehabilitation service provision



50-80% Category A needs on admission
50-70% RCS-E score ≥ 11 cross-sectionally

Needs and inputs

- Patient Categorisation Tool (PCAT)
- Rehabilitation Complexity Scale (RCS-E)
- Northwick Park nursing and therapy dependency tools (NPDS and NPTDA)
 - NPDS translates via computerised algorithm into assessment of care hours (Northwick Park Care Needs Assessment)
 - NPTDA translates via computerised algorithm into assessment of therapy hours



Patient Categorisation Tool

- Checklist tool to assist in identifying patients with complex needs requiring treatment in Level 1 (tertiary) inpatient rehabilitation services and then was further developed as an ordinal scale to identify category A, B or C/D needs.
- 18 domains each with 3 columns containing level of need divided into Category A, B or C/D needs
- Further questions based on clinical impression on the service level required, potential category of need and estimated duration of in-patient rehabilitation stay
- The PCAT is scored once on admission (ideally by the Consultant in rehabilitation medicine or their deputy). Each domain is rated on a score of 1-3 (highest score applied once to each domain). Only the highest of either the medical/neuropsychiatric scores is included (not both scores) and the “duration of stay” is allocated a score of 0-2. So the final tool is a 17 item scale with a total score range of 16-50
- The category of need currently remains a clinical decision; however, there is reasonable indication that a total PCAT score of 19-24 indicates Category C needs, 25-29 category B needs and a total PCAT score of ≥ 30 category A needs

	Category A needs (Score 3)	Category B needs (Score 2)	Category C needs (Score 1)
Specialist medical / neuropsychiatric needs			
Medical/Surgical	☐ Complex specialist investigation/ intervention ☐ Medically /surgically unstable ☐ Complex on-going needs for coordinated trauma care	☐ Routine investigation/ intervention ☐ Currently well but potentially unstable ☐ Active on-going trauma care management	☐ No investigation/ intervention ☐ Medically stable ☐ Trauma care largely complete – review only
Neuropsychiatric	☐ Complex/unstable psychiatric needs ☐ High Risk management ☐ Treatment under section of the MHA	☐ Psychiatric condition stable but requires monitoring ☐ Medium Risk management	☐ No psychiatric condition ☐ Low or no risk
Intensity	☐ ≥5 therapy disciplines ☐ >25 hours total therapy time per week ☐ requires 1:1 supervision ☐ ≥2 trained therapists to treat at one time	☐ 4 therapy disciplines ☐ 20-25 hours total therapy time per week	☐ 1-3 therapy disciplines ☐ <20 hours total therapy time per week
Clinical needs			
Physical	☐ Complex postural tone /contracture management ☐ ≥ 2 to handle ☐ Highly complex musculoskeletal/trauma/pain management issues ☐ Complex amputee needs (Multi-limb, hi tech etc)	☐ Routine physical issues ☐ 1 to handle ☐ Moderately complex musculoskeletal/trauma/pain management issues ☐ Standard specialist amputee needs	☐ Higher function problems only (e.g high level coordination/mild deconditioning) ☐ Standard musculoskeletal/trauma/pain management/neurological issues ☐ No physical issues
Tracheostomy/ventilatory	☐ Unstable tracheostomy requiring intensive suction ☐ O ₂ sats monitoring programme ☐ Active weaning programme ☐ Assisted ventilation	☐ Tracheostomy in situ but stable	☐ No tracheostomy
Swallowing / nutrition	☐ Complex swallowing evaluation (eg FEES) ☐ Complex nutritional requirements requiring intensive dietary support/intervention	☐ Enteral feeding programme ☐ Moderate monitoring – eg progressive consistency, dietary content ☐ Dietary education (eg healthy eating, weight reduction)	☐ Normal or stable modified diet ☐ Able to eat independently or with supervision from care staff only ☐ Standard dietary / Weight monitoring only
Communication	Complex communication needs requiring: ☐ Specialist evaluation ☐ Complex communication aid set/up provision	☐ Moderate communication issues with some listener burden, but able to communicate basic needs and ideas	☐ Higher function problems only ☐ No problems with communication
Cognitive	Severe cognitive problems requiring ☐ Intensive support for carryover / orientation etc ☐ Complex cognitive / neuropsychological assessment	Moderate cognitive problems requiring ☐ Structured environment, strategies ☐ Routine cognitive assessment eg by O/T	☐ Higher function problems only ☐ No cognitive problems
Behavioural	☐ Highly challenging behaviours (eg physical/verbal aggression) requiring interactive behavioural management programme	☐ Mild/moderate behavioural issues controlled in structured environment	☐ No significant behavioural problems
Mood/emotion	Severe anxiety / depression / emotional lability requiring: ☐ Specialist evaluation ☐ Active management and frequent crisis intervention	☐ Mood disorder/adjustment issues under active management with planned programme	☐ No significant mood / adjustment issues

Rehabilitation Complexity Score

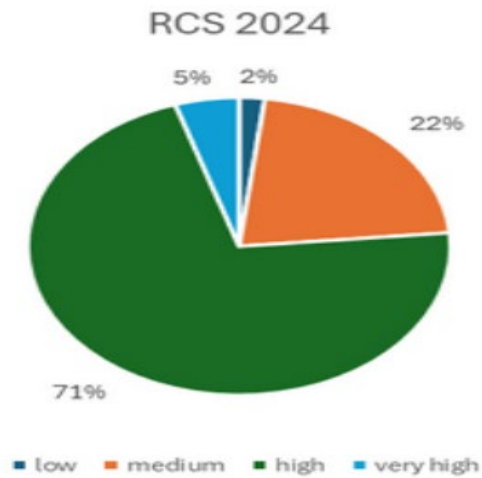
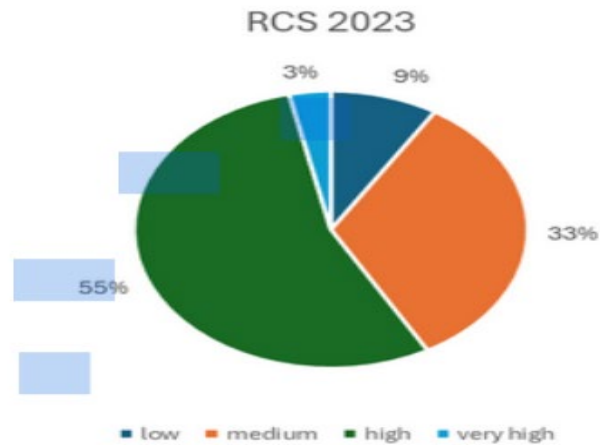
The Rehabilitation Complexity Scale Extended (RCS-E) provides a simple overall measure of Care, Nursing, Therapy, Medical and Equipment needs, and is designed to offer crude banding of complexity

The RCS-E (version 13) is a 22 point measure:

- C: Basic care needs or R: Risk 0-4
- T: Therapy hours 0-8
- Equipment 0-2
- N: Special nursing needs 0-4
- M: Medical environment 0-4

RCS scores

% Breakdown of RCS Scores



Pathways in and referral criteria

- IN
 - Post acute i.e. not commissioned to accept patients from community
 - Sussex wide referrals from across region; large proportion from within University Hospitals Sussex
 - Stroke unit / tertiary neurosurgery & neurology / major trauma centre/ critical care..... COTE, cardiology, medicine
- Referral criteria
 - Sussex GP / resident (Sussex population 1.7 million)
 - New onset neurological injury / diagnosis
 - Goals for neurorehabilitation requiring at least 2 disciplines
 - Level of complexity / acuity that cannot be managed in community



Exclusions

- Patients with severely challenging behaviour
- Ventilated patients and tracheostomies (low numbers of referrals with tracheostomies means that competencies cannot be maintained)
- Patients unlikely to benefit from rehabilitation and for disability management only
- Patients that can be managed in the community
- Functional neurological disorders
- Patients under Mental Health Act section

Referral process

- Completed form sent electronically to generic referrals inbox or medical / therapy / nursing lead and tracked via online patient management system
- Referral accepted / more information sought / declined and advice given
- If accepted, placed on waiting list and referrers informed
- Updated waiting list information sent out daily
- Average wait time referral to admission 15 days
- Pre-admission information for patient / families available (expectation management)

SRC Inpatient Unit

39 BEDS



REHABILITATION
MEDICINE
CONSULTANTS



- ABI (non stroke)
- Stroke <65 years
- All non ABI neurology

CARE OF ELDERLY &
STROKE CONSULTANT



- Stroke >65 years

What happens at SRC?

- Clerked in by junior doctor, review by consultant
 - Case presented to MDT at weekly meeting, discussed every week thereafter until discharge
 - Initial planning meeting within 2 weeks of arrival (or sooner if anticipated short stay)
 - Goal setting – patient and treating team
 - Concomitant discharge planning for most appropriate destination / set up
 - Further meetings – patient planning / family meetings; best interest meetings
-
- Therapy 5 days a week ; groups ; individual exercise programs; open gym
 - Gym ; rehab kitchen; overhead hoist / partial weight bearing; motomed;Wii

The People We Treat

There were **89**
admissions from 1/1/24
to 1/7/24 (45 admitted to
SRC1 and 44 to SRC 2)



There were **208**
admissions in 23/24



Average age from 1/1/24 to
1/7/24 was **64 yrs**

Age range from 27 to 87

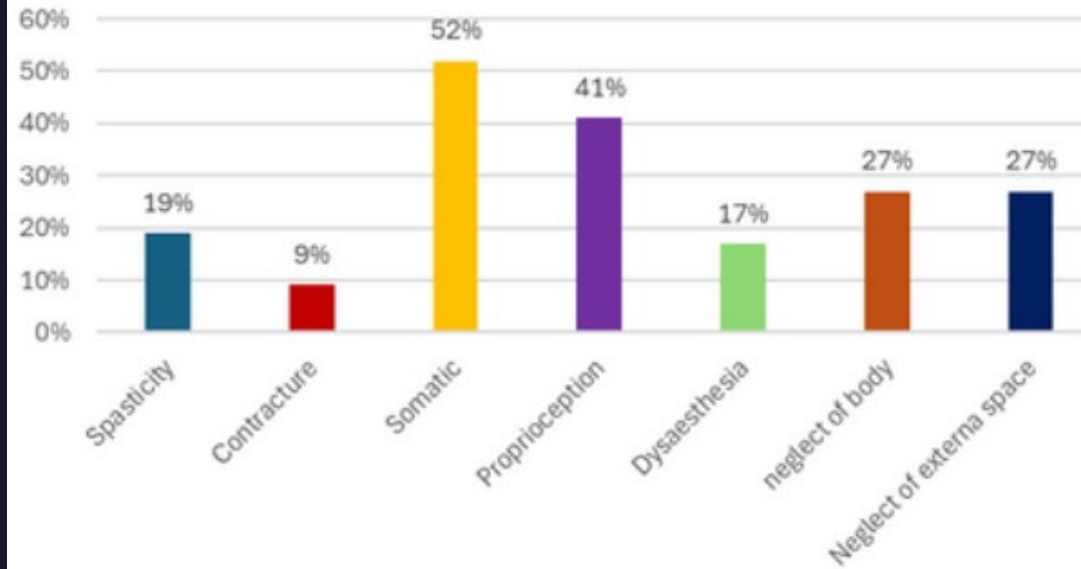
Mode 74

Average deviation 16 yrs

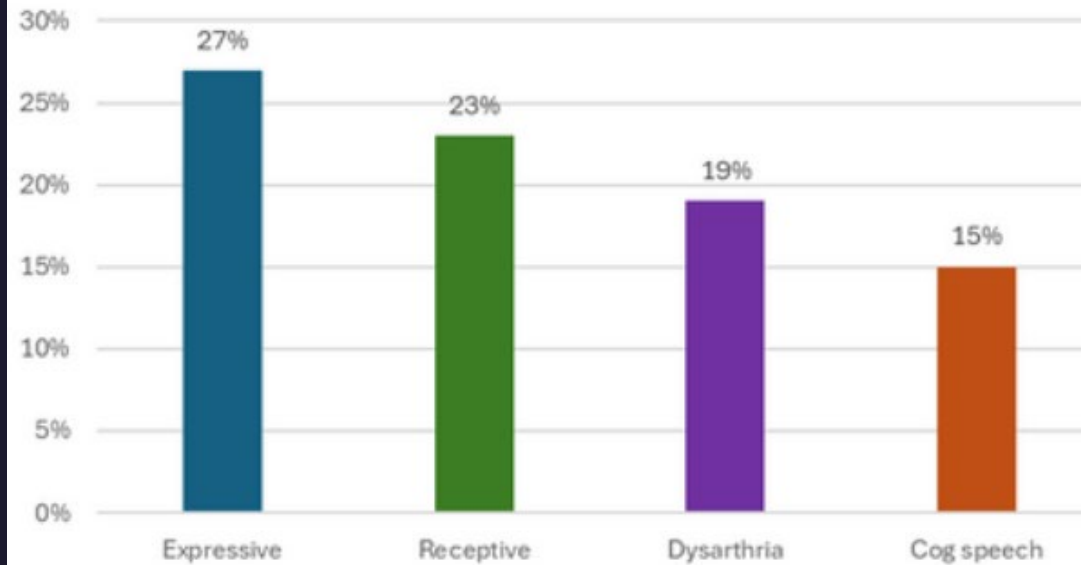
Percentage **below 68 years**
(state pension age) = **51%**

The People We Treat

Prevalence of impairments in patients 1.1.24 to 1.7.24

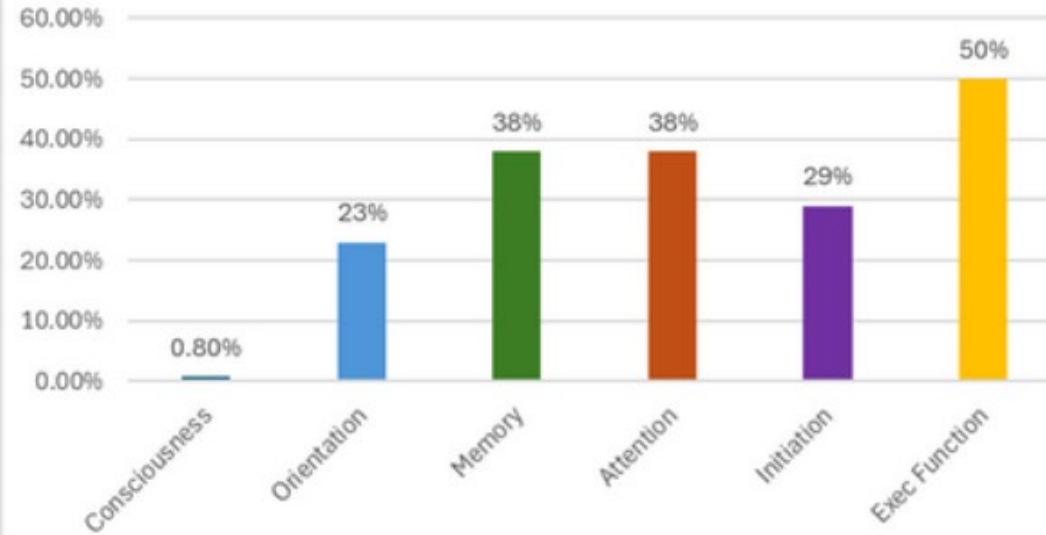


Prevalence of Communication impairments



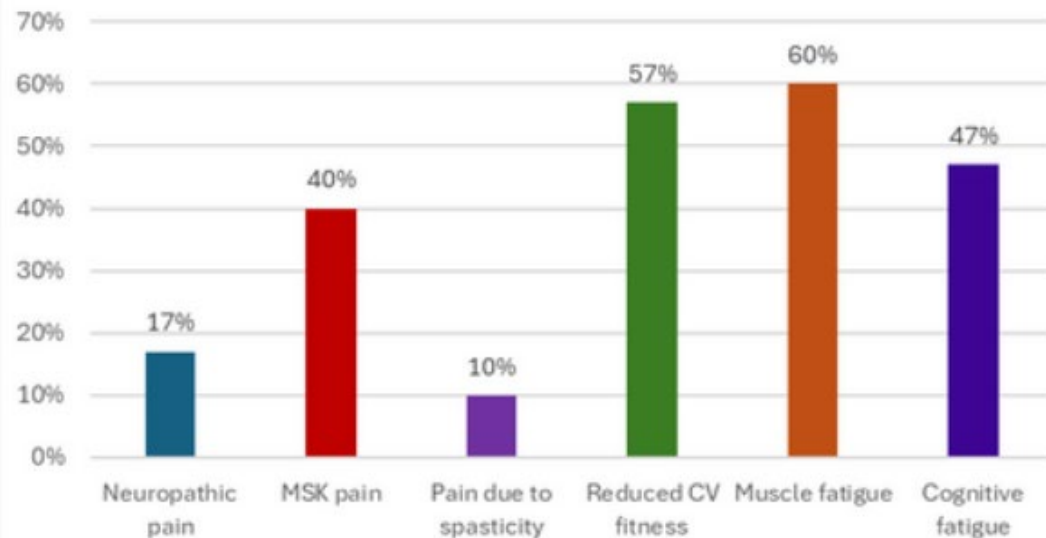
The People We Treat

Prevalence of arousal and cognitive impairments



55% of patients had depression

Prevalence of pain and fatigue



The SRC team

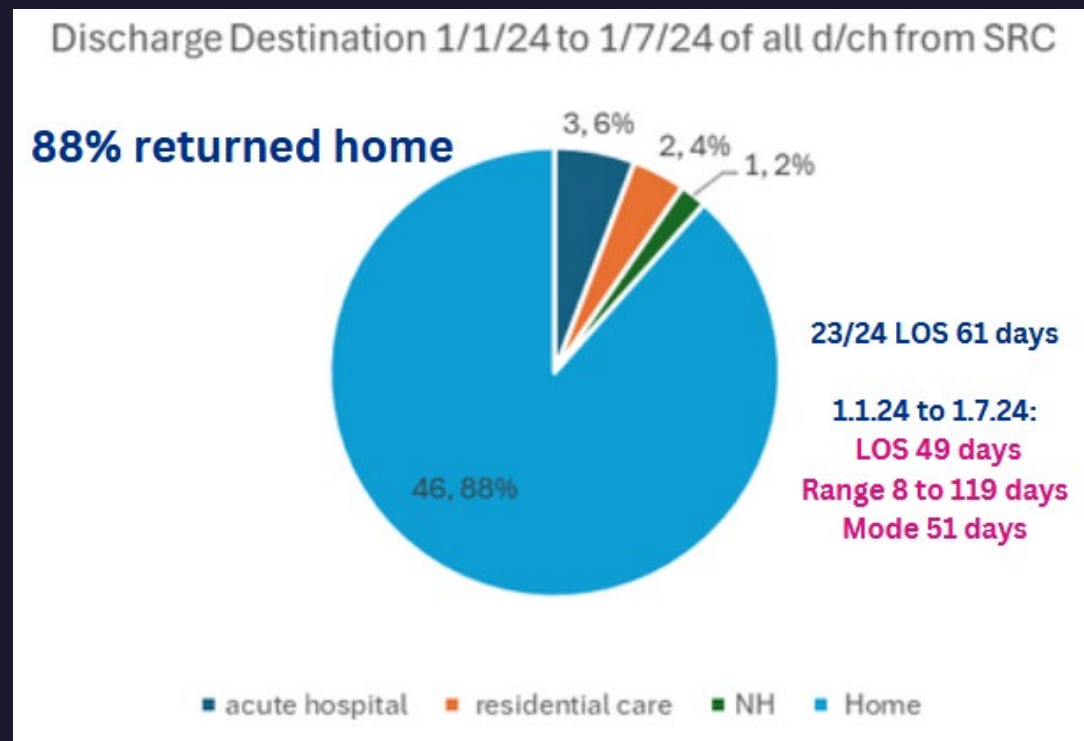
- Medical – consultant, specialty doctor, rotating resident doctor
- Nurses and HCAs
- Physiotherapy, occupational therapy, speech & language therapy, neuropsychology, counselling, dietetics
- Adult social care
- Practice educator
- Activities co-Ordinator
- Headway Hospital Liaison Facilitator; InterAct; Pets as therapy dogs; Flamenco therapy



Pathways out

DISCHARGE DESTINATIONS

- Home plus CNRT / JCR and adult social care provision
- Slow stream / extended residential rehabilitation
 - Kerwin Court (BrainKind), Queen Elizabeth Foundation Trust (Leatherhead), Hothfield, RHND Putney
- Residential / nursing home



Outcomes

- NPDS (used to inform NPCNA = measure of care including costs)
- UK FIM+FAM
 - Functional Independence Measure (18 item global measure of disability; each item scored on 7 ordinal levels)
 - Functional Assessment Measure (adds 12 items to FIM to measure cognitive & psychosocial function)
 - 1 = total assistance, 7 = complete independence
 - Essentially a rating of independence for basic daily activities; MDT rated based on what they actually do (not what they could do or might be able to do – therefore also depends on environment)



FIM+FAM score changes

Motor Average Admission Score	Motor Average discharge Score	Cognitive average admission score	Cog average discharge score
49.7	80.0 	71.4	80.8 



Discharge challenges

Community rehabilitation

- Community neurorehabilitation teams – home based rehabilitation
- Outpatient neurophysiotherapy
- Private providers
- Adult social care
- Community equipment services
- Wheelchair services

Outpatient rehabilitation medicine

- Neurorehabilitation consultant outpatient service at Brighton General Hospital
- General neurorehabilitation clinics – inpatient follow up and new patients
- Spasticity & mobility clinic (neurophysio / MS practitioner in one clinic a week)
 - Including botulinum toxin injections
- On site orthotics service
- Link with relevant community and outpatient services

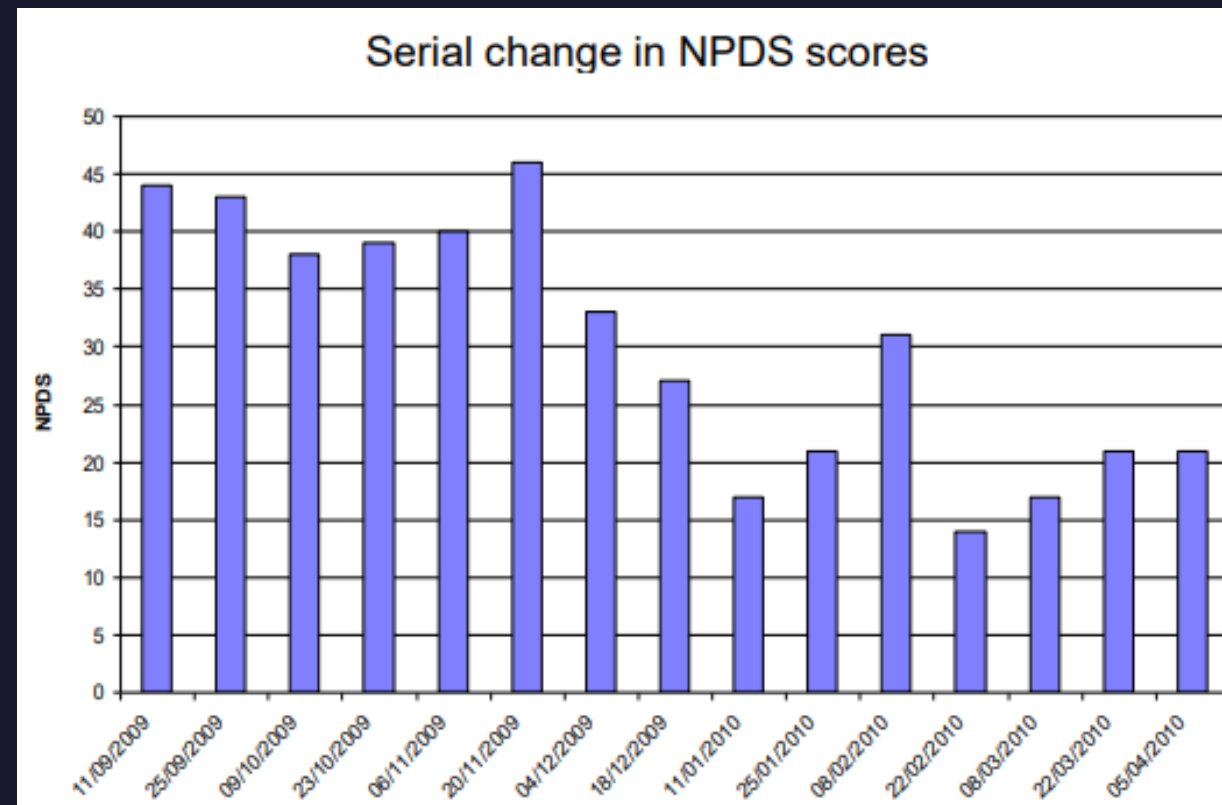
Sussex NHS neurorehabilitation providers

- Sussex Rehabilitation Centre – regional pan Sussex catchment (level 2a inpatients PRH; outpatients at BGH)
- Donald Wilson House - for W Sussex patients (level 2b inpatients; outpatient neurorehab and spasticity clinic - St Richards Hospital, Chichester)
- Bexhill Irvine Unit – for E Sussex patients (level 3 inpatients; spasticity MDT)

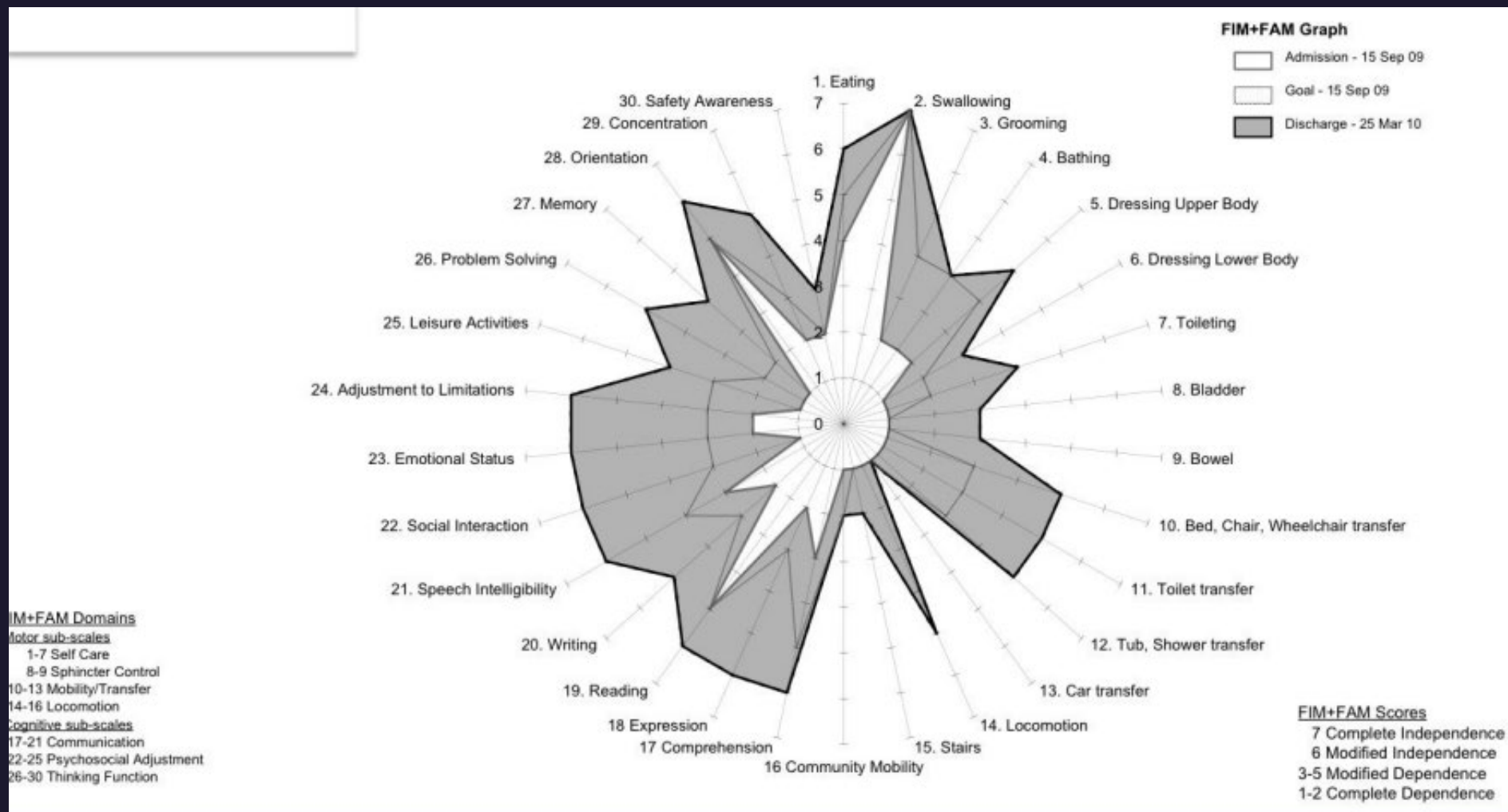


Example case of cat A needs patient

- 57 year old IT manager
- Severe intracerebral haemorrhage with SAH and hydrocephalus
- Dense right sided spastic hemiparesis, sensory inattention & somatic neglect
- Expressive & receptive dysphasia
- Dyspraxia, impaired & memory deficits
- R shoulder pain
- Partial seizures



FAM splat



Function on discharge

- Walking short distances indoors with close supervision of one, AFO and quad stick
- Remained at risk of falls
- Using RUL as prop for bimanual tasks and selectively e.g. eating with knife & fork, spreading butter
- Prepare breakfast independently if items within reach
- Speaking fluently, could hold normal conversation
- Ongoing dyspraxia and memory impairments but better able to plan and organise daily routine
- Discharged home to live with partner, CNRT



Outcomes

Outcome data

Total cost of admission: £87, 364.40

Weekly saving in cost of care from admission to discharge £932

Time to offset cost of admission: 23 months

	Admission	Discharge	Change
Dates	2.9.2009	01.4.2010	212 days
RCS	11 (C2 N3 T4 M2)	11 (C1 N2 T6 M2)	↓C+N ↑T
NPDS score	44	21	↓23
Weekly care hours	70	42	↓28
Weekly care costs	£1900	£968	↓£932
UK FIM+FAM	60	139	↑79
Barthel Index	2	9	↑ 7

RCS = Rehabilitation Complexity Score; NPDS = Northwick Park Dependency Score



Summary



Opportunities

- Transition support worker
- Access to more space (Clayton)
- Open Gym
- Development of a patient held rehab plan
- Developing joint formulation
- Exploring matched care models
- NSA for stroke working at SRC
- Nominated by patient for team of year star award

Challenges

- Workforce
- Intensity of therapy to meet evidence based practice
- Coordination between health and social care /housing
- Space
- Equipment
- CHC processes not fit for rehab setting
- Balancing need for flow with sufficient rehab to realise cost benefits
- Demand and capacity mismatch.
- Demand from all neuro pathways
- Limited community services SLT +++

Further consideration

- KEYWORDS – COLLABORATIVE and SYSTEM WIDE approach needed for funding and transformation
- Funding - long term view needed, and in context of social care, housing/accommodation, employment and reduction of complications
- Closer links and co working with – combined input, discharge planning and follow up
 - Mental health
 - Alcohol and substance misuse
 - Adult social care
 - Housing
- Increasing provision for hyperacute rehabilitation, 7 day inpatient therapy, transitional living set ups and community rehabilitation

References and acknowledgements

- NHS Standard Contract For Specialised Rehabilitation for all Patients with Highly Complex Needs (All Ages) Service Specification (NHS England 2013)
- UK Rehabilitation Outcomes Collaborative
- Specialist neuro-rehabilitation services; providing for patients with complex rehabilitation needs - Service Standards (BSPRM 2015)
- Special thanks to Michelle Long, therapy lead at SRC for SRC specific data and graphics



Thank You

Clare Mehta

clare.mehta@nhs.net

