

Specialist neuro-rehabilitation services: providing for patients with complex rehabilitation needs

Background

The National Services Framework (NSF) for Long Term neurological Conditions emphasises the need for **local rehabilitation services**, as close as possible to the individual's home. All services caring for patients with disabling conditions have a responsibility to provide a rehabilitative approach. Basic rehabilitation skills should be a core competency of every health professional.

The NSF also recognises the need for **specialist services for people with more complex needs** and therefore recommends that rehabilitation services are planned and delivered through **co-ordinated networks** in which specialist neuro-rehabilitation services work both in hospital and the community to support local rehabilitation and care support teams. The British Society of Rehabilitation Medicine (BSRM) standards¹ recommend that there should be a local specialist rehabilitation service, led by a consultant trained and accredited in rehabilitation medicine, for every 250-350K population

A small number of patients have very complex needs, and require a higher level of specialist care. The NSF recognises the need for **tertiary** services to support people with **profound and complex disabilities**. Very highly trained rehabilitation professionals are in short supply in the UK, and it is not feasible or economical to duplicate these high cost/low volume services in every locality.

The Warner Report on specialised commissioning recommends that these **"specialised services"** should be planned over a suitable geographical area (approximately 1-3 million population in this case), and therefore require **collaborative commissioning arrangements**.

What is specialist rehabilitation?

Rehabilitation is a process of assessment, treatment and management by which the individual (and their family/carers) are supported to achieve their maximum potential for physical, cognitive, social and psychological function, participation in society and quality of living. Patient goals for rehabilitation vary according to the trajectory and stage of their condition

Specialist rehabilitation is the total active care of patients with a disabling condition, and their families, by a multi-professional team who have undergone recognised specialist training in rehabilitation, led /supported by a consultant trained and accredited in rehabilitation medicine (RM).

Generally, patients requiring specialist rehabilitation are those with complex disabilities. Such patients typically present with a diverse mixture of medical, physical, sensory, cognitive, communicative, behavioural and social problems, which require specialist input from a wide range of rehabilitation disciplines (eg rehabilitation-trained nurses, physiotherapy, occupational therapy, speech and language therapy, psychology, dietetics, orthotics, social work etc.) as well as specialist medical input from consultants trained in rehabilitation medicine, and other relevant specialties eg neuropsychiatry).

A subgroup of patients will have 'profound disability'; these are more severely affected patients who require help for all aspects of their basic care, as well specialist interventions e.g. spasticity management, postural support programmes and highly specialist equipment.

¹ BSRM standards for Specialist Rehabilitation Services mapped on to the NSF for Long Term Conditions, London, 2008

² Terminology of the second National Definition Set for Specialised Services

Specialist rehabilitation services may be provided along three main (frequently overlapping) pathways:

- **Restoration of function** e.g. for those recovering from a 'sudden onset' or 'intermittent' condition, where patient goals are focussed not only on improving independence in daily living activities, but also on participatory roles such as work, parenting and other activities.
- **Disability management**, e.g. for those with stable or progressive conditions, where patient/family goals are focussed on maintaining existing levels of function and participation; compensating for lost function (eg through provision of equipment/adaptations); or supporting adjustment to change in the context of deteriorating physical, cognitive, and psychosocial function
- **Neuro-palliative rehabilitation** focuses on symptom management and interventions to improve quality of life during the later stages of a progressive condition or profound disability, at the interface between rehabilitation and palliative care.

Rehabilitation Service provision in the UK

Rehabilitation services have developed over the last two decades, in a 3-tier structure:

1. Within each locality (Level 3):

Local non-specialist rehabilitation teams provide general multi-professional rehabilitation and therapy support for a range of conditions within the context of acute services (including stroke units), intermediate care or community services.

2. Local (district) specialist rehabilitation services (Level 2) are typically planned over a district-level population of 250-500K, and are led or supported by a consultant trained and accredited in Rehabilitation medicine (RM), working both in hospital and the community setting. The specialist multidisciplinary rehabilitation team provides advice and support for local general rehabilitation teams.

3. Tertiary 'specialised' rehabilitation services* (Level 1) are high cost / low volume services, which provide for patients with highly complex rehabilitation needs that are beyond the scope of their local and district specialist services. These are normally provided in co-ordinated service networks planned over a regional population of 1-3 million through collaborative (specialised) commissioning arrangements. They are currently exempt from HRGsv4.

Tertiary specialised rehabilitation services are thinly spread and, in some areas of the UK where access is poor, local specialist rehabilitation services have extended to support a **supra-district** catchment of 750K or more, and take a proportion of patients with very complex needs. These are Level 2a services.

In addition, local services which 'specialise' in certain conditions and include a significant component of rehabilitation (for example stroke, or care of the elderly) may act as a local source of expertise, even though they do not meet the full standards for a 'specialist rehabilitation service' (These are level 3a services). These developments have led to a 5-tier system as shown in Figure 1.

Patients have differing levels of need for rehabilitation which are detailed in Table 1. In general:

- Level 1 units provide 'tertiary specialised rehabilitation' services to patients with Category A needs.
- Level 2 units provide 'local specialist rehabilitation' service to patients with Category B needs (but level 2a units which have appropriate facilities, expertise and staffing ratios may also accept certain patients with Category A needs)
- Level 3 services provide rehabilitation in the context of acute, intermediate care or community services to patients with category C and D needs.

* Previously known as 'Complex specialised rehabilitation services' in the National Definition Set version 2.

What is a specialist rehabilitation service?

Defining criteria for 'local specialist' and 'tertiary specialised' services are detailed in Annexe 1 and 2.

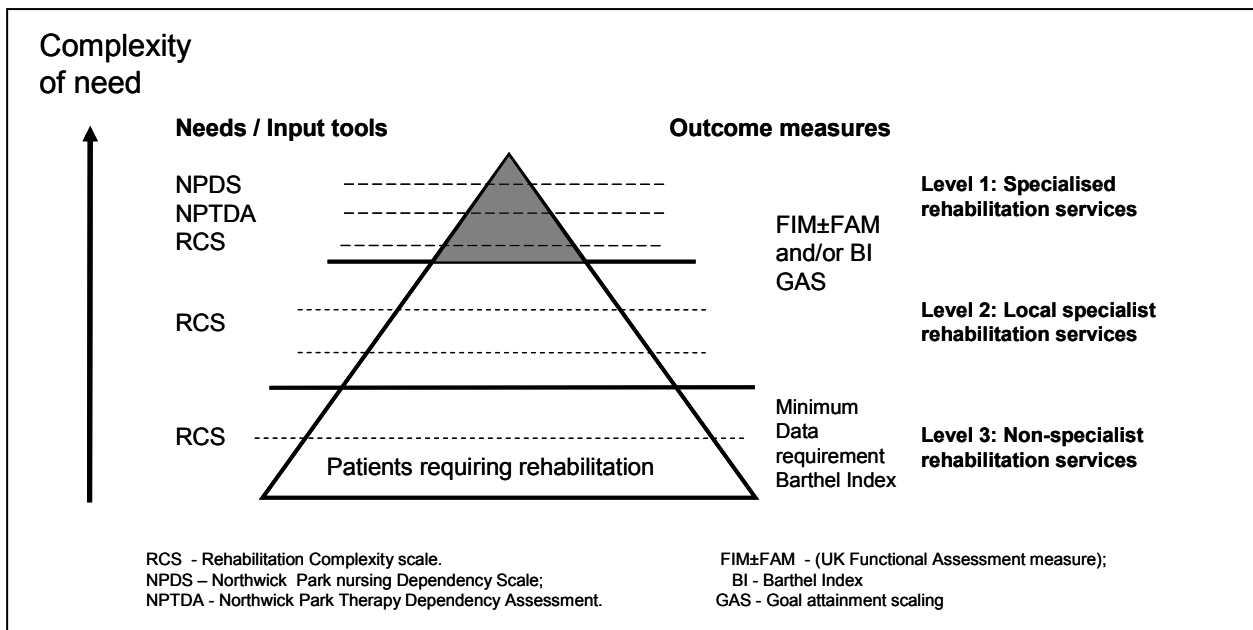
Key features of any specialist rehabilitation service are:

- The multi-professional team has undergone recognised specialist training in rehabilitation
- Led or supported by a consultant trained and accredited in Rehabilitation Medicine
- A co-ordinated inter-disciplinary team-working towards an agreed set of goals
- Take patients with more complex rehabilitation needs than non-specialist services.
- Have specialist equipment, facilities and staffing levels to meet those needs
- Clinical data as defined by the UK National Dataset for Specialist Rehabilitation Services (including complexity and outcome data) are routinely collected and reported annually for all patients.
- Meet the national BSRM standards for specialist rehabilitation services
- Support local rehabilitation teams in hospital and community.
- Have a recognised role in education, training in the field of rehabilitation

The **definition of a 'tertiary specialised' rehabilitation service** is based on five main criteria:

1. It is **led by a consultant trained and accredited in RM**, and/or neuropsychiatry depending on caseload
2. It covers a **population of >1 million** patients, therefore requires **collaborative commissioning**
3. It caters for people whose needs are beyond the scope of the local specialist services and therefore has a **high proportion of patients with very complex rehabilitation needs**
4. It provides a **higher level of service** in terms of specialist expertise, facilities and programme intensity to meet those needs (see Annexe 1 and 2)
5. It also plays a recognised **Networking role** which includes
 - a. supporting local specialist and general teams in the management of complex cases and
 - b. acting as resource for **research and development**, as well as education and training.

Figure 1: Different levels of complexity in rehabilitation service provision



TERTIARY SPECIALISED REHABILITATION SERVICES- provided at regional / national level		
Level 1:	Specialised rehabilitation services Provided by specialised rehab teams led by consultants trained and accredited in the specialty of rehabilitation medicine (RM) (and/or neuropsychiatry):	
	Serving a regional or supra-regional population and taking patients with Category A needs – ie severe physical, cognitive communicative disabilities or challenging behaviours, with highly complex rehabilitation needs* that are beyond the scope of their local specialist rehabilitation services, and have higher level facilities and skilled staff to support these. Collect and report full National Specialist Rehabilitation Dataset	Catchment: 1-3 million Predominantly highly complex caseload (eg 60-70% patients with RCS score ≥10)
LOCAL REHABILITATION SERVICES - provided at district level		
Level 2:	Local (district) specialist rehabilitation services Provided by inter-disciplinary teams led/supported by a consultant in RM, and meeting the BSRM standards for specialist rehabilitation services	
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 Mixed caseload (eg 50% RCS score ≥10)
Level 2b	Led/supported by a consultant in RM. Serving a local population, predominantly patients with Category B needs. Collect and report at least the minimum national dataset	Catchment: 250-500K Less complex caseload (eg 20-30% RCS score ≥10)
Level 3:	Local non-specialist services. Includes generic rehabilitation for a wide range of conditions, provided in the context acute, intermediate care and community facilities, or other specialist services (eg stroke units)	
Level 3a	Other specialist services led or supported by consultants in specialties other than RM - eg services catering for patient in specific diagnostic groups (eg stroke) with Category C needs. Therapy / nursing teams have specialist expertise in the target condition	
Level 3b	Generic rehabilitation for a wide range of conditions, often led by non-medical staff, provided in the context acute, intermediate care and community facilities, for patients with Category D needs	

*Defined by Rehabilitation Complexity / Northwick Park nursing and Therapy Dependency Scores

What type of patients need specialist rehabilitation services?

The different categories of need for rehabilitation are detailed in Table 1.

The majority of patients have category C or D rehabilitation needs. These individuals will travel satisfactorily down the path from injury/illness to independence with the help of their local rehabilitation and support services.

For example a patient admitted to hospital following a moderate - severe stroke may have acute treatment followed by 4-6 weeks rehabilitation in a specialist stroke unit or intermediate care setting, and may then transfer satisfactorily on to their local community rehabilitation services without the need for specialist rehabilitation.

However, a small minority of patients will have more complex needs requiring specialist rehabilitation, and a few will have very complex needs or profound disability, requiring a tertiary specialised rehabilitation service.

Local Specialist rehabilitation:

The type of patients who need a specialist rehabilitation service would typically be younger, previously fitter patients with more complex needs such as cognitive, communicative, perceptual, behavioural and social difficulties requiring the co-ordinated input of a specialist consultant-led team in order to manage difficult to treat symptoms and to coordinate multi-agency referral and on-going care.

These patients with category B needs would typically be those who require:

1. Co-ordinated interdisciplinary intervention from 2-4 or more therapy disciplines, in addition to specialist rehabilitation medicine/nursing care in a rehabilitative environment
2. Medium-Longer durations of stay, ie usually >6 weeks – occasionally up to 6 months
3. Rehabilitation/support to return to productive roles, such as work or parenting.
4. Special facilities/ equipment or interventions

They may also have medical problems requiring ongoing investigation / treatment during rehabilitation.

Tertiary Specialised rehabilitation

Some patients have very complex needs for rehabilitation which are beyond the resources of their local specialist services, and require a tertiary 'specialised (Level 1) service'.

These patients with category A needs would typically be those who require one or more of:

- Intensive, co-ordinated interdisciplinary intervention from 4 or more therapy disciplines, in addition to specialist rehabilitation medicine/nursing care in a rehabilitative environment
- Longer programmes - typically 2-4 months, but occasionally up to 6-12 months
- Very high intensity input – eg 1:1 nurse "specialising", or 2-3 trained therapists at one time
- Highly specialist clinical skills (see table 1 for details)
- Neuropsychiatric care, including risk management, treatment under the Mental Health Act
- Higher level facilities /equipment such as bespoke assistive technology
- Complex multi-agency vocational rehabilitation /support
- Ongoing management of complex / unstable medical problems in an acute hospital setting

A small number of patients have profound disability requiring specialised neuro-palliative rehabilitation services. Their needs are often substantial and ongoing and typically include support for family members as well as the patient him/herself. Specialised rehabilitation services often work closely with community rehabilitation teams, specialist nursing homes and palliative care services to support individuals during the later stages of their condition.

It is recognised that the complexity of patient needs changes over time. All specialist rehabilitation services will have a case mix that covers a range of complexity.

- Within a local specialist rehabilitation service it is expected that, at any one time, a small number of patients (eg 25-30%) will have complex rehabilitation needs – or 50% in the case of level 2a services
- In Level 1 services, 60-70% will have complex needs at any one time, although all patients are expected to meet the admission criteria of needs beyond their local/specialist rehab services

It is therefore the proportion of complex patients that chiefly distinguishes these two levels of service.

Table 1: Four categories of patient need for rehabilitation services

Patients with Category A rehabilitation needs

- Patient goals for rehabilitation may include:
 - Improved physical, cognitive, social and psychological function / independence in activities in and around the home;
 - Participation in societal roles (eg work / parenting / relationships);
 - Disability management eg to maintain existing function; manage unwanted behaviours / facilitate adjustment to change
 - Improved quality of life and living including symptom management, complex care planning, support for family and carers, including neuropalliative rehabilitation
- Patients have complex or profound disabilities e.g. severe physical, cognitive communicative disabilities or challenging behaviours.
- Patients have highly complex rehabilitation needs and require specialised facilities and a higher level of input from more skilled staff than provided in the local specialist rehabilitation unit. In particular rehabilitation will usually include one or more of the following:
 - intensive, co-ordinated interdisciplinary intervention from 4 or more therapy* disciplines, in addition to specialist rehabilitation medicine/nursing care in a rehabilitative environment
 - medium length to long term rehabilitation programme required to achieve rehabilitation goals – typically 2-4 months, but up 6 months or more, providing this can be justified by measurable outcomes
 - very high intensity staffing ratios e.g. 24 hour 1:1 nurse “specialling”, or individual patient therapy sessions involving 2-3 trained therapists at any one time
 - highest level facilities /equipment e.g. bespoke assistive technology / seating systems, orthotics, environmental control systems/computers or communication aids, ventilators.
 - complex vocational rehabilitation including inter-disciplinary assessment / multi-agency intervention to support return to work , vocational retraining, or withdrawal from work / financial planning as appropriate
- Patients may also require:
 - Highly specialist clinical input e.g. for tracheostomy weaning, cognitive and/or behavioural management, low awareness states, or dealing with families in extreme distress
 - ongoing investigation / treatment of complex / unstable medical problems in the context of an acute hospital setting
 - neuro-psychiatric care including: risk management, treatment under sections of the Mental Health Act,
 - support for medicolegal matters including mental capacity and consent issues
- Patients are treated in a specialised rehabilitation unit (i.e. a Level 1 unit).
- Patients may on occasion be treated in a Level 2 unit depending on the availability of expert staff and specialist facilities as well as appropriate staffing ratios.

Patients with Category B rehabilitation needs

- Patient goals for rehabilitation may be as for category A patients
- Patients have moderate to severe physical, cognitive and/or communicative disabilities which may include mild-moderate behavioural problems.
- Patients require rehabilitation from expert staff in a dedicated rehabilitation unit with appropriate specialist facilities.
- In particular rehabilitation will usually include one or more of the following:
 - Intensive co-ordinated interdisciplinary intervention from 2-4 therapy disciplines in addition to specialist rehabilitation medicine/nursing care in a rehabilitative environment
 - medium length rehabilitation programme required to achieve rehabilitation goals – typically 1-3 months, but up to a maximum of 6 months, providing this can be justified by measurable outcomes
 - special facilities/ equipment (e.g. specialist mobility/ training aids, orthotics, assistive technology) or interventions (e.g. spasticity management with botulinum toxin or intrathecal baclofen)
 - interventions to support goals such as return to work, or resumption of other extended activities of daily living, eg home-making, managing personal finances etc.
- Patients may also have medical problems requiring ongoing investigation / treatment.
- Patients are treated in a local specialist rehabilitation unit (i.e. a Level 2 unit).

Patients with Category C rehabilitation needs

- Patient goals are typically focused in restoration of function / independence and co-ordinated discharge planning with a view to continuing rehabilitation in the community.
- Patients require rehabilitation in the context of their specialist treatment as part of a specific diagnostic group (e.g. stroke).
- Patients may be medically unstable or require specialist medical investigation / procedures for the specific condition.
- Patients usually require less intensive rehabilitation intervention from 1-3 therapy disciplines in relatively short rehabilitation programmes (i.e. up to 6 weeks).
- Patients are treated by a local specialist team (i.e. Level 3a service) which may be led by consultants in specialties other than Rehabilitative Medicine (e.g. neurology / stroke medicine) and staffed by therapy and nursing teams with specialist expertise in the target condition.

Patients with Category D rehabilitation needs

- Patient goals are typically focused in restoration of function / independence and co-ordinated discharge planning with a view to continuing rehabilitation in the community if necessary.
- Patients have a wide range of conditions but are usually medically stable.
- Patients require less intensive rehabilitation intervention from 1-3 therapy disciplines in relatively short rehabilitation programmes (i.e. 6-12 weeks)
- Patients receive an in-patient local non-specialist rehabilitation service (i.e. Level 3b) which is led by non-medical staff.

Therapy disciplines may include: physiotherapy, occupational therapy, speech and language therapy, psychology, dietetics, social work, orthotics, rehabilitation engineering, vocational / educational support (including play therapy in children's settings).

Defining Complexity in Rehabilitation

In rehabilitation, diagnosis is a poor determinant of need for rehabilitation or the costs of providing it.

The key factors that determine complexity of **rehabilitation needs** are:

- Needs for basic care and safety
- Needs for skilled nursing care
- Needs for therapy input – no of disciplines involved and intensity of treatment
- Needs for medical care and intervention

However, if a service is to take patients with complex needs, it must be able to demonstrate that it provides a **level of rehabilitation inputs** and facilities co-measurable with those needs. And if the commissioners are to fund these higher level services, there must be measurable **outcomes** to demonstrate that useful gain has been made.

A hierarchical series of tools has been developed to capture needs, inputs and outcomes, with more detailed tools being used to define higher levels of complexity in low volume–high cost services, as shown in figure 1. These form part of the National Dataset for Specialist Rehabilitation Services, and are collated through the UK Rehabilitation Outcomes Collaborative (UKROC) database which is held at Northwick Park as part of a collaborative venture between the British Society for Rehabilitative Medicine (BSRM) and the NHS Information Centre in a programme funded by the Department of Health to inform casemix development in rehabilitation services. (see Annexe 3).

Needs and inputs

- The **Rehabilitation Complexity Scale** is designed for use particularly in the higher throughput services, to identify patients with more complex needs. It is a simple tool that is easy and quick to apply, but it has recognised ceiling effects in the complex services, and does not provide any information on how clinical teams spend their time with patients
- The **Northwick Park nursing and therapy dependency tools** have been developed to provide a more detailed evaluation of needs / inputs for use in the high cost/low volume services
 - The **NPDS** is an ordinal measure of needs for care and skilled nursing. It translates by a computerised algorithm into an assessment of **care hours** (the **NPCNA** (Northwick Park care needs assessment))
 - The **NPTDA** is an equivalent tool for assessment needs for therapy intervention. It also translated by a computerised algorithm into **therapy hours** for each discipline

All of these tools may be applied either prospectively (to measure *needs for rehabilitation*) or retrospectively to measure *inputs actually provided*, and hence to confirm that needs have been adequately provided for – or alternatively to identify gaps in the level of service provision.

Outcome

The dataset is not designed to be restrictive – units are still encouraged to collect any outcomes that they consider to be most relevant to their caseload. However for the purpose of comparative description all units are asked to collect a minimum of standardised outcome data, which includes one of the following which are already routinely collected by 95% of specialist rehabilitation units in the UK:

- Barthel Index (BI),
- The Functional independence measure (FIM) or UK FIM+FAM
- The Northwick Park nursing Dependency Scale (NPDS)

The FIM and the NPDS both translate to a Barthel score, so any of these tools can provide a common language at the level of the Barthel Index.

In patients with profound disabilities, where the focus of the programme is on neuropalliative rehabilitation, the goals for rehabilitation may be focussed more on symptom management and quality of life than gains in functional independence. Goal attainment scaling (GAS) offers a useful option for capturing individualized person centred outcomes or putting together the outcomes from a range of different measures, where the standardised measures of physical disability fail to capture the intended purpose of the programme.

Casemix and costing of specialist services

Data from the UKROC database will also be used to more accurate costing for specialist rehabilitation service a than is available from reference costing alone. This information will be use to develop banded tariffs for rehabilitation services under the Payment by Results (PbR) programme. The UKROC project is registered as a PbR Improvement Project.

Because of the flat cost curve for rehabilitation case episode costs, the Expert Reference Panel for development of HRGs in Rehabilitation as determined that commissioning currencies for rehabilitation should be based on a weighted bed day tariff.

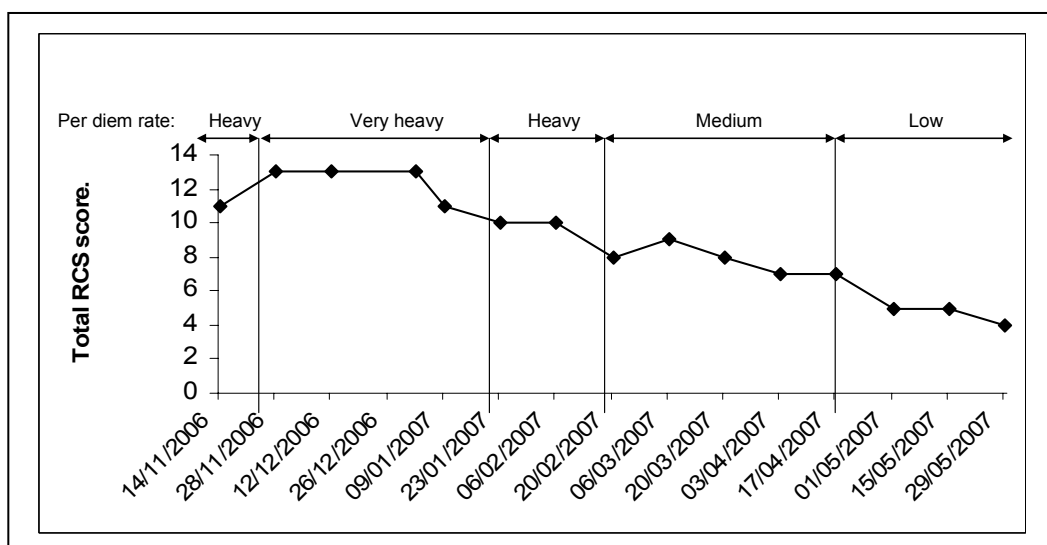
Because each level of service carries a range of patients at different levels of complexity at any one time, the best way to define costs is by a weighted tariff based on patient complexity, as opposed to fixed tariffs for different levels of service.

The panel has proposed a model where the cost is weighted proportionately to the period for which the patient is at a given complexity level, i.e. a multiple level tariff that can change over time according to the complexity of the patient's needs. The model is based on serial complexity ratings using the agreed measures of complexity and outcome as defined through the UKROC dataset. Units seeking to use this flexible tariff will need to record and report serial data and to demonstrate that they are able to provide inputs commensurate with patient needs.

Weighted costing model

In our weighting model, the RCS is used to group patients into different bands of complexity and the Northwick Park Dependency Scales are then used to determine the relative proportions of staff time associated with each treatment group.

- The weighted costing model is a 5-tier model based on complexity groups: Very low (RCS = 0-3), Low(RCS = 4-6); Medium (RCS = 7-9); Heavy (RCS = 10-12); Very heavy (RCS = 13-15)
- A costing multiplier has been derived for each of these complexity groups, based on the relative proportions of staff time. The multiplier is applied to the variable portion of the bed-day cost to produce a weighted tariff
- The figure below illustrates how the multi-level tariff would be applied through serial complexity ratings over the course of a single case episode. The total episode of 194 days was made up of 42 'very heavy', 48 'heavy', 70 'medium' and 34 'light' days.



The costing methodology is described in more detail in a paper entitled "Determination of bed-day costs for specialist neurorehabilitation services". The model has been develop based on data from one service. It is now being extended to capture data from a wider range of services across the UK.

Annexe 1: Defining Criteria for ‘Local Specialist’ and ‘Specialised’ (Level 1) rehabilitation services

Criterion	Local specialist rehabilitation service (Level 2)	Tertiary specialised rehabilitation service (Level 1)
National standards	Meets the national standards for specialist rehabilitation laid down by the Royal College of Physicians and the British Society of Rehabilitation Medicine (BSRM).	
Specialist team	Rehabilitation is provided by a multi-professional team of nurses, allied health professionals (AHPs) and doctors who have undergone recognised specialist training in rehabilitation.	
Inter-disciplinary working practice	The team works in an inter-disciplinary, co-ordinated fashion towards an agreed set of goals to assist them to achieve their desired level of independence, autonomy and participation in society.	
RM Consultant leadership	Led or supported by a consultant, trained and accredited within the specialty of rehabilitation medicine with input from other specialists (eg neurology, psychiatry) as required.	Led by a consultant, trained and accredited within the specialty of rehabilitation medicine and/or neuropsychiatry.
Catchment	Catchment population typically 250-500 K (Level 2a: 600K-1m)	Catchment population typically <u>>1 million</u>
Complex caseload	Carries a more complex caseload than non-specialist services, as defined by agreed criteria (eg the Rehabilitation Complexity Scale (RCS) or equivalent)	Takes a selected group of patients with <u>complex rehabilitation needs beyond the scope of their local general and specialist rehabilitation services (category A)</u> . These include patients with severe physical, cognitive communicative disabilities or challenging behaviours – (or other highly complex needs defined by NPDS/NPTDA scores),
Facilities	Has specialist facilities as appropriate to the caseload – eg assistive technology, specialist orthotics, special seating, spasticity management programmes	In addition to facilities for specialist rehab services, has <u>higher level facilities</u> as appropriate to caseload eg bespoke assistive technology, ventilators, acute/ specialist medical facilities, rehab engineering, etc.
Staffing	Has appropriately skilled staff in numbers sufficient to provide rehabilitation at a level of intensity commensurate with the patients needs (see BSRM minimum standard staffing levels.)	Has <u>higher level skilled staff</u> and <u>increased staff numbers</u> to cope with complex case load.
Monitoring	It routinely monitors casemix and outcome data for the purpose of benchmarking and quality monitoring.	
	Systematically reports <u>minimum mandatory Dataset</u> for Specialist Rehabilitation Services through the national database (see Annexe 3)	Systematically reports <u>full Dataset</u> for Specialised (Level 1) Rehabilitation Services through the national database (see Annexe 3)
Networking	Acts as a resource for advice and support to other professional staff in local general and community rehabilitation services	Acts as a resource for advice and support to <u>local specialist</u> , as well as general and community rehabilitation teams in the management of patients with complex disabilities.
Education and training	Serves a recognised role in education, training for development of specialist rehabilitation in the field	Serves a recognised role in education, training and <u>publishes audit/research/development</u> in the field of specialist rehabilitation

Annexe 2: Minimum staffing provision for specialist in-patient rehabilitation service³

	Local specialist rehabilitation service (Level 2)	Specialised rehabilitation service (Level 1)	For both types of service
	For every 20 beds:	For every 20 beds	
Medical staff	1.2-1.5 WTE Consultant accredited in rehabilitation medicine 2 WTE training grades (above FY) and/or 1.5 WTE Trust Grade doctors	2-2.5 WTE Consultant accredited in rehabilitation medicine and/or neuropsychiatry, depending on nature of caseload 2-3 WTE training grades (above FY) and/or 1.5 WTE Trust Grade doctors	Plus Trained therapy assistants, technicians.
Nurses	24-30 WTE (varies with dependency, but at least 1/3 should have specific rehab training)	25-35 WTE (varies with dependency, but at least 1/3 should have specific rehab or mental health training, depending on caseload)	
Physiotherapists	4 WTE	5-6 WTE (depending on physical demands of caseload)	Access to rehab engineers and other professions as appropriate to caseload
Occupational therapists	4 WTE	5-6 WTE	
Speech and language therapists	1.5-2.5 WTE (depending on whether patients with tracheostomy are accepted)	2-3.5 WTE (depending on proportion of patients with dysphagia, communication deficits and tracheostomy/ ventilation)	
Clinical psychologist/counselling	1.5-2 WTE	2-3 WTE (depending on whether patients with severe behavioural problems are accepted)	
Social Worker / discharge co-ordinator	1-1.5 WTE	1.5-2 WTE (depending on catchment area)	
Dietitian	0.5-0.75 WTE (depending on the proportion of patients on enteral feeding)	0.5-1.0 WTE (depending on the proportion of patients on enteral feeding / complex nutrition needs)	
Clerical staff	3.0 WTE, but dependent on caseload and throughput		

Note:

These staffing levels support both the inpatient activity and associated out-reach work including assessments home-visits, follow-up, case-conferences etc. Additional resources are required if the services also offers community rehabilitation services

Tertiary specialised services taking patients with more complex needs the skill mix is adjusted to cater for the specific group of patients they serve – for example a cognitive behavioural rehabilitation services would require:

- A higher proportion of psychology / counselling staff
- Consultant neuropsychiatrist support
- A proportion of registered mental health nurses, and sufficient staffing levels to provide a safe environment for high risk patients, including 1:1 supervision when needed.

Level 2a services, will require staffing levels somewhere between those of a Level 1 and 2 service, depending on the complexity of their mixed caseload

A range of dependency tools to evaluate caseload complexity and staffing needs are currently in place and undergoing further development (eg the Northwick Park Nursing and Therapy Dependency Assessments).

³ * These recommendations are adapted from the RCP/BSRM National Guidelines for rehabilitation following Acquired Brain Injury 2003.

Annexe 3: National Minimum dataset for Specialist Rehabilitation Services

CATEGORY	✓	DATA FIELD	RESPONSE
Unit details (Fixed for each unit)	<input type="checkbox"/>	Unit identifier	Unit Name / code
	<input type="checkbox"/>	Designation	Level 1 (CSRS) / Level 2 (SRS) / Level 3 (Non specialist)
Patient details	<input type="checkbox"/>	Person identifier (Mandatory)	NHS number
	<input type="checkbox"/>	Date of Birth / Age at admission	Date: Birth
	<input type="checkbox"/>	Gender	List: Male / Female
	<input type="checkbox"/>	Race	List: Race/ethnicity
	<input type="checkbox"/>	Postcode	Post code
	<input type="checkbox"/>	PCT	PCT / code
	<input type="checkbox"/>	Strategic Health Authority	SHA / code
	<input type="checkbox"/>	Diagnosis at assessment	Text: primary diagnosis
	<input type="checkbox"/>	Date of onset	Date: (set at first of month or year, if not precise)
Referral and processing	<input type="checkbox"/>	Source of referral	List: Hospital / Community
	<input type="checkbox"/>	Date of referral	Date: referred
	<input type="checkbox"/>	Date of assessment	Date: assessed
	<input type="checkbox"/>	Details of assessor / team	List: Uni-disciplinary / Multidisciplinary
	<input type="checkbox"/>	Date of decision / waiting list	Date: on waiting list
Admission details	<input type="checkbox"/>	Admission date	Date: Admitted
	<input type="checkbox"/>	Admitted from	List: Hospital specialist / DGH / home / nursing home
	<input type="checkbox"/>	Type of admission	List: Assessment only / Active rehab / disability management
	<input type="checkbox"/>	Dependency category on admission	List: High / medium / low
	<input type="checkbox"/>	Anticipated discharge date	Date:
	<input type="checkbox"/>	If delayed discharge - reason	Text or List (eg waiting for housing/ care package)
Interruption of rehab if any	<input type="checkbox"/>	Total interruption days	Number: Days transferred to other ward
	<input type="checkbox"/>	Reason for interruption	Text or List (e.g. intercurrent illness/ procedure)
Discharge	<input type="checkbox"/>	Discharge date	Date: Discharged
	<input type="checkbox"/>	Length of stay (Mandatory)	Number: Days (calculated field)
	<input type="checkbox"/>	Mode of episode end	List: discharge / death / transfer to other ward
	<input type="checkbox"/>	Discharge destination	List: Home, nursing home/ residential care / other rehab
Diagnosis / coding	<input type="checkbox"/>	HRG category (Mandatory)	HRG code
	<input type="checkbox"/>	Primary ICD code (Mandatory)	primary ICD or diagnosis
	<input type="checkbox"/>	Secondary ICD codes	Secondary codes
Spinal cord injury	<input type="checkbox"/>	ASIA impairment scale (SCI)	ASIA score
Amputee rehab	<input type="checkbox"/>	SIGAM grade (lower limb)	
Costing data	<input type="checkbox"/>	Unit cost per bed day	£---
	<input type="checkbox"/>	Total cost of episode/spell (Mandatory)	£---
	<input type="checkbox"/>		
Standardised costing and outcome data			
Complexity		Admission	Discharge
All services	<input type="checkbox"/>	RCS: C, N, T, M, Total (Mandatory)	RCS: C, N, T, M, Total (Mandatory)
Level 1 services	<input type="checkbox"/>	NPDS	NPDS
Level 1 services	<input type="checkbox"/>	NPTDA	NPTDA
Outcome		Admission	Discharge
All services	<input type="checkbox"/>	Barthel Index (Mandatory)	Barthel Index (Mandatory)
Level 2 services	<input type="checkbox"/>	FIM Motor	FIM Motor
Level 2 services	<input type="checkbox"/>	FIM Cognitive	FIM Cognitive
Level 1 services	<input type="checkbox"/>	FIM+FAM Motor	FIM+FAM Motor
Level 1 services	<input type="checkbox"/>	FIM+FAM Cognitive	FIM+FAM Cognitive
Optional	<input type="checkbox"/>	GAS	GAS
Optional	<input type="checkbox"/>	(FIM+FAM Impairment Set)	

The National Database for Specialist Rehabilitation Services is held at Northwick Park Hospital and managed in collaboration with the BSRM.

All specialist rehabilitation services should submit de-identified data to the database:

- Level 2 services: at minimum report the five mandatory fields
- Level 1 (Specialised services) should report the full dataset