Rehabilitation: Evaluation Framework

Purpose

This paper sets out evaluation guidance and a framework that will support heath boards, local authority, third and voluntary sector services to understand demand for and evaluate the impact of rehabilitation for all of Wales.

It supports the Welsh Government All Wales Rehabilitation Framework: principles to achieve a person-centred value-based approach (2022) together with the Rehabilitation Modelling Resource.

Value-based healthcare is defined as the equitable, sustainable, and transparent use of the available resources to achieve better outcomes and experiences for every person (Hurst et al, 2019). To deliver value-based rehabilitation across Wales there needs to be:

1. Better data: an understanding of the resource use (including staff, people, and carer time) and outcomes and experiences that matter to people.

2. Better evidence: an understanding of what works to increase value. This requires better evidence about the effectiveness of what happens in the real world of the NHS (National Health Service). This can help inform decision making about resource use and allocation.

3. Multi-disciplinary engagement, involving all stakeholders, especially people. Multiple skills are needed, and all professional groups must be engaged. Value means different things to different people, and there are multiple perspectives at any one time.

Aims

The evaluation framework aims to support organisations and services to deliver value-based rehabilitation to all who have needs.

1. Tracking an individual person's recovery over time on their rehabilitation pathway across health and community settings.

2. Providing understanding of all populations in need of rehabilitation.

a. Demand for rehabilitation.

b. Impact of rehabilitation.

3. Informing planning and funding of high-quality services to support rehabilitation for services for long term conditions.

4. Evaluating the effectiveness of their interventions to inform service development and transformation.

The framework may also:

Support the development of more seamless and integrated rehabilitation services in the future.

Framework

The evaluation framework in table one is based on a whole system framework and design process utilising a Results Based Accountability (RBATM) approach and focuses on the performance accountability of rehabilitation services. It aligns with the National Clinical Framework and the principles of value-based healthcare. It has been updated from previous work by a subgroup of the Covid-19 Planning & Response Rehabilitation Task and Finish Group who received support from the value-based health care team, cedar, Allied Health Professionals (AHPs) reference group, modelling group, national clinical and professional networks.

Outcome Indicators

Rehabilitation is only one element of the whole system that will contribute to achieving this outcome.

The other elements include:

- Underlying health conditions and comorbidities
- Medical treatment
- Socio-economic factors
- Environment factors

However, it is still important to try and capture the demand for and specific impact of rehabilitation services.

Table one sets out a Rehabilitation Evaluation Framework that encourages clinicians, services, and organisations to focus on what is important to their local populations. In line with value-based healthcare principles (Illustration one) it is important to capture data from a person-centred perspective on:

- Quality of care (top right quadrant of Table one)
- Cost effectiveness (left side of Table one)
- Outcomes (bottom right quadrant of Table one)

Illustration One: Value-Based Healthcare

Table One: Rehabilitation Evaluation Framework

	Quantity (Cost Effectiveness)	**Quality**
Effort	How much? # People provided with rehabilitation because of: Length of stay in service	How well Patient reported experience measure Intensity of rehabilitation provided Responsiveness of rehabilitation services Where rehabilitation provided, home, school, community setting, hospital setting Type of rehabilitation interventions- face to face, group, virtual
Effect	**Is anyone better off?** # Who have returned to previous level of independence and well-being (PROM (Patient Reported Outcome Measures)) # Who are confident to manage their health in the long term (PROM)	**Outcomes** % Who have returned to previous level of independence and well-being (PROM) % Who are confident to manage their health in the long term (PROM)

	# With improved impairment (COM) # With improved level of activity (PROM/COM) # With improved well-being (PROM) # That achieved goals identified by them that matter to them # Of people who return to meaningful occupation /work-based activity/ participation	% With improved impairment (COM) % With improved level of activity (PROM/COM) % With improved well-being (PROM) % That achieved goals identified by them that matter to them % Of people who return to meaningful occupation /work-based activity/ participation

Table two includes of some of the instruments or tools that are commonly used across Wales to capture the outcomes identified in the bottom right quadrant of table one. Some of these are clinician reported (COM) and some are patient reported (PROM). The measures are separated into groups depending on what aspect of health they focus on, in line with the WHO International Classification of Functioning, Disability and Health (see Appendix 1 for definitions).

This table focuses on the tools that are used across professional groups and across health conditions or are recommended by national groups. There are numerous other tools that measure the outcome in specific health conditions or populations or are only used by one profession.

Table Two: Common outcome measures and tools used in rehabilitation across Wales

Measure	Tools
% Who are confident to manage their health in the long term	Patient Activation Measure, General Self Efficacy Scale, Therapy Outcome Measure, Occupational Self-Assessment (OSA) Version 2.2, Morriston Occupational Therapy Outcome Measure (MOTOM)
% Who have returned to previous level of	EuroQol 5d (EQ5D-5L), World Health Organisation

independence and well being	Disability Assessment Schedule 2.0 (WHO-DAS 2.0), Patient-Reported Outcomes Measurement Information System Global Health version 1.2 (PROMIS Global10 v1.2), Medical Outcomes Study (MOS) 36-Item Short Form Health Survey (SF-36), SF-12
% With improved impairment	

Fatigue	Fatigue Severity Scale [FSS], Fatigue Impact Scale [FIS], Brief Fatigue Inventory [BFI]) Fatigue Symptom Inventory [FSI], Multidimensional Assessment of Fatigue [MAF], and Multidimensional Fatigue Symptom Inventory [MFSI]
Cognition	Montreal Cognitive Assessment (MoCA), Mini - Addenbrooke's Cognitive Examination (M-ACE-III), Addenbrooke’s Cognitive Examination-III (ACE-III)
Physical Function	Berg Balance Scale, muscle strength, Elderly Mobility Scale, Rivermead Mobility Index, Handgrip, Modified Rankin Scale, Nottingham Extended Activities of Daily Living Scale (NEADL)
Respiratory Function	6-minute walk test, sit to stand, St Georges Questionnaire, Borg Scale of Breathlessness, Medical Research Council Scale of Breathlessness
Mood	Patient Health Questionnaire (PHQ) 9, General Anxiety Disorder (GAD) 7, Hospital Anxiety and depression Scale (HADS), Trauma Screening Questionnaire (TSQ)
Communication	La Trobe Communication Questionnaire
Swallow/Voice	Voice Handicap Index (VHI), GRBAS, Reflux Symptom Index (RSI), EAT-10, Functional Oral Intake Scale (FOIS), Airway Voice Swallowing (AVS) scale, Newcastle Laryngeal Hypersensitivity Questionnaire

% With improved level of activity	Derbyshire Outcome Measure, Barthel Index, FIM, FIM+FAM, Rockwood Frailty Score, Nottingham Extended Activities of Daily Living Scale (NEADL)
% With improved wellbeing	Warwick Edinburgh Mental Wellbeing Scale (WEMBS), ReQol, CORE-Outcome Measure (OM), CORE-10, DISC, TSQ
% That achieved goals that matter to them	Goal Attainment Scale, Adapted Therapy Outcome Measure, Canadian Occupational Performance Measure (COPM), Occupational Self-Assessment (OSA) Version 2.2 (MOHO), Goals Achieved Yes/No/Partially

For availability of a Welsh language version (check Mesurau Iechyd Cymraeg or Welsh Language Health Measures website http://micym.org/llais/static/index.html#.)

There are several tools to help understand demand from a service or organisational perspective. The Patient Categorisation Tool, Northwick Park Therapy Dependency Tool, Northwick Park Nursing Dependency Needs Provision and Complexity Scale for Long Term Neurological Conditions and Rehabilitation Complexity Scale are all designed for use in acquired brain injury or neurorehabilitation. They can be useful tools to use in planning what rehabilitation someone should have, or where their needs can be met, rather than as an outcome measure.

Recommendation

It is recommended that practitioners, services, and organisations use this evaluation framework to help them choose which measures and tools are most relevant to demonstrate the value and impact of their local populations. In doing so it is important to consider the burden of questionnaire completion and data collection on people and the workforce.

Wherever possible the same tools and measures should be used across services and people pathways and the fewest possible used.

Step One: Recovery

To be able to track an individual person's recovery over time on their rehabilitation pathway across health and community settings it is recommended that all services and organisation use the same high-level measure of independence and well-being (PROM):

- EuroQoL EQ5D-5L

This tool is already on the national platform in English and Welsh. Organisations or services may choose to use additional measures which have more detailed questions and may be more sensitive to certain aspects of a person's level of activity or well-being such as the:

· 10-item Patient-Reported Outcomes Measurement Information System Global Health version 1.2 (PROMIS Global 10v1.2) asks people to report on last 7 days. There is a Welsh version and a 9-item PROMIS Global Paediatric and Parent Proxy Global 7+2.

- 12-item World Health Organisation Disability Assessment Schedule 2.0 (WHO-DAS 2.0) which asks people to report on last 30 days.

Both tools have had robust comparative studies undertaken that enable them to be mapped to the EQ5D-5L.

Step Two: Demand

To provide a national and local understanding of the demand for rehabilitation for the population organisations and services are requested to collect data on:

- The need of the person, the service and the socio-economic value of the rehabilitation support.
- Length of stay in service. Number of contacts
- Number of different health or social care professionals involved
- Type of intervention: face to face, telephone, or virtual consultation.

This aligns with the national strategic drive to ensure rehabilitation remains a key and ongoing priority at all levels to support the population from the impacts of the Covid-19 pandemic, wider determinants of health, and the long-term sustainability of the health and social care system.

Step Three: Impact

To provide a local and national understanding of the impact or effectiveness of rehabilitation in line with population needs. It is suggested that all services and organisations use the same measure of self-efficacy in line with recommendations from the All-Wales Psychology Group, for example:

- General Self Efficacy Scale 6

Organisations and services are also recommended to consider a set of outcome tools from table two that reflect the intended aim of the management plan provided. This may be at an impairment, activity, or participation level. Consideration should be made of the factors set out in Appendix 2 including:

- Specific population
- Service interactions and comorbidities
- Psychometric properties

Some of the datasets recommended by speciality groups or specific professional groups are included in Appendix 3.

Step Four: Quality

To understand the quality of a rehabilitation intervention organisations and services will need to capture data on:

- The local population experience in line with national guidance
- The responsiveness of their service- time from referral to first contact
- How close to home rehabilitation is delivered- place of intervention

Step Five: Capturing, Collating and Reporting Data

Organisations and services need to make sure that their existing clinical systems capture the **demand and quality** data that relates to rehabilitation through appropriate coding.

Where possible, data that captures recovery and impact should also be incorporated into clinical systems, such as Welsh Clinical and Care Information System (WCCIS) and other approved systems, although in some cases, particularly for peoples experience it is recognised that this is not possible. Online resources and virtual platforms that are GDPR compatible, such as Microsoft Teams, Forms, Smart Survey, and Attend Anywhere may also need to be considered.

Organisations and services should ensure practitioners in their rehabilitation services are clear what clinical outcome measures they should use and when they should use them, ideally at the beginning and end of an agreed rehabilitation plan. They also need clear guidance on how and where they should record them.

Services and organisations should develop local systems for collating and reporting the data to inform local service provision. In the longer term, however, it should be possible for data to be incorporated into the national data repository to inform future developments of a rehabilitation data dashboards. Standardising the approach to evaluating rehabilitation now will make this quicker and easier to achieve in the longer term.

References

Hurst L, Mahtani K, Pluddemann A, Lewis S, et al (2019) Defining value-based healthcare in the NHS: CEBM report May 2019. https://www.cebm.net/2019/04/defining-value-basedhealthcare-in-the-nhs/

Appendix 1: The International Classification of Functioning, Disability and Health

https://www.who.int/classifications/icf/icfbeginnersguide.pdf?ua=1

Body Functions are physiological functions of body systems (including psychological functions).

Body Structures are anatomical parts of the body such as organs, limbs, and their components.

Impairments are problems in body function or structure such as a significant deviation or loss.

Activity is the execution of a task or action by an individual. Activity Limitations are difficulties an individual may have in executing activities.

Participation is involvement in a life situation.

Participation Restrictions are problems an individual may experience in involvement in life situations.

Environmental Factors make up the physical, social, and attitudinal environment in which people live and conduct their lives.

Appendix 2: Factors to consider when choosing an outcome tool

Outcome measures help to assess the quality and effect of a rehabilitation intervention or service. Different tools will measure the outcome in different populations and situations.

First you need to consider who is the population you are delivering your intervention or service to, for example:

- Age range- adults, older people, children,
- People with cognitive impairment or learning disabilities, people with communication difficulties
- Availability of a Welsh language version (check Mesurau Iechyd Cymraeg or Welsh Language Health Measures website http://micym.org/llais/static/index.html#
- Medical condition- is it a condition specific group, such as stroke survivors or people living with a respiratory condition or is it a more general group- for example anyone who has been affected by one of the 4 harms of Covid-19. T

Then you need to decide what impact you think your intervention or service might have what outcome would you expect a person to have. Are you trying to have an impact on a person's:

- Overall health and well-being
- Confidence
- mental health
- Their ability to manage their own condition, or
- A specific impairment (swallow, balance, weight, mood) or
- An activity (walking, self-care, social interaction, well-being) or
- Their participation (environmental interaction, vocational activities, family roles, social networks).

You need to consider who will be administering the tool

- Is it the participant who self-administers (patient reported outcome measure PROM)?
- Is it a profession specific tool (see training below)?
- Can it be used by a wide number of professions or service providers (health and social care/third sector)?

Lastly, you need to think about:

- Interoperability - can it be used across multiple existing systems?
- Training requirements
- Cost implications

Appendix 3: Measures recommended by specialist services and professional groups

UK Specialist Rehabilitation Outcomes Collaborative (UKROC) http://www.ukroc.org/

The full UKROC dataset represents the inpatient rehabilitation subset of the Long-Term Neurological Conditions dataset. It comprises 30 items of demographic and process data for each admitted case episode together with:

- The Rehabilitation Complexity Scale (RCS-E) (as a measure of rehabilitation needs)
- At least one of an agreed set of outcome measures which include:
    - Full dataset - The UK FIM ± FAM

o Minimum dataset - Barthel index (Wade and Collin Manual 1988)

- The Northwick Park Dependency Scale and Care Needs Assessment – to derive cost efficiency

The Trauma Audit & Research Network (TARN)

https://www.tarn.ac.uk/

Glasgow Coma Scale (GCS) should be recorded for all patients Patient reported outcomes:

- Patient Experience in hospital
- EQ5D-5L
- VAS (Visual Analogue Scale) where patients rank how they are feeling on a scale of 0 (worse health imaginable) to 100 (best health imaginable)
- Employment/education status prior to injury.

All Wales Psychology Group

% Who are confident to manage their health in the long term	General Self Efficacy Scale
% Who have returned to previous level of independence and well being	EQ-5D-5L, WHO – DAS
% With improved wellbeing / mood	PHQ 9, GAD 7, TSQ CORE-10, 34 and LD, DISC, HADS
% That achieved goals that matter to them	GAS, Recovery Star

RCSALT

Measure	
% Who have returned to previous level of independence and well being	TOMS- SALT
% With improved impairment	Voice Handicap Index (VHI) GRBAS Reflux Symptom Index (RSI) EAT-10 Functional Oral Intake Scale (FOIS) Airway Voice Swallowing (AVS) Scale Newcastle Laryngeal Hypersensitivity Questionnaire
% With improved level of activity	La Trobe Communication Questionnaire