

REHABILITATION: Post COVID19 Evaluation Guidance

PURPOSE

This paper sets out evaluation guidance and a framework that may support health boards, local authority and third sector services to understand demand for and evaluate the impact of rehabilitation in the 4 populations affected by the COVID-19 pandemic.

It supports the Rehabilitation: Framework for Continuity and Recovery 2020 to 2021, together with Rehabilitation: Post Covid-19 Guidance and Rehabilitation Post Covid-19 Modelling. All are available [here](#).

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). In order to deliver value-based rehabilitation across Wales there needs to be:

1. Better data: an understanding of the resource use (including staff, service users and carer time) and outcomes and experiences that matter to patients
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. This can help inform decision making about resource use and allocation.
3. Multi-disciplinary engagement, involving all stakeholders, especially service users. Multiple skills are needed, and many professional groups must be engaged. But value means different things to different people/stakeholders, 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 people affected by COVID-19 by:

1. **Tracking** an individual person's recovery over time on their rehabilitation pathway across health and community settings
2. Providing understanding for the 4 populations affected by the pandemic of the
 - a. **demand** for rehabilitation
 - b. **impact** of rehabilitation
3. Informing planning and funding of **high-quality** services to support post COVID-19 rehabilitation
4. Evaluating the **effectiveness** of their interventions to inform service development and transformation

The framework may also:

- contribute to understanding the impact of the pandemic on health, social care, and third sector services
- support the development of more seamless and integrated rehabilitation services in the future

FRAMEWORK

The evaluation framework in table one is based on whole system framework and design process utilising a Results Based Accountability™ (RBA™) 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 developed by a subgroup of the COVID-19 Planning & Response Rehabilitation Task and Finish Group with support from the Value Based Health Care Team, Cedar, Allied Health Professionals (AHP) reference group, modelling group, national clinical and professional networks

Who is the population?

The population is all people who have been affected by COVID-19:

1. People recovering from COVID-19, both those who remained in the community and those who have been discharged following extended critical care/hospital stays;
2. People whose health and function are now at risk due to pauses in planned care;
3. People who avoided accessing health services during the pandemic and are now at greater risk of ill-health because of delayed diagnosis and treatment;
4. People dealing with the physical and mental health effects of lockdown.

The outcome we want for this population

All people who have been affected by one of the 4 harms of Covid-19 enjoy and return to their optimal level of independence and well-being.

Population 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 service users. In line with Value Based Healthcare principles (Fig 1) 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)



Figure One: Value-Based Healthcare

Table One: Rehabilitation Evaluation Framework

	Quantity (Cost Effectiveness)	Quality
Effort	How much? # people provided with rehabilitation because of: <ul style="list-style-type: none"> • Direct impact of Covid-19, population 1 • Indirect impact of Covid-19 populations 2,3,4 Length of stay in service	How well Patient reported experience measure Intensity of rehabilitation provide Responsiveness of rehabilitation services Where rehabilitation provided, home, school, community setting, hospital setting Type of rehab interventions- face to face, group, virtual
Effect	<div>Is anyone better off?</div> # 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	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

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 one 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 independence and well being	EuroQol 5d (EQ5D-5L), World Health Organisation 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	

There is an online resource which details which tools have been translated to Welsh and validated: link [here](#).

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 service users. In doing so it is important to consider the burden of questionnaire completion and data collection on service users and clinicians.

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

Step One: Recovery

In order 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 Pediatric 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 of these tools have had robust comparative studies undertaken that enable them to be mapped to the EQ5D-5L.

Step Two: Demand

In order to provide a national and local understanding of the **demand** for rehabilitation for the 4 populations affected by the pandemic, organisations and services are requested to collect data on:

- the number of people affected by Covid-19 using their service (direct or indirect)
- 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's recovery from the impacts of the Covid-19 pandemic, and the long-term sustainability of the health and social care system.

Step Three: Impact

In order to provide a local and national understanding of the **impact** or effectiveness of rehabilitation on the 4 populations affected by the pandemic 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:

- General Self Efficacy Scale

Organisations and services are also recommended to choose a set of outcome tools from table two that reflect the intended aim of the intervention(s) provided. This may be at an impairment, activity or participation level. Consideration should be made of the factors set out in Appendix Two 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 Three.

Step Four: Quality

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

- The service user experience in line with [national guidance](#)
- The responsiveness of their service- time from referral to first contact
- How close to home rehabilitation 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), Dr Doctor, Patient Knows Best (PKB) although in some cases, particularly for **patient experience** it is recognised that this is not possible. Online resources that are GDPR compatible, such as Microsoft Teams and Smart Survey, may also need to be used.

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 episode of care. They also need clear guidance on **how** and **where** they should record them.

Wherever possible services and organisations should work with stakeholders, including service users to consider

Services and organisations should develop local systems for collating and reporting the data in order 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 the development of a rehabilitation data dashboard, by the Value Based Healthcare Team. This work is ongoing. 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, Harvey K, Briggs A, Boylan A-M, Bajwa R, Haire K, Entwistle A, Handa A and Heneghan C. Defining Value-based Healthcare in the NHS: CEBM report May 2019. <https://www.cebm.net/2019/04/defining-value-based-healthcare-in-the-nhs/>

APPENDIX One: 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 TWO: 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.

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 THREE: 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
 - 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're 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