Compendium of Clinical Measures for Community Rehabilitation

Prepared for Queensland Health

**Prepared by Centre for Allied Health Evidence
University of South Australia**

QUEENSLAND HEALTH

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Contents of the compendium

This Compendium contains a suite of outcome measures for use in community rehabilitation settings, as identified from a systematic review of the literature. This is a synthesis of 28 measures and clinical tests which have been critically appraised and then approved by an expert working group of rehabilitation clinicians.

In the first section, the identified measures are presented individually in domains based on the *World Health Organisation International Classification of Functioning, Disability and Health (ICF Framework).* The taxonomy of disability offered by the ICF provides a foundation for the selection and interpretation of outcome measurement. Specifically, the taxonomy is structured into a "body structure, function domain" (incorporating physiological and psychological functions), an "activity and participation domain" and an "environmental factors" domain. The taxonomy also recognizes the potential impact of personal factors upon the experience of disability.

To complement the selection of outcome measures which align with the specific domains of the ICF, the Compendium includes measures of quality of life which overarch the domains of the taxonomy. Additionally goal based measures have been included in the Compendium, which will provide clinicians with further tools for client-centred outcome measurement.

Each measure is described in summary form and with full instructions to allow comprehensive administration. Where relevant, scoring procedures, normative data and interpretation are also provided. A summary of psychometric properties is included for each measure at the end of the compendium. Each measure has been reproduced in this Compendium with the full permission of the developers where required. However there are four measures that require further purchasing of either score sheets (the Neuropsychology Behaviour and Affect Profile – a preliminary quantity has been purchased by QH) or testing kits/equipment (Rivermead Behavioural Memory Test, Frenchay Dysarthria Assessment and Western Aphasia Battery). These extra requirements are clearly noted at the end of each test description.

The methodology used for the review and synthesis is presented at the end of the document. This includes a glossary of terms and the results of the systematic review in full, along with a complete reference list.

INTRODUCTION

Background

In 2004, as a result of election commitment funding to stroke rehabilitation services, five new Community Based Rehabilitation (CBR) Teams were established in Queensland. As part of a comprehensive ongoing appraisal of these services it was identified that there was a need to evaluate and utilise the most appropriate tools to monitor program outcomes across the continuum of care. The five CBR Teams established a partnership with the Community Rehabilitation Workforce Project and the QEII Community Rehabilitation Team to undertake the "Outcome Measurement Project in Community Rehabilitation". The final result of this project is this Outcome Measures Compendium. It was identified that this Compendium may have utility for other community rehabilitation services in Queensland.

Outcome measures are "assessments which gauge the effect or results of treatment for a particular disease or condition. Outcome measures include the patient's perception of restoration of functional status, as well as measures of mortality, morbidity, cost, quality of life, patient satisfaction, and others". www.futurehealth.ucsf.edu/cnetwork/resources/glossary/gloNO.html

Outcome measures are necessary to measure the outputs of community rehabilitation services, however problems with efficiency and effectiveness of outcome measures occur when:

- outcome measures are chosen ad hoc, not according to best available evidence
- teams may use many different measures to measure the same outcome and
- training in application of measures is not standardised.

Project aim

This project aimed to increase Queensland Health's knowledge base in the use and application of outcome measures for community rehabilitation. In particular, it aimed to identify appropriate outcome measures as they relate to the activities of six community rehabilitation services.

The outcome measures were reviewed within the framework of the World Health Organisations International Classification of Functioning, Disability and Health (ICF).

Project scope

The project involved six community rehabilitation teams in Queensland. These teams are based in Mackay, the Fraser Coast, the Sunshine Coast, Redcliffe/Caboolture, Brisbane South and Logan.

Measures chosen were based on the range and type of interventions and services provided by these teams. Many of these teams have a stroke focus but also treat clients with other gerontological and neurological conditions (including falls). Therefore the measures chosen had to be applicable to client groups with a broad range of presenting problems.

Three core measures were identified for use by the teams. It is the intention that these core measures will be used with all clients. These measures can be administered by any member of the multidisciplinary team who is suitably skilled. In addition, a number of non-core measures were identified as recommended for use when specifically required to meet outcome measurement needs for specific clients and specific disciplines within the

multidisciplinary team.

Why use the ICF framework?

Increasingly healthcare sectors are endeavouring to utilise a common framework, both for language and to contextualise assessment and management of health and welfare needs. The ICF framework, based on international consensus and collaboration, offers a series of models and has been recognised as valuable by Queensland Health (QH).

"The ICF 'mainstreams' the experience of disability and recognises it as a universal human experience. By shifting the focus from cause to impact it places all health conditions on an equal footing allowing them to be compared using a common metric - the ruler of health and disability. Furthermore ICF takes into account the social aspects of disability and does not see disability only as 'medical' or 'biological' dysfunction. By including Contextual Factors, in which environmental factors are listed, ICF allows the recording of the impact of the environment on the person's functioning".
http://www.who.int/classifications/icf/en/

There are many ways in which the ICF can be used to improve policy and information on disability and human functioning. Potential applications include:

- use of the broad ICF conceptual framework in advocacy, teaching, planning and education
- use of the classification at various levels in information systems, for instance, national data on disability or rehabilitation services
- reference to the classification in designing new assessment methods, or relating various methods to each other within a common framework and
- use of the detailed codes in specific service, clinical or therapeutic settings.

(Australian Institute of Health and Welfare (AIHW) 2003. ICF Australian User Guide. Version 1.0. Disability Series. AIHW Cat. No. DIS 33. Canberra: AIHW).

ICF domain definitions

The ICF provides a taxonomy of domains within which measurement and health clinical interventions can be situated or contextualised and are defined as follows:

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.
Participation is involvement in a life situation.
Activity Limitations are difficulties an individual may have in executing activities.
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

(http://www.who.int/classification/icf Beginners Guide)

The following is a diagram that represents a model of disability congruent with the ICF

framework, adapted from the ICF Beginners Guide.

Health Condition
(disorder of disease)

Body functions and structures   **Activity**   **Participation**

Environmental Factors   **Personal Factors**
(contextual factors)
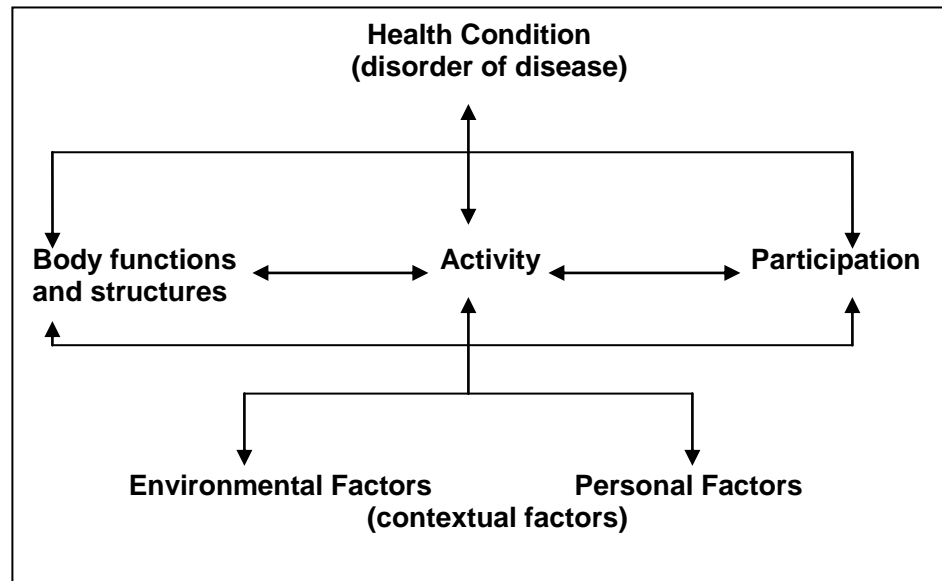
In 2005, Salter et al published a series of papers that examined 5-6 stroke outcome measures in each of the three ICF domains (body function, activity and participation). They concluded that the first two domains are relatively well understood and represented in the measurement literature and that measures in these categories have relatively robust psychometric properties. They reported that:

"..of the three ICF categories, participation seems to be most problematic with respect to: (a) lack of consensus on the range of domains required for measurement in stroke; (b) much greater emphasis on health-related quality of life, relative to subjective quality of life in general; (c) the inclusion of a mixture of measurements from all three ICF categories". ….. "There is no consensus regarding the most important indicators of successful involvement in a life situation and which ones best represent the societal perspective of functioning. In particular, quality of life outcomes lack adequate conceptual frameworks to guide the process of development and validation of measures" (Salter et al, 2005c, p507).

With these cautionary notes in mind, the Compendium is based on an attempt to bring together sufficient measures to provide a cover of the varying perspectives relating to quality of life and gives particular emphasis to those more recent measures that are based on the ICF framework itself. Some of the included measures can be argued to sit within more than one domain. In these instances we have used consensus to align the individual measures into the most fitting domain.

Psychometric evaluation of outcome measures

A full literature search was performed in March to May 2007. Key search words and data bases are listed in the methodology section. From the search results, outcome measures were evaluated briefly to ascertain they were in the disciplines/domains identified by the QH working group, were relevant to a community based rehabilitation setting and not related to a specific diagnostic group (other than stroke). From this a list was complied and circulated to the working group for further reduction based on the criteria above,

resulting in the first deliverable of some 300 outcome measures listed in ICF domains with a key reference for each.

All references related to these measures were then retrieved in full and a group of critical appraisers reviewed this literature. Each measure underwent a standardised critical appraisal (see **Appendix One** for the tool). Each critical appraisal situated the measure in context and assigned it a score out of 11 where a higher score indicated more robust psychometrics. These individual measure critical appraisal sheets were then distributed to all members of the working group via QH and responses collated and returned to the review team. From this, a final list of 40 measures were identified and this then refined to 28. The working group based their decisions on the critical appraisal process and on their consensus expert opinion of the requirements and scope of their rehabilitation clients and practice both at a generic and specific discipline level. Thus the aims of selecting outcome measures that are reflective both of the best available evidence and of clinical expertise were fulfilled. To fulfil the aim of standardised testing and minimal overlap the compendium has been constructed in such a way as to facilitate any team member administering the core measures, and is to be augmented by team training program/s.

CORE MEASURES

World Health Organisation Quality of Life (Brief version)

Full name of outcome measure	World Health Organisation quality of life: brief version (Australian Version May 2000)
Abbreviated name	WHOQoL-BREF
Author	World Health Organisation; based on WHOQoL 100
Objective	to measure domain level profiles which assess quality of life
Population	generic
Type of measure	questionnaire
Mode of administration	self reported if possible, can be interview assisted.

Description

Number of items	26 items/questions (WHOQoL 100 has 100 items) in four domains (physical health, psychological, social relationships and environment)
Type of scale	5 point Likert scale
Time required to perform	10 min
Instructions	See questionnaire
Scoring	Can derive 4 domain scores, with 2 items examined separately (overall perception of QoL Q1 and health Q2). Higher domain score gives higher QoL. For all questions response1= score1 *except* Q3, Q4, Q26 which are negatively worded (converted by subtracting from 6). Raw scores are transformed by formula: Transformed score= (actual raw domain score – lowest possible raw score) x100 possible raw domain score range

		Sum domain scores	Raw score	Mean score
Domain 1	Physical health	(6-Q3)+(6-Q4)+Q10+Q15+Q16+Q17+Q18 ___+___+___+___+___+___+___	=____ (/7)	=
Domain 2	Psychological	Q5+Q6+Q7+Q11+Q19+(6-Q26) ___+___+___+___+___+___	=____ (/6)	=
Domain 3	Social relationships	Q20+Q21+Q22 ___+___+___	=___ (/3)	=
Domain 4	Environment	Q8+Q9+Q12+Q13+Q14+Q23+Q24+Q25 ___+___+___+___+___+___+___+___	=___ (/8)	=

WHOQoL-BREF – questionnaire

ABOUT YOU
Before you begin we would like to ask you to answer a few general questions about yourself: by circling the correct answer or by filling in the space provided.

What is your gender?   Male   Female

What is your date of birth?   _____ / _____ / _____
                                   day   month   year

What is the highest education you received?   None at all
                                                   Primary school
                                                   Secondary school
                                                   Tertiary

What is your marital status?   Single   Separated
                                 Married   Divorced
                                 Widowed   Living as married

Are you currently ill?   Yes   No

If something is wrong with your health what do you think it is?
_____ illness/problem

Instructions
This assessment asks how you feel about your quality of life, health or other areas of your life. Please answer all the questions. If unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks.

Example:

Do you get the kind of support from others that you need?	Not at all 1	Not much 2	Moderately 3	A great deal 4	Completely 5

You would circle the number 4 if in the last two weeks you got a great deal of support from others. But if you did not get any of the support from others that you needed in the last two weeks you would circle number 1.

Please read each question, assess your feelings, for the last two weeks, and circle the number on the scale for each question that gives the best answer for you.

		Very poor	Poor	Neither poor nor good	Good	Very good
1 (G1)	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
2 (G4)	How satisfied are you with your health?	1	2	3	4	5

The following questions ask about how much you have experienced certain things in the last two weeks.

		Not at all	A little	A moderate amount	Very much	An extreme amount
3 (F1.4)	To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
4 (F11.3)	How much do you need any daily treatment to function in your daily life?	1	2	3	4	5
5 (F4.1)	How much do you enjoy life?	1	2	3	4	5
6 (F24.2)	To what extent do you feel your life to be meaningful?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
7 (F5.3)	How well are you able to concentrate?	1	2	3	4	5
8 (F16.1)	How safe do you feel in your daily life?	1	2	3	4	5
9 (F22.1)	How healthy is your physical environment?	1	2	3	4	5

The following questions ask you to say how good or satisfied you have felt about various aspects of your life over the last two weeks.

		Not at all	Slightly	Somewhat	To a great extent	Completely
10 (F2.1)	Do you have enough energy for everyday life?	1	2	3	4	5
11 (F7.1)	Are you able to accept your bodily appearance?	1	2	3	4	5
12 (F18.1)	Have you enough money to meet your needs?	1	2	3	4	5
13 (F20.1)	How available to you is the information that	1	2	3	4	5

	you need in your day-to-day life?					
14 (F21.1)	To what extent do you have the opportunity for leisure activities?					

		Not at all	Slightly	Moderately	Very	Extremely
15 (F9.1)	How well are you able to get around?	1	2	3	4	5

		Very dissatisfied	Fairly Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16 (F3.3)	How satisfied are you with your sleep?	1	2	3	4	5
17 (F10.3)	How satisfied are you with your ability to perform your daily living activities?	1	2	3	4	5
18 (F12.4)	How satisfied are you with your capacity for work?	1	2	3	4	5
19 (F6.3)	How satisfied are you with yourself?	1	2	3	4	5
20 (F13.3)	How satisfied are you with your personal relationships?	1	2	3	4	5
21 (F15.3)	How satisfied are you with your sex life?	1	2	3	4	5
22 (F14.4)	How satisfied are you with the support you get from your friends?	1	2	3	4	5
23 (F17.3)	How satisfied are you with the conditions of your living place?	1	2	3	4	5
24 (F19.3)	How satisfied are you with your access to health services?	1	2	3	4	5
25 (F23.3)	How satisfied are you with your transport?	1	2	3	4	5

		Never	Infrequently	Sometimes	Frequently	Always
26 (F8.1)	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

THE END
THANK YOU FOR YOUR HELP

Frenchay Activities Index

Full name of outcome measure	Frenchay activities index
Abbreviated name	FAI
Author	M Holbrook and CE Skilbeck (1983)
Objective	to measure disability and handicap in stroke patients
	activities measured reflect higher level of independence and social survival
Population	people post stroke, community dwelling
Type of measure	Questionnaire
Mode of administration	Self report or interview,
	suitable for proxy use (caution for bias)
Description	
Number of items	15
Type of scale	4 point scale
Time required to perform	3-5 min
Instructions	See questionnaire
Scoring	four point quantitative scale, maximum score out of 60.

Normative scores: Schuling et al 1993.

FAI scores	Mean score	95% CI	SD
Control (health elderly)	40.86	39.6-42.1	9.37
Pre-stroke	35.9	34-37.8	9.21
Stroke	30.19	28-32.4	10.9

Permission: granted September 2007

Frenchay Activities Index: questionnaire

Please answer these questions using the numbers 1-4 as defined for each question.

In the last three months how often have you participated in:

1. Preparing main meals
2. Washing up

1 = never
2 = <1 time per week
3 = 1-2 times per week
4 = most days

3. Washing clothes
4. Light housework
5. Heavy housework
6. Local shopping
7. Social outings
8. Walking outside >15 min
9. Actively pursuing hobby
10. Driving car / bus travel

1 = never
2 = 1-2 times in 3 months
3 = 3-12 times in 3 months
4 = >1 time per week

In the last six months how often have you participated in:

11. Outings / car rides

1 = never
2 = 1-2 times in 6 months
3 = 3-12 times in 6 months
4 = >1 time per week

12. Gardening
13. Household / car maintenance

1 = never
2 = light
3 = moderate
4 = all necessary

14. Reading books

1 = none
2 = 1 in 6 months
3 = <1 in 2 weeks
4 = > 1 in 2 weeks

15. Gainful work

□

1 = none
2 = <10 hrs per week
3 = 10-30 hrs per week
4 = > 30 hrs per week

Total score: _____

(maximum 60)

Home and Community Environment Instrument

Full name of outcome measure	Home and community environment instrument
Abbreviated name	HACE
Author	J Keysor, A Jette, S Haley (2005)
Objective	to measure factors in a person's home and community environments that may influence their level/s of participation
Population	Older adult population; many diagnostic groups eg neurological, cardiovascular, orthopaedic, chronic pain
Type of measure	Questionnaire
Mode of administration	self reported
Description	
Number of items	36 items in 6 conceptual domains: home mobility, community mobility, basic mobility devices, communication devices, transportation factors and attitudes
Type of scale	Varying scales used for each item
Time required to perform	10 mins
Instructions	see questionnaire
Scoring	**Home mobility score:** Total score for entrance 0-4, + for main entrance to main area and for inside main area The 3 home mobility variables are then summed for total score 0-10 points (higher indicating more obstacles) **Community mobility score:** range of 0-5 where higher indicates more obstacles. **Basic mobility and communication devices:** Higher scores indicate more devices being available. **Transportation:** Scores range from 0 transportation opportunities available to 5, with higher scores denoting more opportunities available **Attitudes:** Scored as 1 for absence of each negative attitude giving a range of 0 to 4 where 4 indicates no negative community attitudes.

Permission: granted October 2007

Home and Community Environment Instrument: questionnaire

Item	Response Options	Scoring
Domain: Home mobility		/10*
What type of home of home do you live in?	□ single family □ multi-family □ apartment building or condominium complex □ congregate housing/assisted living □ nursing/rest home □ other	No score
How many steps are at the main entrance of your home?	□ none □ 1-2 □ several □ 10 or more	0 1 2 3
Is there a railing at the main entrance steps?	□ yes □ no	-1 0
Is there a ramp at the main entrance steps?	□ yes □ no	-1 0
Does the door at the main entrance open electronically or is someone available to open the door?	□ yes □ no	0 1
How many steps are there from the main entrance of your building to your main living area?	□ none □ 1-2 □ several □ 10 or more	0 1 2 3
How many steps are there inside your main living area?	□ none □ 1-2 □ several □ 10 or more	0 1 2 3
Is there a chairlift or elevator inside your main living area?	□ yes □ no	-1 0
Is there a chairlift or elevator inside your building?	□ yes □ no	-1 0
Domain: Community Mobility		/5*
To what extent does your local community have: Uneven footpaths or other walking areas	□ a lot □ some □ not at all □ don't know	1 0
Parks and walking areas that are easy to get to and easy to use	□ a lot □ some □ not at all □ don't know	0 1
Safe parks or walking areas	□ a lot □ some □ not at all □ don't know	0 1
Places to sit and rest at bus stops, in parks or in other places where people walk?	□ a lot □ some □ not at all □ don't know	0 1

Curbs with curb cuts	□ a lot □ some □ not at all □ don't know	0 1
Domain: Basic mobility devices		/9
Do you have: Manual wheelchair Electric wheelchair or electric scooter Walker Stick or crutch Bedside commode, raised toilet seat or grab bars near toilet Grab bars or bench in tub or shower Reachers Dressing aids such as button adapters or zipper pullers Eating aids such as built-up cutlery or kitchen aids such as cutting boards that hold food or utensils that are designed to be used with one hand	□ yes □ no □ yes □ no □ yes □ no □ yes □ no □ yes □ no □ yes □ no □ yes □ no □ yes □ no □ yes □ no	Yes = 1 No = 0
Domain: Communication devices		/4
Do you have: Aids to help you communicate with people such as boards or papers with pictures or telephones with big dials and hearing devices Voice-output communication aids, such as voice generating computers A computer Access to internet	□ yes □ no □ yes □ no □ yes □ no □ yes □ no	Yes = 1 No = 0
Domain: Transportation factors		/5
Do you have a car available to you at your home?	□ yes □ no	1 0
Do you drive?	□ yes □ no	1 0
To what extent does your local community have: Public transportation that is close to your home	□ a lot □ some □ not at all □ don't know	1 0
Public transportation with adaptions for people who are limited in their daily activities	□ a lot □ some □ not at all □ don't know	1 0
Adequate disabled people's parking	□ a lot □ some □ not at all □ don't know	1 0
Domain: Attitudes		/4
People in your building have negative attitudes towards persons with limitations in daily activities	□ strongly agree □ agree □ neither agree or disagree □ disagree □ strongly disagree	0 0 1 1 1

People in your building are willing to help persons with limitations in daily activities	□ strongly agree	1
	□ agree	1
	□ neither agree or disagree	1
	□ disagree	0
	□ strongly disagree	0
People in your community have negative attitudes towards persons limitations in daily activities	□ strongly agree	0
	□ agree	0
	□ neither agree or disagree	1
	□ disagree	1
	□ strongly disagree	1
People in your community are willing to help persons with limitations in daily living	□ strongly agree	1
	□ agree	1
	□ neither agree or disagree	1
	□ disagree	0
	□ strongly disagree	0

* higher score denotes more obstacles ie worse situation
  all other domain scores – higher score indicates more positive situation

SECONDARY MEASURES

Rivermead Behavioural Memory Test

Full name of outcome measure	Rivermead behavioural memory test
Abbreviated name	RBMT
Author/s	Wilson et al 1985 (cited van Balen 1996)
Objective	to assess everyday memory problems and to complement traditional memory assessment procedures
Population	non-specific
Type of measure	clinical assessment
Mode of administration	clinician administered assessment
Description	
Number of items	12 – either given as screening (SS) or full profile tool (SPS) rated on three point ordinal response OR pass/fail dichotomous score
Time required to perform	allow 30 min to complete – requires 15-20 min delayed recall
Type of scale	ordinal classification scale
Instructions	refer to testing kit
Scoring/interpretation	Cut off scores (SPS): Normal memory: 22+ Poor memory: 17-21 Moderately impaired: 10-16 Severely impaired 0-9
Special considerations	Length of recall may be a drawback. Requires testing kit to be purchased.

Normative scores (van Balen et al. 1996)

Healthy elderly	SS	SPS
<60 yrs	9.5 +/- 1.8	20.5 +/- 2.8
60-69 yrs	9.4 +/- 2.2	20.5 +/- 3.6
>69 yrs	8.5 +/- 2.4	19.0 +/- 4.3
CVA patients		
<60 yrs	7.0 +/- 3.4	15.9 +/- 6.1
60-69 yrs	6.3 +/- 3.1	15.0 +/- 5.5
>69 yrs	5.6 +/- 3.4	13.4 +/- 6.8

Short Orientation Memory Concentration Test

Full name of outcome measure	Short orientation memory concentration test
Abbreviated name	SOMCT (also OMCT, SOMC)
Author/s	R Katzman et al 1983
Objective	to assess impaired memory and concentration
Population	community dwelling elderly and people with various neurological impairments
Type of measure	clinical assessment
Mode of administration	clinician administration (can be via telephone)
Description	
Number of items	6 questions
Time required to perform	reported as "short"
Type of scale	overall score out of 28
Equipment required	nil
Instructions	refer to test sheet
Scoring	Two different methods of scoring:
	1. The more intuitive scoring where higher scores indicate better memory with a range of 0-28
	<22 is considered abnormal (Wade & Vergis 1999) (recommended)
	2. inverted where higher score means poorer memory
	>8/28 indicates significant level of cognitive impairment (Dellasega et al 2001)

Permission: granted September 2007

Short Orientation Memory Concentration Test

Ask each question. Score 0 for incorrect answer or indicated score for each correct answer or part of answer correct. Self correction is allowed. Indicate date of test at top.

	Date:	D					
		M					
		Y					
Questions	Score if correct		score	score	score	score	score
1. What year is it now?	4						
Answer							
2. What month is it now?	3						
Answer							
Repeat this address							
Address A/B/C/D							
3. About what time is it now? *(correct if within 1 hour)*	3						
Answer							
4. Count backwards from 20 to 1 *(2 points off for each error)*	4 or 2						
5. Say the months in reverse order *(2 points off for each error)*	4 or 2						
6. Repeat the address given *(2 points off for each error)*	10, 8, 6, 4 or 2						
Total score /28							

Address A	Address B	Address C	Address D
Mr John / Brown 42 / West St Gateshead	Mr Joe / Smith 34 / Church Rd Banbury	Mr Tom / White 26 / Station Rd Aylesbury	Mr Philip / Jones 18 / North Way Oxford

"/" denotes the 5 separate items to remember within address

Geriatric Depression Scale

Full name of outcome measure   Geriatric depression scale
Abbreviated name   GDS
Author/s   Brink et al 1982
Objective   to assess depression in elderly persons (identify the symptoms of depression)

Population   elderly persons
Type of measure   questionnaire
Mode of administration   self report, telephone interview
Description
    Number of items   30 items
    Time required to perform   10 minutes
    Type of scale   total score out of 30

                                        questions answered yes or no
Instructions   See questionnaire
Scoring   Original scoring for the scale – one point for answers as shown in table below.
Cut-off:
Normal 0-9
Mild depressives 10-19
Severe depressives 20-30

1. no	6. yes	11. yes	16. yes	21. no	26. yes
2. yes	7. no	12. yes	17. yes	22. yes	27. no
3. yes	8. yes	13. yes	18. yes	23. yes	28. yes
4. yes	9. no	14. yes	19. no	24. yes	29. no
5. no	10. yes	15. no	20. yes	25. yes	30. no

Permission: granted September 2007

Geriatric Depression Scale: questionnaire

Scale questions and scoring (circle Y = yes or N = no)

1. Are you basically satisfied with your life?	**Y / N**
2. Have you dropped many of your activities and interests?	**Y / N**
3. Do you feel that your life is empty?	**Y / N**
4. Do you often get bored?	**Y / N**
5. Are you hopeful about the future?	**Y / N**
6. Are you bothered by thoughts you can't get out of your head?	**Y / N**
7. Are you in good spirits most of the time?	**Y / N**
8. Are you afraid that something bad is going to happen to you?	**Y / N**
9. Do you feel happy most of the time?	**Y / N**
10. Do you often feel helpless?	**Y / N**
11. Do you often get restless and fidgety?	**Y / N**
12. Do you prefer to stay at home, rather than going out and doing new things?	**Y / N**
13. Do you frequently worry about the future?	**Y / N**
14. Do you feel you have more problems with memory than most?	**Y / N**
15. Do you think it is wonderful to be alive now?	**Y / N**
16. Do you often feel downhearted and blue?	**Y / N**
17. Do you feel pretty worthless the way you are now?	**Y / N**
18. Do you worry a lot about the past?	**Y / N**
19. Do you find life very exciting?	**Y / N**
20. Is it hard for you to get started on new projects?	**Y / N**
21. Do you feel full of energy?	**Y / N**
22. Do you feel that your situation is hopeless?	**Y / N**
23. Do you think that most people are better off than you are?	**Y / N**
24. Do you frequently get upset over little things?	**Y / N**
25. Do you frequently feel like crying?	**Y / N**
26. Do you have trouble concentrating?	**Y / N**
27. Do you enjoy getting up in the morning?	**Y / N**
28. Do you prefer to avoid social gatherings?	**Y / N**
29. Is it easy for you to make decisions?	**Y / N**
30. Is your mind as clear as it used to be?	**Y / N**

Total score _____/30

Manual Muscle Testing

Full name of outcome measure	Manual muscle testing
Abbreviated name	MMT
Author	Lovett (1917) cited in Mulroy 1997
Objective	to measure muscle weakness in a clinical environment
Population	generic
Type of measure	physical test (subjective, semi-quantitative
Mode of administration	clinician administered
Description	
Equipment required	nil
Type of scale	Ordinal rating scale, out of 6 points
Time required to perform	30 seconds per muscle group
Instructions	Starting position standardised to offer best fixation of body as a whole. Stabilise proximal to the tested part Place body part in precise anti-gravity test position (for grades >3) OR to allow movement in horizontal plane for muscles that are <3. Apply resistance directly opposite the line of pull of the muscle, in a gradual fashion and as distal as possible (longest lever) Test position is muscle in midrange
Scoring	**Grade 0** = no contraction seen/felt 1 = tendon becomes prominent or feeble contraction felt in muscle but no visible movement 2 = movement through complete range of 3 = holds test position antigravity 4 = holds test position against moderate pressure from clinician 5 = holds test position against strong pressure Addition of '+' or '-' to numeric grade indicates moderation or incomplete success with definitions as above
Special considerations	Recommended that grades be obtained by a single rater Sensitivity decreases with grades >3+ (application of clinician resistance is variable)

Permission: not required.

Tardieu Scale

Full name of outcome measure	Tardieu scale
Abbreviated name	na
Author	original development by Tardieu 1950s
Objective	to measure spasticity based on muscle responses during passive movement at varying velocities
Population	people with altered muscle tone
Type of measure	physical test
Mode of administration	clinician administered
Description	
Equipment required	goniometer; lower limb testing requires participant to be supine
Type of scale	Ordinal rating scale, 5 points
Time required to perform	30 seconds per muscle group
Instructions	Starting position:
	Minimise distractions/stimulation.
	Test similar time of day
	Muscle starting position should be constant relative to body, starting from position of minimal stretch wherever possible.
	Other body part positions (eg neck) to be kept constant for all tests
	Upper limb – test in sitting, elbow flexed to 90°, shoulder neutral
	Lower limb – test in supine, altering hip or knee angle from neutral to 90° depending on muscle group being tested.
	Procedure:
	Take muscle through full passive range of movement (PROM) to determine full range at slowest speed **(V1).**
	Repeat test at speed (as fast as possible) **(V3).** The angle at which a catch (resistance) is first felt is noted.
	Can also be repeated for **V2** (where speed is that of limb falling into gravity)
Scoring	***Quality of muscle reaction (X)***
	0=no resistance through out course of passive movement (normal value)
	1=slight resistance throughout course of PROM, with no clear catch at a precise angle
	2=clear catch at a precise angle, interrupting PROM, followed by release
	3=fatigable clonus (<10s when maintain pressure) occurring at precise angle

4=infatigable clonus (>10s when maintain pressure) at precise angle.

Angle of muscle reaction (Y)
The difference between the full PROM (during V1) and the angle of catch at V2 or V3 = the spasticity angle
Normal value would be 0 difference and equal to normal range

Standard error of measurement:
5° hip adductors, 5.5° calf, 9° hamstrings (children with CP)

Special interpretations:
The angle at V1 and angle at V3 (assuming findings are objective and repeatable). The relationship between the two values can be used to establish and evaluate spasticity management.
For example:
A *large difference* between angle of V1 and angle of V3 may indicate a large dynamic component in which case there is more opportunity for change with pharmacological intervention (eg Botulinum toxin)
A *small difference* between the angles may indicate a more fixed contracture of the muscle, suggesting less opportunity to use pharmacological interventions.

The PROM and normal range of movement.
If V1 PROM values are near a normal range, then pharmacological management is more likely to be effective
If V3 values are within a slightly shortened range, further management beyond pharmacology may be required (eg splinting or casting)
If V3 values are within a severely shortened range this may indicate contracture (passive shortening) and pharmacology may be ineffective.

Comparison and Interpretation.
The Tardieu Scale should be completed on repeated occasions of testing, and the scores should be compared between testings in order to obtain an understanding of any change in spasticity. The higher the score in the "X" scale, the greater the spasticity. This scale alone can be applied for clinical information.

Permission: not required

Tardieu Scale: example of recording

1. Quality of movement (X)

This is scored as
0 - no resistance throughout the course of the passive movement
1 - slight resistance throughout the course of the passive movement, with no clear catch at a precise angle
2 - clear catch at a precise angle, interrupting the passive movement, followed by release
3 - fatigable clonus (<10 secs when maintaining pressure) occurring at a precise angle
4 - infatigable clonus (>10 seconds when maintaining pressure) at a precise angle

Muscle group list	Quality of movement
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

2. Range of Movement

Muscle group list	Movement	ANGLE (degrees) at which muscle reaction occurs (Y)		
		VI (PROM)	V2 (gravity)	V3 (fast as possible)
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

e.g.

Muscle group list	Movement	ANGLE (degrees) at which muscle reaction occurs (Y)		
		VI (PROM)	V2 (gravity)	V3 (fast as possible)
Hamstrings	Knee ext	-70 degrees	-50 degrees	-30 degrees

Wolf Motor Function Test

Full name of outcome measure	Wolf motor function test
Abbreviated name	WMFT
Author	S Wolf, D Lecraw, L Barton, B Jann (1989)
Objective	to test upper extremity performance (time based) and provide information regarding joint-specific and total-limb movements
Population	people with upper limb impairments, people post stroke, brain injury
Type of measure	physical test
Mode of administration	Clinician administered, performance based
Description	
Equipment required	table, box, sandbag, 1 lb weight, can, pencil, paper clip, checkers, cards, keys, towel and basket
Type of scale	continuous scale.
Time required to perform	15-30 min
Instructions	All tasks are performed as quickly as possible and are truncated at 120 sec. Tasks 1-6 involve timed joint-segment movements Tasks 7-15 consist of timed integrative functional movements
Scoring	Time taken for each task is summed. Will range up to 30 min maximum as worst score.

Permission: granted September 2007

Wolf Motor Function Test: timed tasks

All tasks are performed as quickly as possible and are truncated at 120 seconds (timing ceased). Tasks are as follows:

1. Forearm to table (side):
   Subject attempts to place forearm on the table by abduction at the shoulder _____s

2. Forearm to box (side):
   Subject attempts to place forearm on the box by abduction at the shoulder _____s

3. Extend elbow (side):
   Subject attempts to reach across the table by extending the elbow (to the side) _____s

4. Extend elbow (to the side) with weight:
   Subject attempts to push the sandbag against outer wrist joint across the table
   by extending the elbow _____s

5. Hand to table (front):
   Subject attempts to place involved hand on the table _____s

6. Hand to box (front):
   Subject attempts to place involved hand on the box _____s

7. Reach and retrieve (front):
   Subject attempts to pull 1 lb weight across table by using elbow flexion and
   cupped wrist _____s

8. Lift can (front):
   Subject attempts to lift can and bring it close to lips with a cylindrical grasp _____s

9. Lift pencil (front):
   Subject attempts to pick up pencil by using 3-jaw chuck grasp (tripod) _____s

10. Pick up paper clip (front):
    Subject attempts to pick up paper clip by using a pincer grip _____s

11. Stack three checkers (front):
    Subject attempts to stack checkers onto centre checker _____s

12. Flip three cards (front):
    Using the pincer grip, subject attempts to flip each card over _____s

13. Turning the key in lock (front):
    Using pincer grasp, while maintaining contact, subject turns key fully left/ right _____s

14. Fold towel (front):
    Subject grasps towel, folds it lengthwise, and then uses the tested hand to fold
    the towel in half again _____s

15. Lift basket (standing):
    Subject picks up basket by grasping the handles and placing it on table _____s

TOTAL TIME: _____

Step test

Full name of outcome measure	Step test
Abbreviated name	na
Author	Hill, KD, Bernhardt J, McGann AM, Maltese D, Berkovits D. 1996.
Objective	to test dynamic standing balance via single limb stance
Population	community dwelling adults people post stroke
Type of measure	physical test
Mode of administration	performance based
Description	
Equipment required	one step: 7.5cm high, 41 cm wide, 30 cm deep; stopwatch
Time required to perform	15s to perform test
Instructions	Person stands unsupported with feet parallel and the block 5cm directly in front of them.
	Therapist stands to one side and steadies block with their foot.
	Person instructed to place nominated stepping foot completely on to block then return it fully back to the floor, repeatedly *as fast as possible.*
	Also instructed to not move opposite (supporting) foot during the test period.
	Therapist can demonstrate test and allow several practice steps.
	Testing period commences when therapist says "go" and starts stopwatch Testing finishes when nominated period reached (15 seconds).
	If the therapist has to provide hands-on support, counting of steps stops and this becomes the final score.
Scoring	Count number of completed steps - foot fully on step and back to floor in 15s.
	Score for right leg and left leg.
	Normative scores (Healthy elderly):
	R) leg: Mean 17.67 (sd 3.22) range 12-25
	L) leg: Mean 17.35 (3.03) range 12-24
	Unaffected leg: mean 6.95 (4.55) 0-16
	Affected leg: mean 6.39 (4.53) 0-14
	NB both affected and nonaffected leg tests may be impaired for this in stroke as the test involves lifting the affected leg and weightbearing on it for the opposite test

Permission: granted October 2007

Activities-specific Balance Confidence Scale

Full name of outcome measure	Activities-specific balance confidence scale
Abbreviated name	ABC Scale
Author/s	LE Powell and AM Myers, 1995.
Objective	to test balance and objectify balance confidence/fear of falling in older adults and offer greater sensitivity in scoring
Population	community dwelling, physically active (older) adults
Type of measure	questionnaire
Mode of administration	self-report or interview
Description	
Number of items	16
Time required to perform	allow 5-10min to complete
Type of scale	0-100 numerical scale
Instructions	The participant is asked to rate their *CONFIDENCE* in performing each of the activities on a scale from 0 (no confidence) to 100% (complete confidence) without losing balance or becoming unsteady
Scoring/interpretation	<50 indicates a low level of physical functioning 50-80 indicates moderate level of physical functioning >80 indicates high level of physical function
Special considerations	Requires level of cognition to understand difference between *confidence* doing tasks and actual ease of performance

Permission: not required

Activities-specific Balance Confidence Scale: Scoring sheet

Please read the following list of activities that you may encounter in daily life. Please rate your *CONFIDENCE* in performing each of these activities *without losing balance or becoming unsteady*. Use a scale from 0 (not confident) to 100% (completely confident).

	Not confident at all	Fairly confident	Completely confident
1. walk around the house	0%_ __ __ __ _50%_ __ __ __ _100%		
2. up and down stairs	0__ __ __ __ __50__ __ __ __ __100		
3. pick up a slipper from the floor	0__ __ __ __ __50__ __ __ __ __100		
4. reach at eye level	0__ __ __ __ __50__ __ __ __ __100		
5. reach on tip toes	0__ __ __ __ __50__ __ __ __ __100		
6. stand on a chair to reach	0__ __ __ __ __50__ __ __ __ __100		
7. sweep the floor	0__ __ __ __ __50__ __ __ __ __100		
8. walk outside to a nearby car	0__ __ __ __ __50__ __ __ __ __100		
9. get in/out of a car	0__ __ __ __ __50__ __ __ __ __100		
10. walk across the parking lot	0__ __ __ __ __50__ __ __ __ __100		
11.up and down a ramp	0__ __ __ __ __50__ __ __ __ __100		
12. walk in a crowded mall	0__ __ __ __ __50__ __ __ __ __100		
13. walk in crowd / get bumped	0__ __ __ __ __50__ __ __ __ __100		
14. escalator holding rail	0__ __ __ __ __50__ __ __ __ __100		
15. escalator NOT holding rail	0__ __ __ __ __50__ __ __ __ __100		
16. walk on icy(slippery) footpaths	0__ __ __ __ __50__ __ __ __ __100		

Average score =   _____/16

                         =   _____

Postural Assessment Scale for Stroke patients

Full name of outcome measure	Postural assessment scale for stroke patients
Abbreviated name	PASS
Author	C Benaim, DA Pérennou, J Villy, M Rousseaux, JY Pelissier, 1999. (adapted from BL Motor Assessment)
Objective	to assess and monitor postural control after stroke, in particular: ability to maintain posture and ensure equilibrium in changing position
Population	community dwelling adults people post stroke
Type of measure	physical test
Mode of administration	performance based
Description	
Equipment required	height adjustable plinth
Time required to perform	1-10 min to perform test
Instructions	see scoring sheet
Scoring	score 0-3 for each of the 12 tests (4 point) Total score of 36 The following table shows reference scores for people with stroke 30 days after onset in terms of percent achieving each level for each item, where 0 is worst and 3 is best (Benaim et al 1999)

Permission: granted Oct 2007

Item description	Level 0 %	Level 1 %	Level 2 %	Level 3 %
Supine to affected side lateral	8.7	8.7	10.3	72.4
Supine to non-affected side lateral	12.1	12.1	12.1	63.8
Supine to sitting up on edge of table	13.8	17.2	13.8	55.2
Sitting without support	3.5	6.9	8.6	81
Sitting on edge of table to supine	12.1	12.1	20.7	55.2
Sitting down to standing up	25.9	19	8.6	46.6
Standing up to sitting down	24.1	13.8	6.9	55.2
Standing with support	15.5	17.2	10.3	56.9
Standing without support	44.8	6.9	6.9	41.4
Standing picking up a pencil from floor	56.9	3.5	8.6	31
Standing on non-paretic leg	43.1	22.4	6.9	27.9
Standing in paretic leg	67.2	19	1.7	12.1

Postural Assessment Scale for Stroke patients: Scoring sheet

Maintaining a posture

1. Sitting without support (sitting on the edge of a 50cm high examination table) with the feet touching the floor
   - 0=cannot sit
   - 1=can sit with slight support, for example by 1 hand
   - 2=can sit for >10seconds without support
   - 3=can sit for 5 minutes without support

2. Standing with support (feet position free, no other constraints)
   - 0=cannot stand, even with support
   - 1=can stand with strong support of 2 people
   - 2=can stand with moderate support of 1 person
   - 3=can stand with support of only 1 hand

3. Standing without support (feet position free, no other constraints)
   - 0=cannot stand without support
   - 1=can stand without support for 10 sec or leans heavily on 1 leg
   - 2=can stand without support for 1 minute or stands slightly asymmetrically
   - 3=can stand without support for >1 min and at the same time perform arm movements above the shoulder level

4. Standing on non-paretic leg (no other constraints)
   - 0=cannot stand on non-paretic leg
   - 1=can stand on non-paretic leg for a few seconds
   - 2=can stand on non-paretic leg for >5 sec
   - 3=can stand on non-paretic leg for >10sec

5. Standing on paretic leg (no other constraints)
   - *Same scoring as item 4.*

Changing posture

6. Supine to affected side lateral *
7. Supine to non-affected side lateral *
8. Supine to sitting up on the edge of the table *
9. Sitting on the edge of the table to supine *
10. Sitting to standing up *
11. Standing up to sitting down *
12. Standing, picking up a pencil from the floor

   - 0=cannot perform the activity
   - 1=can perform the activity with much help
   - 2=can perform the activity with a little help
   - 3=can perform the activity without help

* performed using 50cm plinth   Total Score

Timed Up-and-Go Test

Full name of outcome measure	Timed up-and-go test
Abbreviated name	TUG
Author/s	D Podsiadlo and S Richardson
Objective	to test functional mobility and falls risk
Population	community dwelling adults, geriatric populations, chronic and /or community dwelling people post stroke
Type of measure	physical test
Mode of administration	performance based

Description

Equipment required — chair (height between 44 and 47cm), tape, ground marker, stopwatch, gait aid if applicable

Time required to perform — 2-5 min to perform test

Instructions — Participant is seated with their back against the back of a standardised chair (height as above) with a ground marker placed 3m away on the floor. Participant wears usual footwear, may use usual gait aid for indoor walking. No physical assistance is given. Instructed to "stand up from the chair (using their arms if they wish) and walk at a comfortable and safe pace to the ground marker, turn, return to the chair and then sit down" to commence on the command "GO". Perform one practice trial and then one that is timed.

Scoring — Timing in seconds from "go" and stops when participant has resumed seating with back against chair
<13.5 s considered "normal"
>13.5 s considered predictive of falls
Can use as single measure of within patient change irrespective of 'normative' score
(eg below – Steffen et al 2002).

Permission: granted October 2007

Healthy community-dwelling older adults: age in years	Females mean time (sd)	Males mean time (sd)
60-69	8 sec (2)	8 sec (2)
70-79	9 sec (2)	9 sec (3)
80-89	11 sec (3)	10 sec (1)

Motor Assessment Scale

Full name of outcome measure   (Modified) Motor assessment scale

Abbreviated name   MAS also MMAS

Author   JH Carr, RB Shepherd, L Nordholm and D Lynn, 1985.

Objective   to measure functional capabilities

Population   people post stroke

Type of measure   physical tests

Mode of administration   performance based, therapist administered/assessed

Description

    Equipment required   mat/bed; chair; 10m space; 4 stairs; table; 14cm ball; styrofoam cup; pen cap; pen and paper; 8 jelly beans; 2 tea cups; toothbrush; spoon; stopwatch

    Time required to perform   18-60 min to perform tests

    Instructions   See scoring sheet.

Scoring   Eight motor items each scored on 7 point ordinal scale (0-6) where 6 reflects maximum score for quality performance. Total optimal motor behaviour score 48. Most items are arranged in a hierarchy of difficulty such that a failure at level 3 means the item need not be tested at further levels. The exception is *Item 7 Advanced hand movements* where all 6 levels need to tested as there is no inherent hierarchy.

Permission: granted September 2007

Motor Assessment Scale: Instructions and scoring sheet

Item 1: supine to side lying – onto intact side
Level 1   Pulls him/herself into side lying. Participant pulls self into side lying with intact arm, moves affected leg with intact leg. Starting position must be supine, not knees flexed for all levels.
Level 2   Moves leg across actively and the lower half of the body follows. Arm is left behind body.
Level 3   Arm is lifted across body with other arm. Leg is moved actively and body follows in a block.
Level 4   Moves arm across actively and rest of the body follows in a block.
Level 5   Moves arm and leg and rolls to side but overbalances. Shoulder protracts and arm flexes forward.
Level 6   Rolls to side in 3 seconds. Must not use hands.

Item 2: Supine to sitting over side of bed
Level 1   Side lying. Lifts head sideways but cannot sit-up. (Participant assisted to side lying).
Level 2   Side lying to sitting over the side of bed. Therapist assists person with movement. Participant controls head position throughout.
Level 3   Side lying to sitting over side of bed. Therapist gives standby help by assisting legs over side of bed.
Level 4   Side lying to sitting over side of bed. With no standby help.
Level 5   Supine to sitting over side of bed (with no standby help)
Level 6   Supine to sitting over side of bed within 10s with no standby help.

Item 3: Balanced sitting
Level 1   Sits only with support. Therapist should assist person into sitting
Level 2   Sits unsupported for 10sec. Without holding on, knees and feet together, feet can be supported on floor.
Level 3   Sits unsupported with weight well forward and evenly distributed. Weight should be well forward at the hips, head and thoracic spine extended, weight evenly distributed on both sides.
Level 4   Sits unsupported, turns head and trunk to look behind. Feet supported and together on floor. Do no allow legs to abduct or feet to move. Have hands resting on thighs, do not allow hands to move on to plinth.
Level 5   Sits unsupported, reaches forward to touch floor and returns to starting position. Feet supported on floor. Do not allow participants to hold on. Do not allow legs and feet to move, support affected arm if necessary. Hand must touch floor at least 10cm in front of foot.
Level 6   Sits on stool unsupported, reaches sideways to touch floor and returns to starting position. Feet supported on floor. Do not allow participant to hold on. Do not allow legs and feet to move, support affected arm if necessary. Participant must reach sideways not forward.

Item 4: Sitting to standing
Level 1   Gets to standing with help from therapist. Any method.
Level 2   Gets to standing with standby help. Weight unevenly distributed, uses hands for support.
Level 3   Gets to standing. Do not allow uneven weight distribution or help from hands.
Level 4   Gets to standing and stands for 5 sec with hips and knees extended. Do not allow uneven weight distribution for following three levels
Level 5   Sitting to standing to sitting with no standby help. Full extension hips/ knees
Level 6   Sitting to standing to sitting with no standby help 3 times in 10 sec.

Motor Assessment Scale: Instructions and scoring sheet *continued*

Item 5: Walking

Level 1   Stands on affected leg and steps forward with other leg. Weight bearing hip must be extended. Therapist may give standby help.
Level 2   Walks with standby help from one person
Level 3   Walks 3 m alone or using any aid but with no standby help.
Level 4   Walks 5m with no aid in 15 sec.
Level 5   Walks 10m with no aid, turns around, picks up a small sand bag from floor and walks back in 25sec. May use either hand.
Level 6   Walks up and down 4 steps with or without an aid but without holding on to the rail 3 times in 35 sec.

Item 6: Upper arm function

Level 1   Lying, protract shoulder girdle with arm in elevation. Therapist places arm in position and supports it with elbow in extension.
Level 2   Lying, hold extended arm in elevation for 2 sec. Therapist should place arm in position and participant must maintain with some external rotation. Elbow must be held within 20° of full extension.
Level 3   Flexion and extension of elbow to take palm to forehead with arm as in level 2. Therapist may assist in supination of forearm.
Level 4   Sitting, hold extended arm in forward flexion at 90° to body for 2 sec. Therapist should place arm in position and patient must maintain with some external rotation and elbow extension. Do not allow excess shoulder elevation.
Level 5   Sitting, patient lifts arm to above position and holds it there for 10sec, then lowers it. Participant must maintain with some external rotation but no pronation.
Level 6   Standing, hand against wall, maintain arm position while turning body towards wall. Have arm abducted to 90° with palm flat against wall.

Item 7: Hand movements

Level 1   Sitting, extension of wrist. Participant sitting at a table with forearms resting on the table. Therapist places cylindrical object in palm of their hand. Participant asked to lift object off table by extending wrist, no elbow flexion.
Level 2   Sitting, radial deviation of wrist. Therapist should place forearm in mid-pronation/supination, ie resting on ulnar side, thumb in line with forearm and wrist in extension, fingers around cylindrical object, Participant is asked to lift hand off table. Do not allow elbow flexion or pronation.
Level 3   Sitting, elbow into side, pronation and supination. Elbow unsupported, at right angles. ¾ range acceptable.
Level 4   Reach forward, pick up large ball of 14cm diameter with both hands and put it down. Ball should be on table so far in front that the participant has to extend arms fully to reach it. Shoulders must be protracted, elbows extended, wrist neutral or extended. Palms should be kept in contact with the ball.
Level 5   Pick up a polystyrene cup from table and put it down on table across other side of body. Do not allow alteration in shape of cup.
Level 6   Continuous opposition of thumb and each finger more than 14 times in 10 sec. Each finger is turn taps thumb, staring with the index finger. Do not allow thumb to slide from one finger to another, or to go backwards.

Item 8: Advanced hand activities

Level 1   Picking up the top of a pen and putting it down again. Participant stretches forward, picks up pen top, releases it on table close to body.
Level 2   Picking up one jelly bean from a cup and placing it in another cup. Teacup contains 8 beans. Both cups must be at arms length. Left hand takes from cup on right and releases it in cup on left.

Level 3	Drawing horizontal lines to stop at a vertical line 10 times in 20 sec. At least 5 lines must touch and stop at the vertical line.
Level 4	Holding a pencil, making rapid consecutive dots on a sheet of paper. Participant must do at least 2 dots per sec for 5 sec. Picks pencil up and positions it without assistance. Must hold pencil as for writing and make a dot not a stroke.
Level 5	Taking a dessert spoon of liquid to the mouth. Do not allow head to lower towards spoon. Do not allow liquid to spill
Level 6	Holding a comb and combing hair at back of head.

Total Score: _____(maximum 48)

Six Minute Walk Test

Full name of outcome measure	Six minute walk test
Abbreviated name	6MWT
Author/s	KH Cooper et al (1968); R Butland et al 982

Objective	to test physical mobility function and cardiovascular function (gait endurance)
Population	community dwelling (older) adults people post stroke older adults with mobility/balance impairments
Type of measure	physical test
Mode of administration	performance based
Description	
Equipment required	tape measure/pre-marked area for walking; level, clear walking surface; stopwatch
Time required to perform	6 min to perform test plus 1-2 min administration time
Instructions	Participant starts at beginning of walking track and is instructed to *"walk as quickly as you can for 6 minutes to cover as much ground as possible. You may stop if you have to but continue again as soon as you are able"* No assistance or motivational feedback is given other than simple "going well" comments or reminders of time elapsed.
Scoring	Three methods of analysis: **Ratio – distance covered in metres** May also measure cardiovascular indicators such as BP, HR or perceived exertion (Borg VAS) pre and post walk. **Regression model for normative scores:** Distance = 868.8-(2.99xage)-(74.7xgender) where men=0, women=1 **Reference equation for distance:** Men: Distance= (7.57xheight cm)-(5.02xage)-(1.76xweight kg)-309m Women: distance= (2.11xheight cm)-(2.29xweight kg)-(5.78xage)+667m Distance=762.26-(4.81xage)-(121.97xassistive device) where assistive device yes=1, no=0.

Normative scores (Gibbons et al, 2001; Steffen et al 2002):

Healthy participants: Age	Females Mean distance	Males Mean distance
20-40	699 +/- 37m	800 +/- 83m
41-60	670 +/- 85m	671 +/- 56m
61-80	583 +/- 53m	687 +/- 89m
80-89	392 +/- 85m	417 +/- 73m

Permission: not required

Chedoke Arm and Hand Activity Inventory

Full name of outcome measure   Chedoke arm and hand activity
                                 inventory (13 item version)
Abbreviated name   CAHAI -13
Author   Chedoke-McMaster Hospitals
                                 Foundation
Objective   to measure functional ability of the
                                 hemiplegic upper limb
Population   people post stroke
Type of measure   physical tests
Mode of administration   inventory based tests - therapist
                                 administered
Description
    Number of items   13 real-life function items (involving both
                                 upper limbs)
                                 Also shortened versions
                                 CAHAI-7 (items 1-3, 6,7,10 and 11)
                                 CAHAI-8 (plus item 4)
                                 CAHAI-9 (plus item 5)
    Type of scale   Ordinal score
    Time required to perform   25 min
    Instructions   See activity scale
Scoring   Seven point quantitative scale for each
                                 functional item, summed to give score range
                                 from 13-91 with higher scores indicating
                                 better performance.

Permission: granted September 2007

Chedoke Arm and Hand Activity Inventory: Activity scale

Activity scale
1. total assist (weak U/L < 25%)
2. maximal assist (weak U/L = 25-49%)
3. moderate assist (weak U/L = 50-74%)
4. minimal assist (weak U/L > 75%)
5. supervision
6. modified independence (device)
7. complete independence (timely, safely)

Affected Limb: **Score: /7**

1. Open jar of coffee   □ holds jar   □ holds lid   ☐

2. Call 000   □ holds receiver   □ dials phone   ☐

3. Draw a line with a ruler   □ holds ruler   □ holds pen   ☐

4. Put toothpaste on toothbrush   □ holds toothpaste   □ holds brush   ☐

5. Cut medium consistency putty   □ holds knife   □ holds fork   ☐

6. Pour a glass of water   □ holds glass   □ holds pitcher   ☐

7. Wring out washcloth   ☐

8. Clean a pair of eyeglasses   □ holds glasses   □ wipes lenses   ☐

9. Zip up the zipper   □ holds zipper □ holds zipper pull   ☐

10. Do up five buttons   ☐

11. Dry back with towel   □ reaches for towel   □ grasps towel   ☐

12. Place container on table   ☐

13. Carry bag up the stairs   ☐

Total score: **/91**

Hand Active Sensation Test

Full name of outcome measure   Hand active sensation test
Abbreviated name   HASTe
Author   P Williams, D Basso, J case-Smith,
                                    D Nichols-Larsen, 2006.
Objective   to measure haptic touch after stroke
                                    (tests weight and texture not temperature,
                                    surface compliance , size or shape)
Population   people post stroke
Type of measure   physical (haptic) sensation tests
Mode of administration   performance based, therapist
                                    administered/assessed

Description
    Equipment required   textured objects which closely resemble
                                    the chosen object (eg drinking container
                                    and Styrofoam, plastic, paper etc) chair and
                                    table such that patient can move objects
                                    with ease; curtain to place over test arm and
                                    objects; scales to measure object weight.
    Time required to perform   25 min
    Instructions   1. Use 1 hand to first manually explore
                                    the target object and then each possible
                                    match that vary by weight or texture (never
                                    both) and "find the match"
                                    2. You can touch each object as many times
                                    as you need to determine your answer
                                    3. You have a maximum of 5 minutes for
                                    each trial
Scoring   9 test objects matched twice – gives 18
                                    trials. Total score of 0 -18 using
                                    dichotomous scoring for each trial, where 0
                                    is incorrect match and 1 is scored for a
                                    correct match
                                    A score of 13 has been identified as an
                                    appropriate cut-off score between abnormal
                                    and normal performance.

Special considerations: matching occurs from 3 objects at a time to prevent guessing or chance identification. Participants are not explicitly told which quality (texture or weight) they are matching to. If elbow or shoulder movement prevents a participant from moving between objects the examiner slides the objects over to and away from the participant at their request, but does not assist with manual exploration. This requires participants to have sufficient hand movement to explore the object once in reach. Once the participant has identified the match they indicate to the examiner either verbally or pointing the number on the curtain. Participants are not encouraged to verbally describe the objects. Two sample object matches are used first as demonstration (that do not reappear in the test items). No feedback is given during the test.
Permission: *Developers currently applying for patent so no clear details on measure or objects as of October 2007.*

Nine Hole Peg Test

Full name of outcome measure	Nine hole peg test
Abbreviated name	9HPT
Author	First described by M Kellor et al 1971 (cited Wade, 1989)
Objective	to measure dexterity and strength in the upper limb
Population	all
Type of measure	physical test
Mode of administration	performance based, therapist administered/timed, assessed visually

Description

Equipment required	Nine hole peg board (holes 10mm diam) with one dish containing 9 pegs (plastic or wood, 9mm diameter, 32mm long); stopwatch
Time required to perform	5 min
Instructions	Place the pegboard in front of the subject and dish in front of test hand. Take 1 peg at a time from the dish and place in a hole until all 9 pegs are in the board Timing starts when subject first touches first peg and ceases when their hand leaves the final peg. If a peg is fumbled or dropped, timing is stopped and a trial recommenced from the start. A practice trial is permitted. Dominant hand is tested first.
Scoring	1. timed score, in seconds, required to place all 9 pegs in the holes or 2. timed score in seconds to place *and remove* all 9 pegs 3. the number of pegs placed in 50 seconds and then calculate number of pegs placed per second
Normative values	Completion in 18s or less (0.5 peg/s) is considered normal (Heller et al, 1987) Age and hand related norms: means (SD) in seconds (Oxford Grice et al, 2003)

Age	Male R hand	Male L hand	Female R hand	Female L hand
51-55	18.93 (2.37)	19.84 (3.10)	17.38 (1.88)	18.92 (2.29)
56-60	20.90 (4.55)	21.64 (3.39)	17.86 (2.39)	19.48 (3.26)
61-65	20.87 (3.50)	21.60 (2.98)	18.99 (2.18)	20.33 (2.76)
66-70	21.23 (3.29)	22.29 (3.71)	19.90 (3.15)	21.44 (3.97)
71 +	25.79 (5.60)	25.95 (4.54)	22.49 (6.02)	24.11 (5.66)

Permission: not required

Hand Grip Strength Test

Full name of outcome measure	Hand grip strength test (maximal and sustained)
Abbreviated name	HGST and SGST
Author	various
Objective	to measure isometric grip strength – can measure both maximal grip strength and ability to sustain grip strength over 6sec
Population	all, including stroke
Type of measure	physical test
Mode of administration	performance based
Description	
Equipment required	grip strength dynamometer eg Jamar dynamometer (Lafayette Instruments, Lafayette, IN, USA)
Time required to perform	2 min
Instructions	Subjects seated with shoulders in 0° abduction and neutral rotation, elbow 90° flexion, forearm in neutral supin/pronation, wrist 0-30° extension. Maximal grip strength test: Asked to grip dynamometer as hard as they can (handle position 2 on Jamar). Sustained grip strength test: Position as above where subject sustains 80% of maximal grip strength over a six second trial "squeeze the dynamometer for 6 sec as hard as you can"
Scoring	Maximal: peak force associated with single trial. Measured in pounds, kilo/grams or converted to Newtons. Sustained: to be accurate requires instrumentation to plot strength/duration curve. Clinician can observe/record time in seconds that subject sustains 80% of maximal force until reaches maximum of 6s.
Special considerations:	Technical errors of measurement have been described as 15.8 and 21.3N for the left and right hands respectively, therefore any change should be above these values to be considered clinically relevant (Bohannon and Schaubert, 2005).
Permission: not required	

Frenchay Dysarthria Assessment

Full name of outcome measure   Frenchay dysarthria assessment
Abbreviated name   FDA
Author   Enderby 1983
Objective   to measure motor speech function – assesses oral peripheral structure, function and speech

Population   adults, including neurological diagnoses
Type of measure   Test
Mode of administration   performance based, clinician rated
Description
      Equipment required   FDA protocol plus FDA computer-based differential analysis software
      Type of scale   29 tasks, rated as performance scores from 0-8 based on quality and quantity of performance in 8 major areas: reflexive swallowing, respiratory functioning, lips, jaw, palate, larynx, tongue, rate of speech and overall speech intelligibility.
      Time required to perform   not stated
      Instructions   Specified in Frenchay Dysarthria Assessment manual: Enderby P (1983) San Diego, CA: College-Hill Press.

Scoring   Specified in the FDA Assessment Manual (Enderby,1983). Gives scores for each sub-test as well as overall oral motor score. FDA software allows comparison of performance scores to mean clusters of scores from normative research groups (specific diagnostic categories)

Special consideration: Needs to be purchased

Western Aphasia Battery

Full name of outcome measure	Western aphasia battery
Abbreviated name	WAB
Author	Kertesz 1982
Objective	to measure overall aphasia severity
Population	adults, with neurological diagnoses leading to aphasia
Type of measure	Test
Mode of administration	Clinician administered
Description	
Equipment required	Battery with instructions, test sheets, pen and paper.
Type of scale	multiple sub-tests, rated on scale 0-3, giving 4 overall quotients (out of 100)
Time required to perform	60-90min
Instructions	Refer to Instruction manual: Kertesz A (1982) Western Aphasia battery. New York: Grune and Stratton.
Scoring	Gives 4 possible summary scores, each expressed as quotient (each 100.0 max points). Four quotients and subtests.

1. Aphasia Quotient (AQ): spontaneous speech content, spontaneous speech fluency, comprehension, repetition and naming.
2. Reading quotient (RQ): comprehension of paragraphs, and oral and silent comprehension of sentences, words and spelling
3. Writing Quotient (WQ): spontaneous writing, word letter, number and sentence dictation, serial writing (alphabet, numerals) and copying
4. Language Quotient (LQ): from those scores comprising the AQ, RQ and WQ (Shewan, 1986): LQ from weighting as spontaneous speech (20%), auditory comprehension (20%), repetition (10%), naming (10%), reading (20%) and writing (20%).

Special consideration:	Needs to be purchased

Voice Handicap Index

Full name of outcome measure   Voice handicap index
Abbreviated name   VHI
Author   Jacobson et al 1997
Objective   to measure voice pathology in terms of level of handicap and disability –
Population   adults with vocal disorders (varied)
Type of measure   questionnaire
Mode of administration   self report
Description
         Number of items   30 items in 3 domains: emotional, physical and functional aspects of voice disorders
         VHI-10 shortened version with 10 items
         Type of scale   5 point Likert scale
         Time required to perform   5 min
         Instructions   See Index
Scoring   maximum score of 120 represents maximum perceived handicap resulting from voice disorder

Special considerations: VHI-10 is equal to VHI in terms of utility and validity and may be preferable in a clinical setting.
It uses the following items:
F1, F3, P1, P4, P6, P7, P9, E2, E3, E5.

Permission: granted September 2007

Voice Handicap Index

Instructions: These are statements that many people have sued to describe their voices and the effects of their voices on their lives. Circle the response that indicates how frequently you have the same experience.

0 = never   1 = almost never   2 = sometimes   3 = almost always   4 = always

Part I: Functional

F1	My voice makes it difficult for people to hear me	0	1	2	3	4
F2	People have difficulty understanding me in a noisy room	0	1	2	3	4
F3	My family has difficulty hearing me when I call them throughout the house	0	1	2	3	4
F4	I use the phone less often than I would like to	0	1	2	3	4
F5	I tend to avoid groups of people because of my voice	0	1	2	3	4
F6	I speak with friends, neighbours, or relatives less often because of my voice	0	1	2	3	4
F7	People ask me to repeat myself when speaking face-to-face	0	1	2	3	4
F8	My voice difficulties restrict my personal and social life	0	1	2	3	4
F9	I feel left out of conversations because of my voice	0	1	2	3	4
F10	My voice problem causes me to lose income	0	1	2	3	4

Part II: Physical

P1	I run out of air when I talk	0	1	2	3	4
P2	The sound of my voice varies throughout the day	0	1	2	3	4
P3	People ask "what's wrong with your voice?"	0	1	2	3	4
P4	My voice sounds creaky and dry	0	1	2	3	4
P5	I feel as though I have to strain to produce voice	0	1	2	3	4
P6	The clarity of my voice is unpredictable	0	1	2	3	4
P7	I try to change my voice to sound different	0	1	2	3	4
P8	I use a great deal of effort to speak	0	1	2	3	4
P9	My voice is worse in the evening	0	1	2	3	4
P10	My voice "gives out" on me in the middle of speaking	0	1	2	3	4

Part III: Emotional

E1	I am tense when talking to others because of my voice	0	1	2	3	4
E2	People seem irritated with my voice	0	1	2	3	4
E3	I find other people don't understand my voice problems	0	1	2	3	4
E4	My voice problem upsets me	0	1	2	3	4
E5	I am less outgoing because of my voice problem	0	1	2	3	4
E6	My voice makes me feel handicapped	0	1	2	3	4
E7	I feel annoyed when people ask me to repeat	0	1	2	3	4
E8	I feel embarrassed when people ask me to repeat	0	1	2	3	4
E9	My voice makes me feel incompetent	0	1	2	3	4
E10	I am ashamed of my voice problem	0	1	2	3	4

Total score_____/120

The Royal Brisbane Hospital Outcome Measure for Swallowing

Full name of outcome measure   Royal Brisbane Hospital outcome measure for swallowing

Abbreviated name   RBHOMS

Author   RBH

Objective   to measure dysphagia outcomes in terms of oral intake

Population   adults with dysphagia (varied)

Type of measure   Observational and performance measure

Mode of administration   Clinician administered

Description

    Number of items   10 items

    Type of scale   Single point rating from ten levels which have been divided into 4 stages: not ordinal (ie higher number does not necessarily indicate an increase in functional capacity)

    Time required to perform   10 minutes

    Instructions   Refer to test manual (RBHOMS)

Scoring   Record stage (A,B,C,D) + level (1-10). A: nil by mouth; B: commencing oral intake; C: establishing oral intake and D: maintaining oral intake. 10 levels have been operationalised.

Special considerations: Reported to be sensitive in acute hospital setting, may have ceiling or plateau effects once patient reaches rehabilitation or community setting.

Permission: granted October 2007

The Royal Brisbane Hospital Outcome Measure for Swallowing

Stage and level descriptors

Stage	Level	Description	Characteristics
A. Nil by mouth	1	Patient aspirates secretions	+ pooling of saliva in oral cavity
			+ requires frequent oral/pharyngeal suctioning
			+ wet phonation
			+/- unsafe for trial swallow
			+/- drooling
			- protective cough
			TRACHEOTOMISED PATIENTS
			+ cuffed tracheostomy, cuff inflated
			+ saliva present in tracheal secretions
	2	Difficulty managing secretions but patient protecting airway	+ at risk of aspirating food/fluids on trial swallow
			+ swallowing trial with speech pathologist only
			+ protective cough
			+/- pooling of saliva in oral cavity
			+/- drooling
			+/- oral/pharyngeal suctioning
			+/- moist phonation
			TRACHEOSTOMISED PATIENTS
			+ able to cough aspirated secretions up into the mouth
			+/- cuff deflated
			- saliva present in tracheal secretions
	3	Coping with secretions	+ at risk of aspirating food/fluids on trial swallow
			+ swallowing trial with speech pathologist only
			+ protective cough
			- intra-oral pooling of secretions
			- drooling
			- oral/pharyngeal suctioning
			- moist phonation
			TRACHEOSTOMISED PATIENTS
			+ cuff deflated / uncuffed tracheostomy
			- saliva present in tracheal secretions
B. Commencing oral intake	4	Tolerates small amounts of thickened/thin fluids only	+ tolerating small amounts thickened/thin fluid only (eg post head/neck surgery having sips of water)
			+/- no-oral supplementation for food and/or fluid requirements (eg NG, IV, TPN, PEG)

			+/- supervision with regards to safety of swallow
			+/- meets all fluid and/or requirements orally
			- swallowing trial with speech pathologist only
C. Establishing oral intake	5	Commencing/continuing modified diet – supplementation is being provided	+ modified diet
			+ non-oral supplementation for food and /or fluid requirements
			+ at risk of aspiration if speech pathologist recommendations not followed
			+/- supervision with regards to safety of swallow
			+/- compensatory techniques
			+/- increased time with meals
			- meets all fluid and/or food requirements orally
	6	Commencing/continuing modified diet – no supplementation	+ modified diet
			+ meets all fluid and/or food requirements orally
			+at risk of aspiration if speech pathologist recommendations are not followed
			+/- compensatory techniques
			+/- increased time with meals – non-oral supplementation for food and/or fluid requirements
	7	Upgrading of modified diet	+ progression in diet towards 'normal' diet consistencies depending on aetiology of swallowing disorder (eg progression from thick to thin fluids in CVA patient: progression from liquid diet to solid I patients following head/neck surgery)
			+ meets fluid and/or food requirements orally
			+/- supervision with regards safety of swallow
			+/- compensatory techniques
			+/- increased time with meals
			+/- at risk of aspiration if speech pathologist recommendations not followed
			- non-oral supplementation for food and/or fluid requirements
D. Maintaining oral intake	8	Swallowing function at patient's optimal level	+ meets all fluid and/or food requirements orally
			+ independent in use of

			compensatory techniques if recommended (eg head rotation)
			+/- modified diet
			+/- supervision of meals with regards to safety of swallow (assistance with feeding not included)
			- non-oral supplementation for food/fluid requirements
			- further progression in diet given aetiology of swallowing problems
	9	Swallowing function at pre-morbid /preadmission level	+ swallow status (ie safety and appropriate diet consistency) is at premorbid/preadmission level
			+ meets all food and/or fluid requirements
			+ modified diet
			- non-oral supplementation for food/fluid requirements
	10	Swallowing function at better than premorbid /preadmission level	+ swallow status (ie safety and appropriate diet consistency) at better than premorbid/preadmission level
			+ meets food and/or fluid requirements orally
			+/- modified diet
			- non-oral supplementation for food and/or fluid requirements

Australian Therapy Outcome Measures

Full name of outcome measure   Australian therapy outcomes measures. Three versions – occupational therapy, physiotherapy and speech pathology

Abbreviated name   AusTOMs (AusTOMs-OT, AusTOMs-Physio and AusTOMs-Speech)

Author   various

Objective   to measure a person's level of impairment, activity limitation, participation restriction and distress/well-being in order to provide a holistic view of status in the three discipline domains

Population   generic

Type of measure   questionnaire

Mode of administration   clinician administered

Description

     Number of items   AusTOMS-OT: up to12 scales (those relevant to individual goals): learning and applying knowledge; functional walking and mobility; upper limb use; carrying out daily life tasks and routines; transfers; using transport; self-care; domestic life – home; domestic life – managing resources; interpersonal interactions and relationships; work, employment and education; community life, recreation leisure and play.
AusTOMs-physio: up to 9 disorder specific scales: Balance and postural control; cardiovascular system related functions; musculo-skeletal movement related functions; neurological movement related functions; pain; respiratory system functions; sensory functions; skin functions; urinary and bowel continence.
AusTOMs-speech: 6 scales:
Voice, speech, language, fluency, swallowing, cognitive communication

     Type of scale   6 point Likert scale

     Time required to perform   variable dependent on number of domains used

     Instructions   available from authors as kit with example case studies for training

Scoring   A rating for each domain is made using 0-5 where 0=complete difficulty and 5= no difficulty. Each point is fully defined and half-points can be allocated.

Normative score   5 for each independent domain.

Special considerations:
These measures are included in the compendium as non-core measures for those clinicians who have undergone the requisite training. Full instructions are therefore not part of this document.

Permission: not sought for reproduction.

Coping Strategy Indicator

Full name of outcome measure   Coping strategy indicator
Abbreviated name   CSI
Author   J Amirkhan 1990
Objective   situation specific measure to assess an
               individual's choice among strategies in any
               one coping event (person perceived)
Population   generic
Type of measure   Questionnaire
Mode of administration   self reported
Description
   Number of items   33 coping options for 3 distinct factors
               (problem solving, seeking social support
               and avoidance)
   Type of scale   3 point scale (a lot, a little or not at all)
   Time required to perform 15-20 mins
   Instructions   See questionnaire
Scoring   See scoring sheet after questionnaire

Permission: granted September 2007

Coping Strategy Indicator: Questionnaire

Sex: □ Male □ Female

Age:_____

Household Income:

□ less than $15,000   □ $25,000 to $34,999   □ $45,000 to $60,000
□ $15,000 to $24,999   □ $35,000 to $49,999   □ greater than $60,000

Number of persons in the household: _____

Highest completed education:
□ Primary school
□ High school
□ University
□ Graduate / Professional

Occupation: _____

We are interested in how people cope with the problems and troubles in their lives.

Listed below are several possible ways of coping. We would like you to indicate to what extent you, yourself, used each of these coping methods. All of your responses will remain anonymous.

Try to think of one problem you have encountered in the last six months or so. This should be a problem that was important to you, and that caused you to worry (anything from the loss of a loved one to a traffic fine, but one that was important to you).

Please describe this problem in a few words (remember, your answer will be kept anonymous):

_____

Did you remember to write down your problem? If not, please do so before going on.

Keeping that stressful event in mind, indicate to what extent you……

1. Let your feelings out to a friend?	□ A lot	□ A little	□ Not at all
2. Rearranged things around you so that your problem had the best chance of being resolved?	□ A lot	□ A little	□ Not at all
3. Brainstormed all possible solutions before deciding what to do?	□ A lot	□ A little	□ Not at all
4. Tried to distract yourself from the problem?	□ A lot	□ A little	□ Not at all

5. Accepted sympathy and understanding from someone? □ A lot   □ A little   □ Not at all

6. Did all you could to keep others from seeing how bad things really were? □ A lot   □ A little   □ Not at all

7. Talked to people about the situation because talking about it helped you to feel better? □ A lot   □ A little   □ Not at all

8. Set some goals for yourself to deal with the Situation? □ A lot   □ A little   □ Not at all

9. Weighed your options very carefully? □ A lot   □ A little   □ Not at all

10. Daydreamed about better times? □ A lot   □ A little   □ Not at all

11. Tried different ways to solve the problem until you found one that worked? □ A lot   □ A little   □ Not at all

12. Confided your fears and worries to a friend or relative? □ A lot   □ A little   □ Not at all

13. Spent more time than usual alone? □ A lot   □ A little   □ Not at all

14. Told people about the situation because just talking about it helped you to come up with solutions? □ A lot   □ A little   □ Not at all

15. Thought about what needed to be done to straighten things out? □ A lot   □ A little   □ Not at all

16. Turned your full attention to solving the problem? □ A lot   □ A little   □ Not at all

17. Formed a plan of action in your mind? □ A lot   □ A little   □ Not at all

18. Watched television more than usual? □ A lot   □ A little   □ Not at all

19. Went to someone (friend or professional) in order to help you feel better? □ A lot   □ A little   □ Not at all

20. Stood firm and fought for what you wanted in the situation □ A lot   □ A little   □ Not at all

21. Avoided being with people in general? □ A lot   □ A little   □ Not at all

22. Buried yourself in a hobby or sports activity to avoid the problem? □ A lot   □ A little   □ Not at all

23. Went to a friend to help you feel better

about the problem? □ A lot □ A little □ Not at all

24. Went to a friend for advice on how to
change the situation? □ A lot □ A little □ Not at all

25. Accepted sympathy and understanding from
friends who had the same problem? □ A lot □ A little □ Not at all

26. Slept more than usual? □ A lot □ A little □ Not at all

27. Fantasised about how things could have
been different? □ A lot □ A little □ Not at all

28. Identified with characters in novels or
movies? □ A lot □ A little □ Not at all

29. Tried to solve the problem? □ A lot □ A little □ Not at all

30. Wished that people would just leave you
alone? □ A lot □ A little □ Not at all

31. Accepted help from a friend or relative? □ A lot □ A little □ Not at all

32. Sought reassurance from those who know
you best? □ A lot □ A little □ Not at all

33. Tried to carefully plan a course of action
rather than acting on impulse? □ A lot □ A little □ Not at all

You may STOP here.

Thank you for your cooperation!
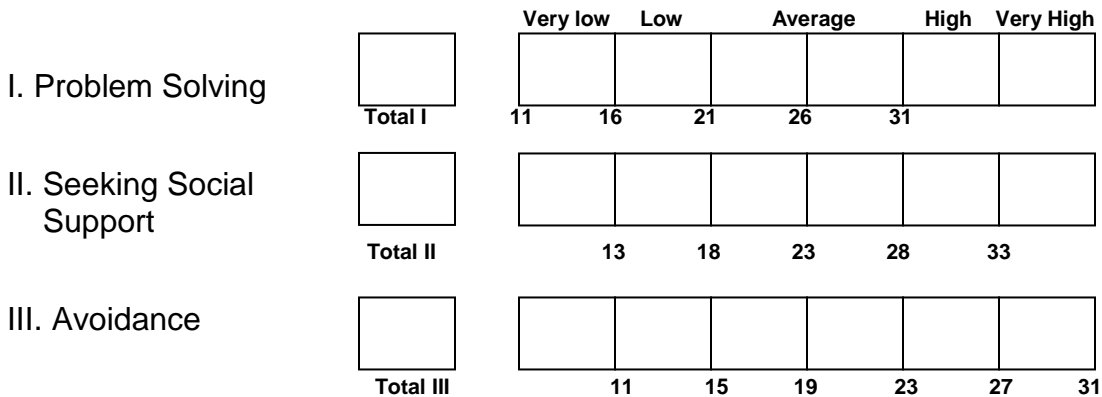
Coping Strategy Indicator: Scoring Sheet

1. For each response assign a numerical score:
   A lot = 3; A little=2, Not at all=1.

2. Enter the scores for each question in the appropriate column below:

SCALE I		SCALE II		SCALE III	
Item	Score	Item	Score	Item	Score
#2	_____	#1	_____	#4	_____
#3	_____	#5	_____	#6	_____
#8	_____	#7	_____	#10	_____
#9	_____	#12	_____	#13	_____
#11	_____	#14	_____	#18	_____
#15	_____	#19	_____	#21	_____
#16	_____	#23	_____	#22	_____
#17	_____	#24	_____	#26	_____
#20	_____	#25	_____	#27	_____
#29	_____	#31	_____	#28	_____
#33	_____	#32	_____	#30	_____
Total I	_____	Total II	_____	Total III	_____

3. Sum each column and enter the totals in the appropriate boxes below.

4. Mark each bar of the graph below at the point indicated by each column total.
Fill in the bar up to point to graphically indicate preferred coping strategy.

I. Problem Solving

	Very low	Low		Average		High	Very High

Total I   11   16   21   26   31

II. Seeking Social
Support

Total II   13   18   23   28   33

III. Avoidance

Total III   11   15   19   23   27   31

Neuropsychology Behavior and Affect Profile in Stroke Patients

Full name of outcome measure	Neuropsychology behavior and affect profile
Abbreviated name	NBAP
Author	L Nelson, P Satz, L D'Elia 1989
Objective	to measure current level and type of emotional functioning post brain-impairment, including extent of emotional change compared to pre-morbid status
Population	people post stroke or brain injury
Type of measure	Questionnaire
Mode of administration	Form S (self reported) and Form O (completed by "significant others" of the person)
Description	
Number of items	66 items in 5 scales: indifference(12), inappropriateness(7), pragnosia (12), depression (11), mania (24), plus 15 neutral items (total 81)
Type of scale	separate scale scores for "before" and "now" responses (summation of total "agree" responses) converted to percentages
Time required to perform	20 mins
Instructions	Refer to separate response and scoring sheet purchased from developers
Scoring	106 randomly ordered statements each designed to be answered twice as a descriptor reflecting premorbid status ("before" stroke) and current levels of functioning ("now"). Response choices either "agree" (ie typically or often) or "disagree" (seldom or hardly at all).

Permission: granted December 3 2007. Queensland Health have purchased initial quantity of scoring sheets, Licensed to Tracy Comans.

Neuropsychology Behavior and Affect Profile – 5 Sample questions.

BEFORE		FORM S	NOW	
AGREE	DISAGREE		AGREE	DISAGREE
A	D	1. I often socialise with others	A	D
A	D	2. At times I want to go on buying sprees or to spend money excessively without considering the consequences.	A	D
A	D	3. At times I am full of grandiose ideas.	A	D
A	D	4. My mood is usually good.	A	D
A	D	5. At times I feel unrealistically empowered to accomplish great things.	A	D

Canadian Occupational Performance Measure

Full name of outcome measure   Canadian occupational performance
                                        measure
Abbreviated name   COPM
Author   M Law et al.1994.
Objective   to measure changes in self-perceived
                                        occupational performance (self-care, leisure
                                        and productivity)
Population   generic
Type of measure   individualised, criterion-referenced,
                                        rating scale
Mode of administration   semi-structured interview
Description
    Number of items   individualised, dependent on what the
                                        client identifies as an issue – most
                                        ommonly 4-5 issues.
    Type of scale   1-10 rating scale
    Time required to perform   30-40 min (up to an hour)
    Instructions   Participant must be ready/capable to
                                        identify potentially sensitive issues, with
                                        insight etc.
                                        Clinician needs to become familiar with
                                        interview process and develop rapport with
                                        client
Scoring   Participant identifies "problems" and
                                        rates *importance* on a 10-point scale from
                                        "not important at all" (score 1) to "extremely
                                        important" (score 10) – used to prioritise the
                                        five most important.
                                        Participant then rates *current performance*
                                        for each of these activities from "not able to
                                        do it" to "able to do it very well" (0-10).
                                        Finally rate *satisfaction with performance*
                                        from "not satisfied at all" to "extremely
                                        satisfied" (0-10).
                                        Higher scores reflect better performance
                                        and satisfaction (self-perceived).
                                        Performance and satisfaction reassessed
                                        following intervention/period of time and
                                        average change scores for both calculated.

Manual: Law M, Baptiste S, Carswell A, McColl M, Polatajko H, Pollock N. *Canadian Occupational Performance Measure*, third edition. Toronto: CAOT Publications ACE, 1998.

Permission: granted September 2007

Goal Attainment Scale

Full name of outcome measure	Goal attainment scale
Abbreviated name	GAS
Author	TJ Kiresuk and RE Sherman (1968)
Objective	originally to evaluate human service and mental health programs; used to chart individual's progress in rehabilitation
Population	generic
Type of measure	individualised, criterion-referenced, rating scale
Mode of administration	interview
Description	
Number of items	individualised, dependent on what the client identifies as an issue – most commonly 3-5 issues.
Type of scale	5 point rating scale
Time required to perform	30-40 min
Instructions	Multiple, individualised client goals are identified and scaled on a "follow-up guide", in terms of expected outcome (the program goal at the "0" level) and plausible outcomes that are better (+1 or +2) or worse (-1 or -2) than expected. Baseline is usually at the -1 or -2 level Clinician needs to become familiar with interview process and develop rapport with client
Scoring	Variations of scoring from simple summation of scores (-2 to +2) for each goal scale eg 3 goals would have maximum attainment of 15. To produce standardised GAS scoring with maximum of 50, apply formula (see scoring guide). Score of 50 means that, in general, each of the goals under consideration have been met. The formula takes into account the number of goals. Optional: Can weight each goal scale to express relative clinical importance and calculate weighted overall score, or not.

Permission: not required

Goal attainment follow-up guide			
Attainment levels	Scale 1 *(name of goal)*	Scale 2 *(eg ADLs)*	Scale 3 *(name of goal)*
-2 Much less than expected	*Operationalise each level for each goal*	*Totally dependent with bathing and dressing*	
-1 Somewhat less than expected		*Maximal assist with bathing and dressing* √	
0 Expected level (Program Goal)		*Independent dressing.* * *Minimal assist bathing*	
+1 Somewhat better than expected		*Independent dressing. Supervision with bathing*	
+2 Much more than expected		*Independent dressing and bathing*	
Comments:		*Family providing support for bathing*	

√ level on admission

*   level on discharge

Formula: GAS score = 50 + [10∑(W$_i$ X$_i$)] / 0.7∑ W$_i$ ² + 0.3(∑W$_i$)²] ^{½}

Where W$_i$ = weight assigned to goal area
and X$_i$ = attained score for goal area (-2 to +2).
If no weighting is used, then assign W$_i$ = 1

Kiresuk TJ, Sherman RE. Goal Attainment Scaling: a general method for evaluating community mental health programs. Community Mental Health J. 1968; 4: 443-453

Assessment of Quality of Life Instrument

Full name of outcome measure   Assessment of quality of life
also Australian quality of life instrument

Abbreviated name   AQoL

Author   G Hawthorne, J Richardson, et al. 1999

Objective   to measure health-related quality of life (HRQoL) and the descriptive system for a multi-attribute utility (MAU) instrument used in economic evaluation (similar to "quality of life years" - QALY)

Population   generic across full range of health status

Type of measure   questionnaire

Mode of administration   self reported, telephone version also available with prompts

Description

      Number of items   15 items in 5 dimensions: illness, independent living, social relationships, physical senses and psychological well-being

      Type of scale   Likert scale

      Time required to perform   5-10 min

      Instructions   Participants circle the response that best describes them during the last week. Refer to questionnaire.

Scoring   Score as response A=0, B=1, C=2, D=3 Can use as value profiles for the 5 dimensions (score out of 9 for each). Total score out of 45 provides overall unweighted HRQoL index, where a 0 score indicates normal or good HRQoL and the maximum (9 for each dimension or 45 for overall) indicates worst possible HRQoL. To use as a utility HRQoL measure for D=4 and use "look-up tables" in manual

Permission: Registration number 2007/142.
More details about AQoL family of instruments at the Australian WHOQOL Field Centre website (http://www.psychiatry.unimelb.edu.au/qol/).
Registration entitles access to additional AQoL technical support; including AQoL manual (download from the website); advice on data entry and maintenance; imputing missing data; the AQoL scoring algorithms; and assistance with interpretation of AQoL data including population norms. Population norms are available from the website above.

Assessment of Quality of Life Instrument

Instructions: Please circle the alternative that best describes you during the last week.

Illness
1. Concerning my use of prescribed medicines:
   A. I do not or rarely use any medicines at all
   B. I use one or two medicinal drugs regularly
   C. I need to use three or four medicinal drugs regularly
   D. I use five or more medicinal drugs regularly

2. To what extent do I rely on medicines or a medical aid *(NOT glasses or a hearing aid). (For example: walking frame, wheelchair, prosthesis etc)*
   A. I do not use any medicines and/or medical aids
   B. I occasionally use medicines and/or medical aids
   C. I regularly use medicines and/or medical aids
   D. I have to constantly use medicines and/or medical aids

3. Do I need regular medical treatment from a doctor or other health professional?
   A. I do not need regular medical treatment
   B. Although I have some regular medical treatment, I am not dependent on this
   C. I am dependent on having regular medical treatment
   D. My life is dependent upon regular medical treatment

Independent living
4. Do I need any help looking after myself?
   A. I need no help at all
   B. Occasionally I need some help with personal care tasks
   C. I need help with the more difficult personal care tasks
   D. I need help daily with most or all personal care tasks

5. When doing household tasks: *(For example: preparing food, gardening, using the video recorder, radio, telephone or washing the car)*
   A. I need no help at all
   B. Occasionally I need some help with household tasks
   C. I need help with the more difficult household tasks
   D. I need daily help with most or all household tasks

6. Thinking about how easily I can get around my home and community:
   A. I get around my home and community by myself without any difficulty
   B. I find it difficult to get around my home and community by myself
   C. I cannot get around the community by myself, but I can get around my home with some difficulty
   D. I cannot get around either the community or my home by myself

Social relationships
7. Because of my health, my relationships *(for example: with my friends, partner or parents)* generally:
   A. Are very close and warm
   B. Are sometimes close and warm
   C. are seldom close and warm
   D. I have no close and warm relationships

8. Thinking about my relationship with other people:
   A. I have plenty of friends, and am never lonely

B. Although I have friends, I am occasionally lonely
C. I have some friends, but am often lonely for company
D. I am socially isolated and feel lonely

9. Thinking about my health and my relationship with my family
A. My role in the family is unaffected by my health
B. There are some parts of my family role I cannot carry out
C. There are many parts of my family role I cannot carry out
D. I cannot carry out any part of my family role

Physical senses
10. Thinking about my vision, including when using my glasses or contact lenses if needed:
A. I see normally
B. I have some difficulty focusing on things, or I do not see them sharply. *For example: small print, a newspaper, or seeing objects in the distance.*
C. I have a lot of difficulty seeing things. My vision is blurred. *For example: I can see just enough to get by with.*
D. I only see general shapes, or am blind. *For example: I need a guide to move around.*

11. Thinking about my hearing, including using my hearing aid if needed:
A. I hear normally
B. I have some difficulty hearing or I do not hear clearly. *For example: I ask people to speak up, or turn up the TV or radio volume.*
C. I have difficulty hearing things clearly. *For example: Often I do not understand what is said.* I usually do not take part in conversations because I cannot hear what is being said.
D. I hear very little indeed. *For example: I cannot fully understand loud voices speaking directly to me.*

12. When I communicate with others: *(for example: by talking, listening, writing or signing)*
A. I have no trouble speaking to them or understanding what they are saying.
B. I have some difficulty being understood by people who do not know me. I have no trouble understanding what others are saying to me.
C. I am only understood by people who know me well. I have real trouble understanding what others are saying to me.
D. I cannot adequately communicate with others

Psychological well-being
13. If I think about how I sleep
A. I am able to sleep without difficulty most of the time
B. My sleep is interrupted some of the time but I am usually able to go back to sleep without difficulty
C. My sleep is interrupted most nights, but I am usually able to go back to sleep without difficulty
D. I sleep in short bursts only. I am awake most of the night

14. Thinking about how I generally feel:
A. I do not feel anxious, worried or depressed
B. I am slightly anxious, worried or depressed
C. I feel moderately anxious, worried or depressed
D. I am extremely anxious, worried or depressed

15. How much pain or discomfort do I experience?
A. None at all
B. I have moderate pain
C. I suffer from severe pain
D. I suffer from unbearable pain.