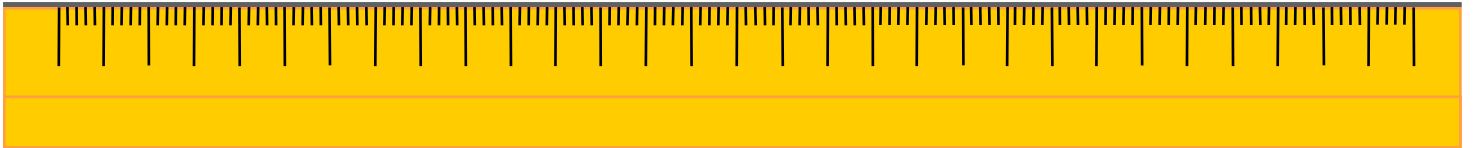


Stroke Rehabilitation Outcome Measures Forum



**Measuring Across the Continuum
Let's Make it Happen!**

**Summary Report
2009**

Moving to Best Practice



“No single organization can or does provide the entire spectrum of services required by a patient. To ensure that consumers can move through the system easily, service providers across the continuum must work collaboratively to achieve optimal health outcomes. There must be a sense of shared responsibility. This requires a fundamentally different way of working together. Methods must be found to improve access, consistency in care provision, responsiveness to clients, sharing of information across providers, client empowerment, and reductions in duplication of assessments and treatments.”

***South West LHIN Integration and Priority Action Plan
October 2006***

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Executive Summary

The public has an expectation that health care practitioners communicate with each other within and across settings regarding their care. Yet they consistently report duplication of assessments during their health care experience. Building on the premise that Stroke Rehabilitation can be enhanced by use of standardized assessment tools and outcome measures across the continuum of care, 105 invited participants (rehabilitation therapy clinicians, administrators and academics) from across Southwestern Ontario gathered on June 11, 2009 for the Stroke Rehabilitation Outcome Measures Forum. The group was convened by the Southwestern Ontario Stroke Strategy with the following goals.

Goals of the Forum:

1. Identify the Current State in the Region
2. Review Best Practice Recommendations
3. Gain Front Line Support for Implementation in the Region
4. Identify Barriers/Enablers
5. Provide Support for First Steps
6. Identify Next Steps

Results:

Participants expressed having benefited from the opportunity to network with colleagues, to learn from each other, to build consensus on practice, and support academic curricula development.

1. Identifying the Current State in the Region:

A detailed inventory of tools currently in use across the region was compiled.

Top Five Tools Currently in Use from Survey Results: N=43

- AlphaFIM/FIM and Numeric Pain Rating Scale each reported in use by 29 respondents
- Chedoke McMaster Stroke Assessment Impairment Inventory: 28 respondents
- Berg Balance Scale: 26 respondents
- Timed Up & Go: 23 respondents

2. Reviewing Best Practice Recommendations:

Participants reviewed the measures in the selected core set of tools, compiled recommendations and analyses regarding the clinical utility of each tool.

Case Work: Top three responses from therapists to the question:

On receiving transfer of a stroke survivor to your care, "What measure would you have liked the therapist in the sending service to have done?"

- FIM/AlphaFIM
- Berg Balance Scale
- Chedoke McMaster Stroke Assessment

3. Gaining Front Line Support for Implementation in the Region:

At the end of the day:

- 96.6% (58/60) rated the forum as very or extremely valuable
- 84% expressed a high or very high level of interest in participating in a Community of Practice to learn more about the tools and to share practical experiences
- 86.6% of participants agreed or strongly agreed, "I am ready to consistently use the 'core set' of tools"
- 100% of participants agreed or strongly agreed, "I am willing to take the key messages to my team"

4. Identifying Barriers/Enablers:

Participants indicated the top three things that will help people consistently use the core set of recommended outcome measures:

- Practical education about how to use the tools
- Access to tools, including copies of tools & funding
- Show the evidence that demonstrates consistent use of outcome measures increases efficiency, communication between care providers and patient outcomes

Participants identified enablers to implementing a core set of outcome measures:

- Networking, collaboration, cross continuum communication
- Education
- Leadership support

5. Providing Support for First Steps:

Implementation strategies and supports were provided. Participants were given an opportunity to sign up to try out or 'Test Drive' a recommended tool that they were not currently using.

Top Three Tools Selected by Volunteers for "Test Drive" (tools not already in common use)

- Behavioural Inattention Test
- Line Bisection
- Stroke Impact Scale

6. Next Steps:

- ▶ Draft Forum report in a succinct format and send out draft for feedback as a check back for accuracy
- ▶ Contact "test drive" project volunteers and initiate trials with the tools
- ▶ Investigate posting a toolkit on the www.swostroke.ca website
- ▶ Create local clinical networks or communities of practice to share learnings and coordinate use of outcome measures across the continuum
- ▶ SWO Stroke Strategy Rehabilitation Coordinator to participate in provincial working group with objective of selecting a few measures to be recommended for province wide implementation
- ▶ Regional working group to identify small number of tools (3-5) for priority implementation within the region

Introduction

The public has an expectation that health care practitioners communicate with each other within and across settings regarding their care. Yet they consistently report duplication of assessments during their health care experience. There is a need for health care practitioners to reach agreement on assessment tools, establish a common language and share information about their clients' care across the continuum.

Premise: Stroke Rehabilitation can be enhanced by use of standardized assessment tools and outcome measures across the continuum of care.

Use of standardized, valid assessments are Best Practice for Stroke Care

Best practice dictates that standardized measurement tools can and should be identified from amongst those currently available.

The Canadian Best Practice Recommendations for Stroke Care 2008, state:

4iv & 5viii. Clinicians should use **standardized, valid assessment tools** to evaluate the patient's stroke-related impairments and functional status (Evidence Level B; ASA, RCP).

The Ontario Consensus Panel on the Stroke Rehabilitation System, in its report, "Time is Function" 2007, states:

Standard 5: Stroke related impairments and functional status will be evaluated by rehabilitation professionals trained in stroke rehabilitation using **standardized, valid assessments** (Evidence Level 2).

Background

In 2006, the Canadian Stroke Strategy convened a panel of experts in stroke rehabilitation from across Canada to review the tools we use to measure outcomes in stroke rehabilitation with the goal of establishing a core set of rehabilitation outcome measures to be used across the continuum.

This National Consensus Panel reviewed tools using the following criteria for selection:

- Published use in stroke trials (as identified by the Evidence-Based Review of Stroke Rehabilitation)
- Strong psychometric properties (tools were proven to be reliable and valid)
- Ease and feasibility of administration
- Potential for multidisciplinary administration (promote interprofessional collaboration and facilitate use when lacking access to all rehabilitation professionals)

The Panel recommended tools to evaluate the outcomes of stroke rehabilitation in Canada for relevant domains according to the International Classification of Functioning (body structure and function, activity and participation). See Appendix A.

Southwestern Ontario Region

On March 10, 2009 the Southwestern Ontario Regional Stroke Rehabilitation Advisory Group endorsed the work of implementing the National Panel's recommendations in our region.

Anticipated benefits to using a core set of standardized measures:

Using common assessment and outcome measures throughout the region will:

- Provide stroke survivors with consistency, enabling client self management
- Promote use of a common language within teams and across transitions
- Facilitate measurement of stroke rehabilitation outcomes across systems
- Ensure clinicians know which tools are valid, reliable measures that support best practices

Southwestern Ontario Stroke Rehabilitation Outcome Measures Forum: Measuring Across the Continuum...Let's Make it Happen

The first step to implementing the National Panel recommendations was to bring clinicians together to achieve a shared vision for implementation of the recommendations within our region. With great enthusiasm, 105 invited participants (rehabilitation therapy clinicians, administrators and academics) from across Southwestern Ontario gathered on June 11, 2009 for the Stroke Rehabilitation Outcome Measures Forum.

Goals of the Forum:

1. Identify the Current State
2. Review Best Practice Recommendations
3. Gain Front Line Support for Implementation in the Region
4. Identify Barriers/Enablers
5. Provide Support for First Steps
6. Identify Next Steps

Process:

The National Panel recommendations included measures for fifteen domains according to the World Health Organization's International Classification of Functioning. This initial forum focused on a subset of the domains for several reasons:

- The full set of tools was too large to address in a single day
- Tools for depression, cognition and language were still under consideration
- The domains selected primarily involved physical and occupational therapy allowing more focused targeting of participants and expertise

The domains addressed at the forum included perception, pain, upper and lower extremity impairment, arm function, functional mobility/balance, activities of daily living (ADL), instrumental activities of daily living (IADL), and participation/quality of life (see Appendix B).

The forum activities were based on an appreciative inquiry model and change management approach that engaged participants in identifying benefits, barriers and solutions.

A common understanding of terminology and basic measurement properties was necessary to establish a foundation for the day's discussions. This was accomplished through an interactive presentation that provided definitions (see Appendix C).

Goal 1: Identify the Current State

Activity: A survey of current tools in use in various practice settings was completed by all participants upon arrival at the forum. Results were immediately presented on posters providing a visual display for viewing and discussion. Participants could see the similarities and variations in use of outcome measures across practice settings and across the region.

Result: *Top Five Tools Currently in Use by Practice Setting:*

<i>Acute:</i>	<i>Rehab:</i>	<i>Community:</i>
AlphaFIM	FIM	FIM
Berg Balance Scale	Berg Balance Scale	Berg Balance Scale
Numeric Pain Rating Scale	Numeric Pain Rating Scale	Numeric Pain
Rating Scale		
CMSA Impairment Inventory	CMSA Impairment Inventory	CMSA Impairment
Inventory		
OSOT Perceptual Evaluation	MVPT	Timed Up & Go

Conclusion: Four of the top five tools currently in use were used across all practice settings. There is a strong foundation in place within the region for standardized practice related to the use of outcome measures in the domains of ADL, Functional Mobility/Balance, Pain, and Upper and Lower Extremity Impairment.

Activity: A detailed survey was sent out to the region prior to the forum and tabulated following the forum with the goal of establishing detailed baseline information about use of outcome measures in the region, enabling measurement of change in practice over time.

Result:

Top Five Tools Currently in Use Across the Region: N=43

1. AlphaFIM/FIM reported in use by 29 respondents
2. Numeric Pain Rating Scale reported in use by 29 respondents
3. Chedoke McMaster Stroke Assessment (CMSA) Impairment Inventory reported in use by 28 respondents
4. Berg Balance Scale reported in use by 26 respondents
5. Timed Up & Go reported in use by 23 respondents

Top Five Tools Currently in Use in Acute Care: N=17

1. AlphaFIM N=12
2. Berg Balance Scale N=11
3. Timed Up & Go N=9
4. Chedoke McMaster Impairment Inventory N=8
5. Numeric Pain Rating Scale N=7

Top Five Tools Currently in Use in Inpatient Rehabilitation: N=19

1. Chedoke McMaster Impairment Inventory N=15
2. FIM N=14
3. Numeric Pain Rating Scale N=13
4. Berg Balance Scale N=11
5. Timed Up & Go, and Chedoke Arm and Hand Activity Inventory N=10

Top Five Tools Currently in Use in the Community: N=12

1. Numeric Pain Rating Scale N=9
2. Chedoke McMaster Impairment Inventory N=7
3. Chedoke McMaster Shoulder Assessment, Timed Up & Go, Berg Balance Scale, FIM, Stroke Impact Scale, and Chedoke Arm and Hand Activity Inventory N=6

Conclusion: Although there were some minor differences evident when the detailed inventory of tools was compared to the survey of tools from workshop participants, there remained much overlap across settings providing a strong foundation for common practice in outcome measurement in these domains.

Goal 2: Review Best Practice Recommendations

Activity: A key note address by subject matter expert, Dr. Robert Teasell provided background (see Appendix D).

Result: Workshop participants gained a common understanding of the evidence related to outcome measurement in stroke rehabilitation, and current activities in this field.

Activity: Participants were given the opportunity to review each measure from the selected domains in the recommended core set of tools, and compile recommendations and analyses regarding the clinical utility of each tool.

Result: Participants became familiar with the tools and their measurement properties and contributed to a detailed clinical analysis of the pros and cons of each.
(details available upon request)

Activity: After becoming familiar with the measures in the core set of recommended tools, participants, clustered by stroke district, were given cases of stroke survivors and asked to identify preferences for tools from the recommended core set.

Result:

A: What measure would you have liked the therapist in the sending service to have done?	
FIM/AlphaFIM	9
Chedoke McMaster Stroke Assessment Impairment Inventory	9
Berg Balance Scale	8
Motor Free Visual Perceptual Test	4
Numeric Pain Rating Scale	3
Line Bisection	3
Timed Up & Go	3
OSOT Perceptual Evaluation	1
Rivermead Perceptual Assessment Battery	1

B: Now that this case was transferred to you, which tools would you use?	
Berg Balance Scale	5
Chedoke McMaster Stroke Assessment Impairment Inventory	3
Chedoke Arm and Hand Activity Inventory	3
Reintegration to Normal Living Index	3
Numeric Pain Rating Scale	3
Life-H	3
FIM	2
OSOT Perceptual Evaluation	1
Motor-Free Visual Perceptual Test	1
Rivermead Mobility	1
Timed Up & Go	1
CMSA Activity Inventory	1
Stroke Impact Scale	1
Six Minute Walk Test	1

Conclusion: There was greater variability in the clinical tools chosen by clinicians for cases under their own care.

Goal 3: Gain Front Line Support for Implementation in the Region

Activity: Poll the audience to identify whether agreement had been reached supporting implementation of a core set of outcome measures within the region.

Result:

86.6% agreed or strongly agreed to the statement “Personally I am ready to consistently use the “core set” of tools that are applicable to my work.

100% agreed or strongly agreed “As follow-up to this meeting I am willing to take the key messages to my team/organization.”

88% agreed or strongly agreed that their team/organization would be open to learning more about the consistent use of tools

Goal 4: Identify Barriers/Enablers

Activity: Participants were asked to work in groups to identify “what could get in the way of us consistently using the core set of outcome measures”.

Result:

Top main barriers:

- 1) People think it will take too long to use the tools
- 2) People see it as extra work with no value
- 3) People do not like to change or learn new things
- 4) Cost of some of the tools
- 5) People are not aware of the benefits

Activity: Participants worked at tables to identify enablers and strengths that they felt would help people consistently use the core set of recommended outcome measures.

Result:

Top three enablers:

- 1) Practical education about how to use the tools
- 2) Access to tools, including copies of tools & funding
- 3) Show the evidence that demonstrates consistent use of outcome measures increases efficiency, communication between care providers and patient outcomes

Top three strengths:

- 1) Networking, collaboration, cross continuum communication
- 2) Education
- 3) Leadership support

Activity: Identify the benefits of consistently using a common set of tools across the continuum of care.

Result:

What would patients notice is different and better?

- Less repetition
- Ability to track their own progress; better understanding; more meaningful; more informed
- Better transitions, continuity; same language
- Faster trust; more motivation with more buy in to treatment
- Empowerment: patients, families setting their own realistic goals
- Improved interdisciplinary care with results in patient safety
- Increased ability to navigate medical system

What would be better for you personally?

- Speed up process, save time → more treatment time
- Easier transitions; improved system efficiency/cost savings
- Improved communication and continuity both with patient/family and within team
- Creating a culture to question what is being done and how we can do it better
- Substantiate our workload – prove effectiveness, allow comparisons
- Improve validity of treatment planning; facilitate goal setting
- Patients more motivated, therefore therapists are more creative and innovative in planning care
- Increased use of reliable, valid and responsive tools; adds credibility to rehab

Activity: Participants brainstormed solutions to some of the common barriers using wicked questions.

Result: Over one hundred ideas were generated (see Appendix E).

1) How can we encourage team members to use outcome measures when they say they don't have time to learn or use the tools?

- Trade offs (what they can give up/don't add more; fewer meetings)
- Carry out a 'time study'
- Lead by example, champions
- Choose the most efficient tool
- Show the benefits – to patients & themselves

2) How can we encourage team members to use outcome measures when they see them as extra work with little value?

- Educate about benefits, tie it into best practice
- Incorporate directly into documentation
- Develop a network/discussion forum
- Provide the measures/provide the training, make measures accessible
- Choose tools that are applicable to the setting

3) How can we use the tools as a common language when not all team members are familiar with some or all of them?

- Education, continuing education, incorporate into orientation, posters
- Shadowing and mentoring
- Job aids, quick reference cards, charts interpreting the findings
- Incorporate into rounds discussions

4) How can we get leaders to support (encourage the use of and pay for) the tools when resources are tight?

- Demonstrate cost benefit
- Show benefit to patient satisfaction
- Identify as best practice/incorporate into accreditation standards

Goal 5: Provide Support for First Steps

Activity: Support for implementation provided to the participants included:

- An Implementation Framework (Appendix F), and Gina Tomaszewski walked participants through strategies for its use.
- A Key Messages document (Appendix G), to enable participants to share information from the forum with their teams.
- Web links for all assessment tools accessible in the public domain. Electronic copies of these tools could also be requested directly via email: deb.willems@lhsc.on.ca
- Tools made available for loan. Some assessment tools not readily available at many practice settings were made available for loan from the Southwestern Ontario Stroke Strategy e.g. Behavioural Inattention Test.

Activity: Participants were asked to select one or more tools, which they were not currently using, for a volunteer trial or ‘test drive’ for a three month period.

Result: 28 participants signed up for a ‘test drive’ with unfamiliar tools

<i>Top Tools Chosen</i>	<i>Number of volunteers</i>
Behavioural Inattention Test	8
Line Bisection	5
Stroke Impact Scale	5
Rivermead Mobility Index	4
CMSA Activity Inventory	4
AlphaFIM	4

Goal 6: Identify Next Steps

Actions:

1. Draft Forum summary report and send out draft to participants for feedback re accuracy.
2. Contact “test drive” project volunteers and initiate trials with the tools.
3. Investigate posting a toolkit on the www.swostroke.ca website.
4. Create local clinical networks or communities of practice to share learnings and coordinate use of outcome measures across the continuum.
5. SWO Stroke Strategy Rehabilitation Coordinator to participate in provincial working group with objective of selecting a few measures to be recommended for province wide implementation.
6. Regional working group to identify small number of tools (3-5) for priority implementation within the region.

Evaluations n=60

96.6% (58/60) rated the forum as very or extremely valuable.

84% expressed a high or very high level of interest in participating in a Community of Practice to learn more about the tools and to share practical experiences.

Participants indicated that the best things about the forum were:

- Being educated on different tools; Seeing the different tools; Awareness/Information of outcome measures; Learning different tools and/or problem solving N=25
- Collaborating/Networking with other professionals from other services to see what they are doing; Discussion with colleagues; Knowing I'm not alone N=11
- Discussing barriers to using outcomes measure & discussing the ways to overcome these barriers; Group Work; Excellent brain storming session; Activities in groups N=6
- Interactive nature of forum; workshop methodology N=6

Participant Comments:

Janet Brown

School of Physical Therapy

Faculty of Health Sciences

University of Western Ontario

"This workshop was a very worthwhile experience affirming that students are appropriately prepared in their academic studies by learning the designated 'Core Set of Stroke Rehabilitation Outcome Measures' for their future practice as Physical Therapists. With literally dozens of good stroke outcome measures to choose from, the student can now be much more confident that they are utilizing and interpreting the same information as their experienced clinicians."

Sandi Spaulding

School of Occupational Therapy

Faculty of Health Sciences

University of Western Ontario

"It was an excellent forum and I learned a great deal, particularly about the distribution of use across the worksites. I was extremely appreciative of the emphasis on standardized tests. I teach assessments in the OT School and feel I can go in with stronger conviction, knowing that I have the strength of the local community on using good outcome measures! I really would like to let the students know the strength, energy and intelligence that is going into this aspect of rehabilitation. Thank you for compiling the work."

Sandra Albrecht

Interim Manger Rehabilitation and Complex Continuing Care Services

Huron Perth Healthcare Alliance

"As a new manager in the Rehabilitation area this was a great learning experience for me personally. It was great to be able as a manager to understand and get information on the Measurement Tools that are being utilized by the disciplines. The concept of developing a Standard set of Outcome Measurement tools for a facility or even in the bigger picture provincially is valid. It would provide professionals/patients/families with a set of valid and reliable tools that would allow common communication and understanding. Enjoyed it and hope that there is more follow up."

APPENDICES

Appendix A: *Canadian Best Practices in Stroke Rehabilitation Outcomes Report of the Expert Panel*

Held in Toronto, Ontario; Monday February 6-7, 2006

Conference Chairs:

Dr. Mark Bayley

Physiatrist, Toronto Rehabilitation Institute

Principal Investigator, SCORE Project

Member, Canadian Stroke Strategy Best Practices & Standards Working Group

Dr. Patrice Lindsay

Performance and Standards Specialist, Canadian Stroke Network

Stroke Evaluation Lead, Ontario Stroke System

Organizing Committee:

Representatives from the Canadian Stroke Network theme 4B (Rehabilitation and recovery) and members of the Best Practices committee of the Canadian Stroke Strategy collaborated to form the organizing committee for the Expert Panel. These members included: Dr. Nicol Korner-Bitensky, Dr. Robert Teasell, Dr. Johanne Desrosiers, Dr. Jeff Jutai, Alison MacDonald, Katherine Salter, Dr. Sharon Wood-Dauphinee, and Nancy Deming.

Goal of the Conference:

Through discussion with Canadian Stroke Network and the Heart and Stroke Foundation of Ontario, it was agreed that an expert consensus panel with representatives from relevant health professionals as well as stakeholders would be an important method for establishing a course of rehabilitation outcome measures to be used across the continuum.

The conference had two main objectives:

1. Using the International Classification of Functioning to prioritize a set of outcome measures in the domains of body structure and function, activity and participation that could be used to evaluate the outcomes of stroke rehabilitation in Canada
2. Identify preliminary indicators of performance of the stroke rehabilitation system.

Findings of the Conference:

In order to promote ease of selection, the following criteria were suggested to the panel to facilitate selection of measures:

- The measure should have been used in previous stroke trials as identified by the Stroke Rehabilitation Evidenced Based Review.

- The measure can be used at admission and completion of rehabilitation.
- The measure can be administered in a multi-disciplinary fashion i.e., could be administered by a number of different health professionals. (This was felt to be important for smaller rehabilitation centers that may not have all the highly specialized rehabilitation professionals for example, a neuropsychologist.)
- The measure should have optimal psychometric properties including reasonable reliability and demonstrated validity.
- The measure should be available in English and French.
- The time required to complete the measure should fit within the context of the usual assessment time of a health care professional i.e., is not excessively burdensome.

All outcome measures selected by the panel also were considered using the following criteria:

- Ease and feasibility of administration
- Content of the Measure
- Reliability
- Validity
- Responsiveness.

The final outcome tools for stroke rehabilitation selected by the panel include:

Domain	Selected Measure
Measures of Stroke Severity	Orpington or National Institute of Health (NIH) Stroke Scale
Medical Comorbidities	Charlson Comorbidities Scale
Upper Extremity Structure and Function	Chedoke – McMaster Stroke Assessment (CMSA)
Lower extremity	Chedoke – McMaster Stroke Assessment
Spasticity	Modified Ashworth Scale + Spasticity Subscale of CMSA
Visual Perception	Comb and Razor Test (interdisciplinary admin) Behavioural Inattention Test (Sunnybrook) Neglect Assessment Protocol or SNAP) Line Bisection (Unilateral Spatial Neglect) Alternates- Rivermead Perceptual Assessment Battery, OSOT (Ontario Society of Occupational Therapists) Perceptual Evaluation and Motor-Free Visual Perception Test (MVPT)
Language	a) Screening in Acute and follow-up: Frenchay Aphasia Screening Test (FAST) b) for Rehabilitation: Boston Diagnostic Aphasia Assessment

Speech Intelligibility Tool	No tool in published literature
Cognition	<p>a) Screening as per SCORE = Mini Mental State Examination (MMSE) and Line Bisection + Semantic Fluency</p> <p>b) Initial selection Cambridge Cognitive Examination (CAM-COG)</p> <p>Note: no single tool; therefore, need to seek further consultation to consider which domains are important i.e., attention, memory, executive skills, processing speed</p>

Activity Assessment Scales

Domain	Selected Measure
Arm Function	<p>Chedoke Arm and Hand Activity Inventory</p> <p>Box and Block</p> <p>Nine Hole Peg Test</p>
Walking/Lower Extremity	<p>Chedoke Lower Extremity Disability Inventory</p> <p>Timed "Up and Go" Test</p> <p>6 – Minute Walk Test</p> <p>Alternate – Rivermead Mobility Index</p>
Balance	Berg Balance Scale (BBS)
Functional Communication	<p>Amsterdam-Nijmegen Everyday Language Test (ANELT)</p> <p>Alternate – American Speech – Language – Hearing Association Functional Assessment of Communication Skills for Adults (ASHA-FACS)</p>
Self-Care Activities of Daily Living	FIM™ (Functional Independence Measure)
Instrumental Activities of Daily Living	<p>Reintegration to Normal Living Index</p> <p>Leisure section of the Assessment of Life Habits (LIFE-H)</p>

Participation Assessment Scales

Domain	Selected Measure
Participation	Stroke Impact Scale

Appendix B: Tools of the Trade: Core Set for June 11th Regional Forum
Stroke Rehabilitation Outcome Measures

Domain	Outcome Measure
Body, Function and Structure	
Perception	Line Bisection Test Behavioral Inattention Test Motor-Free Visual Perception Test (MVPT) Rivermead Perceptual Assessment Battery Ontario Society of Occupational Therapists Perceptual Evaluation (OSOT)
Pain	Numeric Pain Rating Scale (1-10) <i>Pictorial Faces Rating Scale (Aphasia)</i> Chedoke McMaster Stroke Assessment (CMSA) – Impairment Inventory: Shoulder Pain
Upper and Lower Extremity Impairment	CMSA Impairment Inventory (Arm, Hand, Leg, Foot)
Activity	
Arm Function	Chedoke Arm and Hand Activity Inventory Box and Block Test Nine Hole Peg Test
Functional Mobility / Balance	Timed Up and Go (TUG) 6-Minute Walk Test Berg Balance Scale Rivermead Mobility Index Chedoke McMaster Stroke Assessment (CMSA) – Activity Inventory
Activities of Daily Living (ADL)	Functional Independence Measure (FIM) or AlphaFIM
Instrumental Activities of Daily Living (IADL)	Reintegration to Normal Living Index Assessment of Life Habits (Life-H)
Participation	
Participation / Quality of Life	Stroke Impact Scale (SIS)

Appendix C: Definitions for Types of Tools by Purpose

Screening tool: a test or testing carried out routinely in order to identify, as early as possible, those at high risk of a particular problem or feature. RNAO Best Practice Guidelines¹ indicate that **screening tools** can augment, but not replace a comprehensive assessment. Its primary purpose may be to identify the need for referral to a specialized discipline for further assessment/intervention. A common example of a screening tool is the Modified Mini-Mental State Examination used for cognitive screening.

Assessment: the detailed identification of specific impairments in body function, structure or system (including psychological).

Classification Tool: categorize clients into homogeneous subgroups based on level of impairment. This classification is useful for the purposes of predicting outcomes, guiding intervention, and to categorize clients for the purposes of research. It also provides a common language for communication e.g. American Spinal Injury Association (ASIA) Impairment Scale Stroke: Chedoke McMaster Impairment Inventory International Classification of Functioning, Disability and Health (ICF) *see reverse*

Outcome Measure: measures of change (or lack of change) in the well-being of a defined population. Improvement in an outcome measure reflects the health status of the resident, whereas a **process measure** reflects the care delivery to the resident. Improvement in an outcome measure has a direct effect on mortality and morbidity².

“Outcomes refer to the effects of treatment, programs or policies on individuals or populations. Outcomes may also be defined as changes in status attributed to a specific intervention or treatment. For audiologists, occupational therapists, physiotherapists and speech language pathologists, outcomes may be thought of as changes in the lives of clients and their environments) as a result of rehabilitation. Outcome measures are tools (e.g. instruments, questionnaires, scales, rating forms, etc.) used to uncover or identify the outcome of intervention for the client. Outcome measures are used to document change in client characteristics, functional abilities or behaviours, over time.”³

Process or System Measure: provides information about program or team effectiveness; may be clinical (e.g. FIM) or not (wait times).
Is a measure that enables providers and programs to document results of care delivery, providing a common language for comparison of outcomes across programs.

Please note: that a measure may have multiple purposes as defined above e.g. FIM is both an outcome measure and a process measure.

¹ Nursing Best Practice Guideline: Screening for Delirium, Dementia and Depression in the Older Adult. *Registered Nurses Association of Ontario*, November 2003

² <http://www.qualishealth.org/qi/collaboratives/glossary.cfm>

³ Outcome Measurement for Rehabilitation Services” May 1996 DHCS /RSP/WG#2 New Brunswick

Tools will also vary by the level of function that they are designed to measure. The World Health Organization has created a Framework for classification:

ICF Framework

International Classification of Functioning, Disability and Health

Impairment: Impairments are problems in body function or structure as a significant deviation or loss. Body functions are the physiological or psychological functions of body systems (nervous, musculoskeletal, digestive or respiratory and circulatory systems).

Activity/Disability: activity is the performance of a task or action by an individual. Activity limitations are difficulties in performance of activities. These are also referred to as function.

Performance/Handicap: participation is an individual's involvement in life situations in relation to Health Conditions, Body Functions or Structures, Activities, and Contextual Factors. Participation Restrictions are problems an individual may have in the manner or extent of involvement in life situations.

Appendix D: Dr. Teasell's Key Note Address

STROKE REHABILITATION OUTCOME MEASURES

Robert Teasell MD FRCPC
 Professor and Chair-Chief
 Department of Physical Medicine and Rehabilitation
 Schulich School of Medicine
 Lawson Health Research Institute
 June 11, 2009

MEASURING THE OUTCOMES OF STROKE REHABILITATION

Results of a Canadian Stroke Strategy/Heart and Stroke Foundation National Consensus Panel

RATIONALE

- Stroke Rehabilitation can be enhanced by use of standardized outcomes

WHY BOTHER?

- Consistency (individualism saved for shopping or picking paint colors)
- Use Best Measure with known psychometric properties
- Communication Across the Continuum (avoid Tower of Babel)
- Maximizes Resources (assessments cost \$)
- Allows Comparisons (can identify strengths and weaknesses)
- Allows Better System Evaluation
- Promotes Better Care

CONSENSUS PANEL PRINCIPLES FOR SELECTION

- Tried to select measures that worked across the continuum
- Can be interprofessional administration
- Can be administered in reasonable time at beginning and end of Rehabilitation
- Minimize cost of training
- Ideally available in English and French.

Cross-Canada Survey of Best Practices

- Korner-Bitensky et al. traced > 5500 randomly sampled clinicians
- Interviewed 1733 stroke clinicians (OT, PT, SLP) in 10 provinces
- Working in: acute in-patient, in-patient rehab, community practice



STUDY PARTICIPANTS

OT n=681	PT n=650	SLP n=432
Gender • 598 females, 53 males	Gender • 574 females, 76 males	Gender • 407 females, 25 males
Age • 37 years (22-to-64)	Age • 40 years (22-to-72)	Age • 38 years (24-to-64)
Stroke Experience • 39% > 10 years • 33% = 4-10 years • 23% = 1-3 years • 5% < 1 year	Stroke Experience • 50% > 10 years • 29% = 4-10 years • 15% = 1-3 years • 5% < 1 year	Stroke Experience • 44% > 10 years • 37% = 4-10 years • 16% = 1-3 years • 4% < 1 year

Rationale for Using Outcome Measures

- It is available where I work
- Its use is required at my place of work
- Learned it during my professional training
- It has known reliability and validity

No standardization of care and evidence does not drive practice

SUMMARY OF SURVEY FINDINGS

- Inconsistent use of measures
- Frequently used only at admission and not at discharge
- Not necessarily using measures tested for responsiveness

PROCESS

- Used the International Classification of Functioning to prioritize a set of outcome measures in the domains of body structure and function, activity and participation that could be used to evaluate the outcomes of stroke rehabilitation in Canada

IDEAL MEASURES FOR OUTCOMES

- Any evaluative measure should assess an individual or group at baseline and again at one or two points, usually to determine if change has occurred
- Needs to be responsive to reflect change in patient status when it occurs

SOME CAUTIONARY TALES

- Electronic stroke Referral service used in acute care for referral to rehab the
 - Alpha FIM
 - Charlson Comorbidities
 - ChedokeChallenges in training all staff, staff turnover, trusting the measure
- SCORE project uses five outcome measures
 - FIM , Box and Block, 6 minute Walk test, Chedoke arm and Hand inventory, Chedoke McMaster Stroke Assessment and Euroqol-5D
 - Challenges in completion.

SOME THOUGHTS ON CHOOSING OUTCOMES

- Less is More - avoid the temptation to want to answer all the questions on your first attempt
- Consider the time in administration
- Consider the time to train people
- Consider how much equipment is needed
- Consider whether it will change your practice

SOME THOUGHTS ON CHOOSING OUTCOMES

- Pick tools that are transdisciplinary if possible
- Think about who is going to use the Results of all your work in collecting outcomes
 - Is this for you as a clinician to plan your practice?
 - Do you want to show those administration people that you make a difference?
 - Do you want to show the funders that you make a difference
 - (What do you think they are interested in?)

CLINICAL VS PROCESS MEASURES

- Do you want to measure team or program operations or are you interested in patient recovery
- Is there an efficiency issue that needs to be measured

CONCLUSIONS

1. A core set of rehabilitation outcome measures is required as there is variability in current practice, need to consistently evaluate system and compare across centers and systems
2. Issues that must be considered when selecting responsive outcome measures include the reliability, validity and responsiveness of the measure. These properties can now be estimated quantitatively

CONCLUSIONS

3. Good quality Stroke Rehabilitation outcome measures can be identified for all aspects of the International Classification of Functioning i.e. Body Structures and Function, Activity and Participation

Appendix E: Outcome Measures Forum Wicked Questions: Responses Collated

How can we encourage team members to use outcome measures when they say they don't have time to learn or use the tools?

- Admin/site visit
- Adjust caseload to allow
- Trade offs (what they can give up/don't add more; fewer meetings)
- Give prizes/incentives
- Provide lunch: do teaching during PD training with tool
- Encourage/motivate
- Pay for performance
- Accessible/easy
- Champion for demonstration
- Carry out a 'time study'
- Lead by example **
- Choose the most efficient tool
- Show them the end goal benefits – to patients & themselves
- Communicate in same language
- Demonstrate OM supported by college
- Send people to conference (time)
- Local inservices/free lunch
- Leadership support for time to learn
- Mentoring
- Give evidence/resources
- Don't pay them!!
- Make the measures mandatory/expectation
- Learn anew one, but give up an old one
- Peer pressure (guilt)
- Give some choice (which ones are recommended – choose which one to use)
- Learn what other best practice facilities are doing and follow
- Feedback from other community partners on expectations (i.e. what info is needed in community)
- Recognize the value in each others' work
- Reward for implementing the measure (i.e. look at the stats; celebrate success)
- Feature therapists as leaders in stroke rehab
- Education to learn how much time the assessment takes!
- Document how you/staff are spending their time; maybe there is time available or efficiencies
- Leaders to show how the measures are being used (i.e. drive system change)
- Pilot the measures & get feedback from the end-users
- Students to learn measures therefore drive uptake by the therapists
- Provide the tools (make them accessible); funding
- Specific-educator roles for therapists/allied health educators

How can we encourage team members to use outcome measures when they see them as extra work with little value?

- Educate about benefits/reliability/validity to patients ++
- Tie it in to promoting best practice +
- Provide the measures/provide the training, make them accessible, be sure to choose the ones that are applicable to your setting
- Make it an expectation of employment
- Include clinicians in decision making re: measures
- Guilt them into using it
- Learn a new one: delete old one
- “lunch and learn” sessions
- Allow a trial period
- Educate therapist of own benefits to their practice
- Include client in decision making process
- Give raise if used!
- Have place on assessment form, diagnosis and flow sheet with the specific outcome measures i.e. TUG ____, BBB___/56
- Find out where the “extra value” is
- To use the determinant that it’s most beneficial to the patient; client centred
- Client satisfaction survey – hitting the goals, same language, meaningful, consistent
- Means of justification for additional visits/extra time
- Opportunity to give feedback – good, bad, ugly!
- Narrow choice – not too many choices – diluted – not same value therefore spread too thin so not as meaningful/valuable
- Develop a network/discussion forum **
 - opportunity for problem solving
 - literature search to demonstrate value
 - across continuum
 - across facilities or regions
 - circle of care
- Data
 - pre/post
 - follow-up – process; how what they’re doing changes the system and is very valuable and leading components of demonstrating value
- Call a colleague – support/buddy
 - optics of accountability – have to account to your partner, positive competition
- Timelines – opportunity to review, touch base, share in shorter durations – hit the pulse and potentially avoid downward spiral/off tracking
- Who chooses – isolation or team decision
- Ensure simple to use – education, orientation for new staff

How can we use the tools as a common language when not all team members are familiar with some or all of them?



- Educate team members; Lunch and learns
- Shadowing and mentoring
- Job aid with written definitions for reference; Quick reference
- Use the tool
- Pilot with followup with group discussions
- Chart to help interpret the findings (user friendly and portable)
- Check back with staff to ensure they understand
- Open dialogue about their tools
- Use of case studies at staff meetings
- Documentation includes a description of the measure as a strategy to educate/communicate with colleagues
- Provide time to learn the tool and take the time
- Continual feedback loop with continuing education
- Internet access to education
- Whoever leads team rounds use the language “walk the talk”
- Make use of the student that is in the practice setting
- Guilt and peer pressure
- Interprofessional champions for education, mentoring and support, updates
- Include other partners e.g. CCAC, Day programs
- Quick reference cards of tools and findings
- Annual updates e.g. WHMIS
- Core competencies for unit
- Poster in charting room, communication boards, binders
- Copies are available to all team members
- Minimal use of acronyms
- Minimum number of tools (less is more)
- Same standard tool across continuum
- Electronic documentation
- Huddles
- Newsletters, posters
- Contest/prizes/food
- Chart what it means and what it effects on patient
- Cross training – know each other’s world & roles
- Common communication tool
- Discharge summary e.g/ TIP tool
- Legend (description of what numbers and norms mean)
- Staff meeting review tool
- Mentoring program
- Formal certificate for professional practice
- Part of accreditation standards
- Consistent in all settings highlighting scores
- Orientation for new staff
- Part of the culture
- Use as report in interprofessional rounds

How can we get leaders to support (encourage the use of and pay for) the tools when resources are tight?



- Demonstrate usefulness, cost benefit, shorter LOS +++
- Disciplines to adhere to core set of rules
- Show benefit to patient satisfaction ++
- Show who else is using it and their results +
- Encourage administrators to attend education sessions like today +
- Physician group support
- Inclusion of leaders' in reporting back
- MOH making it mandatory/essential
- Tie to funding (like FIM)
- Go to the Foundation for donated dollars
- Increase efficiency (decrease LOS); demonstrate evidence showing that tools will encourage decreased LOS; identify cost of not using it
- Peer pressure and accreditation standards (include in new stroke standards)
- Volunteer to pilot
- Use the media! Patient endorsement and testimonials
- Squeaky wheel technique
- Use guilt!!! Compare to USA
- Use their language: LOS, flow, cost/wt case, IPC
- Direct education of department heads in charge of budgets
- Wishlists: keep ready for donations
- Regional agreement on a standard set of 7 tools: including clinicians in process
 - Across continuum
 - Volunteers: Deb, Bob Teasell, Katherine Salter, Rob Fazakerley, Sandra Connolly
- Buy in volume

Appendix F: Implementation Framework

Tools of the Trade - Getting the Job Done!

Four Steps to Change			
1. Awareness	Who needs to be aware?	Vehicles of Communication	How ready are you?
<ul style="list-style-type: none"> ▫ Staff needs to be aware of the change. Provide background information, and ask staff what they think the benefits to their patients will be? ▫ Identify early adopters. ▫ Anticipate objections in advance and develop a strategy to deal with them e.g., Prepare your responses to tough questions in advance; refer to the literature/data if available, or any other information sources. 	<ul style="list-style-type: none"> ▫ Does the entire interprofessional team need to be aware i.e., OTs, PTs, RNs, PSW's, Physicians etc., of this change? ▫ Arrange a meeting with your Manager, or Coordinator to ensure support. 	<ul style="list-style-type: none"> ▫ Arrange to bring the new information to summon ideas and input at staff or unit meetings. <ul style="list-style-type: none"> ▫ You may want to share some data about how this change can make a difference to the stroke survivor. ▫ Departmental communication books. ▫ Departmental newsletters. 	 <p>If you are in the red or yellow zone, the Stroke Strategy is here to help!</p>
2. Agreement	Who needs to be involved?	Vehicles of Communication	How ready are you?
<ul style="list-style-type: none"> ▫ Start from a position of strength. Start where you have agreement. Don't aim for 100% unanimous support, it can happen in some instances, but is usually rare. Even if you have 60% support, this is good start, it just means you need to start smaller, and will need to identify why the remainder hasn't bought-in? Do they lack understanding or clarity regarding the change? ▫ You may need to suggest a pilot of the change to get others on board. 	<p>Set up a small working group with your early adopters:</p> <ul style="list-style-type: none"> ▫ Do you have support from the organization e.g. Manager's, Coordinator's, Professional Practice ▫ Involve people that the change will impact. Don't forget about staff who work night-shifts and weekends; have you touched base with them? 	<ul style="list-style-type: none"> ▫ Arrange meetings with your working group to discuss a plan of action. Assign roles and responsibilities. ▫ Who else needs to be involved? Who else can help? ▫ Think about having Champion staff to support the change, and act as resource people to staff. ▫ Identify what are the enablers and barriers to this change so that the team can think about how to manage these? Are there any other barriers that need to be managed i.e. .. persons, lack of tools? ▫ Is there any kind of education that needs to be in place in order for staff to be prepared for the change? 	 <p>If you are in the red or yellow zone, remember the Stroke Strategy is here to help!</p>
<p>*To access additional resources e.g., the Report of the Expert Panel on Stroke Rehabilitation Outcomes go to: www.heartandstroke.ca/profed, then click on Stroke/Stroke Care Resources/Rehab Outcome Measures Toolbox</p>			

Tools of the Trade - Getting the Job Done!

3. Adoption	Is everyone ready?	Vehicles of Communication	How ready are you?
<ul style="list-style-type: none"> ▫ People need to practice the change to become familiar with it. 	<ul style="list-style-type: none"> ▫ Do you have a plan of action for adoption, and is everyone aware? ▫ Is staff education in place? ▫ Are tools such as documentation forms in place? Does staff know how to use these tools, and where they can be accessed? ▫ Does staff know where to go for help, or where they can list their questions? ▫ Have a feedback session at a team meeting and make it fun. At a team meeting tell a funny story, or have a "What surprised me about this tool was..... (make it a contest with prizes). 	<ul style="list-style-type: none"> ▫ Are the working group and management aware of the change? Communicate at staff meetings, or send a bulletin out to the staff. ▫ Is it possible to set up a Hotline or a Feedback box to catch all questions and concerns? 	<div style="text-align: center;">  </div> <p style="text-align: center;">If you are in the red or yellow zone, remember the Stroke Strategy is here to help!</p>
4. Adherence	How is it going and how is everyone doing?	Vehicles of Communication	How ready are you?
<ul style="list-style-type: none"> ▫ Keep the change on the radar. (Remember: Out of sight is out of mind) 	<ul style="list-style-type: none"> ▫ Arrange periodic Check-in's: How is everyone doing? ▫ Arrange for celebrations of milestones. 	<ul style="list-style-type: none"> ▫ Has your working group arranged a check-in? Check-in's can be arranged at staff meetings, or via survey-monkey, or questionnaire. ▫ Has your working group set up celebration of milestones, and what milestones would be celebrated? ▫ Dates(s) for celebration milestones could be communicated via staff meetings, bulletins, email or newsletters. Don't forget to celebrate by placing an article in your organization's newsletter or in the SWO Stroke Strategy newsletter. The Stroke Strategy would be interested in learning about your stories and experiences, we could share and post on our website as well. 	<div style="text-align: center;">  </div> <p style="text-align: center;">If you are in the red or yellow zone, remember the Stroke Strategy is here to help!</p>

Appendix G:

Stroke Rehabilitation Outcome Measures Forum

Key Messages

Using standardized, valid assessment tools for stroke care is a Best Practice

Canadian Best Practice Recommendations for Stroke Care 2008:

4iv & 5viii. Clinicians should use **standardized, valid assessment tools** to evaluate the patient's stroke-related impairments and functional status (Evidence Level B; ASA, RCP).

There are important benefits to using a Core Set of standardized measures:

- Ensure tools are valid, reliable measures for stroke clients
- Promote use of a common language within teams and across transitions
- Provide stroke survivors with consistency, enabling them to potentially track their own progress throughout the recovery period
- Improve data collection regarding stroke rehabilitation outcomes
 - documenting the importance and benefit of rehabilitation
 - facilitating the identification of gaps for the purposes of advocacy

Help is available

Southwestern Ontario Stroke Strategy can:

- Make the tools available
- Train people to use the tools
- Help with coordination and facilitation
- Share lessons learned from others
- Provide information about the tools
- Provide education at your facility
- Provide copies of materials used at the forum June 11, 2009

We want you to try the tools out

We would like people to try out at least one of the measures that they are not currently using and provide feedback to the SWO Stroke Strategy. This will provide important information to others in the region and province. Give them a test drive today!

If you are interested, please contact:

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Notes:



This work has been endorsed by the Regional Stroke Rehabilitation Advisory Group.