Southwestern Ontario Stroke Rehabilitation Action Planning Day November 28, 2006

Summary Report

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The Southwestern Ontario Stroke Strategy

The goal of the Stroke Strategy is to decrease the incidence of stroke and improve patient care and outcomes for persons who experience stroke, by reorganizing stroke care delivery - ensuring all Ontarians have access to appropriate, quality stroke care in a timely manner.

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Executive Summary

Call to Action
Stroke is the leading cause of adult disability in Canada. Approximately 85% of stroke survivors experience difficulty performing activities of daily living. Stroke is also the leading diagnosis for admission to Long Term Care Homes from hospital and stroke survivors account for 22% of LTC residents; the cost of which is estimated at over $600 million per year in Canada.

The provision of high quality stroke rehabilitation is known to reduce disability, prevent institutionalization, and decrease morbidity and mortality by 63% for individuals affected by stroke.

Specialized interdisciplinary stroke rehabilitation care, properly resourced, has been estimated to reduce hospital length of stay by 10 days, result in 38% fewer discharges to LTC and generate an estimated direct cost savings to the health care system of $5.9 billion over 20 years. Yet in Ontario only 24% of all acute stroke survivors access inpatient rehabilitation programs, and even fewer access community (max 14.5 % SWO, CCAC) or ambulatory rehabilitation services.

The data from Southwestern Ontario (SWO) raises concerns that patients in rural and smaller centres have less access to rehabilitation (range 0-39%) and that even when patients are admitted to stroke rehabilitation units, the therapist to patient ratios are too low for an adequate stroke rehabilitation therapeutic environment (interdisciplinary team members lacking; or ratios ranging from 1:7-1:332). There are dramatic differences in stroke rehabilitation care depending on where one is living at the time of the stroke.

Despite the strong body of evidence supporting the effectiveness of stroke rehabilitation, stroke survivors in SWO do not consistently benefit from a well-organized, well-designed, high quality system providing effective stroke rehabilitation.

The ideal stroke rehabilitation system combines initial rehabilitation assessment within 24-48 hours, early aggressive admission to organized inpatient stroke rehabilitation units providing high intensity, specialized interdisciplinary care and comprehensive community rehabilitation services for early supported discharge.

There are not only potential cost savings for the system as a whole, but also the quality of life of stroke survivors and their families will improve as stroke survivors achieve higher levels of independence.

Action Planning Day

To address the tremendous variation in access to best practice stroke rehabilitation in the region, the Southwestern Ontario Stroke Strategy led the Stroke Rehabilitation Action Planning Day with the purpose of generating consensus on strategic directions for moving stroke rehabilitation towards best practice for Southwestern Ontario.

On November 28, 2006, 72 stakeholders came together to identify initiatives that will be first steps in moving stroke rehabilitation toward best practice in the region. Stakeholder groups representing all the counties in SWO, and champions from across the continuum of care,

participated in this planning day. Participants included: senior leadership, clinicians, rehabilitation program managers, District Stroke Coordinators, CCAC representatives, private community therapy providers, and representatives from the Erie St Clair and South West LHINs.

Their challenge was to generate ideas about how to improve the system for stroke rehabilitation - both changes *within* existing resources and changes *to* existing resources/systems.

> *"The Action Planning Day was successful in that it assembled partners committed to improvements in public education, stroke prevention and stroke therapy. Stroke management benefits from regional collaboration and participant willingness to share ideas, resources and organizational talents was clearly evident. When this level of cooperation occurs, clients and their families are clearly the beneficiaries."*
>
> **Ken Tremblay**, CEO, Chatham Kent Health Alliance

Planning Day Objectives:

1. Achieve a common understanding of the current state and initiatives in stroke rehabilitation
2. Respond to opportunities related to provincial and national consensus panel work
3. Identify 3 initiatives to move stroke rehabilitation towards its vision for Southwest and create working groups that will undertake the initiatives
4. Use a project model that will focus on local projects/pilots with potential for regional application

Process:

The model used for the day was one of appreciative inquiry - directing participants to identify and build on local and regional strengths. An underlying assumption for the workshop was to use the **Canadian Best Practice Recommendations for Stroke Care: 2006** as a standard.

Included in these guidelines are the following best practices for stroke rehabilitation:

1. All patients with stroke who are admitted to hospital who require rehabilitation should be treated in a rehabilitation stroke unit by an interdisciplinary team.
2. Stroke rehabilitation should begin as early as possible.
3. Patients should receive intensive, planned interdisciplinary care provided by stroke rehabilitation experts.
4. Early supported discharge services should be provided by well resourced, coordinated specialist interdisciplinary teams.

Prework:

A planning group compiled a list of 29 needs identified by key stakeholders as actionable gaps in the system for stroke rehabilitation. Participants completed a survey prior to the Planning Day to establish priorities.

Outcomes:

There was a high level of energy and enthusiasm as ideas about what would be required to bring about the desired changes were generated. A brief summary of some of the key discussion points and conclusions follow:

Best Practice: Organized Stroke Rehabilitation Units
Evidence shows that specialized and clustered stroke rehabilitation units enhance the effectiveness of care

SWO Reality:
- no rehabilitation hospital beds in Bruce, Huron and Oxford Counties
- no regional plan based on population or need
- only two stroke rehabilitation units (London, Windsor) and one integrated stroke unit (Chatham)
- a number of centres in Southwest do not have the critical mass (minimum 8 beds) to provide best practice stroke rehabilitation services

"The response to an Evidence-Based approach to transforming the Stroke Rehabilitation system was positive and enthusiastic; there is clearly a great deal of interest in doing what we do better to the benefit of our patients.'

Dr. Robert Teasell, Chair-Chief and Professor of the Department of Physical Medicine and Rehabilitation, Schulich School of Medicine, University of Western Ontario

Strategic Priority
⇒ Create a regional plan for designated inpatient stroke rehabilitation beds based on population need, evidence and best practices.

Benefits
- equitable access to best practice stroke care for all residents of SWO
- improved functional outcomes; more discharges home with reduced long term reliance on the health care system
- decreased length of stay; both acute care and rehabilitation
- reduction in mortality
- centres of excellence will provide enhanced, efficient expert care

Best Practice: Timely Access to Inpatient Stroke Rehabilitation
Evidence indicates that the greatest benefits provided by inpatient stroke rehabilitation units are derived from early admission of moderate and severe stroke survivors (FIM scores 40-80)

SWO Reality:
- not all stroke patients in SWO access inpatient stroke rehabilitation: range 0% to 39%
- significant delays post onset stroke until admission to inpatient rehabilitation varying from 10 to 38 days
- no standard exists for admission to inpatient rehabilitation services based on need or functional score
- primarily higher functioning clients are being admitted to inpatient rehabilitation in SWO (FIM scores 63.3-80.8); limiting access for those more severely affected
- high numbers of stroke survivors are admitted to LTC Homes immediately following acute stroke (up to 23.7%)

Strategic Priority

⇒ Create an access plan and navigation system for all residents of Southwestern Ontario ensuring timely access to best practice stroke rehabilitation

Benefits:

- equitable, timely access to best practice stroke care for all residents of SWO
- improved system navigation, seamless care
- increased discharges home and decreased admissions to LTC Homes

Strategic Priority

⇒ Standardize assessment and triage criteria for equitable, timely access to designated inpatient stroke rehabilitation beds

Benefits:

- right service, right place, right time, right provider

Strategic Priority

⇒ Determine the demand for stroke rehabilitation services for severe stroke in the region

Benefits:

- access for severe stroke survivors to evidence based care
- increased discharges home
- decreased admissions to LTC Homes
- integrated continuum of care for adults with complex needs

Best Practice: Interdisciplinary Team Expert in Post Stroke Care

Evidence indicates that greater intensities of rehabilitation therapies by specialist providers result in better outcomes

SWO Reality:

- absence of core interdisciplinary team members in some inpatient rehabilitation programs
- tremendous variation in therapy staff ratios in designated inpatient rehabilitation programs (e.g. OT range 1:7 to 1:148 FTE per bed covered)
- intensity of rehabilitation services in some programs inadequate to achieve outcomes identified by best practices

Strategic Priority

⇒ Create staffing guidelines for inpatient stroke rehabilitation programs based on evidence and best practice.

Benefits:

- equitable access to interdisciplinary teams
- standards of care
- improved functional outcomes
- attract professional staff

Best Practice: Comprehensive Community Stroke Rehabilitation Services

Evidence indicates that stroke survivors with mild physical deficits benefit equally from specialized community rehabilitation compared to inpatient services, thereby reducing hospital

length of stay. Specialized community stroke rehabilitation services are also known to reduce admissions to LTC Homes from hospital and hospital readmissions post discharge.

***SWO Reality**:*

Ambulatory Services

- not available in some communities
- limited access, not comprehensive, wait times (up to 10 months), time limited
- lack of expertise

CCAC Services

- some counties offer consultation/teaching only, not therapeutic rehabilitation services
- service provision ranges from 4.6% to 14.5% post-stroke on discharge from acute care
- over 54% of clients in Lambton and Bruce counties are discharged home post acute stroke with no CCAC services
- self identified lack of expertise
- lack comprehensive interdisciplinary team care

Strategic Priority

⇒ Create a regional plan for adequate ambulatory and community rehabilitation services post-stroke to ensure an efficient rehabilitation system

Benefits

- earlier discharge from inpatient settings
- reduced dependence on hospital services
- more efficient, cost effective rehabilitation system
- improved functional outcomes; more discharges home with reduced long term reliance on the health care system
- chronic disease management model; retaining people in community

Strategic Priorities Going Forward:

Six strategic priorities were identified, rather than 3, from all the potential actionable gaps. All attracted significant support as foundational actions necessary for stroke rehabilitation to achieve best practice. The interaction and integration of all the strategic priorities were noted as essential components of an effective and efficient system. Potential for collapsing the initiatives is apparent and will be addressed.

In order of priority:

1. Create a regional plan for adequate ambulatory and community rehabilitation services post-stroke to ensure an efficient rehabilitation system
2. Create an access plan and navigation system for all residents of Southwestern Ontario ensuring timely access to best practice stroke rehabilitation
3. Create a regional plan for designated inpatient stroke rehabilitation beds based on population need, evidence and best practices.
4. Standardize assessment and triage criteria for equitable, timely access to designated inpatient stroke rehabilitation beds
5. Create staffing guidelines for inpatient stroke rehabilitation programs based on evidence and best practice.
6. Determine the demand for stroke rehabilitation services for severe stroke in the region

Participants at the Action Planning Day volunteered to continue work on the initiatives by joining project teams.

LHIN representatives highlighted some of the achievements at the end of the day:

- Participants overwhelmingly agreed on the need for a coordinated system approach to stroke rehabilitation with built-in strategies for navigation.
- There were many good ideas for doing things differently to make the system more efficient and effective.
- "Become part of us" - there is great potential for a working relationship within the LHIN

"Networks such as the Stroke Network lend horizontal system integration opportunities that parallel our LHIN objectives."

Paul Brown, Integration Consultant, Erie St. Clair Health Integration Network

Next Steps:

- Project teams to meet to refine action plans and begin to identify areas for common action.
- Continue to work with the LHINs to implement an effective, coordinated stroke rehabilitation system.
- Participate on Southwest LHIN Rehabilitation Priority Action Team. Consider stroke rehabilitation a "Quick Start".
- Continue to support Erie St Clair LHIN Rehabilitation Network, aligning activities and building on collaboration.
- Continue to bring forward leveraging opportunities and share experiences from across the province as part of the Ontario Stroke System, through our connection with the LHIN CEO designate.
- Advocate for policy and system change that will support best practice stroke rehabilitation.
- Highlight the current state of stroke rehabilitation in the Stroke Evaluation Advisory Committee Report.
- Participate in the Regional Consultation of the Provincial Consensus Panel being held February 5, 2007 and incorporate resulting outcomes relevant to Southwestern Ontario.

"By identifying current issues and trends, sharing accomplishments, prioritizing needs and creating action plans, we have committed to system improvement. Integration and collaboration across two Local Health Integration Networks generates the momentum to deliver this change.'

Nancy Snobelen, Program Director of Rehabilitation and Continuing Care, Chatham Kent Health Alliance

From Evidence to Practice

There is a substantial body of evidence available for us to draw upon in our vision to create an effective system for stroke rehabilitation in Southwestern Ontario. We know what works!

There exists tremendous potential for greater effectiveness, more equitable access, and greater efficiencies. Now is the time to examine our current system and build on it.

Our challenge was to identify ways to improve the system for stroke rehabilitation – both *within* existing resources and changes *to* existing resources/systems that would move stroke rehabilitation towards best practice. The majority of the strategic priorities identified: regional planning, clustering of stroke beds, the creation of a navigation system, implementing the use of standardized assessment, identifying needs for severe stroke and the creation of staffing guidelines are all improvements that can be carried out *within* existing resources. Much of this foundational work will ultimately contribute to directing needed changes *to* existing resources. All have the potential to significantly improve the system for stroke rehabilitation in Southwestern Ontario.

The participants at the Action Planning Day exhibited the energy, enthusiasm and motivation to undertake this ambitious task. More than 30 of the participants volunteered to continue work on the initiatives by joining the project teams. “We need to … make this happen!”

82% indicated confidence that we have identified initiatives that will improve the status of stroke rehabilitation in SWO. “Good start to a very challenging task!”

In Conclusion:

We are confident that as key decision makers and leaders of SWO health service agencies, together with our LHIN partners, we have the vision and momentum it takes to create an effective, efficient, sustainable stroke rehabilitation system that will meet the needs of our aging population.

We believe we can create a new future for residents of Southwestern Ontario recovering from stroke.

> *"Great 'meeting of the minds' from across the region so that we could see the big picture. The Action Planning Day allowed participants to prioritize known gaps in the rehabilitation continuum from inpatient bed allocation to access to outpatient & community services. It allowed members to envision (and plan to move toward) next steps - and people were optimistic that change could occur with the LHIN system. "*
>
> **Dr Nathania Liem**, Medical Director,
> Regional Rehabilitation Program,
> Windsor Regional Hospital

Vision of Stroke Rehabilitation in Ontario

Each year it is estimated that about 17,913 individuals (based on the estimated incidence rate of 157 per 100,000) (HSFO, 2000) will experience a stroke in the province of Ontario. According to the June 2000 report, *Towards an Integrated Stroke Strategy for Ontario*, the annual number of adult Ontarians living with the effects of stroke is estimated to be about 88,000.

Stroke rehabilitation is one of the key components in the continuum of stroke care. When a person survives a stroke, rehabilitation is a critical enabler that helps survivors maximize their quality of life physically, cognitively, emotionally and socially.

The Heart and Stroke Foundation of Ontario (HSFO), in consultation with the Ministry of Health and Long-Term Care (MOHLTC), established a Consensus Panel on stroke rehabilitation in 1999 (HSFO, 2000).

The Panel's vision for stroke rehabilitation was:

> *Individuals who experience a stroke will have timely access to the appropriate intensity and duration of rehabilitation services. These services will be provided in a comprehensive and coordinated way to patients and families, by agencies and health care providers who are expert in stroke care and practice rehabilitation principles.*

This vision can only be achieved with the development of regional stroke rehabilitation systems that are linked to broader stroke networks and regional rehabilitation networks. This will ensure a collaborative approach that is consistent with the Panel's vision for stroke rehabilitation.

Regional stroke rehabilitation systems have a number of important benefits. A regional system approach will help support a collaborative approach to stroke rehabilitation, where services are coordinated and integrated from the acute phase of stroke to all levels of stroke rehabilitation and will advance a common approach to initial triage and ongoing access to timely stroke rehabilitation. A regional network will also advance strong links to primary and secondary prevention programs and a concerted response to regional requirements for professional training, continuing education and consultation, and common decision making protocols.

The following principles guide the Ontario Stroke System:

- *Comprehensive*: improve stroke services across the entire continuum of care, from prevention programs to care in a long-term care or community setting
- *Integrated*: essential services and providers function as a unified whole; formal linkages established across the continuum of care and across Ontario to minimize duplication of services and optimize existing resources
- *Evidence-based*: build on practices and care that have been supported by scientific evidence, or are considered the gold standard ("best practice") according to prevailing knowledge
- *Province-wide*: available to all Ontarians irrespective of geographic location (i.e. telestroke, district stroke centres designation criteria).

The Ministry funded six rehabilitation pilot projects, which focused on assessment, triage and/or referral systems, outreach including tele-rehab, transition to community, and community and information flow services. These pilots have been completed (November 2004) and the results will contribute to the creation of a coordinated stroke rehabilitation strategy.

A Business Plan was submitted to the Ministry in November 2004 which built upon the Consensus Panel Report and the six pilot projects. A key component of the Business Plan was the hiring of Regional Stroke Rehabilitation Coordinators. The main role of the Regional Stroke Rehabilitation Coordinator is to develop a regional rehabilitation plan, and to move this plan from vision to reality using research and evidence-based practices.

In 2005, an Ontario Stroke Rehabilitation System Consensus Panel was formed with the following objectives:

1. Describe and define the components of the Stroke Rehabilitation System in Ontario
2. Identify components of a triage system
3. Select the common assessment tools
4. Take the initial steps in the development of a province-wide data system for stroke rehabilitation

The work of this panel has not yet been completed.

Stakeholders in the region felt that it was important to begin a visioning exercise for Southwestern Ontario to create Action Plans specific to the needs of the region. This work could then build upon the previous works and the upcoming outcomes of the Consensus Panel.

Moving Stroke Rehabilitation Toward Best Practice

Best Practice: Organized Stroke Rehabilitation Units

Canadian Stroke Strategy: Canadian Best Practice Recommendations for Stroke Care 2006

- All patients with stroke who are admitted to hospital and who require rehabilitation should be treated in a comprehensive or rehabilitation stroke unit by an interdisciplinary team. (Australian Rehabilitation; Evidence Level A/I)
- All patients should be referred to a specialist rehabilitation team on a geographically defined unit as soon as possible after admission. (RCP; Evidence Level A)
- Post-acute stroke care should be delivered in a setting in which rehabilitation care is formally coordinated and organized. (AHA-ASA; Evidence Level 1)

Highlights of Evidence:

Specialized and clustered inpatient stroke rehabilitation units enhance the effectiveness of care and service delivery.

Cost Benefits of Inpatient Stroke Rehabilitation Units (Teasell, 2006)
Multiple randomized controlled trials show specialized **interdisciplinary stroke rehabilitation units** have the following benefits: 1. Improvement of functional outcomes. 2. Reduction in mortality. 3. Reduction of hospital length of stay (both acute and rehab). 4. Ensure more patients return home and less to institutions. Studies which have compared stroke rehabilitation unit care to standardized medical care for moderate to severe strokes have shown that stroke rehabilitation units have lower direct costs or are cost neutral. The improved functional outcomes mean a reduction in informal care costs. The reduction in institutional care results in significant future care savings. Both will improve quality of life.

Comparing Canada and the United States
Post Stroke Rehabilitation Outcomes Project (PRSOP) 2005

	US PROSP[1]	Canada (IBM)[2]
Mean Age	66.0+14.6	70.8
ADL dependent before stroke (%)	27.9	
Ambulant without assistance or device before stroke (%)	84.1	
Lived alone before stroke (%)	20.7	24.5
Mean admission FIM	61.0+20.3	75.2
Mean onset to rehab admission	13.8+20.8	26 days
Mean acute LOS	8.6+8.4	
Mean rehab LOS	18.6+10.6	38 days
Discharge Destination		
Home	78.0%	67.3%
Community assisted living	2.9%	4.2%
Institutional	13.2%	15.3%
Hospital	4.1%	9.8%
Other acute rehab	1.3%	
Died	0.5%	0.6%
Mean discharge FIM	87.2+22.5	96.3
Mean increase in FIM	26.2+14.0	21.2

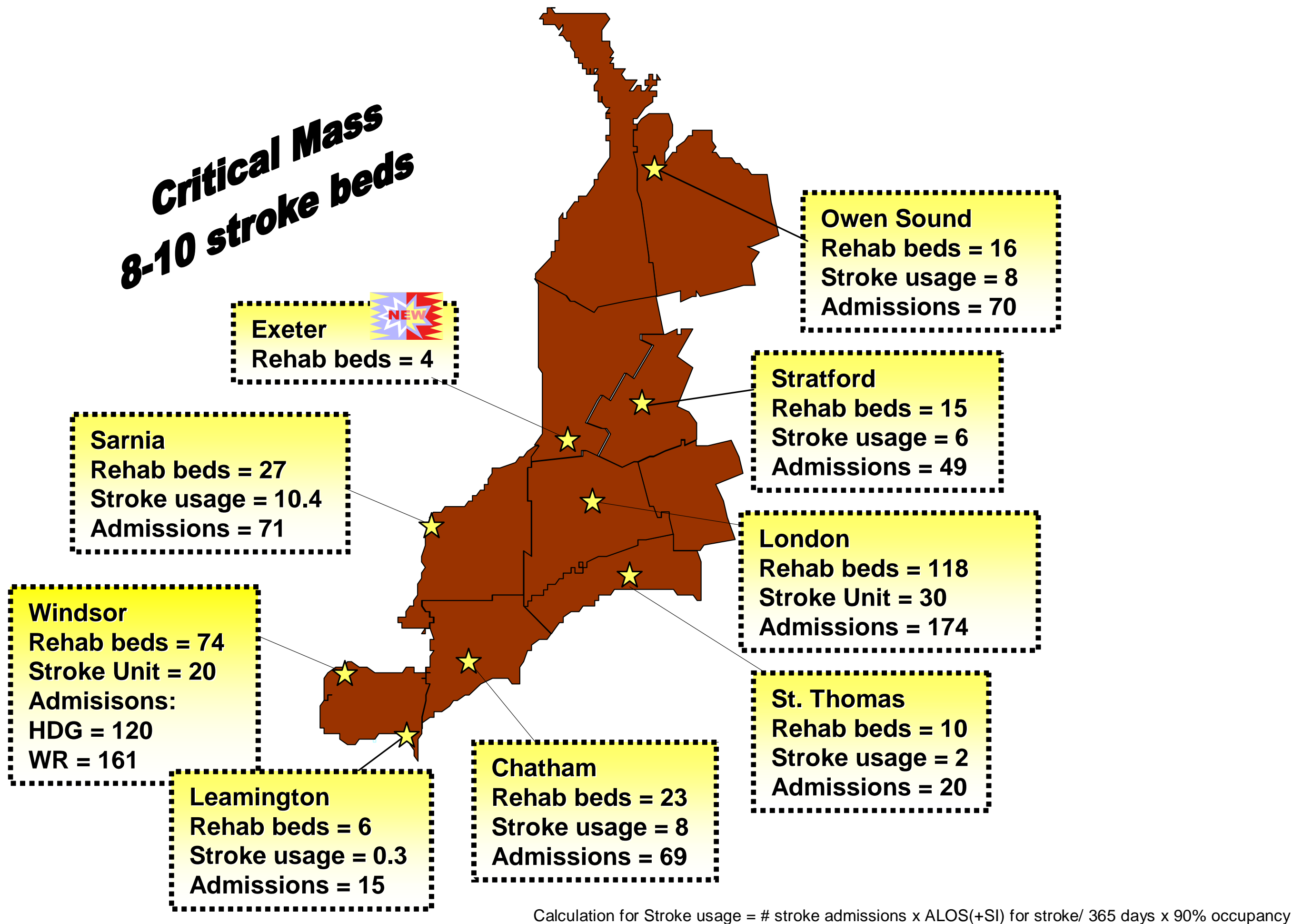
[1] United States data from the PSROP study (n=1161 2002-2203)
[2] IBM data for participating centers (n=1003) for July 01 to September 30, 2003

Outcomes within the rehabilitation system in the United States, which are now the international "gold standard" or benchmark for stroke care, achieve efficiencies currently not seen within the Canadian system.

The U.S. PSROP centers, compared to rehabilitation in Canada, admit stroke patients much sooner following onset of their stroke, at a lower level of functioning, have shorter length of stays and achieve better functional outcomes, discharging more patients home and fewer to an institution after their rehabilitation stay. The Canadian system appears significantly less efficient, suggesting there is tremendous room for improvement with appropriate reorganization and reinvestment. The requirements – specialized stroke rehabilitation units with more medical and RN support, standard therapy intensities, weekend therapy, more focused task specific treatments and improved outpatient services. (Teasell, 2006)

Current Status in Southwestern Ontario:

Designated Rehabilitation Beds and Current Usage for Stroke Rehabilitation (2005 NRS Data)



Calculation for Stroke usage = # stroke admissions x ALOS(+SI) for stroke/ 365 days x 90% occupancy

The above chart illustrates all designated general rehabilitation beds in Southwestern Ontario and a calculation from 2005 NRS data of the numbers of those beds used for stroke rehabilitation

- No rehabilitation hospital beds in Bruce, Huron and Oxford Counties and only 10 rehabilitation beds in Elgin County
  - Exeter recently approved 4 beds (opening late 2006)
  - Woodstock to open 22 beds in 2009
- Lack of equitable access for all residents of SWO
- No regional plan based on population or need
- Inconsistent regional availability of specialized inpatient stroke rehabilitation beds; only two stroke rehab units (London, Windsor) and one integrated stroke unit (Chatham)
- Critical mass: minimum of 8 stroke rehab beds is recommended for a stroke unit

Access to Inpatient Stroke Rehabilitation
NRS 2005 stroke rehabilitation admissions as a percentage of CIHI 2004 acute stroke hospital admissions by county

County	# of Strokes	NRS Adm	%
Essex	717	281	39
Kent	249	69	28
Lambton	307	71	23
Elgin	166	20	12
Middlesex	464	174	37
Oxford	184	0	0
Huron Perth	234	49	21
Grey Bruce	397	70	18

- Access for stroke survivors to inpatient rehabilitation is highly variable in SWO ranging from 0% to 39%
- For 2004/2005, there were no designated rehabilitation beds in Oxford, Huron and Bruce counties therefore there are no rehabilitation admissions reported. These residents may be accessing rehabilitation in adjacent counties; although the local mandate may preclude admission (Parkwood Hospital's primary mandate for stroke rehabilitation is for London/Middlesex residents; others are admitted based on bed availability).
- Access for those counties with available rehabilitation beds ranged from 12% to 39% of all stroke survivors indicating a lack of access to a significant number of individuals who would potentially benefit
- Rehabilitation admissions reported through NRS reflect only the stroke patients who accessed designated rehabilitation inpatient beds. We recognize that some informal rehabilitation is provided in other venues (e.g. Complex Continuing Care) but these lack the coordinated interdisciplinary services known to provide optimum benefit and cost effectiveness for stroke.

How Do We Measure Up?

1. There is no regional plan based on population or need for inpatient stroke rehabilitation units in Southwestern Ontario
2. Some individuals are not accessing inpatient stroke rehabilitation; with access rates varying from 0 to 39% of all stroke survivors.
3. A number of centres in Southwest do not have the critical mass to provide best practice stroke rehabilitation services (Leamington, Exeter, St Thomas, Stratford).
4. There is an opportunity to develop district level stroke rehabilitation centres that ensure appropriate critical mass and infrastructure.

Best Practice: Timely Access to Inpatient Stroke Rehabilitation

Canadian Stroke Strategy: Canadian Best Practice Recommendations for Stroke Care 2006

- All patients with stroke should begin rehabilitation therapy as early as possible once medical stability is reached. (AHS/ASA; Evidence Level I)

Highlights of Evidence:

Evidence indicates that the greatest benefits provided by inpatient stroke rehabilitation units are derived from early admission of moderate and severe stroke survivors (FIM scores 40-80)

Fewer days from stroke symptom onset to rehabilitation admission was associated significantly with better functional outcomes: higher total, motor, mobility, and ADL discharge FIM scores. (Maulden, 2005)

Reduction in Length of Hospital Stay
Data from a recent systematic review indicated that specialized stroke unit care was associated with an average reduction in length of hospital stay of 10 days (95% CI). (Teasell, 2006)

Cost Benefits of Early Admission to Rehabilitation (Teasell, 2006)
Both American and Canadian data indicate that admitting stroke patients to rehabilitation early has the following benefits: 1. Reduces the length of stay in acute hospital units 2. Reduces the length of stay in rehabilitation 3. Improves functional outcomes, resulting in more independent stroke survivors, with reductions in informal caregiver support requirements, home care supports and increasing the likelihood of discharge home Admitting stroke patients several days earlier to rehabilitation would result in greater functional gains and a reduction in overall hospital length of stay. Given the high cost of acute hospital stays such a strategy would offer cost savings even after the required investment in stroke rehabilitation to accommodate earlier admissions occurs.

Current Status in Southwestern Ontario:

Days Post Onset Stroke to Inpatient Stroke Admission
NRS 2005 Rehabilitation Data

Facility	Days Post Onset Stroke
Windsor Regional	25
Chatham	13
Sarnia	13
Parkwood	38
St Thomas	11
Stratford	10
Owen Sound	28

This table indicates the average number of days post onset stroke on admission to inpatient rehabilitation by facility.

- There is tremendous variation ranging from 10 to 38 days post stroke.
- Note that this does not represent all stroke patients that need rehabilitation but only those who access designated rehabilitation beds.

As per the "Access to Inpatient Stroke Rehabilitation" table in the previous section:

- Access for stroke survivors to inpatient rehabilitation is highly variable in SWO ranging from 0% to 39%

How Do We Measure Up?

1. There are significant delays post onset stroke until admission to inpatient rehabilitation in some areas (range 10 to 38 days).
2. There is an opportunity to set a standard for early admission to stroke rehabilitation.
3. There is a need to create pathways and navigation tools to ensure timely access to best practice stroke rehabilitation for all residents of Southwestern Ontario.

Best Practice: Standardized Assessment and Triage Criteria

Canadian Stroke Strategy: Canadian Best Practice Recommendations for Stroke Care 2006

- All people admitted to hospital with acute stroke should have an initial assessment by rehabilitation professionals as soon as possible after admission (RCP Level A); preferably within the first 24–48 hours. (NZ; Evidence Level C)

- Standardized assessment tools should be used to assess the functional status of stroke patients. (AHA-ASA; Evidence Level II)

- Clinicians should use standardized, valid assessments to evaluate the patient's stroke-related impairments and functional status. (AHA-ASA; Evidence Level III)

- All people with acute stroke not admitted to hospital should undergo a comprehensive outpatient assessment(s), which includes a medical evaluation, and functional assessments (RCP; Evidence Level A), preferably within two weeks. (BPS-WG; Evidence Level C/D)

Highlights of Evidence:

Evidence indicates that stroke survivors with a FIM score of between 40 and 80, reflective of moderate to severe functional disability, benefit most from an inpatient rehabilitation stay on a specialized stroke unit.

Rehabilitation needs for individuals with FIM scores greater than 80 are met most effectively in the community (Teasell, 2007).

The average admission FIM Score in US stroke rehabilitation facilities is 61. (Gassaway, 2005) (see also table page 14).

Current Status in Southwestern Ontario:

There are no standardized assessment tools or measures used for admission to designated inpatient rehabilitation in Southwestern Ontario. After admission, FIM (Functional Independence Measure) scores are assessed as a requirement of NRS data for CIHI.

Admission FIM Scores by Facility
NRS 2005 Rehabilitation Data

Facility	Admission FIM
Windsor Regional	78.2
Chatham	79.3
Sarnia	80.8
Parkwood	77.8
St Thomas	75.9
Stratford	63.3
Owen Sound	79.4

This chart indicates average FIM score, a measure of functional independence, on admission to an inpatient rehabilitation facility.

- There is clear variation in functional levels of stroke patients at admission, ranging from a FIM score of 63.3 to 80.8
- Higher admission functional scores indicate primarily milder stroke clients are being admitted to inpatient rehabilitation; limiting access for those more severely affected
- Lack of standardized admission criteria across the region

How Do We Measure Up?

1. No standard exists for admission to inpatient or community rehabilitation services based on need or functional score.
2. Access to inpatient stroke rehabilitation is not equitable for all residents of Southwestern Ontario.
3. There is a tendency to admit patients with higher functional levels to inpatient rehabilitation services (Admission FIM scores range 63.3 to 80.8).
4. Criteria are needed to ensure that a person with stroke receives the right services in the right place at the right time.

Best Practice: Access to Stroke Rehabilitation Services for Severe Stroke

Canadian Stroke Strategy: Canadian Best Practice Recommendations for Stroke Care 2006

- All patients with stroke should begin rehabilitation therapy as early as possible once medical stability is reached. (AHS/ASA; Evidence Level I)
- Patients should undergo as much therapy appropriate to their needs as they are willing and able to tolerate. (RCP; Evidence Level A)
- Where admission to a stroke rehabilitation unit is not possible, longer-term inpatient rehabilitation should be provided on a mixed rehabilitation unit (i.e. where interdisciplinary care is provided to patients disabled by a range of disorders including stroke). (SIGN 64; Evidence Level B)

Highlights of Evidence:

Studies indicate that individuals with severe deficits (FIM 40 on admission) gain significant benefit from inpatient stroke rehabilitation with greater numbers returning home and fewer institutionalized.

"Fewer days from stroke symptom onset to rehabilitation admission was associated significantly with better functional outcomes: higher total, motor, mobility, and ADL discharge FIM scores. **For severely impaired patients with stroke, the relation was strongest**" **(**Maulden, 2005).

"Patients with severe strokes (average admission FIM score 47) achieved significant functional outcomes. Many were no longer wheelchair dependent (28% able to ambulate independently) and almost half (43%) returned home "(Teasell, 2005).

"100% of severe stroke patients (admission FIM scores of <40) returned home following a 60 day inpatient rehabilitation stay" (Nolfe, 2003).

In 2004, results from the Stroke Rehabilitation Pilot Project: SWO Outpatient Services for Severe Stroke (FIM < 50) indicated that:

- Patients showed significant functional improvement
- 38% fewer discharges to LTC from inpatient rehabilitation
- Estimated system savings >$400,000 per year (includes the cost of Rx)

Current Status in Southwestern Ontario:

As per the last table "Admission FIM Scores by Facility", it is evident that access to inpatient rehabilitation for individuals with severe stroke (FIM 40) is limited in Southwestern Ontario.

Acute Stroke Dispositions to LTC
CIHI data FY 2004

County	LTC
Essex	10.9%
Kent	15.7%
Lambton	12.4%
Elgin	23.5%
Middlesex	23.7%
Oxford	21.7%
Huron	14.6%
Perth	19.2%
Grey	10.4%
Bruce	5.7%

This table indicates the numbers of stroke patients discharged directly from acute care hospital beds to Long Term Care Homes. An inordinately high number are admitted to Long Term Care Homes in some counties (range 5.7% to 23.7%) without having had the opportunity for recovery provided by rehabilitation services.

We recognize that some informal rehabilitation is provided in other venues (e.g. Complex Continuing Care) but these lack the coordinated interdisciplinary services known to provide optimum benefit and cost effectiveness for stroke.

How Do We Measure Up?

1. Stroke survivors with more severe functional deficits are not accessing inpatient rehabilitation in Southwestern Ontario
2. An inordinately high number of stroke survivors are institutionalized immediately following acute stroke (up to 23.7%)
3. Standards for rehabilitation programs for severe stroke outside of designated inpatient rehabilitation beds are nonexistent.

Best Practice: Interdisciplinary Team Expert in Post Stroke Care

Canadian Stroke Strategy: Canadian Best Practice Recommendations for Stroke Care 2006:

- Post-acute stroke care should be delivered by a variety of treatment disciplines, experienced in providing post stroke care, to ensure consistency and reduce the risk of complications. (RCP; Evidence Level C)

- The interdisciplinary team may consist of a physician, nurse, physical therapist, occupational therapist, speech and language pathologist, social worker, psychologist, recreation therapist, patient and family/caregivers. (ASA-AHA; Evidence Level 1). This "core" interdisciplinary team should consist of appropriate levels of these disciplines, as identified by the Stroke Unit Trialists' Collaboration. (SIGN 64; Evidence Level B)

- The interdisciplinary team should assess patients within 24-48 hours of admission and develop a comprehensive rehabilitation plan to reflect the severity of the stroke and the needs and goals of the stroke survivor. (HSFO, NZ; Evidence Level C)

- Stroke unit teams should conduct at least one formal interdisciplinary meeting per week to discuss the progress and problems, rehabilitation goals, and discharge arrangements for patients on the unit. (SIGN 64; Evidence Level B)

- Patients should undergo as much therapy appropriate to their needs as they are willing and able to tolerate. (RCP; Evidence Level A)

Highlights of Evidence:

Evidence indicates that greater intensities of rehabilitation therapies by specialist providers result in better outcomes:

Intensity: Greater intensities of rehabilitation therapies result in improved stroke outcomes. Studies show significant improvements in activities of daily living, function and reduction of impairments with higher intensities of treatment.

Weekend therapy: Provision of weekend therapies improves functional outcomes while reducing length of hospital stays; almost double FIM efficiency scores. Weekend therapies would reduce hospital length of stay by a minimum of each day weekend therapy was provided. Hence with a 38 day length of rehabilitation stay there is the potential to reduce length of stay by at least 10 days.

Adjuncts: Consideration should be given to doing things differently to ensure the highest level of intensity – this includes increased use of rehabilitation therapy aids, recreational therapists, volunteers (including family and friends), robotics, computers, etc

Differences in the Processes of Care Between a Stroke Unit and a Stroke Team (Evans et al. 2001)

Processes of Care	Odds Ratio (95% CI) Associated with the Benefit of Stroke Unit Care
Formal swallowing assessment within 72 hours	3.3 (2.0-5.4)
Occupational therapy assessment within 72 hours	2.4 (1.4-4.0)
Social work assessment within 72 hours	2.8 (1.1-6.9)
Attention to secondary prevention	2.0 (1.2-3.3)
Assessment of caregiver skill need	11.3 (6.6-19.2)
Written rehabilitation goals	2.5 (1.3-4.8)

Evans et al. (2001) has identified specific components of stroke unit care that are associated with decreased mortality and dependence. The above listed processes of care were evaluated comparing a dedicated stroke unit and less organized stroke team located on a general medical ward. This work has specifically identified the importance of early access to Occupational Therapy, Speech Language Pathology and Social Work as critical to improved outcomes (Teasell, 2006).

Current Status in Southwestern Ontario:

Specialized and clustered inpatient programs enhance the effectiveness of care by building expertise. There are two such programs in Southwestern Ontario (London, Windsor) and one integrated stroke unit in Chatham.

Inpatient Stroke Rehabilitation Staffing Ratios in Southwestern Ontario
2006 Data FTE per bed covered

	PT	OT	SLP	SW	RN/RPN
Parkwood	1:7	1:7	1:15	1:15	1:3(3/2)
Windsor	1:10	1:8	1:25	1:18	1:4(1/5)
Owen Sound	1:8	1:16	1:27	1:20	1:4(1/1)
Chatham	1:14	1:16	1:26	1:90	1:4(1/3)
Sarnia	1:14	1:14	1:54	1:76	1:5(1/1)
Stratford	1:15	1:15	1:20	1:50	1:5(1/2)
St Thomas	1:72	1:72	1: 166	1:332	1:6(1/1)
Leamington	1:45	1:148	0	0	1:4(1/2)

RN/RPN Ratios: First ratio refers to total nursing complement per patient; second ratio, in brackets, refers to the RN to RPN ratio

The above table reflects the budgeted FTE staffing ratios per bed covered in designated inpatient rehabilitation units across Southwestern Ontario rounded to the nearest whole number. Where interdisciplinary staff are not assigned solely to the rehabilitation unit, the number reflects the number of beds covered on all services by the staff member. Staff do not always receive referrals for every bed covered.

- Absence of core interdisciplinary team members in some inpatient rehabilitation programs (no Speech Language Pathology or Social Work in Leamington)
- Therapy staff ratios for designated inpatient rehabilitation beds demonstrate tremendous variation. For example, Occupational Therapy staffing ranges from one FTE for 7, to one FTE for 148 beds covered

How Do We Measure Up?

1. There is an absence of core interdisciplinary team members in some inpatient rehabilitation programs.
2. There is tremendous variation in therapy staff ratios in designated inpatient rehabilitation programs (e.g. OT range 1:7 to 1:148 FTE per bed covered).
3. The intensity of rehabilitation services provided in some programs is inadequate to achieve the outcomes identified within the literature and considered best practice.
4. Staffing Guidelines for inpatient stroke rehabilitation teams are needed.
5. There is potential to reduce the length of inpatient rehabilitation stay by increasing the intensity of rehabilitation therapies and/or providing weekend therapies.
6. There is an opportunity to maximize use of nonprofessional staff and adjuncts to enhance care.

Best Practice: Comprehensive Community Stroke Rehabilitation Services

Canadian Stroke Strategy: Canadian Best Practice Recommendations for Stroke Care 2006:

- All people with acute stroke not admitted to hospital should undergo a comprehensive outpatient assessment(s) which includes a medical evaluation and functional assessments (RCP; Evidence Level A), preferably within two weeks. (BPS-WG; Evidence Level C/D)

- Stroke survivors should continue to have access to specialized stroke care and rehabilitation after leaving hospital (acute and/or inpatient rehabilitation). (RCP; Evidence Level A)

- Early supported discharge services provided by a well resourced, coordinated specialist interdisciplinary team are an acceptable alternative to more prolonged hospital stroke unit care and can reduce the length of hospital stay for selected patients. (SIGN 64; Evidence Level A) In addition, early supported discharge services to generic (non-specific) community services should not be undertaken. (RCP; Evidence Level A)

- People living in the community who have difficulty with ADL should have access, as appropriate, to therapy services to improve, or prevent deterioration in ADL. (Australian; Evidence Level I)

- Stroke survivors and their caregivers should have their individual psychosocial and support needs reviewed on a regular basis. (RCP; Evidence Level A)

- Any stroke survivor with reduced activity at six months or later after stroke should be assessed for appropriate targeted rehabilitation. (RCP; Evidence Level A)

Highlights of Evidence:

Evidence indicates that stroke survivors with mild physical deficits benefit equally from specialized community rehabilitation compared to inpatient services, thereby reducing hospital length of stay. Specialized community stroke rehabilitation services are also known to reduce admissions to LTC Homes from hospital and hospital readmissions post discharge.

The 2004 SW Ontario Rehabilitation Pilot Project: Outpatient Services for Severe Stroke (FIM < 50) indicated that:

- Outpatient services were provided post rehabilitation discharge for severe stroke clients
- Patients continued to show functional improvement post hospital discharge
- 38% fewer discharges to LTC Homes; 4 clients successful in moving home from LTC
- Estimated system savings >$400,000 per year (includes the cost of Rx)
- Improved Quality of Life for caregivers

The 2004 SE Ontario Rehabilitation Pilot Project: Timely and Enhanced Community Rehabilitation results showed that:

- "Enhanced" clients received extra PSW, PT, OT, SLP for 2 months after discharge
- Significant improvement in function (FIM +7.3) compared to usual care (FIM –2.1)
- Half the number of hospital readmissions in first 3 months compared to usual care

Cost-Benefits of Outpatient Therapy (Teasell, 2006)

Stroke rehabilitation outpatient therapy has been shown to improve outcomes and in particular help to maintain gains made in inpatient stroke rehabilitation. The benefits of outpatient therapy include:

1. Patient is more likely to remain at home through maintenance of gains.
2. Outpatient services for severe stroke may result in being able to repatriate stroke patients from long-term care with substantial long-standing benefits.

Unfortunately, outpatient therapy is often one of the first casualties of hospital cuts and needs to be seen as an essential element of stroke care.

Early Supported Discharge (ESD) provided by a coordinated, specialized interdisciplinary stroke rehabilitation team in the home is an alternative to current inpatient rehabilitation practices for mild to moderate stroke patients. Outcomes are similar although there is a trend toward lower costs for the ESD group due to reduced hospital lengths of stay.

Current Status in Southwestern Ontario:

Adequate ambulatory and community rehabilitation services are not available in some communities.

Lack of access to ambulatory services

- not available in some communities; limited access in others
- lack comprehensive interdisciplinary care; single services, some disciplines not available
- significant wait times for some services (10 months for Speech Language Pathology in Windsor) rendering them ineffective
- some services time limited rather than based on need or measurable outcomes
- self identified lack of expertise
- recent cuts to Day Hospital programs providing interdisciplinary stroke rehabilitation

Limited access to Community Care Access Centre (CCAC) services for stroke clients

- some counties offer consultation/teaching only, not therapeutic rehabilitation services
- service provision ranges from 4.6% to 11.2% post-stroke on discharge from acute care
- over 54% of clients in Lambton and Bruce counties are discharged home post acute stroke with no services (see table next page)
- lack comprehensive interdisciplinary team care
- self identified lack of expertise

Limited access to rehabilitation services in LTC Homes

- limited or no appropriate stroke rehabilitation services available to patients in LTC Homes
- although physiotherapy services are now available in LTC Homes, there is a lack of stroke-specific expertise

Acute Stroke Dispositions to Home
CIHI data FY 2004

County	Home	CCAC
Essex	31.8%	11.2%
Kent	30.9%	10.8%
Lambton	54.1%	4.9%
Elgin	29.5%	14.5%
Middlesex	28.4%	10.1%
Oxford	48.9%	5.4%
Huron	50%	4.6%
Perth	31.7%	8.7%
Grey	46.8%	8.6%
Bruce	55.4%	5.1%

This table indicates the numbers of stroke patients discharged home, and 'home with services' from acute care hospital beds. Although there is tremendous variation of CCAC service provision for post acute strokes, from 4.6% to 14.5%, all seem inordinately low. In Lambton and Bruce counties, over 54% of stroke survivors were discharged home with no services. Data tells us that only 20% of all strokes fully recover; therefore many individuals with deficits are not accessing rehabilitation services.

How Do We Measure Up?

1. Adequate ambulatory and community rehabilitation services are not available in some communities.
2. Access to outpatient services is severely limited by significant wait times in some areas (10 months for Speech Language Pathology in Windsor) rendering them ineffective.
3. Some community services are time limited rather than based on need or measurable outcomes.
4. CCAC service provision post acute stroke ranges from 4.6% to 14.5% on discharge from hospital with over 54% of clients in Lambton and Bruce counties being discharged home with no services.
5. Community services most often do not provide comprehensive, interdisciplinary care.

6. There is a self identified lack of specialized stroke expertise amongst community providers.
7. There is an opportunity to reduce hospital length of stay, reduce admissions to LTC Homes, and reduce hospital readmissions by enhancing community stroke rehabilitation services.
8. Comprehensive interdisciplinary outpatient stroke rehabilitation teams affiliated with each inpatient stroke rehabilitation unit are needed to ensure an efficient rehabilitation system.

Action Planning Day Processes and Outcomes

From Evidence to Practice

There is a substantial body of evidence available for us to draw upon in our vision to create an effective system for stroke rehabilitation; potential for greater effectiveness, more equitable access, and greater efficiencies. We know what works!

Stroke Rehabilitation stakeholders in Southwestern Ontario felt it was time to examine our current system, in light of the evidence, and identify steps to move toward best practice. Our challenge was to identify ways to improve the system for stroke rehabilitation – both *within* existing resources and changes *to* existing resources/systems.

As a first step in the planning process to address the gaps between evidence and practice, the Southwestern Ontario Regional Stroke Strategy undertook to host a Stroke Rehabilitation Action Planning Day on November 28, 2006. The purpose was to generate consensus on strategic directions. A committee was formed to develop objectives and organize plans for the day. (See Appendix A)

The following objectives for the Stroke Rehabilitation Action Planning Day were identified:

1. Achieve a common understanding of the current state and initiatives in stroke rehabilitation
2. Respond to opportunities related to provincial and national consensus panel work
3. Identify 3 initiatives to move stroke rehabilitation towards its vision for Southwest and create working groups that will undertake the initiatives
4. Use a project model that will focus on local projects/pilots with potential for regional application

The model used for the day was one of appreciative inquiry - directing participants to identify and build on local and regional strengths. An underlying assumption for the workshop was to use the **Canadian Stroke Strategy Canadian Best Practice Recommendations for Stroke Care: 2006** as a standard.

Identifying Gaps and Setting Priorities

Needs and gaps in the stroke rehabilitation system were identified by reviewing previous works, and through discussions at various forums with stakeholder groups throughout the region.

Previous works included:

- Stroke Rehabilitation Consensus Panel Report (2000)
- Stroke Rehabilitation Network: A Road Map for Southwestern Ontario (2002)
- Best Practice Guidelines for Stroke Rehabilitation (2003)
- Six rehabilitation pilot projects (released 2005)
- District Best Practice Guidelines launches (2004)
- Stroke Rehabilitation Business Plan (2004)
- Two Working Groups and Regional Visits (2005)

A planning group compiled a list of 29 needs based on best practices, and identified by key stakeholders as gaps in the system for stroke rehabilitation in Southwestern Ontario requiring action.

These were organized into the survey format below.

	Best Practices	Current State	Need	Priority
1	Rehabilitation professionals should provide an initial assessment within 24-48 hours following acute stroke	Significant lack of specific disciplines in many hospitals and under resourced in others	•Standards for allied health in acute care at District Stroke Centres	
			•Screening tools to initiate referrals to allied health where under resourced	
2	Equitable Access to Stroke Rehabilitation	No rehabilitation beds in Bruce, Huron or Oxford counties No regional plan for accessing stroke rehabilitation Lacking standardized referral processes, admission criteria and triage ALC occupying rehab beds	•Regional plan for rehabilitation beds	
			•Standard for number of stroke rehabilitation beds per numbers of strokes	
			•Access plan for all communities	
			•Monitor reasons for not accessing	
			•Standardized admission and triage criteria across the region	
			•Advocate for adequate LTC beds	
3	Wait Times for Stroke Rehabilitation Admission (Best Practice = 7 to 10 days)	Average 42.2 days post onset stroke for admission in Southwest; median 14 days (2004 SEAC data)	•Review of factors contributing to wait times	
			•Plan to address factors contributing to wait times	
4	Stroke patients requiring rehab should be treated in a **Stroke Rehabilitation Unit**	Designated stroke rehab unit only in London, beds cohorted in Windsor; all others general rehab	• Stroke rehabilitation units (Consensus Panel recommended stroke rehabilitation units where volumes warrant 8-10 beds)	
5	Slow Stream Rehabilitation for Severe Stroke	Access to designated rehab only available at Parkwood; some rehab in Complex Continuing Care at Strathroy, Stratford, St Thomas, Woodstock and Sarnia	•Determine need for Slow Stream Programs	
			•Plan to provide for unmet needs	
6	Care should be provided by an **Interdisciplinary Team** expert in post stroke care	Wide variation in staffing resources/ratios and expertise Professional staff not available/human resource issues	•Rehabilitation staffing guidelines	
			•Build Interdisciplinary teams	
			•Provide education	
			•Advocate for sustainability of human resources	

7	Standardized Assessments and Screening Tools are used	Highly variable assessment tools used and inconsistent use	•Standardized assessment and screening tools	
			•Care guides and protocols for best practices	
8	Seamless Transition across the continuum	Fragmentation/inadequate integration of the various components of rehabilitation	•Planning for a Stroke Rehabilitation System	
		Inconsistent communication of timely information in a user friendly format	•Working groups across providers to create content and method for providing timely, complete, relevant transition information at all transition points	
9	Adequate Outpatient/Community Services	Absent or limited	•Regional Plan for provision of services to ensure efficient rehabilitation system (outpatient and CCAC)	
10	Follow-up provided and Re-Entry to rehabilitation accessible	Episodic care; follow-up is rarely systematic and re-entry difficult Family Physicians feel ill equipped to deal with specialized needs	•Follow-up of patients discharged from hospital to • collect data/outcomes • prevent deterioration and comorbidities • access services as needed	
11	Community Re-integration	Inadequate community re-integration and return to work services	•Return to work services	
			•Planned community support services	
12	Outcomes Evaluated	NRS data mandatory No outcome data collected in Complex Continuing Care, Outpatient services, CCAC, Long Term Care or community	•Use of NRS data to improve system efficacy	
			•Standardized system to evaluate outcomes in OP, CCC, LTC and CCAC	
			•Measure implementation of Best Practices	
13	Consistent Secondary Prevention practices	Inconsistently addressed across the continuum	•Ensure secondary prevention is consistently addressed in rehabilitation, LTC and community	

Participants were invited to complete the survey prior to the Action Planning Day to establish priorities. 37 responses were received. Results are compiled in chart format on the next page. Detailed results are contained in Appendix B.

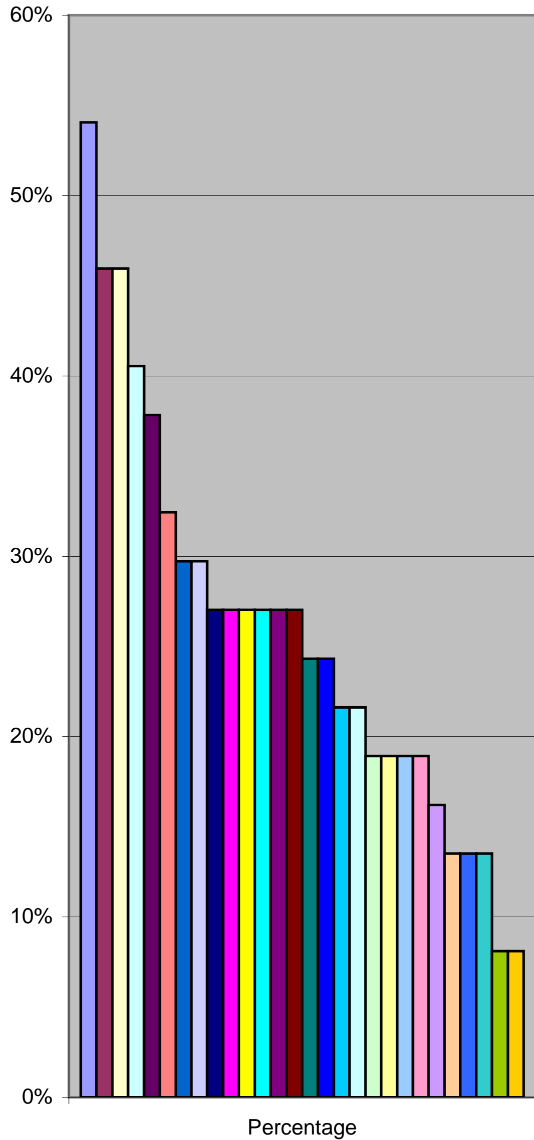
The top 6 priorities identified on the survey were:

1. Regional plan for community stroke rehabilitation services
2. Regional plan for stroke rehabilitation beds
3. Staffing Guidelines for inpatient stroke rehabilitation
4. Standardized admission and triage criteria across the region
5. Access plan for stroke rehabilitation for all communities
6. Determine need for slow stream programs

82% of Action Planning Day participants indicated confidence that we have identified initiatives that will improve the status of stroke rehabilitation in SWO. "Good start to a very challenging task!"

These priorities were taken to the participants at the Action Planning Day for ratification.

Results of Issues Survey



- •Regional Plan for provision of services to ensure efficient rehabilitation system (outpatient and CCAC)
- •Regional plan for rehabilitation beds
- •Rehabilitation staffing guidelines
- •Access plan for all communities
- •Standardized admission and triage criteria across the region
- •Determine need for Slow Stream Programs
- •Care guides and protocols for best practices
- •Ensure secondary prevention is consistently addressed in rehabilitation, LTC and community
- •Standards for allied health in acute care at District Stroke Centres
- •Advocate for adequate LTC beds
- • Stroke rehabilitation units (Consensus Panel recommended stroke rehabilitation units where volumes warrant 8-10 beds)
- •Build Interdisciplinary teams
- •Standardized assessment and screening tools
- •Follow-up of patients discharged from hospital to
- •Standard for number of stroke rehabilitation beds per numbers of strokes
- •Advocate for sustainability of human resources
- •Review of factors contributing to wait times
- •Plan to address factors contributing to wait times
- •Monitor reasons for not accessing
- •Plan to provide for unmet needs
- •Provide education
- •Planning for a Stroke Rehabilitation System
- •Planned community support services
- •Screening tools to initiate referrals to allied health where under resourced
- •Working groups across providers to create content and method for providing timely, complete, relevant transition information at all transition points
- •Return to work services
- •Standardized system to evaluate outcomes in OP, CCC, LTC and CCAC
- •Measure implementation of Best Practices

The Stroke Rehabilitation Action Planning Day was envisioned to bring stakeholders together as a first step to address the gaps in stroke rehabilitation across SWO. The planning committee recognized the need to provide background information and updates for the participants.

The following presentations were provided:

- Regional Stroke Strategy Vision, Progress & Best Practices
  - ***Deb Willems***, *Regional Rehabilitation Coordinator, SWO Stroke Strategy*

- What's new? Provincial Stroke Rehabilitation Consensus Panel
  - ***Mary Solomon***, *District Stroke Coordinator, Grey Bruce Regional Health Centre*

- LHIN Integrated Health Services Plan and Implications for Stroke Rehabilitation
  - ***Julie Girard***, *Integration Consultant Southwest Local Health Integration Network*
  - ***Paul Brown***, *Integration Consultant, Erie St Clair Local Health Integration Network*

- A Blueprint for Stroke Rehabilitation: Improving Outcomes and Maximizing Efficiencies
  - ***Dr. Robert Teasell,*** *Chair-Chief and Professor of the Department of Physical Medicine and Rehabilitation, Schulich School of Medicine, University of Western Ontario.*

- Success Stories and Factors that Lead to Success
  - ***Nancy Snobelen, Ken Tremblay, Laurie Zimmer***; *Chatham Kent Health Alliance*
  - ***Dr. Nathania Liem, Bernice Markham, Don Rudzinski***; *Windsor Regional Hospital*

To request a copy of any of the presentations, email swostrokestrategy@lhsc.on.ca

Following the presentations, an opportunity to identify priorities that may have been missed resulted in no additional gaps/needs being articulated.

Wicked questions designed to facilitate small group idea generation were created for each of the 6 priorities. (See Appendix C)

Following the small group work, the attendees voted on the priorities for initiatives to move stroke rehabilitation towards best practice. Voting by all participants at the Action Planning Day resulted in the following re-ordering of priorities from those identified by the prework survey.

1. **Regional plan for community stroke rehabilitation services**
   - Adequate outpatient and community rehabilitation services needed to allow earlier discharge from inpatient settings and ensure an efficient rehabilitation system

2. **Access plan for stroke rehabilitation for all communities**
   - Create pathways for all residents to access stroke rehabilitation, particularly in areas that currently do not have access to inpatient stroke rehabilitation beds

3. **Regional plan for stroke rehabilitation beds**
    - Ensure access to inpatient stroke rehabilitation for all residents of SWO
    - Balance need for critical mass with care close to home

4. **Standardized admission and triage criteria across the region**
    - Create a model of access to the appropriate level of care based on the severity of the stroke
    - Identify unmet needs for stroke rehabilitation services in SWO

5. **Staffing guidelines for inpatient stroke rehabilitation**
    - Standardize caseloads and professional team members to be included as minimal requirements for the provision of stroke rehabilitation

6. **Determine need for slow stream stroke programs**
    - Define criteria for access to rehabilitation for severe stroke

Voting Results: *Note: Each participant was given 8 votes to "spend".*

- 83 votes for "Determine need for slow stream programs"
- 84 votes for "Staffing guidelines for inpatient stroke rehab"
- 101 votes for "Standardized admission and triage criteria across the region"
- 102 votes for "Regional plan for stroke rehab beds"
- 106 votes for "Access plan for stroke rehab for all communities"
- 146 votes for "Regional plan for community stroke rehab"

Six strategic priorities were identified, rather than 3, from all the gaps requiring action. All attracted significant support as foundational actions necessary for stroke rehabilitation to achieve best practice. The interaction and integration of all the strategic priorities were noted as essential components of an effective and efficient system. Potential for collapsing the initiatives is apparent and will be addressed.

Action plans for each priority were created in small groups using a project planning template (See Appendix D). Potential resources for the project teams were identified to help participants in creating the plans (See Appendix E).

Participants at the Action Planning Day volunteered to continue work on the initiatives by joining project teams. (See Appendix F).

Strategic Priorities

Strategic Priority	Why A Priority?	Expected Outcomes
Create a regional plan for adequate ambulatory and community rehabilitation services post-stroke to ensure an efficient rehabilitation system	Lack of community services means: • increased hospital LOS • patients' recovery potential is not achieved • hospital readmissions	Reduced dependence on hospital services Decreased hospital length of stay (acute and rehabilitation) Increased discharges home Decreased admissions to LTC Homes Fewer hospital readmissions Seamless care
Create an access plan and navigation system for all residents of Southwestern Ontario ensuring timely access to best practice stroke rehabilitation	Not all eligible stroke patients in Southwestern Ontario access stroke rehabilitation, and there are significant delays post onset stroke to rehab admission in some areas.	Equitable, timely access Improved system navigation Seamless care Increased discharges home Decreased admissions to LTC Homes
Create a regional plan for designated inpatient stroke rehabilitation beds based on population need, evidence and best practices	A critical mass of stroke rehabilitation beds (minimum 8) is necessary to provide best practice, effective and efficient care	Equitable access Reduced mortality Decreased length of stay Increased discharges home Decreased admissions to LTC Homes Centres of Excellence; Staff Development
Standardize assessment and triage criteria for equitable, timely access to designated inpatient stroke rehabilitation beds	Standards for access to inpatient rehabilitation services will contribute to equitable access and objectively determine need There is an opportunity to set a standard for early admission to stroke rehabilitation	Equitable, timely access Right service, right place, right time, right provider
Create staffing guidelines for inpatient stroke rehabilitation programs based on evidence and best practice	Interdiciplinary team staffing in some rehabilitation centres inadequate for effective outcomes	Equitable access to interdisciplinary teams Standards of care Attract professional staff
Determine the demand for stroke rehabilitation services for severe stroke in the region	High numbers of stroke survivors admitted directly to LTC Homes from acute without opportunity to maximize recovery	Access to evidence based care for severe stroke Increased discharges home Decreased admissions to LTC Home beds Integrated continuum of care for adults with complex needs

Next Steps

- Project teams to meet to refine action plans and begin to identify areas for common action.
- Continue to work with the LHINs to implement an effective, coordinated stroke rehabilitation system
- Participate on Southwest LHIN Rehabilitation Priority Action Team. Consider stroke rehabilitation a "Quick Start".
- Continue to support Erie St Clair LHIN Rehabilitation Network, aligning activities and building on collaboration.
- Continue to bring forward leveraging opportunities and share experiences from across the province as part of the Ontario Stroke System, through our connection with the LHIN CEO designate.
- Advocate for policy and system change that will support best practice stroke rehabilitation
- Highlight the current state of stroke rehabilitation in the Stroke Evaluation Advisory Committee Report
- Participate in the Regional Consultation of the Provincial Consensus Panel being held February 5, 2007 and incorporate resulting outcomes relevant to Southwestern Ontario

Conclusion

We are confident that as key decision makers and leaders of SWO health service agencies, together with our LHIN partners, we have identified the crucial first steps needed to create an effective, efficient, and sustainable stroke rehabilitation system that will meet the needs of our aging population.

We believe we can create a new future for residents of Southwestern Ontario recovering from stroke.

> *"Great 'meeting of the minds' from across the region so that we could see the big picture. The Action Planning Day allowed participants to prioritize known gaps in the rehabilitation continuum from inpatient bed allocation to access to outpatient & community services. It allowed members to envision (and plan to move toward) next steps - and people were optimistic that change could occur with the LHIN system."*
>
> **Dr Nathania Liem**, Medical Director, Regional Rehabilitation Program, Windsor Regional Hospital

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Appendix A

Planning Committee Members

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Anna Bluvol, Clinical Nurse Specialist, Parkwood Rehabilitation, London

Sheila Cook, Corporate Facilitator, St Josephs Health Care, London

Paula Gilmore, District Stroke Coordinator, Bluewater Health, Sarnia

Bernice Markham, Program Manager, Inpatient Rehabilitation, Windsor Regional Hospital, Windsor

Chris O'Callaghan, Regional Program Manager, SWO Stroke Strategy

Mary Solomon, District Stroke Coordinator, Grey Bruce Regional Health Services, Owen Sound

Appendix B

Detailed Survey Results

Need	Percentage
Regional Plan for provision of services to ensure efficient rehabilitation system (outpatient and CCAC)	54.1%
Regional plan for rehabilitation beds	45.9%
Rehabilitation staffing guidelines	45.9%
Access plan for all communities	40.5%
Standardized admission and triage criteria across the region	37.8%
Determine need for Slow Stream Programs	32.4%
Care guides and protocols for best practices	29.7%
Ensure secondary prevention is consistently addressed in rehabilitation, LTC and community	29.7%
Standards for allied health in acute care at District Stroke Centres	27.0%
Advocate for adequate LTC beds	27.0%
Stroke rehabilitation units (Consensus Panel recommended stroke rehabilitation units where volumes warrant 8-10 beds)	27.0%
Build Interdisciplinary teams	27.0%
Standardized assessment and screening tools	27.0%
Follow-up of patients discharged from hospital to	27.0%
Standard for number of stroke rehabilitation beds per numbers of strokes	24.3%
Advocate for sustainability of human resources	24.3%
Review of factors contributing to wait times	21.6%
Plan to address factors contributing to wait times	21.6%
Monitor reasons for not accessing	18.9%
Plan to provide for unmet needs	18.9%
Provide education	18.9%
Planning for a Stroke Rehabilitation System	18.9%
Planned community support services	16.2%
Screening tools to initiate referrals to allied health where under resourced	13.5%
Working groups across providers to create content and method for providing timely, complete, relevant transition information at all transition points	13.5%
Return to work services	13.5%
Standardized system to evaluate outcomes in OP, CCC, LTC and CCAC	8.1%
Measure implementation of Best Practices	8.1%
• collect data/outcomes	0.0%
• prevent deterioration and comorbidities	0.0%
• access services as needed	0.0%
Use of NRS data to improve system efficacy	0.0%

Appendix C

Summary Results of Small Group Work

Wicked questions designed to facilitate small group idea generation were created for each of the 6 priorities. Group discussion points are summarized below:

1. Regional Plan for Community Stroke Rehabilitation

How can we create a Regional Plan for providing outpatient/CCAC services to ensure an efficient rehabilitation system when many outpatient services have been cut and stroke is not a priority within limited CCAC budgets?

- Set Best Practice Guidelines across the continuum
- Create a business case for cost savings in the LHIN
- Environmental Scan of services
- Funding based on stroke specific services
- Weekend provision of therapy
- Investigate alternative funding for services (fee for service)
- Funding from MOHLTC for CCAC for a specialized stroke team
- Education through continuum to support the survivor and caregiver (same information) e.g. Tips and Tools
- Inform consumers – educate/market - expectation management
- Define expected outcomes
- Transportation issues for outpatients

2. Regional Plan for Rehabilitation Beds

How can we develop a regional plan for rehabilitation beds when there are no widely accepted standards and best practice guidelines?

- Balance critical mass vs. geographic access
- Develop standards for admission (FIM score 40-80; 7 days post onset)
- Triage tool needed; referral process standardized
- Clinical pathway with built in processes/prompts to assess early re: rehab needs/discharge disposition
- Professional education that is evidence based
- Top driven mandate/directive from LHIN
- "Satellite" rehab
- Access stroke survivors and support groups as advocates and clinicians
- Consider different inpatient rehab sites (large vs. community) that are determined by severity of stroke, intensity of services required
- Discharge criteria; transitions into community for resources
- "Criticall" for Rehab (bed registry)
- Physician buy-in to accept patients

3. Staffing Guidelines for Inpatient Stroke Rehabilitation

How can we implement stroke rehabilitation staffing guidelines when there are mixed caseloads and significant differences in available resources?

- Set minimum standard for each discipline
- Make staffing guidelines part of accreditation
- Designated stroke units – hospital, LTC & Community
- Cluster stroke patients to maximize staff skill and expertise
- Use of standard assessment and outcome measurement tools (in order to minimize assessment times)
- Provide weekend therapy (engage union re: staff scheduling)
- Create business case re cost effectiveness of rehab
- Integrate therapy into daily routines tasks; incorporate role of rehab nurse
- Create processes or algorithms for client centred care
- Ensure staff are working to the full extent of their scope
- Maximize role of support personnel, volunteers etc
- Look at college standards; competencies of disciplines
- Early engagement of families in the care as part of the discharge plan
- Prioritize rehab in acute care
- Look at staffing mix and models based on patients' functional needs
- Base staffing needs based on requirements to remove wait list

4. Standardized Admission and Triage Criteria across the Region

How can access/triage to stroke rehabilitation be consistent across the region when different models are in place?

- Consistent/ standardized admit/discharge criteria
- Defined access point (where to go) – e.g. Web portal, 1-800#
- Align with LHINs – ACCOUNTABILITY
- Community needs varied ? model consistent but adapt by your area, needs, partnerships, manpower, finances, $ available.
- Stroke rehab units need to be treating patients with FIM scores 40-80
- Community services need to be increased to meet demands (home if FIM>80) or potential discharges with greater functional needs (<40FIM)
- Look at components of the system that also need to change (Convalescent care, transportation, transitional beds, LTC, outpatients/CCAC)
- Need resources to handle earlier admissions, less medically stable
- Build better partnerships; change in process required at many levels
- Patient/families need to be part of team
- Case manager for stroke patients across the continuum to drive flow
- Develop "regional" clinical pathways for stroke that drive the system

5. Access plan for stroke rehabilitation for all communities

How can we provide equitable access to stroke rehabilitation for every resident of Southwestern Ontario when the availability of rehabilitation beds is variable and limited?

- Central registry of available beds within Region i.e. SWO
- Geographic plan for access; navigation tools
- Standardized referral/triage tool across the continuum
- System reorganization – earlier access, 7 day/wk therapy
- Cluster stroke patients, increase critical mass, with increased skill set
- Accountability – LHIN (to ensure right person, right place, right time, right provider)
- Benchmarks, standards, and accountability to meet
- Flexibility of funding across budgets
- Videoconferencing/ Satellite sites – increase all clinicians' skill set, multidisciplinary access – requires education of public/families/patients
- Build capacity with outreach by looking at models
- Re-evaluate CCAC approach to CUTBACKS – inadequate rehab support
- Decompensation/Chronic patients in community make a priority
- Rehab/Assist/PSW (Tips & Tools) can these resources be trained to be utilized better/efficiency
- ALC/LTC beds – are these the right people in the right place?
- Reassessment of CVA patients at home/nursing home post rehab

6. Determine Need for Slow Stream Stroke Rehabilitation

How can we get a complete picture of the need for slow stream stroke rehabilitation services when we only collect data on those who successfully access inpatient rehabilitation?

- Definition of slow stream; Standardized tool for access
- Inventory of where slow stream rehab is happening
- Keep stats on # in acute care who aren't going to rehab; stop denying rehab to patients who are expected to go to LTCH (severe strokes)
- Education – share evidence Rehab works for severe
- Is there an ethical right to rehab?
- Need to education the public re: right care/right place
- ALC stroke not in an active rehab program
- More rehab beds? Institute earlier rehab, weekend therapy
- Need Decision Support Team - access data: CCAC, LTC, Acute, Complex Continuing Care, Rehab, Dr's offices;
    - Need MDS to talk to NRS & DAD (Acute) and NACRS
- Readmission data and $ - details – complications
- Consistent criteria for CCAC services for therapy at home and LTCH
- Define what "therapy" is provided in LTCH; make it mandatory to have a rehab adjuvant. Engage LTCH nurses in patient rehab
- Address system issues e.g. No lift policy works against rehab
- Change LTC funding so improvement in the resident results in increased funding

Appendix D

Project Planning Template

AIM: What do we want to accomplish?

What do we want to be different? What possibilities do we envision?

How will we know a change is an improvement?

What ideas did you hear today that have the potential to lead to the improvement we'd like to see?

What next steps do you recommend to keep the momentum from today?

What resources do you require for these next steps?

Who is interested in continuing to work on this initiative?

Appendix E

Stroke Rehabilitation Action Plan Resources

The following resources, provided by the Southwestern Ontario Stroke Strategy are available to the project teams to assist with the creation, development and implementation of their Action Plans.

- Seed funding to support project group activities such as meetings, travel, data collection and analysis
- Coordination and facilitation
- Administrative support
- Videoconferencing
- Evidence/Literature reviews
- Professional and patient education materials and programs
- Communications Specialist
- Executive summary of today's proceedings
- Pilot project funding
- Protocols, lessons learned from across province and region

Appendix F

Project Teams

Regional Plan for Community Stroke Rehabilitation Services
Members: Lois Beamish-Taylor, Eileen Britt; Linda Pierce, Rob Fazakerley, Jennifer Woodroffe, Alison Greenhill

Access Plan for Stroke Rehabilitation for all Communities
Members: Sharon Jankowski, Arlene Whitehead, Mary Solomon, Tricia Khan, Kathy Gooding, Gina Tomaszewski

Regional Plan for Stroke Rehabilitation Beds
Members: Bob Teasell, Nathania Liem, Nancy Snobelen, Deb Willems, Ken Tremblay

Standardized admission and Triage Criteria Across the Region
Members: Doris Noble, Mary Cardinal, Peter Hodes, Brenda Palsa, Marilee Garner, Julia Armstrong, Paula Gilmore, Laurie Zimmer, Karen Atkins

Determine Need for Slow Stream Programs
Members: Kim Staikos, Veda Goodwin, Mary Raithby, Cheryl Taylor, Anna Bluvol, Crystal Pole

Appendix G

Southwestern Ontario Stroke Rehabilitation Action Planning Day

Evaluation Results, November 28, 2006

41 evaluations were completed.

Overall, how would you rate the following aspects of today's event?

Deb Willems: Regional Stroke Strategy Vision, Progress & Best Practices

Pace of Presentation	**Too slow 0**	**About right 40**	**Too fast 1**
Volume of Material	**Too little 0**	**About right 41**	**Too much 0**
Opportunities to Participate	**Too few 1**	**About right 40**	**Too many 0**
Content	**Too basic 1**	**About right 40**	**Too detailed 0**

Mary Solomon: Provincial Stroke Rehabilitation Consensus Panel

Pace of Presentation	**Too slow 1**	**About right 40**	**Too fast 0**
Volume of Material	**Too little 1**	**About right 40**	**Too much 0**
Opportunities to Participate	**Too few 0**	**About right 41**	**Too many 0**
Content	**Too basic 2**	**About right 39**	**Too detailed 0**

Kelly Gillis & Paul Brown: LHIN IHSPs and Implications for Stroke Rehabilitation

Pace of Presentation	**Too slow 0**	**About right 41**	**Too fast 0**
Volume of Material	**Too little 1**	**About right 38**	**Too much 2**
Opportunities to Participate	**Too few 3**	**About right 38**	**Too many 0**
Content	**Too basic 6**	**About right 32**	**Too detailed 3**

Dr. Robert Teasell: A Blueprint for Stroke Rehabilitation

Pace of Presentation	**Too slow 0**	**About right 41**	**Too fast 0**
Volume of Material	**Too little 1**	**About right 40**	**Too much 0**
Opportunities to Participate	**Too few 2**	**About right 39**	**Too many 0**
Content	**Too basic 0**	**About right 41**	**Too detailed 0**

Success Stories

Pace of Presentation	**Too slow 3**	**About right 35**	**Too fast 3**
Volume of Material	**Too little 2**	**About right 35**	**Too much 4**
Opportunities to Participate	**Too few 3**	**About right 38**	**Too many 0**
Content	**Too basic 1**	**About right 38**	**Too detailed 2**

Planning Day	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
	Circle your response				
1. I have gained a better understanding of the status of stroke rehabilitation in Southwestern Ontario		1/41= 2%	1/41=2%	23/41=56%	16/41=39%
2. I feel confident that we have identified initiatives that will improve the status of stroke rehabilitation in SWO.			7/41=17%	17/41=41%	17/41=41%
3. I am clear about the actions we need to commit to in order to achieve our objectives.		2/41=5%	12/41=29%	20/41=49%	7/41=17%
4. **I have what I need to take the next step in using the skills/knowledge/awareness I gained today.**	1/27=4%	2/27=7%	8/27=30%	13/27=48%	3/27=11%

Feedback on Planning Day Experience

5. What aspects of the day best supported our aim to identify and start work on three initiatives that will move stroke rehabilitation in Southwestern Ontario toward best practice? (E.g. group discussions, presentations)

- Exercises and information
- Group discussion x 10
- Mixture important – needed presentations and discussions
- Dr. Teasell's presentation and the success stories
- Presentations that identified best practice and what needs to change
- Networking x 4
- Deb & Dr. Teasell's presentations, group discussion, very interesting to hear from a variety of geographic areas in what they are doing
- Acknowledgement of need for system change
- LHIN rehab strategy - need to see, operationalize
- Background info, action planning, support to move forward – Regional Rehab Coordinator
- Group discussions & presentations
- Dr. Teasell's data
- Dr. Teasell's presentation – very valuable and thought provoking – need to get his info out to the people who control the finances re: outpatient services, more intensive therapies, FIM score for admission & discharge
- Discussion of priority items using template
- Group discussion flip chart exercise
- Mix of admin people and front line people
- Discussion provided lots of opinions

6. What aspects of the day least supported our aim to identify and start work on three initiatives that will move stroke rehabilitation in Southwestern Ontario toward best practice?
   - The success stories x5
   - ?? how beneficial group discussions were
   - need more CCAC representation
   - too much time on "new initiatives"
   - provincial consensus panel presentation
   - consensus panel was very vague and I don't think they are very effective. what's taking so long?
   - Greater participation by physicians, especially to hear Dr. Teasell's presentation
   - Discussion groups – consistently off topic, no direction or focus, developing more meetings
   - Insufficient network opportunities – perhaps a scheduled tabletop network discussion
   - More time for planning – have planning earlier in the day.
   - LHINS are very important but they needed to be more involved in what they can offer

Overall Value of the Session	Strongly Disagree	Disagree	Unsure	Agree	Strongly Agree
7. Overall, I found this planning day to be valuable.			1/41=2%	20/41=49%	19/41=46%

Comments and Suggestions

- Excellent day overall
- Thank you for an opportunity to listen & participating in address issues & facilitating change
- Keep the motivation going! Change is needed!
- Seemed to need for more discussion for success stories
- Group discussions difficult to hear due to discussion in whole room, smaller rooms would work better
- Reconvene next year to provide feedback from the teams and more evidence based talks
- Ongoing newsletter updates
- Participants contact list
- Makes me think about what we could do in acute care, that we aren't particularly doing & how to enrich our environment. From what Dr. Teasell says the research shows a large number of our pts in acute care are not receiving all the care (rehab potential) they should. How do we bridge acute care & rehab more seamlessly for our pts in London.
- The work we are doing in creating care paths are going in the right direction after this conference
- Well done & facilitated
- Stroke Rehab Network session days 2 times per year
- We need to get off our butts and make this happen!
- Good start to a very challenging task!
- Great lunch and facility
- Good to hear success stories and tips on what works