

# **Stroke Rehabilitation Pilot Project Southwestern Ontario**

## **A Regional Stroke Rehabilitation System: From Vision to Reality**

Submitted to:  
Ministry of Health and Long-Term Care  
December 2, 2004

Submitted by:  
Sharon Jankowski, Director, Rehabilitation Program  
St. Joseph's Health Care, London  
Christina O'Callaghan, SWO Stroke Strategy Coordinator  
London Health Sciences Centre

This project was funded by the Ministry of Health and Long-Term Care (MOHLTC)  
and supported by The Heart and Stroke Foundation of Ontario (HSFO)



# Table of Contents

ACKNOWLEDGEMENTS .....	4
EXECUTIVE SUMMARY .....	5
BACKGROUND .....	7
RATIONALE.....	7
LIMITATIONS.....	9
OUTPATIENT STROKE REHABILITATION SERVICE.....	9
Goals of the Service.....	9
Who Was Served?.....	9
What Was Provided .....	9
Model of Service.....	9
Measures .....	10
Demographics .....	10
Referral Source (n=106) .....	10
Geographic Residence (n=106).....	11
Referrals and Wait Time for Assessments.....	11
Therapy Information .....	12
Survivors of Severe Stroke – Sub-Comparison Group- FIM ≤ 50 .....	13
Results For All Outpatients.....	15
Client-centred Goals .....	15
Most Common Goals Were Related To:.....	15
Pain .....	16
General Health Status .....	16
FIM .....	16
Communication.....	17
Reintegration to Normal Living Index.....	17
Berg Balance Scale .....	18
Chedoke-McMaster Stroke Assessment Impairment Inventory – Arm & Hand.....	19
COVS (Physiotherapy Clinical Outcome Variables Score).....	19
SIS (Stroke Impact Scale) – Stroke Recovery Scale .....	20
Caregiver Quality of Life.....	21
Consumer Satisfaction Results .....	21
System Cost Savings.....	21
What We Have Learned.....	23
What We Recommend.....	24
OUTREACH STROKE REHABILITATION SERVICE.....	24
The Model.....	24
Examples of the Outreach Model .....	25
Client-Specific Consultation.....	25
Education .....	25
Tips and Tools Sub-pilot.....	25
Outreach Stroke Rehabilitation – Education Results.....	25
Education Requests By Source .....	26

Education Requests By County .....	26
Education Requests By Topic .....	26
Education By Presenter (discipline).....	27
Education - Other Information .....	27
Evaluation of Education.....	27
Evaluation Of The Education Service By The Requester.....	30
Evaluation Of Outreach – Client Specific Consultation.....	30
Client Specific Consultation Requests By Source .....	30
Client Specific Consultation Requests By County .....	31
Client Specific Consultation Requests By Reason .....	31
Client Specific Consultation Requests By Discipline.....	31
Client Specific Consultation By Presenter (discipline) .....	32
Client Specific Consultation - Other.....	32
Evaluation of Client-Specific Consultation By Requesters of the Service.....	32
Access To The Outreach Service.....	33
What We Have Learned about Outreach .....	34
What We Recommend .....	35
SUMMARY .....	35
<b>APPENDIX A</b>	
Outpatient Brochure .....	36
<b>APPENDIX B</b>	
Outpatient Referral Form .....	38
<b>APPENDIX C</b>	
Outpatient Measures.....	40
<b>APPENDIX D</b>	
Outreach Brochure .....	41
<b>APPENDIX E</b>	
Outreach Referral Form .....	43
<b>APPENDIX F</b>	
Tips and Tools for Everyday Living	
Summary of Workshop Results .....	44
<b>APPENDIX G</b>	
Outreach Education Feedback Form .....	58
<b>APPENDIX H</b>	
Client Consultation Feedback Form .....	60
<b>APPENDIX I</b>	
Letters of Support .....	62

## **ACKNOWLEDGEMENTS**

We would like to acknowledge the Stroke Pilot Team for their enthusiasm, creativity, consistent commitment and passion for this project. This, along their advanced stroke rehabilitation expertise, contributed to the success of the project.

Neemera Jamani	Project Coordinator
Sue Brown	Speech Language Pathologist
Janet Donais	Occupational Therapist
Rob Fazakerley	Physiotherapist

Our appreciation is extended to Heather McHale, Consultant, Quality Measurement and Clinical Decision Support, St. Joseph's Health Care, London who guided the data collection and survey development for the project, analyzed and interpreted the data and helped formulate the key results. We also appreciate the advice and evaluation assistance of Dr. Roy Butler, Director, Quality Measurement and Clinical Decision Support, St. Joseph's Health Care, London

We wish to acknowledge the time taken by the following individuals to review and critique the final report.

Roy Butler	Director Quality Measurement and Clinical Decision Support
Alison Greenhill	Coordinator, Regional Integration Integrated Strategic Alliances and Networks
Sharon Mytka	Regional Prevention & Thames Valley Coordinator Southwestern Ontario Stroke Strategy

Finally, a very special thank you to Janet Tozer, Program Secretary for the Rehabilitation Program for her assistance in preparing this report.

## EXECUTIVE SUMMARY

In response to the request for proposal issued by the Ministry of Health and Long-Term Care in September 2001, the Southwestern Ontario Region submitted a pilot project titled – “A Regional Stroke Rehabilitation System: From Vision to Reality”. This project developed, implemented and evaluated two service components that currently are gaps in the province:

- Outreach Stroke Rehabilitation Service
- Stroke Rehabilitation Outpatient Service for stroke survivors with significant communication needs, cognitive impairments and/or severe disability.

These two components were identified as essential elements in achieving the vision for Stroke Rehabilitation by the Stroke Rehabilitation consensus Panel Report May 2000:

**“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 coordinated way to clients and families, by agencies and health care providers who are expert in stroke care and practice rehabilitation principles.”**

The two components are:

- Outreach Stroke Rehabilitation Service
- Stroke Rehabilitation Outpatient Service for stroke survivors with significant communication needs, cognitive impairments and/or severe disability

The objectives of the pilot project:

- **To determine the effectiveness of providing outpatient stroke rehabilitation for survivors of severe stroke**
- **To determine the effectiveness of Outreach Stroke Rehabilitation service in meeting the needs of health care providers in Southwestern Ontario and the clients they serve.**

The pilot was successful in meeting both of these objectives. The patients served in **the Stroke Rehabilitation Outpatient Service** showed improvement in all measures of function, balance, mobility, communication, cognition and participation. Caregivers showed improvement in quality of life and clients and their families were highly satisfied with the service. Additionally, potential savings to the system by the provision of a Stroke Rehabilitation Outpatient Service have been demonstrated.

The **Outreach Service** was effective in meeting the needs of service providers in the region and the clients/families they serve. This is demonstrated by the demand for the service, high levels of satisfaction by the requesters and the improvement in knowledge self-rating by the participants.

**The recommendations that resulted from the Outpatient component are:**

1. Survivors of severe stroke should routinely receive outpatient rehabilitation services.
2. A comprehensive economic evaluation should be undertaken regarding the financial impact to the health system when:
  - The discharge location is home rather than a long-term care facility or
  - A client can move from a long-term care facility into home.

3. Existing outpatient services need to:
  - Be flexible with a length of stay that is related to measurable goals set in collaboration with the client and family, i.e., a client should not be discharged at 6 weeks if goals are not met and it is determined they could be met with an extension.
  - Serve clients if they only require one service
  - Facilitate re-entry to rehabilitation for stroke survivors who have identified rehabilitation goals irregardless of the time that has elapsed since the stroke
4. The capacity for specialized transportation services to enable access to ambulatory rehabilitation services is a service gap that should be addressed.
5. The inclusion of Social Work, Nursing and Therapeutic Recreation in stroke rehabilitation ambulatory services is important to attain optimal outcomes.  
Social Work helped support the family and Therapeutic Recreation assisted with community re-engagement planning and implementation.
6. To monitor and evaluate a stroke rehabilitation outpatient service, the following measures are recommended: Functional Index measure (FIM), Chedoke-McMaster Stroke Assessment Impairment Inventory, Physiotherapy Clinical Outcome Variables Score (COVS), Berg Balance Scale, Reintegration to Normal Living Index. Additionally, building in follow-up post-discharge is very useful to determine if outcomes are sustained over time.
7. Outpatient rehabilitation should be provided for survivors of severe stroke by therapists with stroke rehabilitation expertise to be consistent with best practice.

**The recommendations that have resulted from the Outreach component are:**

1. Stroke Rehabilitation-specific outreach services should be available in all regions of the province in order to increase the uptake of stroke best practice knowledge, skill and application and to enable stroke survivors to receive best practice stroke care closer to home.
2. Each region needs to develop an outreach structure that works best for their geography.
3. The criteria necessary to offer a Outreach Stroke Rehabilitation service include:
  - A critical mass of clients with stroke
  - An interdisciplinary staff with stroke-specific expertise
  - Champions at the front-line with the interest and commitment
  - Senior leadership commitment
  - A stroke rehabilitation infrastructure to support such a service
4. To use VideoCare linkages wherever possible to reduce travel time. Additional work to perfect this as a tool for clinical applications is recommended.

## BACKGROUND

In September 2001, the Ministry of Health and Long-Term Care (MoHLTC) issued a request for proposal (RFP) to implement and evaluate pilot projects that would address the following objectives for Stroke Rehabilitation in Ontario:

- Provide outreach services to support enhanced consultation in rural , northern and remote areas of the province
- Identify best practices to strengthen and improve coordination of stroke rehabilitation especially in the case management of the transition between hospitals and from hospital to community-based care and,
- Identify best practices for home-based rehabilitation including community ambulatory programs

In response to this RFP, the Southwestern Stroke Rehabilitation Pilot Project titled –“A Regional Stroke Rehabilitation System: From Vision to Reality”. This project developed, implemented and evaluated two service components that currently are gaps in the province:

- Outreach Stroke Rehabilitation Service
- Stroke Rehabilitation Outpatient Service for stroke survivors with significant communication needs, cognitive impairments and/or severe disability

These two components were identified as essential elements in achieving the vision for Stroke Rehabilitation by the Stroke Rehabilitation Consensus Panel Report May 2000:

**“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 coordinated way to clients and families, by agencies and health care providers who are expert in stroke care and practice rehabilitation principles.”**

The MoHLTC approved the proposal and two years funding was received in 2002. The project spanned a two-year period from August 2002 to September 2004. The initial four months was used for project start-up including personnel recruitment, development of forms, brochures and program marketing.

### **The project team included:**

Project Coordinator	.5 FTE
Occupational Therapist	1.0 FTE
Physiotherapist	1.0 FTE
Speech-Language Pathologist	1.0 FTE

## RATIONALE

### **Outpatient Service – Why Was This Chosen to Study?**

The outpatient service for severe stroke clients was selected as a pilot project in response to Recommendation # 4 of the Stroke Rehabilitation Consensus Panel Report,<sup>1</sup> i.e.,

The regional stroke systems monitor waiting lists and other indicators of need for ambulatory and home-based stroke rehabilitation, to determine the reinvestments required

---

<sup>1</sup> Stroke Rehabilitation Consensus Panel Report – May 2000 – Page 38

to meet regional needs, and to recommend to the Ministry of Health and Long-Term Care the resources that should be allocated to meet these needs.

Survivors of severe strokes are generally not accepted by existing rehabilitation services; some reasons include the inability to manage individuals with high physical care needs for treatment, transferring and toileting.

There have been several gaps identified in access to outpatient stroke rehabilitation services in Southwestern Ontario, in particular, for stroke survivors with:

- Significant communication and/or cognitive impairments
- Need for only one rehabilitation therapy (eligibility for many programs requires the need for two or more services)
- Severe stroke – these individuals are generally not accepted into existing outpatient services.

The objective of the outpatient component of the SWO stroke rehabilitation pilot was:

**To determine the effectiveness of providing outpatient stroke rehabilitation for survivors of severe stroke**

#### **Outreach Service – Why Was This Chosen to Study?**

Outreach service was clearly identified as a necessary service in Recommendation #10 of the Stroke Rehabilitation Consensus Panel Report,<sup>2</sup> i.e.,

- Regional centres and local units provide outreach services to support the education of professional caregivers and enhanced consultations throughout regional stroke rehabilitation systems. The Ministry of Health and Long-Term Care should endeavor to support these outreach activities.

In addition, a number of reports have identified the training needs relating to stroke rehabilitation including:

- “Professional Education for Health Care Practitioners in Stroke Rehabilitation”, October 2000, (Carnaross Consulting for HSFO)
- “An Assessment of the Educational Needs of Health Care Practitioners Who Provide Acute Stroke Care and Rehabilitation”, October 2001 (Pegasus Consulting for HSFO)
- “Long Term Stroke Care in Community and Facilities Project – Successes and Challenges”, February 2001 (Sagecare Inc. for HSFO).

Outreach Stroke Rehabilitation services do not exist in Southwestern Ontario. The outreach model in the Pilot project includes both education/training and client-specific consultation. It is a model that provides “just-in-time” access to education and consultation to service providers caring for stroke providers. This results in stroke survivors receiving best practice stroke rehabilitation closer to home.

The objective of the outreach component of the SWO stroke rehabilitation pilot was:

---

<sup>2</sup> Stroke Rehabilitation consensus Panel Report – May 2000 – Page 43



**To determine the effectiveness of Outreach Stroke Rehabilitation service in meeting the needs of health care providers in Southwestern Ontario and the clients they serve.**

## **LIMITATIONS**

The funding available did not enable a full interdisciplinary approach to be evaluated. Therefore, the pilot evaluated the provision of the highest demand therapy services of Occupational Therapy (OT), Physiotherapy (PT), and Speech-Language Pathology (SLP). Ideally, the pilot should have included a full complement of nursing, social work and therapeutic recreation services. In addition, it was noted that transportation would be a barrier to access the program, however funding was not available to provide transportation.

## **OUTPATIENT STROKE REHABILITATION SERVICE**

### **Goals of the Service**

- To achieve realistic, time-limited, client-centered sustainable rehabilitation goals
- To provide education and training to clients and families
- To assist the client with re-integration into the community

### **Who Was Served?**

Stroke survivors with any or all of the following presentations:

- Significant communication needs
- Significant cognitive impairments
- Severe disability

AND who meet the following criteria:

- Have identifiable and achievable rehabilitation goals
- Are motivated and able to participate
- Are able to arrange own transportation to Parkwood Hospital
- Have needs not met by existing services

### **What Was Provided**

PT, OT and SLP services were funded through the pilot project. Limited access to Therapeutic Recreation and Social Work was provided as existing resources permitted as in-kind contribution to the pilot.

### **Model of Service**

- Potential referral sources were made aware of the service through mailings with brochure (see Appendix A), follow-up phone calls and presentations.
- A referral was mailed or faxed to the pilot team (See Appendix B).
- An assessment was arranged.
- The rehabilitation plan focused on collaborative measurable goal setting and rehabilitation plan development with the client and their family and the program customized to meet each client's need

- The PT, OT and SLP all had stroke-specific rehabilitation expertise-there is strong evidence that this results in better outcomes.<sup>3</sup>
- Services were flexible in frequency, duration and intensity.
- The services could be provided in the outpatient rehabilitation setting, the client’s home, the long-term care facility or the community depending on the targeted outcomes and the environment most suited to achieving those outcomes.

### Measures

These are listed and described in Appendix C. Clients were scored using these tools at:

- Admission to the Outpatient Pilot Program
- Discharge from the Outpatient Pilot Program
- Follow-up which occurred, on average 6-7 months post-discharge from the pilot.

For all tools, the higher the score the better the result

### Demographics

One hundred and six clients were referred to the Stroke Pilot Outpatient service. Descriptive information of the 106 clients referred is provided below:

**Table 1**

Gender	Percentage (number)
Male	40.6% (43)
Female	59.4% (63)

**Table 2**

	Mean	Median	Range
Age	64.7 years	65	15 – 91 years of age

The majority of referrals were received from inpatient rehabilitation (39.6%), followed by acute care hospital (16%) and family physicians (14.2%). See Table 3 for details.

### Referral Source (n=106)

**Table 3**

Source	Percentage (number)
Acute Care Hospital	16.0% (17)
CCAC	4.7% (5)
CORP	7.5% (8)
Family physician	14.2% (15)
Inpatient Rehab Unit	39.6% (42)
LTC	3.8% (4)
Specialist	12.2% (13)
Other	1.9% (2)

<sup>3</sup> Evidence-Based Review of Stroke Rehabilitation – Robert Teasell MD, Timothy Doherty MD PhD, Mark Speechley PhD, Norine Foley BSc, Sanjit K. Bhogal BA (Hon)

The majority of referrals were received from Middlesex-London (84%). This is not surprising given the population density, proximity and lack of transportation for those outside London. See Table 4 for detail.

**Geographic Residence (n=106)**

**Table 4**

County	Percentage (number)
Elgin	6.6% (7)
Huron	1.9% (2)
Lambton	2.8% (3)
Middlesex-London	84.0% (89)
Oxford	4.7% (5)

Complete data was available on 47 clients only. There is incomplete data on some of the clients because:

- Thirty-one clients were seen for therapy for less than 5 visits (these clients did not require a course of rehabilitation but rather a consultation which included assessment and recommendations).
- Five clients were either readmitted to hospital or declined to complete the information at discharge and four deceased.
- Ten people were determined not to be appropriate for pilot
- For nine clients discharged at the end of the pilot, there was insufficient time to complete a follow-up assessment .

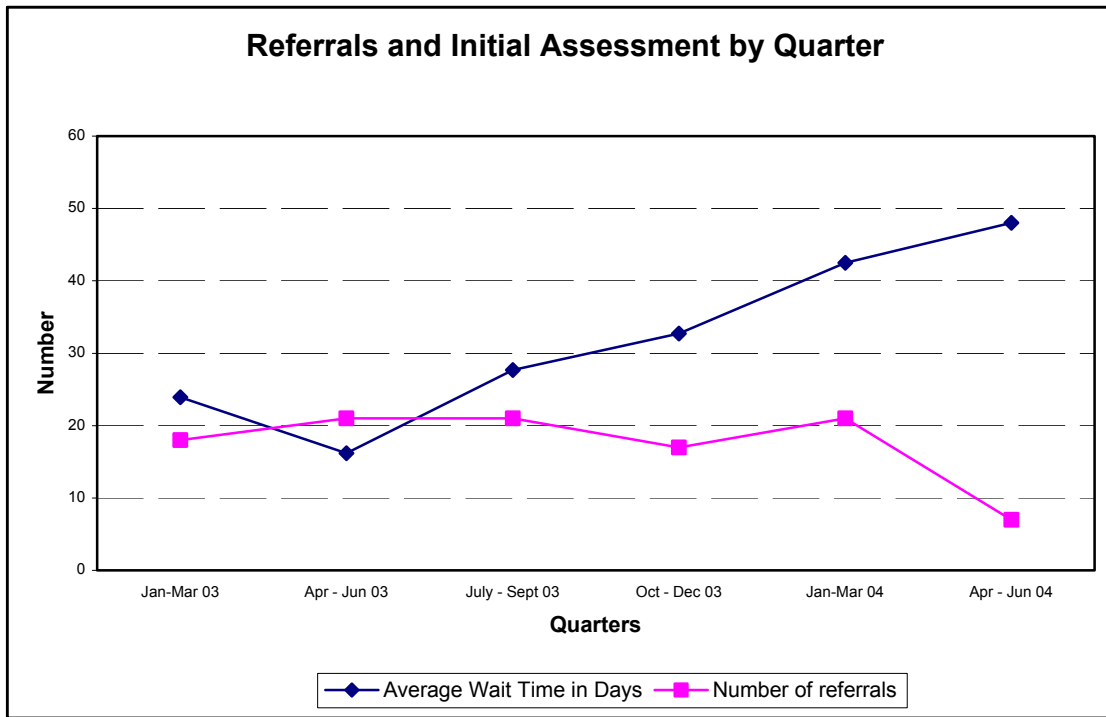
Therefore outcome results will be reported for those clients (n=47) with complete data (admission, discharge and follow-up). When the results at admission and discharge for all clients were compared to clients with complete data, the results were very similar.

**Referrals and Wait Time for Assessments**

There was a steady flow of referrals from the commencement of the project in January 2003 until it was communicated that referrals would not be accepted after June 2004. This cut off date was designed to ensure that any clients started in the Pilot could finish their course of rehabilitation, since the funding ended in September 2004.

The average length of time between the referral being received and the initial assessment was 29.9 days (median 25.5 days). However, the waiting time steadily increased over the duration of the project; demonstrating that the need for this service exceeded the resources available. The minimum length of time was 0 days and the maximum waiting time was 111 days. Figure 1 displays the number of referrals by quarter and the average waiting time before initial assessment.

**Figure 1**



**Therapy Information**

Of the 106 clients referred, the referrals to OT and PT were almost equal; 65% and 69% respectively and SLP was 45% (Table 5).

The length of time and number of attendances for OT and PT were very similar. These two therapists treated many clients jointly as an effective way to provide intervention for clients with severe disability. The SLP spent roughly half as much time and attendances to achieve the goals set for clients requiring SLP.

The mean LOS by therapy was similar for PT (119.2 days) and OT (108.0 days) and almost half as long for SLP (56.9 days). See Table 6 for details. The mean number of attendances between PT and OT were almost identical (21.1 and 21.7) and just less than half for SLP (10.0) See Table 7 for details. In addition, the average hours in therapy were similar for PT (17.2) and OT (17.1) and notably less for SLP (10). See Table 8 for details.

**Number of Clients by Discipline**

**Table 5**

Therapy	Number of Clients Seen
PT	73
OT	69
SLP	48

**Table 6**

LOS in Pilot by Therapy	Mean	Median	Range
PT LOS (n=73)	119.2 days	100.0 days	1 – 455 days
OT LOS (n=69)	108.0 days	101.0 days	1 – 462 days
SLP LOS (n=48)	56.9 days	46.5 days	1 – 241 days

**Table 7**

Number of Attendances	Mean	Median	Range
PT (n=73)	21.1	16.0	1 - 84
OT (n=69)	21.7	18.0	1 – 86
SLP (n=48)	10.0	7.0	1 – 48

**Table 8**

Hours of Therapy/Case	Mean	Median	Range
PT (n=73)	17.2	13.1	.9 - 75.8
OT (n=69)	17.1	14.1	.5 - 71.7
SLP (n=48)	10.0	6.9	1.0 - 48.7

### **Survivors of Severe Stroke – Sub-Comparison Group- FIM ≤ 50**

In order to determine the impact of the provision of outpatient services for survivors of severe stroke, two groups were compared:

- **Pre-Pilot Group** - for the year prior to the pilot being implemented, the clients with an inpatient hospital admission FIM score of ≤ 50 were identified, located and asked to participate in a follow-up assessment.
- **Pilot Group** - for the year during which the pilot was available, clients with an inpatient hospital admission FIM score of ≤ 50 were identified.

**FIM (Functional Independence Measure)** is a tool used to measure disability in 18 domains of function. Each domain is scored from 1 to 7; with 1 being totally dependent and 7 being totally independent. The minimum possible score is 18 and the maximum possible score is 126.

The following measures were available for comparison for the Pre-Pilot and Pilot group:

- Hospital Admission FIM
- Hospital Discharge FIM
- Living setting at discharge from hospital
- Follow-up FIM
- Follow-up Reintegration to Normal Living Index Score

### **KEY RESULTS**

Table 9 below shows a comparison of discharge setting post-inpatient rehabilitation discharge. Of note, is the difference in the pattern of discharge destination. There were 43% more client

who were discharged to home when the pilot was available and 38% fewer discharges to LTC facilities. It raises the question of whether the availability of ongoing support post-hospital discharge would alter decisions regarding discharge destination.

### Discharge Setting Post-Inpatient Rehabilitation Discharge

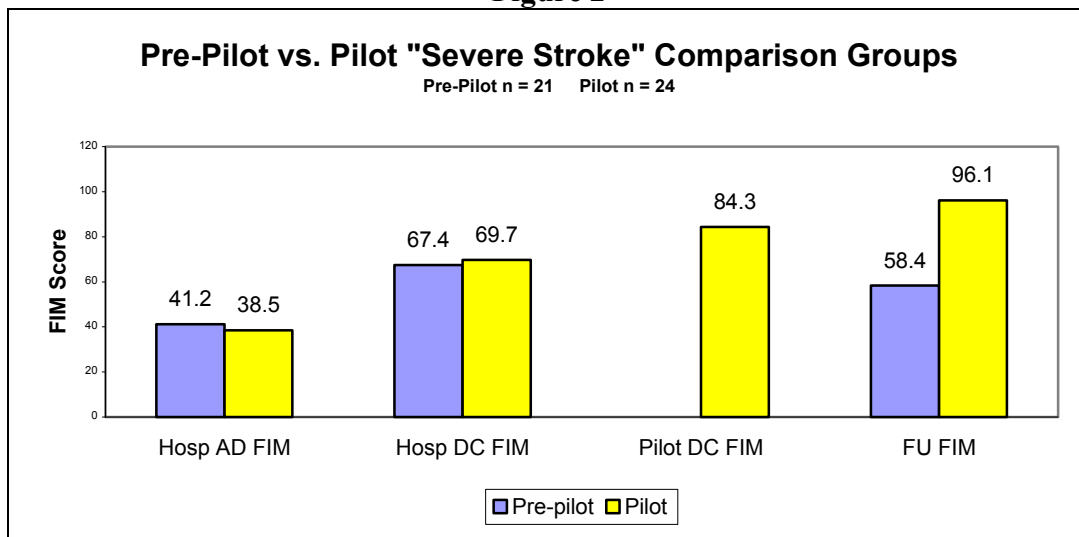
**Table 9**

<b>Comparison of Pre-pilot and Pilot Stroke Survivors with Hospital Admission FIM score ≤ 50</b>		
<b>Data Element</b>	<b>Pre-Pilot</b>	<b>Pilot</b>
Number	21	24
Discharge Living Setting – Home	19%	61.9%
Discharge Living Setting – LTC	76%	38.1%
Discharge Living Setting – Other	5%	0%

Figure 2 depicts a comparison of FIM scores for the two groups. The two groups score were similar at Inpatient Rehabilitation Hospital Admission FIM and Discharge FIM. However, at follow-up the Pre-Pilot group declined by 9 FIM points on average, the median being a loss of 15 FIM points. The Pilot group, on the other hand, on average had a FIM score of 84.3 at the time of discharge from the pilot and continued to improve up to 6-7 months post-discharge to 96.1 compared to the Pre-Pilot FIM at follow-up of 58.4.

Therefore, the provision of outpatient rehabilitation for these survivors of severe stroke seemed to result in continued functional gains; whereas, not providing service results in a decline in function.

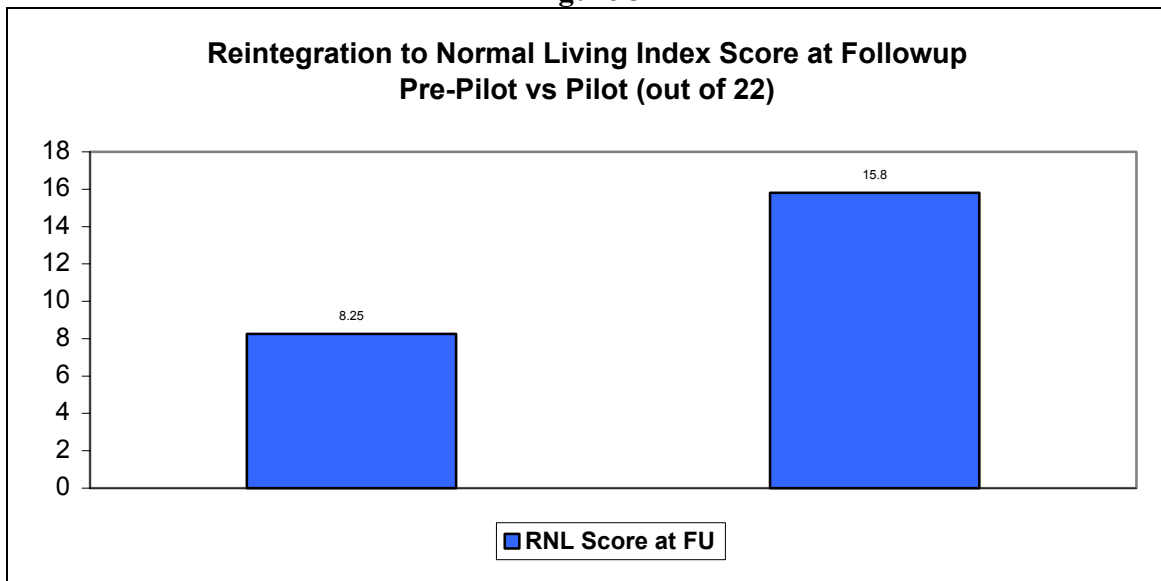
**Figure 2**



**The Reintegration to Normal Living Index** is a self-assessment of 11 items about participation ranging from mobility, self-care, work, recreation, and social activities. The score ranges from 0 (does not describe my situation) to 22 (fully describes my situation). Total score can range from 0 to 22. A higher score reflects a higher level of integration. For the two groups there was a major difference in Reintegration to Normal Living Index scores as illustrated in Figure 3. The Pilot

group average RNL scores were almost double the scores of the Pre-Pilot group as shown in Figure 3.

**Figure 3**



### **Results For All Outpatients**

#### **Client-Centred Goals**

At admission to the outpatient program, the team, the client and the family would collaborate to establish client-centered goals. Goals needed to be specific, measurable, achievable, realistic and time limited. At discharge and follow-up, all goals were scored as being met, exceeded, partially met or not met at all.

#### **Most Common Goals Were Related To:**

- Mobility
- Communication
- Upper Extremity Function
- Instrumental Activities of Daily Living (e.g., meal preparation, housework, learning to use public transit)
- Self-care

Table 10 below shows that at discharge 65% of goals set were met or exceeded and an additional 30% were partially met. Consistent with most of the measures, the clients continued to improve or at least maintained similar levels of achievement based on follow-up scores. A very small percentage of goals were not met at all (3.9% at follow-up).

**Table 10**

<b>Goal Attainment Level</b>	<b>Discharge from Pilot</b>	<b>Follow-up</b>
<b>Exceeded</b>	9.9%	14.3%
<b>Met</b>	55.2%	53.7%
<b>Partially Met</b>	30.0%	28.1%
<b>Not Met</b>	4.9%	3.9%

**Pain**

- Of those clients reporting they had pain at admission to outpatient rehabilitation, 17% reported that they did not have pain at discharge.
- Of those clients who still had pain at discharge from outpatient rehabilitation, 31% reported the intensity was less.
- 7.6% felt pain was worse at discharge.

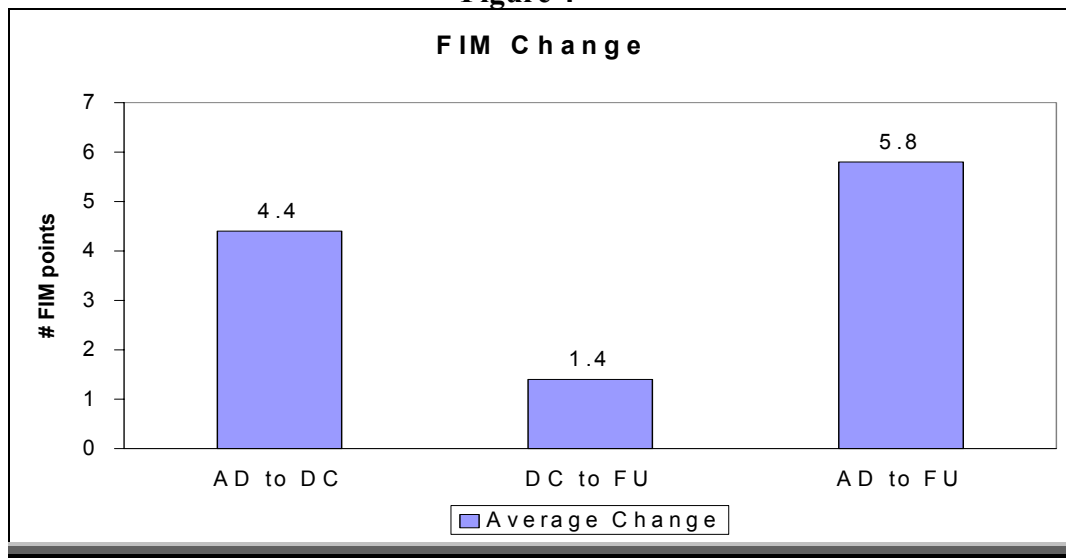
**General Health Status**

- 32% of the clients reported an increase in general health status at discharge from the outpatient program.
- 14.8% felt their health status decreased at discharge.
- At Admission to the Outpatient Pilot 51% of the clients report their health status as good or excellent. At Discharge from the Outpatient Pilot 68.1% of clients reported their health status as good or excellent. This represents a 17% increase in the good/excellent rating.

**FIM**

- 76% of the clients improved, compared to admission, their FIM score at discharge from the outpatient rehabilitation program.. The average FIM score for all clients upon admission to the Pilot was 101.8, at discharge was 106.1 and at follow-up was 107.5. Figure 4 illustrates the average FIM change was 4.4 points. Of interest is the fact that improvement continued 6 months post-discharge when FIM was rescored at follow-up.

**Figure 4**





When the total FIM Score averages were divided into Motor (13 items) and Cognitive (5 items) sub-scores, there was improvement in both motor (4.1 points at follow-up) and cognitive (1.7 points at follow-up).

### Communication

#### Verbal and Non-verbal

- Average improvement from 4.0/5.0 at admission to 4.2/5.0 at discharge
- 16% of clients (n=44) improved

#### Written Expression

- Average improvement from 3.7/5.0 at admission to 3.8/5.0 at discharge
- 16% of clients (n=44) improved

#### Auditory or Non-Auditory Comprehension

- Average scores did not change between admission and discharge
- 11% of clients (n=44) improved.

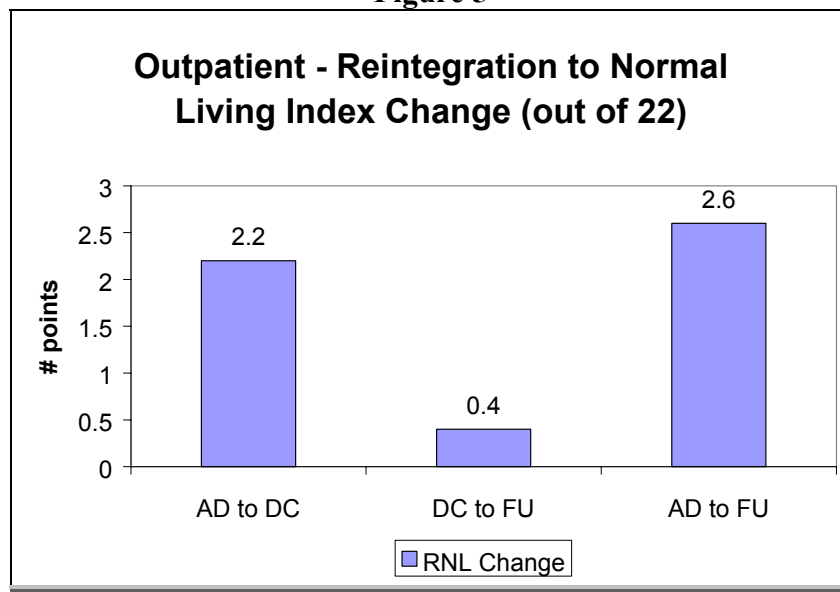
#### Reading Comprehension

- Average improvement from 3.9/5.0 at admission to 4.1/5.0 at discharge
- 14% of clients (n=44) improved

### Reintegration to Normal Living Index

- 62% of clients improved their RNL score at discharge from the outpatient program. Of note, is the fact that the score continued to show improvement at the 6 month follow-up. The average admission RNL was 15.0, discharge was 17.3 and follow-up was 17.7. Change scores are shown in Figure 5.

Figure 5



### Berg Balance Scale

The Berg Balance Scale is used to monitor functional balance over time. It consists of 14 tasks graded from 0 to 4. A higher score reflects better balance. The maximum score is 56. Eight-five percent of clients improved their Berg Balance Score at discharge from the Pilot. A change of six points is reported to be a clinically meaningful change. Also a score of  $\leq 36$  is reported to indicate an extremely high risk of falling. The average score of clients on admission to the outpatient program was 32.9. By discharge the average score was 39.2 (above the high risk threshold) and further improvement was recorded at six months post-discharge with an average of 40.3. The average scores are shown in Figure 6. Change scores to the Berg Balance scale are shown in Figure 7.

Figure 6

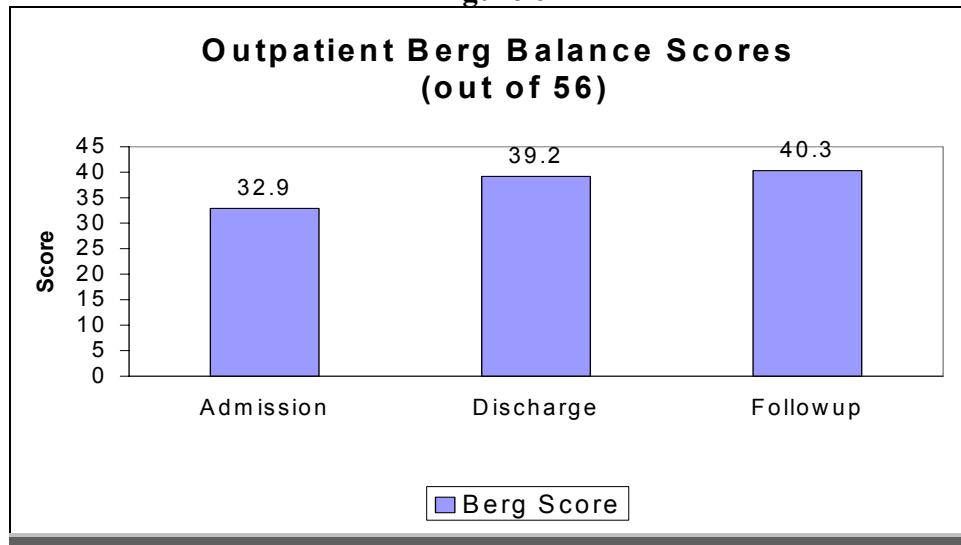
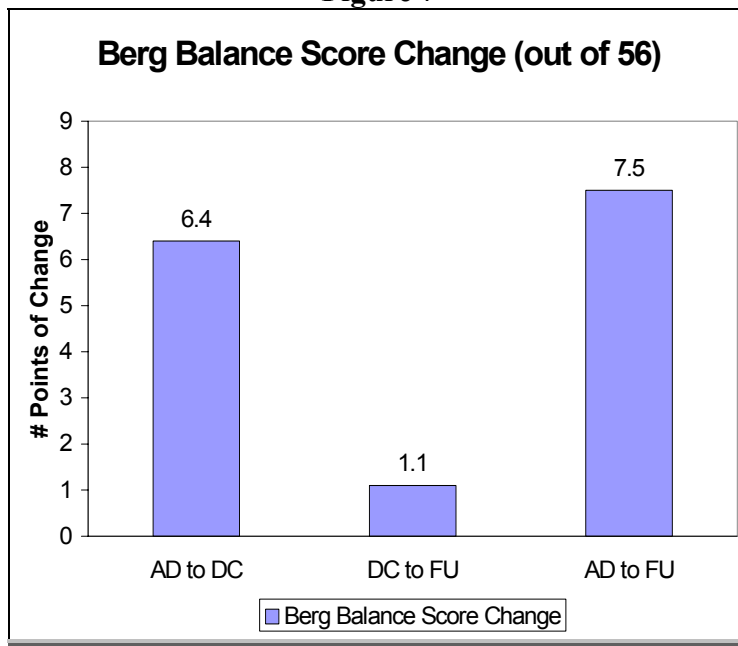


Figure 7



### **Chedoke-McMaster Stroke Assessment Impairment Inventory – Arm & Hand**

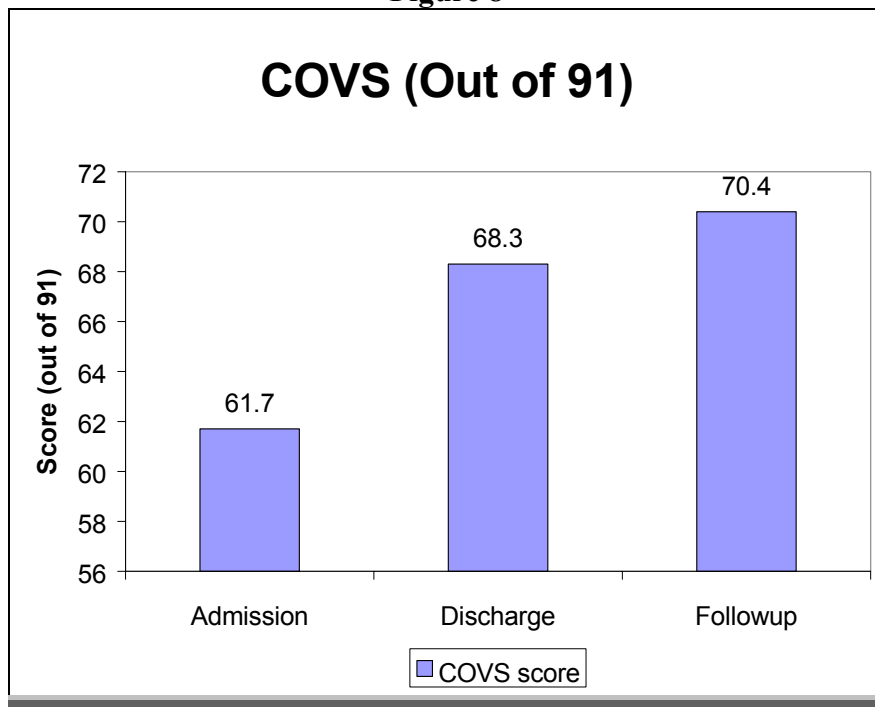
The Chedoke-McMaster Stroke Assessment Impairment Inventory-Arm and Hand-measures motor function in the upper extremity and determines the presence and severity of physical impairments. The Arm and Hand dimension is measured on a seven-point scale with each scale corresponding to the seven stages of motor recovery.

- 18% of the clients improved their arm function at discharge from the pilot
- 24% of the clients improved their hand function at discharge from the pilot
- 0% declined

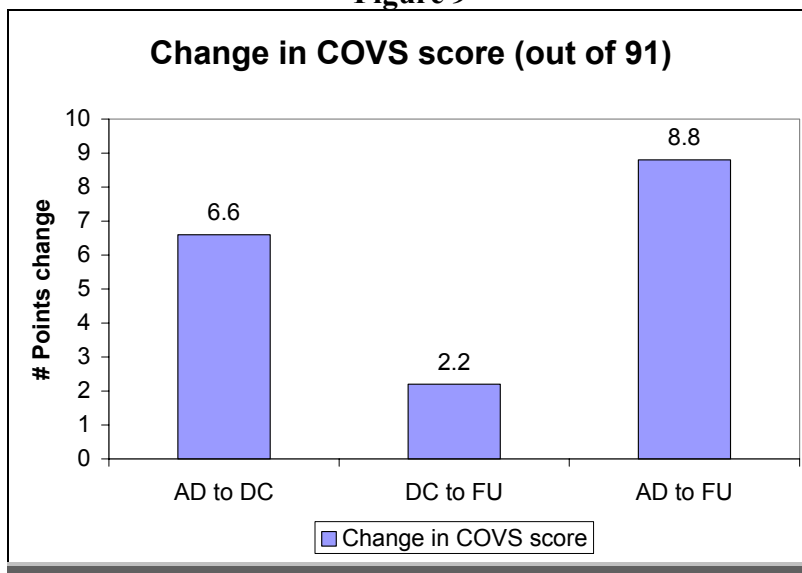
### **COVS (Physiotherapy Clinical Outcome Variables Score)**

COVS is used to measure dysfunction in mobility. The score can range from 13-91. A five-point change is deemed to be the minimum for a clinically important difference. 82% improved their COVS score at discharge from the pilot. The improvement continued after discharge for an average COVS change score of 8.8 points at follow-up. Some clients had up to a 25-point improvement. The COVS average scores are shown in Figure 8. The COVS Change scores are shown in Figure 9.

**Figure 8**



**Figure 9**

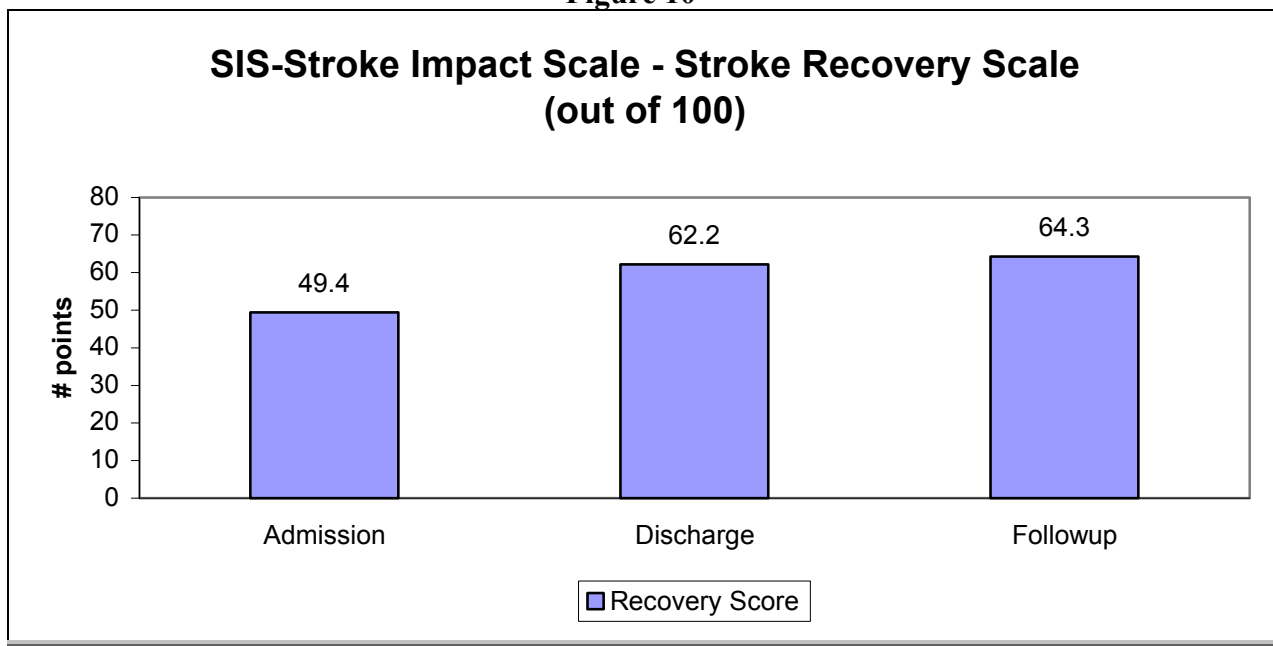


**SIS (Stroke Impact Scale) – Stroke Recovery Scale**

This is a self-rating scale of stroke recovery from 0 to 100, with 0 representing no recovery and 100 representing full recovery.

The average improvement from admission to discharge was 12.8 with continued improvement after discharge leading to an average improvement at follow-up of 14.9 as illustrated in Figure 10.

**Figure 10**

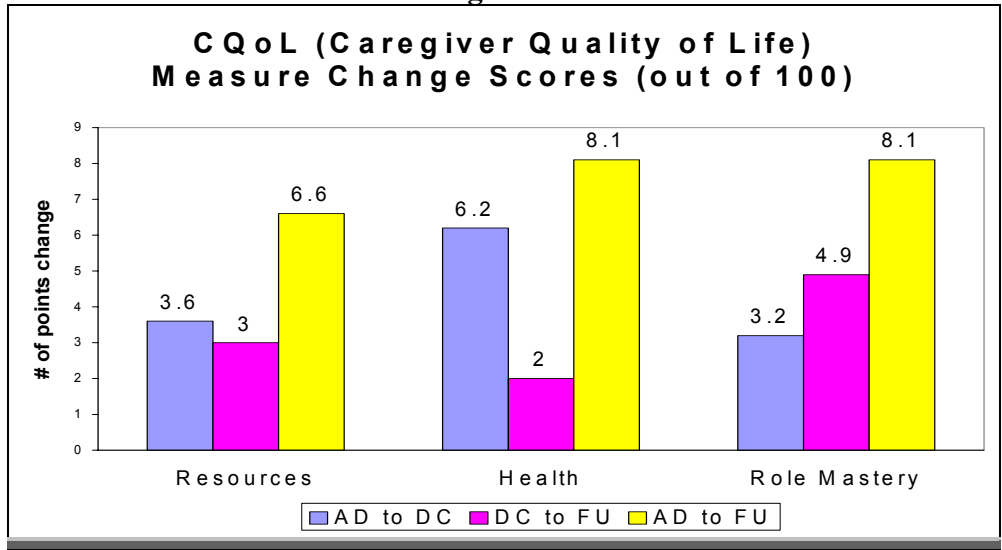


### Caregiver Quality of Life

This tool measures the quality of life of the stroke survivor’s caregiver. Three domains were measured: resources, health and role mastery. All showed improvement from admission to discharge and the improvement continued as measured at follow-up.

The Resources domain reflects both the personal and environmental characteristics that are inherent to quality of life, e.g., energy, not feeling isolated, finances, support of family and friends. The Health domain relates to the caregiver’s health. The Role Mastery domain relates to the caregiver’s ability and competence in managing the care giving situation. CQoL change scores are shown in Figure 11.

Figure 11



### Consumer Satisfaction Results

After discharge from the Outpatient Pilot, consumers were sent a client satisfaction survey. There was a high level of satisfaction with the service. Questions were asked specifically about involvement in goal setting and decision-making, and communication

<b>Outpatient Client Satisfaction – Sample of Results – n=49</b>	
<b>% Positive (Excellent + Good)</b>	
Was treatment centered around goals that were important to you?	90%
Were you kept up to date regarding progress in your programs?	96%
Rate overall the quality of rehabilitation you received from this service?	92%

### System Cost Savings

A cost benefit analysis was not done for all clients served by the Outpatient component of the SWO Stroke Pilot. However, we wanted to draw attention to the fact that there are potential savings to the system by the provision of outpatient stroke rehabilitation.



**Estimated total system savings in one year for the 11 clients described above  
= \$140,907 + \$288,063 = \$428,970**

The total cost of the Stroke Pilot = \$250,000 per year.

**Total cost per year for the Outpatient Component = \$150,000 (based on 60% of time spent on Outpatients).**

**Clients served per year = 53**

#### **Estimated Annual Program Personnel Costs**

- To operationalize this program, there would not be need for as much coordinator resource so cost would be less. Estimate \$135,000 per year for personnel costs serving approximately 70 clients annually.
- It seems the potential savings would exceed the costs of providing such a service. This finding warrants a more vigorous examination.

#### **What We Have Learned**

1. Positive functional and quality of life gains can be made with survivors of a severe stroke and these improvements continue at least 6-7 months post discharge.
2. In the absence of outpatient rehabilitation services, survivors of a severe stroke, with an inpatient rehabilitation admission FIM  $\leq$  50, generally decline in function as demonstrated by FIM scores and lower scores on the reintegration to normal living index.
3. The advanced stroke expertise of the Pilot team is considered to be a contributing factor to the gains made by the stroke participants.
4. Communication between client, family and the team about setting measurable achievable goals was found to be advantageous by the team and commented on in consumer surveys as related to higher levels of satisfaction.
5. Some existing outpatient services have strict criteria for admission around requiring more than one service and definitive lengths of stay, i.e., 6 weeks. The Pilot team received several referrals for stroke survivors who were referred from other outpatient programs because they had exceeded the program's length of stay and still had goals to achieve. Others were not eligible because the referring program admission criteria required two or more services but the stroke survivor required only one service.
6. For survivors of a severe stroke, it would appear that there is a greater probability of discharge to home when there is a program that has the capability of supporting the client and family post discharge and providing ongoing rehabilitation.
7. As the client improved in function, the quality of life for the caregiver also improved.
8. Outpatient rehabilitation services can be provided for survivors of severe stroke by an interdisciplinary team in an efficient manner
9. Preliminary estimates demonstrate that savings to the system can be realized through the provision of outpatient services.
10. The number of tests/measures used were critical to comprehensive evaluation of the pilot project; however in an operationalized service a reduced number would be necessary.

11. There were clients who were unable to utilize the Pilot outpatient service due to lack of specialized transportation options.

### **What We Recommend**

1. Survivors of severe stroke should routinely receive outpatient rehabilitation services.
2. A comprehensive economic evaluation should be undertaken regarding the financial impact to the health system when
  - The discharge location is home rather than a long-term care facility
  - A client can move from a long-term care facility into home.
3. Existing outpatient services need to:
  - Be flexible with a length of stay that is related to measurable goals set in collaboration with the client and family, i.e., a client should not be discharged at 6 weeks if goals are not met and it is determined they could be met with an extension.
  - Serve clients if they only require one service
  - Facilitate re-entry to rehabilitation for stroke survivors who have identified rehabilitation goals irregardless of the time that has elapsed since the stroke
4. The capacity for specialized transportation services to enable access to ambulatory rehabilitation services is a service gap that should be addressed.
5. The inclusion of Social Work, Nursing and Therapeutic Recreation in stroke rehabilitation ambulatory services is important to attain optimal outcomes.
6. To monitor and evaluate a stroke rehabilitation outpatient service, the following measures are recommended: Functional Independence Measure (FIM), Chedoke-McMaster Stroke Assessment Inventory – Arm & Hand, Clinical Outcome Variables Score (COVS), Berg Balance Scale, Reintegration to Normal Living Index. Additionally, building in follow-up post-discharge is very useful to determine if outcomes are sustained over time.
7. Outpatient rehabilitation should be provided for survivors of severe stroke by therapists with stroke rehabilitation expertise to be consistent with best practice.

## **OUTREACH STROKE REHABILITATION SERVICE**

### **The Model**

The Outreach Stroke Rehabilitation implemented in the Pilot project provided “just-in-time” client-specific consultation and/or training/education to service providers in Southwestern Ontario. The service providers reached by the Pilot model worked in hospitals, long-term care facilities, CCAC's and other similar agencies that care for stroke survivors.

Considerable efforts were spent in publicizing the service; to make service providers aware of its existence. These included brochure mailings, follow-up phone calls, in-services, etc. The timing of the SARS issue resulted in a slow start to the pilot; however once facilities were able to provide access to the Pilot team, the number of requests increased. See Appendix D and E for the Brochure and Request form respectively.

VideoCare was used for some education sessions. It worked well for both the team and the requesting therapists. It also saved significant travel time for the Pilot team.



## **Examples of the Outreach Model**

### **Client-Specific Consultation**

A physiotherapist in a small community hospital often has a caseload with a wide variety of conditions – everything from orthopedics to neurology. The physiotherapist, being a generalist, may request advice and direction about a stroke client from the Pilot project physiotherapist who has advanced stroke rehabilitation expertise. The Pilot project physiotherapist would travel to the community hospital to meet with the client and the physiotherapist, assess the client and offer suggestions/recommendations for the physiotherapist to try. A follow-up phone call would be placed to see how the suggestions are working. Additional visits would be arranged if needed. In this situation, the Pilot physiotherapist does not provide ongoing treatment – but, rather, uses a consultative model to help service providers problem-solve and learn additional strategies. This model also offers the client, who is receiving treatment closer to home access to stroke-specific expertise when needed without having to travel to another treatment centre.

### **Education**

An agency may identify that they would like some training, as an example, on the topic of management of the hemiplegic arm. The Pilot team would identify who, within the team, would give this training (OT or PT or both), consult with agency personnel about what content they would like, date, timing and format. The session would be provided and evaluated.

### **Tips and Tools Sub-pilot**

A Sub-pilot for Tips and Tools Education was also conducted within the scope of this Pilot. The resource “Tips and Tools for Everyday Living – A Guide for Stroke Caregivers” was developed to help Personal Support Workers address the challenges of caring for stroke survivors in a very practical way. This sub-pilot was intended to increase the uptake of the content by increasing the knowledge level of service providers in long-term care in the areas of mobility, behavior, feeding and communication. The pilot was very successful in demonstrating that self-rating of knowledge significantly improved as a result of the workshops and that this improvement was generally sustained three months following the workshop. The full report can be seen in Appendix F.

### **Outreach Stroke Rehabilitation – Education Results**

The majority of educational requests were received from Long-Term Care facilities (34.9%) followed by hospitals (32.6%) and University/Colleges (13.9%). Details are in Table 12.

The highest proportion of education requests were received from Middlesex County (55.8%) followed by Oxford County (16.3%) and Lambton County (7%). Details are in Table 13.

### Education Requests By Source

**Table 12**

Source	Percentage (number) n=43
LTC	34.9% (15)
Hospital	32.6% (14)
University/College	13.9% (6)
Day Program	7.0% (3)
CCAC	4.6% (2)
Private Rehab	4.6% (2)
Interest Group	2.3% (1)

### Education Requests By County

**Table 13**

County	Percentage (number) n=43
Middlesex	55.8% (24)
Oxford	16.3% (7)
Lambton	7.0% (3)
Bruce	4.6% (2)
Elgin	4.6% (2)
Kent	4.6% (2)
Grey	2.3% (1)
Huron	2.3% (1)
Perth	2.3% (1)

The most common educational requests were mobility management of the upper extremity and feeding and swallowing. The utilization of the three disciplines is shown in Table 14 with PT and SLP presenting individually being the most common scenario (32.5% and 25.6% respectively).

### Education Requests By Topic

- Mobility
- Transfers
- Management of Shoulder
- Feeding and Swallowing
- Normal Movement
- Assessment Tools and Goal Setting
- Tips and Tools Topics

### Education By Presenter (discipline)

**Table 14**

Discipline of Presenter	Percentage (number) n=43
PT	32.5% (14)
SLP	25.6% (11)
OT	16.3% (7)
OT/SLP	9.3% (4)
PT/OT/SLP	9.3% (4)
OT/PT	7.0% (3)

The education sessions reached a total of 22 different agencies and 753 participants. Details in Table 15. The average number attending each session was 18. the average time from receipt of request to actual presentation was 70 days. The requesters (100%) felt that the timelines were acceptable. (see Evaluation of Education by Requesters on page 30). Generally, the requesters needed time to arrange for space and staff attendance at these events and the timing was negotiated between the Pilot team and the requester.

### Education - Other Information

**Table 15**

No. of agencies	22	
No. of total visits	43	
No. of participants (total attendance in all sessions)*	753	
* includes those who attended more than 1 session		
	Mean	Range
No. participants per session	18	3-70
Travel time/visit – RT	77 mins.	5-270
Presentation time including set-up time	120 mins.	60-240
Length of time from request receipt to presentation	70 days	14-190

### Evaluation of Education

The results that are graphed below illustrate the self-ratings of the participants on the three most common in-services: swallowing, mobility and normal movement. The participants were asked to self-rate their knowledge level before the session and immediately after the session on a number of sub-topics that would be covered in the session. The rating scale was a five-point scale – excellent (five), very good (four), fair (three), poor (two), very poor (one). In all cases there was a significant improvement from before to after the session.

Figure 12

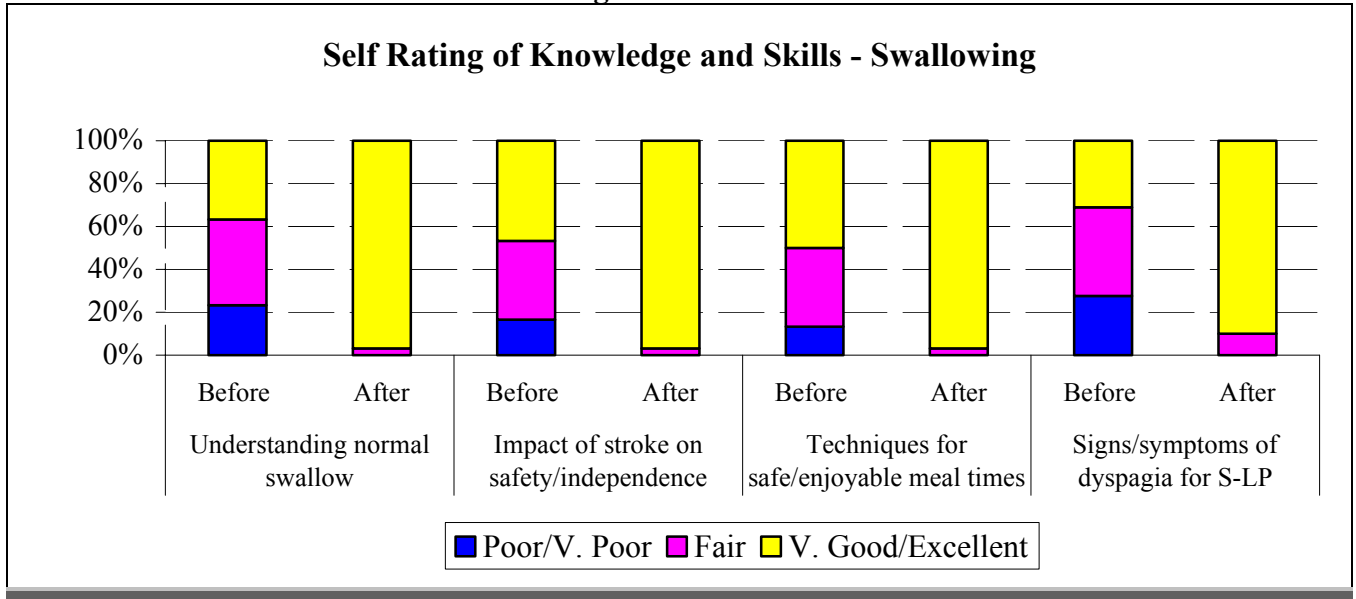
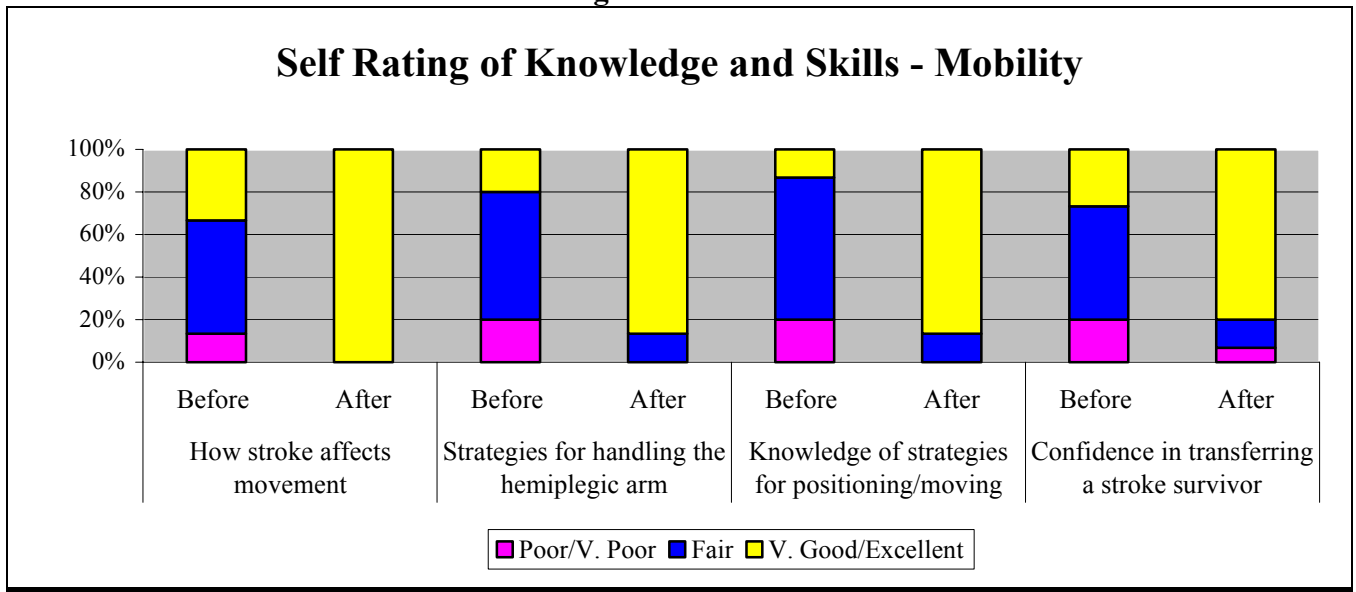
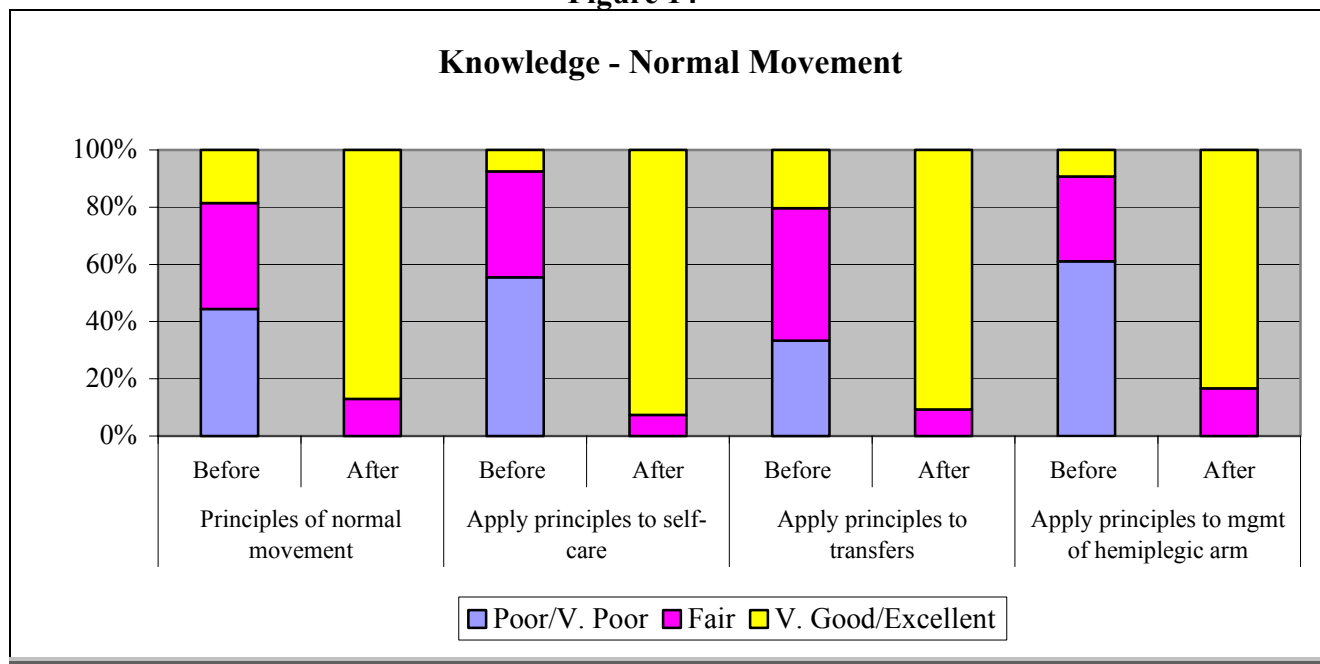


Figure 13

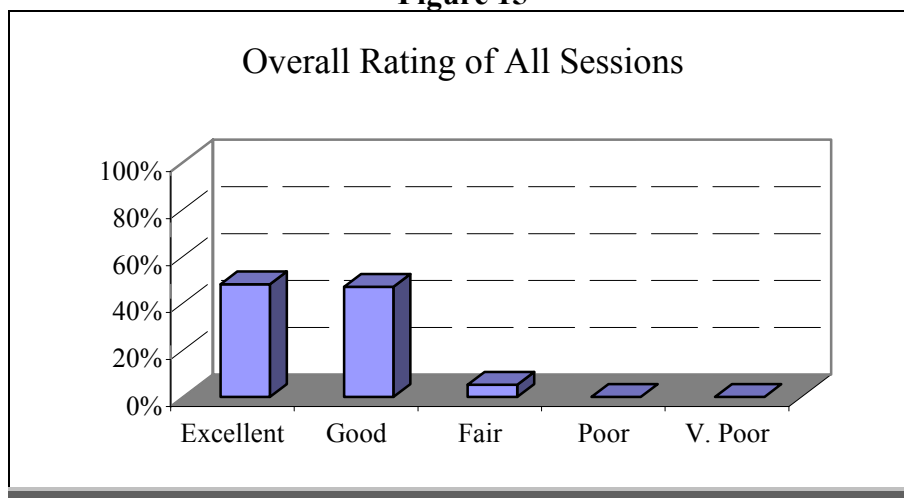


**Figure 14**



The overall rating for all sessions was very positive:

**Figure 15**



While the objective measures validated the value and need for outreach services; there were additionally many narrative comments provided in the evaluation forms that subjectively validated this approach as a needed resource, for example:

- Very much appreciated someone willing to come to us
- Need more updating and ongoing reviews
- Outreach education much needed service in this area
- Great to have outreach resource
- More workshops – more education – several times a year

The above information relates to evaluating the content of the session. Additionally, the requesters were asked for feedback on the team’s handling of the request.

### Evaluation Of The Education Service By The Requester

**Table 16**

Question	Yes	To Some Extent	No		
Did a member of the Stroke Pilot team respond promptly to your initial request?	83.3%	17.7%	0%		
Did a member of the Stroke Pilot team actively listen to your needs?	100%	0%	0%		
Were the timelines negotiated with the Stroke Pilot team acceptable to you?	100%	0%	0%		
Did the Stroke Pilot team follow through on what they committed they would do?	94.4%	5.6%	0%		
Did the service address your needs?	86.7%	13.3%	0%		
Would you recommend the Stroke Pilot service to others?	100%	0%	0%		
	Excell.	V.Good	Good	Fair	Poor
Overall how would you rate the quality of the service provided by the Stroke Pilot team?	83.3%	16.7%	0%	0%	0%

### Evaluation Of Outreach – Client Specific Consultation

The highest number of requests for client-specific consultation came from hospitals (61.5%) and Long-Term Care facilities (18.5%). See Table 17 for details. The majority of requests came from Middlesex County (56.9%) followed by Oxford County (13.8%), Elgin County (9.2%) and Lambton County (7.7%). Details are in Table 18.

### Client Specific Consultation Requests By Source

**Table 17**

	Percentage (number) n=65
Hospital	61.5% (40)
LTC	18.5% (12)
Private	7.7% (5)
CCAC	7.7% (5)
Family Practice	3.1% (2)
Specialist	1.5% (1)

### Client Specific Consultation Requests By County

**Table 18**

County	Percentage (number) n=65
Middlesex	56.9% (37)
Oxford	13.8% (9)
Elgin	9.2% (6)
Lambton	7.7% (5)
Kent	6.2% (4)
Grey	1.5% (1)
Huron	1.5% (1)
Perth	1.5% (1)
Bruce	1.5% (1)

### Client Specific Consultation Requests By Reason

- Mobility
- Functional Independence
- Shoulder Pain
- Swallowing
- Home Safety
- IADLs
- Client Management
- Communication

Physiotherapists made the highest number of requests (50.8%) followed by Occupational Therapists (15.4). Details are in Table 19. Thus, PT and OT were most common presenters from the Pilot team (60% and 16.9% respectively). See Table 20 for details.

### Client Specific Consultation Requests By Discipline

**Table 19**

Discipline	Percentage (number) n=65
Physiotherapists	50.8% (33)
Occupational Therapists	15.4% (10)
MD	7.7% (5)
Nursing	7.7% (5)
Adjuvant/Restorative Care	7.7% (5)
Director of Care	1.5% (1)
Case Manager	3.1% (2)
Rehab Therapist	1.5% (1)
Kinesiologist	1.5% (1)
S-LP	1.5% (1)
SW	1.5% (1)

**Client Specific Consultation By Presenter (discipline)**

**Table 20**

Presenter (Discipline)	Percentage (number) n=65**
PT	60% (39)
OT	16.9% (11)
OT/PT	9.2% (6)
SLP	7.7% (5)
PT/OT/SLP	4.6% (3)
OT/SLP	1.5% (1)

\*\*includes repeat visits to same client, therefore n>43

In total, 47 clients were served in 65 visits through the consultation outreach service. Details are in Table 21.

**Client Specific Consultation – Other**

**Table 21**

	Average (Range)
No. of clients seen = 47	
No. of total visits = 65	
Travel time by visit	60 mins (0-360)
Visit time – average/visit*	75 mins (15-210)
Length of wait time – ref. receipt to visit	18 days (0-78)

**Table 22**

**Evaluation of Client-Specific Consultation By Requesters of the Service**

Question	Yes	To Some Extent	No		
• Did a member of the Stroke Pilot team respond promptly to your initial request?	100%	0%	0%		
• Did a member of the Stroke Pilot team actively listen to your needs?	100%	0%	0%		
• Were the timelines negotiated with the Stroke Pilot team acceptable to you?	89.5%	5.3%	5.3%		
• Did the Stroke Pilot team follow through on what they committed they would do?	90%	10%	0%		
• Did the service address your needs?	90.9%	9.1%	0%		
• Would you recommend the Stroke Pilot service to others?	100%	0%	0%		
	<b>Excell.</b>	<b>V.Good</b>	<b>Good</b>	<b>Fair</b>	<b>Poor</b>
Overall how would you rate the quality of the service provided by the Stroke Pilot team?	90.9%	9.1%	0%	0%	0%



While the objective measures validated the value of outreach services; there were many narrative comments provided in the evaluation forms that subjectively validated this approach as a needed resource. For example:

- Thank you so much for all the ongoing support from your program. It has been incredible. Keep up the great work.
- Very timely assessment, good practical information
- It was great having someone who is able to actually come to our facility to see the resident in her environment.
- Southwestern Ontario cannot afford to lose your program.
- Thank you for this wonderful and valuable service. It made a big difference in our ability to progress the client.

### Access To The Outreach Service

Generally priority was given to client-specific consultation requests. The wait time for education requests was greater than client-specific requests. During the SARS outbreak, the pilot team was restricted in its ability to go into other facilities. These facilities were struggling to staff SARS screening stations and therefore couldn't manage to also arrange staff education events. The waiting time for client-specific requests were less affected by this. Additionally, in January 2004, there was an influenza outbreak at Parkwood Hospital as well as other facilities. This precluded staff traveling to other facilities.

A cut off date of June 2004 for Outreach requests was given to ensure all requests received up to that point could be accommodated.

The two graphs below illustrate the number of referrals plotted over time and the average wait time plotted over time for both client-specific consultation and requests for educational sessions.

**Figure 16**

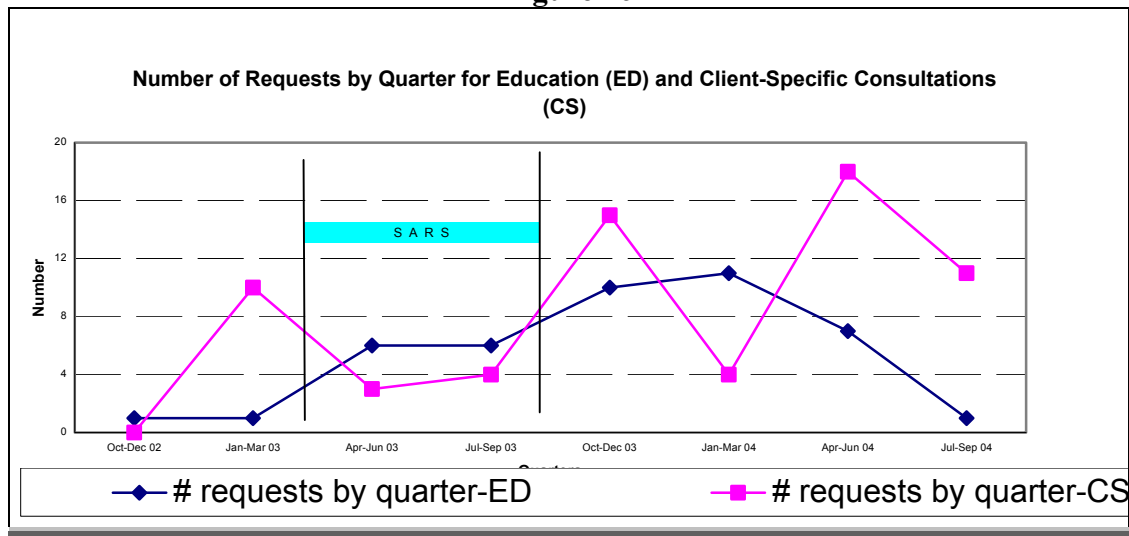
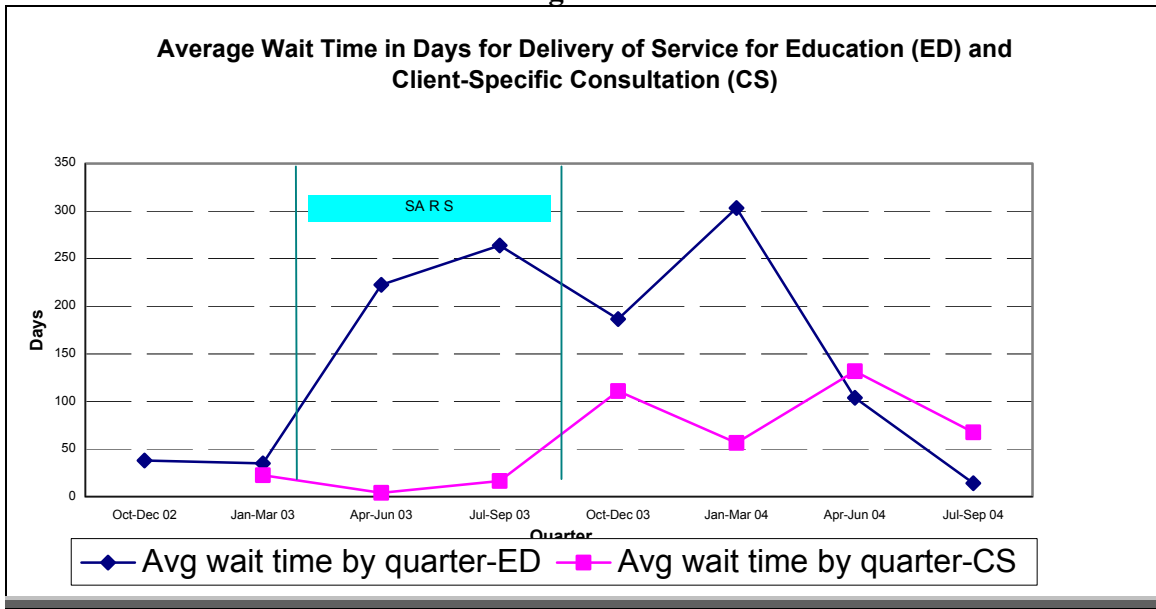


Figure 17



### What We Have Learned about Outreach

- The need and value of “just-in-time” access to client-specific consultation for stroke survivors and education/training related to stroke rehabilitation was validated by the Pilot study. The service was highly rated by those who requested it and the evaluation of the education objectives showed a significant improvement in the self-rating by the participants.
- Tips and Tools is effective in increasing knowledge and bringing about improvements in care provided for persons living with stroke. With the “Tips and Tools” sub-pilot, the participants reported significant increases in their knowledge about the needs and care of stroke survivors. Even three months later, their self-ratings remained significantly higher with only a minimal decline in their knowledge. At the same time, participants identified examples of change they had made in their own practice.
- There is a role for VideoCare as a tool in delivering outreach services to create time and travel efficiencies. VideoCare was very helpful in conducting educational sessions, particularly to multiple sites simultaneously. This saved travel time for the pilot team members. VideoCare is less helpful for client-specific consultations that require hands-on involvement with the client; however is an efficient way to conduct follow-up with the requesting therapist.
- The availability of the Outreach service resulted in the client receiving best practice stroke care closer to home.
- The model of the same therapists providing both outpatient and outreach services worked extremely well. It provided enough flexibility to accommodate outreach requests in a timely fashion; particularly the client specific consultations. Also, the lines between a client specific consultation and outpatients often became blurred in order to meet that client’s needs (e.g., a client came twice a week as an outpatient and the P.T. and O.T. went to the LTC facility to train PSW’s and Kinesiologist in specific management strategies).

## **What We Recommend**

1. Stroke Rehabilitation-specific outreach services should be available in all regions of the province in order to increase the uptake of stroke best practice knowledge, skill and application and to enable stroke survivors to receive best practice stroke care closer to home.
2. Each region needs to develop an outreach structure that works best for their geography.
3. The criteria necessary to offer a Outreach Stroke Rehabilitation service include:
  - A critical mass of clients with stroke
  - An interdisciplinary staff with stroke-specific expertise
  - Champions at the front-line with the interest and commitment
  - Senior leadership commitment
  - A stroke rehabilitation infrastructure to support such a service
4. To use VideoCare linkages wherever possible to reduce travel time. Additional work to perfect this as a tool for clinical applications is recommended.

## **SUMMARY**

In conclusion, the Stroke Rehabilitation Pilot Project for Southwestern Ontario was successful in demonstrating that:

Providing Outpatient Stroke Rehabilitation for survivors of severe stroke is effective. The data showed improvement in all measures of function, participation, balance, mobility and caregiver quality of life. The clients/family were highly satisfied with the service. Preliminary estimates indicate that there are cost savings to the system by the provision of outpatient stroke rehabilitation.

Providing Outreach Stroke Rehabilitation to the region of Southwestern Ontario is effective in meeting the needs of the service providers and the clients they serve. This was demonstrated by the demand for the service, the feedback received from the requesters of the service and the improvement in self-rating of knowledge by the participants.

## Appendix A

### How to Refer:

A physician referral (signature) is required. Referral forms are available from the Coordinator. Completed forms can be faxed to the Coordinator.

### Contact Information:

Neemera Jamani  
Coordinator, Stroke Pilot Project  
Room B-221, Parkwood Hospital  
Phone: (519) 685-4292, ext. 42421  
Fax: (519) 685-4043  
E-mail address:  
[neemera.jamani@sjhc.london.on.ca](mailto:neemera.jamani@sjhc.london.on.ca)  
<http://www.sjhc.london.on.ca/parkwood/programs/rehab/strokepi.htm>

The Southwestern Ontario Stroke Rehabilitation Pilot Project is funded by the Ministry of Health and Long-term Care and supported by St. Joseph's Health Care, London.



### Map to Parkwood Hospital

Parking at Parkwood Hospital

**Parking is available in Visitor's Lot #3.  
\$4.00 (\$1 or \$2 coins only) required upon  
entry to the parking lot.**



## Southwestern Ontario Stroke Rehabilitation Pilot Project

Stroke Rehabilitation

**Outpatient  
Service**



Parkwood Hospital

# Stroke Rehabilitation Outpatient Service Brochure

## Pilot Project Overview

Rehabilitation helps stroke survivors maximize their quality of life physically, cognitively, emotionally, and socially.

The pilot project, funded by the Ministry of Health and Long Term Care is a two-year project to implement and evaluate two types of stroke rehabilitation services consistent with the recommendations of the Stroke Rehabilitation Consensus Panel Report.

The two dimensions to the pilot project are:

- Outpatient service
- Outreach service

Outpatient services include Occupational Therapy, Physiotherapy, and Speech-Language Pathology.

This brochure focuses on *Outpatient* services. Please refer to our brochure *Stroke Rehabilitation Outreach Service* for further information on this element of our pilot project.

Staff members assigned to the outpatient service also act in an outreach capacity on request.

## Goals of the Pilot Project – Outpatient Service

- to achieve realistic, time-limited, client-centred sustainable rehabilitation goals
- to provide education and training to clients and families
- to assist the client with re-integration into the community.

## The Rehabilitation Team

The Outpatient Stroke Rehabilitation team consists of an Occupational Therapist, a Physiotherapist, and a Speech-Language Pathologist. A Social Worker is also available upon request.

The number of therapies required by a client is decided on a case-by-case basis.

## Our Clients

The service is designed for stroke survivors who have any of the following:

- significant communication needs
- significant cognitive impairments
- severe disability

**and meet the following criteria:**

- have identifiable and achievable goals
- are motivated and able to participate
- are able to arrange own transportation to Parkwood Hospital, and
- their needs cannot be met by existing services.

## What Can You Expect?

Outpatient stroke rehabilitation provides:

- a custom program for each client's need
- flexible frequency, duration, and intensity
- a combination of services
- partnerships with community services
- collaborative goal setting and rehabilitation plan development with the client and their family
- care by professionals with expertise in stroke rehabilitation.

## Appendix B



### Southwestern Ontario Stroke Pilot Outpatient Service Referral Form

#### Coordinated Stroke Strategy

<b>CLIENT INFORMATION</b>	Date: <i>(DD/MM/YY)</i>		Parkwood M.R. #:		
Name:	D.O.B. <i>(DD/MM/YY)</i>		Sex <input type="checkbox"/> M <input type="checkbox"/> F		
Address:	Marital Status: <input type="checkbox"/> Married <input type="checkbox"/> Widowed <input type="checkbox"/> Single <input type="checkbox"/> Separated/Divorced				
	Health Card #:				
	Contact Name:		Relationship:		
Phone #: (        )	Contact		Phone #: (        )		
Is client currently in hospital? Facility:					
Expected Discharge Date: <i>(DD/MM/YY)</i>					
Has client been informed and consents to referral? <input type="checkbox"/> YES <input type="checkbox"/> NO					
Date(s), Type and Location of Stroke and Resulting Impairments:					
_____					
_____					
Relevant Medical History:					
_____					
_____					
_____					
Medications <i>(or attach list)</i> :					
Have referrals been made to other agencies/services? <i>Please specify</i>					
<b>Please Indicate Recent Service Providers with Contact Numbers</b>					
Service provider name & facility: (i.e., case manager, occupational therapist, social work, speech)	Type of Service	Telephone Number	Approximate Dates Seen	Discharge Summary Enclosed	
				Yes	No

REASON FOR REFERRAL (*expected outcomes, etc*):      REQUIRED SERVICES:    P.T.    O.T.    S.L.P.    S.W.

ANY OTHER RELEVANT INFORMATION:

**Diet:** Does client follow a special diet?    YES    NO   If yes, please indicate type of diet:  
 Weight Loss    Weight Gain    Diabetic    Modified Texture (i.e., pureed, minced, thick fluids)  
 Other, please describe:

**Allergies:**    None Known    Drug Allergies (which drugs):  
Food Allergies:

**Other:**       VRE Positive       MRSA Positive

**NAME OF PERSON/AGENCY FILLING OUT THE FORM:**  
Name: \_\_\_\_\_ Agency: \_\_\_\_\_  
Phone #: (        ) \_\_\_\_\_ Fax #: (        ) \_\_\_\_\_

**PHYSICIAN INFORMATION**

Family Physician:	Telephone #: (        )
-------------------	-------------------------

Attending Physician:	Telephone #: (        )
----------------------	-------------------------

Discharge Reports Included:    P.T.    O.T.    S.L.P.    Social Work    Other (specify) \_\_\_\_\_

**Physician's Signature (required):**

**PLEASE FAX COMPLETED FORM TO: (519) 685-4043**  
Questions? Contact Coordinator, Neemera Jamani, at (519)685-4292 Ext: 42421  
or by e-mail: [neemera.jamani@sjhc.london.on.ca](mailto:neemera.jamani@sjhc.london.on.ca)

**OFFICE USE ONLY**

**Date Received:** \_\_\_\_\_      **Initial Contact:** \_\_\_\_\_

**Initial Assessment:** \_\_\_\_\_      **Start of Treatment:** \_\_\_\_\_

**Transportation:** \_\_\_\_\_

NOTES:

## Appendix C

### Stroke Rehabilitation Pilot – Outpatient Measures

Measure	Description
BBS (Berg Balance Scale)	Measures the ability of an individual to maintain balance while performing 14 tasks such as transferring from bed to chair, standing up from a sitting position, picking up objects, turning and other common tasks. It is graded on a five-point ordinal scale ranging from 0 to 4. Maximum score is 56. The Berg helps determine changes in functional standing balance over time and therefore is a sensitive measure of recovery. A change of six points is necessary to be 90% confident of meaningful change in a client's functional balance.
CQoL (Caregiver Quality of Life)	Measures quality of life of the stroke survivor's primary caregiver. The scale is a five-point scale. The Resources domain reflects both the personal and environmental characteristics that are inherent to quality of life, e.g., energy, not feeling isolated, finances, support of family and friends. The Health domain relates to the caregiver's health. The Role Mastery domain relates to the caregiver's ability and competence in managing the care giving situation.
Chedoke-McMaster Stroke Assessment Impairment Inventory – Arm and Hand	Measures motor function in the upper extremity and determines the presence and severity of physical impairments. The Arm and Hand dimension of the Inventory is measured on a seven-point scale with each step corresponding to the seven stages of motor recovery.
COVS (Clinical Outcome Variables Scale)	This is a functional mobility scale with 13 items such as rolling in bed, transfers, ambulation, and upper extremity function. Each item is measured on a seven-point scale. Maximum score is 91. A change score of 5 is clinically important.
FIM (Functional Independence Measure)	Measures disability in 18 domains of function. Each domain is scored from 1 to 7; with 1 being totally dependent and 7 being totally independent. The minimum possible score is 18 and the maximum possible score is 126. Domains include: Self-care (eating, grooming, bathing, dressing upper and lower body, toileting), Sphincter (bladder and bowel), Transfers (bed/ chair/wheelchair, toilet, tub/shower), Locomotion (walk/wheel, stairs, Communication (comprehension, expression), Social Cognition (social interaction, problem-solving, memory)
RNL (Reintegration to Normal Living Index)	A self-assessment of 11 items about participation. Items include moving around inside, moving around in the community, traveling, self-care, work activity, recreation, social activities, family role, personal relationships, interaction with others and life events. The score ranges from 0 (does not describe my situation) to 22 (fully describes my situation). Total score can range from 0 to 22.
SIS (Stroke Impact Scale) – Stroke Recovery Scale	This is a self-rating scale of stroke recovery from 0 to 100, with 0 representing no recovery and 100 representing full recovery. This question is one of several aspects of SIS to assess many aspects of health-related quality of life important to the stroke survivors, their caregivers and health professionals.



## Appendix D



### **Southwestern Ontario Stroke Rehabilitation Pilot Project**

### **Stroke Rehabilitation Outreach Service**

The Southwestern Ontario Stroke Rehabilitation Pilot Project is funded by the Ministry of Health and Long-term Care and supported by St. Joseph's Health Care, London, Ontario.



Parkwood Hospital

# Stroke Rehabilitation Outreach Service

## Program Overview

Rehabilitation helps stroke survivors maximize their quality of life physically, cognitively, emotionally, and socially.

The pilot project, funded by the Ministry of Health and Long Term Care, is a two-year project to implement and evaluate two types of stroke rehabilitation services consistent with the recommendations of the Stroke Rehabilitation Consensus Panel Report.

The two dimensions to the pilot project are:

- Outreach Service
- Outpatient Service

This brochure focuses on the *Outreach* component of the stroke rehabilitation pilot project. Please refer to our brochure *Stroke Rehabilitation Outpatient Service* for further information on the outpatient element of our pilot project.

The Stroke Rehabilitation Outreach Service allows individuals with stroke to receive rehabilitation closer to home by supporting service providers in the stroke survivor's community.

## Service Provision

To address stroke rehabilitation, the pilot project team members — consisting of an occupational therapist, a physiotherapist, and a speech-language pathologist — provide consultation, education, training and support to service providers.

The stroke rehabilitation outreach service provides the following, upon request, to any service provider<sup>4</sup> in Southwestern Ontario:

- client specific consultation
- training and education
- support.

The consultation, education, and support includes, but is not limited to:

- assessment and goal-setting
- cognition and perception
- behaviour
- communication
- activities of daily living
- instrumental activities of daily living
- mobility
- feeding and swallowing
- leisure
- resource information sharing
- best practice stroke rehabilitation information

<sup>1</sup> Service providers include hospitals, long-term care facilities, CCACs and other related agencies.

## Our Clients

Our clients are service providers from the ten counties of Southwestern Ontario caring for individuals who have had a stroke. Service providers include hospitals, long term care facilities, Community Care Access Centres (CCACs), and other related agencies.

## What Can You Expect?

This outreach project will help service providers in the region gain access to experts in stroke rehabilitation on an as-needed basis.

## To Access This Service, Contact:

Neemera Jamani,  
Coordinator, Stroke Pilot Project  
Room B-221, Parkwood Hospital  
Phone: (519) 685-4292, ext. 42421  
Fax: (519) 685-4043  
E-mail address:  
[neemera.jamani@sjhc.london.on.ca](mailto:neemera.jamani@sjhc.london.on.ca)  
<http://www.sjhc.london.on.ca/parkwood/programs/rehab/strokepi.htm>



Coordinated Stroke Strategy

Appendix E

Southwestern Ontario Stroke Pilot Outreach Service Referral Form

REFERRAL SOURCE

Name of Service Provider Making Request:	Date of Referral: (DD/MM/YY)
Discipline: _____	Telephone #: (     ) _____ Ext _____
Agency/Institution: _____	Fax #: (     ) _____
Address: _____	E-mail Address: _____
_____	

Nature of Request

- Client-specific Consultation - Please Complete Page 2 - Client Information
- Education - Please Complete Below

Nature of Education Request

Topic, Size of Audience, Expected Location of Inservices, Preferred Times/Dates

PLEASE FAX TO: (519) 685-4043

Questions? Contact Coordinator, Neemera Jamani at (519) 685-4292 ext: 42421 or by e-mail: neemera.jamani@sjhc.london.on.ca

FOR OFFICE USE ONLY

Date Received:	Date of Initial Response:
----------------	---------------------------

## **Appendix F**

# **Tips and Tools for Everyday Living A Guide for Stroke Caregivers**

## **Summary of Workshop Results**

Stroke Rehabilitation Pilot Project  
Southwestern Ontario Stroke Strategy

June 2004

## Tips and Tools for Everyday Living –A Guide for Stroke Caregivers

### Summary of Workshop Results

#### Background

Sustaining the outcomes achieved in rehabilitation for those discharged to long-term care facilities is challenging. Stroke survivors comprise a significant proportion of the resident population in long-term care facilities. “Tips and Tools for Everyday Living: A Guide for Stroke Caregivers” was created in 2001 to provide the practical knowledge and skills needed by caregivers working with stroke survivors in long-term care facilities and the community. The Southwest Ontario region felt a logical next step to improve the uptake of Tips and Tools material would be to pilot training workshops in long-term care facilities. With funds received from the Ministry of Health and Long-Term Care, three Southwestern Ontario District Stroke Centres collaborated to develop and conduct training sessions for service providers in Long-term care facilities. The workshops were conducted in London, Grey/Bruce, and Kitchener/Waterloo. The workshops focused on education of the following four stroke-related topics that were identified by the long-term care facilities as the priorities for training:

- Cognitive and perceptual affects of stroke
- Feeding and swallowing
- Communication
- Mobility

#### Format

The content for the four topics was developed by the London team in collaboration with therapists from Grey/Bruce and Kitchener/Waterloo. It was agreed that consistency of content for all workshops was important.

Initial feedback from long-term care facilities was that the sessions must be only 15-20 minutes in length. There was significant concern about the feasibility of covering the material and the quality of the learning experience in such a short time. Further discussion and negotiation with long-term care facilities resulted in longer sessions being arranged.

The workshops were conducted in person for groups of care providers from long-term care facilities. In Grey/Bruce and Kitchener/Waterloo, all four of the above topic areas were covered in one 4 four hour workshop. These sessions were held in May and June 2003. The workshops in London were four 2 hour sessions - each session covering a different topic area. The London workshops were offered in September and October 2003. Upon completion of a follow-up survey three months following the workshops, all workshop participants were mailed a certificate of attendance.

## Participants

Approximately 95 participants attended workshops. Participants included:

- Client Support Workers/Health Care Assistants/ Client Care Assistants
- Registered Practical Nurses
- Registered Nurses
- Others (e.g. *Restorative Care Coordinator, Occupational Therapist, Executive Director, Physiotherapist, Fitness leader, Educator*)

**The Long-term care Facilities that participated were:**

### **Grey/Bruce**

- Lee Manor
- Southampton Care Centre

### **Kitchener/Waterloo**

- Forest Heights Long-term care
- Sunnyside Long-term care

### **London**

- Central Park Lodge

## Method of Evaluation

**At the end of the workshop, participants were asked to complete a survey that asked questions about their satisfaction with the workshop and their level of knowledge about the core content of the workshop prior to and after completing the workshop. Participants rated their knowledge using a five-point rating scale (1=very poor, 2=poor, 3=fair, 4=good, 5=excellent). A copy of the survey is in Appendix A.**

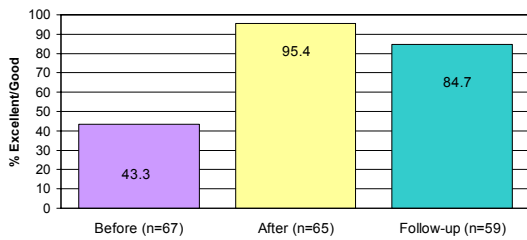
**Three months following their initial training, all participants were mailed a follow-up survey. Similar questions were asked about their knowledge of the core content covered in the workshop. In addition, participants were asked how their practice had changed as a result of the information obtained at the workshop(s) and if they had any suggestions for future training. A copy of the follow-up survey is located in Appendix B.**

## Results

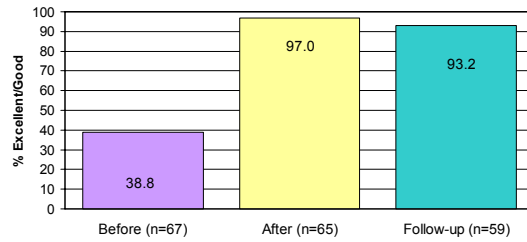
### **Change in Knowledge**

For eight questions, participants were asked to rate their level of knowledge prior to the workshop, as a result of the workshop, and then three months after the workshop. For all items, there were statistically significant improvements ( $p < .05$ ) in self-perceived levels of knowledge immediately following the workshop and at the three month follow-up compared to self-perceived knowledge prior to the workshop. Overall results for each question are provided below. Specific results for London, Grey/Bruce, and Kitchener/Waterloo are located in Appendix C.

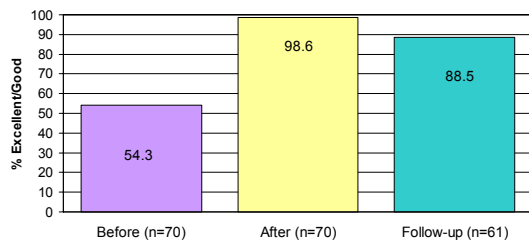
Knowledge of the underlying cognitive and perceptual problems that can affect a stroke survivor's behaviour



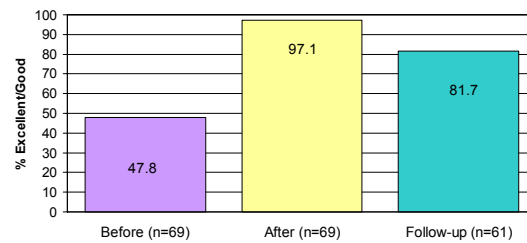
Knowledge of the strategies that can be used to assist a stroke survivor who has cognitive and perceptual problems



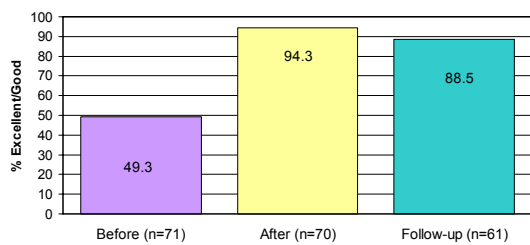
Knowledge of strategies to promote safe feeding for stroke survivors



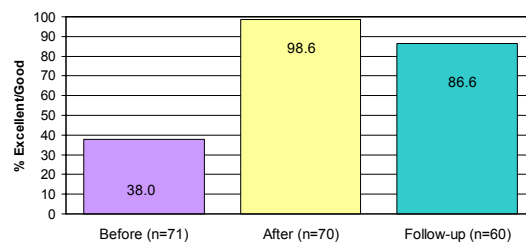
Knowledge of strategies to promote independent feeding for stroke survivors



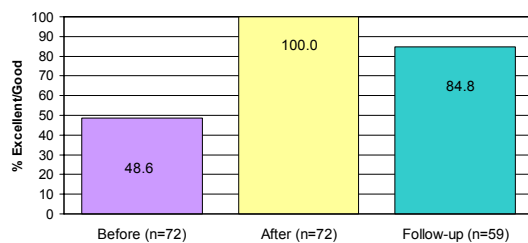
Knowledge of strategies to communicate effectively with stroke survivors



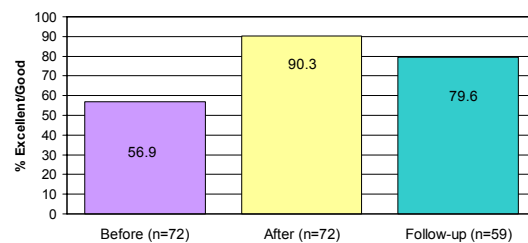
Knowledge of strategies for handling the hemiplegic arm



Knowledge of the importance of proper positioning in bed and the wheelchair to prevent pain and muscle tightness

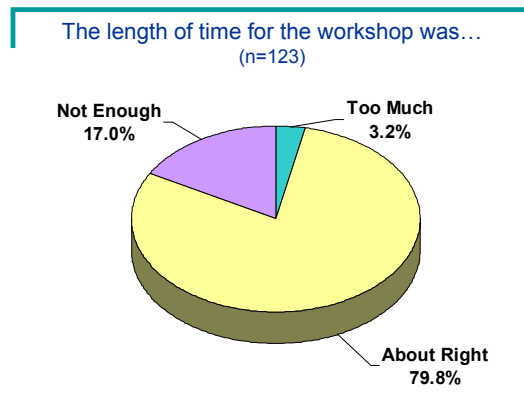


Confidence and comfort in transferring a stroke survivor



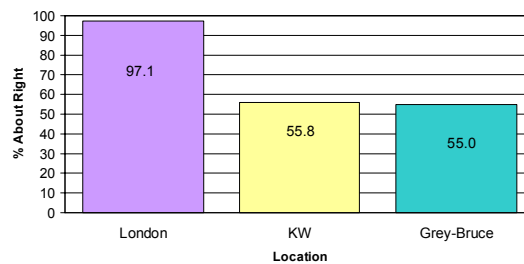
## Length of Sessions

Overall, 79.6% of respondents indicated the length of sessions were about right. 17.0% indicated that the length of sessions was not enough and 3.2% indicated they were too long



**A difference in participant satisfaction was noted when comparing the response rates from the four 2-hour workshops held in London and the one 4-hour workshop held in Grey/Bruce and Kitchener/Waterloo. This was reinforced by written comments. This suggests that the four 2 hour sessions are a more appropriate format for delivering this information.**

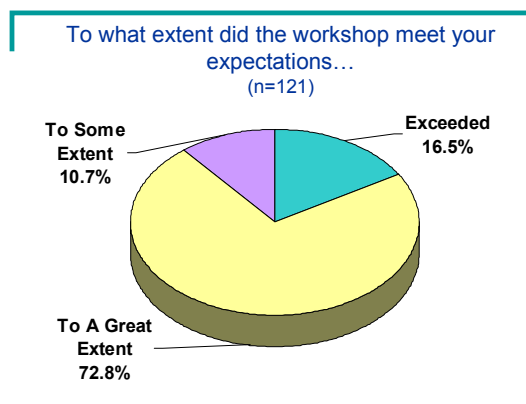
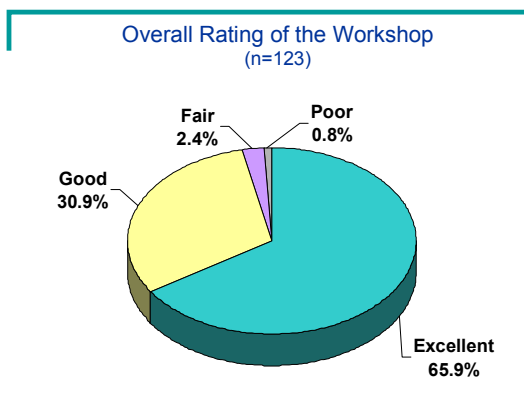
### How Would You Rate the Length of Time of the Workshop



## Overall Satisfaction

There were high levels of overall satisfaction with the workshop both in terms of quality of the workshop and the workshop meeting the expectations of participants.





## Written Comments

A number of open-ended questions were also asked in the initial evaluation of the workshop and in the follow-up questionnaire. A summary of written comments is provided for each of these questions.

What did you find most helpful?

- Many respondents noted that all the content was helpful but certain recurrent themes did emerge including
  - Information on positioning/transferring/mobility
  - Live demonstrations/practical application of the material

What did you find least helpful about the workshop?

- Most respondents did not answer this question or stated “nothing”
- There were isolated comments related to some sessions being a bit rushed and certain topics being a review but no consistent theme emerged

Name one thing that you learned today that you would now try to implement in your practice

- Examples spanned the four core areas of the workshop but the highest frequency of examples were related to positioning and transferring of clients

Areas that I need ongoing support in

- Approximately 1/3 of surveys contained a response to this question
- Comments spanned all four content areas but the primary themes were related to mobility (transferring, positioning) and communication

In what three ways has your practice changed as a result of what you learned at the workshop?

- People provided a wide variety of answers to this question but some consistent themes were
  - Using different techniques for positioning and transferring
  - Enhanced awareness and using different techniques for feeding
  - Enhanced awareness and using different techniques for communication

### Suggestions for Future Workshops

- There were varied suggestions regarding the content for future sessions but one theme that emerged was the desire for more time/sessions to practice and learn – this appeared to be particularly notable for those participants that attended the one 4 hour session

### Additional Comments

- There were several written comments praising the overall quality of the workshop and the workshop presenters

## Summary

Overall, there were high levels of satisfaction with the Tips and Tools workshop. Participants self-perceived levels of knowledge about cognitive and perceptual difficulties associated with stroke, feeding and swallowing, communication, and mobility and strategies to deal with these issues improved significantly as a result of the education. Additionally, these improvements were largely maintained three months following the training. Feedback from participants suggests that 4 two hour sessions is a more appropriate format for receiving this information than one four hour session.

From the presenter's perspective, it was felt it was important to have champions to support the training initiatives both at the Administrative level as well as the front line. Also, it was important that the presenters visited the long-term care facility prior to the training in order for the training to fit the context of the environment. It was also found that content enhancers such as role play, case examples, and interactive activities helped keep the sessions interesting and relevant. In several cases, request for client-specific consultations followed the training. The SWO Stroke Rehabilitation Pilot team was able to provide this follow-up.

In conclusion, this initiative was a successful first step in moving the knowledge on the pages of Tips and Tools into practice in long-term care facilities. It was also helpful in building the relationship between rehabilitation and long-term care staff which will ultimately lead to better transitions between these two components of the continuum of stroke care.

**LONG-TERM CARE  
EVALUATION OF STROKE CARE  
TRAINING WORKSHOP**

Date of Training: \_\_\_\_\_ Site: \_\_\_\_\_

Classification: PSW/HCA/PSA  RPN  RN  Other  (please specify) \_\_\_\_\_

Please take a few minutes to provide us with feedback about today’s workshop. The information you provide will help us plan future workshops. The evaluation also contains questions about your perceptions of your abilities before and after today’s session. You will be sent a follow-up questionnaire in three months that will ask you about your use of the information that you received in today’s workshop. Upon completion of the three month questionnaire, you will be sent a workshop certificate.

Using the following scale, please rate yourself *before* today’s workshop and *as a result of* today’s workshop for each of the following questions by placing a number in the appropriate box.

	1 = Very Poor	2 = Poor	3 = Fair	4 = Good	5 = Excellent
How would you rate...				Before the Workshop	As a result of the Workshop
1. your knowledge of:				<input type="checkbox"/>	<input type="checkbox"/>
a) the underlying cognitive and perceptual problems that can affect a stroke survivor’s behaviour?				<input type="checkbox"/>	<input type="checkbox"/>
b) the strategies that can be used to assist a stroke survivor who has cognitive and perceptual problems?				<input type="checkbox"/>	<input type="checkbox"/>
2. your knowledge of strategies to promote:				<input type="checkbox"/>	<input type="checkbox"/>
a) safe feeding for stroke survivors?				<input type="checkbox"/>	<input type="checkbox"/>
b) independent feeding for stroke survivors?				<input type="checkbox"/>	<input type="checkbox"/>
3. your knowledge of strategies to communicate effectively with stroke survivors?				<input type="checkbox"/>	<input type="checkbox"/>
4. your knowledge of strategies for handling the hemiplegic arm?				<input type="checkbox"/>	<input type="checkbox"/>
5. your knowledge of the importance of proper positioning in bed and the wheelchair to prevent pain and muscle tightness?				<input type="checkbox"/>	<input type="checkbox"/>
6. your confidence and comfort in transferring a stroke survivor?				<input type="checkbox"/>	<input type="checkbox"/>

Please turn over →

7. Was the amount of information presented...

Too much

About right

Not enough

Comments: \_\_\_\_\_

8. The length of time for the workshop was...

Too much

About right

Not enough

Comments: \_\_\_\_\_

9. What did you find **most** helpful about the workshop?

\_\_\_\_\_  
\_\_\_\_\_

10. What did you find **least** helpful about the workshop?

\_\_\_\_\_  
\_\_\_\_\_

11. Name one thing that you learned today that you would now try to implement in your practice.

\_\_\_\_\_  
\_\_\_\_\_

**To what extent did this workshop meet your expectations?**

Exceeded

To a great extent

To some extent

Did not meet

12. What is your overall rating of the workshop?

Excellent

Good

Fair

Poor

Very Poor

Comments: \_\_\_\_\_

\_\_\_\_\_

13. Areas I anticipate I may need ongoing support in.

\_\_\_\_\_

14. Please make any additional comments or recommendations about the workshop.

\_\_\_\_\_

\_\_\_\_\_

Appendix B



LONG-TERM CARE STROKE CARE  
TRAINING WORKSHOP  
FOLLOW-UP EVALUATION



You participated in a stroke care training workshop on at . At that time it was mentioned that you would be asked to complete a follow-up questionnaire approximately three months following the workshop. Please take a few minutes to answer the following questions. The information you provide will help us in assessing the effectiveness of our outreach education pilot project.

Classification: PSW/HCA/PSA  RPN  RN  Other  (please specify): \_\_\_\_\_

Please circle the response option that **most** closely reflects you.

How would you rate...	Excellent	Good	Fair	Poor	Very Poor
1) your knowledge of:					
<input type="checkbox"/> the underlying cognitive and perceptual problems that can affect a stroke survivor's behaviour?	5	4	3	2	1
<input type="checkbox"/> the strategies that can be used to assist a stroke survivor who has cognitive and perceptual problems?	5	4	3	2	1
2) your knowledge of strategies to promote:					
a) safe feeding for stroke survivors?	5	4	3	2	1
b) Independent feeding for stroke survivors?	5	4	3	2	1
3) your knowledge of strategies to communicate effectively with stroke survivors?					
	5	4	3	2	1
4) your knowledge of strategies for handling the hemiplegic arm?					
	5	4	3	2	1
5) your knowledge of the importance of proper positioning in bed and the wheelchair to prevent pain and muscle tightness?					
	5	4	3	2	1
6) your confidence and comfort in transferring a stroke survivor?					
	5	4	3	2	1
7) In what three ways has your practice changed as a result of the information you obtained at the workshop? Please provide specific examples: (top 4 responses)					
• Please provide any suggestions for future workshops					

Please return your completed survey in the attached envelope to Neemera Jamani, Coordinator, Stroke Pilot Project, Rm B-221, Parkwood Hospital, within 2 weeks of receipt.

**THANK YOU!**

## APPENDIX C

**Your knowledge of the underlying cognitive and perceptual problems that can affect a stroke survivor's behaviour?**

		<b>London n=14</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=67</b>
<b>Before</b>	Excellent	71.0%	0.0%	0.0%	1.5%
	Good	14.3%	57.6%	35.0%	41.8%
	Fair	57.1%	33.3%	60.0%	46.3%
	Poor	14.3%	9.1%	5.0%	9.0%
	Very Poor	7.1%	0.0%	0.0%	1.5%
		<b>London n=12</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=65</b>
<b>After</b>	Excellent	58.3%	57.6%	35.0%	50.8%
	Good	33.3%	39.4%	60.0%	44.6%
	Fair	8.3%	3.0%	5.0%	4.6%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%
		<b>London n=18</b>	<b>K/W n=27</b>	<b>Grey/Bruce n=14</b>	<b>Total n=59</b>
<b>Follow-up</b>	Excellent	38.9%	25.9%	21.4%	28.8%
	Good	38.9%	59.3%	71.4%	55.9%
	Fair	22.2%	14.8%	7.1%	15.3%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%

**Your knowledge of the strategies that can be used to assist a stroke survivor who has cognitive and perceptual problems?**

		<b>London n=14</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=67</b>
<b>Before</b>	Excellent	7.1%	0.0%	0.0%	1.5%
	Good	35.7%	39.4%	35.0%	37.3%
	Fair	35.7%	42.4%	65.0%	47.8%
	Poor	14.3%	18.2%	0.0%	11.9%
	Very Poor	7.1%	0.0%	0.0%	1.5%
		<b>London n=12</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=65</b>
<b>After</b>	Excellent	58.3%	48.5%	35.0%	46.2%
	Good	41.7%	48.5%	60.0%	50.8%
	Fair	0.0%	3.0%	5.0%	3.1%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%
		<b>London n=18</b>	<b>K/W n=27</b>	<b>Grey/Bruce n=14</b>	<b>Total n=59</b>
<b>Follow-up</b>	Excellent	27.8%	22.2%	7.1%	20.3%
	Good	66.7%	66.7%	92.9%	72.9%
	Fair	5.6%	11.1%	0.0%	6.8%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%

**Your knowledge of strategies to promote safe feeding for stroke survivors?**

		<b>London n=17</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=70</b>
<b>Before</b>	Excellent	5.9%	6.1%	0.0%	4.3%
	Good	47.1%	54.5%	45.0%	50.0%
	Fair	29.4%	27.3%	50.0%	34.3%
	Poor	11.8%	9.1%	5.0%	8.6%
	Very Poor	5.9%	3.0%	0.0%	2.9%
		<b>London n=17</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=70</b>
<b>After</b>	Excellent	64.7%	57.6%	40.0%	54.3%
	Good	35.3%	39.4%	60.0%	44.3%
	Fair	0.0%	3.0%	0.0%	1.4%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%
		<b>London n=19</b>	<b>K/W n=28</b>	<b>Grey/Bruce n=14</b>	<b>Total n=61</b>
<b>Follow-up</b>	Excellent	42.1%	42.9%	35.7%	41.0%
	Good	31.6%	50.0%	64.3%	47.5%
	Fair	21.1%	7.1%	0.0%	9.8%
	Poor	5.3%	0.0%	0.0%	1.6%
	Very Poor	0.0%	0.0%	0.0%	0.0%

**Your knowledge of strategies to promote independent feeding for stroke survivors?**

		<b>London n=19</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=72</b>
<b>Before</b>	Excellent	15.8%	3.0%	5.0%	6.9%
	Good	52.6%	48.5%	50.0%	50.0%
	Fair	26.3%	24.2%	40.0%	29.2%
	Poor	0.0%	24.2%	5.0%	12.5%
	Very Poor	5.3%	0.0%	0.0%	1.4%
		<b>London n=19</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=72</b>
<b>After</b>	Excellent	73.7%	51.5%	40.0%	54.2%
	Good	10.5%	36.4%	60.0%	36.1%
	Fair	15.8%	12.1%	0.0%	9.7%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%
		<b>London n=17</b>	<b>K/W n=28</b>	<b>Grey/Bruce n=14</b>	<b>Total n=59</b>
<b>Follow-up</b>	Excellent	29.4%	21.4%	28.6%	25.4%
	Good	58.8%	50.0%	57.1%	54.2%
	Fair	5.9%	28.6%	14.3%	18.6%
	Poor	5.9%	0.0%	0.0%	1.7%
	Very Poor	0.0%	0.0%	0.0%	0.0%

**Your knowledge of strategies to communicate effectively with stroke survivors?**

	<b>London n=18</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=71</b>	
<b>Before</b>	Excellent	11.1%	6.1%	0.0%	5.6%
	Good	33.3%	45.5%	50.0%	43.7%
	Fair	44.4%	39.4%	35.0%	39.4%
	Poor	5.6%	9.1%	15.0%	9.9%
	Very Poor	5.6%	0.0%	0.0%	1.4%
	<b>London n=17</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=70</b>	
<b>After</b>	Excellent	58.8%	63.6%	35.0%	54.3%
	Good	35.3%	36.4%	50.0%	40.0%
	Fair	5.9%	0.0%	10.0%	4.3%
	Poor	0.0%	0.0%	5.0%	1.4%
	Very Poor	0.0%	0.0%	0.0%	0.0%
	<b>London n=19</b>	<b>K/W n=28</b>	<b>Grey/Bruce n=14</b>	<b>Total n=61</b>	
<b>Follow-up</b>	Excellent	36.8%	25.0%	35.7%	31.1%
	Good	52.6%	64.3%	50.0%	57.4%
	Fair	10.5%	10.7%	14.3%	11.5%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%

**Your knowledge of strategies for handling the hemiplegic arm?**

	<b>London n=19</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=19</b>	<b>Total n=71</b>	
<b>Before</b>	Excellent	10.5%	3.0%	5.3%	5.6%
	Good	36.8%	18.2%	52.6%	32.4%
	Fair	47.4%	51.5%	26.3%	43.7%
	Poor	0.0%	27.3%	15.8%	16.9%
	Very Poor	5.3%	0.0%	0.0%	1.4%
	<b>London n=18</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=19</b>	<b>Total n=70</b>	
<b>After</b>	Excellent	72.2%	48.5%	47.4%	54.3%
	Good	27.8%	48.5%	52.6%	44.3%
	Fair	0.0%	3.0%	0.0%	1.4%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%
	<b>London n=18</b>	<b>K/W n=28</b>	<b>Grey/Bruce n=14</b>	<b>Total n=60</b>	
<b>Follow-up</b>	Excellent	33.3%	32.1%	57.1%	38.3%
	Good	55.6%	46.4%	42.9%	48.3%
	Fair	11.1%	14.3%	0.0%	10.0%
	Poor	0.0%	7.1%	0.0%	3.3%
	Very Poor	0.0%	0.0%	0.0%	0.0%



**Your knowledge of the importance of proper positioning in bed and the wheelchair to prevent pain and muscle tightness?**

		<b>London n=19</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=72</b>
<b>Before</b>	Excellent	5.3%	0.0%	5.0%	2.8%
	Good	57.9%	36.4%	50.0%	45.8%
	Fair	26.3%	39.4%	45.0%	37.5%
	Poor	5.3%	24.2%	0.0%	12.5%
	Very Poor	5.3%	0.0%	0.0%	1.4%
		<b>London n=19</b>	<b>K/W n=33</b>	<b>Grey/Bruce n=20</b>	<b>Total n=72</b>
<b>After</b>	Excellent	73.7%	63.6%	55.0%	63.9%
	Good	26.3%	36.4%	45.0%	36.1%
	Fair	0.0%	0.0%	0.0%	0.0%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%
		<b>London n=18</b>	<b>K/W n=28</b>	<b>Grey/Bruce n=13</b>	<b>Total n=59</b>
<b>Follow-up</b>	Excellent	44.4%	39.3%	46.2%	42.4%
	Good	44.4%	35.7%	53.8%	42.4%
	Fair	11.1%	25.0%	0.0%	15.3%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%

**Your confidence and comfort in transferring a stroke survivor?**

		<b>London n=19</b>	<b>K/W n=33</b>	<b>Grey/Bruce n =20</b>	<b>Total n=72</b>
<b>Before</b>	Excellent	15.8%	3.0%	5.0%	6.9%
	Good	52.6%	48.5%	50.0%	50.0%
	Fair	26.3%	24.2%	40.0%	29.2%
	Poor	0.0%	24.2%	5.0%	12.5%
	Very Poor	5.3%	0.0%	0.0%	1.4%
		<b>London n=19</b>	<b>K/W n=33</b>	<b>Grey/Bruce n =20</b>	<b>Total n=72</b>
<b>After</b>	Excellent	73.7%	51.5%	40.0%	54.2%
	Good	10.5%	36.4%	60.0%	36.1%
	Fair	15.8%	12.1%	0.0%	9.7%
	Poor	0.0%	0.0%	0.0%	0.0%
	Very Poor	0.0%	0.0%	0.0%	0.0%
		<b>London n=17</b>	<b>K/W n=28</b>	<b>Grey/Bruce n=14</b>	<b>Total n=59</b>
<b>Follow-up</b>	Excellent	29.4%	21.4%	28.6%	25.4%
	Good	58.8%	50.0%	57.1%	54.2%
	Fair	5.9%	28.6%	14.3%	18.6%
	Poor	5.9%	0.0%	0.0%	1.7%
	Very Poor	0.0%	0.0%	0.0%	0.0%

Appendix G

**Southwestern Ontario Stroke Rehabilitation  
Pilot Project**

**Outreach Education Feedback Form**

Agency: (name of agency)

Contact: (name of contact)

On (date of presentation) (name of therapist) from the Stroke Rehabilitation Pilot Project presented on (topic) to your staff. We would appreciate feedback on the service we provided. Please take a few minutes and answer the following questions. If you have any questions please contact Neemera Jamani, Coordinator, Stoke Pilot Project, Parkwood Hospital (519) 685-4292 ext. 42421 or email [NEEMERA.JAMANI@SJHC.LONDON.ON.CA](mailto:NEEMERA.JAMANI@SJHC.LONDON.ON.CA)

Please circle the response option that **most** closely reflects your opinion. Feel free to include comments.

	Yes	To some extent	No	Not applic.
1. Did a member of the Stroke Pilot Project respond promptly to your initial request? COMMENTS: _____ _____	3	2	1	n/a
2. Did a member of the Stroke Pilot Project actively listen to your need(s) for education? Comments: _____ _____	3	2	1	n/a
3. Were the timelines negotiated with the Stoke Pilot Project Team acceptable to you? Comments: _____ _____	3	2	1	n/a
4. Were roles and expectations of the Stroke Pilot Project Team clearly defined? Comments: _____ _____	3	2	1	N/a
5. Did the Stroke Pilot Project Team follow through with what they committed they would do? Comments: _____ _____	3	2	1	N/a
6. Did the education service provided by the Stroke Pilot Project Team address your need(s)? Comments: _____ _____	3	2	1	N/a
7. Did the education provided by the Stroke Pilot Project Team aid your staff in their care of clients with stroke? Comments: _____ _____	3	2	1	n/a

	Yes	No
8. Would you recommend the service of the Stroke Pilot Project to others?	1	0
9. Are there any areas you would like to receive further follow-up? (If yes, please describe) _____	1	0

10. How could we improve our service? \_\_\_\_\_

	Excellent	Very Good	Good	Fair	Poor
11. Overall how would you rate the quality of the services provided by the Stroke Pilot Project?	5	4	3	2	1

12. Additional Comments \_\_\_\_\_

**Thank you for your feedback!**

**Please return your completed survey in the attached envelope to Neemera Jamani, Coordinator,  
Stroke Pilot Project,  
Rm B-221, Parkwood Hospital, within 2 weeks of receipt**

# Appendix H



## Southwestern Ontario Stroke Rehabilitation Pilot Project

### Client Consultation Feedback Form

Agency: (agency name)

Contact: (contact name)

Recently, (therapist name) from the Stroke Rehabilitation Pilot Project consulted with you about a client for (describe problem). We would appreciate feedback on the service we provided. Please take a few minutes and answer the following questions. If you have any questions please contact Neemera Jamani, Coordinator, Stoke Pilot Project, Parkwood Hospital (519) 685-4292 ext. 42421 or email [NEEMERA.JAMANI@SJHC.LONDON.ON.CA](mailto:NEEMERA.JAMANI@SJHC.LONDON.ON.CA)

Please circle the response option that **most** closely reflects your opinion. Feel free to include comments.

	Yes	To some extent	No	Not applic.
13. Did a member of the Stroke Pilot Project respond promptly to your initial request? COMMENTS: _____ _____	3	2	1	n/a
14. Did a member of the Stroke Pilot Project actively listen to the needs of you/your client? Comments: _____ _____	3	2	1	n/a
15. Were the timelines negotiated with the Stoke Pilot Project Team acceptable to you? Comments: _____ _____	3	2	1	N/a
16. Were roles and expectations of both the Stroke Pilot Project Team and you clearly defined? Comments: _____ _____	3	2	1	N/a
17. Did the Stroke Pilot Project Team follow through with what they committed they would do? Comments: _____ _____	3	2	1	n/a
18. Did the consultation service provided by the Stroke Pilot Project Team address your need(s)? Comments: _____ _____	3	2	1	n/a

	Yes	To some extent	No	Not applic.
19. Did the consultation service provided by the Stroke Pilot Project Team aid in moving this client to the desired outcome?	3	2	1	n/a
Comments: _____				

20. Did the consultation service provided by the Stroke Pilot Project Team add to your knowledge of what strategies to use with clients with the same problem?	3	2	1	n/a
Comments: _____				

	Yes	No
21. Would you recommend the service of the Stroke Pilot Project to others?	1	0
22. Are there any areas you would like to receive further follow-up?	1	0
(If yes, please describe) _____		

23. How could we improve our service? \_\_\_\_\_

	Excellent	Very Good	Good	Fair	Poor
24. Overall how would you rate the quality of the services provided by the Stroke Pilot Project?	5	4	3	2	1

25. Additional Comments \_\_\_\_\_

**Thank you for your feedback!**  
**Please return your completed survey in the attached envelope to Neemera Jamani,**  
**Coordinator, Stroke Pilot Project,**  
**Rm B-221, Parkwood Hospital, within 2 weeks of receipt**

Jennifer Renaud CYW  
Crystal Greig RRT, RRCP  
London, Ontario  
N5Z 3V2

September , 2004

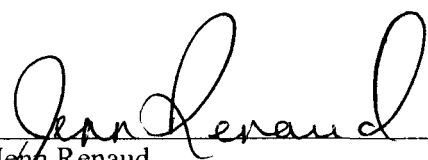
To whom it may concern,

I am writing this letter in regards to the **Stroke Pilot Project**. My step-father, James Vassair, has been in this program for approximately one year and has made significant progress in numerous areas. James suffered his stroke in July of 2000, while residing in Owen Sound. We were told that he would have total right side paralysis, no bowel or bladder control and limited speech if any at all. It was at this time that we were told James would require constant care and therefore a nursing home would be our only option given James needs. Immediately following his stroke James had six weeks of rehabilitation in Owen Sound, which included physiotherapy, speech therapy, and occupational therapy. After this period, with little progress we were told James would not recover his losses and that there was nothing further they could offer him. So with the support of his family James returned home.

Three years later James moved to London with his partner and her daughters. He was enrolled in the Stroke Pilot Project, and here received physiotherapy, occupational therapy and speech therapy. His ability to effectively communicate with others dramatically improved. He became more confident and demonstrated this through his relationships with others outside of the immediate family.

In regards to gains in the area of occupational therapy, James right shoulder which was partially separated is now been slightly realigned. There is more muscle tone and a definite decrease in pain associated with the right shoulder. The most progress for James has come from physiotherapy. Before the Pilot Project James required supervision during transfers (i.e. from wheelchair to commode). Within the first few weeks James was standing with assistance, and continued thereafter developing strength and stamina. Over the next couple of months he was standing on his own and walking with assistance. This dramatic progress came not only in part to James effort but also due to the commitment, and support of the professionals James was working with. Overall his quality of life has improved. He has developed confidence in doing tasks that earlier he would have been unable to do. James appears happier and more social. This program

has made him realize that he is still capable of having a life and finding enjoyment. We believe that without our experience with this program our step-father would have remained hopeless and deprived of his true potential. We extend our greatest thanks to the Pilot Project Program not only for the physical gains made by James but also the emotional and social gains. We write this letter in support of the Program and hope to see continued funding.



---

Jenn Renaud



---

Crystal Greig RRT, RRCF



c/o STEGH, Box 2007  
189 Elm Street, St. Thomas, Ontario N5P 3W2  
Telephone: (519) 631-0000  
Fax: (519) 631-0756

---

Mary Louise Starcevic, Registered Physiotherapist  
Corporate Vitality c/o St. Thomas Elgin General Hospital  
PO Box 2007, St. Thomas, Ontario N5P 3W2

August 18, 2004

Neemera Jamani, Coordinator, Stroke Pilot Project  
SJHC – Parkwood Hospital  
801 Commissioners Road, London, Ontario N6C 5J1

Dear Ms Jamani:

I wanted to thank you and extend my support for the Stroke Pilot Project which you offer at Parkwood Hospital.

I was first introduced to your team by a fellow physiotherapist with whom I was working at OnTrack Rehab Centre, St. Thomas. He suggested that a physiotherapist from the Stroke Pilot Project of Parkwood could consult with me to assess and improve functional outcomes of a stroke client of mine. This referral was made and an inservice/consult was organized in a very timely and efficient manner.

The physiotherapist gave us an inservice in the Bobath Method, stroke recovery, and rehabilitation which was extremely informative clinically as well as practically oriented. Following the inservice, my client was assessed. The physiotherapist consulted with me on expected outcomes and treatment tools.

Over the months that followed, my client and I saw a clear benefit from this outreach program in terms of clearer objectives and tangible objective results. I have also been able to use these neuro techniques with good results on other neurological and chronic pain clients.

In my clinical opinion, I see a real need in the London/St. Thomas area for more dynamic, active rehabilitation settings. I feel clients can show tremendous potential for recovery but it is often untapped due to limited funding or limited resources in physiotherapy or rehabilitation settings. I very much believe in the Bobath approach for rehabilitation of stroke and ABI (acquired brain injury). I believe that the assistance you provide therapists in mentoring and clinical consulting through this Stroke Pilot Project is invaluable. I sincerely hope that your outpatient service can be reestablished and that this invaluable Stroke Pilot Project can be maintained.

Thank you so much again for all your support and help.

Yours Sincerely,

BSc P.T.

Mary Louise Starcevic



Woodstock General Hospital  
270 Riddell St.  
Woodstock ON  
N4S 6N6

Sept 07, 2004

Re: Southwestern Ontario Stroke Rehabilitation Pilot Project

Dear Rob and Janet

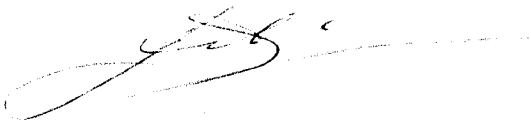
This is a letter to express our thanks for your involvement with our hospital through your pilot project. We have used your expertise to assist us with individual clients both for specific issues and general consults as well as an inservice on the hemiplegic arm.

The style of support given has been extremely beneficial being specific, treatment and goal oriented for the individual clients seen. The information and education given to us was done in a very sensitive manner and resulted in immediate positive changes in their program and our ability as staff to modify our approach to other similar patients.

Following your inservice on the hemiplegic arm we have had a dramatic decrease in arm and shoulder pain. All staff attending that session felt the information was practice and useful and were eager to attend further sessions. Unfortunately your pilot project was need its end by the time we awoke and realized how much we could benefit from your expertise.

The style of support that this project has enabled you to provide has long been needed and we hope you will continue to exist and be able to fill the void .

Thanks again

A handwritten signature in black ink, appearing to read 'June Higham', with a long horizontal flourish extending to the right.

June Higham  
Physiotherapist

August 30, 2004

To whom it may concern:

Re: Stroke Pilot Project  
Parkwood Hospital

I, Bill Kilbourn, began the Pilot Project at Parkwood Hospital May 20th, 2004, one week after my release from Parkwood Hospital. It is of my opinion that this project must be continued because of the excellent progress I have made since being a part of it.

I suffered my first stroke one week before Christmas 2003 and another severe stroke one week after Christmas which left me severely impaired, unable to walk, sit and hold my head up or use my hands and arms effectively. I was transferred to Parkwood Hospital January 28th, 2004, at which time I started the in-hospital physio therapy program. I received physio therapy every week day for one hour.

I was released from Parkwood Hospital on May 13th, 2004 at which time I was assessed at the following, taken from the discharge summary:

“Mr. Kilbourn has not made functional gains during his 3.5 month rehab stay. He has had difficulties with motion sickness, postural hypotension, medication tolerance, sleep disturbances by room-mates, poor activity tolerance and significant fatigue. Uncertain whether gains will be made with respect to trunk control, motor control in limbs and subsequently functional independence. However, in consideration for his age, the severity of his strokes and the possibility that his brain edema has not yet fully resolved, the team felt he should continue to be followed by the Stroke Pilot Program over a longer period of time.”

After having received physio therapy from the Stroke Pilot Project, two sessions a week and one hour at a time, I have made tremendous improvement. Below are listed movements I can do but could not do before.

1. My speech volume has improved so that I can now talk on the telephone.
2. I can now sit on the edge of a bed for short periods of time.
3. I can close both hands.
4. I can lean forward unassisted in my wheelchair to pick up items that are in front of me.
5. I can bridge in bed to assist in getting dressed.
6. I can pull myself up and stand for short periods of time assisted by the therapists.
7. I can raise both arms up.
8. In the sitting position I can straighten and lift my legs better than before.
9. I have better trunk control and motor skills and can transfer from my wheelchair to other chairs with the help of people and not my lift.
10. Because of better neck control I do not need the head rest on my wheelchair.

Because of my overall improvements made since attending the Stroke Pilot Project, my mental attitude has improved tremendously knowing I am improving my quality of life with each small improvement made possible by the Stroke Pilot Project.

If the object of the rehab program is to make me better so that I am no longer a burden of the health care system then why is the program under consideration for cuts when I am under way to becoming better because of it. Therapy for sprained limb patients can be optional but for stroke victims and their care givers it is a lifeline. Please consider refunding this worthwhile program for stroke victims and their caregivers. If this program is not funded then would you please be kind enough to inform us what therapy will be available to help me get better.

As I sit in my wheelchair, I wait patiently for your reply.

Yours sincerely,

Bill Kilbourn

A handwritten signature in cursive script that reads "Bill Kilbourn". The signature is written in black ink and is positioned to the right of the typed name.