APSS
ALBERTA PROVINCIAL STROKE STRATEGY

ALBERTA PROVINCIAL STROKE STRATEGY (APSS)

Rehabilitation and Community Reintegration

January 29, 2007

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1.0 VISION FOR STROKE REHABILITATION

"Rehabilitation includes all measures aimed at reducing the impact of disability for an individual, enabling him or her to achieve independence, social reintegration, a better quality of life and self-actualization."[1]

"Rehabilitation services should no longer be imposed without the consent and participation of people who are using the services."[2]

Rehabilitation and Community Reintegration is one of the pillars of the Alberta Provincial Stroke Strategy (APSS). The APSS recognizes that a stroke can have an impact on an individual's function, which can affect their overall health status. The effects of stroke are best explained by the World Health Organization's (WHO) International Classification of Functioning, Disability and Health (ICF)[3].

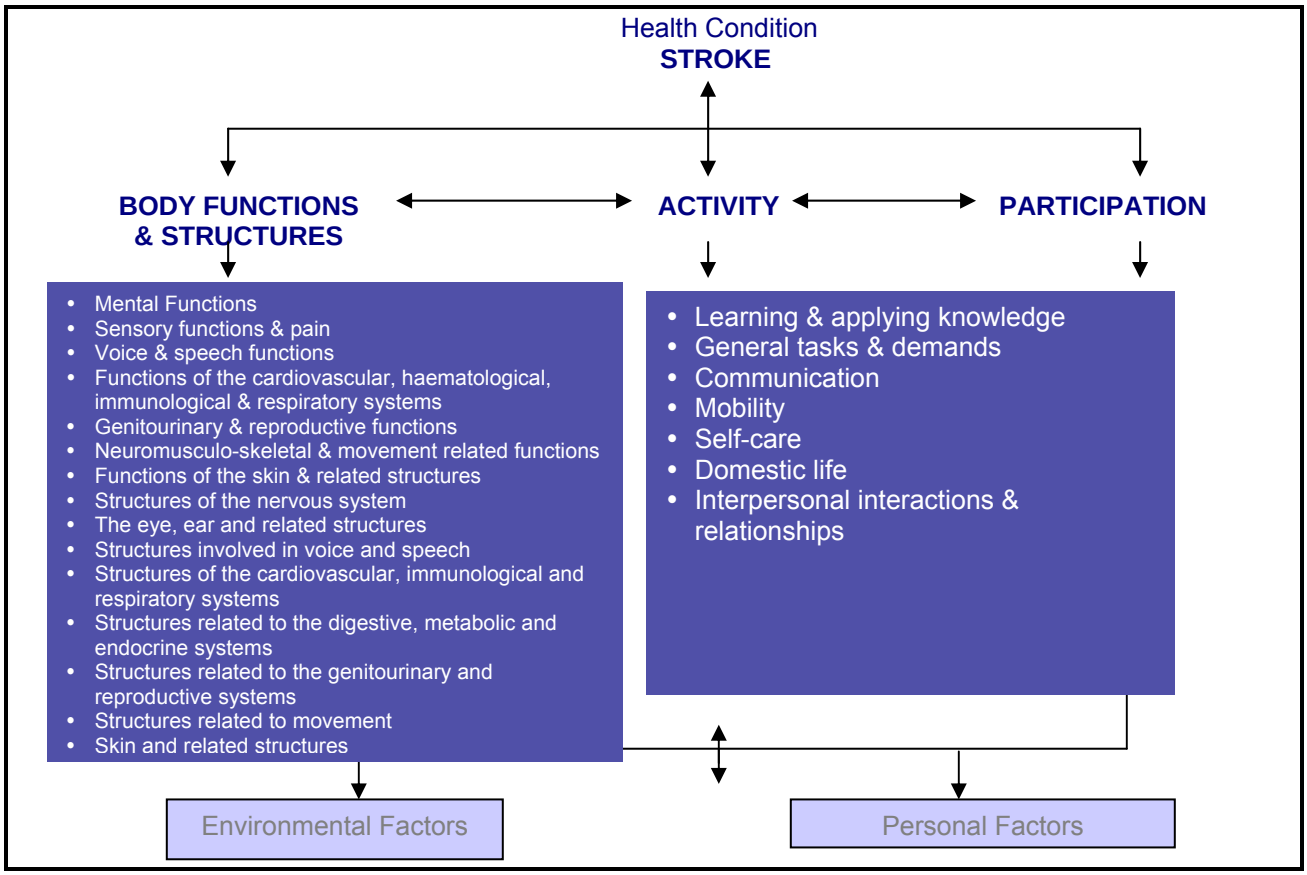


Fig. 1 Interactions between components of the ICF (WHO, 2001)

The ICF describes that functioning and health are influenced by the Health Condition, the Body Structures & Functions affected, and the specific Activities and Participation areas that are involved. With this, there are Personal and Environmental Factors that may have a positive or negative impact, but these may be managed to produce a more positive outcome.

Implementation of the APSS recommendations for stroke care across the continuum will influence an adult individual at various levels of their recovery, depending on the stage of involvement. The literature indicates that the earlier that rehabilitation begins, the better the functional and overall health outcomes [4, 5, 6]. Early rehabilitation focuses on the management of body structures and function.

Examples of early intervention are swallowing assessments by the Speech-Language Pathologist (SLP) or guidelines for positioning the stroke survivor to maintain optimum muscle length and joint range of motion by the Occupational Therapist (OT) or Physical Therapist (PT). Later, the focus of rehabilitation shifts more towards the activities important to the individual. As the stroke survivor returns home, the focus of

rehabilitation shifts more heavily towards re-establishing their participation in their community in previous life roles or in developing new roles. This shifting focus is depicted in Figure 2.

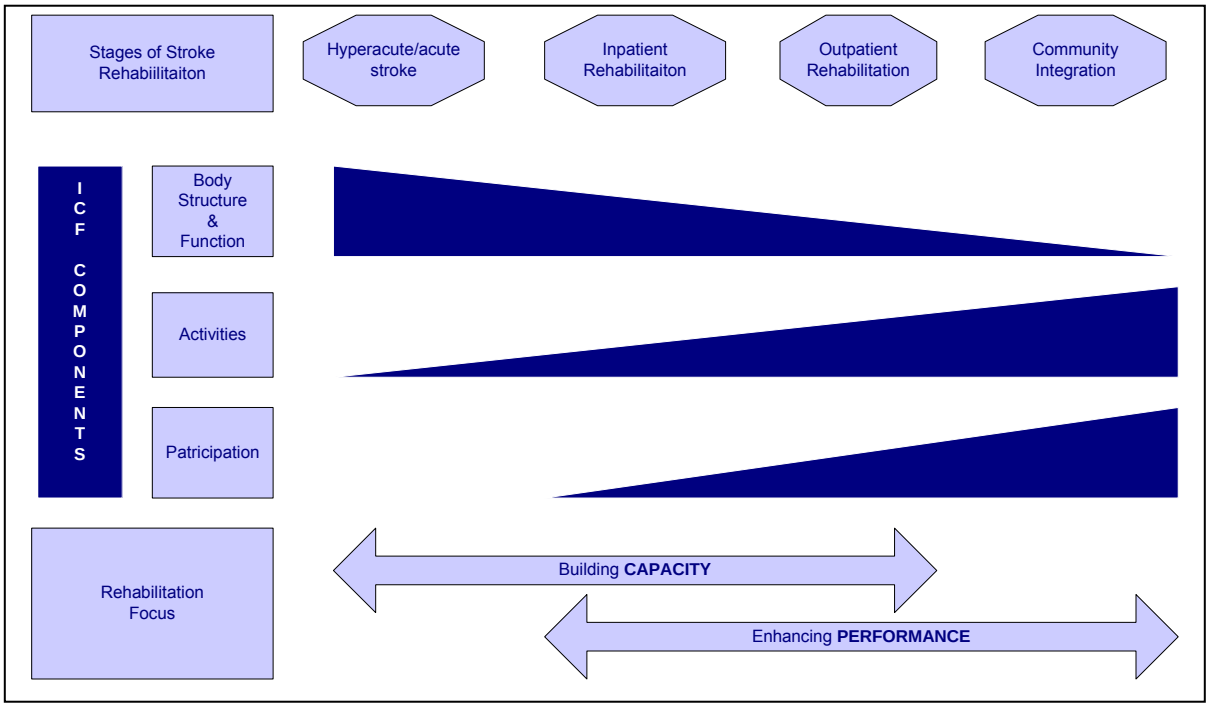


Fig. 2 Stroke Rehabilitation Stages and Focus

Stroke rehabilitation can be described in stages: hyperacute/acute, inpatient, outpatient and community reintegration. In the first three stages, the goal is to maintain or increase a stroke survivor's **capacity** for functional independence. As rehabilitation moves towards the community, there is a greater emphasis on the individual's activities and participation in pre-stroke and/or new life roles and enhancing their **performance** in these areas.

The adult stroke survivor's function is just as much influenced by their physical and social environment and personal factors such as pre-stroke coping strategies, motivation, personal goals, and personality; as they are by the severity of their initial stroke and the medical management provided at the early stages of care.

Because the stroke survivor brings much to the rehabilitation process, a patient/client-centred* approach is best utilized. This approach emphasizes the patient/client's personal goals, requiring their involvement in the planning and decision-making during the rehabilitation process along with the patient/client's informal caregivers. Community involvement is also important. The stroke survivor and their informal caregiver's need for psychosocial support cannot be overemphasized at all stages of the rehabilitation continuum.

* Refer to Glossary

References

[1] *Concepts in Prevention of Disability and Rehabilitation,* World Health Organization
www.who.int/entity/buruli/information/publications/BU-3POD-concept.pdf

[2] *CBR: A Strategy for Rehabilitation, Equalization of Opportunities, Poverty Reduction and Social Inclusion of People with Disabilities;* Joint Position Paper 2004, International Labour Office, United Nations Educational, Scientific and Cultural Organization, World Health Organization
www.whqlibdoc.who.int/publications/2004/9241592389.pdf

[3] World Health Organization, Geneva 2001.

[4] Canadian Stroke Strategy. *Canadian Best Practice Recommendations for Stroke Care: 2006*. http://www.canadianstrokestrategy.ca

[5] *Life After Stroke: New Zealand Guideline for Management of Stroke.* New Zealand Guidelines Group, 003 http://www.nzgg.org.nz/guidelines/dsp_guideline_popup.cfm?guidelineCatID=32&guidelineID=37

[6] *Management of Adult Stroke Rehabilitation Care: A Clinical Practice Guideline*. AHA/ASA-Endorsed Practice Guidelines, 2005. http://stroke.ahajournals.org/cgi/content/full/36/9/e100

2.0 OVERVIEW – STROKE REHABILITATION ACROSS THE CONTINUUM

The personal, economic and societal costs of stroke are enormous. Stroke is the fourth leading cause of death in Canada and is the most common disabling chronic condition. Stroke rehabilitation should be an integral part of the care of any stroke survivor in the province of Alberta. With Alberta's geography, health care structure, population and resources, it is important to build a system that provides rehabilitation at the right place, at the right time and by the right service providers while capitalizing on existing expertise and resources.

On admission for an acute stroke episode, all clients shall be screened for the presence of swallowing difficulties, a condition that is present in 55% of acute stroke patients.[1] A screen can be completed by any trained health care providers (nurse, physician, Dysphagia Team) and patients should then be managed based on the screen's results. Patients classified as being 'higher risk' should receive intervention or consultation with a speech-language pathologist. (Section 5.4)

Within 48 hours of acute care admission, patients admitted with a diagnosis of stroke must be screened by rehabilitation staff (Occupational Therapist or Physical Therapist) for the following:

- Positioning to prevent secondary complications of skin breakdown, contractures, or respiratory complications such as aspiration
- Early mobilization
- Identification of rehabilitation needs including psychosocial and communication needs.

Where rehabilitation professionals are unavailable to provide a screen in 48 hours, suggested guidelines for management of the above should be implemented by nursing staff. (Refer to Appendix V). Consideration may be given to transferring the patient to the facility that best meets their needs during the acute phase (See APSS Inpatient Care – Acute Stroke Unit).

Rehabilitation intervention is provided as needed by a single/multi/interdisciplinary team. Intervention plans are based on realistic goals set together by the client/family and rehabilitation staff/team. For greatest efficiency and effectiveness, rehabilitation intervention must be based on clinical research evidence (See: http://www.ebrsr.com/index_home.html, http://www.rcplondon.ac.uk/pubs/books/stroke/stroke_guidelines_2ed.pdf). These clinical intervention guidelines summarize the literature and are recommended by Pillar 3 for adoption by rehabilitation staff caring for stroke patients.

Once the patient is medically stable, the client's need for further inpatient rehabilitation shall be evaluated by the treating team (medical and/or rehabilitation). (Refer to Section 5.6, Rehabilitation Decision Tree for the Hospitalized Acute Stroke Patient, 'Determining Level of Stroke Rehabilitation' Section 6.0; Post Acute Rehabilitation Matrix – Inpatient and Outpatient, Section 7.1 are used as resources to determine the most appropriate post-stroke rehabilitation setting). Consultation with a physiatrist may be requested as appropriate, especially when admission to Inpatient Tertiary Rehabilitation is being considered (Refer to Appendix VI – Indications for Physiatry Consultation). Because the goal of stroke rehabilitation is successful community reintegration, rehabilitation services should ideally be available where the stroke survivors reside. Where this is not feasible, relationships/agreements must be implemented to ensure that all Albertans have access to the appropriate level of inpatient rehabilitation. These agreements shall guarantee/facilitate the repatriation and reintegration of the stroke survivor into their home community.

When patients do not require further inpatient rehabilitation, it is strongly recommended that they be linked with ambulatory rehabilitation services and community resources/agencies that will ensure the following are addressed:

- Education about stroke, it's causes, prevention and possible effects on physical, cognitive and psychosocial function
- Care and support for the informal caregiver
- Reintegration to previous life activity, roles, and community
- Further rehabilitation for residual functional deficits

All patients with acute stroke not admitted to hospital should, within 2 weeks, undergo a comprehensive outpatient assessment including a medical evaluation (stroke prevention clinic) and functional assessment (outpatient rehabilitation setting) (CSS BP Recommendation 18b, Evidence Level C/D)

It must be recognized that although stroke rehabilitation has an important role in the recovery of a stroke survivor, formal stroke rehabilitation must end when functional recovery plateaus. However, as a stroke survivor returns to life in the community, whether living independently or in continuing care, they may continue to change and should be able to re-access formal rehabilitation programs when it is deemed appropriate. Health regions must establish mechanisms to facilitate re-access to rehabilitation by stroke survivors residing at home, in continuing care, or in assisted living settings. (Section 7.2). Any stroke survivor with reduced activity at 6 months or later after stroke should be assessed for appropriate targeted rehabilitation (RCP; Evidence Level A; CSS Recommendation #24b)

Community reintegration is a key component of the continuum of stroke care. Community reintegration is achieved by continuity of services and accessibility to education, self-management information, caregiver support, and social supports in the community. Information about community resources must be made available to stroke survivors and their informal caregivers at the time of their stroke and during their initial rehabilitation stages to help them with their transition to home and the community. Formal referral processes to Chronic Disease Management and other community programs for stroke survivors should be established within each health region to promote self-management and community reintegration. Primary health care providers in the community must have resources to support their stroke patients in the community and provide them with information and referrals when they are ready to receive them. These service providers are integral to successful community reintegration following stroke.

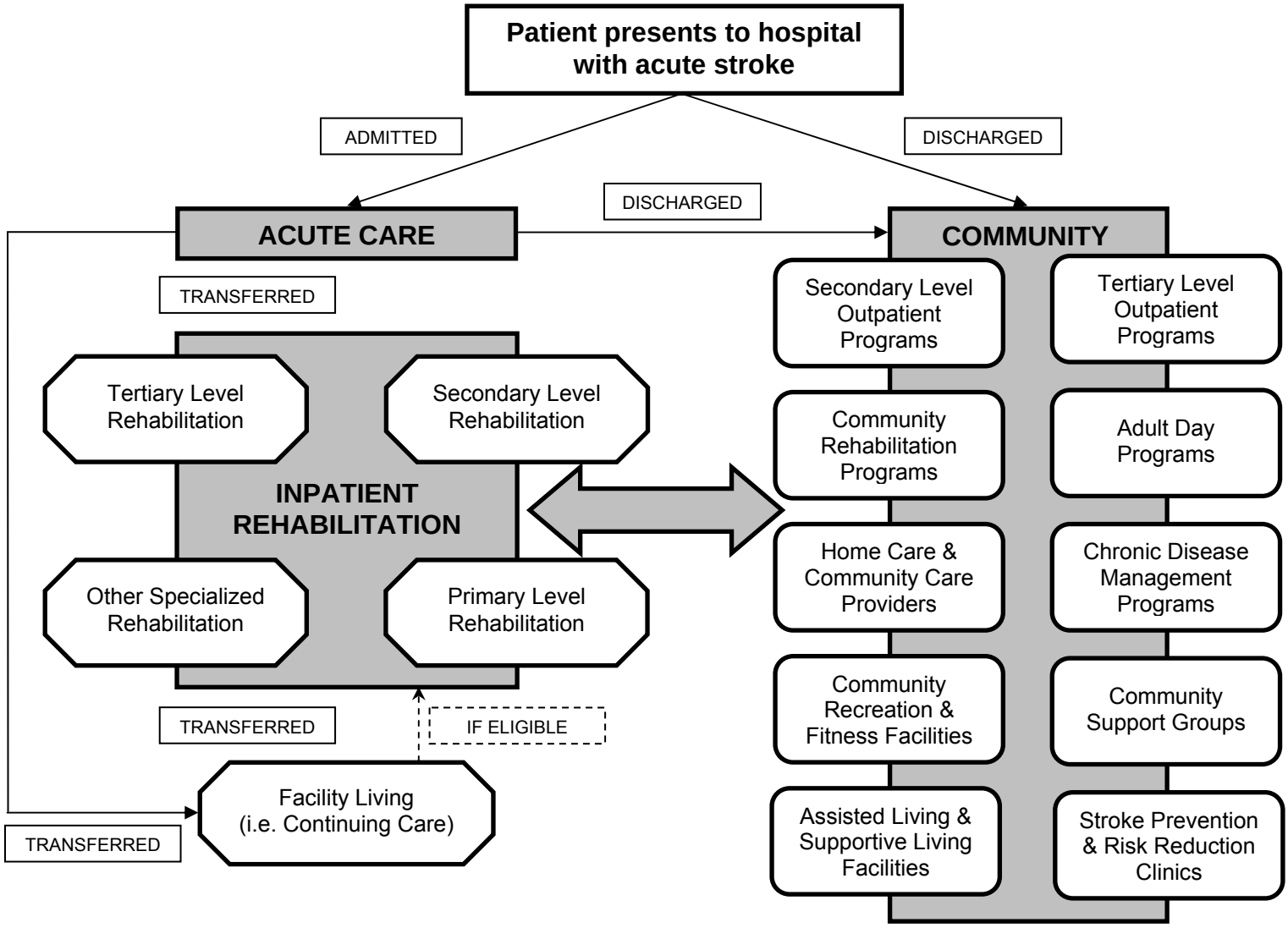
Health regions shall promote the development of or partner with existing community resources/agencies to facilitate healthy living among stroke survivors and their caregivers. The Community Service Inventory can be used by health regions to ensure that a broad range of community services are in place (Section 8.1). Information about these community-specific resources shall be made available and kept updated by each health region as part of a provincial network such as Health Link.

Stroke rehabilitation in Alberta shall be supported by a structure that links tertiary rehabilitation sites to secondary and primary sites, thus ensuring the flow of expertise and knowledge where it is needed – where the patients are situated. A culture of direct communication must be administratively supported to ensure that patients will receive timely and appropriate consultation. It is recommended that each region provide contact information for a provincial Contact List (Appendix IV), to support professional mentoring and communication. Commitment and support from management and administration must also be provided to ensure that all staff providing stroke rehabilitation possesses the basic level of knowledge and skills recommended.

References

[1] Martino R, Foley N, Bhogal S, Diamant N, Speechly M, Teasell R. *Dsyphagia After Stroke; Incidence, Diagnosis and Pulmonary Complications,* Stroke 2005, 36: 2756-63

3.0 REHABILITATION FLOW CHART



4.0 STROKE REHABILITATION SERVICES - LEVELS OF CARE

The Alberta Provincial Stroke Strategy (APSS) Pillar 3 group has adopted, in full, the Canadian Stroke Strategy Best Practices and Standards Recommendations related to stroke rehabilitation services, as well as the review and scoring of relevant evidence sourced during their development.[1] (Refer to Appendix III for a list of resources to guide stroke rehabilitation practice)

The following descriptions are APSS Pillar 3 recommendations outlining the key aspects of rehabilitation services at various levels of care – early acute / hyperacute stage, acute care, early supported discharge, inpatient rehabilitation, outpatient rehabilitation and community care. These statements describe the minimum care required at the various levels; however, it is recognized and accepted that rehabilitative service provision should be adapted in order to meet the individual needs of each stroke survivor and their family. These guidelines do not intend to prescribe or recommend specific assessment tools, outcome measures or treatment approaches; but rather to facilitate clinical and administrative decision making and service planning for stroke rehabilitative care. Where statements from current sources of evidence-based clinical practice guidelines have been recommended, references to the publications are provided. For greatest efficiency and effectiveness, rehabilitation intervention must be based on clinical research evidence (See:http://www.ebrsr.com/index_home.html, http://www.rcplondon.ac.uk/pubs/books/stroke/stroke_guidelines_2ed.pdf). These clinical intervention guidelines summarize the literature and are recommended by Pillar 3 for adoption by rehabilitation staff caring for stroke patients.

Access to the appropriate intensity of rehabilitation services should be available at each level of care and should be measured by the Stroke Rehabilitation Determinants Table found in the Determining Level of Stroke Rehabilitation section of this document (Section 6.0). This will promote consistency within and amongst health regions in Alberta. It is suggested that all health regions provide secondary inpatient rehabilitation services for individuals with stroke whether they are managed in an inpatient or community environment, and should have access to tertiary rehabilitation services whether within the region or from another region.

Regardless of the size of the acute care or rehabilitation team or outpatient community program, services must be provided by appropriately skilled professionals to manage the following common post-stroke issues.[2] If these services are not available within a program, access to these services should be available and accessed from other centers within the health region, or if necessary, through consultation with secondary or tertiary rehabilitation services outside the region. This may be facilitated by Telehealth consultations and/or Telementoring processes.

- medical complications
- self-care
- continence care (bowel and bladder)
- management of hemiparesis (including flaccid hemiplegic shoulder)
- mobility (e.g. bed mobility, ambulation and gait, wheelchair mobility skills)
- communication
- swallowing problems
- cognition (other than communication)
- mood and other psychological disorders
- appropriate living environment
- finances and employment
- return to previous roles and community involvement
- relationship strain and caregiver issues
- exploration of alternative leisure / recreational activities

Inpatient acute care, general medical and rehabilitation units should have processes in place to ensure the following occurs before discharge[3,4].

- patients and families are prepared and fully involved in plans for discharge and follow-up
- general practitioners and other primary healthcare providers, as well as community service providers, are involved in and informed of discharge plans;
- all necessary equipment and support services are in place and the family / caregiver has received training in moving and handling, in order to assist the patient safely in the home environment;
- any continuing treatment required should be provided without delay in the community whether by home care, a day hospital or outpatient clinic; and,
- patients are given information about, and offered contact with, appropriate community resources and services

In all settings, the rehabilitation team should be comprised of multidisciplinary health professionals and support staff, as well as the person with stroke and their family / caregivers, as well as the patient's primary care providers. This team should work together to manage common issues following stroke and achieve mutually agreed upon goals.[2] The composition of the rehabilitation team will vary according to the setting and whether the focus is on inpatient or community care (refer to "Post-Acute Stroke Rehabilitation Matrix", pages 27-28) Coordination of rehabilitation services is essential within a program and should also be facilitated between various settings and programs and with other health regions through the identification of a contact individual (Refer to Appendix IV for Contact Lists). This information should be made available to all care providers and the patient and their family / caregiver.

References

[1]Canadian Stroke Strategy. *Canadian Best Practice Recommendations for Stroke Care: 2006*. http://www.canadianstrokestrategy.ca

[2] *Life After Stroke: New Zealand Guideline for Management of Stroke.* New Zealand Guidelines Group, 003 http://www.nzgg.org.nz/guidelines/dsp_guideline_popup.cfm?guidelineCatID=32&guidelineID=37

[3] *Management of Adult Stroke Rehabilitation Care: A Clinical Practice Guideline*. AHA/ASA-Endorsed Practice Guidelines, 2005. http://stroke.ahajournals.org/cgi/content/full/36/9/e100

[4] *National Clinical Guidelines for Stroke, 2nd edition.* Prepared by the Intercollegiate Stroke Working Party. London: RCP, 2004. http://www.rcplondon.ac.uk/pubs/books/stroke/index.htm

5.0 ACUTE INPATIENT CARE

5.1 Early Acute Care / Hyper-acute (within the first 24-48 hours)

All patients with stroke occurrence should have the following clinical assessments conducted, despite the category of facility providing early acute care. Reassessment will depend on whether a problem is identified and its significance in the overall plan of care for a particular patient. Screening and/or assessments are conducted early (within the first 48 hours) to determine the severity of stroke and to provide treatment to reduce the risk of stroke-related complications (Refer to APSS Inpatient Care Assessment Interventions – Acute Stroke Admissions.)

Initial assessments completed by the medical and interdisciplinary team members[2,3,4]

- Level of consciousness and cognitive status (arousal, alertness and orientation)
- NIHSS or other valid, reliable tool to determine stroke severity
- Medical co-morbidities and risk factors for stroke recurrence
- Swallow / dysphagia screening (Refer to "Management of Dysphagia Following Acute Stroke", p. 15)
- Nutritional status and hydration screening
- Continence – bowel and bladder function
- Risk for venous thrombosis / DVT
- Skin integrity and risk for developing pressure areas
- Speech, language and other communication areas as needed
- Visual neglect / inattention or other perceptual difficulties
- Appropriate moving, handling, and positioning of the person with stroke, with respect to the person's abilities and need for assistance
- Risk for falls / safety

All patients with acute stroke should have a rehabilitation screening and/or assessment (physical therapy and occupational therapy) within 48 hours of admission.[1,2,3] The appropriateness and type of rehabilitation intervention; including the most appropriate setting to meet those needs; will be determined by the results of this assessment. In order to identify early rehabilitation needs; the following should be considered as part of the rehabilitation screening [3]

- review of the patient's medical workup and treatment plan related to stroke severity and the assessment of medical co-morbidities, consider:
  - stable vital signs for 24 hours
  - ability to rouse and maintain some level of alertness
  - no chest pain within the previous 24 hours, with the exception of stable angina or a documented non-cardiac condition
  - no significant arrhythmia
  - no evidence of venous thrombosis / DVT
- comprehension and expressive communication means for interaction
- cognitive capability to participate in rehabilitation
- willingness to participate in rehabilitation interventions
- pre-stroke functional status and current functional deficits
- pre-stroke living environment and supports
- capacity for improvement
- assessment of training needs: caregiver / family, major equipment, and vocation / leisure

Early rehabilitation intervention may be provided prior to the patient achieving medical stability or if the patient has low level of alertness or responsiveness. Intervention may consist of preliminary screening, assessment and intervention for preventative

management of secondary complications and risk factors related to stroke severity (e.g. positioning to avoid skin breakdown or aspiration).

References

[1]Canadian Stroke Strategy. *Canadian Best Practice Recommendations for Stroke Care: 2006*. http://www.canadianstrokestrategy.ca

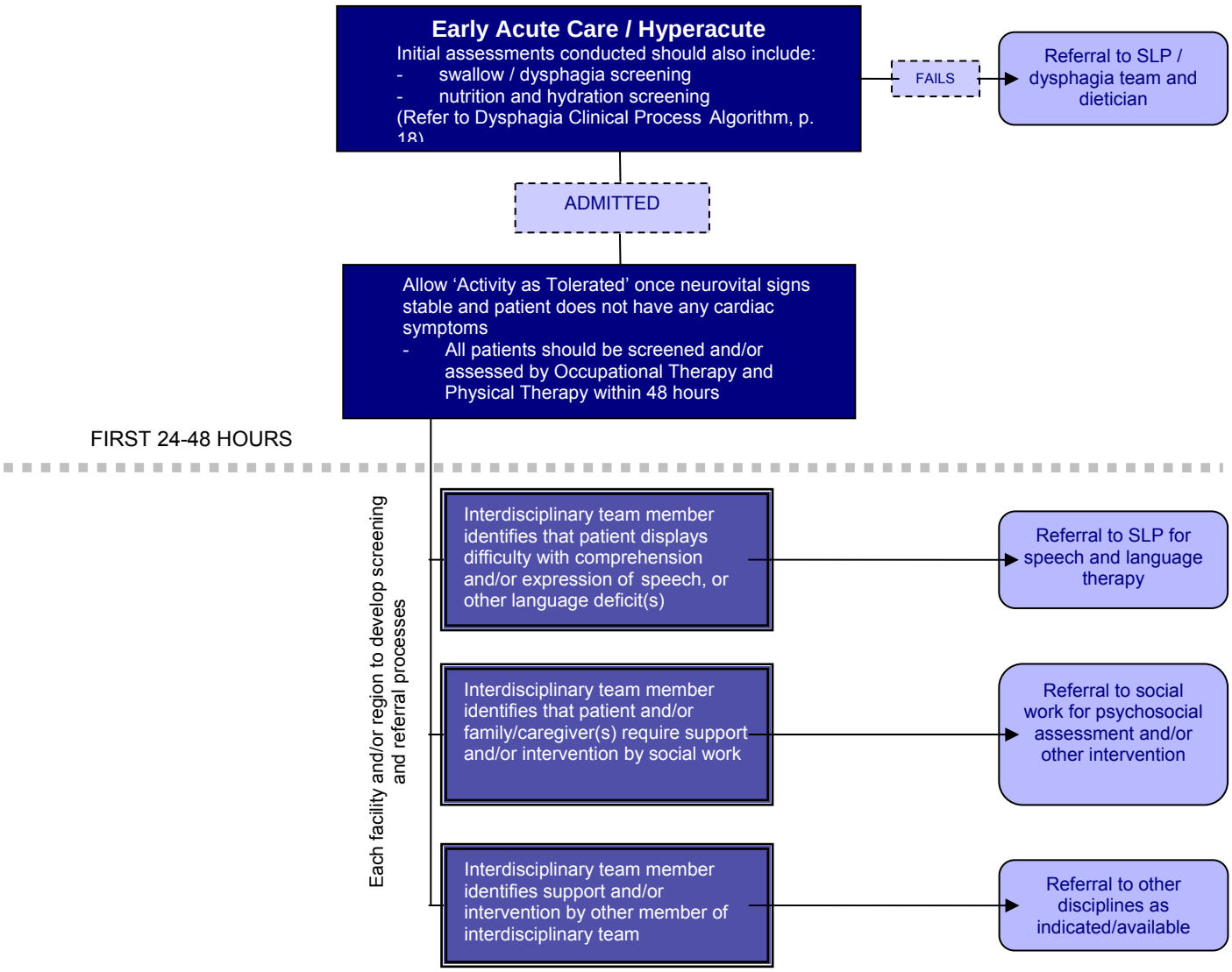
[2] *Life After Stroke: New Zealand Guideline for Management of Stroke.* New Zealand Guidelines Group, 003 http://www.nzgg.org.nz/guidelines/dsp_guideline_popup.cfm?guidelineCatID=32&guidelineID=37

[3] *Management of Adult Stroke Rehabilitation Care: A Clinical Practice Guideline*. AHA/ASA-Endorsed Practice Guidelines, 2005. http://stroke.ahajournals.org/cgi/content/full/36/9/e100

[4] *National Clinical Guidelines for Stroke, 2nd edition.* Prepared by the Intercollegiate Stroke Working Party. London: RCP, 2004. http://www.rcplondon.ac.uk/pubs/books/stroke/index.htm

5.2 REFERRAL PROCESS FOR REHABILITATION SERVICES IN ACUTE CARE

The following diagram outlines the recommended referral process to rehabilitation disciplines for patients with stroke presenting to acute care facilities:



5.3 Acute Care (48+ hours)

Assessing the rehabilitation potential of stroke survivors and planning for rehabilitation ideally begins as soon as possible during acute care.[1] The goals of these assessments are to identify patients who may benefit from rehabilitation, to determine the most appropriate rehabilitation setting, and to identify services to address those problems requiring treatment. The most important rehabilitation determinants are type and severity of impairment, functional abilities, ability to learn, and physical endurance.[1]

To assist rehabilitation planning, information on the following should be obtained as early as possible during the hospital stay and through ongoing assessments prior to discharge from acute care[3]:

- Available supports on discharge (formal and informal) - caregiver / family support and involvement
- Discharge environment
- Need for community care / home care services (pre-stroke and post-stroke functional status)
- Mood
- Cognitive status, including attention and memory
- Perceptual status, including visual / spatial orientation and apraxia
- Safety risk secondary to persisting cognitive or perceptual impairments
- Ability to perform ADLs; if patient returning to community living, IADLs must also be addressed
- Work / school / leisure situation and ability to resume life roles
- Cultural / spiritual issues
- Education / information needs of patient and family/caregivers
- Medication management
- Requirements for optimizing nutritional status
- Driving status: ability to drive safely on discharge, need for alternate means of transportation, and/or need for referral for driving assessment

The identification of needs that require the assessment and/or intervention by social work (e.g. psychosocial support, caregiver support, discharge planning needs, finances, employment), should be documented and a formal referral should be made by the interdisciplinary team. It is also suggested that if an interdisciplinary team member involved in a patient's care identifies language and/or other communication deficits requiring speech and language therapy services, a formal referral should be made to a speech-language pathologist for further assessment and intervention. Each facility and/or health region should identify and develop formal referral processes to these disciplines; as well as other disciplines such as pastoral care and recreation therapy; where available. (Refer to Section 21).

References

[1] *Best Practice Guidelines for Stroke Care.* Heart & Stroke Foundation of Ontario, 2003. http://209.5.25.171/

5.4 MANAGEMENT OF DYSPHAGIA FOLLOWING ACUTE STROKE

This section is intended to provide 'best practice' guidelines for improving the early identification and management of dysphagia in the acute stage of stroke recovery. It is recognized that the clinical and administrative processes implemented by individual institutions/health regions will be influenced by available resources.

Management of Dysphagia Following Stroke is excerpted from *Implementing a Regional Dysphagia Management Strategy by the Heart and Stroke Foundation of Ontario, 2003.*[1,2]

The Alberta Provincial Stroke Strategy (APSS) Pillar 3 group has adopted, in full, the Canadian Stroke Strategy Best Practices and Standards Recommendations related to dysphagia assessment in the stroke population, as well as the review and scoring of relevant evidence sourced during their development. [3]

DYSPHAGIA ASSESSMENT

15a. All patients with stroke should have their swallow screened prior to initiating oral intake of fluids or food utilizing a simple valid reliable bedside testing protocol. (CSQCS, SCORE, SIGN 78, NZ; Evidence Level B)

15b. Patients with stroke presenting with features indicating dysphagia or pulmonary aspiration should receive a full clinical assessment of swallowing by an SLP or appropriately trained specialist who should advise on safe swallow and consistency of diet and fluids. (RCP, CSQCS, SCORE, NZ; Evidence Level A)

Source: [3] Best Practices and Standards Working Group: Canadian Stroke Care Recommendations, Phase One. Canadian Stroke Strategy, November 2006.

5.4.1 Vision for Dysphagia Management

All patients presenting with stroke will receive a dysphagia screening, as part of the initial assessments conducted, to minimize the development of health complications. Stroke patients who fail the screening will receive a timely dysphagia assessment. Stroke patients found to have dysphagia will receive appropriate individualized dysphagia and nutritional management that meets the 'best practice' guidelines for dysphagia management.[3]

5.4.2 Best Practice Guidelines for Managing Dysphagia

Realizing the vision articulated above requires an innovative, flexible approach to the use of regional resources. It is recommended that facilities/regions develop interdisciplinary dysphagia teams for the provision of bedside clinical and instrumental assessment and treatment. Teams may include occupational therapists, registered dietitians, and speech-language pathologists. In addition to the dysphagia team, it is recommended that institutions/regions implement a training program to involve nurses, LPN's or other health care providers in the provision of an initial dysphagia screening.

Maintain all acute stroke patients NPO until swallowing ability has been determined. NPO prohibits the administration of oral medications, water and ice chips. Intravenous fluids may be required. Regularly perform mouth-clearing or oral care procedures, using a minimal amount of water, to prevent colonization of the mouth and upper aerodigestive tract with pathogenic bacteria. (Refer to Oral Care Guidelines – Inpatient Care for Acute Stroke Admissions).

Screen all stroke patients for swallowing difficulties using a valid and reliable tool, within 24 hours of the patient being awake and alert. A physician, registered nurse, licensed practical nurse or other dysphagia team member, trained to administer swallowing screening tests and interpret results, should perform the screening. The results of the screening should be documented on the patient chart.

Screen all stroke patients for risk factors for poor nutritional status within 48 hours *of admission*. A registered nurse, licensed practical nurse or other dysphagia team member, trained to administer nutritional screening tests and interpret results, should perform the screening.

Assess the swallowing ability of all stroke patients who fail the swallowing screening. The assessment includes clinical bedside assessment and, if warranted by the clinical signs, an instrumental assessment. A clinical assessment should be completed before conducting an instrumental assessment. A speech-language pathologist and/or other member of the dysphagia team trained in examination and interpretation of oral motor and swallowing function should perform the clinical bedside examination. The clinical assessment should include:

- Review of the patient's medical chart to obtain information on medical history and present medical status, including nutrition, hydration, respiratory, cognitive and communication status
- Oral mechanism exam (structure, function and sensation of the face, lips, jaw, tongue, velopharynx, and voice)[4]
- Assessment of the stroke patient's ability to swallow food, liquid and medications. Use of compensatory strategies such as food textures, feeding volumes, postures and swallowing maneuvers should be conducted
- Determination of the level of risk of dysphagic complications, including airway obstruction, aspiration of food and liquid and inadequate nutrition and hydration
- Identification of associated factors that might interfere with adequate oral nutrition and hydration or lead to aspiration-related complications, such as impaired motor skills, cognition or perception
- Individualized recommendations on the management of dysphagia, which may include changes in food or fluid consistency, feeding strategies, swallowing therapy, oral care regimens, and possibly referral to other health care professionals

Provide feeding assistance or mealtime supervision to stroke patients, as required. If specific feeding strategies are required (e.g., positioning), this information will be conveyed to all care providers, including family and other informal caregivers, who are involved in assisting the patient at mealtimes. Mouth clearing and oral care procedures, to prevent bacterial colonization, should be performed regularly. Recommended guidelines for oral care are as follows:

- Clean the mouth (including dentition, gums and tongue) with a toothbrush and toothpaste in the morning and at bedtime. Provide suctioning for those patients at risk of aspiration or who cannot effectively expectorate material.
- Perform oral care before and after each meal. Use an antibacterial mouthwash or water to rinse the oral cavity, and a swab to remove any food debris.
- Remove and clean dentures and store them in clean water
- Consider using an oral moisturizer for patients who are NPO and/or have dry mouth.

Refer to APSS Inpatient Care for Acute Stroke Admissions for more detailed information on oral care.

Assess the nutrition and hydration status of all stroke patients who fail the screening. A dietitian should:

- Assess energy, protein and fluid needs
- Recommend alterations in diet to meet energy, protein and fluid needs
- Support alterations in food texture and fluid consistency, based on the assessment by a speech-language pathologist and/or member of the dysphagia team.

Reassess all stroke patients receiving modified texture diets or enteral feeding for alterations in swallowing status regularly. After the acute stroke management phase, usually the first week after the stroke, reassess patients at minimum intervals of once every 2-to-3 months during the first year after the stroke and then every 6 months thereafter, or as required. The severity of swallowing impairment and the rate of improvement may alter the reassessment schedule.

Explain the nature of the dysphagia and recommendations for management, follow-up and reassessment upon discharge to all stroke patients, family members and care providers.

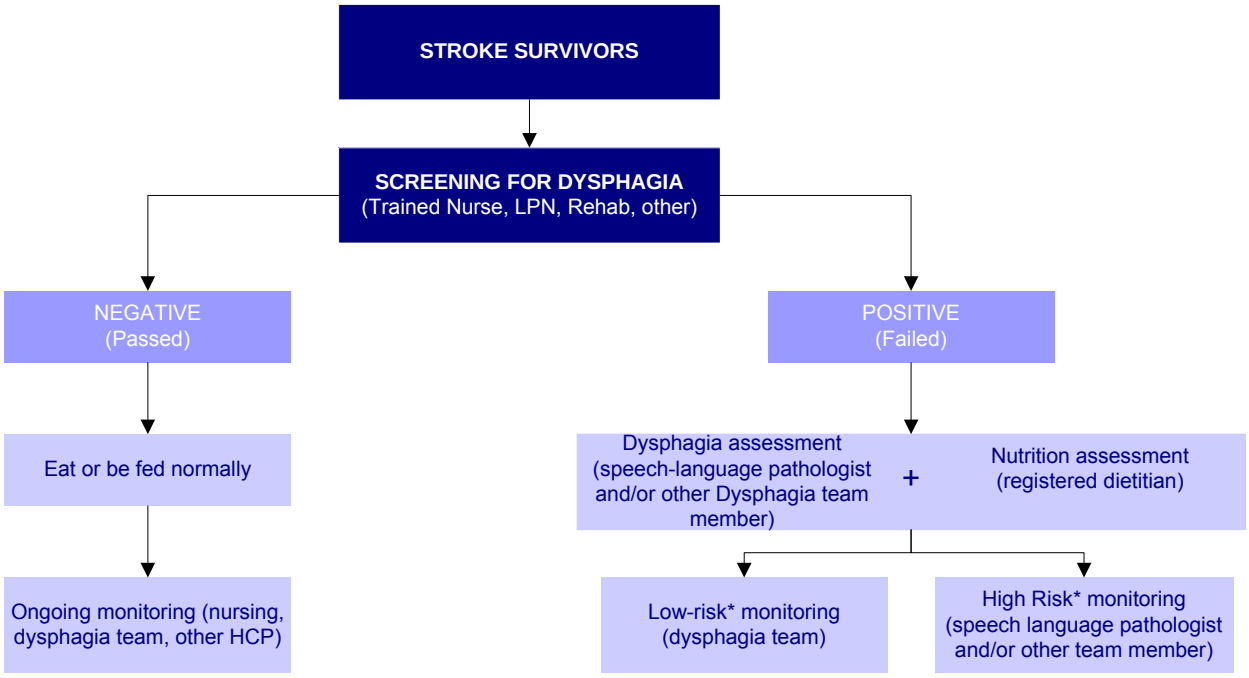
Provide the stroke patient or substitute decision maker with sufficient information to allow informed decision making about nutritional options. Consider the wishes and values of the stroke patient and family concerning oral and non-oral nutrition when developing a dysphagia management plan.

5.4.3 Clinical Process[3]

The following algorithm illustrates the roles of the various healthcare professionals involved in screening, assessment and monitoring of stroke patients for dysphagia in the acute inpatient stage. Nurses, physicians, and members of the dysphagia team would be trained to provide initial screening of all individuals considered to be at potential risk for dysphagia*.

* Refer to glossary

DYSPHAGIA CLINICAL PROCESS ALGORITHM



5.4.4 Education[1]

A comprehensive education and training program for Nursing, Physicians, and dysphagia team members is essential to ensure necessary clinical competencies are met. An education program should include:

- Training on the proper administration and interpretation of a dysphagia screening test
- Swallowing
  -anatomy and physiology
- dysphagia
  -pathophysiology of dysphagia
  -signs, symptoms, risk factors and complications
  -dysphagia screening and referral
- dysphagia management
  -safe feeding strategies, including compensatory manoeuvres, and outcomes
  -modified texture diets, feeding regimens, and enteral feeding
  -assistive devices and emergency procedures, including oral suctioning
  -individualizing management strategies

-oral hygiene
-swallowing therapy
-evaluation

Members of the dysphagia team will require additional education and training to support their provision of clinical bedside and instrumental assessment and treatment activities. Policies and procedures must be developed by institutions/regions to ensure the continued competency over time of all disciplines involved in management of dysphagia. Establishing effective swallowing teams depends on educating interested healthcare professionals in each institution/region. Teams should be sufficiently large and varied in discipline membership to enable best practice intervention, but small enough to ensure that team members are regularly engaged, in order to maintain their clinical competencies, in dysphagia management.

5.4.5 Implementation[1]

The following are recommended guidelines to ensure the successful implementation of a dysphagia screening service:

- identify and communicate with all key stakeholders, in all health regions, rural and urban centres, that must be informed of the proposed change to clinical practice and those that must be involved in implementing the dysphagia screening service. Invite feedback from stakeholders.
- create a dysphagia task force composed of individuals from key departments, including hospital administration, nursing and speech-language pathology, who will be responsible for all aspects of the implementation process
- determine the general scope of the project
- clarify the roles and responsibilities of all disciplines involved in dysphagia management
- select a reliable, validated dysphagia screening tool, e.g., Toronto Bedside Swallowing Screening Test (TOR-BSST)
- recruit volunteers from all disciplines who may be involved in dysphagia management
- develop the protocols necessary to ensure reliable implementation of the dysphagia screening service
- identify realistic time lines for planning, training and implementation stages of project
- identify a process to evaluate the dysphagia screening service
- identify a process to evaluate and support the necessary competencies of all disciplines involved in dysphagia management on an on-going basis

References

[1] *Heart and Stroke Foundation of Ontario. Implementing a Regional Dysphagia Management Strategy*. Toronto: Author, 2005.

[2] *Heart and Stroke Foundation of Ontario. Improving Recognition and Management of Dysphagia in Acute Stroke*. Heart and Stroke Foundation of Ontario. Toronto: Author, 2002.

[3] Canadian Stroke Strategy. *Canadian Best Practice Recommendations for Stroke Care: 2006.* http://www.canadianstrokestrategy.ca

[4] *Logemann, Jeri A. Evaluation and Treatment of Swallowing Disorders*. Pro-Ed. 1998.

[5] *Management of Adult Stroke Rehabilitation Care: A Clinical Practice Guideline*. AHA/ASA-Endorsed Practice Guidelines, 2005. http://stroke.ahajournals.org/cgi/content/full/36/9/e100

5.5 REFERRAL TO INPATIENT REHABILITATION

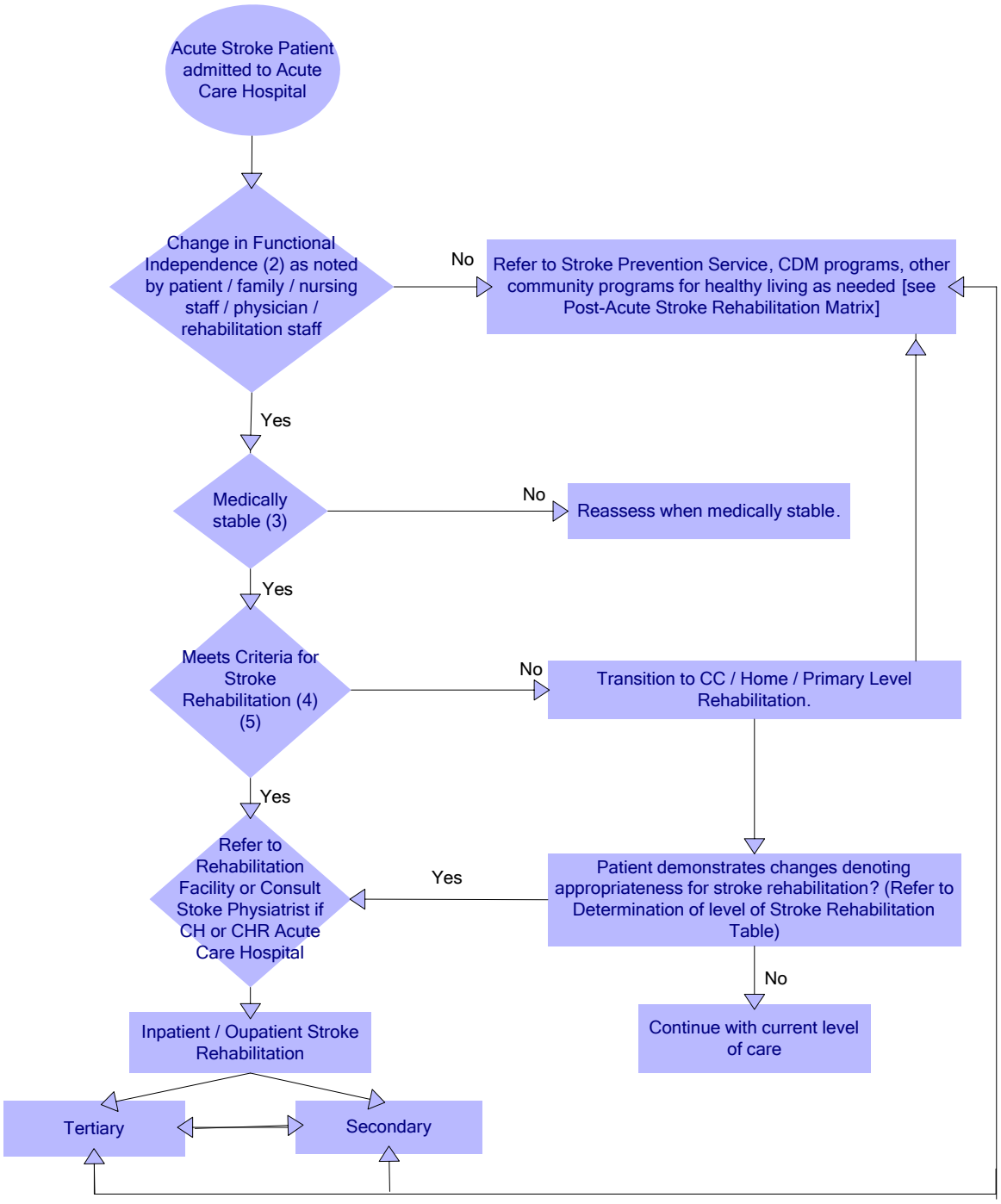
A clinician(s), skilled in stroke rehabilitation, (Appendix VI) should assess stroke patients considered suitable for further inpatient rehabilitation during the acute admission[1]. Those individuals considered suitable should be admitted to an inpatient rehabilitation program as soon as medically feasible. Clinicians are encouraged to utilize the "Rehabilitation Decision Tree for the Hospitalized Acute Stroke Patient" (Section 5.6) and the "Stroke Rehabilitation Determinants" (Section 6.0) for assessing and monitoring suitability of the stroke survivor for inpatient rehabilitation and for determining the appropriate inpatient rehabilitation setting, including when to request Physiatry consultation. The family / caregiver of the stroke patient, if available, should be involved in decision-making and treatment planning as early as possible and throughout the duration of the rehabilitation process.

The role of Physiatry during the acute care inpatient admission may include consultation for assessment regarding suitability for inpatient and outpatient stroke rehabilitation, and consultation for optimizing acute patient care.

References

[1] *Best Practice Guidelines for Stroke Care.* Heart & Stroke Foundation of Ontario, 2003. http://209.5.25.171/

5.6 Rehabilitation Decision Tree for the Hospitalized Acute Stroke Patient[1]



[1. Emergency Services and Acute Care is addressing outpatient rehabilitation links for those patients who are managed as an outpatient through ER/doctor's offices/stroke prevention clinics.]

[2. Function including mobility, BADL, IADL, communication, memory, mood, community interaction.]

[3. Refer to Admission Criteria GTA definition for Medical Stability.]

[4. Refer to Admission Criteria for Tertiary and Secondary Inpatient/Outpatient Rehabilitation.]

[5. Each Rehabilitation Program to determine admission and wait list processes based on Determination of Need factors.]

6.0 DETERMINING LEVEL OF STROKE REHABILITATION

Patients who have survived an acute stroke episode often would benefit from further rehabilitation. Depending on their stroke severity and other factors, they may be suitable to continue rehabilitation as an inpatient. Different levels/intensities of rehabilitation services are available at different inpatient facilities. It is important to refer the stroke survivor to the facility/service that will provide them with the level/intensity of rehabilitation that will best fit their needs. The referral process to these facilities will vary; however, it is important that the process of identifying suitable patients be transparent.

The following table lists components that are considered important in determining the appropriate level of continuing rehabilitation for a stroke survivor. A scoring system has been adopted to ensure the most appropriate use of limited inpatient rehabilitation resources. Although individuals may not qualify for more intensive levels of rehabilitation following an acute stroke, their rehabilitation needs should still be met at an appropriate site as described in the Post-Acute Stroke Rehabilitation Matrices (Inpatient Rehabilitation; Ambulatory/Community/Continuing Care) and the Stroke Rehabilitation Services Across the Continuum sections. Similarly, individuals who meet the criteria for tertiary rehabilitation services may opt to receive their rehabilitation at their regional secondary rehabilitation site. In these situations, the secondary rehabilitation service will endeavour to meet their needs by accessing/consulting tertiary rehabilitation staff and services.

It is recommended that the Stroke Rehabilitation Determinants Table included in this section also be used to manage a waitlist. When the Table is used to prioritize patients in order to manage a waitlist, it is important to consider the effects of delayed rehabilitation. For this reason, an additional component has been added for use in the process of prioritization.

	Component	Excellent (3 points)	Good (2 points)	Fair (1 point)	Poor (0 points)
1	Functional Status at 7-10 days post acute stroke episode (if medically stable)	FIM 50-70 (or other functional outcome)	FIM 40-49 FIM 71-80 (or other functional outcome)	FIM 37-39 FIM 81-96 (or other functional outcome)	FIM less than 36 or greater than 96 (or other functional outcome)
2	Stroke Severity	NIHSS 16 - 20	NIHSS 11-15	NIHSS 6-10	NIHSS 0-5, >20
3	Comorbidities[a]	No secondary related factors (0 or 1 co-morbid condition) affecting outcome	Minimal secondary related factors (2-3 co-morbid conditions) affecting outcome	Several secondary related factors (4-5 co-morbid conditions) affecting outcome and progress may vary due to same	Patients rehab progress may be severely limited due to numerous secondary relating factors (≥6 co-morbid conditions)
4	Prestroke functional status	Independent – lived at home and independent in BADL and IADL	Independent with community support – assisted living, home care involvement. Assisted with IADL	Independent with facility support – lodge, DAL, requires assistance with some BADL & IADL	Dependent – patient resides in continuing care or at home and required assistance for BADL/IADL, may have been restricted to bed
5	Ability to resume life roles	Patient has potential to fully resume life roles	Patient has potential to resume life roles with assistance	Patient will not be able to resume some life roles and require assistance in performing others	Patient unable to resume any of pre-morbid life roles
6	Rehabilitation Participation	Patient actively involved in treatment sessions, shows interest, compliant with recommendations, involved in goal setting	Patient shows moderate level of interest, inconsistently compliant, does not follow all recommendations, misses some appointments	Interest is minimal, misses appointments regularly, rarely follows recommendations	No interest, refuses admission to unit
7	Progress in acute rehab	Consistent progress toward rehab goals documented	Documented inconsistent gains, but slow progressive trend evident.	Documented inconsistent gains and NO progressive trend evident.	No gains documented.
8	Caregiver/family support/involvement	Extensive support, involved in process, treatment, goal setting, discharge planning	Support is adequate, caregiver/significant other is involved in the process	Caregiver support does not meet level of support required by patient.	No support in place, caregiver refuses rehab admission/participation
9	Discharge environment	Permanent place of residence appropriate on discharge. May require minimal changes	Permanent place of residence, requiring extensive renovation	Identified discharge location is inappropriate.	No discharge location identified.
10	Prognosis	Clearly identified rehab goals achievable in 4-6 weeks	Clearly identified rehab goals achievable in 7-12 weeks	Prognosis uncertain, rehab goals in development	Prognosis poor, no rehab goals
	Total Points				
Determining where to refer patient	Sum score of items 1-10[b]	Score of **? – Tertiary Level Rehab**		**? – Secondary Level Rehab**	
Determining patient priority	Circle one	**High** (21 - 30)	**Med** (11 – 20)	**Low** (0 - 10)	
WAITLIST MANAGEMENT	Wait for rehabilitation	Has been waiting for transfer to inpatient rehabilitation for 11 – 14 days	Has been waiting for transfer to inpatient rehabilitation for 7 - 10 days.	Has been waiting for transfer to inpatient rehabilitation 3 - 6 days	Has been waiting for transfer to inpatient rehabilitation for 1-2 days

[a] Relevant co-morbid conditions include COPD, previous CVA/other neurological problems, MI, chronic pain/chronic fatigue syndrome, severe kidney dysfunction – on dialysis, PVD with resting leg pain, severe depression/anxiety or other mental/behavioural issues.
[b] Scoring system is currently undergoing pilot testing.

7.0 REHABILITATION SERVICES

7.1 Inpatient Rehabilitation

The Stroke Rehabilitation Determinants Table (Section 6.0) is recommended for use within Alberta as a tool to assist care providers in determining the appropriate inpatient rehabilitation setting of patients during their acute stay. The severity of the patient's impairment, the availability of family / social support, and patient / family preferences will help to determine the appropriate environment for inpatient rehabilitation; whether in a primary, secondary or tertiary level facility[3]. The clinical team should propose the preferred environment for rehabilitation and treatments also on the basis of expectations for recovery, and describe to the patient and family the treatment options; including the rehabilitation and recovery process, prognosis, estimated length of stay, frequency of therapy, and discharge criteria.[3] The patient, family / caregiver, and rehabilitation team should together determine the optimal environment for rehabilitation and preferred treatment, whether provided in an inpatient or outpatient setting (Refer to "Post-Acute Stroke Rehabilitation Matrix" for descriptions of services, Section 7.1.1).[3] Information about the rehabilitation setting the patient has been referred to should be provided to the patient and their family.[3]

Patients in need of tertiary and secondary level inpatient rehabilitation services should have access to a setting with a coordinated and organized rehabilitation care team that is experienced in providing stroke services.[1,3,6] A comprehensive rehabilitation plan should be developed for each patient that reflects the severity of the stroke and the needs and goals of the stroke survivor and family / caregivers.[3,4] Multi/interdisciplinary team meetings should occur at least weekly to discuss: patient problems, rehabilitation goals, patient progress, and discharge planning.[1,4]

Patients should remain in an inpatient setting for their rehabilitation care if they are in need of 24-hour skilled nursing services, regular physician care, and multiple therapeutic interventions[3] (Refer to "Post-Acute Stroke Rehabilitation Matrix – Inpatient Rehabilitation", Section 7.1.1). Patients should be discharged from general medical and rehabilitation units in a timely manner, once realistic functional goals have been achieved, appropriate discharge plans are established, and inpatient care is no longer required.[5] Prior to discharge from an inpatient medical or rehabilitation unit, those assessments outlined in the 'Acute Care' section of this document should be conducted.[3] Preparation for discharge to the community may involve day or weekend passes for the patient with their family / caregivers and home assessments to identify and coordinate required community care / home care services. Appropriate community supports should be in place to facilitate a smooth transition and enable community reintegration (Refer to Post-Acute Stroke Rehabilitation Matrix – Outpatient/Ambulatory, Section 7.2.1).

The role of Physiatry during the inpatient rehabilitation admission may include primary or consultative medical care with the multi/interdisciplinary rehabilitation team(s); participation in the education of medical students and residents as well as other rehabilitation professionals; support and/or leadership of clinical research activities; and participation in the planning, administration and evaluation of stroke rehabilitation programs and services. (Refer to Appendix VI – Indicators for Physiatry Consultation)

References

[1]Canadian Stroke Strategy. *Canadian Best Practice Recommendations for Stroke Care: 2006*. http://www.canadianstrokestrategy.ca

[2] *Life After Stroke: New Zealand Guideline for Management of Stroke.* New Zealand Guidelines Group, 003 http://www.nzgg.org.nz/guidelines/dsp_guideline_popup.cfm?guidelineCatID=32&guidelineID=37

[3] *Management of Adult Stroke Rehabilitation Care: A Clinical Practice Guideline*. AHA/ASA-Endorsed Practice Guidelines, 2005. http://stroke.ahajournals.org/cgi/content/full/36/9/e100

[4] *National Clinical Guidelines for Stroke, 2nd edition.* Prepared by the Intercollegiate Stroke Working Party. London: RCP, 2004. http://www.rcplondon.ac.uk/pubs/books/stroke/index.htm

[5] *Best Practice Guidelines for Stroke Care.* Heart & Stroke Foundation of Ontario, 2003. http://209.5.25.171/

[6] *SCORE Evidence Based Recommendations for the Upper, and Lower Extremities and Risk Assessment Post-Stroke 2005*. Canadian Stroke Network. 2005. http://www.canadianstrokenetwork.ca.research/projects/download/SCORE_recommendations.pdf

7.1.1 Post-Acute Stroke Rehabilitation Matrix

TABLE XX – POST ACUTE STROKE REHABILITATION MATRIX – INPATIENT REHABILITATION

This table summarizes information on the different levels of inpatient rehabilitation provided in Alberta, the components of each level, possible locations and recommended staffing.

	PRIMARY Level Inpatient Rehabilitation	SECONDARY Level Inpatient Rehabilitation	TERTIARY Level Inpatient Rehabilitation	OTHER Specialized Inpatient Rehabilitation
Possible Location	Local hospital or Transitional Rehabilitation Facility (Category* C,D or E facility)	Regional Hospital/Primary Stroke Centre, Transitional* or Stand Alone Rehabilitation Facility (Category B Facility)	Comprehensive* Stroke Centre or Stand Alone Facility (Category A Facility)	Halvar Johnson Brain Injury Rehabilitation Program
Characteristics	• Partial rehabilitation team, usually OT and/or PT • Access to rehabilitation consultation from Secondary or Tertiary Level Rehab • Continuing rehabilitation in acute care or transitional unit	• Dedicated Rehab beds but not specific to stroke • Multi/interdisciplinary* team • Physiatry consultation through Tertiary Level rehabilitation • Caregiver support programs	• Stroke-specific rehabilitation beds • Full interdisciplinary team • Caregiver support programs	• Longer term inpatient rehabilitation for acquired brain injury patients, including stroke • Full interdisciplinary team including Rehab Nursing, RD, OT, PT, RecT, S-LP, SW, Psychology, Neuropsychology, Physiatry • Access to the patient school for school-age clients • Staffing/services to meet the needs of clients aged 16 – 17 yrs.
Suitable patients (inclusion and exclusion criteria)	• Patients awaiting entry into secondary/ tertiary rehab following acute medical treatment at a comprehensive or primary stroke center • Patients with poor prognosis due to stroke severity, co-morbidities or previous disability requiring longer term rehabilitation or admission to continuing care • Patients transitioning to home community with limited inpatient rehabilitation needs (short stay) • Patients requiring 24 hour nursing care	• Moderate stroke with potential to return to life roles • Patients with sufficient endurance to participate in rehab at a minimum of a half hour twice a day • "Slow stream" * candidates • Patients able to interact sufficiently to participate in rehabilitation. • Patients who demonstrate motivation to participate in rehabilitation • Patients requiring 24 hour nursing care	• Moderate stroke with potential to return to life roles • Patients with sufficient endurance to participate in rehab at a minimum 2 hours twice a day • Patients who have sufficient cognitive ability to participate in rehabilitation • Patients who demonstrate a willingness and commitment to participate in rehabilitation • Patients requiring 24 hour nursing care	• Patients ≤ 65 years of age • Moderate-severe stroke with potential to return to life roles • Patients with sufficient endurance to participate in rehab at a minimum of a half hour twice a day • "Slow stream" * candidates • Patients able to interact sufficiently to participate in rehabilitation. • Patients requiring 24 hour nursing care
Required Care Components	• Single discipline rehabilitation (OT and/or PT) with linkage to Nursing and others as available. • Stroke patient /family education • Standardized assessment of outcome. (will be basic, but should still be present in the ideal world)	• Multi/ Interdisciplinary team • Team conferences • Case/family conferences • Admission criteria • Stroke patient/family education • Caregiver support program • Standardized assessment of	• Dedicated interdisciplinary team with enhanced knowledge and expertise re: stroke rehabilitation • Mentorship of other facilities/staff and regular professional education re: stroke rehabilitation • Team conferences	• Interdisciplinary team • Team conferences • Case/family conferences • Admission criteria • Standardized assessment of outcomes (CIHI-NRS)

	PRIMARY Level Inpatient Rehabilitation	SECONDARY Level Inpatient Rehabilitation	TERTIARY Level Inpatient Rehabilitation	OTHER Specialized Inpatient Rehabilitation
		outcomes (CIHI-NRS) • Consultation with Tertiary Team, e.g. physiatry • Case coordination[1]	• Case/family conferences • Admission criteria • Stroke patient/family education Caregiver support program • Standardized assessment of outcomes (CIHI-NRS) • Case coordination	
Recommended Team Members	• OT and/or PT	• Rehab nursing • OT • PT • SW • S-LP	• Rehab nursing • OT • PT • Physiatrist • Psychologist • Rec T • RD • S-LP • SW • Neuropsychologist	• Rehab nursing • OT • PT • Psychologist • Rec T • RD • S-LP • SW • Neuropsychologist • Physiatrist
Recommended Service Enhancements[2]	• Consultation with Secondary or Tertiary Rehab • Access to S-LP	• Access to physiatrist • Access to psychologist, recreation therapist, dietician, neuropsychologist	• Role of Best Practice Facilitator[3] • Role of Professional Development Coordinator[4]	

References

* Refer to glossary

[1] Case coordination is a function that is recommended to ensure that complex patients are able to receive the services they need. It can be incorporated in other positions and does not need to be fully dedicated to stroke patients. A case coordinator will need to be aware of all the available services throughout the continuum of care within the health care region and of resources available in referring health regions.

[2] Consultations to disciplines or services identified in this section can be accessed from a tertiary or secondary rehabilitation site through any method of telecommunications that would be appropriate, e.g. telephone, telehealth, etc. It is expected that regional hospitals providing secondary level rehabilitation services will provide consultation and mentoring to primary rehabilitation sites within their region. Tertiary rehabilitation services will provide consultation and mentoring to secondary or primary rehabilitation sites within their region; and secondary rehabilitation sites outside their region.

[3] It is important that rehabilitation services delivered through the APSS remain at the forefront of best practice. As the Tertiary Rehabilitation Centre has a dedicated Stroke Rehabilitation team, it is recommended that the role of best practice facilitator be supported at this level. Like the case coordination role, this may be included in other positions and does not need to be dedicated to stroke care alone.

[4] The tertiary rehabilitation site will have the greatest responsibility in ensuring that education re: stroke rehabilitation be maintained and that information re: the same be shared with secondary and primary rehabilitation sites. As such, appropriate time must be allocated to this role whether as part of another position and/or in combination with the management of education about rehabilitation of other patient diagnoses/groupings.

7.1.2 SECONDARY LEVEL INPATIENT REHABILITATION PROGRAMS

Inpatient Admission Criteria

The Programs provide coordinated inpatient rehabilitation for adults with a stroke or other diagnoses. They are committed to improving the stroke survivor's functional independence and providing stroke education for the patients and their families within a supportive environment to maximize their overall functional outcome.

Patients who qualify for tertiary services may prefer to receive their rehabilitation closer to home or who choose not to wait for tertiary rehabilitation; and therefore choose to be admitted to their regional secondary stroke rehabilitation program. These patients and their families/significant other understand that they may not have the same access to some of the services available at the tertiary rehabilitation site.

Inclusion Criteria

Diagnosis of acute stroke - accepted within 8 weeks of event

Adult 18 years of age or older

Requires multi/interdisciplinary rehabilitation assessment and treatment (disciplines including Rehabilitation Nursing, Dietary, PT, OT, SLP, SW, Psych, and Recreation) from staff with Stroke experience/expertise

Requires 24 hour inpatient care

Patient is *medically stable* [8]

- A clear diagnosis and comorbidities have been established
- At time of discharge from acute care, acute medical issues have been addressed; disease processes and/or impairments are not precluding participation in rehab program
- Vital signs are stable
- No undetermined medical issues (for example excessive shortness of breath/falls/CHF)

Minimum level of function

- (FIM or other measure) – to be determined
- Stamina to participate in rehab at a minimum of a half hour twice a day
- Able to follow at minimum 1 step commands
- Has sufficient attention, short term memory, and insight to progress through rehabilitation process[a]
- Has motivation to participate[a]

Exclusion Criteria

Patient/family refusal to be admitted

Severe cognitive impairment preventing patient from learning and participating in therapy

Patients on bed rest or non weight bearing status

[a] Exception: Patients demonstrating decreased motivation or insight secondary to diagnosis/condition, e.g. depression, brain injury.

Behaviour is inappropriate putting self or others at risk (i.e. aggressive, wanders, etc.) except where facility has means of managing these issues

Terminal illness with an expected short survival

Patient resides in a continuing care facility or is awaiting placement in continuing care except where the patient has not received inpatient rehabilitation following the acute stroke episode and is now demonstrating readiness for rehabilitation. (Refer to Rehabilitation Decision Tree for the Hospitalized Acute Stroke Patient, Section 5.6)

7.1.3 TERTIARY LEVEL INPATIENT STROKE REHABILITATION PROGRAMS

Inpatient Admission Criteria

The Programs provide specialized tertiary level inpatient stroke rehabilitation for adults. They are committed to improving the stroke survivor's functional independence and providing stroke education for the patients and their families within a supportive environment to maximize their overall functional outcome. For younger clients, those who are gainfully employed, or those with complex needs, the program can provide the necessary services to facilitate return to this level of function, e.g. neuropsychological assessments, access/linkage to return to work counselling/community agency liaison.

Ideally, acute stroke survivors are assessed for tertiary stroke rehabilitation inpatient programs by a Physiatrist within a week[b] of the stroke to determine appropriateness for admission to the inpatient program. For those hospitalized patients living outside of the program's region, applications are reviewed by the program's Coordinator and/or Physiatrist. Telehealth consultations are possible to assess out of region applicants.

Inclusion Criteria

Diagnosis of acute stroke - accepted within 8 weeks of event.

Adult 18 years of age or older

Requires interdisciplinary stroke-specific rehabilitation assessment and treatment (disciplines including Dietary, Rehabilitation Nursing, OT, Physiatry, PT, Psychology, Recreation Therapy, SLP, and SW)

Requires 24 hour inpatient care

Patient is *medically stable* [8]

- A clear diagnosis and co-morbidities have been established
- At time of discharge from acute care, acute medical issues have been addressed; disease processes and/or impairments are not precluding participation in rehab program
- Vital signs are stable
- No undetermined medical issues (for example excessive shortness of breath/falls/CHF)

[b] Some patients, depending on the type of stroke and/or medical/psychiatric complications, may require more than one assessment to ultimately determine appropriateness for admission.

Minimum level of function

- (FIM or other measure) – to be determined
- Stamina to participate in two hours of sustained activity at minimum twice a day
- Able to follow at minimum 1 step commands
- Has sufficient attention, short term memory, and insight to progress through rehabilitation process[a]
- Has motivation to participate[a]

Exclusion Criteria

Patient/family refusal to be admitted

Severe cognitive impairment preventing patient from learning and participating in therapy

Patients on bed rest or non-weight bearing status

Behaviour is inappropriate putting self or others at risk (i.e. aggressive, wanders, etc.) except where facility has means of managing these issues

Terminal illness with an expected short survival

Patient resides in a continuing care facility or is awaiting placement in continuing care except where the patient has not received inpatient rehabilitation following the acute stroke episode and is now demonstrating readiness for rehabilitation. (Refer to Rehabilitation Decision Tree for the Hospitalized Acute Stroke Patient, p. 21)

[a] Exception: Patients demonstrating decreased motivation or insight secondary to diagnosis/condition, e.g. depression, brain injury.

7.1.4 HALVAR JOHNSON BRAIN INJURY REHABILITATION PROGRAM (FORMERLY PONOKA BRAIN INJURY PROGRAM)

Admission Criteria

The Halvar Johnson Brain Injury Rehabilitation Program is a provincial program that provides longer-term inpatient rehabilitation for adults with a non-progressive acquired brain injury, including non-traumatic brain injury such as stroke. This includes stroke as a non-traumatic brain injury. The program is committed to reducing the consequences of brain injury and promoting community reintegration. Staff provide stroke education for the patients and their families within a supportive environment to maximize overall functional outcome.

Slower stream patients not accepted by, or those having completed post-acute programs (secondary and tertiary) requiring longer-term rehabilitation may be appropriate candidates for this program.

Inclusion Criteria

Clients with non-progressive brain injuries, age 16 to 65 years of age, assessed as requiring service

Require interdisciplinary rehabilitation assessment and treatment (disciplines including Rehabilitation Nursing, Dietary, PT, OT, SLP, SW, Psychology, Neuropsychology, Recreation Therapy and Patient School) from staff with Stroke experience/expertise

“Slow stream” candidates with potential to benefit from rehabilitation

Require 24-hour inpatient care

Patient is *medically stable*
- A clear diagnosis and comorbidities have been established
- At time of discharge from previous care setting, acute medical issues have been addressed; disease processes and/or impairments are not precluding participation in a rehabilitation program and necessary follow-up/ procedures are preferably completed or arranged
- Vital signs are stable
- No undiagnosed medical issues (for example excessive shortness of breath/falls/CHF)

Minimum level of function
- *(FIM or other measure) – to be determined*
- Stamina to participate in rehab at a minimum of two hours a day
- Client is able to interact sufficiently to participate in rehabilitation
- A level of alertness and/or awareness indicating a potential to communicate

Exclusion Criteria

Patient/family chooses not to be admitted

Severe cognitive impairment preventing patient from learning and participating in therapy

Significant behaviours that put self or others at risk and that are the only or predominant reason for referral

Terminal illness with an expected short survival

Progressive neurological condition

7.2 REHABILITATION IN THE COMMUNITY

Prior to discharge from inpatient medical and rehabilitation care, the multi/interdisciplinary team should determine the appropriate setting which can provide the required intensity and duration of ongoing rehabilitation in the community (refer to “Post-Acute Stroke Rehabilitation Matrix”, Section 7.1.1. and “Admission Criteria for Tertiary and Secondary Stroke Rehabilitation Outpatient Programs”, Section 7.2.1). Ongoing rehabilitation needs should be assessed in order to support the stroke survivor and caregiver / family in the discharge location and to ensure adaptation and coping in the environment. Rehabilitation programs initiated during inpatient care are progressed and modified based on the patient’s functional status within the environment; in alignment with patient, family / caregiver, and rehabilitation provider goals. There should be appropriate processes to allow for reassessment of continued need for rehabilitation and re-entry into the health system for assessment and treatment for all people with stroke (Refer to “Rehabilitation Decision Tree for the Hospitalized Acute Stroke Patient”, Section 5.6).

7.2.1 Post-Acute Stroke Rehabilitation Matrix – Ambulatory / Community / Continuing Care

TABLE XX – POST ACUTE STROKE REHABILITATION MATRIX – AMBULATORY/COMMUNITY/CONTINUING CARE

This table summarizes information on the different levels of ambulatory and continuing care rehabilitation, the components of each level, possible locations and recommended staffing. It also provides a description of other programs in the community that may be used by stroke survivors to maintain healthy living.

	EARLY SUPPORTED DISCHARGE	HOME CARE/COMMUNITY CARE	PRIMARY Level Ambulatory Rehabilitation or OTHER Community Program	SECONDARY Level Ambulatory Rehabilitation	TERTIARY Level Ambulatory Rehabilitation	CONTINUING CARE
Possible Location	Home/Assisted living	Home	Community health, leisure/recreation or fitness centre Private or publicly funded community rehabilitation clinic Adult Day programs Chronic Disease management programs Transitional or continuing care facility	Local Hospital, or Community Rehabilitation Site	Comprehensive Stroke Centre or Stand Alone Rehabilitation Facility	Continuing Care Facility
Characteristics	• Discharge to community before completion of acute intervention phase • Rehabilitation commences in the home environment with community care / homecare/ multidisciplinary stroke-specific services (nursing, OT, PT, SW, S-LP)	• Single discipline • Home-based therapy delivered under supervision of OT, PT or S-LP	• Programs are not disease-specific • Community partnerships for healthy living • Publicly funded or privately operated health services and programs • Self-management programs for those experiencing a chronic disease	• Single/multi-discipline intervention available, minimum of OT and/or PT • Time-limited, goal directed rehabilitation intervention • Provided in general outpatient department setting	• Full Multi/ interdisciplinary team • Availability of or link with Physiatry clinic	• Rehabilitation intervention focused on single area of function • Rehabilitation intervention aimed at maintaining level of function
Suitable patients (inclusion and exclusion criteria)	• Mild to moderate stroke with potential to return to life roles • Patients requiring rehabilitation intervention to avoid prolonged hospital	• Patients with functional goals requiring rehabilitation intervention, however, patients are unable to tolerate travel to an	• Community-dwelling individuals who experienced a stroke requiring community-based programs to maintain or improve function and to	• Patients discharged from hospital to local community requiring further rehabilitation • Patients requiring rehabilitation intervention to	• Patients with functional goals requiring interdisciplinary intervention • Patients requiring interdisciplinary	• Stroke survivors who are residents of a continuing care facility

	EARLY SUPPORTED DISCHARGE	HOME CARE/COMMUNITY CARE	PRIMARY Level Ambulatory Rehabilitation or OTHER Community Program	SECONDARY Level Ambulatory Rehabilitation	TERTIARY Level Ambulatory Rehabilitation	CONTINUING CARE
	stay/prevent hospital admission • Able to transfer safely to and from bed • Competent caregiver(s) at home • Adequate support/ rehabilitation services available in community • No environmental impediments at discharge setting (e.g. access to bathing, toileting, home wheelchair access	Ambulatory Rehabilitation setting and participating in rehabilitation • Moderate stroke not requiring 24 hour nursing care	maintain a healthy lifestyle	prevent hospital admission • Mild/ moderate stroke not requiring 24 hour nursing care	rehabilitation intervention to prevent hospital admission • Mild/moderate stroke not requiring 24 hour nursing care	
Required Care Components	• Early Supported discharge should only be undertaken if there is a well-resourced, specialist, interdisciplinary team in the community • Multi/ interdisciplinary team • Team conferences • Case/family conferences • Stroke patient/family education • Caregiver support program • Standardized assessment of outcomes	• Single/multidisciplinary rehabilitation • Intervention provided a minimum of 3 times/week by qualified rehabilitation staff • Standardized assessment of outcomes • Transfer of care to Ambulatory Rehabilitation as soon as client tolerance allows • Referral of informal caregiver to agencies/programs for support	• Lay leaders with chronic disease experience • Education in self-management of health needs • Exercise programs to maintain mobility and function • Access to education on healthy nutrition, healthy living, and management of medications • Referral of informal caregiver to agencies/programs for support	• Single/ multidiscipline assessment and treatment • Team conference • Case/family conference • Referral to other programs/ services as required • Standardized assessment of outcomes • Caregiver support program • Referral of informal caregiver to agencies/programs for support	• Dedicated interdisciplinary team with enhanced knowledge and expertise re: stroke rehabilitation • Team conference • Case/family conference • Referral to other programs /services as required • Standardized assessment of outcomes • Caregiver support program • Referral of informal caregiver to agencies/programs for support	• Assessment for rehabilitation needs • Rehabilitation intervention provided by qualified staff • Monitoring to identify need for review for potential re-access of inpatient or ambulatory rehabilitation services • Referral of informal caregiver to agencies/programs for support
Team members	• Nurse • OT	• OT • PT	• Chronic Disease management	• OT • PT	• Rehabilitation Nurse • OT	• OT • PT

	EARLY SUPPORTED DISCHARGE	HOME CARE/COMMUNITY CARE	PRIMARY Level Ambulatory Rehabilitation or OTHER Community Program	SECONDARY Level Ambulatory Rehabilitation	TERTIARY Level Ambulatory Rehabilitation	CONTINUING CARE
	• PT • SW • S-LP	• S-LP • SW • RD	staff/coordinator • Community rehabilitation providers • Community recreation services	• S-LP • SW	• PT • Physiatrist • Psychologist • Neuropsychologist • Recreation Therapist • S-LP • SW	• Nurse • Recreation Therapist
Recommended Service Enhancements[1]	• Access to Physiatry • Access to psychologist • Access to recreation therapist		• Access to GP for consultation re: medical concerns • Access to pharmacist as needed	• Access to Physiatry • Access to psychologist, Neuropsychologist, recreation therapist, dietician • Rehabilitation nurse • Intensive S-LP intervention • Identification of patients requiring readmission	• Intensive S-LP intervention • Identification of patients requiring readmission • Provision of interdisciplinary follow-up of Tertiary Level inpatient population, as appropriate, at 3/6/12 month intervals • Access to Best Practice Facilitator and professional development coordinator	• Access to Physiatry or other rehabilitation staff for consultation • Access to SLP services

[1] Consultations to disciplines or services identified in this section can be accessed from a tertiary or secondary rehabilitation site through any method of telecommunications that would be appropriate, e.g. telephone, Telehealth, etc. It is expected that regional hospitals/sites providing secondary level rehabilitation services will provide consultation and mentoring to primary rehabilitation sites within their region. Tertiary rehabilitation services will provide consultation and mentoring to secondary or primary rehabilitation sites within their region; and secondary rehabilitation sites outside their region.

7.2.2 EARLY SUPPORTED DISCHARGE

Literature suggests[2,4,7] that early supported discharge (before the end of acute rehabilitation) should only be undertaken if there is a well-resourced, specialist, interdisciplinary stroke rehabilitation team in the community and if the patient is able to transfer safely from bed to chair, providing:

- there is a competent and willing caregiver at home;
- equivalent rehabilitation input coordinated by a multi/interdisciplinary team can be delivered in the community; (Refer to Post-Acute Stroke Rehabilitation Matrix, p. 21)
- adequate support services are available and accessible in the community; and
- there are no environmental barriers (e.g. access to shower and toilet, wheelchair access to the home) at the discharge setting.[2]

[a] Exception: Patients demonstrating decreased motivation or insight secondary to diagnosis/condition, e.g. depression, brain injury.

7.2.3 COMMUNITY CARE (HOME CARE)

Stroke survivors in the community may reside in their home environments with or without home care support or in supported living environments (e.g. group care homes, assisted living). To be a candidate for home rehabilitation, a stroke survivor must be able to manage in the home with or without home care services, and should be returning to a home that is accessible or is being made accessible[5].

7.2.4 CONTINUING CARE (FACILITY LIVING)

Stroke survivors in the community may also reside in continuing care facilities which provide 24-hour care and supervision for its residents. At this time, continuing care facilities are governed by the Long Term Care Act. This does not a set a standard for provision of rehabilitation care resulting in inconsistent availability of rehabilitation services in different facilities across each region and between health regions in Alberta.

7.2.5 AMBULATORY CARE (OUTPATIENT REHABILITATION)

In general, to be considered appropriate candidates for outpatient rehabilitation, stroke survivors should be able to manage safely in the home with or without home care services and be able to travel to the facility[5]. Outpatient rehabilitation or other community services should be conducted in an appropriate setting based on the patient's medical status, co-morbidities, function, social support, and access to care.[3] As the ultimate goal of rehabilitation is to re-integrate the stroke survivor into the community, information about and referrals to community health programs and clinics, recreation and leisure facilities, day programs, and Chronic Disease Management programs should be provided to all stroke survivors. The "Post-Acute Stroke Rehabilitation Matrix – Ambulatory/Community/Continuing Care" (Section 7.2.1) describes examples of outpatient services, whether provided in a tertiary or secondary level, or within another outpatient rehabilitation or community program.

The role of Physiatry during outpatient rehabilitation care may include consultative medical care with or without a multi/interdisciplinary rehabilitation team(s); participation in the education of medical students and residents as well as other rehabilitation professionals; support and/or leadership of clinical research activities; and participation in the planning, administration and evaluation of stroke rehabilitation programs and services.

7.2.6 SECONDARY LEVEL AMBULATORY REHABILITATION PROGRAMS

7.2.6.1 Admission Criteria

The programs provide outpatient rehabilitation for adults of any diagnosis who reside in the community. Such programs serve stroke survivors who do not require inpatient stroke rehabilitation as well as those patients discharged from inpatient stroke rehabilitation.

Inclusion Criteria

Acute or Recent Stroke (less than one year post-stroke) or
Client greater than one year post stroke requires outpatient interdisciplinary rehabilitation to achieve functional goals that will prevent hospital admission and/or improve independence

Adult 18 years of age or older

Patient is living at home or in assisted living
Patient is medically stable

Requires multi/interdisciplinary rehabilitation assessment, treatment, or review (disciplines including PT, OT, SLP, Psychology, and Recreation) from staff with Stroke experience/expertise

Minimum Level of Function

- Stamina to participate in the program demands/schedule as well as tolerate transportation to and from the program
- Able to follow at minimum 1 step commands
- Has sufficient attention, short term memory, and insight to progress through rehabilitation process[a]
- Has motivation to participate[a]
- Can attend therapy by self or if assistance is required (i.e. for feeding or toileting) a caregiver must be present at all times
- Patient/family must organize their own transportation to and from the facility

[a] Exception: Patients demonstrating decreased motivation or insight secondary to diagnosis/condition, e.g. depression, brain injury.

Exclusion Criteria

Patient requires 24 hour inpatient care

Patient/family refusal to attend

Severe cognitive impairment preventing patient from learning and participating in therapy

Patient resides in a continuing care facility or is awaiting placement in continuing care

Patient already receives treatment elsewhere and needs are being met

Behaviour is inappropriate putting self or others at risk (i.e. aggressive, wanders, etc.)

Terminal illness with expected short survival

[a] Exception: Patients demonstrating decreased motivation or insight secondary to diagnosis/condition, e.g. depression, brain injury.

7.2.7 TERTIARY LEVEL AMBULATORY STROKE REHABILITATION PROGRAMS

7.2.7.1 Admission Criteria

The programs provide specialized tertiary level outpatient stroke rehabilitation for adults who reside in the community. Such programs serve stroke survivors who do not require inpatient stroke rehabilitation as well as those patients discharged from inpatient stroke rehabilitation. They are committed to improving the stroke survivor's functional independence and providing stroke education for the patients and their families within a supportive environment to maximize their overall functional outcome. For younger clients, those who are gainfully employed, or those with complex needs, the program can provide the necessary services to facilitate return to this level of function, e.g. neuropsychological assessments, access/linkage to return to work counselling/community agency liaison. Applications for outpatient program interdisciplinary assessment are reviewed by the Outpatient Program Intake Coordinator who determines appropriateness. Following the clinic assessment, the outpatient team makes recommendations and arranges outpatient therapy and/or community referrals as appropriate.

Inclusion Criteria

Acute Stroke,
Stroke within one year, or
Client greater than one year post stroke requires outpatient interdisciplinary rehabilitation in order to attain a level of function that will prevent hospital admission and/or further improve independence

Adult 18 years of age or older

Patient is living at home or in assisted living
Patient is medically stable*

* Refer to glossary

Requires interdisciplinary specialized stroke rehabilitation assessment, treatment, or review (disciplines including Physiatry, PT, OT, SLP, SW, Psychology, Neuropsychology, Dietary and Recreation Therapy)

Minimum Level of Function

- Stamina to participate in the program demands/schedule as well as tolerate transportation to and from the program
- Able to follow at minimum 1 step commands
- Has sufficient attention, short term memory, and insight to progress through rehabilitation process[a]
- Has motivation to participate[a]
- Can attend therapy by self or if assistance is required (i.e. for feeding or toileting) a caregiver must be present at all times
- Patient/family must organize their own transportation to and from the facility

Exclusion Criteria

Patient requires 24 hour inpatient care

Patient/family refusal to attend

Severe cognitive impairment preventing patient from learning and participating in therapy

Patient resides in a continuing care facility or is awaiting placement in continuing care

Patient already receives treatment elsewhere and needs are being met

Behaviour is inappropriate putting self or others at risk (i.e. aggressive, wanders, etc.)

Terminal illness with expected short survival

[a] Exception: Patients demonstrating decreased motivation or insight secondary to diagnosis/condition, e.g. depression, brain injury.

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[1]Canadian Stroke Strategy. *Canadian Best Practice Recommendations for Stroke Care: 2006*. http://www.canadianstrokestrategy.ca

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[3]*Management of Adult Stroke Rehabilitation Care: A Clinical Practice Guideline.* AHA/ASA-Endorsed Practice Guidelines, 2005
http://stroke.ahajournals.org/cgi/content/full/36/9/e100

[4]*National Clinical Guidelines for Stroke, 2nd edition*. Prepared by the Intercollegiate Stroke Working Party. London: RCP, 2004
http://www.rcplondon.ac.uk/pubs/books/stroke/index.htm

[5]*Best Practice Guidelines for Stroke Care.* Heart & Stroke Foundation of Ontario, 2003.
http://209.5.25.171/

[6]*SCORE Evidence Based Recommendations for the Upper, and Lower Extremities and Risk Assessment Post-Stroke 2005*. Canadian Stroke Network. 2005.
http://www.canadianstrokenetwork.ca.research/projects/download/SCORE_recommendations.pdf

[7]*Evidenced Based Review of Stroke Rehabilitation,* Teasell R, et al. 2006.
www.ebrsr.com

[8]GTA Rehab Network. *Inpatient Rehab Referral Guidelines*, p.5

8.0 COMMUNITY REINTEGRATION – ENSURING ACCESS TO APPROPRIATE COMMUNITY SERVICES

The goal of community reintegration is to facilitate the transformation of 'stroke survivors' to 'stroke thrivers'. Community reintegration requires an environment that empowers stroke survivors and their family/caregivers to develop personal goals and the methods to achieve them. It goes beyond merely transitioning stroke survivors from an inpatient environment in the health system to a community setting. It may include case coordination, community or home rehabilitation, day programs, home support, and referrals to community based organizations and resources. Service provision by both health care and community organizations should promote life participation in social and community relationships and activities, despite the community setting (i.e. urban vs. rural, home vs. continuing care). Evidence must be used by service providers to guide informed decision-making regarding strategies, protocols and processes for quality care and services for stroke survivors.

A principal objective of the APSS is to optimize the recovery and quality of life for stroke survivors in all health regions in Alberta. To meet the ultimate goal of rehabilitation for stroke survivors – community reintegration, there is a need for improved coordination and stronger links between the health system, primary care providers, and community service providers. Community reintegration includes issues related to health management, life roles, social networks, environment, communications, mobility, and caregiver support. Strategies to meet the individual needs of stroke survivors and their family/caregivers must be considered and developed.

The following are key determinants* of successful community re-engagement and should be considered when planning new services or developing individual care plans for the stroke survivor:

Community Involvement	Psychosocial Functioning	Vocational & Avocational
• Transportation Services • Mobility Aids • Driving Assessment • Communication Aids Age appropriate: • Recreational Programs • Volunteer Activities • Peer Support Groups	• Home support services • Supportive relationships with family & friends • Positive outlook • Resumption of activities • Healthy lifestyle: nutrition, exercise • Knowledge of financial support programs • Caregivers educated about care needs • Caregivers aware of respite services	• Able to return to work • Employer supports modified work environment or schedule • Access to vocational counselling • Access to support in educational setting • Involvement in productive & meaningful activities as alternative to paid employment

**Greater Toronto Area Rehabilitation Network, 2005*

The following guiding principles have been identified as key components for the community reintegration of stroke survivors and describe the basic minimum standard of service provision for stroke survivors and their family/caregivers in the community[1]. The purpose of the following template is to assist each health region to consider and identify community reintegration services and programs, both within the region and those accessible in surrounding regions. Each region must maintain an inventory of these resources and where service delivery gaps exist, consider strategies to address these gaps.

References

[1] Heart and Stroke Foundation of Ontario: *Community Re-engagement*

8.1 Community Resource Inventory

	Guiding Principle	Resource Survey Probes	Regional Resource Inventory (Please describe services)	Regional Issues Comments / Recommendations
Service Provision – Goals/Outcomes				
1	Services available to focus on minimizing impairment, reducing activity limitations, maximizing the participation and quality of life of persons who have sustained a stroke.	Are there formal or informal services for minimizing impairment, reducing activity limitations, and/or for maximizing the participation and quality of life of persons who have sustained a stroke in your Region? ☐ Yes ☐ No		
2	Services available focus on stroke prevention, public awareness and education.	Is there a formal or informal program for stroke prevention services and education? ☐ Yes ☐ No Are there means to educate the public about the effects of a stroke in your region? ☐ Yes ☐ No		
3	Services between the health care system and the community should be integrated and coordinated. Eligibility criteria and referral processes should be established and transparent to allow clients to re-access services if required.	Is the health care system working together with community organizations to provide support for stroke survivors? (e.g., Interagency programs) ☐ Yes ☐ No Is there a clearly defined process to re-access the health system that is understood by service providers, clients and care providers? ☐ Yes ☐ No		
Service Provision – Method/Process				
4	Client-focused service delivery will be based on a formal assessment process designed to address the goals of the stroke survivor and their family/caregiver.	Does your Region have a formal assessment process to assist with individual needs-determination? ☐ Yes ☐ No		
5	A coordinated care plan including a follow-along process is developed for each stroke survivor. Service providers	Is there a formal care plan that includes follow-along for stroke survivors?		

	Guiding Principle	Resource Survey Probes	Regional Resource Inventory (Please describe services)	Regional Issues Comments / Recommendations
	should be able to access this information in an accurate and timely way. (see Appendix II)	☐ Yes ☐ No		
6	Services will be delivered by knowledgeable, skilled personnel with specialized training in stroke.	Do strategies exist to enable health care professionals and care providers in the community to develop stroke care expertise? ☐ Yes ☐ No		
	Caregiver Support			
7	Services will be developed to empower and assist the caregiver support system. The caregiver support system will be provided with the necessary guidance and education to advocate for the needs of the stroke survivor.	What formal and/or informal supports/services are available for the caregiver? (e.g., respite care, Home Care, Lifeline, Life skills support, Church, volunteer groups, clubs etc.) Is there guidance and education available for caregivers of stroke survivors? (e.g., Heart and Stroke Association Foundation, Stroke Recovery Association, Service provider-run patient and family education sessions) ☐ Yes ☐ No	Please list/describe.	
	Education/Information/Resources			
8	Services assist the stroke survivor and their caregiver support system to accept responsibility for the management of their own health. Education and encouragement to effectively use healthcare services can be facilitated by a personal healthcare profile that is retained by the person served. (See Appendix II)	Are clients encouraged and assisted to develop and maintain their own personal record of health events? ☐ Yes ☐ No What systems are being used to develop and maintain personal health records?		
9	Each health region will be responsible for the development and maintenance of a stroke resource inventory.	Is there a stroke resource inventory in your region? ☐ Yes ☐ No		

	Guiding Principle	Resource Survey Probes	Regional Resource Inventory (Please describe services)	Regional Issues Comments / Recommendations
		Is it accessible to both stroke survivors and their families/caregivers and service providers? ☐ Yes ☐ No		
Provincial/Rural/Urban				
10	All individuals, regardless of where they live, should have access to community services. Intra- and inter-regional differences of access and availability will be recognized and addressed.	Where do people access services? What are the barriers to accessing community services? (e.g., transportation, availability of services, distance, costs, waiting lists, etc.) If services are not available in the community, are there alternative methods to access? (e.g., Telehealth, Outreach Teams, travel outside regions, etc.) ☐ Yes ☐ No		
Evaluation				
11	Service providers will maintain a data collection system that includes at least one indicator that measures the effectiveness of its services. Ongoing monitoring and evaluation of these services will be completed on an annual basis.	Do the services in your Region have a method of data collection and evaluation? ☐ Yes ☐ No		

9.0 POSITION STATEMENT ON THE VALUE OF CAREGIVERS

When an individual suffers a stroke, their family is also affected. By providing supports for the caregiver, return to the home/community results in better outcomes. There are benefits the healthcare system due to decreased cost for continuing care, and benefit to society by facilitating the stroke survivor's continued contribution to it.

9.1 The Importance of Caregiver Support within Stroke Care Management

With stable caregiver support,

- The stroke survivor usually has a better outcome of independent living and quality of life within their own community and home environment
- The health care system benefits by avoiding or at least postponing the admission of the stroke survivor to continuing care
- The burden to the healthcare and social support systems will be reduced with lower re-admittance rates for additional services
- Family break-ups will be reduced

Failure to support caregivers increases the likelihood that the caregiver as well as the stroke survivor will require more expensive healthcare services

9.2 Caregiver Definitions

A caregiver is usually a spouse/significant other or other family member of the stroke survivor who has the primary responsibility for the health and well being of the stroke survivor. Personal goals of the caregiver may include:

- To maintain quality of life
- To balance caregiver responsibilities with their other responsibilities and personal needs
- To create opportunities to address personal needs

9.3 Issues Faced by Caregivers

As their roles evolve into that of caregivers, families often need to contend with the following issues:

- Depression and mental health studies suggest 50% will suffer from some depression
- Their own independence - having respite from caring, learning how to take care of themselves
- Learning new skills, domestic duties, household maintenance, financial management etc.
- Increased demands on their time and increased workloads as they support the stroke survivor and take on some of the survivor's former roles
- Learning skills to cope with the challenges of living with a stroke survivor, including those related to communication, medication, transportation, lifestyle (healthy or otherwise) choices, encouraging independence, etc.
- Learning how to assist the survivor in navigating through the system to access resources such as rehabilitation, transportation, leisure activities, financial supports etc.
- Changes in relationships with family and friends
- Changes in relationships within the marriage, roles, responsibilities, sexuality, and adapting to altered personal characteristics/capacities

9.4 Strategies for Caregiver Support

- ASK! - What do they need? Be aware of and understand the individual caregivers' needs, these are unique as to their own capacities and supports
- Ask about:

Adequacy of Home Support
Participation in their own recreational or community activities
Mood changes
Quality/changes in relationships
Financial strain and vocational situation
Lifestyle, stress, burnout
Modifiable risk factors

- Include the needs of the caregiver in planning discharge.
- Follow up with the needs for the caregiver on a scheduled basis, 3 month, 6 month, one year etc. during follow up stroke survivor clinics.
- Provide short-term (less than a day), emergency, and longer term (one or two weeks) opportunities for respite care
- Integrate, inform and fully engage the caregiver into all stroke care processes from acute care through rehabilitation and discharge planning – clearly define caregiver points within the patient care map
- Offer peer support through support groups, chat rooms, counselling services
- Assist the caregiver to identify, navigate, and gain access to community supports
- Offer training resources to caregivers through community agencies, peer support groups, retreats, workshops etc.
- Provide training/educational resources on any/all of the following:
  - patient transfer
  - personal hygiene and assisting with ADLs
  - food and nutrition choices
  - feeding strategies
  - communication strategies and skills
  - social and recreational activities/choices
  - managing cognitive, behavioural, and relationship challenges
  - caregiver self-care
  - maintaining a positive/realistic outlook
  - advocacy for themselves and the stroke survivor
  - advocacy within the “system” and with family/friends
  - coping with financial strain/reduced resources
  - adapting to altered life goals/plans
  - maximizing what is possible given the circumstances

10.0 RECOMMENDATIONS FOR EDUCATION OF STROKE REHABILITATION STAFF

10.1 Goals

To provide recommendations regarding the baseline education requirements necessary to competently provide the recommended standard of stroke rehabilitation care

To recommend strategies to assist health care workers in gaining the education considered necessary to competently provide the recommended standard of stroke rehabilitation care on an ongoing basis

10.2 Requirements of Rehabilitation Professionals (for informational purposes only)

a) Rehabilitation professionals who work under the Health Professions Act (HPA) must be registered with their appropriate college. Rehabilitation Professionals not covered under the HPA should meet the employer's requirements

b) Accreditation: Accreditation documents published on the Canadian accreditation websites for five of the rehabilitation professions indicate general curriculum requirements, but do not necessarily identify an explicit level of education specific to stroke and/or the treatment of people with stroke. Course outlines from the departments of Physical Therapy, Speech Language Pathology, and Occupational Therapy at the University of Alberta indicate each discipline has at least one course equivalent devoted to the treatment of people with stroke. Students also complete clinical placements where they may assess and treat people with stroke under the mentorship of licensed professionals.

- Accreditation websites
  - SLP -http://www.caslpa.ca/english/certification/casp.asp
  - OT – http://www.caot.ca
  - PT – http://www.accpap.ca
  - Nursing - http://www.casn.ca/Accreditation/casn_accreditation_program.htm
  - Social Work - http://www.cassw-acess.ca/xACCR/ac1x1.htm

Recommendation:
Information regarding the Alberta Provincial Stroke Strategy should be incorporated into the University of Alberta core curriculum courses

10.3 Recommendations

Baseline Educational Requirements for Stroke Rehabilitation Care

Regulated health care professionals must:

- Be a member in good standing with the appropriate professional accrediting body/college
- Pass national credentialing exam if required for registration
- Have a baseline level of knowledge and skills related to the treatment of clients with stroke. Recommendations are for minimum baseline level of knowledge – regions may establish a higher level of education requirement. Common areas where competence is required include:
  - medical complications
  - self care
  - continence care
  - management of hemiparesis (including flaccid hemiplegic shoulder)
  - mobility,
  - communication
  - swallowing
  - cognition
  - vision/perception

- mood and other psychological disorders
- selection and recommendation of appropriate living environment
- finances and employment
- community involvement leisure/recreational activities

Skills or knowledge are the recommended *baseline* level of knowledge/skill.

Non-regulated health care professionals (e.g.. kinesiologists, recreation therapists, therapist assistants):

- a basic level of knowledge related to the treatment of clients with stroke should be required
- experience working with stroke survivors or working in an environment that allows mentorship within a stroke team.

Volunteers:

- Regions should provide education/in-servicing at a basic level of knowledge related to stroke to ensure effective participation of volunteers.

Continuing Education (applicable to all health care professionals listed above)

Hours

- Tertiary Level Rehabilitation
  - Participate yearly in 8 or more hours of continuing education specific to stroke
- Primary and Secondary Level Rehabilitation
  - Participate yearly in 4 or more hours of continuing education specific to stroke.
  -

Monitoring

- There is no formal mechanism to monitor continuing education hours specific to stroke. We recommend that clinical leaders and supervisors informally monitor continuing education hours through performance appraisals or other established methods.
- Rehabilitation staff who are members of regulated professions may also choose to self-monitor their continuing education hours through continuing competence documents required by their professional association(s)/colleges

Activities Suitable for Continuing Education Hours (described in more detail below):

- Attendance at courses, seminars, or in-services specific to stroke rehabilitation
- Receipt of mentoring specific to stroke rehabilitation
- Attendance at teleconferences specific to stroke rehabilitation
- Literature review or readings specific to stroke rehabilitation

10.4 Suggested Educational Resources

Online – see Appendix I and APSS website

Course based

(a) The environmental scan report from the Canadian Stroke Strategy Professional Development and Training Working Group includes a substantial list of courses specific to stroke

(b) The Canadian Bobath Instructors Association (http://www.bobath.ca/courses.html) has a list of Bobath courses appropriate for different professions (both regulated and non-regulated) working with stroke survivors at the different rehabilitation stages.

(c) The Saskatchewan Physiotherapy Association (www.saskphysio.org/cptecourses.asp) offer a variety of courses including Bobath courses through a variety of media (onsite, telehealth, teleconference)

(d) The American Physical Therapy Association Neurology division (www.neuropt.org) provides a listing of future courses, the latest findings of the Stroke Special Interest Group, patient resources, and recent and impending research

(e) Each professional association advertises and supports courses of interest to their membership

10.5 Telehealth/Teleconferencing/Telementoring

Telehealth is a major component of the APSS. It is recommended for use not only in patient care and consultations, but also for education and mentoring between tertiary, secondary and primary rehabilitation and acute care sites.

- Video teleconferencing is available in all nine health regions in Alberta.
- Not discipline-specific to date, but hope for future development in all areas of stroke education and patient treatment (Telestroke currently up and running in some emergency departments; potential for expansion to many other areas

10.6 Mentoring

Mentors are essential to the success of a province-wide education strategy. Mentoring can be inter-regional (from different levels of rehabilitation - tertiary to secondary/primary) or intra-regional. Though mentors are often chosen (by their peers) and informal mentoring is part of being a professional, it is strongly recommended that the role of mentoring is formally recognized and supported for professionals through the designation of paid positions or allocation of time for this purpose. The implementation of a mentorship model is a critical factor in the success of the APSS.

Recommendations

Mentoring time must be recognized with a commensurate salary, and mentoring time must be protected

Suggested Strategies for Identifying, Securing, Supporting, and Maintaining Mentorship:

- Individuals with an interest, skill, and aptitude suitable for mentoring may be self-identified, or may be identified by colleagues or supervisors. Some professional associations survey their membership regarding self-identified competencies or interest areas. The University of Alberta Rehabilitation Medicine Alumni website has a section for self-identified mentors.
- Mentoring should be included in a job description, and there must be action on the part of management to protect the time necessary to carry out mentoring activities. If the mentoring position is part-time with a concurrent caseload, mentoring time can be protected through defined caseload or defined time dedicated to mentoring activities.
- Hire 2-4 people in different rehabilitation settings and from different professions who have a significant portion of their job protected strictly for mentoring. The mentoring role would be advertised as part of the new position.
- Further explore mentoring opportunities within the professional organizations (i.e. Physical therapy has a neurology interest group).

Develop a mentoring job description – the Mentoring Association (www.mentoring-association.org) has an excellent website outlining considerations when developing a mentoring job description (www.mentoring-association.org/membersonly/Process/MjobDescr.html).

Options for Education Models

- Nursing has a continuing competence program in Alberta that is supported by regularly scheduled education sessions (See http://www.nurses.ab.ca/practice/contcomp.html). A minimum number of education hours are not identified. The education model used by the College and Association of Registered Nurses of Alberta may be used as a model for the APSS Staff Education initiatives.
- OT and PT both have continuing competence programs. Continuing competence programs strive to help the professional maintain competence through development of a professional portfolio. A professional portfolio is a collection of information that illustrates, in a structured format, a physical therapist's reflections on practice, continuous professional growth, professional history and achievements. PT's continuing competence program is not currently mandatory but will be mandatory when PT comes under the Health Professions Act. Continuing competence does not require a certain number of education hours. OT is in the same position

as PT with respect to continuing competence – they will begin when they come under the Health Professions Act (perhaps Fall 2006).

- See http://www.acot.ca/pages/Continuing_Competency
- It may be important for APSS to explore collaborations with the various licensing agencies/colleges so that the stroke education initiative could tap into the continuing competence process.
- Another possible education model comes from the MS Consortium (www.mscare.org). They have developed a 'specialist program' consisting of three options for acquiring an MS Specialist designation - passing a certification exam, acquiring 75 hours of MS learning activities over previous 5 years, or obtaining 1000 hours of MS practice and 50 hours of MS learning activity over the previous 5 years. Approved Learning Activities and Practice Hours are defined by the Consortium.

Education Linkages with other APSS pillars

- All four APSS pillars have identified education as a gap in stroke care. Education efforts should be coordinated amongst the four pillars
- Send recommendations to APSS Provincial Education Committee. Participate in this committee as possible.

Other Considerations Related to Education

- Multimedia approaches/options are important as individuals have different ways of learning.
- Resources need to be updated regularly due to the changing and expanding nature of the knowledge in this field.
- Educational seminars for staff on conducting searches should be available; human mediation is necessary for effective learning and application of knowledge.
- Books, journals and the Internet are all important resources – order of search depends on the question and purpose of the investigator.
- Professionals need to have equal opportunities for continuing education
- In order to access databases, facilities/regions must subscribe, and this is a very expensive process.

11.0 GLOSSARY OF TERMS

Capacity - indicates the highest probable level of functioning that a person may reach in a domain in the Activities and Participation list at a given moment. It is measured in a standardized environment and thus reflects the environmentally adjusted ability of the individual.[1]

Category of Facilities - based on acute care service provision.[2]

Category A – Comprehensive Stroke Centre providing immediate access to CT and tPA Protocols with ability to manage all Stroke including complex patients with high risk of deterioration. Patients managed in an Acute Stroke Unit. Neurosurgical and neurointerventional expertise on-site.

Category B – Regional hospital providing immediate access to CT and tPA Protocols. Has the option to transfer complex Stroke with high risk of deterioration to Category A hospital. Patients may be managed in an Acute Stroke Unit or designated stroke beds, or potentially transferred to Category A hospital. Also known as a Primary Stroke Centre.

Category C – Local hospital utilizing Bypass Protocol for CT and tPA when services are not available. Patients receiving tPA are potentially transferred to Category B or A hospital. Complex Stroke patients with high risk of deterioration are transferred to Category B or A hospital. May provide acute stroke care on-site via protocols or transfer acute stroke patients to Category B or A hospital.

Category D and E – Local hospital with or without access to CT but no tPA capability. Utilizing bypass protocols for CT and tPA to Category B or A hospital. Complex stroke patients with high risk of deterioration are transferred to Category B or A hospital.

Client-Centred Practice – a philosophy of practice built on concepts that reflect changes in the attitudes and beliefs of clients and rehabilitation practitioners and includes a number of concepts: autonomy/choice, partnership and responsibility, enablement, contextual congruence.[3]

Client-centred practice is an approach to providing (therapy), which embraces a philosophy of respect for, and partnership with, people receiving services. Client-centred practice recognizes the autonomy of individuals, the need for client choice in making decisions about (needs), the strengths clients bring to a (rehabilitation) encounter, the benefits of (client-health care provider) partnership and the need to ensure that services are accessible and fit the context in which a client lives.

Comprehensive Stroke Centre - See Category A facility

Community Services – any agency/program/organization that is not located in a health care facility, providing health and/or related services with the goal of improving function or maintaining health and well-being among its participants. These services may be funded by any source, including the health region. Staffing for these services may or may not include health care providers.

Early Supported Discharge - early discharge with home-based support and rehabilitation.[4]

Health Services - Services and programmes at a local, community, regional, state or national level, aimed at delivering interventions to individuals for their physical, psychological and social well-being, such as health promotion and disease prevention services, primary care services, acute care, rehabilitation and long-term care services; services that are publicly or privately funded, delivered on a short-term, long-term, periodic or one-time basis, in a variety of service settings such as community, home-based, school and work settings, general hospitals, specialty hospitals, clinics, and residential and non-residential care facilities, including those who provide these services.[5]

Interdisciplinary - A group of people from different disciplines who assess and plan care in a collaborative manner. A common goal is established and each discipline works to achieve that goal. Care is interdependent, complementary and coordinated. Joint decision making is the norm. Members feel empowered and assume leadership on the appropriate issue depending upon the patient's needs and their expertise.[6]

Medically Stable/Medical Stability[7]

- A clear diagnosis and co-morbidities have been established.
- At the time of discharge from acute care, acute medical issues have been addressed; disease processes and/or impairments are not precluding participation in rehab program.
- Patient's vital signs are stable.
- No undetermined medical issues (e.g. excessive shortness of breath, falls, congestive heart failure).
- Medication needs have been determined.

Multidisciplinary - A group of people from different disciplines who develop treatment plans independently. Generally, each discipline conducts an independent assessment of patient. One person, usually the physician, orders the services and coordinates the care. The group may meet but, in general, each discipline implements its independent plan as an additional layer of services. Patients' and families' goals may not always be considered together as a unit of care, and specific discipline goals are not always shared with other professional care givers.[8]

Patient/Client-Centred Care -

Performance - describes what individuals do in their current environment, and so brings in the aspect of a person's involvement in life situations. [9]

Primary Stroke Centre - see Category B hospital

Primary Rehabilitation - level of rehabilitation provided by a single discipline or a multidisciplinary team in a medical (non-rehabilitation) unit.

Rehabilitation is "a goal oriented and often time-limited process which enables an individual with impairments and disabilities to identify and reach his/her optimal mental, physical and/or social functional level. Rehabilitation provides opportunities to the individual through a client-focused partnership with family, providers and the community, to accommodate a limitation or lack of function. Rehabilitation focuses on abilities and aims to facilitate social reintegration and independence". (CIHI, February 1999)

Secondary Rehabilitation - level of rehabilitation provided by a multi/interdisciplinary team providing rehab to patients of varying diagnosis other than stroke.

Slow Stream Rehabilitation - generally geared towards patients with severe strokes, those who are much older. Depending on the age of the patient and severity of the stroke, patients are able to tolerate between 20 – 30 minutes of therapy per session, for a maximum total of 5 hours per week. The average length of stay generally ranges between 60 – 180 days. These patients generally have cognitive impairments and comorbidities that affect their ability to tolerate the intensity of a regular stream stroke rehab program.[10]

Tertiary Rehabilitation - level of rehabilitation provided by a dedicated interdisciplinary team. Experience based on a high volume of patients with a diagnosis of Stroke.

References

[1] WHO, World Health Organization. *International Classification of Functioning, Disability and Health: Short Version*. WHO, Geneva, 2001. p. 192

[2] Alberta Provincial Stroke Strategy. *APSS Blueprint*, April 2006. Author: Bev Culham, pp. 11-12.

[3]Law M, Baptiste S, Mills J. Client-centred practice: what does it mean and does it make a difference? Can J Occup Ther 1995;62(5):250-257.

[4] Early Supported Discharge Trialists. Services for reducing duration of hospital care for acute stroke patients. *The Cochrane Database of Systematic Reviews* 2005, Issue 2. Art. No.: CD000443. DOI: 10.1002/14651858.CD000443.pub2

[5] WHO, World Health Organization. *International Classification of Functioning, Disability and Health*. WHO, Geneva, 2001.

[6] The American Geriatrics Society. Geriatric *Interdisciplinary Team Training. Team and Team Work*, p. 14. Found in http://www.americangeriatrics.org/education/gitt/1_topic.pdf

[7] GTA Rehab Network. *Inpatient Rehab Referral Guidelines*, p.5.

[8] The American Geriatrics Society. Geriatric Interdisciplinary Team Training. Team and Team Work, p. 13. Found in http://www.americangeriatrics.org/education/gitt/1_topic.pdf

[9] WHO, World Health Organization. *International Classification of Functioning, Disability and Health: Short Version.* WHO, Geneva, 2001. p. 192

[10] GTA Rehab Network. *Low Tolerance Long Duration Stroke Rehabilitation Initiative Report*, June 2004, p. 11.

APPENDIX I – ONLINE RESOURCES

The following secondary databases are accessible to the public. Most provide free online access.

OT Seeker:

- www.otseeker.com
- An OT specific database that provides access to abstracts of randomized controlled trials and systematic reviews. Trials are rated and critically appraised to assist with interpretation and with evaluation of validity.

PEDro (Physiotherapy Evidence Database):

- www.pedro.fhs.usyd.edu.au/index.html
- A database specific to physiotherapy that allows access to abstracts and details of systematic reviews, randomized controlled trials and evidence-based guidelines for clinical practice. Quality ratings assist in determining which trials are interpretable and valid, and which are not.

PubMed:

- http://www.pubmedcentral.nih.gov/
- A free digital archive of biomedical and life sciences journal literature.
- Links are accessible to full text articles and other related resources surrounding biomedical literature.
- Citations are submitted electronically to PubMed at or before the time of publication.
- PubMed Tutorial – Working with Search Results
  - http://www.nlm.nih.gov/bsd/pubmed_tutorial/m3001.html

Directory of Open Access Journals:

- www.doaj.org
- Free access to quality controlled scholarly and scientific journals (full text).

Highwire Press:

- http://highwire.stanford.edu/
- A site that provides free access to peer-reviewed, full-text journal articles.

Biomed Central

- http://www.biomedcentral.com/
- Publisher of more than 150 peer-reviewed open access journals.

ERIC

- http://www.searcheric.org/
- A search engine that allows access to abstracts of current journal articles and other resources such as conference papers and local and state reports. Specific documents are often available from the ERIC Contractor (http://eric.ed.gov/). Journal articles may also be available from inter-library loan, the publisher or perhaps Ingenta or Institute for Scientific Information.

REHABDATA

- http://www.naric.com/research/rehab/default.cfm
- A database specific to rehabilitation and disability. Topics covered in documents include mental, psychiatric and physical disabilities, vocational rehab, independent living, law, special education, employment, assistive technology and other issues surrounding people with disabilities.
- Categories of documents include published articles in rehabilitation-related periodicals, commercially published books and studies, reports and papers submitted by projects that the National Institute on Disability provides funding for. There are also some non-print materials available.

Ingenta

- http://www.ingentaconnect.com/

- Online professional and academic research articles. Allows users to access full text of electronic articles by subscribing to publications or purchasing individual articles.

NETWORKS AND LIBRARY ASSOCIATIONS

Calgary Health Region Information Network:

- http://library.ucalgary.ca/branches/healthscienceslibrary/
- Beginning in October, the Health Information Network will provide Library Services via the Health Sciences Library at the University of Calgary, to the Calgary Health Region. In addition, an agreement similar to this will be signed with the Alberta Cancer Board at the Tom Baker Cancer Centre.
- This alliance between the University and the Region will improve access to information for staff, patients and physicians. The Network will allow access to electronic health sciences resources, and will provide expert help in finding and retrieving information, as well as finding training and outreach programs.
- The University of Calgary Health Sciences Library will be the base for all library services, with four initial Knowledge Centres at the Peter Lougheed Centre, the Rockyview General Hospital, the Alberta Children's Hospital and the Women's Health Centre. Library services will be transitioned from the Foothills Medical Centre and Southport locations to the Knowledge Centres.

Capital Health Region e-library service

Health Knowledge Network (HKN):

- http://www.hkn.ca/
- A collaboration between the University of Alberta and the University of Calgary, the HKN strives to deliver health research and knowledge-based patient care information to the health practitioners and academic communities in Alberta. License agreements are arranged with international publishers of health sciences literature.
- Bibliographic and full text health information is licensed by the HKM from:
  - STAT!Ref
  - OVID Technologies (Ageline, Ageline, AMED: Allied & Complementary Medicine, CINAHL, EMBASE, EBM Reviews: ACP Journal Club, EBM Reviews: Cochrane Central Register of Controlled Trials (CCRCT), EBM Reviews: Cochrane Database of Systematic Reviews (CDSR), EBM Reviews: Database of Abstracts of Reviews of Effects (DARE), HaPI: Health and Psychosocial Instruments, HealthSTAR, International Pharmaceutical Abstracts (IPA), MEDLINE, PsycINFO, LWW Total Access Collection, OVID Nursing Collection I, OVID Premier 2005 (formerly titled Brandon/Hill Plus collection), PsycARTICLES, Books@OVID, Lippincott / Springhouse Nursing Books, LWW Premier 2005 (formerly titled LWW/Brandon Hill Books - ACMC Books), PsycBOOKS)
  - AccessMedicine
  - EBSCO Publishing (Biomedical Reference Collection: Comprehensive Edition, Evidence-Based Complementary Medicine (EBCM), Health Business Elite, Health Source: Nursing/Academic Edition, Nursing & Allied Health Collection: Comprehensive Edition, Psychology & Behavioral Sciences Collection)
  - Individual Journals (International Journal of Pharmaceutical Medicine, Journal of Clinical Oncology)
- In order to access HKN databases, a basic package must be purchased.
- Training courses are available.
- Self-paced HKN Tutorials are available, and designed to teach strategies on searching effectively for health and medical information. There are Basic, Intermediate and Advanced levels of Tutorials.

Southern AB Health Libraries Association (SAHLA)

- http://www.sahla.org/

- A chapter of the Canadian Health Libraries Association which strives to improve health and health care by promoting access to information.
- This site includes a list of Health Libraries in Southern Alberta

Putting Evidence Into Practice
- http://www.pep.ualberta.ca/
- A trans-disciplinary workshop designed to teach strategies and skills in searching for and identifying appropriate evidence, critically appraising the evidence, and applying the evidence to a specific area of expertise.

The Alberta Library Online
- http://www.talonline.ca/searchalberta/find.jsp?sessionid=0&rpasessionid=
- The Alberta Library is a province-wide multimedia library that promotes cooperative activities.
- Included is a link that lists libraries in Alberta

The Future of Learning Campus Calgary Digital Library (not yet a completed project)
- http://academic-plan.ucalgary.ca/index.php?option=content&task=view&id=33&Itemid=61
- A collaboration with all the public post-secondary institutions in Calgary – Bow Valley College, Mount Royal College, ACAD, and SAIT Polytechnic – as well as those in neighbouring regions, such as Red Crow College on the Blood Reserve.
- Will strive to promote better access to more and the most current information for health care providers.

University of Calgary Information Resources – Health Sciences Library
- http://library.ucalgary.ca/branches/healthscienceslibrary/

University of Alberta Health Sciences:
- http://www.library.ualberta.ca/subject/healthsciences/index.cfm

Medical Libraries
- http://www.mdcme.ca/zerve.asp?id=57
- link to medical libraries across Canada

NEOS
- http://www.neoslibraries.ca/index.aspx
- A collaboration between college and university, health, and government libraries to share library resources, technology, collections and people.
- Members of any NEOS library may borrow from other NEOS libraries. Books, serials, and select videos belonging to NEOS libraries, including those of the University of Alberta, are listed in the NEOS Library Consortium Catalogue (an online library catalogue that can be searched by members from any NEOS member library).
- All connected libraries are listed on the website

OTHER WEBSITES OF INTEREST SPECIFIC TO STROKE

Heart and Stroke Foundation:
- http://ww2.heartandstroke.ca/Page.asp?PageID=24

Canadian Stroke Network
- http://www.canadianstrokenetwork.ca/index_en.php

StrokEngine
- http://www.medicine.mcgill.ca/strokengine/

The Internet Stroke Center
- http://www.strokecenter.org/

GTA Rehab Network

- http://www.gtarehabnetwork.ca/home.asp

American Stroke Association

- http://www.strokeassociation.org/presenter.jhtml?identifier=1200037

Evidence-Based Review of Stroke Rehabilitation

- http://www.ebrsr.com/index_home.html

Royal College of Physicians Stroke Clinical Guidelines

- http://www.rcplondon.ac.uk/pubs/books/stroke/index.htm

New Zealand Guideline for Management of Stroke

- http://www.nzgg.org.nz/guidelines/dsp_guideline_popup.cfm?guidelineCatID=32&guidelineID=37

APPENDIX II – PRINCIPLES OF SHARING PATIENT INFORMATION BETWEEN HEALTH REGIONS AND COMMUNITY AGENCIES

Principle 13 – The transfer of patient information between sites and regions must be seamless, accurate, and timely. This can be facilitated by a portable healthcare profile that is retained by the person served.

Questions:
1. Who is the intended audience for this communication/information?
2. What and how much do they need to know?

Considerations:
1. Confidentiality of personal health information is critical.
2. What and how much needs to be included in a portable healthcare profile?
3. Ability of person served to retain a healthcare profile i.e. the person with cognitive/memory challenges with no family/support system.
4. Ability of a system that can be flexible so that specific information can be pulled as needed depending on the intended audience.
5. Ability of a system that can grow so that additions or changes can be made over time.
6. Health Regions are governed by the Health Information Act (HIA) and must abide by the legislation. ± See review notes on HIA

±The Health Information Act sets out rules governing the collection, use and disclosure of health information. These rules will apply to all health care providers (custodians) operating in the public health system (controlled arena). While the HIA provides guidelines for the uses of health information, it also affirms prevailing professional ethical obligations respecting confidentiality and security of health information. Significantly, the Act also provides a right of access by individuals to their personal health information.

The Prime Directive
Custodians can only collect, use or disclose the amount of health information essential to carrying out the purpose for which the information was provided in the first place. In other words, custodians must collect, use and disclose the *least amount of information necessary and preserve the highest degree of patient anonymity* possible to carry out the intended purpose.

Collection
The Act defines three types of health information: 1) diagnostic, treatment and care information 2) health services provider information 3) registration information.

Use
Use implies access and sharing of information among custodians and affiliates. The two most common uses are: 1) for providing a health service 2) determining or verifying a person's eligibility to receive a health service

Disclosure
Disclosure occurs when a custodian provides health information to another custodian within the controlled arena or to other entities outside the controlled arena. Generally, an individual's consent is required before health information is disclosed but the Act allows the custodians who collect information to share information necessary for the purpose of providing health services *without the individuals consent.* The general rule is that custodians may also disclose *individually identifying health information* to the person who is the subject of the information (themselves) or to persons acting on that person's behalf.

Access

A person has a right of access to any record that contains health information about them that is in a custodian's custody or control. The Act gives people a right to access information, not the right to have the original documents. People do not have unrestricted right of access, as custodians are allowed to refuse access in certain situations.

AI.1 Transfer/Sharing of Information Collected by a Health Region

Health Region information – Health Records systems collect and retain all clinical documentation that is produced by service providers within the system. The management of this information is governed by the health region's policies and procedures and the Health Information Act of Alberta. Health information can be shared as per disclosure rules noted in HIA "The Act allows disclosure of health information to persons responsible for providing continuing treatment and care to an individual".

Alberta's health regions are moving toward the use of an electronic medical record (paperless) system. This will facilitate the immediate sharing of information to service providers who have access to the system. The seven rural regions have all committed to using and are in various stages of implementing a system called Meditech. The seven rural RHA service providers will have access to all information collected on this system.

The two large urban health regions (Capital Health & Calgary Health Region) have created their own electronic health records system. At this time, there is no link between the two systems so there is no ability to share information electronically. The present system of requesting and faxing/mailing information prevails. There is work to create links that will allow universal sharing of health records information between all regions, but there is no indication of when, in the future, this will occur.

AI.2 Collection/Transfer of Information by the Survivor/Family

What is the essential information that would be beneficial for the survivor/family to collect and retain for future needs? The information needs vary by the intended audience i.e. consultation to a specialist, visit to your family physician, worker in a day program.

Endsley, Kibbe, Linares and Colorafi in Family Practice Management (2006) suggest three definitions of Personal Health Records:

- One version of PH records is a provider-owned digital summary that patients can access but cannot change.
- A second definition is a patient-owned program patients can use to enter and organize their own and family's health information
- The third version is a portable digital file that can be transferred between computers and that corresponds closely to the "electronic health record".

Personal Health Records can be gathered and maintained by individuals in a number of ways.

- Information can simply be gathered and kept in a file folder, summarized on a medical ID card or in a booklet such as "The Stroke Survivor's Companion". There are free health record forms for download, reference or use.
- There are now a number of Internet services (phdtogo; Aboutmyhealth; Ihealthrecord) and software programs (ProfileMD, Health Minder; Health Profiler; Health Folio etc.) that can be accessed for free or purchased to record and provide quick access to health information.
- Information can be transferred to a computer disk and carried with the person.
- Portable devices such as USB drive key chains are available that allow people to carry the information and can plug into most computers to access information.

The American Health Information Management Association (AHiMA) suggest that PHR's include the following personal identification: name, birth date and social insurance number, health care number, personal directive, guardianship/trusteeship information, names and phone numbers of your physicians, dentists and other specialists when establishing their own PHR.

Additional information (not inclusive - will vary by individual) that could be collected throughout the various stages of recovery is:

AI.3 Acute Care Stay

- History of stroke incident
- Acute interventions - surgery, (anticoagulant medication)
- Diagnostic studies – CT scan, MRI
- Specialist consults
- Significant events in course of recovery - level of consciousness, post traumatic amnesia, intubations, GI tubes …. Etc
- Past Medical History – contributing risk factors, high blood pressure, smoker, obesity
- Social History – family supports, community supports

AI.4 Rehabilitation

- Facility admissions + LOS
- Access to disciplines/services/programs
- Summary of significant events/progress in rehab
- Adaptive equipment – wheelchair, mobility aides, splints, speech device, ADL aides
- Ongoing Investigations/specialist consults – management of spasticity, ophthalmology, video fluoroscopy, neuropsychology assessment

AI.5 Community

- Participation in formal programs/services – home care, outpatient services, day program, Supports for Community living (SCL), Northern Alberta Brain Injury Society (NABIS), Southern Alberta Brain Injury Society (SABIS)
- Participation in informal programs/services – recreational activities
- Ongoing investigations/specialist consults – Spasticity management (botox)
- Family Physician
- Current medications

References

American Health Information Management Association. My PHR – A guide to managing and understanding your own personal health information. Available at: http://www.myphr.com.

Endersley, S., Kibbe, D. C., Linares, A. & Colorafi. An Introduction to Personal Health Records. Family Practice Medicine, May 2006.

Health Information Act of Alberta. Enacted in the Legislature: December 1999. Proclaimed: April 25, 2001. Available at: http://www.health.gov.ab.ca/about/Minister_legislation.html.

APPENDIX III – RESOURCES TO GUIDE STROKE REHABILITATION PRACTICE

Best Practice Guidelines for Stroke Care. Heart & Stroke Foundation of Ontario, 2003.
http://209.5.25.171/

Canadian Stroke Strategy. *Canadian Best Practice Recommendations for Stroke Care: 2006*.
http://www.canadianstrokestrategy.ca

Evidence-Based Review of Stroke Rehabilitation. Ontario Stroke Strategy: Consensus Panel Report, October 2006
http://www.ebrsr.com/index_home.html

Heart and Stroke Foundation of Ontario. Implementing a Regional Dysphagia Management Strategy. Toronto: Author, 2005

Heart and Stroke Foundation of Ontario. Improving Recognition and Management of Dysphagia in Acute Stroke. Heart and Stroke Foundation of Ontario. Toronto: Author, 2002

Life After Stroke: New Zealand Guideline for Management of Stroke. New Zealand Guidelines Group, 2003
http://www.nzgg.org.nz/guidelines/dsp_guideline_popup.cfm?guidelineCatID=32&guidelineID=37

Logemann, Jeri A. Evaluation and Treatment of Swallowing Disorders. Pro-Ed. 1998

Management of Adult Stroke Rehabilitation Care: A Clinical Practice Guideline. AHA/ASA-Endorsed Practice Guidelines, 2005
http://stroke.ahajournals.org/cgi/content/full/36/9/e100

National Clinical Guidelines for Stroke, 2nd edition. Prepared by the Intercollegiate Stroke Working Party. London: RCP, 2004
http://www.rcplondon.ac.uk/pubs/books/stroke/index.htm

Topics in Stroke Rehabilitation, volume 13, number 2. Ottawa Panel Evidence-Based Clinical Practice Guidelines for Post-Stroke Rehabilitation.

CALGARY HEALTH REGION REHABILITATION CONSULTATION
Please contact:

Calgary Stroke Program
Foothills Medical Centre
1403 – 29 Street N.W.
Calgary, Alberta T2N 2TN
Phone: (403) 944-1447

CAPITAL HEALTH REGION REHABILITATION CONSULTATION
Please contact:

Capital Health Regional Stroke Program
105 Aberhart Services Building
8440 – 112 Street N.W.
Edmonton, Alberta T6G 2B7
Phone: (780) 407-3041
Fax: (780) 407-2809
Email: regionalstroke@cha.ab.ca

APPENDIX V – SUGGESTED GUIDELINES FOR PREVENTING SECONDARY COMPLICATIONS IN THE HYPERACUTE / ACUTE STROKE PATIENT

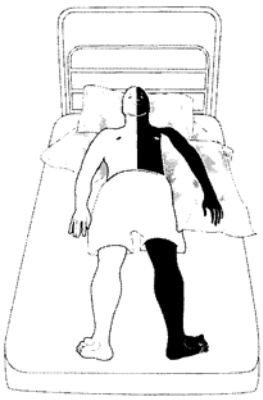
Positioning Guidelines:

These illustrations suggest possible positioning options for people affected by stroke. After a stroke people can experience differing physical problems. Therefore, careful positioning and placement of pillows can be made to achieve safe and comfortable postures for any individual.
Affected stroke side is in **black.**
Pictures do not depict bed rails.

LYING ON AFFECTED SIDE
- one or two pillows for head
- affected shoulder positioned comfortably
- place unaffected leg forward on one or two pillows
- place pillows in front and behind

SITTING UP
- sit well back in the centre of the chair or wheelchair
- place arms well forward onto two pillows on table
- feet flat on floor or footrests
- knees directly above feet

LYING ON UNAFFECTED SIDE
- one or two pillows for head
- affected shoulder forward with arm supported on pillow
- place affected leg backwards on one or two pillows
- place a pillow behind back



LYING ON BACK (if desired)
- place three pillows supporting both shoulders and head
- place affected arm on pillow
- optional pillow beneath affected hip
- ensure feet in neutral position

SITTING IN BED
- sitting in bed is desirable for short periods only
- sit upright and well supported by pillows
- place both arms on pillows
- legs supported for comfort

Reference:

Acknowledgement to Mark Smith, Clinical Specialist Physiotherapist for Stroke, NHS Lothian

More Positioning Guidelines:
http://www.amkh.com.sg/services/rehab1.htm

Upper Extremity Management:
Best Practice Recommendation 22: Shoulder Pain Assessment and Treatment. Canadian Best Practice Recommendations for Stroke Care: 2006, Canadian Stroke Strategy.

APPENDIX VI – INDICATIONS FOR PHYSIATRY CONSULTATION

1. A Physiatrist will screen acute stroke patients deemed possible candidates for Tertiary Rehabilitation in Edmonton and Calgary (See 'Determining Level of Stroke Rehabilitation'). This includes medical chart review and completion of the patient History, Physical, and Functional Assessment. This may include discussion of patient progress with medical and/or rehabilitation team.

2. Consultation to answer any of the following clinical questions regardless if the patient is appropriate for Tertiary Stroke Rehabilitation:
    - Functional prognosis
    - Management of post-stroke complications including
        - Neurogenic bladder and bowel
        - Prevention of venous thromboembolism
        - Spasticity
        - Decubiti
        - Post-stroke depression
        - Painful hemiplegic shoulder/upper extremity
        - Neuropathic pain
        - Dysphagia/Aspiration
        - Post-stroke seizures
    - Assist acute care rehabilitation staff in appropriate acute rehabilitation goal setting
    - Guide patient/family regarding return to work/school and driving

3. Assess those stroke patients who do not meet the criteria for Tertiary Stroke Rehabilitation but patient and/or family request a medical assessment and opinion.

4. Patient/family request hospital discharge without rehabilitation but there are significant concerns that patient/family are unable to manage secondary to the disability due to the stroke (including physical, perceptual, language, and/or cognitive impairments). The Physiatrist can facilitate understanding and initiate appropriate links with community supports if the patient/family still refuse inpatient admission for Tertiary Stroke Rehabilitation.