



Alberta Provincial Stroke Strategy Stroke Blueprint

Report of Phase I

*May 15, 2006
V11f*

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EXECUTIVE SUMMARY

Stroke is the number one cause of acquired long-term disability in the adult populations and is the fourth leading cause of death in Canada. It is the most common neurological disease requiring admission to hospital. In the province of Alberta, there are approximately 5500 documented new stroke cases each year and at present 25,000 stroke survivors. Stroke incidence in North America averages 150 cases per 100,000 per year and will increase by 1%-2% per year for next decade as the population ages. The cost of stroke in Alberta is approximately \$200-\$300 million annually.

Major advances have occurred in stroke care over the past decade and we now have a number of highly effective treatments for stroke during the acute and rehabilitation phases. Effective programs in stroke prevention at the primary and secondary levels have been demonstrated in other jurisdictions. In Alberta, there are currently knowledge gaps in relation to what is known about stroke prevention and management and the current practice across the care continuum.

The Alberta Provincial Stroke Strategy (APSS) is an opportunity to look across geopolitical boundaries, identify where the gaps are, and the greatest needs, successes and best practices. The process of APSS will lay the foundation from which health regions and partners can share information about their stroke services, coordinate service delivery across boundaries and develop common strategies to facilitate access to evidence based care for optimal practice.

The Government of Alberta has committed \$20M over two years to support the delivery of optimal prevention, timely identification, acute treatment, rehabilitation and community integration for stroke patients in the province.

The long-term goals of improving stroke care across the province are to:

- Reduce stroke incidence in Alberta;
- Improve stroke care at all levels throughout Alberta by implementing national standards of care and service delivery
- Optimize recovery and quality of life for stroke survivors and their caregivers in all Health Regions;
- Reduce the financial burden of stroke in Alberta.

The development of the Alberta Provincial Stroke Strategy and the enhancement of stroke services across the province have been informed by a number of processes to date:

- The establishment of a Alberta Stroke Council comprised of stroke care experts, Heart and Stroke Foundation of Alberta, provincial government and health region representatives;
- Health Region Stroke Steering Committees
- Health Region Stroke Plan development through the review of the core components of stroke care and an assessment of current stroke service assets, challenges and inter-regional linkages required to deliver optimal stroke care
- Review of best practices and protocol development by Pillar Committees comprised of provincial stroke care experts
- Development of an evaluation plan and framework to measure performance
- Telestroke Working Group to determine and recommend telehealth solutions to geographic barriers to care and education

The purpose of the APSS is to identify enhancements and develop solutions to strengthen the stroke system of care and ensure the right services are in place at the right time. While the current level of stroke service is impressive in Alberta, further service delivery and network relationship enhancements are needed to ensure appropriate access to services by all Albertans.

The purpose of the Alberta Stroke Blueprint is to articulate and understand:

- stroke service capacity in the province

- inter-regional stroke service linkages and supports
- major gaps in service across the province
- proposed action plans to strengthen stroke services and network relationships
- service priorities

The Alberta Stroke Blueprint provides the foundation for decisions about needed enhancements to stroke prevention and care, priorities, future decision-making around funding allocations and the basis for the core business functions of the APSS to the end of the 2 year grant funding agreement. While giving clear direction for moving forward, the Alberta Stroke Blueprint and regional stroke plans are not static but will change over time as events and new ideas evolve.

Over the next months health regions and community partners will work collaboratively to begin to implement service enhancements within their health region, and between health regions. During implementation health regions will work collaboratively with the Alberta Stroke Council, participating in a process to track activities, progress and investment in stroke care and prevention.

1.0 BACKGROUND

Stroke is the number one cause of acquired long-term disability in the adult populations and is the fourth leading cause of death in Canada. It is the most common neurological disease requiring admission to hospital. Twenty percent (20%) of strokes are fatal and for those who survive stroke, 75% live with some form of long-term disability.

In the province of Alberta, there are approximately 5500 documented new stroke cases each year and at present 25,000 stroke survivors. Stroke incidence in North America averages 150 cases per 100,000 per year and will increase by 1%-2% per year for next decade as the population ages. The cost of stroke in Alberta is approximately \$200-\$300 million annually.

Major advances have occurred in stroke care over the past decade and we now have a number of highly effective treatments for stroke during the acute and rehabilitation phases. Effective programs in stroke prevention at the primary and secondary levels have been demonstrated in other jurisdictions. In Alberta, there are currently knowledge gaps in relation to what is known about stroke prevention and management and the current practice across the care continuum. The challenge for the province and the purpose of the Alberta Provincial Stroke Strategy (APSS) is to strengthen our existing resource base and service delivery models to improve stroke systems or networks of care in Alberta.

The Government of Alberta has committed \$20M over two years to support the delivery of optimal prevention, timely identification, acute treatment, rehabilitation and community integration for stroke patients in the province.

The long-term goals of improving stroke care across the province are to:

- Reduce stroke incidence in Alberta;
- Improve stroke care at all levels throughout Alberta by implementing national standards of care and service delivery
- Optimize recovery and quality of life for stroke survivors and their caregivers in all Health Regions;
- Reduce the financial burden of stroke in Alberta.

2.0 ALBERTA PROVINCIAL STROKE STRATEGY – PURPOSE AND PROCESS

The Alberta Provincial Stroke Strategy (APSS) is supported by a project structure that has been established to ensure the following:

- Components of optimal stroke care are in place and accessible in each health region
- Effective interaction and collaboration between the components
- An organized and standardized approach in each facility and component of the system through the adoption of best practice
- Performance measures to allow continual evolution and improvement

The development of the APSS and the enhancement of stroke services across the province have been informed by a number of processes to date:

- The establishment of a Alberta Stroke Council comprised of stroke care experts, Heart and Stroke Foundation of Alberta, provincial government and health region representatives;
- Health Region Stroke Steering Committees
- Health Region Stroke Plan development through the review of the core components of stroke care and an assessment of current stroke service assets, challenges and inter-regional linkages required to deliver optimal stroke care
- Review of best practices and protocol development by Pillar Committees comprised of provincial stroke care experts
- Development of an evaluation plan and framework to measure performance
- Telestroke Working Group to determine and recommend telehealth solutions to geographic barriers to care and education

The project process, organization chart, and regional accountabilities are in Appendix A.

The APSS is an opportunity to look across geopolitical boundaries, identify where the gaps are, and the greatest needs, successes and best practices. The process of APSS will lay the foundation from which health regions and partners can share information about their stroke services, coordinate service delivery across boundaries and develop common strategies to facilitate access to evidence based care for optimal practice.

3.0 ALBERTA STROKE BLUEPRINT

The purpose of the Alberta Stroke Blueprint is to understand:

- stroke service capacity in the province
- inter-regional stroke service linkages and supports
- major gaps in service across the province
- proposed action plans to strengthen stroke services and network relationships
- service priorities

The Alberta Stroke Blueprint will provide the foundation for decisions about needed enhancements to stroke prevention and care, priorities, future decision-making around funding allocations and the basis for the core business functions of the APSS to the end of the two year grant funding agreement. While giving clear direction for moving forward, the Alberta Stroke Blueprint and regional stroke plans are not static but will change over time as events and new ideas evolve.

4.0 A PROPOSED PROVINCIAL MODEL FOR DELIVERING STROKE SERVICES

4.1 Proposed Provincial Stroke Model

A stroke system or network should coordinate and promote patient access to a full range of activities and services associated with stroke prevention, treatment and rehabilitation. Providing optimal stroke care across the province and to all residents of Alberta is a complex undertaking. Approximately 60 percent of the population resides in the major centers but a significant proportion live in rural Alberta. The challenge is to create an integrated and accessible model of health service to best meet the needs of stroke patients regardless of place of residence.

The fundamental elements or components of optimal stroke care are shown in Table A. Each health region is differentiated by the resources available in the health care setting and the clinical complexity of stroke patients it is able to manage, therefore, each health region will have its own unique stroke care assets and its own set of challenges in providing these components of care. In developing the stroke model of care in Alberta it is important to recognize that not all individuals will need the same level of care and it is not feasible or desirable for all settings to have a similar level of service or expertise. In areas where components are unavailable the network model suggests that patients be transferred or linked via telestroke to services in other geographic locations including other health regions. Strategies to facilitate access to optimal practice via telehealth, staff education/mentoring and outreach clinical consultation are important to support care at all levels and in all settings.

While access to the components of optimal stroke care is important, even more critical are the linkages and referral processes to ensure that individuals access the appropriate services at the right time for follow-up and ongoing treatment. The ideal stroke pathway for prevention, emergency and acute management, rehabilitation and community re-integration and support are outlined in Figure A, B, C.

All components of stroke service delivery in Alberta need to be supported by best practice and evidence-based protocols. APSS Pillar Committees and working groups are in the process of establishing guidelines and protocols to support optimal stroke care and prevention in all settings (completion by mid-June 2006). The Canadian Stroke Strategy is also developing guidelines in a number of key areas that form a foundation for the practice in Alberta. Health Regions shall evaluate new and existing services against these guidelines.

TABLE A ALBERTA PROVINCIAL STROKE STRATEGY PILLAR COMPONENTS (Dec 12/05)

| APSS PILLARS KEY STRATEGY COMPONENTS/STANDARDS | | | |
|--|--|---|--|
| Health Promotion and Disease Prevention | Emergency Services and Acute Care | Rehabilitation and Reintegration | Provincial Evaluation and Quality Assurance |
| <p>Primary Prevention</p> <ul style="list-style-type: none"> Population health programs to decrease the development of risk factors Primary prevention programs focused on established disease risk factors for stroke (hypertension, cholesterol, diabetes, AF) Management of risk factors (leverage existing initiatives Chronic Disease Management, Primary Care Networks, Health Link etc.) <p>Awareness</p> <ul style="list-style-type: none"> Organized public awareness programs on signs of stroke and emergency response <p>Secondary Prevention</p> <ul style="list-style-type: none"> Secondary stroke prevention for high risk individuals (TIA, previous strokes, other high risk populations) including a plan for lifestyle modification, pharmacotherapy, access to education resources and communication with family physician Early carotid revascularization | <p>Acute Episode</p> <p>Notification and Response of EMS</p> <ul style="list-style-type: none"> EMS awareness, rapid assessment and transport protocols to nearest primary or comprehensive stroke centre <p>Acute Treatment of Stroke in ED</p> <ul style="list-style-type: none"> Non-primary stroke hospitals have written protocols to transfer patients in timely way to the appropriate destination Protocols and stroke team for acute stroke in ED Timely neuroimaging Early and appropriate acute stroke care +tPA within 3 hours/or -tPA <p>Inpatient Care for Stroke Admissions</p> <ul style="list-style-type: none"> Stroke unit or geographically designated beds Evidence-based guidelines/protocols to ensure organized interventions, targeting prevention of complications and ensuring early mobilization and rehabilitation Multidisciplinary stroke team with enhanced knowledge of stroke care and mandate to coordinate care Notification of family physician during all phases of care Early discharge planning and smooth transitions to ensure appropriate and timely access to service (education, support, follow-up instructions, primary care arrangements) Standardized information and processes transferred to ensure continuity of care and case management | <p>Inpatient Rehabilitation</p> <ul style="list-style-type: none"> Standardized (system) screening evaluation to determine impairments and most appropriate level of rehabilitation Comprehensive rehab plan to initiate early, intensive, coordinated multidisciplinary stroke rehab. Recovering movement, daily activities, communication Rehab plan reflects severity of stroke Early discharge planning and smooth transitions (education, support, follow-up instructions, primary care arrangements, secondary prevention services) Standardized information and processes transferred to ensure continuity of care and case management <p>Going Home - Post-Discharge Rehabilitation and Care</p> <ul style="list-style-type: none"> Ensure appropriate rehabilitation in various settings Follow-up at regular intervals OPT/Community Rehab Home Care Care Centres and Assisted Living <p>Stroke 'Thrivers'/Community Reintegration</p> <ul style="list-style-type: none"> Becoming social, dealing with emotions, returning to work, getting around Support from families and friends Caregiver support and education | <p>Monitoring and Evaluation</p> <ul style="list-style-type: none"> Strategy Evaluation Framework (Performance measures for stroke components (Outcomes and Implementation) Provincial Approach <p>Specific Activities</p> <ul style="list-style-type: none"> Quality of Data - Validation of Stroke Diagnostic Codes Stroke Audit Tools Registry/Chart Review audit for baseline and outcomes Stroke Surveillance Systems |

Figure A APSS – STROKE PREVENTION FLOW MAP

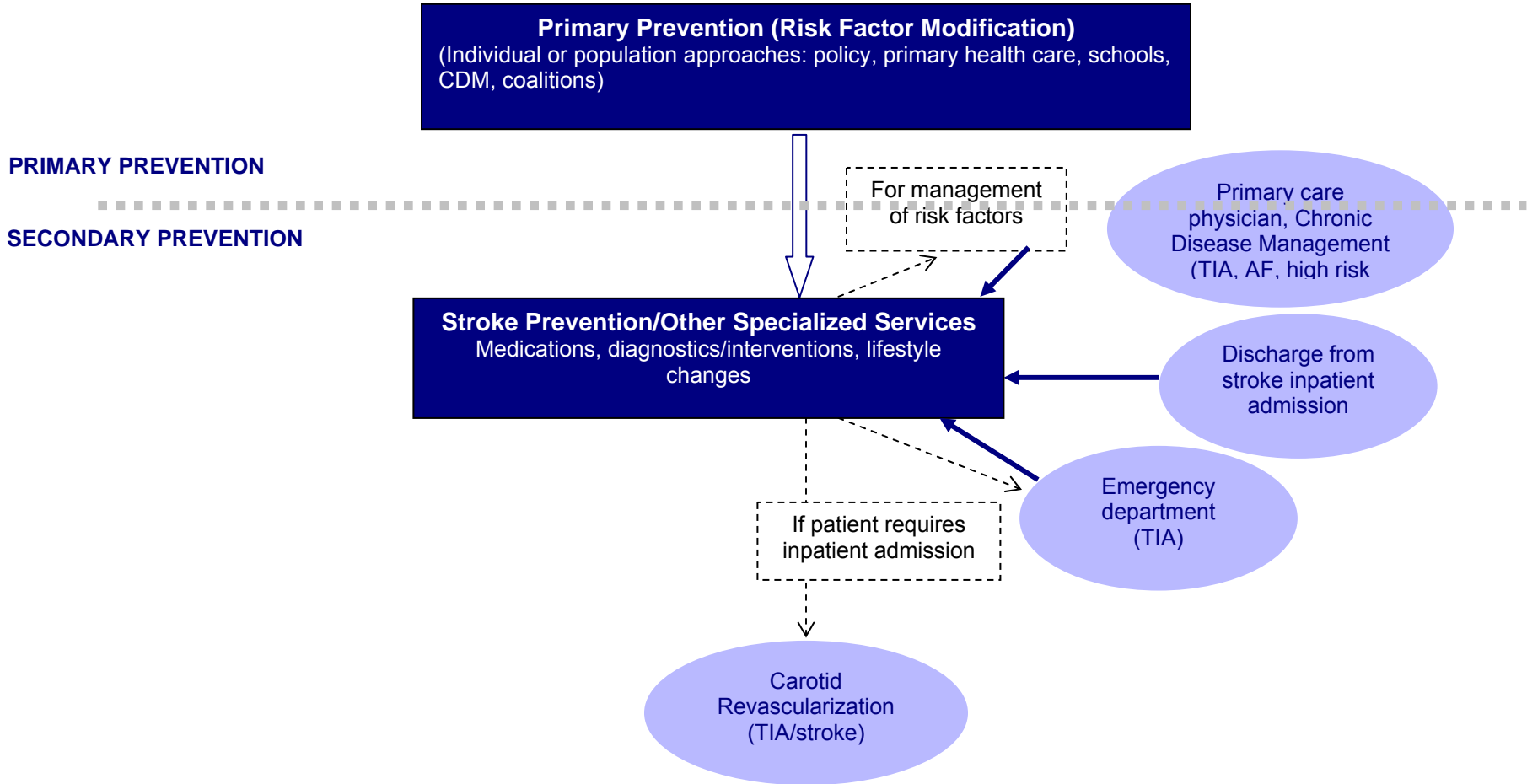


Figure B EMERGENCY SERVICES AND ACUTE CARE STROKE CARE FLOW MAP

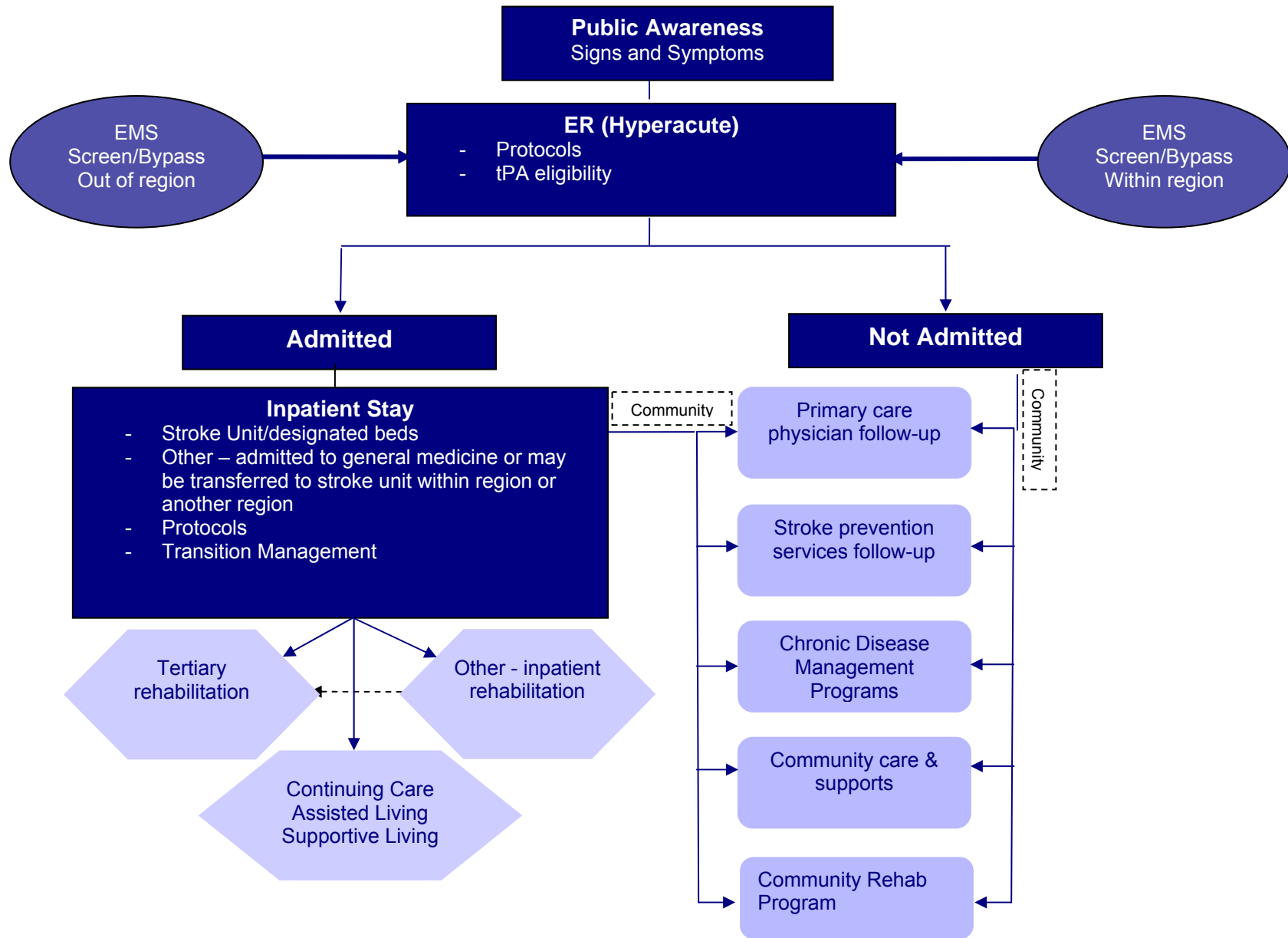
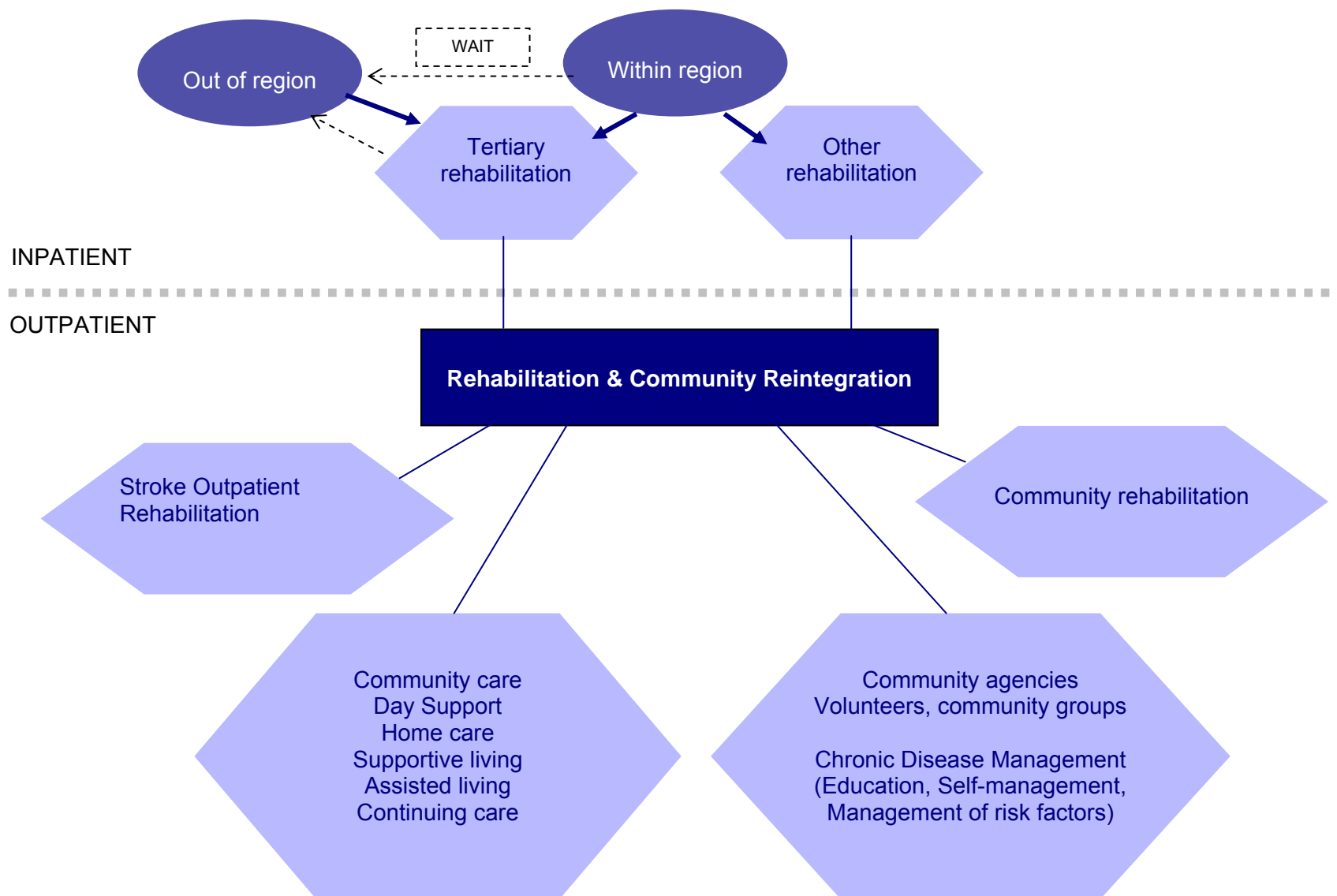


Figure C STROKE REHABILITATION AND COMMUNITY REINTEGRATION FLOW MAP



4.2 Network Relationships

Table B describes the levels of care and network relationships for acute stroke services. The model describes fundamental elements of stroke care and how different facilities in Alberta differ with regard to expertise, case mix and resources available to support stroke care. In order to provide equitable care across the province, the network model requires strong service relationships and consultation linkages between and within regions. The model implies that Category C to E facilities are supported by teams at more specialized centres (Category A and B) and when necessary patients are transferred or are linked via telehealth to facilities that best support their care needs.

Model Implications

In Alberta, there are a number of areas that need to be addressed to make the proposed model work.

- Strengthen Regional Hospital/Centres (Category B) as much as feasible - acute inpatient and rehabilitation
- Formalize clinical supports/education and mentoring relationships between Category A (tertiary sites) and B (regional sites)
- Formalize clinical supports/education and mentoring relationships between Category B and category C-E facilities
- IT/Telehealth technology in place to allow flow of information from one setting to another

TABLE B Proposed Inpatient Stroke Service Model for Alberta
(Guidelines to ensure the right patient at the right place at the right time for optimal care)

| COMPONENT OF CARE | CATEGORY A | CATEGORY B | CATEGORY C | CATEGORY D | CATEGORY E |
|--|--|--|--|--|---|
| | ▪ TERTIARY CENTRE (COMPREHENSIVE STROKE CENTRE) | ▪ MAJOR REGIONAL HOSPITAL (PRIMARY STROKE CENTRE) | ▪ CT SCAN/TPA SITE OTHER HOSPITAL (PRIMARY STROKE CENTRE) | ▪ CT SCAN WITHOUT TPA CAPABILITY | ▪ No CT |
| Bypass Protocol for tPA eligible | | | Bypass to A,B when standing down | Bypass to Category A,B,C | Bypass to Category A,B,C |
| Immediate Access to CT And tPA protocol | √ 24/7 | √ 24/7 | √ Bypass to A,B when CT not available | Within 24 hours of symptoms | Transfer protocol to CT site for diagnostics within 24 hours of symptoms |
| Acute Stroke Protocol in ED | √ 24/7 | √ 24/7 Designated stroke HCP and Physicians Supported by Specialized team from A | √ Designated stroke HCP and Physicians Supported by Specialized team from A,B | √ ▪ Transfer protocol or ▪ Supported by Specialized team from A,B | √ ▪ Transfer protocol or ▪ Supported by Specialized team at A |
| ED Telehealth (CT Image transfer and video link) | √ | √ | √ | √ | X |
| Acute Stroke Unit | √ | √ (Volume dependent) • Provide care on site via protocols or • Potential transfer to A | X • Potential transfer to A,B • Provide care on-site via protocols | X • Potential transfer to A,B • Provide care on-site via protocols | X • Potential transfer to A,B • Provide care on-site via protocols if no transfer |
| Specialized, dedicated multidisciplinary teams | √ | √ Supported by Specialized team at A | General teams supported by specialized teams from A,B | General teams supported by specialized teams from A,B | General teams supported by specialized teams at A,B |
| Inpatient Protocols | √ | √ | √ | √ | √ |
| Education/Enhanced Knowledge, regular access to professional development and education related to stroke | √ | √ Access to enhanced PD from A | Access to PD from A,B | Access to PD from A,B | Access to PD from A,B |
| Access to Advice | Access to sub-specialists from Category A | Access to specialists from A,B | Access to specialists from A,B | Access to specialists from A,B | Access to specialists at A,B |
| Stroke Rehabilitation Beds | √ | √ Supported by physiatry or other specialized stroke services in A | ▪ Rehab on general unit ▪ Possible transfer to A,B or other focused rehab setting | ▪ Rehab on general unit ▪ Possible transfer to A,B or other focused rehab | ▪ Rehab on general unit ▪ Possible transfer to A,B or other focused rehab |

| COMPONENT OF CARE | CATEGORY A ▪ TERTIARY CENTRE (COMPREHENSIVE STROKE CENTRE) | CATEGORY B ▪ MAJOR REGIONAL HOSPITAL (PRIMARY STROKE CENTRE) | CATEGORY C ▪ CT SCAN/TPA SITE OTHER HOSPITAL (PRIMARY STROKE CENTRE) | CATEGORY D ▪ CT SCAN WITHOUT TPA CAPABILITY | CATEGORY E ▪ No CT |
|---------------------------------------|---|--|---|---|---|
| | | | ▪ Supported by specialist from A,B | setting ▪ Supported by specialist from A,B | setting ▪ Supported by specialist at A,B |
| Telehealth in inpatient settings | √ | √ | √ | √ | √ |
| Secondary Stroke Prevention Follow-up | √ | √ (Volume dependent) OR Link via telehealth or patient transfer if lack of volume Vascular follow-up in local community | X Link via telehealth or patient transfer Vascular follow-up in local community | X Link via telehealth or patient transfer Vascular follow-up in local community | X Link via telehealth or patient transfer Vascular follow-up in local community |

Clinical Profile

All patients will benefit from admission to stroke units and organized stroke care delivered on these units. Due to varying clinical presentation, not all stroke patients will require the same level of care. The goal of the APSS is to create a system of care in the province to ensure that the right patient receives the right services at the right place. To some extent the decision to transfer patients between centers will be based on availability of clinical supports that are unique to each facility as well as available bed capacity. Stroke patients may be treated initially in a Primary or Comprehensive stroke centre and subsequently repatriated to their home health region or home hospital in the post acute phase while waiting for admission to rehabilitation beds at another site. The following table describes the clinical profile of patients that would benefit from various levels of care.

| CLINICAL PROFILE | CATEGORY A ▪ TERTIARY CENTRE (COMPREHENSIVE STROKE CENTRE) | CATEGORY B ▪ MAJOR REGIONAL HOSPITAL (PRIMARY STROKE CENTRE) | CATEGORY C ▪ CT SCAN/TPA SITE OTHER HOSPITAL (PRIMARY STROKE CENTRE) | CATEGORY D ▪ CT SCAN WITHOUT TPA CAPABILITY | CATEGORY E ▪ No CT |
|---|---|--|--|--|---|
| Management of all Stroke including complex with high risk of deterioration | √ Neurosurgical/radiological intervention Large intra-cerebral hemorrhage Significant disabling strokes with high potential to benefit from enhanced stroke team care Repatriation to home region in post acute phase | √ Potential transfer to A Situation dependent on available neurological and clinical support Repatriation to C,D,E facilities in post acute phase | X | X | X |
| Management of moderately complex with low to moderate risk of deterioration | √ | √ | √ or X Situation dependent on available neurological and clinical support | √ or X Situation dependent on available neurological and clinical support | √ or X Situation dependent on available neurological and clinical support Patient transported to another facility for CT scan |
| Stable stroke | √ | √ | √ | √ | √ |
| Patient/physician informed decision to decline transfer | | | √ | √ | √ |

Figures D and E describe the network relationships for acute inpatient care and rehabilitation.

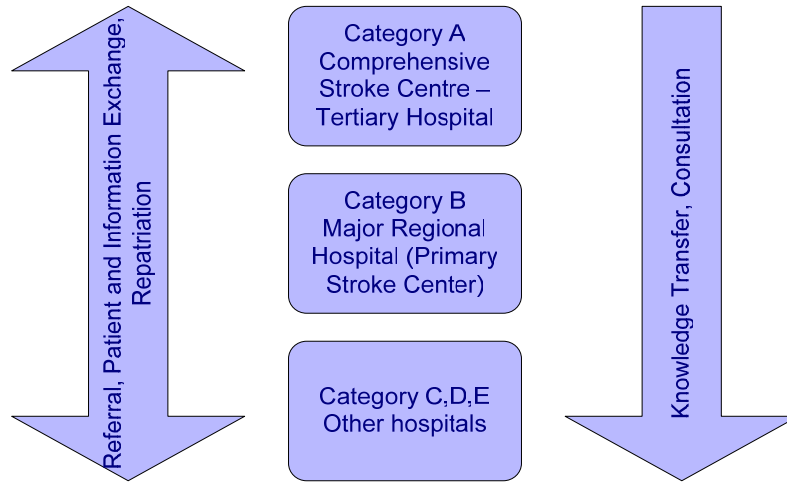


Figure D Acute Stroke Inpatient Care Model - Network Relationships

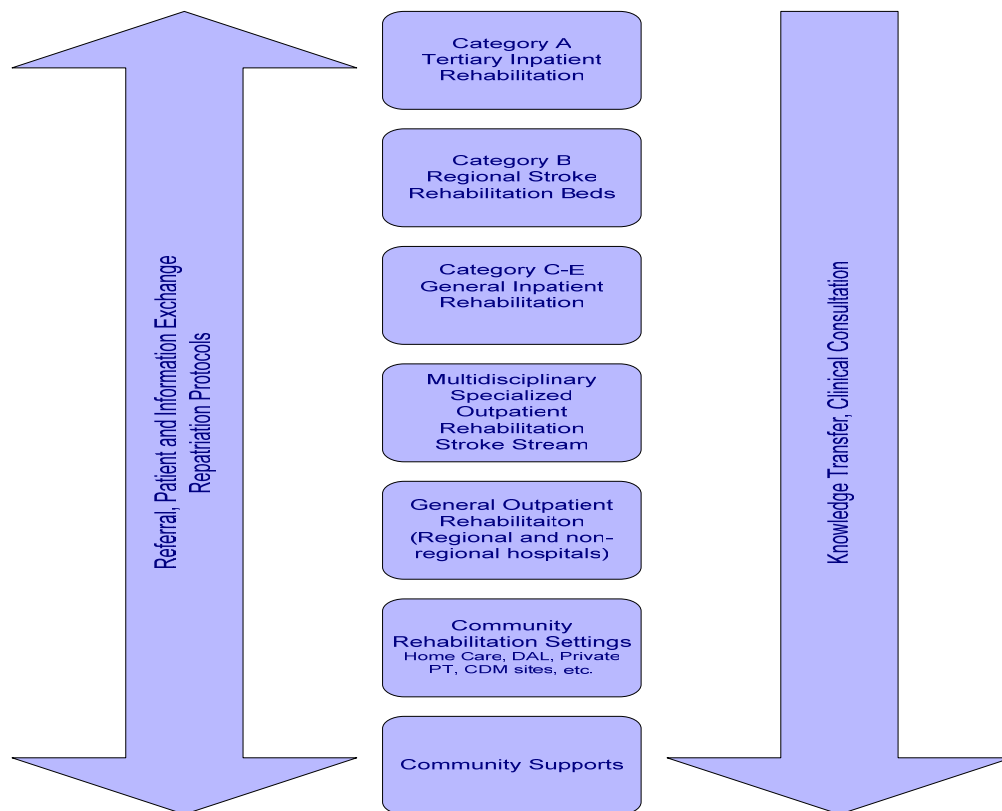


Figure E Stroke Model for Rehabilitation and Community Integration – Network Relationships

5.0 STRENGTHENING THE NETWORK OF STROKE SERVICES IN ALBERTA

The purpose of the APSS is to identify enhancements and develop solutions to strengthen the stroke system of care and ensure the right services are in place at the right time. To a great degree, strong stroke service and consultation relationships already exist in the province. Provincial network relationships are evident in a number of ways:

- 24/7 On-call Stroke Team Access at Comprehensive Stroke Centre for consultation
- Tertiary Care Access lines to arrange patient transfer and access tertiary specialists
- Referral and repatriation processes and agreements
- Education/mentoring of staff across health regions and across the continuum
- Access to Stroke Prevention Services to out of region patients
- Medicine Hat Regional Hospital and FMC linked for acute stroke
- UAH and Hinton pilot to link acute stroke/remote tPA administration
- Bypass protocols to tPA sites in some geographic areas across the province

While the current level of stroke service is impressive in Alberta, further service delivery and network relationship enhancements are needed to ensure appropriate access to services by all Albertans.

In January 2006, each health region began the process of evaluating their existing stroke service assets as a baseline for further stroke service planning. A high level summary of the Stroke Service Inventories and stroke incidence is provided in Appendix B. Subsequently, each Health Region has conducted a more detailed assessment of current stroke service assets, challenges (including access and process issues) and inter-regional linkages required to deliver optimal stroke care. Appendix C contains high level summaries of Health Region Stroke Plans.

In February 2006 each Pillar Committee began the work of defining best practice guidelines, articulating the ideal service pathway for stroke patients/thrivers, and developing protocols, algorithms, documentation tools and resource inventories to support best practice.

The following sections describe the current state of stroke services in Alberta and Health Region and Pillar plans to enhance services and linkages

5.1 Health Promotion and Disease Prevention (Pillar 1)

Generally, all individuals who experience a stroke have at least one risk factor. The most significant long-term impact from enhancements in stroke care and prevention will come from strategies aimed at reducing stroke incidence. Stroke prevention occurs at a number of levels including population health, primary and secondary prevention. Health promotion encourages populations to adopt healthy lifestyles and take control of their health. While primary prevention strategies are focused on otherwise healthy people with modifiable risk factors, secondary prevention is a clinical approach targeted at preventing high risk individuals (TIA, AF, post-stroke and other high risk) from having recurrent events.

5.1.1 Common Themes from Regional Stroke Plans – Current State/Gaps

The following are common themes that emerged through individual Health Region stroke planning processes:

- All health regions have a mandate for population health promotion and wellness and demonstrate a variety of approaches to promote health and prevent the development risk factors for stroke.
- Need for better primary care management of people with risk factors (especially hypertension)

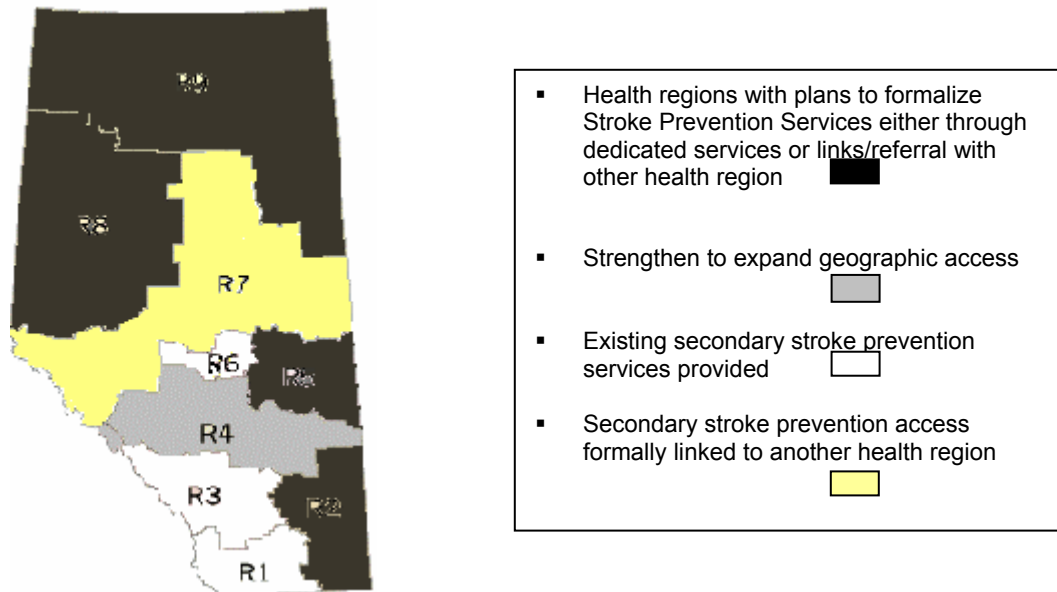
- Need to ensure consistent province-wide and local public education messaging through a more formalized approach and long term strategy
- Need for timely, accessible secondary stroke prevention services for TIA/previous stroke

5.1.2 Plans for Enhancing and Strengthening the Network of Care for Health Promotion and Stroke Prevention

a) Health Region Stroke Plans

- Recommend a provincial campaign, supported by local initiatives, around signs and symptoms and risk factors for stroke to ensure consistent messaging
- All health regions have plans to integrate stroke patients and people at risk for stroke into their existing or developing Chronic Disease Management programs and Local Primary Care Networks
- Secondary Prevention Clinics or better linkages to other regions for secondary prevention are being developed in the following health regions. Services already exist in the others.

**Secondary Stroke Prevention
Figure A.**



b) Pillar 1 Committee Plan

- Provincial public awareness campaign proposal and recommendations for other local awareness strategies.
- Recommend education strategies (Family physicians, other HCPs, public)
- Inventory of common resource materials for primary and secondary prevention (HSFA resources, Health Link etc.)
- Recommend simple screening tool for lipids and hypertension
- Best practices, protocols, resources, and documentation tools for primary prevention and secondary prevention services
- Ideal secondary prevention health service pathway for individuals with previous stroke/TIA to ensure appropriate follow-up, education, self-management support

5.2 Emergency Services and Acute Care (Pillar 2)

Effective emergency response in the field through optimal pre-hospital assessment, minimized delays and rapid transport to the most appropriate hospital is critical to improving stroke outcomes. Time is brain and a rapid, coordinated and consistent response in the emergency room is also essential to optimal outcomes. Admission to a stroke unit or cluster of beds with a dedicated multidisciplinary stroke team following evidence-based protocols is proven to reduce complications, mortality, shorten stays and improve function.

5.2.1 Common Themes from Regional Stroke Plans – Current State/Gaps

The following are common themes that emerged through individual Health Region stroke planning processes:

Prehospital Care

- EMS Bypass protocols and assessment protocols are inconsistently available across the province or partially applied within individual health regions
- Some regions have specific stroke protocols while other use general ALS or BLS guidelines
- Need for ongoing formal standardized education program re all protocols in all settings

Emergency Department Management

- Need to enhance ED stroke response through standard stroke protocols and Stroke Teams (or staff with enhanced knowledge in centres with smaller volumes with formal consultation links to Comprehensive or Primary Stroke Centres)
- Need for formal stroke protocol training
- Exploit CT sites as tPA sites, enhance hours of CT availability and telestroke infrastructure

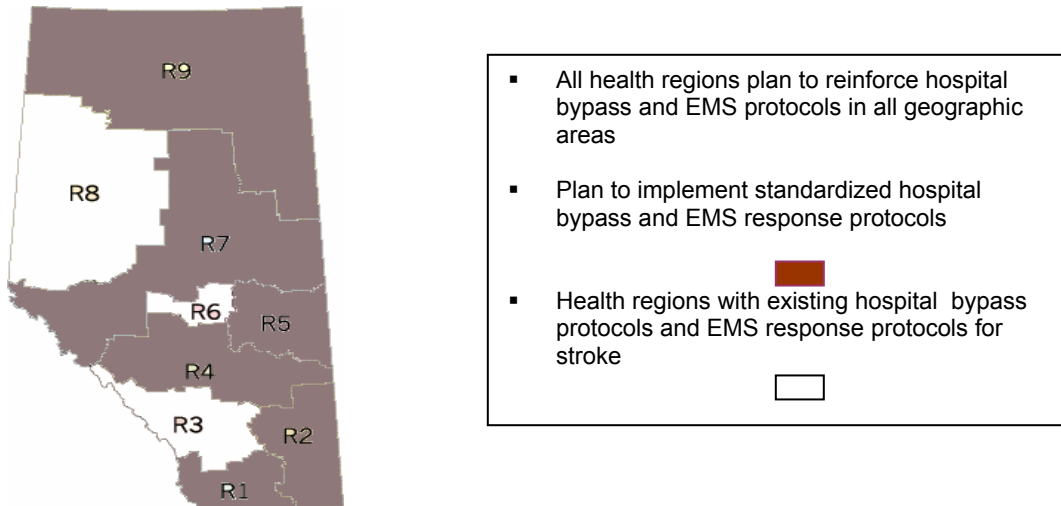
Inpatient Care

- Implement protocols and education for care across all inpatient centres not just stroke units
- Enhancements of rehabilitation staff
- Leverage telehealth for mentoring and support between sites
- Enhance discharge protocols

5.2.2 Plans for Enhancing and Strengthening the Network of Care for Emergency Response and Acute Care

a) Health Region Stroke Plans

Hospital Bypass Protocols and EMS Response Figure B.



CT/tPA Capability

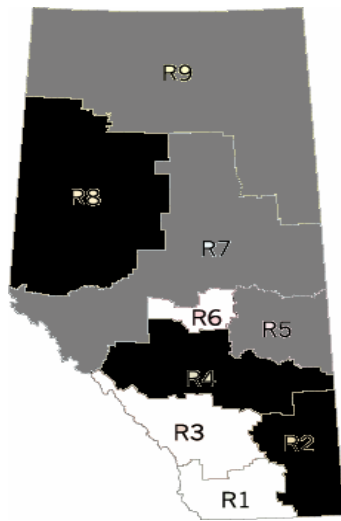
All tertiary and regional hospitals have or plan to have CT/tPA capability 24/7. Most regional hospitals have tPA capability at the present time but differ in their ability to provide access to services 24/7.

| CATEGORY A TERTIARY CENTRE (COMPREHENSIVE STROKE CENTRE) | CATEGORY B MAJOR REGIONAL HOSPITAL (PRIMARY STROKE CENTRE) | CATEGORY C CT SCAN/TPA SITE OTHER HOSPITAL (PRIMARY STROKE CENTRE) |
|---|---|---|
| Calgary * 24/7 | Lethbridge * | Camrose |
| Edmonton * 24/7 | Medicine Hat *April 28/06 | Lloydminster |
| | Red Deer * | Hinton |
| | Grande Prairie * | Potential future sites - Peace River, Westlock, Cold Lake, Drumheller, Wetaskiwin, Brooks |
| | Fort McMurray | |

* indicates tPA protocols in existence and operational.

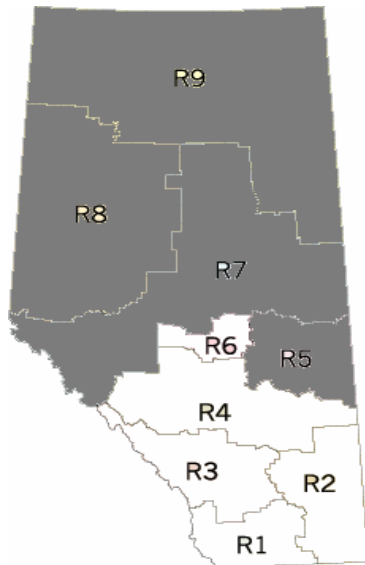
See Appendix D Current Alberta Locations of CT Scanners. These are sites that could potentially be exploited for a tPA site/primary stroke centre site.

**Stroke Teams/Protocols – Emergency Room
Figure C.**



- Health regions to introduce ED Stroke Teams and protocols
- Plan for trained staff following protocols and linked to Comprehensive or Primary Stroke Centre for clinical support
- Health regions with existing Stroke Teams and protocols in ER

**Dedicated Stroke Beds and Protocols
Figure D.**



- Existing dedicated stroke beds for acute management with teams and protocols
- No plans for dedicated stroke beds but intend to introduce protocols and clinical linkages

b) Pillar 2 Committee Plan

- Standardized Hospital Bypass, EMS assessment and transport protocols.
- Standardized Inpatient and Emergency Department stroke and TIA protocols
- Documentation tools to support protocols
- Inventory of common resource materials available
- Education content/strategies for implementation

5.3 Rehabilitation and Community Re-integration (Pillar 3)

Stroke rehabilitation is an active, goal-oriented process to reduce morbidity, increase function and quality of life following a stroke. Rehabilitation begins in the acute phase of stroke care and often continues once the stroke survivor has been discharged. Effective management of transitions between acute care to rehabilitation and to home or other health care organization can reduce hospital stays, facilitate rehabilitation and speed recovery. Adequate community supports at all levels (health and social service partners, informal volunteer groups etc.) help the stroke survivor and their caregivers to assume control of their health and health care, deal with emotions, get around and return to work or normal social functions.

5.3.1 Common Themes from Regional Stroke Plans – Current State/Gaps

The following are common themes that emerged through individual Health Region stroke planning processes:

Inpatient Rehabilitation

- Need to reduce inequities of care in all inpatient settings through introduction of protocols, and formal education/mentoring/tele-consultation relationships with tertiary and regional centres
- Some regional centres are exploring or have plans to implement dedicated stroke rehabilitation beds for post-acute rehabilitation
- Need for better access to some tertiary rehabilitation services eg. dysphagia

Outpatient Rehabilitation

- Outpatient rehabilitation is often limited and not specific to stroke – requires enhancement
- Need to enhance capacity of staff in all settings through standardized protocols, training and resource materials as well as access to tele-consultation and support
- Access to specialized dysphagia services

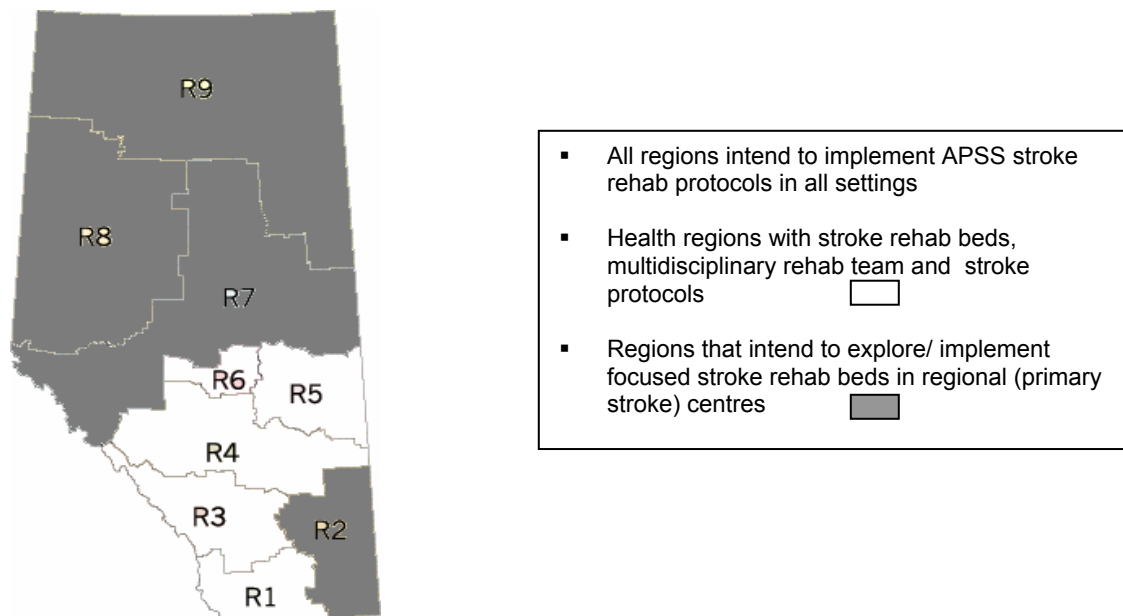
Community Reintegration – ‘Stroke Thrivers’

- Formally link stroke thrivers to Chronic Disease Management post-stroke programs (education, self-management, exercise, social support)
- Explore ‘Stroke Coordinator’ to assist with navigation/case management
- Explore/implement ‘Living with Stroke’ program (HSF)
- Community development model at local level to engage community groups, volunteers and non-health region organizations

5.3.2 Plans for Enhancing and Strengthening the Network of Care for Rehabilitation and Community Reintegration

a) Health Region Stroke Plans

Inpatient Stroke Rehabilitation Figure E



b) Pillar 3 Committee Plan

- Tool to stream patient to most appropriate level of care within and between health regions
- Definition of basic level of care expected at each level of care
- Define best practices and protocols at each level of care
- Tool to ensure appropriate referral to rehabilitation
- Documentation tools to support protocols
- Standard swallowing screen.
- Recommended strategies to ensure patient access or awareness of community supports
- Inventory of common resource materials available and template to assist regions with documentation and collection of community supports
- Recommend education/mentoring strategies to enhance capacity of health care providers across settings and health regions

6.0 HEALTH REGION PRIORITIES

Not all service enhancements can be implemented at the same time and each health region is differentiated by the extent of enhancements required and the implementation resources available. As part of the planning process, each health region was asked to indicate a proposed order for implementation. The following table (Table C) highlights individual Health Region priorities for stroke service and network enhancements organized by Pillar. One time and expected annual operating costs are indicated as available.

TABLE C:
Health Region Priorities - Pillar 1 Health Promotion and Disease Prevention

| HEALTH PROMOTION AND DISEASE PREVENTION | |
|---|---|
| HEALTH REGION | PRIORITY (IN ORDER OF) |
| Chinook | <ol style="list-style-type: none"> 1. Stroke Prevention Coordinator for CDM 2. TIA observation in ER – Stroke Prevention Nurse 3. Regional Stroke Education Plan and Campaign |
| Palliser | <ol style="list-style-type: none"> 1. Implement best practices as established by Pillar 1 2. Integrate stroke prevention (primary and secondary) into PCN/CDM |
| Calgary Health Region | <ol style="list-style-type: none"> 1. Communication strategy in CHR to increase public awareness of signs and symptoms 2. Inventory of stroke resources and increased awareness of these resources by HCP and patients 3. Develop HCP Stroke Education Plan 4. Health Information Passport |
| David Thompson | <ol style="list-style-type: none"> 1. Establish referral linkage to repatriate patients back to SPC in Red Deer from Calgary/Edmonton 2. Stroke case navigator to ensure follow-up of patients beyond ER 3. Integrate stroke prevention into CDM |
| East Central | <ol style="list-style-type: none"> 1. Stroke Education Program for primary prevention 2. Telehealth in Daysland 3. Referral process to Stroke Prevention Clinic in Edmonton 4. Introduce APSS Assessment tool and guidelines for TIA 5. Assess feasibility of Carotid Dopplers in region |
| Capital | <ol style="list-style-type: none"> 1. Increase Stroke Telehealth Coordinator position (0.15 FTE Stroke Telehealth Coordinator) 2. Increase Stroke Prevention Clinic services at RAH (0.4 FTE Stroke Coordinator/RN); Consider enhancing clerical support staff to meet service volumes at both UAH and RAH (1.0 FTE) 3. Implement current standard of practice diagnostic and intervention services (need to replace carotid Doppler machine, purchase transcranial Doppler equipment, recruit Transcranial Doppler technologist/RN), purchase 24 hour blood pressure monitoring units 4. Consider expansion of stroke prevention clinics to include multidisciplinary services |
| Aspen | <ol style="list-style-type: none"> 1. Chronic Disease Prevention and Management Coordinator |

| HEALTH PROMOTION AND DISEASE PREVENTION | |
|--|---|
| HEALTH REGION | PRIORITY (IN ORDER OF) |
| | <ol style="list-style-type: none"> 2. Stroke Plan Prevention and Promotion Project Lead 3. Determine need for further secondary prevention initiatives |
| Peace Country | <ol style="list-style-type: none"> 1. Term Program Developer for CDM 2. Referral Forms/Protocol for current regional programming and to Stroke Prevention Services in Edmonton for TIA/Post-stroke patients 3. Educator/facilitator for promotion and prevention education |
| Northern Lights | <ol style="list-style-type: none"> 1. Increase public awareness of signs and symptoms 2. Integrate stroke prevention into PCN/CDM 3. Introduce stroke specific education through Health Promotion Coordinators |

Health Region Priorities - Pillar 2 Emergency Services and Acute Care

| EMERGENCY SERVICES AND ACUTE CARE | |
|--|--|
| HEALTH REGION | PRIORITY (IN ORDER OF) |
| Chinook | <ol style="list-style-type: none"> 1. Stroke Program Coordinator 2. Stroke Unit 3. Telestroke infrastructure and linkage to Calgary |
| Palliser | <ol style="list-style-type: none"> 4. Implement Pillar 2 BPGs 5. Implement Stroke Team 6. Implement Telestroke linkage to Calgary |
| David Thompson | <ol style="list-style-type: none"> 1. Implement bypass 2. EMS Training re bypass and stroke protocols 3. Process to establish 24/7 tPA capability in ER 4. Explore use of other CT sites for tPA (Wetaskiwin and Drumheller) |
| Calgary Health Region | <ol style="list-style-type: none"> 1. Establish formal standardized stroke education program for EMS, EDs, Urgent Care Centres, urban and rural 2. Formalize Stroke Telehealth Program 3. Establish formal system of support for off-service stroke patients in both urban and rural hospitals |
| East Central | <ol style="list-style-type: none"> 1. Develop and implement EMS by-pass protocols and ED tPA protocols at St. Mary's (Camrose) and Lloydminster 2. Designate stroke beds and fund nursing coverage at St. Mary's and Lloydminster 3. Telehealth linkage to Edmonton - cameras in trauma rooms at St. Mary's and Lloydminster |
| Capital | <ol style="list-style-type: none"> 1. Implement consistent EMS protocol (will require communication strategy and training) 2. Establish transcranial Doppler service within region for acute stroke and vasospasm 3. Determine availability of additional medical and/or nursing staff and potential models of care in order to provide coverage for regional sites and out-of-region consultation services (i.e., support for remote |

| EMERGENCY SERVICES AND ACUTE CARE | |
|-----------------------------------|--|
| HEALTH REGION | PRIORITY (IN ORDER OF) |
| | tPA/Telestroke consultation 4. Develop infrastructure, Telehealth protocols, and DI support (PACS) to support remote tPA intervention 5. Establish tPA/stroke observation monitoring beds at designated regional sites 6. Enhance inpatient rehabilitation and psychosocial services 7. Establish TIA monitoring beds at designated regional sites (<i>further discussion is required</i>) |
| Aspen | 1. Stroke Project Leader to coordinate the ongoing development and implementation of the Regional Stroke Plan 2. Develop CT connections and telehealth with Capital Health to develop Hinton, Westlock and Cold Lake as tPA/stroke sites |
| | 1. |
| Peace Country | 2. Recruit Stroke Coordinator 3. Educate staff re best practices/protocols 4. Stroke Team development 5. Dedicated Stroke Beds |
| Northern Lights | 1. Implement EMS standard assessment tools as per Pillar 2 Prehospital BPGs 2. Implement ED stroke protocols including tPA administration linked to Edmonton 3. Implement and train inpatient protocols/BPGs for stroke |

Health Region Priorities - Pillar 3 Rehabilitation and Community Reintegration

| REHABILITATION AND COMMUNITY REINTEGRATION | |
|--|--|
| HEALTH REGION | PRIORITY (IN ORDER OF) |
| Chinook | 1. Stroke Rehab Coordinator 2. Swallow Study Research 3. Education Funding 4. Physiatrist |
| Palliser | 1. Implement Pillar 3 BPGs |
| David Thompson | 1. Weekend rehabilitation coverage 2. Business cases to support enhanced level of rehab 3. Linkages with CDM programs 4. Education and communication re above priorities |
| Calgary Health Region | 1. Establish formal standardized stroke education program 2. Link post stroke population to CDM programs and provide with stroke resources 3. Provide support to Stroke Rehabilitation telehealth project 4. Build a Rehabilitation and Reintegration health service map including inventory and navigation tools |
| East Central | 1. Assess need and funding for rehabilitation resources for care improvement |

REHABILITATION AND COMMUNITY REINTEGRATION

| HEALTH REGION | PRIORITY (IN ORDER OF) |
|-----------------|--|
| | <ol style="list-style-type: none"> 2. Implement and educate rehab protocols 3. Stroke Navigator role within SAGE. Possible stroke intake RN |
| Capital | <ol style="list-style-type: none"> 1. Establish Stroke Rehabilitation Transition Unit at GRH 2. Recruit tertiary rehabilitation Nurse Practitioner position 3. Implement on-site dysphagia services at GRH and ensure state of the art instrumentation 4. Enhance outpatient rehabilitation and psychosocial services 5. Develop plan to provide central and northern regions with access to multidisciplinary rehabilitation consultation through direct visits, clinical Telehealth, and Telementoring services 6. Develop plan for community dysphagia team (need for portable dysphagia instrumentation) 7. Implement H&SF “Living with Stroke” program |
| Aspen | <ol style="list-style-type: none"> 1. Stroke Case Coordinator 2. Education to address rehab professional development needs 3. Investigate dysphasia needs |
| Peace Country | <ol style="list-style-type: none"> 1. Enhance secondary speech services at QEII 2. Increase staffing levels at key rural sites to facilitate regional management of early strokes 3. Stroke BPG and protocol training 4. Explore opportunity for designated stroke rehab beds |
| Northern Lights | <ol style="list-style-type: none"> 1. Implement and educate staff re Pillar 3 BPGs 2. Explore telehealth opportunities in gap areas eg. S/L follow-up 3. Work with community resources and PCN to develop and implement support services and resources for clients and caregivers 4. Stroke Coordinator for APSS project (2 years) |

7.0 APSS BUSINESS PLAN (APRIL 2006 – DECEMBER 2007)

During the regional stroke planning process a number of common themes emerged in relation to potential areas of focus at the provincial level. The following is a business plan that articulates the functions and activities to be undertaken by the Alberta Provincial Stroke Strategy to address these areas.

| STROKE EDUCATION/KNOWLEDGE TRANSLATION | |
|--|-----------------------------------|
| To make recommendations regarding the development, coordination, implementation and evaluation of education within the Alberta Provincial Stroke Strategy (APSS). | |
| <ul style="list-style-type: none"> ○ Identify and prioritize regional stroke education and training needs with input from APSS Pillars and Regional Stroke Steering Committees ○ Identify current stroke education initiatives in place and build on their strengths in accordance with best practice guidelines ○ Build a network that allows regional education coordinators to communicate issues and ideas regarding the development, implementation and evaluation of educational programs to promote best practice stroke care ○ Identify resources required to sustain learning over the long term ○ Increase access to and continuity of knowledge transfer, training & education using a variety of modalities | Business Case October 2006 |

| TELESTROKE | |
|--|----------|
| Coordinate the use of telehealth to provide an efficient, reliable network to support stroke care that operates seamlessly across Alberta. | |
| <ul style="list-style-type: none"> ○ Identify and evaluate potential telehealth technical solutions including interim and longer term solutions to support clinical processes across the care continuum. ○ Inventory existing Telehealth and CT-associated network capabilities and develop plan for implementing gaps ○ Define telehealth support requirements and options. ○ Propose a “telehealth implementation toolkit” to support the implementation phase of the Telestroke strategy at a local level. ○ Identify critical issues and challenges and propose a risk mitigation plan. | Dec 2006 |

| INFORMATION MANAGEMENT | |
|--|----------|
| Ensure that the Electronic Health Record implementation incorporates stroke protocols to enhance the delivery of an organized set of stroke interventions. | |
| <ul style="list-style-type: none"> ○ APSS Stroke Protocols developed by APSS Pillars ○ Protocols incorporated into EHR to guide care and ensure organized interventions ○ Liaise with Meditech and PCIS/CCIS through regional representatives on Pillar/Steering Committees ○ Identify training requirements for use of electronic protocols | Dec 2007 |

| BEST PRACTICES | |
|---|--|
| The use of best practice organized and standardized approach in each facility and component of the system | |

| ACTIONS | TIME |
|--|---|
| <ul style="list-style-type: none"> ○ articulate basic service components and expectations for service delivery across the continuum ○ develop formal evidence based guidelines for acute stroke care aligning with Canadian Stroke Strategy best practice guidelines ○ develop protocols, algorithms, documentation tools, resource materials to support best practice guidelines ○ recommend education strategies and curricula for knowledge transfer ○ act as a resource to RHAs on the development of regional and interregional stroke plans and implementation to ensure alignment with evidence based practice ○ recommend evaluation indicators to Evaluation Pillar | <p>BPG/protocols June 06</p> <p>APSS Conference Sept 06 to introduce guidelines</p> |

| EVALUATION | |
|---|--|
| <p>Evaluation will be a key component of the Alberta Provincial Stroke Strategy (APSS) to demonstrate province-wide effectiveness of the strategy. The goals of Pillar 4 are:</p> <ul style="list-style-type: none"> ○ To evaluate the effectiveness of the APSS in reducing adverse stroke outcomes, improving access to best care, and improving health care efficiency and reducing costs. ○ To provide a sustainable system of stroke surveillance for Alberta. ○ To evaluate the effectiveness of the APSS in improving population knowledge of stroke. ○ To assist in the development of a system of quality control for stroke care. | |
| ACTIONS | TIME |
| <p>The evaluation plan will make use of existing sources of data including administrative datasets maintained by health regions and by Alberta Health and Wellness; data from Stroke Prevention Clinics already in existence; homecare and community rehabilitation databases, functional scores (FIM) from tertiary rehabilitation hospitals.</p> <p>New sources of data are proposed:</p> <ul style="list-style-type: none"> ○ Currently existing administrative datasets will be enhanced through addition of FIM scores to acute care hospital discharge abstracts and through validation of stroke diagnostic codes and interventions to optimize medical record coding for stroke diagnostic codes. ○ Two waves of province-wide random inpatient chart reviews to assess performance on key indicators pre and post implementation of the APSS ○ Surveys pre and post implementation to determine the impact of the APSS on public knowledge of stroke and on the experience of stroke survivors who have re-entered the community (quality of life and access to community services). ○ New regional databases tracking specific stroke indicators. Includes data from new and established Stroke Prevention Clinics. | <p>December 2007</p> <p>Interim report Spring 2007</p> |

8.0 NEXT STEPS – PUTTING THE STRATEGY INTO ACTION

The APSS Blueprint has provided an overview of the current stroke service capacity in the province including inter-regional service linkages. Each health region and APSS Pillars has completed a significant amount of work to clearly articulate the needs and the road ahead. Major services gaps and opportunities for strengthening service delivery and networks have been highlighted. Regional priorities have been determined. While giving clear direction for moving forward, the Alberta Stroke Blueprint and regional stroke plans are not static but will change over time as events and new ideas evolve.

Over the next months health regions and community partners will work collaboratively to begin to implement service enhancements within their health region, and between health regions. During implementation health regions will participate in a process to track their activities, progress and investment in stroke care and prevention working collaboratively with the Alberta Stroke Council.

The APSS will work collaboratively with health regions to develop implementation plans including timelines, providing central support to the implementation of the key initiatives, facilitating linkages between partners and health regions, and providing provincial leadership and direction on issues that have a provincial focus.

In the Fall 2006, the Alberta Stroke Council will meet to assess overall needs and allocate Phase II funding to high priority areas.

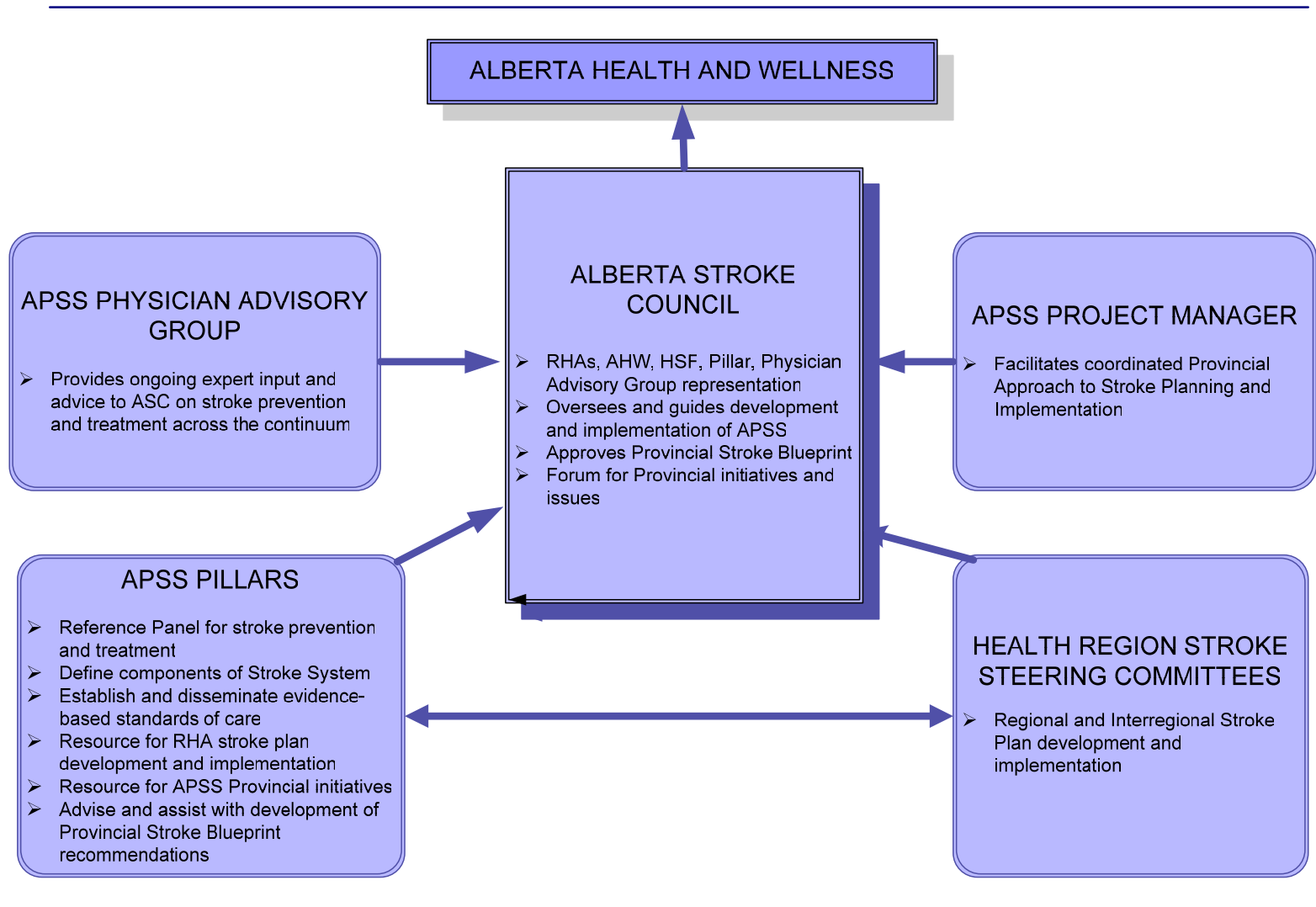
Appendix A

APSS ORGANIZATION AND PROCESS

APSS PROJECT PROCESS

| CONCEPTUALIZATION AND MOBILIZATION APRIL TO JANUARY 2005 | PLANNING FOR CHANGE NOVEMBER 2005 TO APRIL 2006 | IMPLEMENTING THE CHANGE JANUARY 2006 TO SEPTEMBER 2007 | EVALUATION AND SUSTAINING GAINS APRIL 2005 TO SEPTEMBER 2007 |
|---|---|---|---|
| <p><i>Structure and Organization</i></p> <ul style="list-style-type: none"> ✓ Alberta Stroke Council ✓ Regional Steering Committees ✓ Pillars ✓ Physician Advisory Group ✓ Project Manager ✓ Champions ✓ Project Charter ✓ APSS Principles ✓ Ground Rules ✓ Process for Funding Allocation ✓ Health Region Accountabilities ✓ Strategy Development Process ✓ Decision Points and Criteria ✓ Service Design Principles ✓ Communication Strategy | <p><i>Blueprint for Stroke</i></p> <ul style="list-style-type: none"> ✓ Basic Standards/Components and Expectations for a system of Stroke Prevention and Management ✓ Map of stroke prevention and care delivery in each Health Region (Current and Desired Future) ✓ Define major Gaps/Disconnects between inventory of current stroke care services and Basic Standards/Components. ✓ Continue to move forward and implement immediate known priority service gaps with Health Region Year 1 \$ allocation ✓ Develop Stroke Plans (Provincial, Regional and Network/Inter-Regional). Phased roadmap to fill gaps and respond to basic standards/components and expectations. ✓ Develop Provincial Plans Education, Telestroke, IM/IT ✓ High Level Costing of Provincial and Regional Plans ✓ Provincial Stroke Blueprint Roll-up of Provincial, Regional and Inter-Regional/Network Stroke Plans by Project Manager and Pillars ✓ Approval of Provincial, Network and Regional Stroke Plans by ASC ✓ Allocation of Year 2 Funding based on Blue Print Document, identified priorities | <p><i>Putting Services Into Place</i></p> <ul style="list-style-type: none"> ✓ Implement new or enhanced services/processes to fill service gaps and address disconnects ✓ Evaluate <u>new and existing services</u> against best practice guidelines (Guidelines produced by Pillars). Change practice as appropriate. <p><u>Process</u></p> <ul style="list-style-type: none"> ✓ APSS Pillars outline best practice guidelines for each component of care (eg. Stroke prevention) ✓ Health Regions develop Service Plans and Operational Plans for their respective health regions ✓ Pillar expertise to assist with implementation in health regions and ensure consistency of standardized approach to stroke care ✓ Progress Reports to Regional Stroke Steering Committee and Alberta Stroke Council on status of implementation | <p><i>Did We Accomplish the Goals?</i></p> <ul style="list-style-type: none"> ✓ Evaluation Framework (core indicators of performance) ✓ Baseline data collection ✓ Surveillance to identify problems or measure progress across continuum ✓ Audit Tools <p><u>Sustaining Gains</u></p> <ul style="list-style-type: none"> ✓ Development of Ongoing Service Networks ✓ Sustaining and Coordinating Structures |

ALBERTA PROVINCIAL STROKE STRATEGY ORGANIZATION CHART



APSS - HEALTH REGION ACCOUNTABILITIES AND RESPONSIBILITIES

Principles:

1. Stroke services need to be coordinated on a provincial basis to ensure all Albertans have reasonable access to stroke prevention and management services. The best interests of the patient are considered first and foremost above those of geopolitical boundaries
2. While each RHA is accountable for service delivery planning and implementation within their region, each health region is accountable to provide leadership and stewardship at the provincial level to ensure all Albertans have reasonable access to stroke prevention and management services with the intent of improving outcomes of care.
3. Stroke needs a systems management approach to address specific issues (e.g. remote areas, deficits in diagnostics/technology, human resource shortages), to ensure adequate linkages and coordination are achieved and to optimize the impact of the available resources for allocation
4. Comprehensive stroke centres (centres with specialized resources and personnel available to provide stroke treatment and rehabilitation that surpass those services expected in primary stroke centres or other facilities) shall accept responsibility for collaborating and providing service in ways that promote patient access to an appropriate level of care.

Responsibilities of Each Health Region

1. Develop and maintain a regional plan of stroke care across the continuum, building on existing services, expertise and capacity as well as relationships with other health regions. Develop a plan for how services would be delivered in the region for each component of each Pillar to create a system of stroke care.
2. Maintain a Regional Stroke Steering Committee to oversee development of the regional stroke plan, prioritization, coordination, evaluation and implementation of stroke services.
3. Align RHA Stroke Plans with the Alberta Provincial Stroke Strategy and the components, standards and expectations as determined by the APSS Pillars, Alberta Stroke Council and the Canadian Stroke Network/Strategy, to ensure best-practice, integration and consistency of approach.
4. Demonstrate a systems approach to stroke planning to ensure stroke care is coordinated across the continuum. Organize stroke care on a regional and inter-regional basis establishing networks that follow natural referral patterns. Partner with other health regions to ensure the provision of a network of services in the South/North areas of the province so that all Albertans, especially those in rural and remote areas, have reasonable access to care.
5. Provide leadership and partner with other parts of the health region or other health regions to provide and fund outreach services to support enhanced consultation or service delivery to other regions of the province where services may not exist or are not feasible to provide.
6. Participate in the development of best practices and consistent approaches to care by providing representation to the APSS Pillar Committees and Provincial or National Stroke Working Groups
7. Participate in strategy development for human resources, education, training, evidence-based care, technology, information management, and evaluation undertaken at the provincial level.
8. Provide leadership and mentoring to share expertise and promote knowledge transfer in stroke prevention and management

9. Develop and submit Regional Stroke Plan and progress reports to the Alberta Stroke Council on a regular scheduled basis to include status of stroke plan development, implementation status, financial allocation and outcomes (as per APSS Grant Agreement)

Responsibilities of Regional Stroke Steering Committees

Each health region will put in place an appropriate planning, implementation and coordination structure to support the following functions and activities:

1. development of services and processes that meet the Pillar components of the Alberta Provincial Stroke Strategy as established by Pillar Committees
2. development and implementation of services and care plans that meet best practices as defined by Pillars and APSS service development principles.
3. monitoring the effectiveness of stroke plans by working closely with the APSS Evaluation and Monitoring Pillar to collect and coordinate core indicator data.
4. establishment of organization infrastructure in the health region for the development and ongoing implementation of stroke care practices. Identify medical and administrative contacts in the health region that will be accountable for development and implementation of each Pillar of the strategy

Appendix B

HEALTH REGION STROKE SERVICES INVENTORIES/STROKE STATS

APSS Stroke Service Inventory

| COMPONENTS OF OPTIMAL STROKE CARE | CHINOOK (1) | PALLISER (2) | CALGAR Y (3) | DAVID THOMPSON (4) | EAST CENTRAL (5) | CAPITAL (6) | ASPEN (7) | PEACE (8) | NORTHERN LIGHTS (9) |
|--|------------------------|--------------|--------------|--------------------------|--|-------------|-----------------------------------|-----------|-----------------------|
| Primary Prevention | | | | | | | | | |
| Population health programs to decrease the development of risk factors | Yes | Yes | Yes | Yes | Yes | Yes | Edson Yes St. Paul No | Yes | Yes |
| Primary prevention programs focused on established disease risk factors for stroke (hypertension, cholesterol, diabetes, AF) | Yes | Yes | Yes | CDM Program in developmt | Some – CDM in place April 06 | Yes | Yes | Yes | Yes |
| Awareness | | | | | | | | | |
| Organized public awareness programs on signs of stroke and emergency response | Yes | Some | No | Yes | Yes | No | No | No | No |
| Secondary Prevention | | | | | | | | | |
| Secondary stroke prevention for high risk individuals (TIA, previous strokes, other high risk populations) including a plan for lifestyle modification, pharmacotherapy, access to education resources and communication with family physician | Yes | No | Yes | Yes Red Deer | No – Edmonton Stroke Prevention clinic | Yes | Edmonton Stroke Prevention Clinic | No | Not routine |
| Early carotid revascularization | Calgary | Calgary | Yes | Calgary/Edmonton | Edmonton | Yes | Edmonton | Edmonton | Edmonton |
| Notification and Response of EMS | | | | | | | | | |
| EMS awareness, rapid assessment and transport protocols to nearest primary | No transport protocols | No | Yes | 6/16 | Yes | Yes | No | Yes | No transport protocol |

| COMPONENTS OF OPTIMAL STROKE CARE | CHINOOK (1) | PALLISER (2) | CALGARY (3) | DAVID THOMPSON (4) | EAST CENTRAL (5) | CAPITAL (6) | ASPEN (7) | PEACE (8) | NORTHERN LIGHTS (9) |
|---|--|--------------------------|-------------|--------------------|---------------------|----------------------|-------------|------------------------------------|---------------------|
| or comprehensive stroke centre | | | | | | | | | Yes assessmt |
| Acute Treatment of Stroke in ED | | | | | | | | | |
| Non-primary stroke hospitals have written protocols to transfer patients in timely way to the appropriate destination | No | No | Yes | No | Yes | No | No | Yes in GP No in other locations | No |
| Stroke team in ED | Yes - modified | No (Spring06 MHat) | Yes | No | Yes | Yes | No | No | No |
| Protocols for acute stroke in ED | Yes | Yes Implementation Phase | Yes | Yes | No | Yes | Some (20%) | Yes in GP No in others | No |
| Timely neuroimaging | Yes | Yes | Yes | Yes | No | Yes | No | Yes in GP | Ft. Mc only |
| Early and appropriate acute stroke care +tPA within 3 hours/or -tPA | Limited times when neurologist available | Yes | Yes | Yes | No | Yes UofA | No Edmonton | Yes in GP | No |
| Inpatient Care for Stroke Admissions | | | | | | | | | |
| Stroke unit or geographically designated beds | Yes | Yes - MHat | Yes | Yes | No | Yes | No | No | No |
| Evidence-based pathways/protocols to ensure organized interventions, targeting prevention of complications and ensuring early mobilization and rehabilitation | Yes | No Spring 2006 | Yes | Yes | No | Yes (needs revision) | Some sites | No | No |
| Multidisciplinary stroke team with enhanced knowledge of stroke care and mandate to coordinate care | Yes | No | Yes | Yes | No Transfer to SAGE | Yes | No | No | No |
| Early discharge planning and smooth transitions to ensure appropriate and timely access to service | Yes | No | Yes | Yes | Yes | Yes | No | Yes (needs work) | Yes |

| COMPONENTS OF OPTIMAL STROKE CARE | CHINOOK (1) | PALLISER (2) | CALGAR Y (3) | DAVID THOMPSON (4) | EAST CENTRAL (5) | CAPITAL (6) | ASPEN (7) | PEACE (8) | NORTHERN LIGHTS (9) |
|---|--------------------------|-----------------------|---------------------|---------------------------|--------------------------|--------------------|------------------|---------------------------|----------------------------|
| (education, support, follow-up instructions, primary care arrangements) | | | | | | | | | |
| <i>Inpatient Rehabilitation</i> | | | | | | | | | |
| Standardized (system) screening evaluation to determine impairments and most appropriate level of rehabilitation | Not regional | Yes FIM in MHat | Yes | Yes | Yes | Yes | No | Yes | Yes |
| Comprehensive rehab plan to initiate early, intensive, coordinated multidisciplinary stroke rehab. Recovering movement, daily activities, communication | Yes in PARP (Lethbridge) | No | Yes | Yes | No in acute care SAGE | Yes | Limited | Yes | Yes Limited SLP |
| Early discharge planning and smooth transitions (education, support, follow-up instructions, primary care arrangements, secondary prevention services) | Yes | No | Yes | Yes | SAGE | Yes | No protocol | Yes | No protocol |
| <i>Going Home - Post-Discharge Rehabilitation and Care</i> | | | | | | | | | |
| OPT/Community based Rehab | Yes MultiD | General OPT/Community | Yes | Yes | Yes | Yes | Limited | Yes MDisc | Yes |
| <i>Stroke 'Thrivers'/Community Reintegration</i> | | | | | | | | | |
| Becoming social, dealing with emotions, returning to work, getting around Support from families and friends Caregiver support and education | Support Groups | Primarily MH | Various | Yes | No | Various | Limited | Support Grp Speech grp | Some |
| <i>Evaluation</i> | | | | | | | | | |

| COMPONENTS OF OPTIMAL STROKE CARE | CHINOOK (1) | PALLISER (2) | CALGARY (3) | DAVID THOMPSON (4) | EAST CENTRAL (5) | CAPITAL (6) | ASPEN (7) | PEACE (8) | NORTHERN LIGHTS (9) |
|--|--|--|--|---------------------------|--|--------------------|------------------|------------------|----------------------------|
| Performance Measures | Hyper acute phase Clinical Outcomes | Prehospital Hyperacute Subacute Clinical Outcomes | Hyperacute, subacute, Clinical Outcomes | No | Primary P Prehospital Hyperacute | Yes | No | No | No |
| Continuing Clinical Education | Yes | Some | Yes | Some | No | Yes | No | No | No |
| Research | Yes | No | Yes | No | No | Yes | No | No | No |
| Telehealth | Yes | Yes - MHat | Limited | Yes | Yes | Yes | Yes | Yes | East NLHR |

APSS Stroke Service Inventory Overall Summary – January 2006

The following reflects an overall summary of the findings of the APSS Health Region Stroke Services and Resources Inventory. These results indicate a snapshot of regional stroke services at the present time but do not reflect issues of quality or access.

| COMPONENTS OF OPTIMAL STROKE CARE | OVERALL SUMMARY OF STROKE SERVICES |
|--|---|
| Primary Prevention | |
| Population health programs to decrease the development of risk factors | All health regions have a mandate for population health promotion and wellness and have a variety of initiatives to promote health and prevent the development of risk factors for stroke (smoking, weight, diet etc). HSF has a variety of resource materials. |
| Primary prevention programs focused on established disease risk factors for stroke (hypertension, cholesterol, diabetes, AF) | While most regions have CDM programs in place most are likely in different stages of maturity and development. HSF has a variety of resource materials |
| Awareness | |
| Organized public awareness programs on signs of stroke and emergency response | Most regions do not have a formalized, organized approach to public awareness, however program awareness is primarily done by the HSFA with specific campaigns running at certain times of the year. |
| Secondary Prevention | |
| Secondary stroke prevention for high risk individuals (TIA, previous strokes, other high risk populations) including a plan for lifestyle modification, pharmacotherapy, access to education resources and communication with family physician | 4/9 Health Regions report formal stroke prevention services within their health region. Two regions access services in Edmonton SPC. |
| Early carotid revascularization | All regions reported access to services in Calgary and Edmonton |
| Notification and Response of EMS | |
| EMS awareness, rapid assessment and transport protocols to nearest primary or comprehensive stroke centre | Four regions have protocols in place. Other regions report gaps in geographical areas. Protocols may also vary from region to region and are not necessarily stroke specific. |
| Acute Treatment of Stroke in ED | |
| Non-primary stroke hospitals have written protocols to transfer patients in timely way to the appropriate destination | 5/9 regions have protocols with 2 of the 5 reporting geographic inconsistency. |
| Stroke team in ED | 4/9 have stroke team in ED |
| Protocols for acute stroke in ED | 6/9 have ED protocols with one of these reporting the protocol only exists in |

| COMPONENTS OF OPTIMAL STROKE CARE | OVERALL SUMMARY OF STROKE SERVICES |
|--|--|
| | primary site not elsewhere |
| Timely neuroimaging | 6/9 report current CT availability in a timely manner at the present time |
| Early and appropriate acute stroke care +tPA within 3 hours/or - tPA | 7/9 report tPA capability with two of the six reporting limited availability dependent on consultant staffing. |
| <i>Inpatient Care for Stroke Admissions</i> | |
| Stroke unit or geographically designated beds | 5/9 regions identified they had designated stroke inpatient beds |
| Evidence-based pathways/protocols to ensure organized interventions, targeting prevention of complications and ensuring early mobilization and rehabilitation | 5/9 regions indicated formalized stroke pathways |
| Multidisciplinary stroke team with enhanced knowledge of stroke care and mandate to coordinate care | 4/9 regions have designated stroke teams |
| Early discharge planning and smooth transitions to ensure appropriate and timely access to service (education, support, follow-up instructions, primary care arrangements) | 7/9 report protocols for early discharge planning |
| <i>Inpatient Rehabilitation</i> | |
| Standardized (system) screening evaluation to determine impairments and most appropriate level of rehabilitation | 8/9 regions have standardized tools with one region reporting gaps in some geographic area. |
| Comprehensive rehab plan to initiate early, intensive, coordinated multidisciplinary stroke rehab. Recovering movement, daily activities, communication | 8/9 regions have comprehensive rehab plans for stroke patients but staff availability impacts the multidisciplinary nature of the team and services that the stroke patient can access in some regions |
| Early discharge planning and smooth transitions (education, support, follow-up instructions, primary care arrangements, secondary prevention services) | 8/9 regions have early discharge planning protocols |
| <i>Going Home - Post-Discharge Rehabilitation and Care</i> | |
| OPT/Community based Rehab | There are a variety of outpatient and community-based rehabilitation available to stroke patients to continue rehabilitation after their inpatient episode. |
| <i>Stroke 'Thrivers'/Community Reintegration</i> | |
| Becoming social, dealing with emotions, returning to work, getting around Support from families and friends Caregiver support and education | Services and programs for ensuring people with stroke thrive in their communities are variable across the province |
| <i>Foundations of Stroke Care System</i> | |
| Performance Measure | 5/9 regions report regularly measured performance indicators particularly in the hyperacute, subacute and clinical outcome areas. |

| COMPONENTS OF OPTIMAL STROKE CARE | OVERALL SUMMARY OF STROKE SERVICES |
|--|---|
| Continuing Clinical Education | 3/9 regions have stroke related clinical education opportunities for staff and physicians |
| Research | 3/9 regions participate in research and clinical trials related to stroke prevention and management |
| Telehealth | All regions report some telehealth infrastructure with gaps in some geographic areas. |

Approximate Number of Acute Strokes by Health Region

| HEALTH REGION | # ACUTE STROKE PATIENTS ADMITTED AS INPATIENTS (MOST RECENT YEAR) | POPULATION |
|-----------------|---|------------|
| Chinook | 80? | 150,000 |
| Palliser | 445 | 100,000 |
| Calgary | 1350 | 1,000,000 |
| David Thompson | 563 | 282,900 |
| East Central | 175 | 110,000 |
| Capital | 1841 | 1,000,000 |
| Aspen | 312 | 175,000 |
| Peace Country | 124 | 130,848 |
| Northern Lights | 14 (Eastside n/a) | 88,600 |

Appendix C

SUMMARY OF HEALTH REGION STROKE PLANS

**SUMMARY OF HEALTH REGION STROKE PLANS
APRIL 24, 2006**

Chinook Health Region (Health Region 1)

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|--|--|--|
| Primary Prevention services at the individual and population levels; | <ul style="list-style-type: none"> ▪ A variety of primary prevention services in place in cooperation with a Healthier You ▪ 'Building Health. Lifestyles ▪ Vascular Protection Program incorporated into Family Practice | <ul style="list-style-type: none"> ▪ Stroke risk factor management integrated with CDM ▪ Partnerships with other organizations to ensure consistent messaging ▪ Ongoing integration with PCN as they develop |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ Some programs but not region-wide | <ul style="list-style-type: none"> ▪ Region-wide stroke education campaign delivered in cooperation with health partners ie. Heart and Stroke Foundation, local college/university |
| Secondary Prevention | <ul style="list-style-type: none"> ▪ SPC exists in Lethbridge | <ul style="list-style-type: none"> ▪ Promote use of SPC among family physicians, referral processes ▪ Implement best practices as per APSS ▪ Integrate with CDM for follow-up care ▪ Measure outcomes |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ EMS aware and transport protocols in place ▪ No By-pass protocols to Lethbridge ▪ No standard regional stroke protocol | <ul style="list-style-type: none"> ▪ Develop bypass protocols for Rural EMS (as per APSS) ▪ Funding for rapid transport (i.e. STARS) ▪ EMS stroke screening and transport protocols (as per APSS) ▪ Education plan for EMS, Emergency Medicine |
| Acute Treatment (ED) | <ul style="list-style-type: none"> ▪ Protocols and physician orders for acute stroke exist in ED ▪ Applied inconsistently ▪ Stroke Team. Neurologist coverage not available at all times ▪ Varying expertise in the ED | <ul style="list-style-type: none"> ▪ Recruit Neurologist/use internal medicine ▪ ED Stroke Nurse 24/7 ▪ PAC capability ▪ Telestroke link and CT image transfer to Calgary when neurologist not available ▪ Training – Recruit Regional Stroke Clinical Educator ▪ Guidelines for neuro-imaging consultations to ensure timeliness of CTs |
| Acute Treatment (IP) | <ul style="list-style-type: none"> ▪ Geographically designated beds on 4C a general medical unit ▪ Stroke patients mixed with other populations ▪ Off-service strokes ▪ Inpatient stroke protocols in place yet | <ul style="list-style-type: none"> ▪ Dedicated Stroke Unit with defined admission and discharge criteria ▪ CME for HCP in all hospitals in region re protocols ▪ Enhance staffing (Neurologist, Nursing, SLP) ▪ Recruit Stroke Program Coordinator and Regional Stroke Program Educator |

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|--|--|--|
| | <ul style="list-style-type: none"> ▪ inconsistently applied ▪ Transition team in place to assist with d/c | <ul style="list-style-type: none"> ▪ Guidelines for more timely transfer to PARP |
| Inpatient Rehabilitation | <ul style="list-style-type: none"> ▪ PARP staffing levels below benchmarks ▪ No specialized rehab in rural sites where staffing in general is limited ▪ Limited SLP, no physiatry | <ul style="list-style-type: none"> ▪ Develop comprehensive regional stroke rehab plan ▪ Stroke designated beds on PARP ▪ Enhance ability of PARP to support rural and other sites through experts, telehealth links to other sites, recruit physiatry, transition position ▪ Outpatient neuromuscular clinic for F/U |
| Community Rehabilitation | <ul style="list-style-type: none"> ▪ Very low rehab staffing levels in the community with little stroke specific education ▪ Long waits for Outpatient Rehab ▪ Limited Specialized Seating Clinic | <ul style="list-style-type: none"> ▪ Outpatient F/U service ▪ Implement stroke flags into PC Information System to improve support post-stroke at primary health care level ▪ Inventory current CVA resources in community ▪ Enhance staffing in community settings |
| Stroke Thrivers/Community Reintegration | <ul style="list-style-type: none"> ▪ Lack of services for young survivors ▪ Limited TR resources to assist with community integration | <ul style="list-style-type: none"> ▪ Central inventory of current supports ▪ Partner with other organization to establish recovery association |

Palliser Health Region Stroke Plan (Health Region 2)

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|--|---|--|
| Primary Prevention services at the individual and population levels; | <ul style="list-style-type: none"> ▪ A variety of primary prevention services for vascular disease prevention are delivered in partnership with community agencies and external organizations at the population health and individual level ▪ Living Health Program (LHP) manages risk factors for cardiovascular disease and diabetes through education and exercise. ▪ Outpatient Nutrition services | <ul style="list-style-type: none"> ▪ Expand LHP services to include stroke prevention including clinical assessment and counseling for risk factors, education and exercise programs ▪ Incorporate weight management in LHP ▪ Expand smoking cessation strategies with external partners ▪ Expand CDM to establish multidisciplinary teams partnered with FPs practicing in the community ▪ Integrate Opt Nutrition services into team and to enhance weight management programs to a larger population |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ Use HSF materials for messaging ▪ Health Fairs, magazine, newspaper target to >50years | <ul style="list-style-type: none"> ▪ Test the effectiveness of educational strategies by pre-post testing |
| Secondary Prevention | <ul style="list-style-type: none"> ▪ Urgent Internal Medicine Clinic (focusing on TIA patient by March 2006 ▪ Living Healthy Program offers risk factor reduction/management, lifestyle however resources are not sufficient to include stroke patients | <ul style="list-style-type: none"> ▪ Develop coordinated education content along the continuum for stroke/TIA patient using HSF materials ▪ Include stroke patients, TIA, AF etc in LHP services using APSS best practices to establish education programs for staff ▪ Ensure referral mechanisms are in place from inpatient units, Internal Medicine Clinic. ▪ Use telehealth to reach all Palliser sites |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ By-pass protocols to primary stroke centre are in place ▪ Stroke screening and management protocols for EMS are in place | <ul style="list-style-type: none"> ▪ EMS/Dispatch training on by-pass and stroke screening and management ▪ Training of inpatient HCP to recognize and respond appropriately to strokes that happen in the hospital |
| Acute Treatment (ED) | <ul style="list-style-type: none"> ▪ Clinical pathway and protocols exists to ensure organized intervention ▪ Inconsistent treatment of CVA/TIA patient in ER regionally ▪ Stroke team protocols and processes are established ▪ Telehealth equipment is ordered for consults with stroke neurologists in Calgary | <ul style="list-style-type: none"> ▪ Finalize Stroke Team in ED ▪ Train staff re protocol training etc, ▪ Establish Urgent Internal Medicine ▪ Telehealth equipment training and 24/7 technical support |
| Acute Treatment (IP) | <ul style="list-style-type: none"> ▪ 4 designated stroke beds for stroke/TIA ▪ Clinical pathways/protocols have been developed ▪ Various disciplines are accessed at the | <ul style="list-style-type: none"> ▪ Finalize protocols and service delivery model ▪ Enhance multidisciplinary team approach and discharge planning process to ensure coordination ▪ Implement care guidelines on non-designated units |

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|--|---|--|
| | discretion of the physician (PT, OT, SLF, RD, Pharmacy) <ul style="list-style-type: none"> ▪ Education and training to be implemented ▪ Dysphasia service on inpatients in Medicine Hat (SLP and RD) although lack of consistent approach elsewhere | <ul style="list-style-type: none"> ▪ Training and resource materials at all levels/settings ▪ Finalize discharge process and possible follow-up at Urgent Internal Medicine Clinic as appropriate ▪ Expand Telehealth connections with CHR ▪ Develop and promote use of Dysphasia Team ▪ Determine recommended rehabilitation staffing levels and educational needs |
| Inpatient Rehabilitation | <ul style="list-style-type: none"> ▪ Supportive Rehab unit in Medicine Hat (general rehab unit) ▪ Limited inpatient rehab available at all sites | <ul style="list-style-type: none"> ▪ Multidisciplinary stroke rehab unit for acute/sub-acute with local access to equipment and space ▪ Determine recommended rehabilitation staffing levels and educational needs ▪ Appropriate training and competency measures ▪ Education programs structured around discharge and functional coping strategies ▪ Develop nutrition support team ▪ FIM training |
| Community Rehabilitation | <ul style="list-style-type: none"> ▪ Limited outpatient rehabilitation available at all sites with various disciplines (not specific to stroke) ▪ Home Care OT/PT ▪ CDM programs ▪ Seating Clinic | <ul style="list-style-type: none"> ▪ Determine recommended rehabilitation staffing levels and educational needs ▪ Provide coordinated services across the continuum by sharing information ▪ Access to education for staff working with stroke patients in all settings including home care, supported living, continuing care ▪ Equipment for assessment and treatment ▪ Expand LHP services to include stroke prevention including clinical assessment and counseling for risk factors, education and exercise programs |
| Stroke Thrivers/Community Reintegration | <ul style="list-style-type: none"> ▪ Strong stroke recovery group in MH ▪ Canadian Paraplegic Association provides direction to various community agencies for social needs | <ul style="list-style-type: none"> ▪ |

Calgary Health Region (Health Region 3)

| STROKE COMPONENT | CURRENT ASSETS/CAPACITY | PLANS FOR ENHANCEMENT |
|--|--|---|
| Primary Prevention services at the individual and population levels; | <ul style="list-style-type: none"> ▪ Variety of smoking cessation, nutrition, health information campaigns focused on preventing risk factors | <ul style="list-style-type: none"> ▪ Public awareness campaign (signs and symptoms) in partnership with HSF/Health Link ▪ Develop communication plan to ensure information and resources available through year |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ No formal messaging | <ul style="list-style-type: none"> ▪ Partner with HSF on messaging in CHR |
| Secondary Prevention | <ul style="list-style-type: none"> ▪ SPC at FMC provides services to people at high risk for stroke, AF Clinic ▪ Patient referred to Living Well CDM program for lifestyle, exercise, education, monitoring | <ul style="list-style-type: none"> ▪ Develop Stroke Resource Inventory targeted to public and health care providers ▪ Introduce 'Passport' to help clients keep track of their personal information ▪ Develop stroke education plan for health care providers |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ Protocols in place (EMS response and bypass) ▪ Need to reinforce and maintain through formal education programs | <ul style="list-style-type: none"> ▪ Education resource to develop and implement a formal standardized stroke education program |
| Acute Treatment (ED) | <ul style="list-style-type: none"> ▪ Stroke protocols for triage and treatment in place and stroke team | <ul style="list-style-type: none"> ▪ Designate resources to ensure stroke telehealth plan is formalized and implemented. Convene a work group to address technical issues, technical support, connections to Medicine Hat, Red Deer (other DTHR sites?) and Lethbridge and rules of use. |
| Acute Treatment (IP) | <ul style="list-style-type: none"> ▪ Stroke Team and standing order protocols in place ▪ 18 bed stroke unit at FMC, 6 beds RGH ▪ 1 high observation bed ▪ regular, frequent multidisciplinary rounds ▪ Team determines rehab requirements and discharge location and follow-up to stroke clinic | <ul style="list-style-type: none"> ▪ Formal system of support to ensure off service are supported with stroke knowledge resources ▪ Designate a rural team of stroke experts ▪ Implement resources to focus on geriatric stroke patients with multiple co-morbidities |
| Inpatient Rehabilitation | <ul style="list-style-type: none"> ▪ Unit 58 FMC – tertiary rehab ▪ Slow stream Fanning Centre ▪ Limited, generalized rehab at other sites across the region | <ul style="list-style-type: none"> ▪ Need to reduce inequities of care between locations ▪ Education of staff at all sites ▪ Mentoring to build consistent stroke expertise ▪ Explore need for education coordinator ▪ Leverage telehealth to maintain and share expertise between sites |

| STROKE COMPONENT | CURRENT ASSETS/CAPACITY | PLANS FOR ENHANCEMENT |
|--|---|--|
| Community Rehabilitation | <ul style="list-style-type: none"> ▪ Community Accessible Rehabilitation offers multidisciplinary rehab including social work, psychology | <ul style="list-style-type: none"> ▪ Leverage telehealth to maintain and share expertise between sites |
| Stroke Thrivers/Community Reintegration | <ul style="list-style-type: none"> ▪ A variety of community supports through CDM, STEP, CADL, Support Groups and external agencies (URSA, SABIS etc) | <ul style="list-style-type: none"> ▪ Formally link post-stroke patients to Chronic Disease Management model so that FP, Community Coordinators can follow them systematically once discharged ▪ Advise CDM on stroke patient needs and resources ▪ Consider use of Electronic Case Management System ▪ Ensure linkages are made to community agencies and follow-up ▪ Introduce a stroke pathway (Pillar 3) |

David Thompson Health Region Stroke Plan (Health Region 4)

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|--|---|---|
| Primary Prevention services at the individual and population levels; | <ul style="list-style-type: none"> ▪ Healthy eating and active living presentations/displays ▪ Tobacco reduction program at various sites | <ul style="list-style-type: none"> ▪ Chronic Disease Management programs (self-management, exercise and disease specific and general lifestyle education programs are currently in development for the management of risk factors for stroke. Begin discussion to ensure risk factors for stroke are incorporated ▪ Carotid Doppler demos in public places |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ Public awareness campaign in Heart Month re signs and symptoms cards | <ul style="list-style-type: none"> ▪ Partner with HSF and APSS to deliver consistent messaging |
| Secondary Prevention | <ul style="list-style-type: none"> ▪ Secondary Stroke Prevention Clinic located in Red Deer for post-stroke patients and TIA ▪ TIA and post-stroke managed by GPs ▪ Care delivery pathway for stroke prevention is not formally established especially for TIA | <ul style="list-style-type: none"> ▪ Establish and communicate clinical pathway and referral mechanisms for TIA discharged from ED including feedback loop to GPs ▪ Establish process to repatriate DTNR post-stroke patients from Calgary and Edmonton to Red Deer SPC as appropriate ▪ Explore role of Stroke Navigator ▪ Train ER docs and RNs |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ EMS Protocols are in place for some areas of the Region but not all | <ul style="list-style-type: none"> ▪ Use APSS developed EMS protocols and work with communities and ambulance providers to implement in rest of region |
| Acute Treatment (ED) | <ul style="list-style-type: none"> ▪ ED and tPA protocols are in place in Red Deer only ▪ Neurology coverage in Red Deer is not 24/7 due to manpower issues ▪ No formal 'stroke team' response | <ul style="list-style-type: none"> ▪ Will explore resources and processes to be put in place to ensure Red Deer regional is a primary stroke centre 24/7 including potential linkages with Calgary and Edmonton for backup as necessary ▪ Explore use of CT scanners in Wetaskawin and Drumheller as tPA sites. ▪ Explore different models of stroke team development ▪ Develop single point of entry for stroke referrals including exploring role of stroke navigator/case manager ▪ Establish telehealth capabilities in all ERs across region ▪ Establish regularly scheduled education programs for ER staff |
| Acute Treatment (IP) | <ul style="list-style-type: none"> ▪ Evidence based protocols in place on stroke unit in Red Deer Regional Hospital ▪ 6 stroke and 1 TIA bed ▪ Gaps in rehab coverage on weekends | <ul style="list-style-type: none"> ▪ Align protocols with APSS protocols obtaining feedback from frontline staff as guideline being developed ▪ Introduce evidence based protocols for inpatient care across the region in all inpatient settings ▪ Implement regular education/training updates ▪ Explore stroke navigator (as above) |

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|---|--|--|
| Stroke Survivors and Community Reintegration | <ul style="list-style-type: none"> ▪ Rehabilitation offered through home care and outpatients ▪ Rehab staff in smaller centres are generalists and have limited OT, SLP and recreation therapy | <ul style="list-style-type: none"> ▪ Explore mobile rehab stroke teams ▪ Work with CDM to develop appropriate programming ▪ Implement HSF programming ▪ Develop business case re rehab resources by discipline ▪ Regular clinical educational updates to rehab staff based on Pillar best practices ▪ Add community recreation therapy coordinator to work with volunteer program to coordinate transition programming to prevent isolation ▪ Meet with community groups to look for opportunities to work together |

East Central Health Region Stroke Plan (Health Region 5)

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|--|--|---|
| Primary Prevention services at the individual and population levels; | <ul style="list-style-type: none"> ▪ Smoking Cessation ▪ Diet Control/BMI Assessment ▪ HBEP at 6 sites ▪ Family physicians offices | Embed risk factors for stroke into best practice algorithms for Family Physicians and the Chronic disease Management Program (under development) Education program to general public re risk factors and lifestyle changes. Link with CDM |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ No formal approach | Not identified |
| Secondary Prevention | <ul style="list-style-type: none"> ▪ Local care delivery for post TIA clients is unknown ▪ Some treated by local physicians in ECH clinics, some transferred to Capital Health SPC ▪ No formal stroke prevention service in the region ▪ No formal referral protocols in place | <ul style="list-style-type: none"> ▪ Develop post TIA protocols to ensure appropriate followup ▪ Assessment tools for FP to assist with diagnosis of TIA ▪ Enhance formal linkages with SPC in Capital including telehealth ▪ Training programs for ER, physicians, rehab, community groups, telehealth ▪ Assess feasibility of ECH service for post TIA/Stroke FU including carotid dopplers |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ EMS By-pass protocols in place with 5 providers to re-direct patients away from ECH | <ul style="list-style-type: none"> ▪ Align current protocols with Pillar protocols and expand to other service providers ▪ Education (including ongoing maintenance) for EMS and dispatch regarding new CT/tPA capabilities with ECH at Camrose and Lloydminster, protocols ▪ Develop centrally stored data collection systems with EMS |
| Acute Treatment | <ul style="list-style-type: none"> ▪ ED Stroke protocols in place in Camrose and Lloydminster for non-tPA patients ▪ No tPA protocols in ECH ▪ | <ul style="list-style-type: none"> ▪ Develop Camrose and Lloydminster as CT/tPA sites ▪ Develop by-pass protocols for non-tPA sites as per Pillar algorithm for transport to ECH sites or CHA site ▪ Develop processes to ensure best practice, access to specialists in CHA ▪ Review and add staffing to manage post-tPA clients and additional admits to Camrose and Lloydminster ▪ Education sessions for ER, medical, rehab re protocols, best practice for ED and inpatient care ▪ Telehealth infrastructure |
| Rehabilitation and Community Reintegration | <ul style="list-style-type: none"> ▪ SAGE program offers an integrated, multidisciplinary rehab program with reintegration as primary objective | <ul style="list-style-type: none"> ▪ Evaluate current resources, supplies, training and mentoring needs for rehabilitation ▪ Strengthen all rehabilitation services to better manage stroke in |

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|------------------|--|--|
| | <ul style="list-style-type: none"> ▪ Inpatient rehab at all acute sites ▪ Community-based PT, OT, RD, RN | <p>all settings using SAGE program, APSS best practice, and team based approaches to care, patient centred care principles, discharge planning</p> <ul style="list-style-type: none"> ▪ Strengthen education and mentoring links with CHR and CNN ▪ Develop and train Stroke Coordinator ▪ Link individuals with developing Chronic Disease Management self directed care model, post stroke management and community rehabilitation services ▪ Strengthen community support through a variety of mechanisms (link to CDM, partnering with community agencies and volunteers, mechanisms to share success stories) |

Capital Health Region Stroke Plan (Health Region 6)

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|--|---|--|
| Primary Prevention services at the individual and population levels; | A variety of primary prevention services for vascular disease prevention are delivered in partnership with community agencies and external organizations | Implement process to support referral and awareness of these various programs Link high risk patients to Chronic Disease Management programs |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ General information provided | Enhance information through Capital Health Link Work with external partners (eg HSFA) to increase awareness |
| Secondary Prevention | Services delivered through a variety of mechanisms: <ul style="list-style-type: none"> ▪ Primary Care Physicians ▪ Cardiologists ▪ General Internal Medicine ▪ Neurology ▪ Stroke Prevention Services (SPC) Services to central and northern regions | <ul style="list-style-type: none"> ▪ Mechanisms to ensure all stroke/TIA patients discharged from IP or ED are seen by SPC in CHR or home region ▪ Provide access to SPC for central and northern patients including enhancement of Telehealth capability ▪ Ensure timely access to Doppler and 24 hour BP monitor ▪ Enhance multidisciplinary nature of SPC team ▪ Discharge plans are developed and transmitted to FP for follow-up care ▪ Enhance staffing to manage increase volumes |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ Edmonton has consistent EMS protocol but needs to consistent across the region | <ul style="list-style-type: none"> ▪ Implement Capital Health EMS screening tool across the region aligning with Pillar 2 EMS protocols and policies |
| Acute Treatment (ED) | <ul style="list-style-type: none"> ▪ tPA protocol in place at UAH ▪ Transcranial Doppler (TD) not available consistently ▪ Inconsistent knowledge of protocols ▪ Inadequate medical staff and allied health to manage increased support to other regions | <ul style="list-style-type: none"> ▪ Transport tPA patients to the appropriate site by exploring multi-site model for tPA administration and developing remote site tPA intervention services for surrounding areas (incl Telehealth and PACs protocols) ▪ Develop training for tPA sites (Physician protocols, HCP training) ▪ Communicate and train ED stroke protocols ▪ Recruit MDs and other HCP to support ED ▪ Purchase TD equipment and support |
| Acute Treatment (IP) | <ul style="list-style-type: none"> ▪ Evidence based protocol in place for IP care but not consistently applied at all locations ▪ Multidisciplinary teams in place | <ul style="list-style-type: none"> ▪ Implement third designated stroke unit in city (GNCH) ▪ Align protocols on all units with APSS protocols ▪ Implement training strategy for protocols ▪ Enhance monitoring beds for TIA and post-tPA ▪ Increase rehab staff and extend coverage ▪ Recruit MDs and other HCP to care for increase in-region patients and out-of-region consultation support |
| Inpatient Rehabilitation | <ul style="list-style-type: none"> ▪ Dedicated tertiary rehabilitation and Glenrose Rehabilitation Hospital (GRH) | <ul style="list-style-type: none"> ▪ Stroke transition unit at GRH for patients with rehab potential but do not need or can not tolerate tertiary level care |

| STROKE COMPONENT | CURRENT | PLANS FOR ENHANCEMENT |
|--|--|--|
| | <ul style="list-style-type: none"> ▪ Northern Alberta Regional Geriatric program ▪ Medical sub-acute unit | <ul style="list-style-type: none"> ▪ Enhance flow through GRH by introducing NP role ▪ Implement on-site videofluoroscopy at GRH ▪ Dysphasia (swallowing) <ul style="list-style-type: none"> ○ New assessment technologies and treatments ○ Community dysphagia team ▪ Multidisciplinary support to northern regions through telehealth and telementoring |
| Community Rehabilitation | <ul style="list-style-type: none"> ▪ Outpatient services at GRH for stroke patient discharged from ED/acute care ▪ Limited stroke rehab services through Community Rehabilitation Program, private PT clinics and EGH ▪ Plans for interdisciplinary rehab services (CRIS) for chronic/complex needs | <ul style="list-style-type: none"> ▪ Enhance outpatient rehabilitation services at tertiary rehabilitation and community level. ▪ Community dysphagia team for CHA and out-of-region ▪ Enhance telerehab and telementoring for out-of-region |
| Stroke Thrivers/Community Reintegration | <ul style="list-style-type: none"> ▪ Support programs are available in the community but not coordinated ▪ Stroke Service Coordinators established recently to help families access and become aware of appropriate services in the community ▪ Alberta Caregiver College courses for caregivers of stroke and BI | <ul style="list-style-type: none"> ▪ Introduce HSF “Living with Stroke” program for patients and families/caregivers ▪ Explore CDM “Live Better Every Day” programs for stroke patients |

Aspen Health Region (Health Region 7)

| STROKE COMPONENT | CURRENT ASSETS/CAPACITY | PLANS FOR ENHANCEMENT |
|--|---|--|
| Primary Prevention services at the individual and population levels; | A variety of primary prevention services for vascular disease prevention are delivered in partnership with community agencies and external organizations | Support Population Health Program's healthy living initiatives, coordinating efforts to implement best practices as defined by Pillar One Screening initiative linked with Chronic Disease Prevention |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ No formal approach | Not identified |
| Secondary Prevention | <ul style="list-style-type: none"> ▪ Access to SPC in Edmonton is quite good | <ul style="list-style-type: none"> ▪ No plans to enhance service ▪ Establish Chronic Disease Prevention and Management Regional Coordinator to develop and implement program |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ EMS By-pass protocols in place at one Health Centre ▪ CT capacity available at Hinton, Westlock and Cold Lake ▪ Urgent and Critical Care Lines used to access specialists in Capital Health | <ul style="list-style-type: none"> ▪ Establish Hinton, Westlock and Cold Lake as tPA sites ▪ Increase CT technician coverage ▪ Education of Prehospital, ED and tPA protocols as per APSS Pillar 2 (prehospital and ER staff) |
| Acute Treatment | <ul style="list-style-type: none"> ▪ Stroke care maps used at 2 Health Centres ▪ Special Car Unit with telemetry are available at the CT sites | <ul style="list-style-type: none"> ▪ Educate staff and implement stroke protocols as per APSS Pillar 2 ▪ Identify staffing needs at each site that manages acute stroke in the inpatient area and determine ▪ Hire Stroke Project Leader ▪ |
| Rehabilitation and Community Reintegration | <ul style="list-style-type: none"> ▪ Full range of rehabilitation professions with Regional Rehabilitation Coordinator and Clinical Leads for each profession ▪ Some staff with extensive Stroke and related clinical experience | <ul style="list-style-type: none"> ▪ Stroke Case Coordinator to support and track individuals with stroke rehab needs, effective discharge processes ▪ Staff education plan ▪ Plan for dysphagia needs (standardize bedside swallow, regional videofluoroscopy service) ▪ Proposal for increase Adult Day Program spaces linked with CDM |

Peace Country Health Region (Health Region 8)

| STROKE COMPONENT | CURRENT ASSETS/CAPACITY | PLANS FOR ENHANCEMENT |
|--|---|---|
| Primary Prevention services at the individual and population levels; | <ul style="list-style-type: none"> ▪ A variety of primary prevention services for vascular disease prevention are delivered in partnership with community agencies and external organizations at the population health and individual level ▪ No developed Chronic Disease Management Program | <ul style="list-style-type: none"> ▪ Develop CDM program incorporating referral and education process/programs for stroke patient ▪ Work with Primary Care Networks to incorporate stroke prevention and management ▪ Develop and deliver education and health promotional programs for physicians, HCP and patients/clients ▪ Use HSF materials to ensure consistency of messaging related to risk factors ▪ Incorporate health promotion in acute care |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ Public awareness messaging is a gap at this time | <ul style="list-style-type: none"> ▪ Develop public education program to enhance awareness |
| Secondary Prevention | <ul style="list-style-type: none"> ▪ Secondary prevention managed by GP ▪ Variety of cardiac/diabetes education clinics but not consistent in region ▪ Not known whether all high risk individuals are followed-up | <ul style="list-style-type: none"> ▪ Establish service link with Edmonton Secondary Prevention Clinic using telehealth technology ▪ Provide integrated education and rehabilitation to clients |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ Level 1 protocols in place in region | <ul style="list-style-type: none"> ▪ Increase awareness of dispatch ▪ Implement Level 2 ▪ Develop regional bypass protocol ▪ EMS Training |
| Acute Treatment (ED) | <ul style="list-style-type: none"> ▪ No formal Stroke Team in ED | <ul style="list-style-type: none"> ▪ Develop formal Stroke Team enhancing staffing resources and introducing protocols ▪ Training EMS, physicians, other HCP ▪ Review feasibility of Peace River 24/7 CT coverage |
| Acute Treatment (IP) | <ul style="list-style-type: none"> ▪ No protocols currently used post tPA ▪ No protocols currently used for transfer from monitoring beds to medical unit ▪ Lack of consistent approach to care on medical unit | <ul style="list-style-type: none"> ▪ Education and implementation of APSS protocols for Inpatient Care including documentation and case conference process ▪ Enhance Rehab staffing (1-2 years) and therapy space (long range) ▪ Develop discharge plan and process to ensure appropriate information flow between acute care and community and patient is well supported upon leaving hospital ▪ Implement quality assurance process for stroke care |
| Inpatient Rehabilitation | <ul style="list-style-type: none"> ▪ 8 rehab beds in QEII ▪ PT, OT, SLP services available in main centres across the region | <ul style="list-style-type: none"> ▪ Increase awareness of role of rehab disciplines ▪ Incorporate APSS Protocols for transfer of patients to larger stroke centers |

| STROKE COMPONENT | CURRENT ASSETS/CAPACITY | PLANS FOR ENHANCEMENT |
|--|---|---|
| | <ul style="list-style-type: none"> ▪ Bedside swallowing assessments ▪ Traveling services through Home Care | <ul style="list-style-type: none"> ▪ Increase rehab staffing levels ▪ Increase capacity of staff through education, mentoring, professional practice support ▪ Implement APSS rehab protocols and standardized education materials for stroke management including mental health ▪ Explore feasibility of dedicated stroke beds ▪ Implement APSS outcome measurement tools |
| Community Rehabilitation | <ul style="list-style-type: none"> ▪ Limited availability of rehab staff across region across sectors ▪ PT, OT, SLP services available in the community through outpatient, home care or other community services ▪ Travelling services in PT, OT ▪ Bedside swallowing assessments ▪ Videofluoroscopy ▪ Regional interdisciplinary dysphagia team | <ul style="list-style-type: none"> ▪ Analysis of staffing levels ▪ Investigate transition bed (sub-acute) service delivery model ▪ Explore role of 'Navigator' ▪ Directory of home support options ▪ Expansion of Adult Day Support Programs |
| Stroke Thrivers/Community Reintegration | <ul style="list-style-type: none"> ▪ Stroke survivor support group ▪ Communication group led by SLP ▪ Both in Grande Prairie | <ul style="list-style-type: none"> ▪ Introduce Living with Stroke Program (HSF) to enhance self-management support |

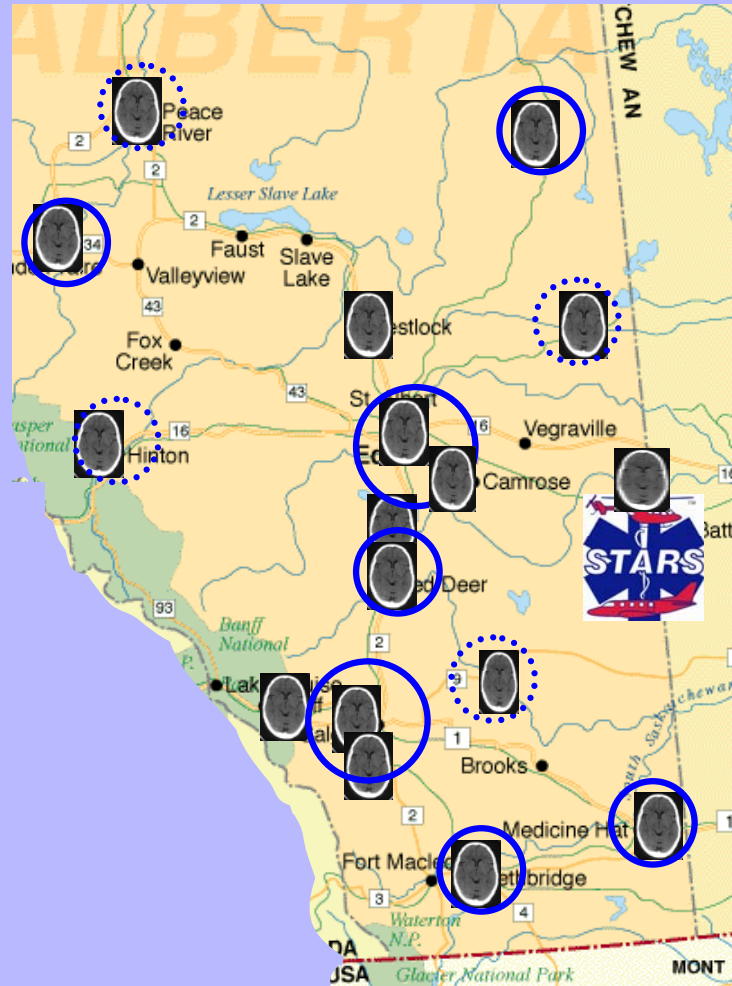
Northern Lights Health Region (Health Region 9)

| STROKE COMPONENT | CURRENT ASSETS/CAPACITY | PLANS FOR ENHANCEMENT |
|--|--|---|
| Primary Prevention services at the individual and population levels; | <ul style="list-style-type: none"> ▪ A variety of primary prevention services for vascular disease prevention are delivered in partnership with community agencies and external organizations at the population health and individual level ▪ Chronic Disease Management Program under development | <ul style="list-style-type: none"> ▪ Begin discussion to integrate stroke with CDM ▪ Explore development of stroke prevention clinic in conjunction with PCN ▪ Use regional Health Promotion coordinators to add stroke prevention to education programs ▪ Use community organizations as resource for stroke prevention ▪ Increase awareness of Health Link/Inform AB |
| Organized public awareness programs for signs and symptoms of stroke and emergency response | <ul style="list-style-type: none"> ▪ Public awareness messaging is a gap at this time | <ul style="list-style-type: none"> ▪ Develop public education program to enhance awareness |
| Secondary Prevention | <ul style="list-style-type: none"> ▪ Not known whether all high risk individuals are followed-up from ED or FP office | <ul style="list-style-type: none"> ▪ Establish service link with Edmonton Secondary Prevention Clinic using telehealth technology ▪ Tele Home Care for monitoring status ▪ Education program for GPs re BPG |
| Notification and Response of EMS | <ul style="list-style-type: none"> ▪ EMS protocols in place in region | <ul style="list-style-type: none"> ▪ Adopt standard APSS stroke screening tool ▪ Training |
| Acute Treatment (ED) | <ul style="list-style-type: none"> ▪ ED protocols for tPA not in place | <ul style="list-style-type: none"> ▪ Develop remote tPA intervention service linked via Telehealth to Edmonton |
| Acute Treatment (IP) | <ul style="list-style-type: none"> ▪ No formal protocols used at present | <ul style="list-style-type: none"> ▪ Introduce and provide training of APSS protocols ▪ Designated beds not feasible. Create clinical support links with Edmonton for advice and consultation |
| Inpatient Rehabilitation | <ul style="list-style-type: none"> ▪ Evidence based protocols in place but formal protocols need to be implemented to ensure consistency ▪ Patient referred to Glenrose as needed | <ul style="list-style-type: none"> ▪ Introduce APSS protocols ▪ Increase S/L staff and increase telehealth link for this service to assist with shortfall ▪ Implement on-site videofluoroscopy |
| Community Rehabilitation | <ul style="list-style-type: none"> ▪ Outpatient services ▪ Home Care PT/OT | <ul style="list-style-type: none"> ▪ Use Tele Home Care to support care givers ▪ Telehealth link with Glenrose to smooth referrals and transfers from Glenrose |
| Stroke Thrivers/Community Reintegration | <ul style="list-style-type: none"> ▪ Lack of stroke survivor self-management support programs | <ul style="list-style-type: none"> ▪ Introduce Living with Stroke Program (HSF) to enhance self-management support ▪ Integrate stroke with CDM program ▪ Explore use of Stroke Coordinators ▪ Caregiver training through AB Caregiver College ▪ Link with ABIN Coordinator |

Appendix D

CT SCANNER LOCATIONS IN ALBERTA

Alberta Provincial Stroke Strategy



May, 2006

APSS