

# Telestroke Planning Questionnaire

## Background:

The Alberta Provincial Stroke Strategy (APSS) is a collaborative model of inter-regional organization and delivery of stroke care that focuses on connections between tertiary and primary stroke centers. One objective of APSS is to use high speed telemedicine technology to increase the efficiency and allow access to a full range of diagnostic and treatment activities regardless of the location of the patient.

A Telestroke Working Group has been formed to arrange telehealth support for the APSS. The purpose of this group is to coordinate use of telehealth to provide an efficient, reliable network to support stroke care that operates seamlessly across Alberta.

Responses to this questionnaire will provide information for the Telestroke Working Group to support: development of a provincial telehealth implementation plan for the Acute stroke component of APSS and planning for use of telehealth infrastructure, implemented for telestroke, for other urgent/ emergent healthcare applications. In addition, responses will support development of a funding application to Canada Health Infoway.

**Please complete by July 10, 2006 and return to:**

Telehealth Branch  
Alberta Health and Wellness  
17<sup>th</sup> Floor Telus Plaza North Tower  
Edmonton, Alberta T5J 1S6

## Questions?

For further information contact:

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## Part A- Regional Information

Completed by: **Blayne Iskiw / Lynette Lutes**  
Position/Department: **Director, Regional Telehealth /**  
AB Health Authority/Board: **Capital Health**

## Part B – Regional Plans:

1. **Please specify status of planning to migrate to a telehealth model for hyperacute phase of stroke at rural sites with CT technology.** [Emergency room telemedicine consultation involving live two-way video and transmission of CT images to enable a care decision on administration of t-PA (tissue plasminogen activator), a highly effective clot-busting drug that should be given under supervision of a neurologist]

- ✓ Migration in progress – may include implementation for off-hours (specify implementation date expected, partial or 24/7 implementation)

**Sept 2006 'go-live' live for Hinton site. Other sites (i.e. Camrose, Lloydminster, etc) to be added throughout fall and early winter. 24/7 implementation to begin fall 2006 (interim 24/7 support provided by phone consultation and PACS monitoring).**

Sites/comments: \_\_\_\_\_

- Migration planning underway - (expected timeframe)

Sites/comments: \_\_\_\_\_

- Intend to migrate within next 3 years but no immediate plans because lacking a key resource - (e.g. local physician resources, ability to digitally transmit CT scans to specialist center...). Please state which resources are lacking.

Sites/comments: \_\_\_\_\_

- Currently, no plans to migrate within next 3 yrs - (e.g. TPA already administered at regional site). Please provide rationale if there are no plans to migrate.

Sites/comments: \_\_\_\_\_

- Yet to be determined

Sites/comments: \_\_\_\_\_

2. **Initial plans for other applications/uses of telehealth technology implemented for hyperacute stroke (e.g. other trauma, cardiology, translation in ER, mental health urgent services....)**

- ✓ Planning underway (specify application(s) – PICU/Ped's ER)
- ✓ Intend to use (applications not yet determined)

**Please list known major expenditures required for planned new telehealth application**

3. **Other planned uses of telehealth technology related to the Alberta Provincial Stroke Strategy**

Pillar	Planned Use
#1. Stroke Prevention + Health Promotion	Enhance Telehealth services for existing stroke service delivery in remote areas of the region and surrounding central and northern regions (i.e. Stroke Prevention Clinic).

#2. Acute Stroke Care	
#3. Stroke Rehabilitation + Community Reintegration	Continued expansion of Stroke Rehabilitation services and education offered via Telehealth (i.e. SLP). Continued expansion of discharge planning and telementoring via Telehealth.
#4. Evaluation + Quality Improvement	Establish evaluation methodologies and tools and are consistent with APSS standards and CH protocols (i.e. Quality Framework). Establish and measures services against APSS/CH developed benchmarks.

## Part C- Technical Requirements

### 4. What new telehealth systems are required for (specify models):

a) hyperacute stroke care –

*Immediate:*

- One (1) Tandberg 6000 codec with two (2) 30" Plasma monitors for the UAH-based Acute TeleStroke room.
- One (1) Tandberg 6000 codec with two (2) 50" Plasma monitors for the Critical Care Line (CCL) call centre (supporting 24/7 implementation)
- One clinical PACS viewer for the Acute TeleStroke room

*Short-term (<12 months):*

- Four (4) laptop-based videoconferencing units to support 'off-site' support from Stroke Neurologists.

b) other stroke care (e.g. rehabilitation, health promotion, etc) Telehealth systems are already in place to provide other stroke care.

- One (1) Tandberg Intern II to support telerehabilitation (i.e. SLP) services out of Glenrose Rehabilitation Hospital (GRH).

### 5. Please describe the proposed solution. What systems and network infrastructure will be used, including bandwidth, network access, network security etc, for:

a) videoconferencing?

Videoconferencing connectivity possible via Alberta SuperNet (IP) or ISDN networks. Maximum bandwidth available is 2Mbps but expected 'normal' connectivity to be at <1Mbps. All Telehealth calls are routed through the CH Telehealth Bridge, using various firewall transversal devices, gateways, gatekeepers and routers. All calls will be fully encrypted.

b) CT scans?

CT images will be transmitted to CH from the remote sites via the Alberta Supernet network. A point-to-point connection is created by the networking teams at each site to establish a secure, encrypted tunnel for transmission.

6. **For service receive sites - What is the region's technical approach for sharing CT images both within the region and between regions? How will other diagnostic/ medical information be shared with the comprehensive stroke center?**

N/A

**For service provision sites – Please describe the region's approach related to receiving CT images from other regions. What technical, security and change management [E.g. remote access to PACS login] issues are anticipated in providing services to multiple out of region sites? How will this be approached? At this point in time there are no anticipated concerns with accessing secure CT images with in the Stroke clinic. Pilot test will be complete to work out any issues that may arise prior to go live date.**

The UAH PACS system can be configured to accept images from other PACS systems once the network tunnel has been established. This allows service receive sites to push CT images onto the UAH PACS system. Currently there are 5 clinical review stations in the UAH ER department where these images can be reviewed. 1 of these stations is ideally located beside the Telehealth video conference equipment. Currently home review is possible but with the forthcoming integration with NetCare it will be possible for all physicians.

Issues of resource availability to work on setting up the network and PACS connections seems to be an issue. So far all technical issues seem to be minor.

7. **How will this integrate with Regional systems and the IM/IT DI initiative? (e.g. what EHR assets will be used for telestroke?) Please include timelines for integration? How will the technical approach change (between interim to routine service)?**

To be determined

## Part D Potential Infoway Funding Request

	Total Expenses	Matching Source			New Infoway Investment (50% of total eligible costs)	When do you expect to have invoices for entire expense?		
		APSS	AB Health Regions \$/InKind	Other Sources (Please specify 'in-kind' or \$)		Dec '06	Dec '07	Dec '08
<b>Capital/One Time Costs</b>								
Telehealth Technology/Equipment	\$130,000		\$65,000		\$65,000	√		
Switches, routers, server space	N/A							
Peripheral medical devices	N/A							
Basic Clinical Room Enhancements*	\$5,000		\$2,500		\$2,500			
Privacy Impact Assessments	N/A							
Project Planning (including development of a management model + definition of clinical & technical requirements + development of plans to address gaps – including CT/Network issues)	\$20,000		\$10,000		\$10,000	√		
Project Management/Control	\$29,600		\$14,800		\$14,800			√
Project Implementation (e.g. development of technical support)	\$2,640		\$1,320		\$1,320	√		
Change Management/Program Adoption/Communications Strategy (e.g. implementation tool kit resources)	\$18,400		\$9,200		\$9,200		√	
Training	\$4,000		\$2,000		\$2,000		√	
Evaluation	\$12,800		\$6,400		\$6,400			√
<b>Total One Time Costs†</b>	<b>\$222,440</b>		<b>\$111,220</b>		<b>\$111,220</b>			

\*Please explain the clinical benefits of the expense, e.g. Room lighting not optimal to ensure accurate diagnosis.

†Total of Infoway Investment cannot exceed the total of matching funding.

Note: Infoway provides 50¢ matching funding on one-time expenditures. Operational costs are not eligible. APSS funding as well as Regional operating, capital and in-kind sources are recognized.

## Part D2: Additional Financial Information for Potential Infoway Funding Request

1 Day = 8 hours

### Telehealth Technology/ Equipment

- Tandberg 6000 codec with plasma monitors **(\$25,000)**
  - Video Conferencing system for the UAH TeleStroke room
- Tandberg 6000 codec with two plasma monitors **(\$27,500)**
  - Video Conferencing system for the Critical Care Line (CCL) call centre which provides 24/7 services
- Four laptop based videoconferencing units **(\$24,000)**
  - to be used to support off-site stroke neurologists
- Tandberg Intern II Videoconferencing Unit **(\$18,500)**
  - Videoconferencing system to support telerehabilitation (i.e. SLP) services from the Glenrose Rehabilitation Hospital
- PACS – Clinical PACS Viewing Station **(\$35,000)**
  - Unit for the UAH TeleStroke room to be used by the stroke neurologists to review CT images transmitted from remote sites.

### Project Management

- Business Analyst **(\$40/hr for 10 days total)**
  - building report template
  - building process flow
  - building accounts
  - building and distributing invoices
- Director – Regional Telehealth **(\$50/hr for 10 days total)**
  - development of policies & procedures
  - recruiting specific clinical leads
- Director – Regional Stroke **(\$50/hr for 10 days total)**
  - development of policies & procedures
  - recruiting specific clinical leads
- Program Coordinator – TeleStroke **(\$50/hr for 20 days total)**
  - development of policies & procedures
  - clinician & physician support
- Service Coordinator – Regional Stroke **(\$50/hr for 10 days total)**
  - development of policies & procedures
  - clinician & physician support
- Clinical Facilitator – Telehealth **(\$40/hr for 20 days total)**
  - clinician & physician support
  - development of policies & procedures

### Program Implementation

- Technology Manager – Telehealth **(\$40/hr for 2 days total)**
  - installation of video conferencing equipment
- Program Coordinator – TeleStroke **(\$50/hr for 5 days total)**
  - implementation of policies & procedures
  - implementation of communications plan and evaluation framework

### Change Management

- Director – Telehealth **(\$50/hr for 10 days total)**
  - development of specific communication strategies
  - discussion of policies & procedures
  - Telehealth pamphlets
    - creation of patient and health care professional information brochures
- Director – Regional Stroke **(\$50/hr for 10 days total)**
  - development of specific clinical communication strategies
  - discussion of clinical policies & procedures

- Clinical Facilitator – Telehealth **(\$40/hr for 10 days total)**
  - initial telehealth clinician training & support
  - development of specific communication strategies
- Program Coordinator – TeleStroke **(\$50/hr for 5 days total)**
  - development of policies & procedures
  - clinician support
- Service Coordinator – Regional Stroke **(\$50/hr for 5 days total)**
  - development of policies & procedures
  - clinician support
- Liaison – Regional Telehealth **(\$40/hr x 10 days total)**
  - Liaison with other regional health authorities
  - Develop and maintain change management initiatives and strategies

#### Training

- Program Coordinator – TeleStroke **(\$50/hr for 10 days total)**
  - provide new telehealth clinician training to increase the adoption of the TeleStroke tPA Pilot project and expand clinical services.

#### Evaluations

- Evaluation Coordinator/Data Analyst **(\$40/hr for 30 days total)**
  - creation of evaluation templates
  - construction of statistical tracking tools
  - analyzing evaluation data
  - evaluation report development
- Clinical Facilitator – Telehealth **(\$40/hr for 10 days total)**
  - creation of questionnaire templates

#### Project Planning

- Director- Regional Telehealth **(\$50/day for 10 days total)**
  - identify/recruit/secure stakeholders
  - draft communications plan, evaluation framework
  - assemble project team, work plan, processes
  - draft service level agreements
  - allocation of resources (human and financial)
- Director – Regional Stroke **(\$50/hr for 10 days total)**
  - identify/recruit/secure clinical stakeholders
  - draft clinical communications plan, evaluation framework
  - assemble clinical project team, work plan, processes
  - draft clinical service level agreements
  - allocation of clinical resources (human and financial)
- Program Coordinator – TeleStroke **(\$50/day for 15 days total)**
  - identify/recruit/secure clinical stakeholders
  - draft clinical communications plan, evaluation framework
  - assemble clinical project team, work plan, processes
  - draft clinical service level agreements
  - allocation of clinical resources (human and financial)
- Service Coordinator – Regional Stroke **(\$50/hr for 15 days total)**
  - identify/recruit/secure clinical stakeholders
  - draft clinical communications plan, evaluation framework
  - assemble clinical project team, work plan, processes
  - draft clinical service level agreements
  - allocation of clinical resources (human and financial)

## Part E- Implementation/ Issues

9. Please describe any barriers to migration – e.g. shortage of specialized staff, incomplete PACS/RIS implementation, etc. Staff shortage lack of physician or nurses. The limited number of stroke cases within a remote area, therefore, staff would need on going clinical updates increasing remote sites work load.

Barriers to migration include:

- PACS connectivity between remote sites and CH (currently in process)
- SuperNet (IP) videoconferencing connectivity (currently in process)

10. Please list any implementation tools that your region is developing/ has developed (e.g. process maps, procedures, CT technician check-list, training programs....) which are available for sharing/ becoming a provincial template. Standardized acute stroke physician orders, TPA protocol, prehospital guidelines, process flow algorithm, TPA administration education.

TeleStroke Process Flow Document (includes remote EMS patient contact to remote tPA administration).....see attachment.

11. Please identify any critical issues or challenges currently being faced by the region in implementation of telestroke components of the Alberta Provincial Stroke Strategy. What is your region's planned approach to address these issues?

N/A

12. How are privacy and security issues being addressed? E.g. is the region's current telehealth PIA being amended? What type of security assessment is planned?

Regional Telehealth is amending is Telehealth PIA to include Acute TeleStroke. All videoconference calls will be via secure and fully encrypted network.

13. Does your planned clinical workflow differ from the appended 'Telestroke Pathway'?

Yes



## Part E2- Infoway Funding Requirements/ Project Management Schedule

**Note: completion of the following section is not required at this time.**

### Project Adoption Targets and Performance Measures:

*This is the means by which completion of your project will be assessed. These will need to be specific, achievable and measurable and specify how the proposal meets the essential criteria. A performance measure is a result, not an activity. Describe how the targets and outcomes were projected and how those targets will change with additional investment.*

### Integration/ Sustainability Plan:

Components include:

1. Has ongoing funding of operational costs been secured?
2. Will the program continue for at least a three year timeframe?
3. Based on lessons learned, please describe any modifications or major changes to program operations.

### Project Management Schedule

Milestones/Activities	Timeline
<b>Initiation</b>	
Grant agreement in place	
Project Manager recruited	
Advisory/Steering Body in place	
<b>First Consult</b>	
Established and documented clinical and operational processes	
Implemented all technology	
<b>Reach adoption/utilization targets; sustainability/integration plan in place</b>	
Training of clinical telehealth staff	
Project evaluation	
Clinical Services Delivery (list services):	
Other Service(s) Delivery	

Appendix  
TELESTROKE  
PATHWAY

