Virtual Healthcare (Telestroke) Implementation Toolkit

Update 2020

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Table of Contents

Canadian Stroke Best Practice Recommendations

Virtual Healthcare Management of Individuals with Stroke (Telestroke)

Introduction

The *Canadian Stroke Best Practice Recommendations* (CSBPR) are intended to provide up-to-date evidence-based guidelines for the prevention and management of stroke, and to promote optimal recovery and reintegration for people who have experienced stroke (patients, families, and informal caregivers). The target audience for these recommendations includes all healthcare providers from a range of health disciplines who are involved in the planning, delivery and monitoring of quality stroke care.

A key consideration throughout the CSBPR is enabling **access** to high-quality evidence-based stroke care irrespective of geographical location. Virtual care programs – connecting with a health care provider by email, phone, or video call – should be established as a service delivery modality within coordinated and integrated health systems across Canada, as most regions include remote or rural areas as well as urban areas. Individuals in these smaller locations should have equivalent access to stroke expertise, and available technology makes that possible. It is well recognized that virtual healthcare technology is an effective modality to provide expertise to regions where local expertise is limited or not available.

The CSBPR Canadian Telestroke Action Collaborative (CTAC) has brought together recognized leaders in virtual healthcare to develop a comprehensive framework and roadmap (Figure 1) that encompasses the major components of virtual care (policy and advocacy, readiness and models of delivery, evidence-based best practices, implementation, technology, and evaluation). The framework emphasizes person-centred care, and takes into account the abilities, goals, and needs of individuals and their families and caregivers throughout the stroke journey.

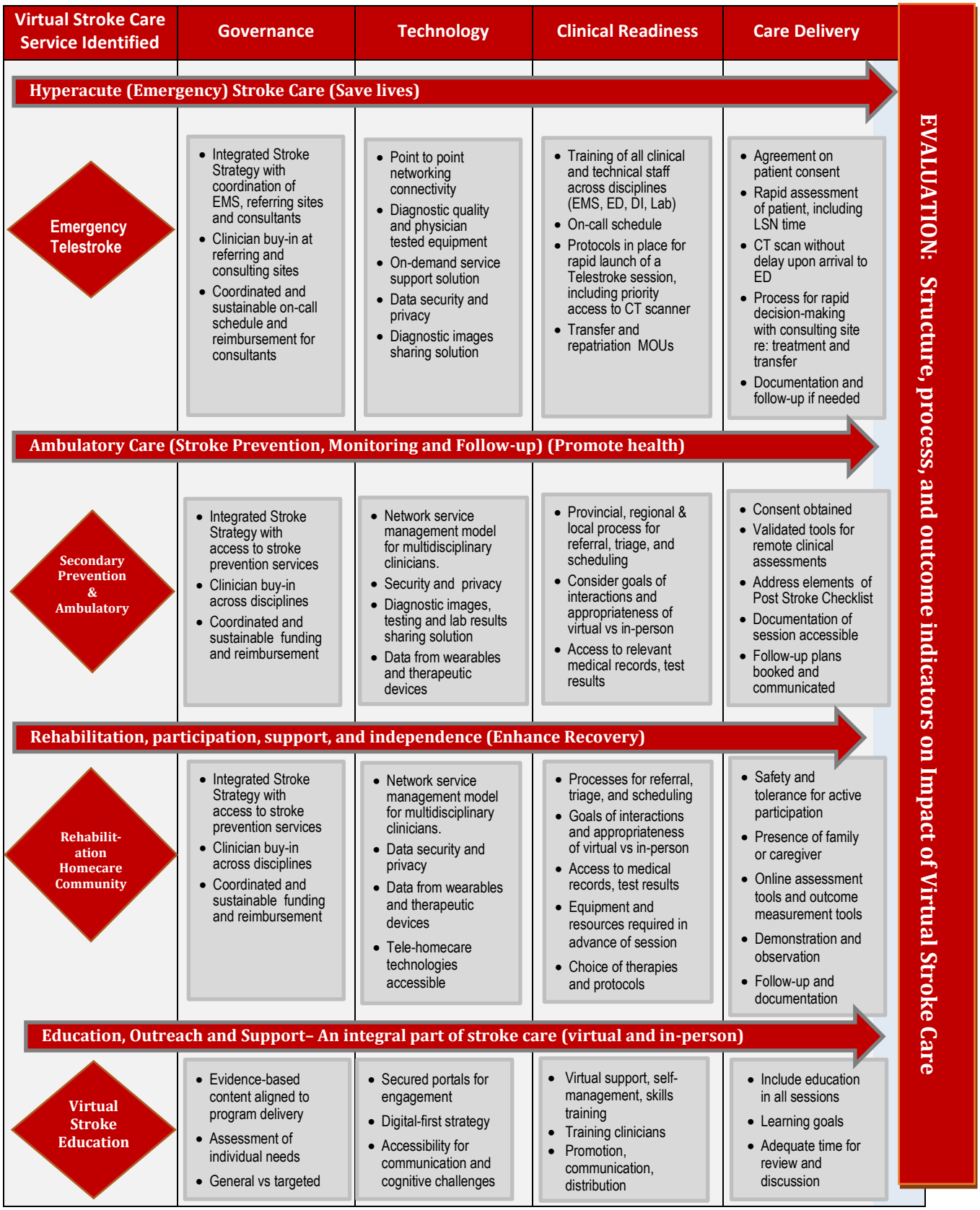
This framework for virtual healthcare delivery is based on the premise that stroke care can be provided through virtual technology at any stage along the care continuum, and for a range of intended goals. These include hyperacute care to support acute thrombolytic administration and candidate selection for endovascular therapy; stroke prevention; rehabilitation and access to allied health professionals such as physical, occupational and speech therapy; emotional and mental health support; and, community reintegration, home monitoring and support for activities of daily living. Virtual healthcare delivery enables timely cost-efficient access to best-available stroke care regardless of patient location.

Several implementation tools have been developed to facilitate efficient and effective telemedicine encounters at each phase of care noted above.

The global pandemic has led to widespread implementation of virtual healthcare for all individuals across all domains.

This toolkit has been updated to support the rapid uptake of digital modalities, ensuring effective and comprehensive assessment, diagnosis, and management of individuals with new and ongoing health issues that do not require direct in-person care or are not available due to a lack of local stroke-neurology expertise for reperfusion therapy assessment.

Figure 1: Virtual Healthcare (Telestroke) Program Roadmap (CTAC, 2020)



Checklists for Effective and Efficient Virtual Healthcare Sessions

The CTAC Virtual Care Master Checklist identifies key components and action items that should be considered in the development and delivery of virtual care encounters. Specific elements have been identified for both urgent (acute stroke management, page 5) and on-demand and scheduled applications (prevention clinic and primary care, page; rehabilitation page). The information provided is a guide – each site can adapt the processes to best reflect the site-specific stroke services model, available technology, setting, individual patient acuity, needs and resources. Virtual clinical sessions may take place with **one or more goals**, such as:

- ☐ Screening/assessment (Triage)
- ☐ Treatment and therapies
- ☐ Transitions, follow-up, and ongoing monitoring
- ☐ Skills training
- ☐ Communication, teaching and education

Tips for effective consultations for Clinicians [1-4]

- ☐ Confirm and clarify consent at the start of each session
- ☐ Be aware of individual characteristics, health status, potential language issues, and care requirements in advance of session and adjust approach accordingly (e.g., people with aphasia)
- ☐ Start with introducing yourself and add *"Thank you for inviting me in your home today,"*
- ☐ Frequently acknowledge that you are present and listening, remain visual on screen if using video, look into camera *at the individual* and avoid wandering gaze away from camera if using
- ☐ Build rapport e.g. make a positive comment about their background or environment to personally connect
- ☐ Help individuals feel more comfortable *"I realize this visit style is new, thank you for giving it a try"*
- ☐ Set goals, expectations, and anticipated duration of the session at the very start and agree on these
- ☐ Be aware of body language and use gestures that they can see on camera
- ☐ Adjust your style if using phone only as the individual will not be able to 'see;' you and it will be harder to follow commands
- ☐ Be able to demonstrate what you need them to do as part of remote exam
- ☐ Use pauses to ensure statements come across clearly and the individual has time to respond.
- ☐ A few minutes before end of time, state *we are almost done our visit, is there anything else regarding your stroke you wanted us to discuss today; how did you feel the virtual visit went today?*
- ☐ Adopt good virtual etiquette in your services. Examples include camera at eye level, confidential environments, badges visible to individual, removing visual distractions behind clinicians, and being punctual for appointments with individual

Tips for effective consultations for individuals participating in virtual healthcare session [1-4]

- ☐ Have technology ready ahead of time and ensure it is working
- ☐ Have information (health card, medication list, questions) ready and with you
- ☐ If needing glasses or hearing aids or other accessibility devices have them ready and with you
- ☐ Be set up in front of your device (phone, computer, tablet) at least 10 minutes before the scheduled appointment time
- ☐ Ensure distractions and surrounding noise is at a minimum or removed before starting appointment and good lighting so you can be seen clearly (avoid a bright window in the background)
- ☐ The clinician can only see what your camera sees so be aware of your camera range

1. Checklists for Virtual Acute Stroke Management (On-Demand Acute Telestroke)

Legend: ***Clinician*** refers to any healthcare professional providing services to an individual through virtual modalities, and working within their regulated scope of practice. ***Individual*** refers to the person (patient, client) receiving the healthcare services from the clinician. For emergency and inpatient stroke care only, the term '**patient**' is used throughout section. ***Session*** refers to the actual virtual healthcare encounter between the clinician and individual. ***Telestroke*** refers to virtual emergency care provided between a referring and consulting hospital site for providing emergency care of a patient with an acute stroke. Note, in some cases a Substitute Decision Maker (SDM) may be involved in a session with or on behalf of the individual. We do not include this person in the checklist specifically for conciseness, but do acknowledge they may be included.

Key Elements of Virtual Care	For the Clinician	For the Individual, Family and Caregivers
Infrastructure and Technology		
Administrative structure to manage a Telestroke program (i.e. system coordination, privacy & security, contingency planning, supporting documentation and manuals, referral management, contract management, monitoring and evaluation).	☐ Provincially integrated stroke service delivery solution ☐ Governance & Management Structure resourced to execute Telestroke Service and provide ongoing leadership and management (i.e. Telehealth Program, Health Authority, Stroke Program) ☐ Administrative and clinical Stroke leadership to support Telestroke development and implementation ☐ Approved ED protocols and stroke care pathways for hyperacute stroke management (Canadian Best Practice Recommendations for Stroke Care) ☐ Aligned and integrated with provincial and/or regional stroke service models (i.e. based on service delivery priorities and need identified) ☐ Available 24/7 ☐ Telestroke service support requirements need to be negotiated with appropriate service support partners and funded to support the Telestroke service requirements (i.e. 24/7, direct contact to support for Telestroke). Often short timeframe to respond. ☐ In systems where Telestroke systems are not established, consideration of other systems (telephone, Zoom/Facetime) to allow for rapid assessment. ☐ Sustainably plan that addresses updating aging equipment ☐ **Alternate Location Solutions**: A home and office access solution should be considered, such as dedicated Telestroke laptop, for 24/7 emergency Telestroke service so that neurologists can be on-call at alternate points of care (i.e. Home and/or office)	☐ Public awareness that stroke is a medical emergency. ☐ Know the signs of stroke and FAST acronym (Face, Arm, Speech, Time to call 911) ☐ Call 911 when stroke is suspected ☐ To be aware of the virtual healthcare sites for emergency stroke management

Key Elements of Virtual Care	For the Clinician	For the Individual, Family and Caregivers
	☐ Regions/provinces need to be prepared to support imaging platforms/etc. on physician's personal devices. When they can respond remotely from anywhere, this goes a long way towards convincing physicians to support a telemedicine program.	
Consulting & Referring Site Service Capacity	☐ Committed consulting group with service capacity ☐ Agreed service delivery model (i.e. service design and service delivery expectations) ☐ Compensation Agreement (contract) ☐ On-call Agreement including alternative points of care solution ☐ Referring Site has capacity to manage patients or transfer protocols in place (i.e. Nursing staff, Imaging Technicians, laboratory staff, allied health professionals)	
Referral Management: Mechanism in place to support coordinated videoconference interaction	☐ On-demand referral management solution either by an organized group -with clearly defined referral protocols and with a back-up solution in case the network fails at the time of consultation ☐ Central referral processing system with ability to launch on-demand urgent priority consultation ☐ Mechanism in place for emergency providers to access quickly with alternate system (e.g. Zoom/Facetime) for rapid access in centres without ready assessment or technical challenges.	

Key Elements of Virtual Care	For the Clinician	For the Individual, Family and Caregivers
Virtual care connectivity between consulting sites and designated Telestroke sites	☐ Appropriate technology infrastructure (e.g., bandwidth) to allow videoconferencing connectivity in the right place & the right time ☐ On-demand connectivity & point to point ☐ Appropriately trained service providers ☐ Consulting neurologists should have the ability to manipulate the referring site camera to support remote neurological assessment ☐ Rapid transmission of CT/CTA images from the referral site to the Telestroke neurologist ☐ CT scan viewing should be available within the ED ☐ Service providers must have access to telephone or alternative backup solution in the event of technical problems ☐ Patient information must travel on a secure network and meet legislated health information privacy standards or waiver in place for emergent situations	☐ Availability of individual health card ☐ Availability of relative or caregiver who is able to provide medical information and consent if individual unable to communicate (may be by phone if physical distancing)
Clinical Care Delivery		
Emergency Medical Services	☐ On-scene patient screening for signs of stroke and second screen for stroke severity to identify possible LVO cases that may be candidate for EVT ☐ Protocols in place to guide decisions regarding whether direct transfer to EVT centre or stop at closer stroke-enabled centre first for CT/CTA ☐ Prenotification to receiving telestroke centre to launch code stroke ☐ Protocols in place for safe and timely transport of suspected pandemic-infected patients.	☐ Availability of individual health card ☐ Availability of relative or caregiver who is able to provide medical information and consent if individual unable to communicate ☐ Current medication list
Laboratory and Diagnostic Imaging	☐ The facility has a CT scanner and has the ability to provide STAT CT and CTA of head scan during Telestroke hours of operation. Consider capacity for CT perfusion (CTP) where appropriate ☐ Site protocols for acute stroke priority in imaging and established imaging protocols. (This includes support and agreement from emergency department, radiology, and neurology) ☐ CT scan must be conducted and transmitted in a timely way to ensure interpretation within 15 minutes of patient arrival (based on 15-30-60-90 rule and CSBPR) ☐ Health Authority and provincial network infrastructure supports rapid transfer of CT from the referring to consulting site	☐ Provide information on allergies or medical issues related to contrast

Key Elements of Virtual Care	For the Clinician	For the Individual, Family and Caregivers
	☐ Laboratory provides stat blood work with no down time during hours of Telestroke operation (i.e. 24/7) ☐ NOTE: After the patient's airway, breathing and circulation are deemed stable, CT/CTA is the priority. ☐ Often laboratory results are not needed prior to establishing thrombolytic therapy if there are no concerns raised in the patient's history ☐ Protocols for pandemic screening to determine safety and logistical issues for imaging and telemedicine access (dedicated equipment, decontamination)	
Organized Emergency Care to facilitate intravenous alteplase, and administration and decision-making regarding EVT	☐ Confirm time last seen well and stroke symptom onset (and time lapse to hospital arrival) ☐ Rapid Triage Protocols for Stroke in place (i.e. Alert from EMS for + stroke evaluation with validated clinical tool & acute stroke algorithms) ☐ Patient management protocols within ED align with Telestroke technology placement (i.e. Telestroke bays are identified in consultation with referring site staff). ☐ Responsibility for technology set-up and support assigned and supported by ED staff ☐ Stroke team present and able to work in tandem and collaboratively on patient arrival ☐ Transfer and placement policies and protocols to assist service providers in ensuring patient has access to appropriate level of care post alteplase ☐ Emergency physician (ERP) to assess all acute stroke patients without delay upon arrival in the ED ☐ Access to CT/CTA results at consulting site at time of contact with consultant ☐ Process to ensure rapid decision-making occurs regarding possible LVO cases who are candidates for endovascular thrombectomy ☐ Protocol for rapid transfer of EVT candidates to higher level of care with Door In-Door Out time less than 45 minutes ☐ Alteplase is readily available within the Emergency Department (i.e. Clot Box). ☐ Process established for meeting benchmarks for delivering alteplase in accordance with the guidelines for thrombolytic therapy for an ischemic stroke ☐ Cardiac Monitoring, neurovitals, BP and temp,	☐ Individual, family member or caregiver to participate in decision-making regarding acute stroke management ☐ Record list of questions as they arise and ask them of members of the healthcare team – in-person and the virtual consultants as appropriate

Key Elements of Virtual Care	For the Clinician	For the Individual, Family and Caregivers
	blood sugar levels is available for all acute stroke protocol patients ☐ ED clinical teams informed, trained and willing to support Telestroke service ☐ ERPs and stroke neurologists extend working relationship to videoconference platform ☐ Pharmacy preparedness for alteplase based on projected volumes (e.g. stock/supplies, distribution, budget) ☐ All appropriate ED staff and supporting service areas (admitting personnel, CT technologists, Laboratory technologists and inpatient nursing staff) trained in hyperacute stroke management ☐ Stroke pathways and protocols established for acute stroke management by dedicated hospital team ☐ Transfer protocols to higher level site in place and applied when clinically indicated ☐ Consultant available for follow-up consultation ☐ Provide support to family and caregivers ☐ *For pandemic suspected patient, appropriate protocols for patient examination, PPE, safety of patient and staff*.	
Follow-up Continuity of Care	☐ Stroke patients remaining in their community should have access to secondary stroke prevention clinics and rehabilitation services appropriate to their needs once discharged from hospital – in person or by virtual telemedicine access ☐ Transfer protocols to higher level site in place and applied when clinically indicated ☐ Consultant available for follow-up as required to support the ongoing care of the individual with stroke while at the referring site ☐ Referring site to provide education and skills training to individual, families and caregivers	☐ Ask questions and clarify information ☐ Request contact person and phone number for follow-up ☐ Request a list of current medications and follow-up appointments ☐ Visit the Heart & Stroke website for information ☐ Visit the Canadian Stroke Best Practices website for resources to help individuals manage following stroke ☐ Consider joining Heart & Stroke's online Community of Survivors or Care Supporters Community

2. Checklists for Virtual Scheduled Ambulatory Stroke Prevention Care

Scheduled virtual consultations to support secondary prevention assessment, management and ongoing follow-up for individuals who have experienced a stroke, transient ischemic attack, or vascular cognitive impairment. In some cases, this may also include individuals with comorbidities such as hypertension, atrial fibrillation or carotid artery disease who are at much higher risk of experiencing these conditions. These visits may be scheduled by stroke specialists and or family physicians and community-based primary health teams (including nurses, dietitians, counselling service providers). The CSBP Checklist below will apply to all these clinicians providing services. Individuals (patients) receiving these services should be made aware that virtual visits can be part of routine stroke care - empower individuals to ask if a virtual visit is possible. In addition to the elements listed below, healthcare clinicians should follow discipline-specific virtual care guidelines as established by their professional regulatory colleges.

Legend: ***Clinician*** refers to any healthcare professional providing services to an individual through virtual modalities, and working within their regulated professional scope of practice. ***Individual*** refers to the person (patient, client) receiving the healthcare services from the clinician. ***Session*** refers to the actual virtual healthcare encounter between the clinician and individual. Note, in some cases a Substitute Decision Maker (SDM) may be involved in a session with or on behalf of the individual. We do not include this person in the checklist specifically for conciseness, but do acknowledge they may be included.

Key Elements	For the Provider	For the Individual, Family and Caregivers
Infrastructure and Technology		
Administrative structure to manage scheduled virtual stroke prevention service appointments **(i.e. system coordination, privacy & security, contingency planning, supporting documentation and manuals, referral management, contract management, monitoring and evaluation).**	☐ Depending on scope of service, could be managed at the regional and local levels. ☐ Stroke clinical leadership to support Telestroke development and implementation ☐ Approved stroke protocols and stroke care pathways for stroke management (in alignment with current Canadian Stroke Best Practice Recommendations) ☐ Aligned and integrated with provincial and/or regional stroke service models (i.e. based on service delivery priorities and need identified) ☐ Regularly updated clinical lists, including algorithms to determine which individuals can be seen virtually vs. those that must be seen in person. ☐ With physical distancing during pandemic, these sessions may be organized through individual providers under organizational oversight where appropriate, using a secure technology	☐ Some individuals may be worried about participating in a virtual healthcare session and sharing personal information online. Ask the healthcare provider what steps they have in place to ensure your information is secure and protected. ☐ Individual (patient) to be made aware that virtual healthcare sessions can be part of routine stroke care - empower individuals to ask if a virtual session is possible ☐ Individual has internet enabled device (smartphone, tablet, laptop, or desktop computer with webcam) ☐ Individual has access to reliable internet connection ☐ Clarify mode of virtual communication to book the virtual healthcare session, conduct the session, share results and information, follow up (e.g., email, phone call or video call). ☐ Receive information on which program or application (APP) the clinician will be using, and

Key Elements	For the Provider	For the Individual, Family and Caregivers
		whether downloading a particular APP or program is required.
Expert Clinician & Referring Site Service Capacity	☐ Committed consulting group with service capacity and stroke care expertise ☐ Agreed service delivery model based on purpose of consultation – e.g., initial assessment, diagnosis and management, follow-up, or ongoing monitoring ☐ Compensation Agreement may be required ☐ Referral sites have capacity to support service if appropriate (such as rural Nursing Stations); including making smart devices available for individuals to enable participation ☐ All appropriate staff and supporting service areas trained in virtual care technology	☐ Clarify whether virtual healthcare session to take place in the individual's home or through a different healthcare clinic location
Virtual care connectivity and technical support	☐ *Note: during the pandemic, confirm with your organization what virtual care platforms and networks are approved for use when clinicians are working off-site (e.g., at home), that all reasonable precautions for privacy should be taken, and that the session can take place as long as individual has provided informed consent* ☐ Consider the needs and goals of the virtual care session and determine technology required (smart phone APP sufficient vs system with increased functionality such as peripheral linkages and/or moveable/zoomable cameras) ☐ Appropriately trained service providers – training to be provided to optimize virtual care experience for provider and individual ☐ Service providers must have access to telephone as back-up in the event of technical problems or medical emergency ☐ Patient information must travel on a secure network and meet legislated health information privacy standards ☐ With individual providers conducting consultations, technical support services should be identified in advance and communicated directly with individual if connecting in their home	☐ Identify what minimal and optimal technology is available to the individual - ensure the device (smartphone, laptop, tablet) is charged and that the volume is working and has a microphone ☐ Discuss preferred method of contact (phone versus audio and video) ☐ Ensure individual has secure place to perform a virtual healthcare session respecting privacy and confidentiality – discuss issues with healthcare provider ☐ Ensure individual is able to maintain privacy and confidentiality as appropriate (e.g., if in residential care, privacy from other residents) ☐ Have someone else available to participate in the virtual healthcare session if possible, with physical distancing and appropriate measures– individual has right to privacy and may choose to have someone else (family, caregiver) involved in care and participate in the sessions

Key Elements	For the Provider	For the Individual, Family and Caregivers
	☐ Consider whether the potential benefits of virtual care for a given individual outweigh any risks ☐ Ensure that confidentiality and privacy requirements regarding Personal Health Information are respected throughout the continuum of care; both in rest (in platform) and in transit (between platforms) ☐ Determine whether there are any audio delays in the connection ☐ Responsibility for technology set-up and support assigned and supported by staff ☐ Consider available technology and support for operating the camera by a family member or other health care support personnel in the home to observe function (i.e. walking, or movement in different home settings) ☐ Consider plan for "just in time" technical support available for individuals if providing services directly to individual's homes	☐ Identify which location in living quarters the virtual healthcare session will take place, ensure well-lit location ☐ Ask if there is a person or service available for technical support, if needed
Referral Management: Mechanism in place to support coordinated virtual healthcare session and manage bookings	☐ *Clear criteria and protocols available for targeted referral pathways to ensure that the health system's efforts to maintain essential services during the pandemic is respected.* ☐ Scheduled virtual stroke prevention consultations may only need a scheduling system or policy and process documentation (i.e. referral protocols) ☐ Consulting sites and individual clinicians have triage protocols in place that ensure referred individuals are seen in a timely manner within the target timelines outlined in the CSBPR and local intake criteria to meet the needs of individuals referred ☐ Process to assess individuals for their ability to participate in a virtual healthcare consultation for stroke prevention (such as cognition, physical deficits, functional abilities, sensory or perceptual deficits, vision, safety, and available assistance from family and caregivers) ☐ Consider approach if sharing a diagnosis or negative news that may be distressing for the individual to receive	☐ At time of booking, individual provides verbal consent to participate in a virtual healthcare session related to stroke rehabilitation and recovery ☐ At time of booking, individual provides verbal consent to receive email communication regarding scheduling and communication of non-sensitive information ☐ Individual is aware that they may decide whether to include other family and/or caregivers as participants in virtual healthcare sessions ☐ Individual has secure place to perform a virtual healthcare session, respecting privacy, and confidentiality ☐ Individual identifies others who may need/want to also participate in the session (e.g., family members, family physician, nurse) and determine whether it is appropriate to the

Key Elements	For the Provider	For the Individual, Family and Caregivers
	☐ Appointment times available that accommodate individual and provider schedules as much as possible (within regular clinic business hours and with some flexibility where necessary) ☐ Consider providing an orientation package of information for individual in advance of starting virtual services – what to expect, how the virtual session will be conducted ☐ Provide a confirmation call in advance to individual to confirm the time and date but specifically if the technology available is working properly. ☐ Consider starting with a shorter session to give individual chance to get used to technology and process before more complicated discussions occur, especially if new individual where they are unknown to the provider. ☐ *Note, when sudden changes in available supports and services occur (such as in a pandemic), centralized triage and booking processes and supports may not be available. Clinicians should have an alternate plan in place to enable booking of appointments directly with individuals (patient)s.*	session and technically possible if they are not present in the same location as the individual ☐ Confirm technology to be used such as smart-phone or another device with video and/or audio ☐ Email address for scheduling and communication of non-sensitive information ☐ Assess the following: ○ Ability to use the technology effectively ○ Communication challenges (e.g., individual with aphasia) ○ Language barriers ○ Cognitive capacity
Clinical Care Delivery		
Preparation for Virtual Session	☐ Determine reason for appointment – new referral or follow-up ☐ Have access to individual medical history records as needed and referral documentation (health status updates, history of condition related to consultation) ☐ If possible, all diagnostics such as CT, CTA, ECG, and laboratory tests should be completed and made available to the neurologist prior to initiating the virtual SPC appointment. ☐ Have standardized clinical decision aids and tools accessible to facilitate interaction ☐ Ensure adequate privacy in the room ☐ Be in a well-lit location where sound is clear and free of distracting background noise ☐ Notify all participants if clinician is running late	☐ Ask and discuss rights and responsibilities regarding participation in a virtual healthcare session ☐ Discuss any concerns related to privacy and/or confidentiality regarding participation in a virtual healthcare session, with healthcare provider ☐ Some individuals may want to record their session with a clinician to help remember information later. Individual must discuss this with the clinician before starting a recording and ensure clinician provides their agreement first ☐ Request a test call if required and available (may not be possible in some circumstances)

Key Elements	For the Provider	For the Individual, Family and Caregivers
	☐ Determine goals of session and have outline of key session elements ☐ Determine capacity of family member or caregiver who may be with the individual regarding ability to help with exam as appropriate ☐ If this session takes place in a referral healthcare site, have someone at the referral site complete the individual's vital signs and assist with the physical exam as necessary ☐ Ensure you have an alternate way of contact (phone number, local contact) in case of break in communication ☐ Ensure you have an emergency plan (i.e. call 911 or local appropriate number if there is an incident) ☐ Be aware of the limitations of virtual care ☐ Consider starting with shorter session to give individual chance to get used to technology and process before more complicated discussions occur, especially if new individual where they are unknown to the provider (another staff member such as a coordinator may be able to do this) ☐ In advance of session, provide individual with any materials (electronic or hard copies) that will be required during the session (e.g. instruction sheets, education pamphlets)	☐ Ask healthcare provider how much space will be needed for the session ☐ Plan space where the session will take place – good lighting, minimal background noise and distractions (such as televisions, radio, pets). Ensure that the space is clear for individual to safely move around as needed (e.g., remove tripping hazards such as loose rugs or cords). ☐ Ensure adequate privacy in the room that will be used for the session ☐ Have a companion available if possible, to assist in the session and to support safety. Consider virtual participation if they are in another location ☐ Things to have readily available for the session: ○ Health card ○ Companion to assist in session if available ○ Updated medication list including route, dose, frequency ○ Pharmacy name, location and phone number ○ Blood pressure machine and or recent readings ☐ If planning neuro exam: ○ Toothpick ○ Ice cube ☐ Have list of concerns and questions prepared for discussion (see Canadian Stroke Best Practice Recommendations CSBPR Post-Stroke Checklist) ☐ Have a pen and paper to make notes and write down instructions and medication changes

Key Elements	For the Provider	For the Individual, Family and Caregivers
Laboratory Tests (i.e., Blood work and other tests)	☐ Laboratory provides blood work service (if required) ☐ Ensure process to provide individual or testing centre with appropriate requisitions prior to individual appointment with the lab ☐ Clinicians should communicate clearly to patients when blood work and other tests should take place that require an in-person visit to a lab or testing centre, and how quickly the test needs to be done (e.g., urgently, appropriate to be delayed for a certain time period, or change in frequency). ☐ Clinician to discuss responsibilities of healthcare provider and responsibilities of individual, to help promote safety when in-person appointments are required (e.g., healthcare facility completes regular cleaning, individual participates in hand hygiene)	☐ Be aware of required bloodwork, timing and which facility is open for testing ☐ Ask clinician how to obtain the requisitions or whether the requisitions will be sent directly to the Lab and when it will happen ☐ Ensure personal safety precautions based on Health Canada, such as physical distancing when accessing blood work services ☐ Book appointment where possible to avoid waiting in public area for longer time periods. Follow safety precautions based on Health Canada, such as physical distancing and hand washing, when accessing testing services.
Diagnostic Imaging	☐ DI solution in place to allow for access to image if required, including clear communication pathways with DI staff, as traditional methods (such as fax) may not allow for timely consultations. ☐ The facility has a CT scanner and can provide CT head/CTA (arch to vertex) scan for prevention clinic services within recommended best practice time frames ☐ Ability to access other imaging or diagnostic tests results electronically beneficial but not mandatory (i.e. EHR) ☐ Management of cardiac testing: such as protocols for echocardiography, Holter monitoring and relaying of reports.	☐ Be aware of required imaging and tests, timing and which facility is open for testing ☐ Ask clinician how to obtain the requisitions or whether the requisitions will be sent directly to the Imaging service and when it will happen ☐ Ensure personal safety precautions based on Health Canada, such as physical distancing when accessing blood work services ☐ Book appointment where possible to avoid waiting in public area for longer time periods. Follow safety precautions based on Health Canada, such as physical distancing and hand washing, when accessing testing services.
Conducting prevention consult	☐ Verify individual identity using minimum of two elements (e.g., name, date of birth, address, health card number) ☐ Introductions and take time to determine individual location and circumstances during	☐ *Note: if the individual has agreed to the virtual session and has joined the call – consent is implied. Consent should be verbally agreed on and*

Key Elements	For the Provider	For the Individual, Family and Caregivers
	COVID (where located, alone or with others, access to caregivers, food) ☐ Provide an outline of how the session will take place and what you will do – also good to state up front how long you expect the session to last (e.g., 15 min, 30 min) so expectations set in advance ☐ Address primary purpose of consultation (new patient, test results, medication management, general follow-up) ☐ Conduct remote neuro-exam if required (e.g., refer to AAN process) ☐ Review risk factors and current control status ☐ Cognitive exams – The MoCA group has developed a process for remote testing ☐ Review and assess rehabilitation status and ongoing needs – make appropriate referrals ☐ Medication review – if changes made or new medications ordered, when and how will the prescriptions be sent to the individual's preferred pharmacy ☐ Mood and signs of depression – process to examine mood as this may be exacerbated with current COVID situation and social isolation, especially individuals living alone ☐ Assess swallowing and communication issues as appropriate to individual ☐ Status of pending diagnostics or other consults ☐ Sleep assessment – use of questionnaire if appropriate ☐ Consider other elements to explore such as those included in CSBPR Post-Stroke Checklist (spasticity, fatigue, communication, pain, continence) ☐ Review other lifestyle issues such as driving status, return to work, community participation, intimacy. ☐ Determine whether individual is safe and capable of continuing to reside in current circumstances or whether changes may need to be made ☐ Address other educational needs of individual and family and refer to stroke prevention nurse if available for follow-up and to Heart	*documented prior to starting the session.* ☐ Individual receiving care should be on camera if available to aid in assessment and therapy ☐ Individual to participate in the virtual healthcare session to the best of their ability ☐ Ask questions of clinician as required to ensure understanding of information provided and any instructions or changes to medications ☐ At any time during the session, individual to let the clinician know if they are feeling unsafe, uncomfortable or have any concerns with how the session is going ☐ Individual can request to terminate the session at any time

Key Elements	For the Provider	For the Individual, Family and Caregivers
	and Stroke Foundation resources and Stroke Best Practice Resources	
Alternate plans if technology issues occur	☐ If connection was initially made and disconnected before session is completed, both the client and the clinician can attempt to reconnect to the event and continue the call. ☐ If the virtual call cannot be continued to do loss of internet, power or system outage, the Clinician must telephone the client to instruct them on any remaining details not already covered as well as follow-up details ☐ If connection was not made, Clinician will call the client to reschedule in-person or virtually as per Clinician/client's request	☐ Know how to connect with the clinician to cancel or reschedule the session, if needed ☐ If technical problems arise during the call, have a telephone nearby and the phone number of the clinician to try and resolve the issue.
Ending virtual session, documentation, follow up	☐ Provide summary of areas addressed, key messages and outcomes of the virtual healthcare session ☐ Make recommendations for follow-up, replicating as closely as possible how this is managed in an in-person visit, and share how appointment will be made ☐ Review instructions for medication changes and clarify continued medications ☐ Review any tests that need to take place, where, when and how will requisitions be obtained ☐ If order tests, discuss when to expect the tests to be done (e.g. test A is urgent, will be in next week, please don't miss it, test B and C are less urgent, can be done when COVID is under control) ☐ If ordering tests, explain how the results will be communicated to them ☐ Ensure individual has contact info for the clinic in case they have follow-up questions. ☐ Initiate follow-up referrals to other health disciplines (e.g., nursing, rehabilitation therapists, dietitian, social work, other medical specialists) ☐ Document session on a standard individual record form for your practice (digital or paper) and send appropriate consultation	☐ Individual to ask any remaining questions that they have ☐ Ask for information about how to contact rehabilitation team members or members of community support teams as appropriate to individual's care ☐ Make note of instructions and information on follow-up appointments and tests – with whom, when, how will individual be contacted, will it be virtual or in-person ☐ Request a follow-up session to receive education to help support self-management, if needed ☐ Visit the Heart & Stroke website for information ☐ Visit the Canadian Stroke Best Practices website for resources to help individuals manage following stroke ☐ Consider joining Heart & Stroke's online Community of Survivors or Care Supporters Community for online and peer support

Key Elements	For the Provider	For the Individual, Family and Caregivers
	notes to referring source, as per college and organizational requirements ☐ Clearly identify and communicate who is following this individual for further care ☐ If appropriate, obtain verbal consent from the individual that they are willing to have future appointments virtually if necessary and possible. This information is then captured in the documentation following the appointment ☐ Each future appointment should be assessed for appropriateness for in person versus virtual delivery and mutually agreed upon by the clinician and individual ☐ Review signs of acute stroke and direct them to call 911 if they experience any of signs of stroke, even if mild or transient	

3. Checklists for Virtual Scheduled Stroke Rehabilitation Services

Scheduled virtual consultations to support rehabilitation following a stroke have been shown to be at least as effective as in-person interactions for some aspects of rehabilitation therapy. These visits may be scheduled for an initial assessment or follow-up appointments, individuals to be made aware that virtual visits can be part of routine stroke care - empower individuals to ask if a virtual visit is possible. In addition to the elements listed below, ***health care clinicians should follow discipline-specific virtual care guidelines as established by their professional regulatory colleges.***

Legend: ***Clinician*** refers to any healthcare professional providing services to an individual through virtual modalities, and ***working within their regulated scope of practice***. ***Individual*** refers to the person (patient, client) receiving the healthcare services from the clinician. ***Session*** refers to the actual virtual healthcare encounter between the clinician and individual. Note, in some cases a Substitute Decision Maker (SDM) may be involved in a session with or on behalf of the individual. We do not include this person in the checklist specifically for conciseness, but do acknowledge they may be included.

Key Elements	For the Provider	For the Individual, Family and Caregivers
Infrastructure and Technology		
Administrative structure to manage scheduled virtual stroke rehabilitation service appointments **(i.e. system coordination, privacy & security, contingency planning, supporting documentation and manuals, referral management, contract management, monitoring and evaluation).**	☐ Depending on scope of service, could be managed at the regional, district and local levels. ☐ Administrative and clinical Stroke leadership to support TeleRehabilitation development and implementation across provider groups ☐ Approved stroke rehabilitation protocols and stroke care pathways for TeleRehabilitation (in alignment with current Canadian Stroke Best Practice Recommendations) ☐ Aligned and integrated with provincial and/or regional stroke rehabilitation service models (i.e. based on service delivery priorities and need identified) ☐ Regularly updated clinical lists, including algorithms to determine which individuals can be seen virtually vs. those that must be seen in person. ☐ Note, with physical distancing during pandemic, these sessions may be organized through each healthcare provider either independently or through organizational oversight where appropriate	☐ Some individuals may be worried about participating in a virtual healthcare session and sharing personal information online. Ask the healthcare provider what steps they have in place to ensure your information is secure and protected. ☐ Individual to be made aware that virtual healthcare sessions can be part of routine stroke care - empower individuals to ask if a virtual session is possible ☐ Individual has internet enabled device (smartphone, tablet, desktop, or laptop computer with webcam) ☐ Individual has access to reliable internet connection ☐ Clarify mode of virtual communication to book the virtual healthcare session, conduct the session, share results and information, follow up (e.g., email, phone call or video call). ☐ Receive information on which program or application (APP) the clinician will be using, and whether downloading a particular APP or program is required

Key Elements	For the Provider	For the Individual, Family and Caregivers
Expert Rehabilitation Capacity	☐ Committed group of healthcare providers with stroke rehabilitation expertise and with service capacity ☐ Agreed service delivery models based on purpose of session – e.g., consultation, assessment, rehabilitation therapy session, follow-up, or ongoing monitoring ☐ Compensation Agreement may be required ☐ Referring sites have capacity to support service if appropriate (such as rural Nursing Stations); including making smart devices available for individuals to enable participation ☐ All appropriate staff and supporting service areas trained in virtual care technology	☐ Clarify whether virtual healthcare session to take place in the individual's home or through a different healthcare clinic location
Virtual Care connectivity and Technical Support	☐ *Note, during pandemic state, confirm with your organization what networks are approved for use when clinician is working off-site (e.g., at home) - all reasonable precautions for privacy should be taken and that the session can take place as long as individual has provided informed consent* ☐ Consider the needs and goals of the virtual care session and determine technology required (smart phone APP sufficient vs system with increased functionality such as peripheral linkages and/or moveable/zoomable cameras) ☐ Bridges can be used to enable connectivity ☐ Appropriately trained service providers – training to be provided to optimize virtual care experience for provider and individual ☐ Service providers must have access to telephone as back-up in the event of technical problems or medical emergency ☐ Patient information must travel on a secure network and meet legislated health information privacy standards ☐ With individual providers conducting consultations, technical support services should be identified in advance and communicated directly with individual if connecting in their home ☐ Consider whether the potential benefits of virtual care for a given individual outweigh any risks	☐ Identify what minimal and optimal technology is available to the individual - ensure the device (smartphone, laptop, tablet) is charged and that the volume is working and has a microphone ☐ Discuss preferred method of contact (phone versus audio and video) ☐ Ensure individual has secure place to perform a virtual healthcare session respecting privacy and confidentiality – discuss issues with healthcare provider ☐ Ensure individual is able to maintain privacy and confidentiality as appropriate (e.g., if in residential care, privacy from other residents) ☐ Have someone else available to participate in the virtual healthcare session if possible, with physical distancing and appropriate measures– individual has right to privacy and may choose to have someone else (family, caregiver) involved in care and participate in the sessions

Key Elements	For the Provider	For the Individual, Family and Caregivers
	☐ Ensure that confidentiality and privacy requirements regarding Personal Health Information are respected throughout the continuum of care; both in rest (in platform) and in transit (between platforms) ☐ Determine whether there are any audio delays in the connection ☐ Responsibility for technology set-up and support assigned and supported by staff ☐ Consider available technology and support for operating the camera by a family member or other health care support personnel in the home to observe function (i.e. walking, or movement in different home settings) ☐ Consider plan for "just in time" technical support available for individuals if providing services directly to individual's homes	☐ Identify which location in living quarters the session will take place, ensure well-lit location ☐ Ask if there is a person or service available for technical support, if needed
Referral Management: Mechanism in place to support coordinated virtual healthcare session and manage bookings	☐ Clear criteria and protocols available for targeted referral pathways to ensure you respect the health system's efforts to maintain essential services during the pandemic ☐ Scheduled virtual stroke rehabilitation consultations may only need a scheduling system or policy and process documentation (i.e. referral protocols) ☐ Consulting sites and individual clinicians have triage protocols in place that ensure referred individuals are seen in a timely manner within the target timelines outlined in the CSBPR and local intake criteria to meet rehabilitation and community care needs of individuals referred ☐ Process to assess individuals for their ability to participate in a virtual session for stroke rehabilitation (such as issues with aphasia and communication, cognition, physical deficits, functional abilities, sensory or perceptual deficits, vision, safety and available assistance from family and caregivers) ☐ Appointment times available that accommodate individual and provider schedules as much as possible (within regular clinic business hours and with some flexibility where necessary)	☐ At time of booking, individual provides verbal consent to participate in a virtual healthcare session related to stroke rehabilitation and recovery ☐ At time of booking, individual provides verbal consent to receive email communication regarding scheduling and communication of non-sensitive information ☐ Individual is aware that they may decide whether to include other family and or caregivers as participants in virtual healthcare sessions ☐ Individual has secure place to perform a virtual healthcare session, respecting privacy, and confidentiality ☐ Individual identifies others who may need/want to also participate in the session (e.g., family members, family physician, nurse) and determine whether it is appropriate to the visit and technically possible if they are not present in the same location as the individual

Key Elements	For the Provider	For the Individual, Family and Caregivers
	☐ Consider providing an orientation package of information for individual in advance of starting virtual services – what to expect, how the virtual session will be conducted. Address privacy and confidentiality ☐ Provide a confirmation call in advance to individual to confirm the time and date but specifically if the technology available is working properly. ☐ Consider starting with a shorter session to give individual chance to get used to technology and process before more complicated discussions occur, especially if new individual where they are unknown to the provider. ☐ *Note, sudden changes in available supports and services (such as in a pandemic), it may be necessary for healthcare professionals to set up appointments directly with individuals (patient) without a centralized triage and booking process and supports.*	☐ Confirm technology to be used such as smart-phone or another device with video and or audio ☐ Individual provides email address (if consent given) for scheduling and communication of non-sensitive information ☐ Individual, family, and caregivers assess the following: ☐ Ability to use the technology effectively ☐ Ability to safely participate in a stroke rehabilitation session virtually ○ Communication challenges (e.g., individual with aphasia) ○ Language barriers ○ Cognitive capacity
Clinical Care Delivery		
Preparation For Virtual Session ***(as appropriate to Individual's needs and within professional scope of practice)***	☐ Clinician or Administrative Support Staff to provide individuals with a reminder one day prior to the session, if possible ☐ Determine reason for appointment – new referral or follow-up ☐ Have access to individual's medical history records as needed and referral documentation (health status updates, history of condition related to consultation) ☐ If possible, all diagnostics such as CT, CTA, ECG, and laboratory tests should be completed and made available to the neurologist prior to initiating the virtual SPC appointment. ☐ Have standardized clinical decision aids and tools accessible to facilitate interaction ☐ Ensure adequate privacy in the room ☐ Notify all participants if clinician is running late ☐ Rehabilitation therapists or assistants to ensure they are working within scope of practice as defined by professional colleges ☐ Have all equipment and visual aids prepared and available at the time of the session,	☐ Ask and discuss rights and responsibilities regarding participation in a virtual healthcare session ☐ Discuss any concerns related to privacy and/or confidentiality regarding participation in a virtual healthcare session, with healthcare provider ☐ Some individuals may want to record their session with a clinician to help remember information later. Individual must discuss this with the clinician before starting a recording and ensure clinician provides their agreement first ☐ Request a test call if required and available (may not be possible in some circumstances.) ☐ Ask healthcare provider how much space will be needed for the session ☐ Plan space where virtual healthcare session will take place

Key Elements	For the Provider	For the Individual, Family and Caregivers
	including aides for supported conversation for individuals with communication challenges ☐ Determine capacity of family member or caregiver who may be with the individual regarding ability to help with rehabilitation and safety issues ☐ Plan exercises and therapies in advance and determine ability to teach and perform safely over virtual platforms ☐ Ensure you have an alternate way of contact (phone number, local contact) in case of break in communication ☐ Ensure you have an emergency plan (i.e. call 911 or local appropriate number if there is an incident) ☐ Be aware of the limitations of virtual care ☐ Consider starting with shorter session to give individual chance to get used to technology and process before more complicated discussions occur, especially if new individual where they are unknown to the provider ☐ In advance of session, provide individual with any materials (electronic or hard copies) that will be required during the session (e.g. exercise program handout, instruction sheets, education pamphlet)	– good lighting, minimal background noise and distractions (such as televisions, radio, pets). Ensure that the space is clear for individual to safely move around as needed (e.g., remove tripping hazards such as loose rugs or cords). ☐ Ensure adequate privacy in the room that will be used for the session ☐ Ask the clinician in advance what to expect during the session (e.g., assessments, what types of activities will be completed, the length of the session) ☐ Ask the clinician in advance what information and or equipment may be needed, where to obtain these items, and have ready and available during the session ☐ If individual wants to show clinician something that will be difficult to demonstrate during a virtual session, ask if taking and sharing a video would be beneficial. Discuss with clinician the best way to share the video ☐ Wear comfortable clothes and non-slip footwear if you will be asked to walk or perform specific movements ☐ Have list of concerns, questions and any changes in health status prepared for discussion, such as: ○ What activities and therapies are recommended for me? ○ What should I include as part of my daily routine? ○ What type of information is needed by my therapist or clinician to monitor my progress? ☐ Have an updated medication list including route, dose, frequency

Key Elements	For the Provider	For the Individual, Family and Caregivers
		☐ Have a blood pressure machine and or recent readings available ☐ Have health card available ☐ Have a pen and paper to make notes and write down instructions and medication changes
Virtual Rehabilitation Session – Initiation and Initial Assessment **(as appropriate to Individual's needs and within professional scope of practice)**	☐ Verify individual identity using minimum of two elements (e.g., name, date of birth, address, health card number) ☐ Confirm verbal consent to continue with session ☐ Perform introductions and take time to determine individual location and any other relevant information (e.g. where located, living alone or with others, access to caregivers, necessities) ☐ Describe expectations for the session - provide an outline (e.g. what you will do or discuss) and the expected length of time it will take (e.g. 30 minutes) ☐ Address primary purpose of session (e.g., new referral, assessment, active therapy, follow-up and or monitoring) ☐ Determine and agree on goals of session and have outline of key session elements ☐ Inquire about and address any new and or urgent concerns or changes in health status ☐ Consider a quick safety checklist of the environment (clutter, pets, phone accessible for emergency, walking aids, hearing aids, glasses, proper footwear) ☐ Take relevant history ☐ Observation of individual with stroke – use camera features of zoom and wide angle to assist in observations ☐ Ask for clarification from individual with stroke or remote care providers when necessary e.g. how much effort is required to complete task or assist individual ☐ Use of available online objective assessment tools to measure current abilities and limitations (e.g., software programs and apps such as step counters, heart rate monitors,	☐ *Note: if the individual has agreed to the virtual healthcare session and has joined the call – consent is implied. Consent should be verbally agreed on and documented prior to starting the session.* ☐ Individual receiving care should be on camera if available to aid in assessment and therapy ☐ Individual to participate in the virtual healthcare session to the best of their ability ☐ Ask questions of clinician as required to ensure understanding of exercises and other suggested interventions ☐ At any time during the session, individual to let the provider know if they are feeling unsafe, uncomfortable or have any concerns with how the session is going ☐ During the rehabilitation session it is important that the individual lets the clinician know if feeling unwell, or if experiencing new or worsening symptoms (such as shortness of breath, weakness, dizziness). Stop the activity right away, sit down, and discuss with clinician what to do. Individual may be asked to visit the hospital or healthcare provider for further assessment and care

Key Elements	For the Provider	For the Individual, Family and Caregivers
	tools for dysphagia and communication assessments)	☐ Individual can request to terminate the session at any time ☐ Have someone else available to participate in session if possible, which may include providing physical assistance to support individual's affected extremity as required for assessment and treatment.
Virtual Rehabilitation Session – Therapeutic Interventions (Functional) **Address areas appropriate to each individual and within professional scope of practice**	☐ Ensure safety and assess mastery of therapeutic activities ☐ Provide clear step-by-step instructions and demonstrations – break them into smaller parts and allow individual to demonstrate back to ensure understanding and mastery ☐ When assigning activities or completing in session, provide direction regarding frequency, duration and intensity of each exercise and therapy recommendation and/or activity ☐ Assessment of individual's environment (physical and social) ☐ Assess how the individual is functioning and adapting in their home environments (e.g. fall risk assessment, other functional activities of daily living assessments, assessment/ recommendation of adaptive equipment as needed to improve safety and promote independence) ☐ Assess active and passive range of motion ☐ Assessment of individual's functioning in daily tasks and self-care, including activities of daily living (ADL's) and instrumental activities of daily living (IADL's) through discussion and observation; provide suggestions to improve safety and promote independence ☐ Assess use of bracing or orthoses (e.g., donning, doffing, fit and related outcomes) ☐ Evaluate fit and use of hand splints/orthotics/slings as needed ☐ Consider instruction regarding safe use of home-based modalities, including electrical stimulation and heat and cold applications, if	☐ Have a companion available if possible, to assist in rehabilitation session, therapy and to support safety. Consider virtual participation if they are in another location ☐ Have chair or table available for support during session ☐ At any time during the session, individual to let the provider know if they are feeling unsafe, uncomfortable or have any concerns with how the session is going ☐ During the rehabilitation session it is important that the individual lets the clinician know if feeling unwell, or if experiencing new or worsening symptoms (such as shortness of breath, weakness, dizziness). Stop the activity right away, sit down, and discuss with clinician what to do. Individual may be asked to visit the hospital or healthcare provider for further assessment and care ☐ Make arrangements for transport to in-person appointment, if required, to maintain function and reduce risk of worsening symptoms that could become longterm ☐ Inquire about clinic protocols for safe access, adhering to public health regulations

Key Elements	For the Provider	For the Individual, Family and Caregivers
	appropriate and if the individual has the equipment available ☐ Instruct individual and caregiver (if present) on use of self-administered techniques e.g. range of motion or stretching exercises and task-specific activities (under the direction of the therapist) ☐ Upper extremity: consider using the ViaTherapy App for assessment and intervention ☐ After assessment, provide exercises/tasks to maximize individual's upper extremity function including active and passive range of motion, strength, spasticity, and fine motor coordination. ☐ After assessment, educate and practice edema management strategies for affected hand as required ☐ After assessment, educate and practice sensory retraining tasks as required ☐ Visual-perceptual and praxis assessment and intervention as required ☐ Support for self-management of suggested therapy tasks ☐ Pain management – include use of motor imagery that can be demonstrated virtually ☐ Consider in-person visit if unable to complete comprehensive assessment, have safety concerns individual requires therapies that cannot be delivered virtually	
Virtual Rehabilitation Session – Mental Health, Cognition, and Fatigue	☐ Monitor/assess mood and signs of depression and anxiety ☐ Cognitive assessment – The MoCA group has developed a process for remote testing; provide intervention as required ☐ Assess sleep patterns and any changes, and signs of post-stroke fatigue ☐ Education on energy conservation and fatigue management strategies as needed ☐ *NOTE: Ensure a process is in place to monitor mood as this may be exacerbated during a pandemic and social isolation, especially in individuals living alone*	☐ If requested, keep a record of changes in mood to share with clinician ☐ Have information available on energy levels, changes in sleep patterns, periods of extreme fatigue

Key Elements	For the Provider	For the Individual, Family and Caregivers
Virtual Rehabilitation Session – Dysphagia and Communication (Aphasia)	☐ When addressing both aphasia and dysphagia issues virtually, sessions are far more effective with video conferencing as well as audio ☐ Demonstrate use of APPS and other speech training tools that you may be using remotely and that the individual can use between sessions ☐ Review swallowing ability and changes ☐ Inquire about nutrition and hydration in all individuals and especially those with dysphagia ☐ Practice supportive conversation and other speech exercises – with virtual sessions need to ensure time allotted for this and individual not rushed (more challenging on remote interactions)	☐ Individual, family member or caregiver to monitor and report changes in swallowing ability (such as increased coughing or choking with fluids or solids) ☐ Keep a record of nutrition intake and share with clinician during virtual session if requested. ☐ Have any communication aides ready for use during session ☐ Use video camera for session if possible, as more challenging on phone alone ☐ Report to clinician current communication strategies and any challenges with them
Virtual Rehabilitation Session – Spasticity	☐ Assess function of upper or lower extremity (range of motion, pain, gait), and note any changes since last exam ☐ Perform basic physical exam with camera if possible ☐ Review treatment goals of spasticity ☐ Inquire about changes in ADL's (e.g., decreases in mobility, increased falls, change in ability to transfer, perineal care/hygiene, loss of independent function) ☐ Discuss changes in need for assistance from caregivers, and additional caregiver burden ☐ Consider in-person visit if unable to complete comprehensive assessment or management virtually, or for botulinum toxin injections, skin breakdown, open wounds, increasing pain and any loss of ADL that place individual at risk	☐ Individual, family member or caregiver to document and track progress and changes in functioning related to spasticity and report to clinician at the start of each session ☐ Family member can help assess for tone, contracture, if available ☐ Make arrangements for transport to in-person appointment, if required, to maintain function and reduce risk of worsening symptoms that could become longterm ☐ Inquire about clinic protocols for safe access, adhering to public health regulations
Virtual Rehabilitation Session – Education	☐ Provide support for self-management, education, coaching and reassurance for individuals and for caregiver (e.g. teaching individual's families how to assist in performing stretches or guide home exercises) ☐ Review risk factors and current secondary prevention management plans and inquire about compliance	☐ Write down a list of questions and areas where more information is needed ☐ Ask about reliable online resources to help individual manage their recovery and daily activities ☐ Visit the Heart & Stroke website for information

Key Elements	For the Provider	For the Individual, Family and Caregivers
	☐ Review and assess rehabilitation status and ongoing needs – make appropriate referrals ☐ Review medications list and flag any needed follow up ☐ Follow-up sessions may include progression of tasks provided at previous sessions to maximize independence and recovery ☐ If future therapy sessions are required/planned, develop SMART therapy goals and action plans to achieve these goals, in conjunction with the individual ☐ Recommend reliable resources for individuals to support recovery	☐ Visit the Canadian Stroke Best Practices website for resources to help individuals manage following stroke ☐ Consider joining Heart & Stroke's online Community of Survivors or Care Supporters Community for online and peer support
Alternate plans if technology issues occur	☐ If connection was initially made and disconnected before session is completed, both the client and the clinician can attempt to reconnect to the event and continue the call. ☐ If the virtual call cannot be continued due to loss of internet, power or system outage, the Clinician must telephone the client to instruct them on any remaining details not already covered as well as follow-up details ☐ If connection was not made, Clinician will call the client to reschedule in-person or virtually as per Clinician/client's request	☐ Know how to connect with the clinician to cancel or reschedule the session if needed ☐ If technical problems arise during the call, have a telephone nearby and the phone number of the clinician to try and resolve the issue.
Ending virtual session, documentation, follow up	☐ Provide summary of areas addressed, key messages, homework, and outcomes of the virtual healthcare session ☐ Make recommendations for follow-up, replicating as closely as possible how this is managed in an in-person visit, and share how appointment will be made if needed ☐ Document session on a standard individual record form for your practice (digital or paper) and send appropriate consultation notes to referring source, as per college and organizational requirements ☐ If appropriate, obtain verbal consent from the individual that they are willing to have future appointments virtually if necessary and possible. This information is then captured in	☐ Individual to ask any remaining questions that they have ☐ Ask for information about how to contact rehabilitation team members or members of community support teams as appropriate to individual's care ☐ Make note of instructions and information on follow-up appointments and tests – with whom, when, how will individual be contacted, will it be virtual or in-person

Key Elements	For the Provider	For the Individual, Family and Caregivers
	the documentation following the appointment ☐ Follow-up with any action items from the session (e.g. contacting vendors, arranging for equipment needs, faxing, emailing, or mailing home-based rehabilitation program, exercises, suggestions, instructions) ☐ Each future appointment should be assessed for appropriateness for in person versus virtual delivery and mutually agreed upon by the clinician and individual ☐ Provide email summary of therapy session to support clients with communication or memory difficulties (need email consent from client)	

Evaluation of Virtual Healthcare Encounters

Virtual healthcare has become a significant component of comprehensive stroke programs to enable equitable access to stroke expertise across the continuum of care and across geographic regions. As a result of the recent pandemic, many healthcare services have quickly pivoted to virtual healthcare delivery where possible. In Canada, considerable variations exist in access to stroke services. Therefore, a key step for all virtual healthcare programs is to establish an evaluation strategy, ideally during the development phase, and carry it through implementation to determine effectiveness and efficiencies, identify opportunities for improvement, and inform decision-making regarding continued and expanded investments in virtual healthcare delivery and program sustainability.

The following list provides evidence-based and consensus-based performance measures for delivery of virtual stroke care across the continuum. Mechanisms for collection of data required to calculate these performance measures should be integrated into patient healthcare records and virtual session documentation.

Domains to be considered in planning for evaluation include:

Accessibility – extent to which patients who should get access to stroke expertise are actually receiving that access, as well as wait times, need for transfers to more advanced level of care

Effectiveness – the impact of access to specialized stroke services through virtual healthcare on patient outcomes, complications, length of stay, readmissions, and recurrent stroke

Efficiency – cost savings, streamlining of care, timely availability of virtual healthcare services on demand

System Integration and Continuity – extent to which the continuity of care for patients is preserved with the use of virtual healthcare technology as part of their episode of care, and extent to which transitions are seamless, and follow-up care and providers clearly defined

Patient Experience- patients' perceptions of the virtual healthcare encounter

Provider Experience – healthcare provider perceptions of the virtual healthcare encounter, their educational preparation and competency level to participate in virtual healthcare

Technical efficiency and responsiveness – the extent that the technology is functioning without incident or technical difficulties that could negatively impact and of the above dimensions of quality

Performance Measures:

1. Virtual healthcare for acute stroke management (Telestroke)

i. Are each of the following processes in place and actively used (Y/N for each):
   a. a coordinated mechanism for rapid access to remote stroke expertise 24 hours per day and seven days per week
   b. a means of transmitting CT/MRI images
   c. a means of establishing 2-way videoconferencing
   d. a means for ongoing access to stroke specialist for ongoing advice regarding patient treatment and management as required
   e. harmonized clinical protocols to support assessment and management of acute stroke patients

ii. Percentage of patients who arrive at a designated referring hospital with stroke symptoms who receive a Telestroke consult as:
   a. the proportion of total stroke cases treated at the referring site; and
   b. the proportion of patients with acute ischemic stroke arriving at the hospital within 3.5, and 6 hours of symptom

iii. Time to initiation of Telestroke consult from: *(note: add local benchmarks)*
   a. stroke symptom onset (last time patient was known to be normal)
   b. arrival in emergency department
   c. completion of the CT scan

iv. Percentage of Telestroke encounters that experienced technical difficulties affecting the quality of the encounter and ability to provide services

v. Percentage of Telestroke consults initiated within 30 minutes of ED arrival for all potentially t-PA eligible patients who present to designated Telestroke hospitals with suspected acute ischemic stroke within four hours of symptom onset

vi. Time to initiation of Telestroke consult:
   a. from arrival in ED
   b. from CT scan completion

vii. Percentage of Telestroke cases where an urgent follow-up is required with the Stroke specialist due to complication or unexpected event

viii. Percentage of patients undergoing brain imaging at the referring site where CTA is completed with initial CT scan

ix. Percentage of acute Telestroke patient consults who are treated with intravenous alteplase
   a. Median time from arrival in ED to intravenous alteplase administration.
   b. Median time from Telestroke consult initiation to administration of intravenous alteplase

x. Percentage of Telestroke patient consults who are transferred to a comprehensive stroke centre for acute endovascular treatment

xi. Percentage of patients transferred to the regional/enhanced district stroke centre due to deterioration post intravenous alteplase requiring neurological or neurosurgical care not available at designated Telestroke hospital

xii. Median Rankin and NIHSS scores at discharge for all patients who received a Telestroke consult (whether or not intravenous alteplase was given)

xiii. Discharge destination of patients receiving a Telestroke consult:
   a. Place of residence prior to stroke
   b. Inpatient rehabilitation
   c. Long-term care home
   d. Patient died in hospital

xiv. Percentage of patients managed with Telestroke where the Telestroke consultant's note is found in the patient's chart

xv. Clinician rating of quality of Telestroke encounter (by referring and consulting clinicians)

xvi. Patient rating of quality of Telestroke encounter

2. Virtual healthcare for scheduled Stroke Prevention/Ambulatory Care/Family Medicine Appointments

i. Proportion of stroke patients discharged from an emergency department in a location without a prevention clinic who receive a scheduled prevention appointment through virtual healthcare modalities

ii. Median wait times for virtual healthcare appointment for initial stroke prevention appointment with stroke specialist
   a. Proportion of patients referred for virtual initial stroke prevention appointment who are seen within target times outlined in the current Canadian Stroke Best Practice Recommendations based on urgency of symptoms and stroke history (i.e., within 24 hours, 48 hrs., 7 days, 30 days)

iii. Degree to which clinician was able to conduct required assessments and treatments through virtual healthcare session

iv. Median duration of virtual healthcare session (stratified by reason for visit – initial assessment, therapy, follow-up)
v. Effectiveness of virtual healthcare session compared to in-person encounter
vi. Percentage of patients who required an in-person follow-up visit for further management that could not be addressed virtually
vii. Percentage of Telestroke encounters that experienced technical difficulties affecting the quality of the encounter and ability to provide services
viii. Clinician rating of quality of virtual healthcare encounter and willingness to expand access to virtual care in their practice
ix. Patient rating of quality of virtual healthcare encounter and willingness for future virtual healthcare sessions
x. Travel miles and costs saved with virtual healthcare session

3. Virtual Scheduled Stroke Rehabilitation Services

i. Median wait times for virtual healthcare appointment for initial stroke rehabilitation appointment with stroke specialist
ii. Degree to which clinician was able to conduct required assessments and treatments through virtual healthcare session
iii. Median duration of virtual healthcare session (stratified by reason for visit – initial assessment, therapy, follow-up)
iv. Effectiveness of virtual healthcare session compared to in-person encounter
v. Percentage of patients who required an in-person follow-up visit for further management that could not be addressed virtually
vi. Percentage of Telestroke encounters that experienced technical difficulties affecting the quality of the encounter and ability to provide services
vii. Clinician rating of quality of virtual healthcare encounter and willingness to expand access to virtual care in their practice
viii. Patient rating of quality of virtual healthcare encounter and willingness for future virtual healthcare sessions
ix. Travel miles and costs saved with virtual healthcare session

Sources:

1. Canadian Stroke Best Practice Recommendations. Virtual technology: stroke care through Telestroke. Recommendations and evidence tables found at https://www.strokebestpractices.ca/recommendations/telestroke
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