Virtual Stroke Care Implementation Toolkit

Update 2022

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Canadian Stroke Best Practice Recommendations

Virtual Healthcare Management of Individuals with Stroke

Introduction

Background: 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 healthcare 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 therapists; 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. Virtual stroke rehabilitation is an emerging field and as such, evidence is evolving and is not as mature as in other topic areas.

Purpose: This toolkit has been updated, 2022, to further 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 or stroke rehabilitation expertise. It aims to support the delivery of stroke care via virtual modalities by providing guidance and practical tips as health professionals integrate teleconferencing, videoconferencing, secure messaging, or audio digital tools into their practice. This is not a guideline document, but rather a complementary toolkit to support virtual care. The toolkit highlights areas and components of virtual stroke care, such as infrastructure and technology, clinical care delivery and evaluation, that will require modifications or adaptations for a virtual environment. It also provides expert suggestions and considerations to support clinical judgement and establish local policies and procedures. It does not

include all aspects of stroke care but rather is meant to be used to help implement appropriate guidelines in a virtual world. For the Canadian Stroke Best Practice Guideline information, please review appropriate source documents. This toolkit will be updated as evidence becomes available

How to Use: This toolkit is divided up into sections with key elements that align with the care journey. The reader is encouraged to use the toolkit document in its entirety but can focus on specific areas of interest or relevance to their clinical practice. There are considerations provided for the healthcare provider, as well as corresponding considerations for the individual receiving care. The healthcare provider is encouraged to use both columns of information to help plan and deliver care for each key element.

It is acknowledged that virtual care does have some limitations, and that some clinical care will not be possible or as effective through virtual formats. This may include the ability to conduct certain assessments or treatments (e.g., injections for spasticity management). This toolkit does not replace clinical judgement. Healthcare providers should use clinical judgement and follow all discipline-specific and organizational virtual care guidelines as well as those established by their professional regulatory colleges and applicable mandated polices or legislations of their organization.

Note: Healthcare professionals are encouraged to be aware of required professional college and local licensing, permissions, and training required for valid and reliable use of tools and assessments that may be listed within this toolkit. Naming of specific tools and assessments are for example purposes only and does not indicate endorsement or evidence-based recommendations unless specifically stated.

This publication Virtual Stroke Care Implementation Toolkit is for informational purposes only and is not intended to be considered or relied upon as medical advice or a substitute for medical advice, a medical diagnosis or treatment from a physician or qualified healthcare professional. You are responsible for obtaining appropriate medical advice from a physician or other qualified healthcare professional prior to acting upon any information available through this publication

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

Virtual Stroke Care Service Identified	Governance	Technology	Clinical Readiness	Care Delivery	EVALUATION: Structure, process, and outcome indicators on Impact of Virtual Stroke Care
Hyperacute (Emergency) Stroke Care (Save lives)					
Emergency Telestroke	• Integrated Stroke Strategy with coordination of EMS, referring sites and consultants • Clinician buy-in at referring and consulting sites • Coordinated and sustainable on-call schedule and reimbursement for consultants	• Point to point networking connectivity • Diagnostic quality and physician tested equipment • On-demand service support solution • Data security and privacy • Diagnostic images sharing solution	• Training of all clinical and technical staff across disciplines (EMS, ED, DI, Lab) • On-call schedule • Protocols in place for rapid launch of a Telestroke session, including priority access to CT scanner • Transfer and repatriation MOUs	• Agreement on patient consent • Rapid assessment of patient, including LSN time • CT scan without delay upon arrival to ED • Process for rapid decision-making with consulting site re: treatment and transfer • Documentation and follow-up if needed	
Ambulatory Care (Stroke Prevention, Monitoring and Follow-up) (Promote health)					
Secondary Prevention & Ambulatory Care	• Integrated Stroke Strategy with access to stroke prevention services • Clinician buy-in across disciplines • Coordinated and sustainable funding and reimbursement	• Network service management model for multidisciplinary clinicians. • Security and privacy • Diagnostic images, testing and lab results sharing solution • Data from wearables and therapeutic devices	• Provincial, regional & local process for referral, triage, and scheduling • Consider goals of interactions and appropriateness of virtual vs in-person • Access to relevant medical records, test results	• Consent obtained • Validated tools for remote clinical assessments • Address elements of Post Stroke Checklist • Documentation of session accessible • Follow-up plans booked and communicated	
Rehabilitation, Participation, Support and Independence (Enhance recovery)					
Rehabilitation Homecare Community	• Integrated Stroke Strategy with access to stroke prevention services • Clinician buy-in across disciplines • Coordinated and sustainable funding and reimbursement	• Network service management model for multidisciplinary clinicians • Data security and privacy • Data from wearables and therapeutic devices • Tele-homecare technologies accessible	• Processes for referral, triage, and scheduling • Goals of interactions and appropriateness of virtual vs in-person • Access to medical records, test results • Equipment and resources required in advance of session • Choice of therapies and protocols	• Safety and tolerance for active participation • Presence of family or caregiver • Online assessment tools and outcome measurement tools • Demonstration and observation • Follow-up and documentation	
Education, Outreach and Support – An integral part of stroke care (Virtual and in-person)					
Virtual Stroke Education	• Evidence-based content aligned with program delivery • Assessment of individual needs • General vs targeted	• Secured portals for engagement • Digital-first strategy • Accessibility for communication and cognitive challenges	• Virtual support, self-management, skills training • Training clinicians • Promotion, communication, distribution	• Include education in all sessions • Learning goals • Adequate time for review and discussion	

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 9) and on-demand and scheduled applications (prevention clinic and primary care, page 14; rehabilitation page 30). 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 Healthcare providers [1-4]

- ☐ Review the Heart & Stroke Virtual Care Decision Framework
- ☐ Confirm and clarify consent at the start of each session
- ☐ Clearly establish mode of communication and inform recipient of care how they will be contacted for the scheduled 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 virtual 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 only using phone as the individual will not be able to see you and it will be harder to follow instructions and conversations. This may include asking a question or explaining a concept a second time, in a different way, and/or using different words
- ☐ Be able to demonstrate what you need the individual 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? 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 healthcare providers, and being punctual for appointments with individual
- ☐ If you are having difficulty hearing, ask the individual to turn down volume of radio, television, or source of background noise and/or if individual could move to a different room.
- ☐ Ensure that individual has a copy of the H&S Virtual Healthcare Checklist

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
- ☐ Have a support person ready at attend the session with you if necessary
- ☐ Have a pen and paper nearby to write down any notes or questions throughout the consultation

☐ If needing glasses or hearing aids or other accessibility devices, have them ready and with you

☐ 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 healthcare provider can only see what your camera sees so be aware of your camera range

Virtual Health and Virtual Healthcare Definitions:

Virtual Health is a broad 'umbrella term' that encompasses all the ways healthcare providers remotely interact with their patients that does not involve direct contact[5] (Teladoc Health, n.d.).

Virtual Care[6]

- Virtual care encompasses all the methods that healthcare providers use to interact with people with stroke remotely, when they are not in the same location or connecting at the same time (i.e., interactions can be synchronous or asynchronous).

- The goal is to maximize the quality and effectiveness of the care provided to the person with stroke.

- These interactions, called virtual encounters, are electronic exchanges using teleconferencing, videoconferencing, secure messaging, or audio digital tools, where one or more healthcare providers deliver healthcare services to a patient.

- Virtual care may include encounters between healthcare providers and people with a health condition and/or family members, and also between providers to discuss the care of the person they are treating.

- Related virtual care services may also include telemonitoring and digital self-care tools that collect biometric data that are usually referred to during virtual encounters.

Application of Virtual Healthcare

Goal*:* Use of technology as a component of health services to enable access to equitable, integrated and seamless health care to optimize wellness, specialty care and outcomes.

Scope*:* Virtual visits may take place for a broad range of health-related services, such as health promotion, screening, assessment, triage, emergency decision-making, treatment, therapies, rehabilitation, counselling, follow-up and monitoring, education, skills training, teaching, and caring for patients requiring primary, acute, chronic, and specialty care, without or with minimal in-person interaction.

Specific Types of Virtual Care

Virtual Care – Acute Stroke Management (also known as Telestroke) refers to virtual emergency care provided between a referring and consulting hospital site to support emergency care for 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.

Virtual Stroke Rehabilitation (Telerehabilitation)[6]

Virtual stroke rehabilitation (also known as telerehabilitation), refers to the use of information and communication technologies to deliver rehabilitation services from a distance. Services can include prevention, evaluation, assessment, monitoring, intervention, supervision, education, consultation, and coaching. Virtual stroke rehabilitation can be delivered in many settings and at many stages of care and recovery and can be delivered by health providers from any stroke rehabilitation and recovery-related health discipline. Technologies such as video calls, phone calls, text, or email may be used as part of virtual stroke rehabilitation.

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5 Teladoc Health. Telemedicine vs. Virtual care: Defining the difference [Internet]. Intouchhealth.com. 2018 [cited 2021 Jan 22]. Available from: https://intouchhealth.com/finding-the-right-term-for-modern-digital-healthcare/

6 Nancy M. Salbach, Anita Mountain, M. Patrice Lindsay, Dylan Blacquiere, Rebecca McGuff, Norine Foley, Hélène Corriveau, Joyce Fung, Natalie Gierman, Elizabeth Inness, Elizabeth Linkewich, Colleen, O'Connell, Brodie Sakakibara, Eric E. Smith, Ada Tang, Debbie Timpson, Tina Vallentin, Katie White and Jennifer Yao (Co-Chair); on Behalf of the Canadian Stroke Best Practice Recommendations Advisory Committee, in collaboration with the Canadian Stroke Consortium and the Canadian Partnership for Stroke Recovery. Canadian Stroke Best Practice Recommendations: Virtual Stroke Rehabilitation, Seventh Edition, 2022; Toronto, Ontario, Canada: Heart and Stroke Foundation. In M. Patrice Lindsay, Anita Mountain, Rebecca McGuff, and Eric E. Smith (Editors), on behalf of the Canadian Stroke Best Practices and Advisory Committee in collaboration with the Canadian Stroke Consortium and the Canadian Partnership for Stroke Recovery. Canadian Stroke Best Practice Recommendations, 7th edition; Heart and Stroke Foundation of Canada.

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

Legend: *Healthcare provider* 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 healthcare provider. For emergency and inpatient stroke care only, the term '**patient**' is used throughout section. *Session* refers to the actual virtual healthcare encounter between the healthcare provider 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 Healthcare Provider	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 Healthcare Provider	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 Healthcare Provider	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	☐ 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 ☐ Laboratory provides stat blood work with no down time during hours of Telestroke	☐ Provide information on allergies or medical issues related to contrast

Key Elements of Virtual Care	For the Healthcare Provider	For the Individual, Family and Caregivers
	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 ☐	
Organized Emergency Care to facilitate intravenous thrombolysis, 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, blood sugar levels is available for all acute stroke protocol patients ☐ ED clinical teams informed, trained and	☐ 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 Healthcare Provider	For the Individual, Family and Caregivers
	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	
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 care 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 Scheduled Virtual Stroke Prevention Care in Ambulatory Settings

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 healthcare providers 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 providers should follow discipline-specific virtual care guidelines as established by their professional regulatory colleges.

Legend: ***Healthcare provider*** 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 healthcare provider. ***Session*** refers to the actual virtual healthcare encounter between the healthcare provider 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 Healthcare 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. ☐ Ensure there is administrative and clinical stroke leadership to support Telestroke/ virtual stroke care development and implementation. ☐ Ensure that appropriate and approved stroke protocols and stroke care pathways for stroke management (in alignment with current Canadian Stroke Best Practice Recommendations) are in place to address virtual stroke care. ☐ Aligned and integrated with provincial and/or regional stroke service models (i.e. based on service delivery priorities and need identified). ☐ Maintain regularly updated clinical lists, and use algorithms to determine which individuals can be seen virtually vs. those that must be seen in person. *See Virtual Care Decision Framework*. ☐ Method or system to change service delivery to a different format of virtual stroke care as required (e.g., telephone to video or vice versa, and virtual care to in person or vice versa).	☐ 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, 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).

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ Develop or modify policies to address items related to virtual stroke sessions such as: 　o Verification of identity. 　o Establish location of individual. 　o Privacy. 　o Informed consent for virtual stroke visit 　　▪ Patient understanding of risks and benefits of virtual stroke visit participation, including safety and exercise programming. 　　▪ Process to attain consent across multiple interactions including: phone calls, emailing information, resources, assessment, virtual education sessions (in accordance with organizational policies and appropriate provincial privacy standards). 　　▪ Additional consent for recording sessions if required. 　　▪ Consent for participation of additional family members, caregivers or friends as required. 　　▪ *Note: permission may be needed from all referred participants before family members can take part in a group session.* 　　▪ *Note: continually seek consent as appropriate.* 　o Emergency plan and safety (e.g., emergency plan, back-up contact number) ☐ Ensure administrative supports and structures in place to address contingency planning, contract management, documentation changes that may be required for virtual care, including the potential of remote working.	☐ Individual to receive information on which program or application (APP) the healthcare provider will be using, and whether downloading a particular APP or program is required.
Expert Healthcare Provider & Referring Site Service Capacity	☐ Establish a committed consulting group with service capacity and stroke care expertise. ☐ Develop virtual service delivery model based on purpose of consultation – e.g.,	☐ Clarify whether virtual healthcare session to take place in the individual's home or through a different

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	initial assessment, diagnosis and management, follow-up, or ongoing monitoring.	healthcare clinic location
	☐ Determine if referral sites have capacity to support service if appropriate (such as rural Nursing Stations); including making smart devices available for individuals to enable participation.	
	☐ Develop a system to provide initial and ongoing training in virtual care technology and service delivery for all staff and supporting service areas. o Use of mock simulations as part of virtual rehabilitation training may be helpful, especially for healthcare providers with no prior experience in virtual rehabilitation or have low case numbers at their sites (e.g., 'what to do if…' scenarios)	
	☐ Develop administrative procedures to address staffing capacity to deliver virtual care services, including in times of reduced staffing levels. Staffing complement and availability may determine nature of virtual care services (i.e., group vs 1:1).	
	☐ Ensure that all healthcare providers work within their scope of practice as defined by regulatory bodies.	
	☐ If available or required, healthcare providers to be aware of competencies related to regulatory bodies.	
Virtual care connectivity and technical support	☐ *Note: Confirm with your organization what virtual care platforms and networks are approved for use when healthcare providers 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*	☐ 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
	☐ Consider what access the individual has to available technology and support such as a family member or other healthcare support personnel in the home to observe function and operate or assist with the camera (i.e. walking, or movement in different home settings).	☐ Ensure individual has secure place to perform a virtual healthcare session respecting privacy and confidentiality – discuss issues with healthcare provider
	☐ Take a patient centred approach by using a variety of available virtual care	☐ Ensure individual can maintain privacy and confidentiality as appropriate

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	enabling technologies available to support virtual care. Multiple technologies may need to be considered to develop an approach that is patient centred. ☐ Determine the need and capacity of family members or caregivers who may support the individual with technology, communication and/ or any safety issues. ☐ Consider the needs and goals of the virtual care session and determine technology required (e.g., telephone, virtual platform, video call, smart device, APP, virtual system with increased functionality such as peripheral linkages and/or moveable/zoomable cameras) *Note: When connecting with an individual from home and using a personal phone-line, inform individual that the call might indicate "unknown" or "private call" on call display.* ☐ Ensure staff have appropriate training and/or support regarding the technological aspects of the virtual service to optimize virtual care experience for provider and individual ☐ Develop or ensure there are polices and procedures that describe and define roles and responsibility for technology set-up and support (e.g., meeting scheduling, support for participants). ☐ Service providers must have a backup plan (e.g., access to telephone, back-up phone number) in the event of technical problems or medical emergency ☐ 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) and that patient information is transferred on a secure network that meets legislation health information privacy standards ☐ There are often audio or video delays in the connection; establish a strategy for managing this (e.g., regular pauses, communicating the delay to individuals.)	(e.g., if in residential care, privacy from other residents) ☐ Identify which location in living quarters the session will take place, ensure well-lit location ☐ Determine if the connection has an audio or video delay ☐ 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 ☐ Ask if there is a person or service available for technical support, if needed

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ Consider plan for technical support available for providers and individuals if providing services directly to individual's homes. Communicate this to individual. ☐ If available, have a co-host and/or administrative support to troubleshoot any issues. ☐ Complete routine checks of equipment to ensure it is functioning well. This may be done as a part of routine checks on other emergency equipment.	
Referral Management: Mechanism in place to support coordinated virtual healthcare session and manage bookings	☐ *Develop or confirm clear criteria and protocols available for targeted referral pathways to ensure the health system's efforts to maintain essential services will be respected (e.g., if service reductions occur).* ☐ A scheduling system should be in place to manage referrals in a timely way, with documentation to support ☐ Ensure consulting sites and individual healthcare providers have triage protocols and scheduling systems in place such that 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. ☐ Establish a process to assess individuals for their ability to participate in a virtual healthcare consultation for stroke prevention (such as clinical/medical factors and/or individual factors and sensory/motor, cognitive/communicative, psychosocial domains) as well as access to technology/ability to communicate remotely). See Virtual Care Decision Framework ☐ Consider approach if sharing a diagnosis or negative news that may be distressing for the individual to receive. ☐ 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 –	☐ At time of booking, individual provides verbal consent to participate in a virtual healthcare session related to stroke rehabilitation, secondary prevention 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 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 session and technically possible if they are not present in the same location as the individual ☐ Individual has secure place to perform a virtual healthcare session, respecting privacy, and confidentiality ☐ Confirm technology to be used such as smart-phone or another device with video and/or audio

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers

	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 a chance to get used to technology and processes before more complicated discussions occur, especially if the individual is a new client / patient.
	☐ *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. Healthcare providers should have an alternate plan in place to enable booking of appointments directly with individuals (patient)s.*
		☐ Confirm email address for scheduling and communication of non-sensitive information
		☐ Individual, family, and caregivers assess:
		  ☐ Ability to use the technology effectively.
		  ☐ Ability to safely participate in the session including:
		    - Physical abilities
		    - Cognitive capacity
		    - Language barriers

Alternate plans if technology issues occur	☐ Utilize established IT services and connection back-up plan (e.g., alternate phone number). ☐ If connection was initially made and disconnected before session is completed, both the individual and the healthcare provider can attempt to reconnect and continue the call. ☐ If the virtual call cannot be continued due to loss of Internet, power or system outage, the healthcare provider must contact the individual via other means (i.e., telephone if available) to instruct them on any remaining details not already covered as well as follow-up details. ☐ If connection was not made, healthcare provider will contact the individual to reschedule in-person or virtually as per healthcare provider/individual's request.	☐ Know how to connect with the healthcare provider to cancel or reschedule the session if needed. ☐ Ask healthcare provider what processes they have in place to address technical issues. ☐ If technical problems arise during the call, have a telephone nearby and the phone number of the healthcare provider to try and resolve the issue. ☐ If able, practice use of platform prior to the visit ☐ Consult the Heart and Stroke Resource: Virtual Healthcare Checklist, for technology tips.
Clinical Care Delivery		
Risk Management	☐ Ensure you have an emergency plan (e.g., call 911 or local appropriate number if there is an incident, have individual's home phone number and location).	☐ Individual provides informed consent to participate in virtual visit. ☐ Individual to discuss any concerns related to participation in virtual visit.

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ Ensure informed consent to participate in VCR is addressed. Please refer to the [Administration section](#) for further details. ☐ Consider whether the potential benefits of virtual care for a given individual outweigh any risks. ☐ Be aware of and provide recommendations to address limitations of virtual healthcare interactions (e.g., cannot complete a full and/or comprehensive physical exam). ☐ If providing pre-recorded exercise videos to watch, consider asking the individual to watch the video all the way through, prior to exercising, to promote safety. ☐ If music or videos are used as part of the session, ensure sound quality is appropriate and copyright is addressed. ☐ Be aware of required licensing, permissions, and training required for all tools used. ☐ Follow local established protocols for all communication to individual. ○ E.g., when providing assessment questionnaires to individual in advance of session, ensure method of communication (e.g., email, mail, internal system) is permitted. **Ensure mechanisms are in place to support virtual visits such as:** ☐ Method to provide feedback to individual as needed during visit. ☐ Method to provide feedback to colleagues, medical director and referring or primary physician as needed during visit (e.g., allowing time in scheduling for team 'huddles/review' regarding individual's care). ☐ A scheduling system to ensure follow up care and monitoring and to follow-up on missed appointments.	☐ Individual is prepared to discuss any issues or concerns that arise during virtual visit. Individual and healthcare provider work collaboratively to help manage risks, as able. ☐ Individual to communicate any recent changes to medication or symptoms to the healthcare provider.
Preparation For Virtual Session	☐ Healthcare provider or administrative support staff to provide individuals with a reminder (e.g., via phone or email) one day prior to the session, if possible. Confirm technology is still available and functional.	*NOTE: In advance of session, individual to be provided with information to prepare for the virtual session (e.g., could be facilitated within an orientation*

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ Consider interpretation services for those with language barriers for obtaining an informed discussion.	*package or when setting up initial assessment)*
	☐ Ensure privacy, informed consent, and confidentiality have been addressed.	☐ Ask and discuss rights and responsibilities regarding participation in a virtual healthcare session
	☐ Ensure you have an alternate way of contact (phone number, local contact) in case of break in communication.	☐ Discuss any concerns related to privacy and/or confidentiality regarding participation in a virtual healthcare session, with healthcare provider
	☐ Ensure you have an emergency plan (i.e. call 911 or local appropriate number if there is an incident) and individuals address, phone number and emergency contact information (if available).	☐ Some individuals may want to record their session with a healthcare provider to help remember information later. Individual must discuss this with the healthcare provider before starting a recording and ensure healthcare provider provides their agreement first
	☐ Have access to individual medical history records as needed and referral documentation (e.g., 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. Ensure that there is a process in place to receive all required diagnostic, laboratory, and assessment components prior to initiation of session.	☐ Request a test call if required and available (may not be possible in some circumstances)
	☐ Determine source of documentation and metrics - self-report or healthcare provider obtained.	☐ Ask healthcare provider how much space will be needed for the session
	☐ 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)	☐ 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).
	☐ Consider scheduling breaks throughout session to help address increased screen time.	☐ Ensure adequate privacy in the room that will be used for the session
	☐ Determine reason for appointment – new referral or follow-up.	☐ Ask the healthcare provider in advance what to expect during the session (e.g., assessments, what types of activities will be completed, the length of the session)
	☐ Determine if a caregiver is available to participate and support the individual through the session (e.g., with rehabilitation exercises).	
	☐ If this session takes place in a referral healthcare site, have someone at the	☐ Where possible, ask the healthcare provider in

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers

	referral site complete the individual's vital signs and assist with the physical exam as necessary.
	
	☐ Consider preparing a quick safety checklist of the environment (clutter, pets, phone accessible for emergency, walking aids, hearing aids, glasses, proper footwear).
	
	☐ Ensure adequate privacy in the room used by the healthcare provider.
	
	☐ Ensure room is well-lit, sound is clear and free of distracting background noise.
	
	☐ Notify all participants if healthcare provider is running late to virtual session.
	
	☐ Prepare outline of key session elements. Plan session activities in advance and determine ability to teach and perform safely over virtual platforms.
	
	☐ Consider transitioning in-person questionnaires to a fillable or survey version so that patient can complete on-line.
	
	☐ In advance of session, provide individual with any assessment questionnaires to complete.
	
	☐ Have standardized clinical decision aids and tools accessible to facilitate interaction.
	
	☐ Be aware of the limitations of virtual care.
	
	☐ 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).
	
	Note: If individual has limited access to email, consider mailing materials. A return stamped and addressed envelope may be required to support access.
	
	☐ Have all equipment and visual aids prepared and available at the time of the session, including aides for supported conversation for individuals with communication challenges.
	
	☐ Your virtual toolbox should contain resources and strategies for individuals to set goals, make action plans, log their progress, and self-manage their healthy
		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 healthcare provider something that will be difficult to demonstrate during a virtual session, ask if taking and sharing a video would be beneficial. Discuss with healthcare provider the best way to share the video.
		
		☐ 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:
		    o Health card
		    o Companion to assist in session if available
		    o Updated medication list including route, dose, frequency
		    o Pharmacy name, location and phone number
		    o Blood pressure machine and or recent readings
		
		☐ If planning neuro exam:
		    o Toothpick
		    o Ice cube
		
		☐ Wear comfortable clothes and non-slip footwear if you will be asked to walk or perform specific movements.
		
		☐ 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

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	behaviours. Examples of strategies include: ▪ Educational material (paper, digital or video). ▪ Mobile and web-based technologies, consumer wearable fitness monitors, training logs and other self-monitoring techniques ▪ Available (online or in person) patient support groups and community services. ▪ Standardized clinical decision aids and/or tools accessible to facilitate interactions. ▪ Tip sheets and resources to troubleshoot technology issues that arise. Note: resources may be available through your virtual service provider. *NOTE: Consider approach if sharing a diagnosis or negative news that may be distressing for the individual to receive.*	instructions and medication changes ☐ If unable to attend booked appointment let the program know using previously identified communication methods (e.g., phone, email, online booking)
Laboratory Tests (i.e., Blood work and other tests)	☐ Ensure process is in place for: ▪ Providing individual or testing centre with appropriate requisitions prior to individual appointment with the lab ▪ Completion of laboratory and diagnostic testing, including process for sending requisitions (e.g., fax, email, mail). ▪ Communicating information such as frequency/urgency of testing to individual ▪ Healthcare providers to communicate laboratory and test results to one another (e.g., online system, process to access and communicate results virtually). ☐ Laboratory provides blood work service (if required) ☐ Healthcare providers 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,	☐ Be aware of required bloodwork, timing and which facility is open for testing ☐ Ask healthcare provider how to obtain the requisitions or whether the requisitions will be sent directly to the Lab and when it will happen ☐ Ask healthcare provider about urgency and frequency of required tests, and plan accordingly. ☐ Ask healthcare provider if any specific preparation is needed before a test. ☐ Ask about the process for receiving and sharing test results (e.g., if other healthcare providers have ordered tests, what is the process to ensure all team members can access/ are aware). ☐ Ensure personal safety precautions based on Health

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	appropriate to be delayed for a certain time period, or change in frequency). ☐ Healthcare providers 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).	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 healthcare provider 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	☐ Discuss privacy, confidentiality, and information security. ☐ 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 (where located, living alone or with others, access to caregivers, food, equipment).	☐ *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 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

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ 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).	☐ Ask questions of healthcare provider as required to ensure understanding of information provided and any instructions or changes to medications
	☐ Address primary purpose of consultation (new patient, test results, medication management, general follow-up)	☐ If possible, have a support person available to participate in session to help where needed
	☐ Consider a quick safety check-in with the individual about their environment (e.g., clutter, pets, phone accessible for emergencies, walking aids, hearing aids, glasses, proper footwear).	☐ At any time during the session, individual to let the healthcare provider know if they are feeling unsafe, uncomfortable or have any concerns with how the session is going
	☐ Inquire about and address any new and or urgent concerns or changes in health status, such as new or worsening symptoms.	☐ Individual can request to terminate the session at any time
	☐ Conduct remote neuro-exam if required (e.g., refer to AAN process).	
	☐ Review risk factors and current control status.	
	☐ As appropriate, complete cognitive exams – The MoCA group has developed a process for remote testing.	
	☐ Review and assess rehabilitation status and ongoing needs – make appropriate referrals.	
	☐ Complete a 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 due to social and environmental situation, such as social isolation, especially individuals living alone.	
	☐ Assess swallowing and communication issues as appropriate to individual.	
	☐ Discuss and/or address status of pending diagnostics or other consults.	

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ As appropriate, consider a sleep assessment – use of questionnaire if appropriate.	
	☐ Consider other elements to explore such as those included in <u>CSBPR Post-Stroke Checklist</u> (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 <u>Heart and Stroke Foundation resources</u> and <u>Stroke Best Practice Resources</u>	
	☐ Determine a patient-centred and comprehensive care plan that prioritizes mutually agreed on goals. Determine how this will be shared and tracked with individual, virtually.	
	☐ Recognizing limitations may exist due to virtual setting, healthcare provider is encouraged to follow program processes and make adaptations to include assessment tools that can be completed virtually.	
	☐ Identify and appropriately refer and/or address any new or worsening symptoms and comorbidities. Be aware of the processes that are in place to address issues that cannot be managed during this session or by the overall program. Be aware of available resources in the community and consider creating a list of resources available virtually (e.g., local physiotherapy, diabetes education).	
	Note: be aware of required licensing, permissions, and training required for chosen assessments	

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
Alternate plans if technology issues occur	☐ If connection was initially made and disconnected before session is completed, both the client and the healthcare provider 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 healthcare provider 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, healthcare provider will call the client to reschedule in-person or virtually as per healthcare provider /individual's request	☐ Know how to connect with the healthcare provider 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 healthcare provider 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 ☐ 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 ordering 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,) ☐ 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 notes to referring source, as	☐ Individual to ask any remaining questions that they have. ☐ Individual to 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 Healthcare Provider	For the Individual, Family and Caregivers
	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 healthcare provider and individual	
	☐ 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)	
	☐ Review signs of acute stroke and direct them to call 911 if they experience any of signs of stroke, even if mild or transient	
	☐ Consider providing an email summary of session to support individuals with communication or memory difficulties (need email consent from individual).	
	☐ Discuss long term adherence/maintenance planning prior to support recovery. Provide virtual/online resources and tools to support adherence/maintenance that can be utilized.	

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, *healthcare providers should follow discipline-specific virtual care guidelines as established by their professional regulatory colleges.*

Legend: *Healthcare provider* 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 healthcare provider. *Session* refers to the actual virtual healthcare encounter between the healthcare provider 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 Healthcare 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. ☐ Ensure there is administrative and clinical Stroke leadership to support virtual stroke rehabilitation development and implementation across provider groups ☐ Ensure there are appropriate and approved stroke rehabilitation protocols and stroke care pathways for virtual stroke rehabilitation (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) ☐ Maintain regularly updated clinical lists, including algorithms to determine which individuals can be seen virtually vs. those that must be seen in person. *See Heart & Stroke Virtual Care Decision Framework* ☐ Method or system to change service delivery to a different format of virtual stroke rehabilitation as required (e.g., telephone to video or vice versa, and virtual care to in person or vice versa). ☐ Develop or modify policies to address items related to virtual stroke rehabilitation such as:	☐ 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). ☐ Individual to receive information on which program or application (APP) the

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers

	o Verification of identity.
	
	o Establish location of individual.
	
	o Privacy.
	
	o Informed consent for virtual stroke rehabilitation.
	
	  ▪ Patient understanding of risks and benefits of virtual stroke rehabilitation participation, including safety and exercise programming.
	
	  ▪ Process to attain consent across multiple interactions including: phone calls, emailing information, resources, assessment, virtual education sessions (in accordance with organizational policies and appropriate provincial privacy standards).
	
	  ▪ Additional consent for recording sessions if required.
	
	  ▪ Consent for participation of additional family members, caregivers or friends as required.
	
	  ▪ Note: permission may be needed from all referred participants before family members can take part in a group session.
	
	  ▪ Note: continuously seek consent as appropriate.
	
	o Emergency plan and safety (e.g., emergency plan for synchronous exercise).
	
	☐ Ensure administrative supports and structures in place to address contingency planning, contract management, documentation changes that may be required for virtual care, including the potential of remote working.
		healthcare provider will be using, and whether downloading a particular APP or program is required

Expert Rehabilitation Capacity	☐ Establish a committed group of healthcare providers with stroke rehabilitation expertise and with service capacity ☐ Develop virtual service delivery models based on purpose of session – e.g., consultation, assessment, rehabilitation therapy session, follow-up, or ongoing monitoring ☐ Determine if referring sites have capacity to support service if appropriate (such as rural Nursing Stations); including making	☐ Clarify whether virtual healthcare session to take place in the individual's home or through a different healthcare clinic location

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	smart devices available for individuals to enable participation ☐ Develop a system to provide initial and ongoing training in virtual care technology and service delivery for all staff and supporting service areas. o Use of mock simulations as part of virtual rehabilitation training may be helpful, especially for healthcare providers with no prior experience in virtual rehabilitation or have low case numbers at their sites (e.g., 'what to do if…' scenarios) ☐ Develop administrative procedures to address staffing capacity to deliver virtual care services, including in times of reduced staffing levels. Staffing complement and availability may determine nature of virtual care services (i.e., group vs 1:1). ☐ Ensure that all healthcare providers work within their scope of practice as defined by professional colleges o If available or required, healthcare providers to be aware of competencies related to governing bodies.	
Virtual Care connectivity and Technical Support	☐ *Note: Confirm with your organization what networks are approved for use when healthcare provider 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 what access the individual has to available technology and support such as a family member or other healthcare support personnel in the home to observe function and operate or assist with the camera (i.e. walking, or movement in different home settings) ☐ Take a patient centred approach by using a variety of available virtual care enabling technologies to support virtual care. Multiple technologies may need to be considered to develop an approach that is patient centred. ☐ Determine the need and capacity of family members or caregivers who may support the individual with technology, communication and/ or any safety issues.	☐ 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 ☐ Ensure individual has secure place to perform a virtual healthcare session respecting privacy and confidentiality – discuss issues with healthcare provider ☐ Ensure individual can maintain privacy and confidentiality as appropriate (e.g., if in residential care, privacy from other residents) ☐ Identify which location in living quarters the session will take place, ensure well-lit location. ☐ Determine if the connection has an audio or video delay.

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ Consider the needs and goals of the virtual care session and determine technology required (e.g., telephone, virtual platform, video call, smart device, APP, virtual system with increased functionality such as peripheral linkages and/or moveable/zoomable cameras) *Note: When connecting with an individual from home and using a personal phone-line, inform individual that the call might indicate "unknown" or "private call" on call display.* ☐ Ensure staff have appropriate training and/or support regarding the technological aspects of the virtual service to optimize virtual care experience for provider and individual ☐ Develop or ensure there are policies and procedures that describe and define roles and responsibility for technology set-up and support (e.g., meeting scheduling, support for participants). ☐ Service providers must have a backup plan (e.g., access to telephone) in the event of technical problems or medical emergency ☐ 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) and that patient information is transferred on a secure network that meets legislation health information privacy standards ☐ There are often audio or video delays in the connection; establish a strategy for managing this (e.g., regular pauses, communicating the delay to individuals.) ☐ Consider plan for technical support available for providers and individuals if providing services directly to individual's homes. Communicate support to individual ☐ If available, have a co-host and/or administrative support to troubleshoot any issues. ☐ Complete routine checks of equipment to ensure it is functioning well. This may be	☐ 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 ☐ 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

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	done as a part of routine checks on other emergency equipment.	

Referral Management: Mechanism in place to support coordinated virtual healthcare session and manage bookings	☐ Develop or confirm clear criteria and protocols available for targeted referral pathways to ensure the health system's efforts to maintain essential services will be respected. (e.g., if service reductions occur).
	
	 ☐ A scheduling system should be in place to manage referrals in a timely way, with documentation to support
	
	 ☐ Ensure consulting sites and individual healthcare providers have triage protocols and scheduling systems in place such that 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
	
	 ☐ Establish a process to assess individuals for their ability to participate in a virtual session for stroke rehabilitation (such as clinical/medical factors and/or individual factors and sensory/motor, cognitive/communicative, psychosocial domains) as well as access to technology/ability to communicate remotely). See Virtual Care Decision Framework
	
	 ☐ 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, limitations of virtual session, technical requirements and troubleshooting documents
	
	 ☐ Address privacy and confidentiality
		☐ 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 provides email address (if consent given) for 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 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
		
		 ☐ Individual has secure place to perform a virtual healthcare session, respecting privacy, and confidentiality
		
		 ☐ Confirm technology to be used such as smart-phone or another device with video and or audio
		
		 ☐ Individual, family, and caregivers assess the following:
		
		     o Ability to use the technology effectively
		
		     o Ability to safely participate in a stroke

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
		rehabilitation session virtually ▪ Physical abilities ▪ Communication challenges (e.g., individual with aphasia) ▪ Language barriers ▪ Cognitive capacity
Alternate plans if technology issues occur	☐ Utilize established IT services and connection back-up plan (e.g., alternate phone number) ☐ If connection was initially made and disconnected before session is completed, both the individual and the healthcare provider can attempt to reconnect and continue the call. ☐ If the virtual call cannot be continued due to loss of internet, power or system outage, the healthcare provider must contact the individual via other means (i.e., telephone if available) to instruct them on any remaining details not already covered as well as follow-up details ☐ If connection was not made, healthcare provider will contact the individual to reschedule in-person or virtually as per healthcare provider/individual's request	☐ Know how to connect with the healthcare provider to cancel or reschedule the session if needed. ☐ Ask healthcare provider what processes they have in place to address technical issues. ☐ If technical problems arise during the call, have a telephone nearby and the phone number of the healthcare provider to try and resolve the issue. ☐ If able, practice use of platform prior to the visit ☐ Consult the Heart and Stroke Resource: Virtual Healthcare Checklist, for technology tips.
Clinical Care Delivery		
Risk Management	☐ Ensure you have an emergency plan (e.g., call 911 or local appropriate number if there is an incident, have individual's home phone number and location) ☐ Ensure informed consent to participate in virtual stroke rehabilitation is addressed. Please refer to the Administration section for further details ☐ Consider whether the potential benefits of virtual care for a given individual outweigh any risks. ☐ Be aware of and provide recommendations to address limitations of virtual healthcare interactions (e.g., cannot complete a full and/or comprehensive physical exam) ☐ If providing pre-recorded exercise videos to watch, consider asking the individual to	☐ Individual provides informed consent to participate in virtual stroke rehabilitation session. ☐ Individual to discuss any concerns related to participation in virtual stroke rehabilitation. ☐ Individual is prepared to discuss any issues or concerns that arise during virtual stroke rehabilitation. Individual and healthcare provider work collaboratively to help manage risks, as able.

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	watch the video all the way through, prior to exercising, to promote safety. ☐ If music or videos are used as part of the session, ensure sound quality is appropriate and copyright is addressed. ☐ Be aware of required licensing, permissions, and training required for all tools used. ☐ Follow local established protocols for all communication to individual. ○ E.g., when providing assessment questionnaires to individual in advance of session, ensure method of communication (e.g., email, mail, internal system) is permitted. **Ensure mechanisms are in place to support virtual stroke rehabilitation sessions such as:** ☐ Method to provide feedback to individual as needed during virtual stroke rehabilitation. ☐ Method to provide feedback to colleagues, medical director and referring or primary physician as needed during virtual stroke rehabilitation (e.g., allowing time in scheduling for team 'huddles/review' regarding individual's care). ☐ A scheduling system to ensure follow-up care and monitoring and to follow-up on missed appointments.	☐ Individual to communicate any recent changes to medication or symptoms to the healthcare provider.
Preparation For Virtual Session *(as appropriate to Individual's needs and within professional scope of practice)*	☐ Healthcare provider or Administrative Support Staff to provide individuals with a reminder (e.g., via phone or email) one day prior to the session, if possible. Confirm technology is still available and functional ☐ Consider interpretation services for those with language barriers for obtaining an informed discussion ☐ 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) and individuals address, phone number and emergency contact information (if available).	*NOTE: In advance of session, individual to be provided with information to prepare for the virtual session (e.g., could be facilitated within an orientation package or when setting up initial assessment)* ☐ 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

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ Have access to individual's medical history records as needed and referral documentation (e.g., health status updates, history of condition related to consultation) ☐ Ensure there is a process in place to receive all diagnostic, laboratory, and assessment components prior to initiation of session. ☐ 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 appointment. ☐ 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 ☐ Consider scheduling breaks throughout session to help address increased screen time ☐ Determine reason for appointment – new referral or follow-up ☐ Have standardized clinical decision aids and validated tools accessible to facilitate interaction ☐ Determine capacity of family member or caregiver who may be with the individual regarding ability to help with rehabilitation and safety issues ☐ Consider preparing a quick safety checklist of the environment (clutter, pets, phone accessible for emergency, walking aids, hearing aids, glasses, proper footwear). ☐ Consider recommending adaptations to support participation such as headphones to supporting audio needs and/or closed captioning ☐ Ensure adequate privacy in the room ☐ Ensure room is well-lit, sound is clear and free of distracting background noise ☐ Notify all participants if healthcare provider is running late	☐ Some individuals may want to record their session with a healthcare provider to help remember information later. Individual must discuss this with the healthcare provider before starting a recording and ensure healthcare provider 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 – 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 healthcare provider 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 healthcare provider 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 healthcare provider something that will be difficult to demonstrate during a virtual session, ask if taking and sharing a video would be beneficial. Discuss with

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers

	☐ Plan exercises and therapies in advance and determine ability to teach and perform safely over virtual platforms
	
	 ☐ Consider transitioning questionnaires to a fillable or survey version so that patient can complete on-line.
	
	 ☐ In advance of session, provide individual with any assessment questionnaires to complete
	
	 ☐ 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). Be mindful to ensure materials are in 'user friendly' version.
	
	 Note: If individual has limited access to email, consider mailing materials. A return stamped and addressed envelope may be required to support access.
	
	 ☐ Have all equipment and visual aids prepared and available at the time of the session, including aides for supported conversation for individuals with communication challenges
	
	 ☐ Rehabilitation therapists or assistants to ensure they are working within scope of practice as defined by professional colleges
	
	 ☐ Be aware of the limitations of virtual care
		healthcare provider the best way to share the video
		
		 ☐ Have a companion available if possible, to assist in the session and to support safety. Consider virtual participation if they are in another location.
		
		 ☐ 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:
		
		    o What activities and therapies are recommended for me?
		
		    o What should I include as part of my daily routine?
		
		    o What type of information is needed by my therapist or healthcare provider to monitor my progress?
		
		 ☐ Have an updated medication list including route, dose, frequency
		
		 ☐ 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
		
		 ☐ Have a phone or cell phone near by in case of emergency
		
		 ☐ If unable to attend booked appointment let the program know using previously identified communication methods (e.g., phone, email, online booking)
		
		 ☐ Consider use of the Heart and Stroke Resource: Virtual Healthcare Checklist, to help prepare for the virtual session,

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
		and get tips and steps to optimize the session
Virtual Rehabilitation Session – intake and initial assessment **(as appropriate to Individual's needs and within professional scope of practice)**	☐ Discuss privacy, confidentiality, and information security ☐ 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) ☐ Address primary purpose of session (e.g., new referral, assessment, active therapy, follow-up and or monitoring) ☐ 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) ☐ Inquire about and address any new and or urgent concerns or changes in health status, such as new or worsening symptoms ☐ Consider a quick safety checklist of the environment (e.g., clutter, pets, phone accessible for emergency, walking aids, hearing aids, glasses, proper footwear) ☐ Consider recommending adaptations to support participation such as headphones to supporting audio needs and/or closed captioning ☐ Take relevant history ☐ If completing observational assessment 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	☐ *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 healthcare provider 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 ☐ Individual can request to terminate the session at any time ☐ During the rehabilitation session it is important that the individual lets the healthcare provider 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 healthcare provider what to do. Individual may be asked to visit the hospital or healthcare provider for further assessment and care ☐ Have someone else available to participate in session if possible, which may include providing physical assistance

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	counters, heart rate monitors, tools for dysphagia and communication assessments)	to support individual's affected extremity as required for assessment and treatment.
	☐ Determine a patient-centred and comprehensive care plan that prioritizes mutually agreed on goals. Determine how this will be shared and tracked with individual, virtually.	
	☐ Recognizing limitations may exist due to virtual setting, healthcare provider is encouraged to follow program processes and make adaptations to include assessment tools that can be completed virtually	
	☐ Identify and appropriately refer and/or address any new or worsening symptoms and comorbidities. Be aware of the processes that are in place to address issues that cannot be managed during this session or by the overall program. Be aware of available resources in the community and consider creating a list of resources available virtually (e.g., local physiotherapy, diabetes education))	
	Note: be aware of required licensing, permissions, and training required for chosen assessments	
Virtual Rehabilitations – Therapeutic Interventions		
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)	☐ 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 healthcare provider know if feeling unwell, or if experiencing new or worsening symptoms (such as shortness of breath, weakness, dizziness). Stop the activity right away, sit

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	☐ Assess active and passive range of motion ☐ Assessment of individual's functioning in daily tasks and self-care, including activities of daily living (ADLs) and instrumental activities of daily living (IADLs) 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 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	down, and discuss with healthcare provider 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 long term ☐ Inquire about clinic protocols for safe access, adhering to public health regulations

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	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 healthcare provider ☐ Have information available on energy levels, changes in sleep patterns, periods of extreme fatigue
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 healthcare provider 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 healthcare provider 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 ADLs (e.g., decreases in mobility, increased falls, change in ability to transfer, perineal	☐ Individual, family member or caregiver to document and track progress and changes in functioning related to spasticity and report to healthcare provider at the start of each session ☐ Family member can help assess for tone, contracture, if available

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	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	☐ 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 ☐ 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 ☐ Consider emailing or mailing relevant print material to the individuals in advance of education sessions. o Provide literacy and language appropriate education/resources. ☐ Try to incorporate interactive components, including time for questions, to keep patients interested and engaged. ☐ Consideration should be given to a variety of individual learning styles and adult learning principles. Offering education in a	☐ 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 ☐ 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 Healthcare Provider	For the Individual, Family and Caregivers
	variety of formats (e.g., different video duration, visuals, audio, text, interactivity) may be beneficial when providing information virtually	

Considerations for group vs individual care delivery
 (as appropriate to Individual's needs and within professional scope of practice)
 Note: Be aware of virtual platform capacity limits.
	☐ NOTE: Some individuals may not be appropriate for group care delivery models (e.g., language barriers, technology challenges, privacy concerns). Healthcare providers are encouraged to use available decision aids, local processes and clinical judgment when considering this, and have process in place for those unable to participate in groups
	
	 ☐ Have healthcare providers available for one-to-one virtual counselling as needed (e.g., dietitian, mental health workers) to address issues not suitable to virtual group care, such as:
	    o Return to work brainstorming.
	    o Specific emotional challenges.
	    o Individual nutritional concerns.
	
	 ☐ When completing virtual group sessions, ensure privacy and confidentiality is discussed (i.e., what group members say in the group, stays in the group)
	
	 ☐ Consider using both video and telephone platforms to reach a larger audience (i.e., those without stable internet connection. Ensure a method of communication is established between the healthcare providers and the virtual group participants (e.g., chat function, email, telephone calls).
	
	 ☐ Consider having two healthcare providers available where possible: one to lead the session and the other to monitor chat functions and help troubleshoot technical difficulties.
		☐ Individual may be invited to join a group session during. Individual to express comfort level with participating in group session. If uncomfortable in a group setting, inquire about alternative options.
		
		 ☐ Individual to use own comfort level to decide what to share with the group. If participating in group session, all information from other members is confidential.
		
		    o If individual has questions, concerns or information that they are uncomfortable discussing in the group setting, follow the established communication method to communicate privately with the healthcare professional (e.g., by sending a private message to the healthcare provider, indicating in the group session that a private conversation with the healthcare provider is needed)
		
		 ☐ Individual to be made aware that group sessions can occur using a variety of formats (e.g., 1-way communication such as a webinar or 2-way communication function, such as an interactive call).

Contingency for individuals requiring medical management during session	☐ Have an emergency action plan in place for your session, and a process in place for healthcare provider if immediate attention or in person care is needed (e.g., have address of individual on hand in case you are required to call local emergency number). Have address, phone number and emergency contact information available.	☐ Individual to be made aware that if urgent health concerns arise before the scheduled session do not wait for a virtual appointment. Seek medical assistance by calling 911 or the local emergency number.

Key Elements	For the Healthcare Provider	For the Individual, Family and Caregivers
	o E.g., have process in place for what healthcare provider is to do if the person falls/gets hurt while completing synchronous exercise, has new or worsening symptoms o Virtual appointments may not be suitable for all situations or individuals. ☐ For group formats, consider having a second healthcare provider present if available, in the event that one group participant requires medical assistance. ☐ Be aware of and provide recommendations to address limitations of virtual healthcare interactions (e.g., cannot perform a complete physical exam, cannot provide hands on assistance as needed).	☐ During a virtual session, individual to discuss health concerns with the healthcare provider. ☐ During the stroke rehabilitation session, it is important that the individual lets the healthcare provider 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 healthcare provider what to do. Individual may be asked to visit the hospital or healthcare provider for further assessment and care. ☐ Have an emergency action plan in place for the session (e.g., have telephone nearby to call for help if needed and a number of who to call). ☐ Seek in-person medical help if there are urgent health concerns (e.g., calling 911 or local emergency number). ☐ Be aware of the limitations of the virtual setting (e.g., healthcare provider is not able to provide hands on assistance).
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	☐ Individual to ask any remaining questions from created question list ☐ Individual to 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 Healthcare Provider	For the Individual, Family and Caregivers
	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 healthcare provider and individual	
	☐ 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)	
	☐ 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. Healthcare provider rating of quality of Telestroke encounter (by referring and consulting healthcare providers)

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 healthcare provider was able to conduct required assessments and treatments through virtual healthcare session (e.g., provider documentation, brief evaluation such as yes/no questionnaire)

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 (e.g., based on evaluation surveys by both clinicians and patients)

    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.   Healthcare provider 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 healthcare provider 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.   Healthcare provider 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

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