VIRTUAL COGNITIVE/PERCEPTUAL ASSESSMENT: OCCUPATIONAL THERAPY PRACTICE GUIDANCE

The intent of this document is to provide practice guidance for occupational therapists who conduct, or are considering conducting, virtual cognitive-perceptual assessments. 'Virtual' refers to videoconferencing using AHS secure methods, including Skype, Zoom, or Telehealth. 'Cognitive-perceptual assessment' refers to screening and/or assessment of cognitive-perceptual domains and how they impact occupational performance. While the intent of this document is to support practice related to assessment, much of the information would apply to virtual occupational therapy treatment, as well.

Client referrals are typically pre-screened by telephone to determine client needs, resources and goals. This information can be utilized to determine the best mode for further assessment as certain clinical areas/situations cannot be easily assessed by video and may require an in-person visit. Clinicians will need to exercise clinical judgment in determining the best mode of assessment: phone, in-person or video.

The information provided here is specific to guidance for virtual cognitive/perceptual assessments. Occupational therapists should refer to the AHS Virtual Health page on Insite for further information, such as obtaining consent for virtual appointments. The Virtual Practice Guidance for Allied Health Professionals document provides general guidance when preparing to offer virtual rehabilitation.

Guiding Principles

- Practice standards remain unchanged when applying virtual health to occupational therapy practice (informed consent, privacy and confidentiality, documentation, etc.).
- The client has the right to decline a virtual assessment.
- Multiple methods may be utilized to assess the impact of cognitive perceptual function on occupational performance including collaboration with health care providers, client/caregiver interviews, screening tools, environmental assessment, standardized measures, structured observation of functional activity, or performance based assessment[1]. *These methods may be accomplished through a combination of telephone, in-person and virtual approaches.*
- Additional Practice Standards for issues such as informed consent, privacy and confidentiality, should be considered when using virtual health**.**
- The utilization of virtual platforms requires the therapist to adapt their approach to clinical assessment. Understanding the risks, benefits and limitations of virtual practice, the clinician determines the appropriateness of the assessment approach as well as the need for education, treatment and follow-up.
- Assessment should focus on addressing occupational performance issues, relevant to the client and in consideration of risk mitigation, quality of life, and participation.
- Consider the purpose and timing of the assessment. What is the clinical question you are trying to address through virtual cognitive/perceptual assessment? What are the client's stated goals? What is the appropriate timeline for assessment to occur? Is virtual assessment a suitable means for collecting the information you require? Is standardized testing needed,

valid, or practical on a virtual platform? Could you obtain the information through other methods such as structured observation or interview?

Enablers

The following person and environment factors facilitate successful virtual cognitive/perceptual assessments:

Technology

- Client/caregiver's device must have a camera, microphone, and adequate speakers/ headset
- A stand to prop the device on a table or counter is helpful
- Strong, reliable, Wi-Fi with enough bandwidth for video

Client/Caregiver

- The client has prior knowledge of technology and/or willingness to learn
- The client has a caregiver or other individual present in order to assist with setup the electronic device during the session
- The client's environment has adequate space, lighting, minimal distractions
- Personal assistive devices are in place (hearing aid, glasses)
- Track sleep, energy levels and daily activity patterns ahead of time
- Client may have improved performance in home environment due to less fatigue and anxiety

Modify your clinical approach. Identify the person and environment factors that will facilitate success. Be creative.

Clinician

- The clinician is already familiar with the technology and has developed basic competencies in order to integrate virtual health into practice
- Prepare for the appointment ahead of time, providing the client with information about the assessment, what environmental set-up is required, objects to have ready, etc.
- Ask the client or caregiver to prepare questions and concerns ahead of time
- Offer a 'test' session with the client to allow for increased familiarity of technology and to observe general cognitive abilities (i.e. pre-assessment information regarding how the client manages with new learning, following instructions, problem-solving, memory)
- Where possible, consider scheduling the Therapy Assistant (or other provider) to provide client education on use of the virtual platform and a trial session prior to the assessment appointment with the therapist
- Use alternative communication tools as indicated (green screen, PowerPoint, white board)
- Technology that has high resolution and a large screen facilitates viewing materials
- Consider joint assessments to promote collaboration

Potential Barriers

The following factors need to be considered as possible barriers to virtual health and require mitigation. Some barriers may preclude virtual health entirely.

Client

- High test anxiety or general anxiety when using technology
- Difficulties with judgement, impulsivity or safety awareness
- Limited ability to monitor subjective responses such as fatigue
- Limited ability to provide physical assistance to delineate physical versus cognitive limitation
- Limitations on ability to express and interpret non-verbal communication (therapist, client and caregiver)
- Limitations in viewing the environment out of camera range
- Be mindful of challenges older adults may experience using technology - intentionally talk slower and be organized in conversation
- Hearing, vision, communication or language barriers within the virtual health context

Environment

- Family members may find it difficult not to help the client during the assessment
- Unless the device is portable or the client/family are unable to provide different views of the home, environmental cues of possible cognitive/perceptual issues may be missed
- Environmental considerations – the level of noise, surrounding action/distraction, and lighting may all impact client's ability to participate fully (i.e. a pet climbing onto client's lap). There may be times when you want to limit distractions or provide distractions as a challenge.

Occupation

- Technology may interfere with utilizing testing materials or performance-based assessments

Practical Tips

Person

- Information gathering from client through interview is important to assess judgment, insight and memory
- Some materials can be mailed/emailed ahead of time (observe copyright) to support standardized and non-standardized observations
- Some activities facilitate observation of multiple cognitive components – playing cards online (https://cardgames.app/cribbage/ OR http://playingcards.io/), lumosity, other computer games, PowerPoint, google slides or green screen activities
- See Appendix A for more specific tips

Environment

- Observations from the environment can possibly provide information regarding client's cognition (i.e. clutter)
- Ask client about pictures or items in room to assess memory

- If safe, consider virtual home tour to make observations that provide information about cognition, e.g. contents of the refrigerator, etc.

Occupation

- Optimize the use of functional tasks and activity analysis in the context of meaningful occupations, to assess cognition. Examples: meal planning & prep, putting meds in dossette, download and enter info into My AHS app, vacation planning

Standardized Tools

Guiding Principles

- Altering the administration, including when using virtual health may be detrimental to construct validity[2] and scores/norms may not apply;
- Results of standardized tools should be interpreted with caution and in the context of possible limitations of a virtual health delivery platform/ technology;
- The clinician needs to have strong rationale to alter the use of a tool and this should be considered more advanced practice. Advanced practice includes clinical reasoning in the choice of how the tool is altered and how it will impact performance and interpreting those results to inform the relationship to occupations;
- Verbal portions of assessments are easier to adapt. Assessments requiring manipulatives require more creativity, careful documentation and interpretation;
- Using portions of standardized tools or using tools in a non-standardized way can provide valuable information through observation and activity analysis but scores cannot be utilized;
- Tools that would be more appropriate when using virtual health would have more verbal components, fewer manipulatives, have clear instructions and be more simple and straightforward to administer.
- There are some tools that have been developed for telephone use but there are costs and copyright requirements
- When considering using parts of or entire tool, consider copyright, how you are going to provide the materials needed (email/mail ahead of time, TA or other health care provider delivers) and how you are going to score the tool (have the client hold up to the camera or have them email/mail materials).
- Clinician can also provide the screening tool to a TA or another professional who is in the home to help facilitate completing the full screen (with the appropriate training);

MoCA

- Full MoCA via Audio-Visual is available with instructions. Blind version of the MoCA can also be used. Validation references are available on the MoCA website under FAQ

References and Additional Resources

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5. Gately, M.E., Trudeau, S.A. & Moo, L.R. (2020). Feasibility of Telehealth-Deliverd Home Safety Evaluations for Caregivers of Clients with Dementia. OTJR Occup Particip Heal (internet). Jan: 40(1): 42-9
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8. Canadian Stroke Best Practices Recommendations Telestroke Implementation Toolkit. Retrieved on May 29, 2020 from https://www.heartandstroke.ca/-/media/1-stroke-best-practices/csbpr7-virtualcaretools13may2020.ashx?rev=e12e5be820b64780b35ef32af00b2663
9. Practice Advisory OT Service Delivery Using Electronic Means http://acot.ca/wp-content/uploads/2020/03/Practice-Advisory-OT-service-delivery-using-electronic-means.pdf
10. Virtual Practice Guidance for Allied Health Professionals https://insite.albertahealthservices.ca/main/assets/tls/ep/tls-ep-covid-19-allied-virtual-practice-guidance.pdf

APPENDIX A
COGNITIVE/PERCEPTUAL VIRTUAL ASSESSMENT
DOMAIN TABLE – PRACTICAL TIPS

Note: The information provided is not comprehensive. Most standardized assessment tools are not validated for virtual administration specifically. These are ideas and suggestions only and meant to encourage creativity and innovation. This information may be helpful to support practice with youth and adolescents.

Domain	**Collateral/Interview Information**	**Occupational Performance Assessment/Observation** (may include structured observation and specific documentation as outlined in the Kettle Test or Executive Function Performance Test (EFPT))	**Standardized Tools Components** (which may be suitable for use virtually)
Executive Function	- Family reports "accidents" or "near misses" - Poor decision making evident in IADLs (money management, meal planning, driving) or other occupations as per family or caregivers - Ask hypothetical questions that require decision making, verbal reasoning, problem solving or planning	- Meal planning and preparation - Medication management - Financial management including budgeting - Learning how to use Zoom - Care of pets - Scheduling appointments - Homemaking - Home Maintenance/Gardening - Poor health management due to decreased judgment and insight - How do they manage their walking device or other equipment? - Board games or card games	- Portions of the Behavioral Assessment of Dysexecutive Syndrome (BADS) - Safety questions in the Independent Living Scale (ILS) or Cognistat - Weekly Planning Calendar Activity (Toglia)(WPCA) - Sections of the Montreal Cognitive Assessment (MoCA) and St. Louis University Mental Status (SLUMS) - EFPT - Sections of Kohlman Evaluation of Living Skills (KELS) - Kettle Test - Trails A&B
Memory	- Family reports client forgetting appointments or tasks - Not able to remember information given earlier in the interview	- Not able to remember medications or medication adherence - Kitchen assessment – forget ingredients or what they were making - Forget to pay bills - Forget instructions for using new medical equipment or testing materials	- MoCA - SLUMS - Cognistat - Memory tasks in the ILS

	- Asks same question multiple times - Unable to remember date, day, month or year - Difficulty remembering significant events - May forget appointments with therapist	- Forget instructions for using Zoom - Prospective memory tasks - Share screen and watch video together and ask client to recall details from the video - Share and discuss news articles - Board or card games	
Attention	- Client seems distracted, especially in family gatherings - May have difficulty remembering information - Has difficulty attending to therapist and instructions - Client easily distracted by environmental stimuli (pets, noises) during the Zoom call	- Workbook of Activities for Language and Cognition - Brain Injury Workbook (WALC) - Activities with playing cards - Online "I Spy" games - Board games	- Trails A&B - SLUMS - MoCA
Vision	- Client/family reports of visual concerns - May have difficulty finding/seeing objects in environment - Reports of bumping into objects or missing steps/curbs.	- Visual tracking, vestibular rehabilitation and reading speed (optokinetic training, eye exercises and visual tracking videos on YouTube). - Scanning Sheets (Bells, from Mary Warren, Source for Executive Function, WALC) - On- line I-spy games for puzzles - Design copy, clock draw (they can do on paper and hold up to show you, or on whiteboard on Zoom) - Disorganized or extra-personal scanning (have client hold phone/tablet to see what they see). - Scan in pantry or object finding (ex- put a bunch of kitchen utensils on table and ask them to for specific ones).	- Tasks on the Brain Injury Visual Assessment Battery for Adults (biVABA) or Ontario Society of Occupational Therapists Perceptual Manual (OSOT) – would need Health Care Professional (HCP) in the home to facilitate

Motor Planning	- Family may report client appears uncoordinated - Client appears to have difficulty with making their hands and arms do what they want to do	- Observations during Kitchen assessment or self-care activities	- Tasks on the Ontario Society of Occupational Therapists Perceptual Manual (OSOT) – would need Health Care Professional (HCP) in the home to facilitate
Spatial Relations	- Do they get lost? - Do the trip or bump into objects?	- Observations during kitchen assessment or self-care activities - Wayfinding in their home or community - They misjudge where objects are in their environment	- Trails A&B - Clock Draw Test - Trails task on MoCA
Constructional Apraxia	- Family report client has difficulty with meal preparation - Client may have difficulty starting a task or activity	- Meal preparation – can they put the ingredients together? - Do they put clothing on in the wrong order?	- OSOT – with HCP assist - Copy design on MoCA - Kettle Test
Scanning	- Client is unable to find needed articles especially if they are out of the direct line of sight - Client appears very disorganized in visual searching - Client may consistently miss articles on one side	- Solitaire - Caregiver puts post-it notes around the room (numbered) for the client to find. - Online “I Spy” games - Scanning sheets can be mailed or emailed to the client (eg. WALC workbook) - Have client find article from pantry or kitchen - Client has difficulty finding or looking for the necessary icon on the computer screen - Board games	- Trails A&B - Scanning sheet from the OSOT
Figure Ground	- Unable to find needed articles	- Have client retrieve an article from a drawer or pantry - Unable to find needed articles in a drawer or cupboard - Board games	- Figure-Ground section of the OSOT - Kettle Test