Virtual Reality In Long Term Care "An Implementation Guide for Targeted Therapeutic Intervention"

This document is intended for Recreation Services implementing Virtual Reality as a therapeutic intervention for in Long Term Care. A tool for improving quality of life.

Prepare for Virtual Reality Implementation and Research

- ☐ **Create and Refer to Charter Document:** Mindful of AIM Statement, clarifying purpose, know team member roles and when the start and finish time of the initial project is. Decide if you want to focus on a certain population and be prepared to adapt - when and if necessary. Start with a question: What are we trying to achieve? SMART – Specific - Measurable - Achievable - Result Orientated and Time Scheduled. Example: "To decrease the RAI Depression & Increase Social Engagement Rating Scores by 1+ point, on four Residents on the 1234 neighborhood at 567 Care Facility through the use of Virtual Reality equipment from this date – to this date."
- ☐ **Determine type of RAI/MDS (Resident Assessment Instrument) data to pull from RAI/MDS.** Of 11 possible ratings to choose from. Consider focusing on the following 4: Depression Score, Cognitive Performance Score, Aggressive Behaviour Scale Score, Social Engagement Score.
- ☐ **Obtain RAI Assessment data from Meditech – login and follow these steps:**
  - ▶ Access specific Resident chart
  - ▶ Open chart
  - ▶ On right hand side of screen click "Reports"
  - ▶ Once on reports tab, click on "external documents"
  - ▶ Next, click on Residential RAI Assessment
  - ▶ Find the most recent (or select a date you would like to use as pre data); click on, ensure it turns green and then press the view button on the bottom of the page. A webpage with of all the RAI/MDS information for that specific resident.
  - ▶ The scores needed for the Project are located under "Outcome Scales" near the top of the page.
- ☐ **Choose Individual residents or a Group of Residents to Introduce the Virtual Reality System to:**
  - ▶ Consider who will participate maybe by selecting by unit, age, level of isolation & population. Start small.
  - ▶ Try the VR system with residents first to see if they tolerate it and ask their interest in being part of the project.
  - ▶ Determine with the care team; the days and times that worked best for the resident and when the resident is most alert and create a schedule that works with the recreation therapists' / assistants' schedules.
  - ▶ Select the length & number of sessions per resident to complete. ie. 2 x week and 20-30 min sessions
- ☐ **Prepare a Video Playlist for each resident**
  - ▶ IMPORTANT REMINDER: WATCH THE ALL TRAINING TUTORIALS - BEFORE Starting ANY VIDEO SELECTION
  - ▶ For each Resident review their chart and gather a list of potential VR Videos of interest.
  - ▶ Review all Rendever videos and choose ones that relate to selected Resident's interests. (2 hours).
  - ▶ Pre watch all videos selected - to determine the level of movement (green, yellow or red), duration (to ensure session is the correct amount of time), and if the video is interesting for the Resident selected. (4 hours)
  - ▶ Knowing your Residents is the most important part of this process as you will be able to determine how they will react or know if the video is something of interest and have a sense of hoe they will react to the content of the videos while also avoiding triggers where possible.

Communicate with Residents, Family and Care Team Member

☐ Document that the individual is participating in VR; in Resident care plans with assistance from nurse or whomever supports care planning.

☐ Communicate how often and length of the Rendever Virtual Reality sessions. For example: 20-30 minutes – two times a week within certain dates. Letting them know if you are facilitating 1:1 or in a group.

☐ Share the project goal. Ie. To improve RAI Depression & Social Engagement Scores using the Rendever VR System.

☐ Communicate with families to ensure - that if they hear from their loved ones that they have been racing cars or seeing water buffalos; that it's not an indication of a health concern, delirium or disease progressing.

☐ Communicate with Resident Council Meetings that VR is being offered so families are aware. Consider signage or any other communication channels like email, calendar of events, social media, share with care team script in communication book, email in huddles, staff meetings.

☐ Strategize with colleagues on when & how to deliver Virtual Reality & gain feedback on quality moments.

☐ Document in residents' charts as often as possible and include successes and challenges of each session.

VR Session Delivery Checklist

☐ Prior to going to the Resident's room: ensure the tablet & headsets are charged & synced.

☐ Take the binder with all assessment tools and notes.

☐ Share with Resident purpose of project and goal for the session.

☐ Ask Resident to indicate where they feel on the Emotion Scale- note number on spreadsheet in binder.

☐ Turn on headset, place on Residents face. It's very important to ensure the resident can see the image. Remind resident, they can take off the headset off whenever they'd like to & they can do it themselves or indicate with a signal to have facilitator remove it.

☐ A resident's posture can impact visibility of the image – be mindful of the head tilt when sitting vs. lying down.

☐ For initial videos, begin with a video of their interest (like a warm up).

☐ Move to different videos but ask resident their comfort level throughout and offer choices for next session.

☐ Having a list of videos that you know Resident enjoys is helpful.

☐ Throughout the videos complete the EPASS & OERS. During session it is also important to note Resident facial expressions, body language & exclamations. Note all these things in the binder.

☐ To finish, choose something relaxing (like a cool down).

☐ Once complete, ask the Resident to indicate how they feel using the Emotion Scale. Note number on spreadsheet.

☐ Ask Resident if they have any feedback from the day's session and note that in binder. Thank Resident for session.

☐ Once back in the office review the paper binder with each Resident attendance, completed EPASS, OERS and assessment scores. From paper copy, ensure to input the data in the computer documents.

☐ Document in residents' charts as often as possible and include successes and challenges of each session.

☐ Record Recreation stats- CTW uses Activity Pro. We have been documenting minutes, videos used in sessions, comments made during session and any notable behaviours. We also have been using Activity Pro when Residents decline session or if they are sleeping during scheduled time.

☐ Once finished with headsets and between sessions; ensure they are sanitized with cavi/Clorox wipe before use with next Resident.

☐ At the end of the day, be sure headsets & tablets are charging, connected to Wi-Fi and are stored in a dark place away from direct sunlight in cases.

Document Resident Experiences and Results

- ☐ Complete 2-5 VR sessions with each Resident.
- ☐ Create a separate activity program like Activity Pro or Activity Connect for highlighting VR Project.
- ☐ Document minutes, videos used in sessions, comments made during session and any notable behaviours.
- ☐ Document in Activity Pro if Residents decline a session or if they are sleeping during scheduled time.
- ☐ Create and maintain a binder with all information including each Residents attendance, completed EPASS, OERS and assessment scores.

- ☐ From the paper copy, input the data in the computer documents.
- ☐ Complete all sessions, compile all data into one table per Resident.
- ☐ Pull new RAI data closer to completion of research timeline and take the scores of selected measures and input them in final table.
- ☐ Input pre & post RAI scores are presented side by side in one chart to compare for all participating Residents.
- ☐ Once data is compiled - observe if there were any changes in Resident RAI/MDS data and if VR interventions had any impact on original Charter Aim.
- ☐ Input weekly data into the “weekly assessment score tracking” spread sheet for each Resident
- ☐ Document in Residents chart, in Activity Pro, and in paper binder.
- ☐ At end of research window at completion of initial sessions, compile all data into one table per Resident.
- ☐ When new RAI data becomes available near or after completion, pull scores of selected measures and input them in final table.
- ☐ Input pre & post RAI scores side by side in one chart to compare for Virtual Residents.
- ☐ Once data is compiled observe if there were any changes in Resident RAI/MDS data and if VR interventions had any impact on original Charter Aim and report findings.

Recommendations for Success, Challenges and Opportunities

- ▶ Consider grouping residents with similar interests and run small group session with 3 Residents. Observing residents during the session without having to complete individual sessions and increasing efficiency.
- ▶ **Anyone implementing Rendever is recommended to watch ALL training videos on the Rendever website prior to beginning any session.**
- ▶ VR is a potential tool for outbreaks. Ie. Residents in their own beds and watching the same playlist.
- ▶ May be a challenge to sustain 2 rec therapists per session / per resident or not available for many sites. Consider training staff, volunteers, students, family to support and sustain the program.
- ▶ Opportunity for social connection with the facilitator, family, care team members & other participants through headset microphones on different floors. With options for competitive and collaborative game play. Ie. Eye Spy
- ▶ Opportunity to develop a family portal where families can upload videos and images; tailored for their loved one. Ie. Wedding, hometown
- ▶ Opportunity to engage other team members to help with running the VR system, volunteers, and family members.
- ▶ Requires an investment of time to conduct individual personalization (pre work & session to session).
- ▶ Resident posture can be a challenge if not able to sit up straight, images on the headset may have a limited view. You may choose to try the “binocular view" which is with the back bulge of the headset resting on top of the headset and allows the resident to hold the headset up to their face (if possible) rather than feeling that

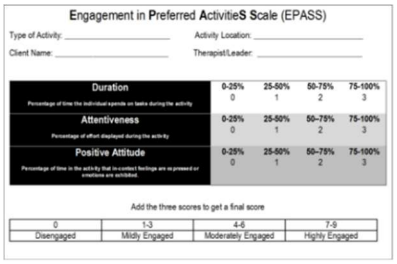
they are confined and strapped in. Or you may try having the resident reclined back farther to where the headset can rest on their face without the need for the headset to be held down with hands or strap.

- The video flow may present a challenge with a pause between videos. before the next one starting which can be troubleshooted with the selection of longer videos and streaming multiple together and engaging Rendever tech support.
- Knowing each residents' interests is important because some videos won't be appropriate for them, and the resident may be bored with selection or maybe too much movement.
- Preparing the video playlist and ensuring it's ready, prior to going to resident's room to start the session to avoid the messages "not synced, start sync now".
- Ensuring the wi-fi is robust enough for downloading videos and can present itself as a challenge when videos that the Resident might enjoy are slow to load or unavailable for download due to transfer speed. Leadership is aware of and working on this issue.

Please note: Challenges can be reported to the research support and project contacts for problem solving and resolving.

Explanation of Supporting Documents

Engagement in Preferred Activities Scale (EPASS)


Engagement in Preferred ActivitieS Scale (EPASS)

Type of Activity: _____ Activity Location: _____

Client Name: _____ Therapist/Leader: _____

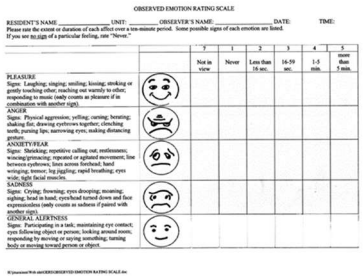
Duration Percentage of time the individual spends on tasks during the activity	0-25% 0	25-50% 1	50-75% 2	75-100% 3
Attentiveness Percentage of effort displayed during the activity	0-25% 0	25-50% 1	50-75% 2	75-100% 3
Positive Attitude Percentage of time in the activity that in-contact feelings are expressed or emotions are exhibited.	0-25% 0	25-50% 1	50-75% 2	75-100% 3

Add the three scores to get a final score

0	1-3	4-6	7-9
Disengaged	Mildly Engaged	Moderately Engaged	Highly Engaged

☐ Have the EPASS document ready or on the ipad with each session with a Resident. EPASS was developed to provide recreation and activity professionals with assessment instrument that can be used to measure an individual's level of engagement in activities of interest. See attached document.

Observed Emotional Rating Scale (OERS)


OBSERVED EMOTION RATING SCALE

RESIDENT'S NAME: _____ UNIT: _____ OBSERVER'S NAME: _____ DATE: _____ TIME: _____

Please rate the extent or duration of each affect over a ten-minute period. Some possible signs of each emotion are listed.

If you see no sign of a particular feeling, rate "Never."

		7 Not in view	1 Never	2 Less than 10 sec	3 16-59 sec	4 1-5 min	5 more than 5 min
PLEASURE Signs: Laughing; singing; smiling; kissing; stroking or gently touching other; reaching out warmly to other; responding to music (only counts as pleasure if in combination with another sign)							
ANGER Signs: Physical aggression; yelling; cursing; berating; shaking fist; drawing eyebrows together; clenching teeth; pursing lips; narrowing eyes; making distancing gesture; _____							
ANXIETY/FEAR Signs: Shrinking; repetitive calling out; restlessness; wincing/grimacing; repeated or agitated movement; line between eyebrows; lines across forehead; hand wringing; tremor; leg jiggling; rapid breathing; eyes wide; tight facial muscles _____							
SADNESS Signs: Crying; frowning; eyes drooping; moaning; sighing; head in hand; eyes/head turned down and face expressionless (only counts as sadness if paired with another sign) _____							
GENERAL ALERTNESS Signs: Participating in a task; maintaining eye contact; eyes following object or person; looking around room; responding by moving or saying something; turning body or moving toward person or object							

☐ Have Observed Emotion Rating Scale (OERS) Rea dy printed or on IPAD: (Previously named the Apparent Affect Rating Scale) OERS is an observational tool for rating two positive emotions (pleasure and general alertness) and three negative emotions (anger, anxiety or fear, and sadness).

☐ Over a 10-minute period, the rater chooses one of six possible defined time intervals (e.g., 1 = never; 2 = < 16 seconds; 3 = 16–59 seconds; 4 = 1–5 min; 5 = > 5 min; and 7 = not in view) that a subject displays each of the five emotions.

☐ Fill in the OERS tool while Resident is watching the longest/most immersive video. See attached document.

Mood (Emotion) Scale

☐ Ask Resident for feedback **Before and After VR sessions** using the emotion (likert) scale. Asking the Resident to indicate where they are at on the scale transfer that info to the spreadsheet. Based on limited communication ask the resident how they are feeling? They can point or hold up fingers to communicate and record their mood. See attached document.

Appreciation, Contact Info and other Resources

Thank you to Lauren Knapton Certified Therapeutic Recreation Specialist and Michelle Wingfield Therapeutic Recreation Specialist for the initial research project they completed while working at Cottonwoods. They have been paving the way for improved quality of life for residents and working to make it easier for other teams to implement VR. For a video presentation by Lauren Knapton and Michelle Wingfield see VR Implementation in LTC Presentation Aug 2022.

Thank you to Health Care Excellence Canada for supporting this project.

Research Coordination and Project Contacts:

April Price Leader, Acute and Long-Term Care, Health System Improvement BC Patient Safety & Quality Council
Email: aprice@bcpsqc.ca

Michelle Smith –Regional Practice Lead, Research & Quality - Long Term Care & Seniors Care, Interior Health, Canada
Email: michelle.smith3@interiorhealth.ca

Paula Morrison –Research Coordinator Research & Quality - Long Term Care & Seniors Care, Interior Health, Canada
Email: paula.morrison@telus.net

Leadership Champions:

Joanna Harrison Executive Director, Seniors Specialized Care Transformation, Interior Health, Community Care
Email: Joanna.Harrison@interiorhealth.ca

Karen Littleton Director, Clinical Services Interior Health, Client Services Pandemic Response
Email: Karen.Littleton@interiorhealth.ca

Hardware and Software Support:

Rendever Hardware and Software Support: Phone: 1(857) 800-8032 Website: www.rendever.com

Alternative Cases for headset hardware: dethinton Compatible with Oculus Quest2 Case, Travel Case for Quest2 All-in-one Virtual Reality (VR) Headsets and Controllers Includes Multiple Quest2 Accessories (Gray)

Please note this is version 1.0 of a living document. For a more up to date version reach out to Michelle Smith or Paula Morrison or to make suggestions for improvement.

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Add the three scores to get a final score

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Co-created by Interior Health and Health Quality BC

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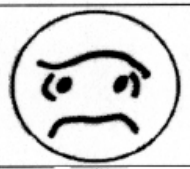
SADNESS Signs: Crying; frowning; eyes drooping; moaning; sighing; head in hand; eyes/head turned down and face expressionless (**only** counts as sadness if paired with another sign).							
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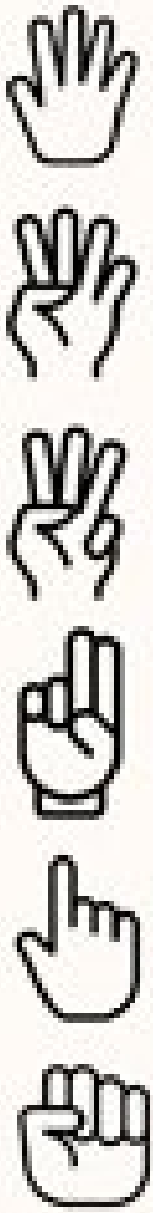
EMOTION SCALE
+
−
HAPPY
GOOD
AVERAGE
POOR
BAD
1
2
3
4
5

Fist to Five Mood Scale

How are you feeling today?



excited, energetic, ecstatic, elated

cheerful, happy, blissful

calm, peaceful, content, good

anxious, tense, frustrated, cranky

melancholy, gloomy, apathetic, blah

exhausted, drained, low energy

RENDEVER CHARTER PROJECT

Notes & Planning Page

Specific VR Intervention Ideas:

1. Resident 1- Born and raised in Northern Ireland, likes swimming, bowling, roller-skating, summertime, gardening, protestant faith, likes Vegas, theatre, concerts, dancing the jitterbug/ballroom/Jive

2. Resident 2- Dogs, hockey games, gardening, fishing, hunting, Lived in Lilloet & Chase, Native practices, sweat lodges, native ceremonies, pow wows, truck driver, xaxlip(hucklip), Neskonlith

3. Resident 3- Rap music, heavy metal music, rugby, swimming, forest fire fighting, forestry, downhill skiing, Lord of the Rings, Rottweilers, Japan, UK, Nanaimo

4. Resident 4- Fishing, Hunting, Border Collies, Baseball, Nature, Brother lived in Africa as Missionary- could be interested in safari

Specific Rendever Videos:

1. **Resident 1**:
   - "Tour of Ireland- 3min"(optional)
   - "Swim with dolphins- 7min 10sec"
   -"Berlin Philharmonic Orchestra- 4min30sec"
   -"Vivaldi at Red Rocks Ampitheatre- 8 min"
   - "Animals up Close- 8 min"
   - "Day at the Zoo-6 min 24sec"
   - "Animals in the Wild West- 5min"
   - "Walking with Penguins"
   - "Hot Air Balloon- 5 min"

2. **Resident 2:**
   - "Fishing in Texas- 4min 25sec"
   - "Bow Hunting- 4min 22sec"
   - "Wonders of the world- 1min 25 sec"
   - "Whale Watching- 3min 30sec"
   - "Seaplane Landing- 2min29sec"
   - "Aurora Borealis- 4 min 26sec"

3. **Resident 3:**
   - "Hot Air Balloon- 5 min"
   - "Sprint Race Car- 5 min"
   - "Ski Colorado- 6min 20 sec"
   - "Wing Suit- 2 min"

- "Seaplane Landing- 2min29sec"
- "Wonders of the world- 1min 25 sec"

4. **Resident 4:**
   - "Fishing in Texas- 4min 25sec"
   - "Bow Hunting- 4min 22sec"
   - "Seaplane Landing- 2min29sec"
   - "Wonders of the world- 1min 25 sec"
   - "Aurora Borealis- 4 min 26sec"
   - "Hot Air Balloon- 5 min"

2x weekly Schedule:

1. Resident 1- Mornings
2. Resident 2- Mornings
3. Resident 3- Mornings
4. Resident 5 M, W, F- 10:00-2:00(ish)

Residents Pre Data:

Resident	Date of Pre RAI Data	Pre RAI Depression Score	Pre RAI Cognitive Performance Score	Pre RAI Aggressive Scale Score	Pre RAI Social Engagement Score
1. Resident 1	5/10/2022	5	3	1	2
2. Resident 2	4/19/2022	0	6	2	0
3. Resident 3	4/30/2022	0	3	0	3
4. Resident 4	4/10/2022	5	1		

Resident Post Data:

Resident	Date of Pre RAI Data	Date of Post RAI Data	Pre DRS	Post DRS	Pre CPS	Post CPS	Pre ABS	Post ABS	Pre ISE	Post ISE
1. Resident 1	5/10/2022		5		3		1		2	
2. Resident 2	4/19/2022		0		6		2		0	
3. Resident 3	4/30/2022		0		3		0		3	
4. Resident 4	4/10/2022		5		1					

Weekly Assessment Scores:

1. **Resident 1**

Date	Pre Score	OERS Pleasure	OERS Alertness	OERS Anger	OERS Anxiety	OERS Sadness	EPASS	Post Score	Notes

Weekly Assessment Scores:

2. Resident 2

Date	Pre Score	OERS Pleasure	OERS Alertness	OERS Anger	OERS Anxiety	OERS Sadness	EPASS	Post Score	Notes

Weekly Assessment Scores:

3. Resident 3

Date	Pre Score	OERS Pleasure	OERS Alertness	OERS Anger	OERS Anxiety	OERS Sadness	EPASS	Post Score	Notes

Weekly Assessment Scores:

4. Resident 4

Date	Pre Score	OERS Pleasure	OERS Alertness	OERS Anger	OERS Anxiety	OERS Sadness	EPASS	Post Score	Notes