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TITLE: Triangle of Healthy Caregiving for Spinal Cord-Injured Veterans

PRINCIPAL INVESTIGATOR: Carol Gibson-Gill M.D.

CONTRACTING ORGANIZATION: Veterans Affairs New Jersey Healthcare System 385 Tremont Ave East Orange, NJ 07018

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14. ABSTRACT

The primary aim of the study was to qualitatively assess the acceptability and utilization of real-time clinical video technology (CVT) in healthcare delivery to Veterans living with a Spinal Cord injury (SCI) delivery thereby identifying the impact of CVT and make recommendations to improve, modify, and refine its implementation in SCI health care. This involved learning from the key stakeholders: the SCI Veterans, their Caregivers and their SCI Clinicians.

The final year of the study was a No Cost Extension (NCE) year during which the research team completed the following: the qualitative data analysis of the semi-structured interviews conducted with SCI Veterans; the coding and reconciliation of interviews and focus groups conducted with the Veterans, Veteran-Caregiver dyads, individual Caregivers, and SCI Clinicians; reviewed, coded the transcripts from the Clinicians' focus groups, reconciled and transferred the codes to NVivo; developed the SCI Clinician Codebook using notable using notable themes and quotes from the Clinicians' focus group; and conducted a meeting with the Veteran- Caregivers Advisory Board (V-CAB) to provide an update of the data analyzed, lessons learned so far, and information regarding the manuscripts being drafting while gathering the V-CAB members' feedback on the lessons learned and the manuscripts ideas.

A summary of study recruitment and data collections from each phase of the study are:

Phase I: 2 Telehealth Coordinators were interviewed, 10 Veterans' enrollment and 10 installations of CVT were observed.

Phase II: 39 SCI Veterans and 25 SCI Caregivers participated in semi-structured interviews

Phase III: 10 SCI clinicians with an average of 7 years working with SCI Veterans participated in the focus group.

Preliminary findings from the study suggest all study participants found the use of CVT in healthcare delivery beneficial. Reported benefits include convenience, timely access to the clinicians, no travel burden, and easy Caregiver involvement in the team. Recommendations from the stakeholders for successful VCT visits include: quickly troubleshooting technical issues during visits, ongoing education about CVT and support by the Telehealth Coordinators, users having access to and being comfortable with technology. Interestingly, a concern raised by the Veterans and Clinicians was the lack of privacy and control during visits for those who are dependent on Caregivers' physical assistance in using technology (the Veterans with higher spinal cord injury levels i. e. high tetraplegia). Findings highlight the value of the "users" voice when developing processes, policies and equipment. There should also be a priority focus on consistent education to SCI Veterans about the benefits of using virtual care technologies in getting health care delivered to them.

15. SUBJECT TERMS

Spinal Cord Injury, Veterans, Caregivers, Clinical Video Technology, Virtual Care technologies, Quality of Life, Benefits, Healthcare delivery, Challenges, Health outcomes

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TABLE OF CONTENTS

	<u>Page</u>
1. Introduction	5
2. Keywords	5
3. Accomplishments	5
4. Impact	15
5. Changes/Problems	16
6. Products	17
7. Participants & Other Collaborating Organizations	18
8. Special Reporting Requirements	21
9. Appendices	21

1. INTRODUCTION: *Narrative that briefly (one paragraph) describes the subject, purpose and scope of the research.*

Spinal cord injury (SCI) is a debilitating injury that results in chronic paralysis, impaired functioning and drastically altered quality of life (QOL). SCI Veterans' propensity to multiple secondary complications makes a healthy partnership crucial for the success of keeping better health and functional outcomes as well as quality of life. In spite of the presence of a caregiver, accessing SCI specialty care may be further challenged with development of complexities evident in chronic SCI, the effects of aging, transportation costs, or the distance to the VA hospital or outpatient services, therefore, methods to facilitate improved access are crucial. The "Triangle of Healthy Caregiving for SCI Veterans" is a patient-centered intervention which incorporates SCI Veterans' Caregivers into the VA SCI healthcare team (HCT) and extends into the homes of SCI Veterans using real-time clinical video teleconferencing (CVT). CVT facilitate video-clinic visits, which include clinical evaluations, therapy (physical/occupational), or supportive services (e.g., social work). The goal of the current study is to qualitatively assess the acceptability and utilization of the "Triangle of Healthy Caregiving for SCI Veterans" intervention with SCI Veterans, Caregivers, and the healthcare teams. What are their experiences with using CVT in the delivery of healthcare in the "Triangle of Healthy Caregiving for SCI Veterans"? What lessons can be learned to inform policies and recommendations in using CVT in providing health care to Veterans with SCI?

2. KEYWORDS: *Provide a brief list of keywords (limit to 20 words).*

Spinal Cord Injury, Veterans, Caregivers, Clinical Video Technology, Virtual Care technologies, Quality of Life, Benefits, Healthcare delivery, Challenges, Health outcomes

3. ACCOMPLISHMENTS:

What were the major goals of the project?

List the major goals of the project as stated in the approved SOW. If the application listed milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion.

Study Aims:

The research team hopes to assess the acceptability and utilization of the "Triangle of Healthy Caregiving for SCI Veterans" by evaluating these three specific aims and will integrate the findings to prepare a summary of the findings for dissemination:

1. Evaluate SCI Veterans experiences in the "Triangle of Healthy Caregiving for SCI Veterans".
2. Evaluate the SCI Veterans' Caregivers' experience receiving support in the "Triangle of Healthy Caregiving for SCI Veterans".
3. Evaluate the VA SCI Healthcare Team's experience delivering healthcare and providing supportive services using the "Triangle of Caregiving for SCI/ Veterans".

SOW: Important Milestones and Percentage Completion (Due to feasibility, Phase III was conducted prior to Phase II).

Phase I (SCI Veterans/Telehealth Coordinators Observations and Installations)	Timeline	% Completion
<i>Major Task 1: Preparing to launch study</i>	Months	
Initiate weekly research team meetings to plan study kick-off, management and logistics	1-3	100%
Research team and consumer volunteers study kick-off and planning meeting	1-3	100%
Submit for WOC	1-3	100%
Finalize consent form & human subjects' protocol	1-3	100%
Submit to VANJHCS IRB application	1-4	100%
Submit for Military 2 nd level IRB review (ORP/HRPO)	5-9	100%
Initiate staff training	3-12	100%
Milestone Achieved: Local IRB Exemption/R&D Approval	4-5	100%
Milestone Achieved: HRPO/ACURO Approval	9-10	100%
Phase I (SCI Veterans/Telehealth Coordinators and Observations of Enrollment)		
<i>Major Task 2: Qualitative review of enrollment and installation into the "Triangle of Healthy Caregiving for SCI Veterans"</i>		
Research team weekly meetings to address study management, procedures, and logistics	Weekly	100%
Meet with consumer volunteers to review CVT enrollment and installation interviews and observation instruments	10-11	100%
Conduct 2 in-depth interviews with VANJHCS Telehealth Coordinators	11-12	100%
Finalize SCI Veterans semi-structured interview questions	17	100%
Conduct 10 observations of <i>SCI Veteran patient enrollment</i> in the "Triangle of Healthy Caregiving for SCI Veterans"	11-16	100%
Conduct 10 observations of SCI Veteran home installation of the CVT equipment/devices	11-16	100%
Milestone achieved: Qualitative review of enrollment and installation into the "Triangle of Healthy Caregiving for SCI Veterans" completed	11-16	100%
Conduct qualitative data analyses	11-16	100%
Phase III (SCI Clinicians Focus Group)		
<i>Major Task 5: Conduct 1 focus group with VANJHCS virtual healthcare team professionals</i>		
Research team weekly meetings to address study management, procedures, and logistics	Weekly	100%
Meet with consumer volunteers to review focus group script	27	100%
Finalize focus group script	27-29	100%
Screen and consent VANJHCS virtual healthcare team professionals	27-29	100%
Conduct focus group with VANJHCS virtual healthcare team professionals	27-29	100%
Milestone Achieved: <i>focus group with VANJHCS virtual healthcare</i>	27-29	100%

<i>team professionals</i>		
Conduct qualitative data analyses	27-29	100%
Phase II (Semi-structured Interviews for Veterans)		
<i>Major Task 3: Semi-structured interviews with 35-40 SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program</i>		
Research team weekly meetings to address study management, procedures, and logistics	Weekly	100%
Meet with consumer volunteers to review SCI Veterans semi-structured interviews	16-17	100%
Finalize SCI Veterans semi-structured interview questions	17	100%
Recruit and consent 35-40 SCI Veterans to participant in semi-structured interviews	17-22	100%
Complete 35-40 SCI Veterans to participant in semi-structured interviews	18-22	100%
Milestone(s) to Achieve: <i>Semi-structured interviews with 35-40 SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program completed</i>	18-22	100%
Conduct qualitative data analyses	17-26	100%
Major Task 4: Semi-structured interviews with 25-30 Caregivers of SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program		
Research team weekly meetings to address study management, procedures, and logistics	Weekly	100%
Finalize caregivers semi-structured interview questions	19-24	100%
Recruit and consent 25-30 caregivers to participant in semi-structured interviews	19-24	100%
Complete 25-30 caregivers to participant in semi-structured interviews	19-24	100%
Milestone Achieved: Semi-structured interviews with 35-40 SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program completed	19-24	100%
Conduct qualitative data analyses	19-28	100%
Major Task 6: Triangulate Qualitative Data, Practice Recommendations and Dissemination		
Review of coding, triangulation of data sources, strategies for identifying other key patterns and findings for dissemination efforts	30-36	100%
Develop practices policy recommendations	30-36	In progress
Disseminate findings at national professional meetings (e.g., abstracts, presentation, publications)	30-36	Ongoing
Milestones Achieved: Analyses completed; Practice Recommendations developed; Findings disseminated at professional meetings and publications	30-36	Ongoing

What was accomplished under these goals?

Major Activity for Year 1

Significant Results or Key Outcomes:

- The Research Team completed, development of procedures, and logistics to conduct the study, hiring of Research staff, securing of VA Without Compensation (WOC) status for Dr. Fyffe and training of the research team on conducting research at VANJHCS
- The research team identified members for and established the Veteran-Caregivers Advisory Board (V-CAB). After all parties agreed on a date, the first CAB meeting was held on 08/27/2017 by Dr. Carol Gibson-Gill and Joyce Williams about the study's goals and aims. All CAB members provided input as to how we should better target the Spinal Cord Injury population for subject recruitment.
- VANJHCS IRB reviewed the protocol and decided that it was IRB Exempted according to category 2 exemption policy, and we were directed to conduct an initial submission to the local Office of Research & Development for approval which was granted. Approvals from all regulatory Boards (ORD and /HRPO) were achieved.
- The team initiated Phase I data collection, which involved the 2 Telehealth Coordinator Interviews. These interviews were completed. By doing this, the research team was able to identify the need for a manual of procedures for the enrollment process of Veterans on the Triangle of Healthy Caregiving for SCI program. The manual of procedures (MOP) was deemed necessary to help standardize the process of enrollment and installation.
- The MOP included checklists which compiled a list of important standardized preparatory and procedural steps that facilitated the Telehealth Coordinators having a successful Enrollment or Installation encounter. After developing the preliminary checklist, the Telehealth Coordinators reviewed and provided feedback to the Research Team and the checklists were updated. The Research Team then conducted 2 mock observations of enrollment and 2 mock observations of installation with members of the Veterans-Caregiver Advisory Board. The purpose of these mock observations was to ensure that all members of the research team were consistent in their use of the checklists when conducting the actual observation of the TCs as part of the research protocol, validating that no steps were overlooked from the checklist. It also served to familiarize the TCs with the process of having the research team conduct observations when the TCs were working with the Veterans. Final edits were made to the checklists based on the feedback from the mock observations. Please refer to the Appendix: Attachment A page 48 for the **checklists** used by the research team.
- Telehealth Coordinator Demographics: The TCs demonstrate a vast experience with working with Veterans living with SCI, due to their duration of employment by a VA SCI department. They worked an average of 10.5 years with Veterans living with SCI. They both have clinical backgrounds because they have done direct hands-on care to Veterans with SCI and have worked with Caregivers of Veterans with SCI. Their long history of working in the SCI department provided them with the familiarity of working with the SCI healthcare team, the Veterans living with SCI, and the Caregivers of these Veterans. Their level of education made it easy for them to transition into the role of Telehealth Coordinators, serving both the Veterans and the healthcare team in the capacity that facilitates delivering of healthcare using CVT. Please refer to the Appendix: Attachment B page 52 for Telehealth Coordinator demographics.

Findings from the interviews conducted with the TCs include the following:

- The TCs are to identify Veterans who should be using CVT in their care and what devices/modalities the Veterans need and can use to have a successful visit with the healthcare providers.
- The TCs are to contact the Veterans to discuss the benefits of using CVT to improve access to care and to discuss the type of device they have or don't have.

- The TCs are to educate the Veterans about the various virtual care modalities available, confirm the enrollment criteria, confirm the Veterans' interest, and determine the best device to use (the Veterans' personal device or the VA device).
- The process used for scheduling the actual installation of devices in the Veterans' homes
- The process for ordering the VA iPad, if applicable.
- The TCs' documentation of this initial encounter with the Veterans in the Veterans' electronic medical record.
- The TCs identifying a secure room (for Veterans' confidentiality) to conduct the installation encounter with the Veteran prior to being able to start the installation segment.
- The TCs confirming the audio/visual quality in virtual chat room and troubleshooting any technical issues that may be encountered during the installation encounter. If the Veteran is using a VA provided CVT device, TCs generate a static link that the Veteran will use to have the clinical visit with the healthcare team. If the Veteran is using a personal device, the TCs would provide application download instructions and confirm Veterans' email address before sending the static link via email.
- The TCs scheduling a follow up session if technical issues were not resolved initially and would document the encounter in the Veterans' electronic medical record.
- Due to feasibility, Phase 3 data collection was completed in Year 1, which involved the SCI Clinicians Focus Group. The Clinician focus group was conducted to gather the perspectives of clinicians on their experiences in delivering healthcare via CVT to Veterans living with a spinal cord injury.
- Ten members of the VANJ SCI/D interdisciplinary team attended the group, with an average age of 44 years old.
- 50% of the clinicians were Non-Hispanic Black, 90% were married, 90% were college educated or greater, and 30% were currently Nurses.
- The clinicians had worked an average of 7 years with Veterans living with SCI and saw on average 24 Veterans per week.
- Please see the Appendix: Attachment B page 64.

Major Activity for Year 2

Significant Results or Key Outcomes:

- Research staff was trained on data collection methods for conducting one on one semi- structured interviews.
- Research staff developed open-ended questions, closed-ended questions and outcome measures that will facilitate successful one on one semi-structured interviews with SCI Veterans (n=35-40) and Family Caregivers (n=25-30). These interviews would be conducted to gain an understanding of the perceptions about the "Triangle of Healthy Caregiving for SCI Veterans" program using Clinical Video Technology in the provision and the ways that impacts the delivery of healthcare.
- 21 SCI Veteran semi-structured interviews were completed.
- 9 Family Caregivers were recruited.
- Using the final approved checklists, the team then conducted the 10 observations of enrollment and 10 observations of installation as defined in the research protocol.
All 10 SCI Veteran observation of enrollment and all 10 SCI Veteran observation of installation interviews were completed. By doing this, the research team was able to identify that there were no standardized procedures for enrolling and installing CVT into the homes of SCI Veterans which led the research team to begin working to develop **standardized enrollment and installation guides entitled "Key Steps For**

Successful Enrollment ” and “Key Steps for Successful Installation” which would need to be included in the MOP. (See Appendix: Attachment C) This will address the clinical inconsistencies identified by the Research team during this part of getting a SCI Veteran to use CVT as part of their healthcare delivery. It can be used to train new staff and it can also be used by non-VA programs delivering healthcare via CVT to patients in their homes directly from facilities. All (10) SCI Veterans Observation of installations interviews have been completed.

Useful Highlights and Tips From Our Observations That May Promote Successful Encounters Setting Up Veterans with SCI to Use CVT

- There is a need for consistency and standardization of the process used by the TCs (and future hired TCs) for enrolling Veterans onto the program.
- Enrollment
 - Utilize inpatient stays to approach Veterans and educate them about the benefits of using CVT in their care
 - Continue to offer the services to the Veterans even if they have previously refused
 - For example, re-approach Veterans with worsening medical conditions as those Veterans may see a need at this point when they previously did not see a need for these services
 - Identify devices Veterans already have access to in their homes
 - Determine Veterans’ comfort with using the devices
 - this will help the Telehealth Coordinator prepare to finalize getting the Veteran set up to use CVT.
 - Expect to see longer encounters for those who are less comfortable with technology. This will help facilitate better time management for both the staff and the Veteran
 - If offering a VA device, have the device available during the initial approach to demonstrate how to use the device
- Installation
 - Budget at least 30 min for each encounter
 - Make sure to follow up with Veterans or Caregivers about the delivery of their VA device in a timely fashion on a weekly schedule.
 - There were some cases where the Telehealth Coordinator was waiting for the Veteran or Caregiver to let her know that the device was delivered; By the time the Telehealth Coordinator contacted the Veteran or Caregiver, the device had been sitting in their homes for a few weeks which led to the delay in the use of the technology for healthcare delivery to the Veteran
 - For VA Devices, two encounters may be necessary:
 - One in-person encounter after the delivery of the VA device to help the Veteran or Caregiver with setting up the device
 - One using the device while the Veteran is in their home and the Telehealth Coordinator is at the facility to ensure that the Veteran or Caregiver can complete the CVT without them
 - Encounters that require troubleshooting take significantly longer than those that do not require troubleshooting
 - Veterans and Caregivers unfamiliar with technology frequently struggled to download the necessary applications on their personal device to be able to start using the system for healthcare delivery.
 - We developed a **potential application download guide** that is used to help those less comfortable with technology. See Appendix: Attachment D Clinical CVT Installation Guide.
 - Even if Veterans have a compatible device, if they are uncomfortable with technology it may better

to issue them a VA Device

- VA devices do not require downloading applications to do the video visit so it would reduce the burden on those less comfortable with technology
- If the Telehealth Coordinator is familiar with the devices that the Veterans or Caregivers use it could greatly help with troubleshooting

Challenges Encountered When Initially Setting Veterans with SCI up to Use CVT which required Troubleshooting by the TC.

During the observations we saw:

- It took the TC an average of 29.8 minutes per encounter which ranged from 7 to 75 minutes.
- 90% of the encounters required some aspect of troubleshooting by the TC which spanned a range of 17-75 minutes (mean = 35.7) per encounter.
- The average encounter without troubleshooting was 7 minutes.
- Please refer to the Appendix: Attachment C page 65 for common troubleshooting problems identified.

Major Activity for Year 3

Significant Results or Key Outcomes:

- The research team submitted a formal request for a no-cost extension which was approved.
- During this time, the research team gathered the perspectives of Veterans and Caregivers on their experiences using CVT for their health care. Semi-structured interviews were conducted with Veterans, Caregivers and Veteran-Caregiver pairs. From these interviews, the team was able to gather data about: Veterans' and Caregivers' demographics, reasons participants did and did not enroll/use CVT, recommendations for pitching CVT use to Veterans and Caregivers, recommendations received from the Veterans and Caregivers on improving healthcare delivery through CVT, Caregiver related experiences, and common troubleshooting issues identified by the Veterans and the Caregivers.
 - Majority of the Veterans enrolled in this study were over 60 years old, Caucasian married men who have been living with a spinal cord injury for over 10 years. There were more Veterans living with paraplegia than Veterans living with tetraplegia in the study and majority of the injuries were sustained after falls.
 - The Veterans were highly educated as majority had a college degree or above and when combined with high school education, the percentage was 95% having at least a high school level education. They all ended their military career with an honorable discharge from the military.
 - Majority of the Veterans reported being currently unemployed due to retirement and report their annual income was above \$50,000 with 32.5% of them making an annual income greater than or equal to \$75,000.
 - Majority of the Veterans use the VA as their primary health care insurance followed by Medicare. The majority of them also self-rated their overall current health status as being in the "good" category with only 18% of the Veterans rating their current health status as excellent. A very small proportion of the Veterans self-rated their health as poor. We found that 50% of them had no or only one hospitalization within the previous year, while 15% reported 2 hospitalizations and 20% reported having three hospitalizations during the same period. A small proportion reported four or more hospitalizations during that year. 50% of those hospitalizations reported were due to acute illness with the other 50% being due to getting routine pre-scheduled SCI annual evaluations that required inpatient stay for procedures.
 - Some of the common health issues reported by majority of the Veterans over the past year included

urinary tract infection, pressure injuries, pain and insomnia. What was encouraging to see was that about 2/3s of the Veterans had reported no falls during this same period of time.

- Veterans' Clinical Reasons for Enrolling in CVT: 62% enrolled to access care and for convenience, 27% enrolled for close monitoring of pressure injuries, 6.6% enrolled for access to psychosocial issues, and 4.4% enrolled for outpatient care. Please see Appendix: Attachment B page 55 for notable quotes from the Veterans.
- Advantages: Some of the advantages of CVT described by the Veterans are accessibility to clinical care, transportation/travel and costs, time efficiency, and reduced burden. Please see Appendix: Attachment B page 58 for notable quotes from the Veterans.
- Veterans' Reported Technical Challenges: 17.14% of the Veterans reported user-based device problems, 40.57% reported audio and/or video problems, 36.57% reported connectivity and/or internet problems, 5.14% reported inability to access email, and 0.57% of Veterans reported errors in VMR app. Please see Appendix: Attachment B page 59 for notable quotes from Veterans.
- Over 90% of the Caregivers were Caucasian female spouses and over 50 years old and highly educated. Some of the Caregivers have been caregiving as early as 1970 and as late as 2015. The Veterans they care for were on average 69.9 years old, most were living with tetraplegia and 28% had been living with their injury for 0-5 years.
- Thirteen of the twenty-five Caregivers had been employed since caregiving, however only five of them were currently employed at the time of the study.
- Caregivers reported having multiple responsibilities, including doing housework, dressing the Veterans, advocating with healthcare providers, preparing meals, helping with transportation, and etc. Majority of them provided assistance to the SCI Veterans 7 days a week with 80% reporting providing over 80+ hours assistance a week.
- The number of Caregivers reporting health conditions increased from before caregiving in comparison to during caregiving. For example, before caregiving, 11 Caregivers reported Arthritis, RA, Osteoarthritis, gout, and Lupus while 17 reported having these conditions during caregiving. Other health conditions reported were Diabetes, High Blood Pressure, high cholesterol, lung disease, digestive problems, and heart disease. Most Caregivers reported their health "good" or "fair" with 24% rating their health as "excellent." We found that 76% visited the doctors between 1 to 4 times within the last 12 months, while 4% visited 5 to 9 times and 4% visited 10 times. An overwhelming majority of Caregivers reported taking medication with 40% reported taking 0 to 2 prescription medications.
- The team quantified the data collected in the interviews with the Veterans to facilitate statistical analysis. The data was characteristics of CVT usage such as: a) CVT user status; b) frequency of CVT's usage; c) clinical reasons for using CVT; d) Veteran's assistance from Caregivers to use CVT; Veteran's comfort with CVT. A total of 16 semi-structured interviews with Veterans were quantified. Some findings are as follows:
 - There is a high percentage of the Veterans who use some "smart" device (95% of them) with 90% of them using at least a smart phone. They were familiar and comfortable with the use of the internet and 70% reported navigating the internet daily. Of the 40 Veterans who used technology, 8 used assistive devices, 9 needed help with the device, and 31 were independent or did not need help.
 - Approximately 74% of the Veterans felt comfortable using CVT.
 - Veteran's Clinical Reasons for Using CVT: Many of the reasons verbalized by the Veterans was for pressure injury management at 34%. Other clinical needs that were verbalized by the Veterans included: Other rehab needs, mental health, social services, neurogenic bowel and/or neurogenic

bladder care, and prepping for the annual physical exam. The Veterans expressed great comfort with using the technology. Please see Appendix: Attachment B.

- Caregiver CVT User Status: 16% of Caregivers reported that they were not involved with using CVT but 84% reported using CVT with the healthcare team.
 - Caregiver CVT Assistance: 72% of Caregivers provided their Veterans assistance during their CVT visits, while 28% they did not have to help or be involved in the CVT visit of their loved ones, due to the Veterans' functionality.
 - Caregiver CVT Comfort: 68% of Caregivers reported feeling comfortable using CVT. Please see Attachment B page 62.
- Members of research team who were to conduct interview coding were trained in using NVivo and the interview data was imported into NVivo (i.e., the qualitative data analysis software) for analyses. They completed the qualitative data analysis of all the semi-structured interviews conducted with the Veterans. They were also trained on the process of proper coding and coding reconciliations. They performed coding reconciliations of the transcripts from the Veterans and Caregivers interviews that had been coded. This led to the development of the SCI Veteran and Caregivers Codebook (see Appendix: Attachment E. Veteran & Caregiver Codebook). The codebook includes 6 themes and 44 codes that capture the Veteran and Caregivers experiences and perspectives about CVT.
 - Staffing changes occurred during this year with the replacement Research Coordinator (Yoyce Geronimo-Galvan) being hired, onboarded, and trained to replace the previous Research Coordinator (Yascheca Ebanks) who upon completion of her graduate studies, left VANJHCS to start employment at the University in her career field.
 - The Research team updated the Veterans-Caregiver Advisory Board on study progress during this period. We shared the lessons learned so far from data collected. They found the information very useful and suggested that we do future work exploring ways to educate more Veterans with SCI on the benefits of using CVT in their healthcare, as well as recommending the need to have more Telehealth staff in healthcare systems who would be readily available to assist with technical issues that might arise during the visits via CVT.

Major Activity for Final Year (No Cost Extension Year)

Significant Results or Key Outcomes:

- We were invited by the CDMRP SCIRP Expansion Award to submit an expansion grant proposal. We submitted a proposal titled: **“Is this the new normal?: Virtual Care Technologies as a Mainstay in SCI Rehabilitation and Care for Veterans with Spinal Cord Injury”**, which was a 3-year multi-site mixed-methods study to assess the implementation and sustainability of the expanded use of Virtual Care Technology (VCT) in the delivery of healthcare from acute SCI inpatient rehabilitation to community living for Veterans with SCI, as well as support to the Caregivers. The full application was submitted Sept 3, 2021 but unfortunately, was not approved for funding.
- The research team completed the qualitative data analysis of all the semi-structured interviews with Veterans, a total of 38 semi-structured were analyzed. The coding and reconciliation of all interviews, including Veteran, Veteran-Caregiver dyads, individual Caregiver, and Clinician focus group interviews were completed during this final year. The transcripts from the SCI Clinicians' focus group were reviewed and coded. The codes underwent reconciliation, were transferred to NVivo and used to develop a SCI Clinician Codebook (See Appendix: Attachment F).

- During this time, the Research team held a meeting with the Veterans-Caregiver Advisory Board (V-CAB) and accomplished the following: 1) provided an update which included the status of data analyzed, lessons learned so far, and information regarding the two manuscripts being drafting; 2) gathered V-CAB member's feedback on the lessons learned and the manuscripts ideas.
- Staffing changes occurred during this time with a new Research Coordinator (Tatiyanna Mingo) being hired, onboarded, and trained to replace the previous Research Coordinator. She was trained on each phase of the project to maintain adequate research quality. She has been very instrumental in the success of the study.

What opportunities for training and professional development has the project provided?

If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state "Nothing to Report."

- Institutional Review Board (IRB) Training
- Clinical Video Technology Study Staff Training
- REDCap Data Repository System Study Staff Training
- Spinal Cord Injury- Functional Index (SCI-FI) Study Staff Training
- Human Subjects Research at the VA Seminar
- VA Research Role of Privacy & Information Security in Research Workshop
- VA HIPAA Training
- Research Assistant Data Collection and Quality Control Training
- Continuing Education Research Workshops which included VA Grants 101 and VA Research Audit Preparation
- Continuing Education Research Workshops by the VA Research Office
- Training on interview transcriptions
- Data cleaning and coding provided by Dr. Fyffe to the Research team
- VBRI Grant Training

How were the results disseminated to communities of interest?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

1. The research team provided to the VANJHCS SCI Telehealth Coordinators (TC), the results of their observations of Enrollment and Installation which led to the development of the manual of Procedures they provided to the SCI TC.
- 2 Dr. Gill and Mrs. Joyce Williams provided an in-service to VANJHCS SCI Department on the findings from Phase II and III of the research.
3. Gibson-Gill, C, Williams, J, Fyffe, Denise, Ebanks, Yasheca, Jones, N. The Triangle of Healthy Caregiving for Spinal Cord Injured Veterans. Planetree International Conference, Oct, 2018, Boston, MA
4. Gibson-Gill, C, Williams, J, Fyffe, D, Ebanks, Y, Jones, N. The Triangle of Healthy Caregiving for Spinal Cord Injured Veterans. VANJHCS SCI Research Week, May, 2019, East Orange, NJ
5. Gibson-Gill, C M, Fyffe, DC, Williams, J, Ebanks, Y, Jones, N. Identifying Unspoken Challenges of Using Clinical Video Technology For SCI Veterans & Caregivers. American Congress of Rehabilitation Medicine Conference. Nov, 2019.
6. Gibson-Gill, C, Williams, J, Fyffe, D, Mingo, T, Thomas, N. Lessons Learned from SCI Clinicians: Incorporating Clinical Video Technology in the Care Delivered. VANJHCS VISN Research Week, May, 2022, East Orange, NJ

What do you plan to do during the next reporting period to accomplish the goals?

If this is the final report, state "Nothing to Report."

Nothing to report as this is the final report.

4. **IMPACT:** *Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to:*

The collaboration between the interdisciplinary research team including the Veteran-Caregiver Advisory Board provided a rich environment for conducting future research in the SCI/D Veteran population. The study participants provided useful information that can be used to positively influence the development of processes, policies and equipment that would make implementation of virtual care technologies in the delivery of care for Veterans with SCI easily accomplished with the goal of improving healthcare outcomes in this high-risk Veteran population. Looking at the data, we have developed two Data codebooks which include themes and codes that capture the Veterans and their Caregivers' experiences and perspectives about using of CVT in their healthcare, as well as the perspectives and experiences of the virtual healthcare professional team. Our presentations generated great dialogue between us and attendees.

What was the impact on other disciplines?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

The Manual of Procedures generated from this study includes information the SCI Telehealth Coordinators can use to standardize the process for setting up a new SCI Veteran and Caregiver to receive healthcare and support from the SCI healthcare team using clinical video technology. They reported appreciation for it and find it useful. Also, it is useful as part of their training of newly hired telehealth staff. The Codebooks created of common themes will be part of our recommendations that would be helpful in future research and the expansion of clinical video technology to other healthcare workers who serve Veterans with spinal cord injury.

What was the impact on technology transfer?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

Nothing to report.

What was the impact on society beyond science and technology?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

We engaged the Caregivers and Veterans as partners in this research with them serving as a Veteran-Caregiver Advisory Board and provided them updates on the progress and findings of the research. They reported feeling valued and expressed interest in collaborating in future research projects. Presentations made to the V-CAB are in Appendix: Attachment G.

- 5. CHANGES/PROBLEMS:** *The PD/PI is reminded that the recipient organization is required to obtain prior written approval from the awarding agency grants official whenever there are significant changes in the project or its direction. If not previously reported in writing, provide the following additional information or state, "Nothing to Report," if applicable:*

Changes in approach and reasons for change

We conducted Phase III (SCI Clinicians) prior to Phase II due to ease of getting the Clinicians recruited for participation. This did not have any negative impact on the study.

Actual or anticipated problems or delays and actions or plans to resolve them

We had staffing changes but were able to fill the vacated positions. The Research Coordinator, Ms. Ebanks completed her graduate studies and got a job working in her field of interest at the University. Ms. Geronimo-Galvan was hired but due to emergent family health issues, she had to resign, and she was replaced by Tatiyanna Mingo effective May 17, 2021.

Transcription company changes were made as follows: In 2019, there were contractual changes with the VA and the Keystrokes transcription company. As a result, in March 2019, the team began working with the Centralized Transcription Services Program, an approved VANJHCS vendor.

Changes that had a significant impact on expenditures

Nothing to report.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or

Nothing to report.

Significant changes in use or care of human subjects

Nothing to report.

Significant changes in use or care of vertebrate animals

Nothing to report.

Significant changes in use of biohazards and/or select agents

Nothing to report.

6. PRODUCTS: *List any products resulting from the project during the reporting period. If there is nothing to report under a particular item, state “Nothing to Report.”*

- **Publications, conference papers, and presentations**

Report only the major publication(s) resulting from the work under this award.

Journal publications.

Gibson-Gill, C M, Fyffe, DC, Williams, J, Ebanks, Y, Jones, N. *Identifying Unspoken Challenges of Using Clinical Video Technology For SCI Veterans & Caregivers*. Archives of Physical Medicine and Rehabilitation;2019-12-01, Volume 100, Issue 12, Pages e182-e182

Gibson-Gill C, Williams J, Fyffe DC. *Triangle of Healthy Caregiving for Spinal Cord Injured Veterans*. JMIR Research Protocols. 2020 May; 9(5): e14051,1-11

Books or other non-periodical, one-time publications.

Nothing to report.

Other publications, conference papers and presentations.

Gibson-Gill, C, Williams, J, Fyffe, Denise, Ebanks, Yasheca, Jones, N. *The Triangle of Healthy Caregiving for Spinal Cord Injured Veterans*. Planetree International Conference, Oct, 2018, Boston, MA

Gibson-Gill, C, Williams, J, Fyffe, D, Ebanks, Y, Jones, N. *The Triangle of Healthy Caregiving for Spinal Cord Injured Veterans*. VANJHCS SCI Research Week, May, 2019, East Orange, NJ

Gibson-Gill, C M, Fyffe, DC, Williams, J, Ebanks, Y, Jones, N. *Identifying Unspoken Challenges of Using Clinical Video Technology For SCI Veterans & Caregivers*. American Congress of Rehabilitation Medicine Conference. Nov, 2019.

Gibson-Gill, C, Williams, J, Fyffe, D, Mingo, T, Thomas, N. *Lessons Learned from SCI Clinicians: Incorporating Clinical Video Technology in the Care Delivered*. VANJHCS VISN Research Week, May, 2022, East Orange, NJ

- **Website(s) or other Internet site(s)**

Nothing to report.

- **Technologies or techniques**

Nothing to report.

- **Inventions, patent applications, and/or licenses**

Nothing to report.

- **Other Products**

1. Manual of Procedures for the SCI Telehealth Coordinators – see Appendix: Attachment C
2. Codebooks – see Appendix: Attachments E and F

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?

Name: Carol Gibson-Gill, MD
Project Role: Principal Investigator
Nearest person month worked: 12 Months
Contribution to Project: Dr. Gibson-Gill has performed in the role of overseer in all aspects of the research project. Her responsibility is to oversee all aspects of the project taking place at the Veterans Administration New Jersey Healthcare System (VANJHCS). She has participated in regular study conference calls to monitor the overall study progress (e.g., development of the focus group/in-depth interview script, selection of the V-CAB members, V-CAB meetings, etc.), hiring and trainings of Research Coordinator and Research Assistant, ensuring regulatory processes were in place, provided methodological and content about SCI Veterans and Caregivers throughout each stage of the study.
Funding Support: Spinal Cord Injury - Qualitative Research Award, Log #SC160198

Name: Denise Fyffe-Thomas PhD
Project Role: Co-Investigator
Nearest person month worked: 12 Months
Contribution to Project: Dr. Fyffe is a Senior Research Scientist at the Kessler Foundation and has and will continue to serve as the Co-Investigator for the study. Dr. Fyffe has devoted 20% of her effort throughout the award period to the proposed research activities. Dr. Fyffe has participated in regular study meetings to monitor the overall study progress along with Dr. Carol Gibson-Gill with the study site. She has conducted the in-depth interviews with the CVT administrative technicians (Telehealth Coordinators); supervise the enrollment procedures and home-observations of the CVT device and equipment installations at SCI Veterans homes. Dr. Fyffe assisted as an oversight in the training of the Research Coordinator and Research Assistant in qualitative data collection, management and quality control. Dr. Fyffe moderated the interviews and focus groups. She also is the head of coordinating and performing the qualitative analyses.
Funding Support: Spinal Cord Injury - Qualitative Research Award, Log #SC160198

Name: Joyce Williams, LCSW
Project Role: Co-Investigator
Nearest person month worked: 12 Months

Contribution to Project: Mrs. Williams is the Spinal Cord Injury and Disorders Coordinator for the VA NJ Healthcare Systems. She provides therapeutic services for spinal cord Veterans through psychosocial assessment and on-going case management for our Veterans and Caregivers support groups. She utilizes the virtual care technologies actively in the care she delivers to the Veterans and their Caregivers. She has been actively involved in the regular meetings, hiring of staff, tracking participant enrollment, training and working with the Research Coordinator and Research Assistant to maximize recruitment efforts, subjects' participation while ensuring data integrity for information gathered from medical records; developed content for the interviews and focus groups; development of contents for interviews and focus groups, selection of V-CAB members and participated in V-CAB meetings.

Funding Support: Spinal Cord Injury - Qualitative Research Award, Log #SC160198

Name: Tatiyanna Mingo, MPH

Project Role: Research Coordinator

Nearest person month worked: 12 Months

Contribution to Project: Ms. Mingo participated in weekly collaborative team research to address study management, procedures, and logistics. She scheduled and coordinated the V-CAB meeting to review preliminary results of the study. She engaged in maintaining data quality and analyzing qualitative data for emerging themes and drafting of the Codebooks and other outputs from the study.

Funding Support: Spinal Cord Injury - Qualitative Research Award, Log #SC160198

Name: Yasheca Ebanks-Williams, MS, CCRC

Project Role: Former Research Coordinator

Nearest person month worked: 12 Months

Contribution to Project: Mrs. Ebanks-Williams managed study data collection, including tracking participant enrollment, worked with the Research Assistant to maximize participation while ensuring data integrity for information gathered from medical records, interviews, and focus groups. Mrs. Ebanks-Williams coordinated the recruitment at the study site, engaged in qualitative data collection, maintained data quality analyze qualitative data for emerging themes, draft codebooks, also in the development of dissemination material and professional publications. Mrs. Ebanks-Williams also assisted in training the Research Assistant in data collection methods.

Funding Support: Spinal Cord Injury - Qualitative Research Award, Log #SC160198

Name: Yoyce Geronimo-Galvan (replaced Mrs. Ebanks as Research Coordinator)

Project Role: Former Research Coordinator

Nearest person month worked: 12 Months

Contribution to Project: Ms. Geronimo-Galvan engaged in qualitative data analysis, data cleaning, and the preparation of recommendations for dissemination and the goals of this

project. She also participated in weekly and collaborative research team meetings and scheduled and coordinated VCAB meetings. Ms. Geronimo-Galvan worked alongside Dr. Fyffe to analyze the semi-structured interviews with Caregivers. She also collaborated with the Research Assistant to conduct qualitative data analysis of the semi-structured interviews with Caregivers.

Funding Support: Spinal Cord Injury - Qualitative Research Award, Log #SC160198

Name: Nicole Jones, BS
Project Role: Former Research Assistant
Nearest person month worked: 12 Months
Contribution to Project: Ms. Jones was responsible for the recruitment of the CAB members and Phase I data collection. Ms. Jones also assisted with preparation of dissemination of study findings per phase, as well as the transcribing of study audio files.
Funding Support: Spinal Cord Injury - Qualitative Research Award, Log #SC160198

Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

Nothing to report.

What other organizations were involved as partners?

Kessler Foundation

Location of Organization: West Orange, New Jersey

Partner's contribution to the project

- Collaboration (e.g., partner's staff work with project staff on the project);
- Personnel exchanges (e.g., project staff and/or partner's staff use each other's facilities, work at each other's site)

On behalf of the Kessler Foundation, Dr. Denise Thomas-Fyffe is collaborating on this project as Co-Investigator.

Organization Name: Keystrokes

Location of Organization: 1119 Colorado Ave., Suite 104, Santa Monica, CA 90401

Partner's Contribution to Project: Transcription Service – VANJHCS vendor

Organization Name: Centralized Transcription Services Program

Location of Organization: Department of Veterans Affairs VA Salt Lake City Health Care System
500 Foothill Drive Salt Lake City, UT 84148

Partner's Contribution to Project: Transcription Service – VANJHCS vendor

8. SPECIAL REPORTING REQUIREMENTS

COLLABORATIVE AWARDS: *For collaborative awards, independent reports are required from BOTH the Initiating Principal Investigator (PI) and the Collaborating/Partnering PI. A duplicative report is acceptable; however, tasks shall be clearly marked with the responsible PI and research site. A report shall be submitted to <https://ebrap.org/eBRAP/public/index.htm> for each unique award.*

QUAD CHARTS: *If applicable, the Quad Chart (available on <https://www.usamraa.army.mil/Pages/Resources.aspx>) should be updated and submitted with attachments.*

9. **APPENDICES:** *Attach all appendices that contain information that supplements, clarifies or supports the text. Examples include original copies of journal articles, reprints of manuscripts and abstracts, a curriculum vitae, patent applications, study questionnaires, and surveys, etc.*

- Updated SOW
- Attachment A: Observation Checklists
- Attachment B: DATA FROM PHASES I, II AND III
- Attachment C. Manual of Procedures (includes (1) Key Steps For Successful Enrollment and (2) Key Steps For Successful Installation, (3) Common Troubleshooting Problems To Look Out For)
- Attachment D: Clinical CVT Installation Guide
- Attachment E: Codebook for Veterans and Caregivers
- Attachment F: Codebook for SCI Clinicians
- Attachment G: Presentations to V-CAB
- Attachment H: Dissemination- Presentations
- Attachment I: JMIR Article

Table of Contents: Appendices

Updated SOW	pg. 23
Attachment A: Observation Checklists	pg. 25
Attachment B: DATA FROM PHASES I, II AND III	pg. 48
Attachment C. Manual of Procedures (includes (1) Key Steps For Successful Enrollment and (2) Key Steps For Successful Installation, (3) Common Troubleshooting Problems To Look Out For)	pg. 67
Attachment D: Clinical CVT Installation Guide	pg. 77
Attachment E: Codebook for Veterans and Caregivers	pg. 88
Attachment F: Codebook for SCI Clinicians	pg. 136
Attachment G: Presentations to V-CAB	pg. 152
Attachment H: Dissemination- Presentations	pg. 219
Attachment I: JMIR Article	pg. 224

Updated SOW

Phase I (SCI Veterans/Telehealth Coordinators Observations and Installations)	Timeline	% Completion
<i>Major Task 1: Preparing to launch study</i>	Months	
Initiate weekly research team meetings to plan study kick-off, management and logistics	1-3	100%
Research team and consumer volunteers study kick-off and planning meeting	1-3	100%
Submit for WOC	1-3	100%
Finalize consent form & human subjects' protocol	1-3	100%
Submit to VANJHCS IRB application	1-4	100%
Submit for Military 2 nd level IRB review (ORP/HRPO)	5-9	100%
Initiate staff training	3-12	100%
Milestone Achieved: Local IRB Exemption/R&D Approval	4-5	100%
Milestone Achieved: HRPO/ACURO Approval	9-10	100%
Phase I (SCI Veterans/Telehealth Coordinators and Observations of Enrollment)		
<i>Major Task 2: Qualitative review of enrollment and installation into the "Triangle of Healthy Caregiving for SCI Veterans"</i>		
Research team weekly meetings to address study management, procedures, and logistics	Weekly	100%
Meet with consumer volunteers to review CVT enrollment and installation interviews and observation instruments	10-11	100%
Conduct 2 in-depth interviews with VANJHCS Telehealth Coordinators	11-12	100%
Finalize SCI Veterans semi-structured interview questions	17	100%
Conduct 10 observations of <i>SCI Veteran patient enrollment</i> in the "Triangle of Healthy Caregiving for SCI Veterans"	11-16	100%
Conduct 10 observations of SCI Veteran home installation of the CVT equipment/devices	11-16	100%
Milestone achieved: Qualitative review of enrollment and installation into the "Triangle of Healthy Caregiving for SCI Veterans" completed	11-16	100%
Conduct qualitative data analyses	11-16	100%
Phase III (SCI Clinicians Focus Group)		
<i>Major Task 5: Conduct 1 focus group with VANJHCS virtual healthcare team professionals</i>		
Research team weekly meetings to address study management, procedures, and logistics	Weekly	100%
Meet with consumer volunteers to review focus group script	1-12	100%
Finalize focus group script	1-12	100%
Screen and consent VANJHCS virtual healthcare team professionals	1-12	100%
Conduct focus group with VANJHCS virtual healthcare team professionals	1-12	100%
Milestone Achieved: <i>focus group with VANJHCS virtual healthcare team professionals</i>	1-12	100%

Conduct qualitative data analyses	1-12	100%
Phase II (Semi-structured Interviews for Veterans)		
Major Task 3: Semi-structured interviews with 35-40 SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program		
Research team weekly meetings to address study management, procedures, and logistics	Weekly	100%
Meet with consumer volunteers to review SCI Veterans semi-structured interviews	16-17	100%
Finalize SCI Veterans semi-structured interview questions	17	100%
Recruit and consent 35-40 SCI Veterans to participant in semi-structured interviews	17-22	100%
Complete 35-40 SCI Veterans to participant in semi-structured interviews	18-22	100%
Milestone(s) to Achieve: <i>Semi-structured interviews with 35-40 SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program completed</i>	18-22	100%
Conduct qualitative data analyses	17-26	100%
Major Task 4: Semi-structured interviews with 25-30 Caregivers of SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program		
Research team weekly meetings to address study management, procedures, and logistics	Weekly	100%
Finalize caregivers semi-structured interview questions	19-24	100%
Recruit and consent 25-30 caregivers to participant in semi-structured interviews	19-24	100%
Complete 25-30 caregivers to participant in semi-structured interviews	19-24	100%
Milestone Achieved: Semi-structured interviews with 35-40 SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program completed	19-24	100%
Conduct qualitative data analyses	19-28	100%
Major Task 6: Triangulate Qualitative Data, Practice Recommendations and Dissemination		
Review of coding, triangulation of data sources, strategies for identifying other key patterns and findings for dissemination efforts	36-48	100%
Develop practices policy recommendations	36-48	In progress
Disseminate findings at national professional meetings (e.g., abstracts, presentation, publications)	36-48	Ongoing
Milestones Achieved: Analyses completed; Practice Recommendations developed; Findings disseminated at professional meetings and publications	36-48	Ongoing

Triangle of Healthy Caregiving for Spinal Cord Injured Veterans
Observations of VHA Virtual Care *Enrollment* Checklist
(IRB #: 01425)

Verified **Unverified**

Study ID #: _____

Phase I: Observations of VHA Virtual Care Enrollment

[tc] TC: [1] TC_01 [2] TC_02 [3] TC_other

[loc] Location: [1] Inpatient [2] Outpatient [3] Over the Phone [4] via CVT

[pobs] Primary Observer: [1] DF [2] YE [3] NJ

[sobs] Secondary Observer: DF YE NJ

Encounter #1:

Encounter #2:

Encounter #3:

[statime1] start time: ____: ____ am/pm

[endtime1] End time: ____: ____ am / pm

[date_1] Date: _____

[otc_e1] Outcome of Encounter:

- Enrollment was successful
 - Veteran accepted CVT care
 - Veteran declined CVT care

Enrollment was unsuccessful

Reason:

[statime2] start time: ____: ____ am/pm

[endtime2] End time: ____: ____ am / pm

[date_2] Date: _____

[otc_e2] Outcome of Encounter:

- Enrollment was successful
 - Veteran accepted CVT care
 - Veteran declined CVT care

Enrollment was unsuccessful

Reason:

[statime3] start time: ____: ____ am/pm

[endtime3] End time: ____: ____ am / pm

[date_3] Date: _____

[otc_e3] Outcome of Encounter:

- Enrollment was successful
 - Veteran accepted CVT care
 - Veteran declined CVT care

Enrollment was unsuccessful

Reason:

Instructions:

Before beginning the observations,

- the primary and secondary observers should first introduce themselves to the veteran being observed. This introduction should include not only an introduction to the research team, but the purpose of the observations.
- the observers should then take a moment to introduce the study and review the consent script with the Veteran.

[virtual] Current VHA Virtual Care Modalities of Veteran
(mark that apply):

- [1] Jabber
- [2] BL Tablet
- [3] Vital Tablet
- [4] MyHealthVet
- [5] Home Telehealth
- [6] VA Video Connect (VVC)
- [7] None

[reas] Reason for Encounter (mark all that apply):

- [1] Upgrade to VVC
- [2] Virtual Care Enrollment
- [3] Returning Device
- [4] Enrolling in MyHealthVet

[who_obs] Who is being observed?

- [1] Veteran
- [2] Caregiver

A. BEFORE VETERAN ENCOUNTER

STEPS TAKEN BEFORE VETERAN ENCOUNTER		NOTES/OBSERVATIONS
Before Veteran encounter	Identifying Veteran (1.1) [vetid]	Telehealth coordinator identifies potential Veteran for enrollment using: <input type="checkbox"/> [1] Provider consult/referral <input type="checkbox"/> [2] Admissions List <input type="checkbox"/> [3] Outpatient Appointment <input type="checkbox"/> [4] During Morning report <input type="checkbox"/> [5] Seamless care list <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable
	Checking New SCI Veteran's CVT Equipment (initial evaluation) (1.2) [idcv]	Telehealth coordinator checks CPRS chart: <input type="checkbox"/> [1] For enrollment in HBPC <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [2] For previous provider technology consults <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [3] For any enrollment in MyHealthVet <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [4] For any technology the Veteran may already have <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable
	Gathering encounter materials (1.3) [mat]	If Veteran does not have technology, telehealth coordinator prepares to educate Veteran on available VHA Virtual Healthcare modalities by gathering: <input type="checkbox"/> [1] "Individuals' request for a copy of their own health information" [for myhealthvett] <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [2] "Clinical Video Telehealth into the home Information Sheet" [for VVC] <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable
	Confirming Known Veteran Information (1.4) [confinfo]	<input type="checkbox"/> [1] Telehealth Coordinator identifies the Veteran email address <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [2] If Veteran is a new VANJHCS SCI patient , telehealth coordinator adds Veteran information to seamless care spreadsheet <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable

	<p>Other (1.5) [bpe_oth]</p>	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	<p>[bpe_oth]</p>
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Proceed to next page for During Veteran Encounter steps

B. DURING VETERAN ENCOUNTER

STEPS TAKEN DURING VETERAN ENCOUNTER		NOTES/OBSERVATIONS	
During Veteran encounter	Education on VHA Virtual Healthcare Modalities (2.1) [edvc]	<input type="checkbox"/> [1] Telehealth Coordinator educates Veteran on the benefits and current modalities of CVT (i.e. MyHealthVet, VVC) <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable	[edvc_n]
	Checking enrollment criteria (2.2) [enroll]	Telehealth Coordinator verifies that the Veteran meets the following enrollment criteria: <input type="checkbox"/> [1] Veteran is interested in using CVT in home <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [2] Veteran can use device or has a caregiver willing to assist <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable	[enroll_n]
	Assessing Compatibility of personal device (2.3) [asscomp]	<input type="checkbox"/> [1] Telehealth coordinator asks Veteran if he/she has any device or technology capable of CVT <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	[asscomp_n]
	Other (2.4) [dpe_other]	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	

If Veteran has own device turn to page 5

If Veteran does not have own device turn to page 7

VVC: PERSONAL DEVICE

STEPS TAKEN DURING VETERAN ENCOUNTER		NOTES/OBSERVATIONS
During Veteran encounter	Providing VVC information (3.1) [vvcinfo] <ul style="list-style-type: none"> <input type="checkbox"/> [1] Telehealth Coordinator reviews the “Clinical Video Telehealth into the home Information Sheet” with the Veteran <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] Telehealth coordinator provides information on applications that need to be downloaded <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable 	[vvcinfo_n]
	Obtaining email address (3.2) [obem] <ul style="list-style-type: none"> <input type="checkbox"/> [1] Telehealth coordinator informs Veteran that email address is needed to use VVC <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] If they have their own email address, telehealth coordinator confirms email address with Veteran <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [3] If Veteran does not have email, telehealth coordinator offers assistance in setting up email address during encounter <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable 	[obem_n]
	Follow Up (3.3) [dpefu] <ul style="list-style-type: none"> <input type="checkbox"/> [1] Telehealth coordinator schedules a follow up session to install software and test connectivity <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable 	[dpefu_n]

	<p>Other (3.4) [dpe_other2]</p>	<ul style="list-style-type: none"><input type="checkbox"/> _____<input type="checkbox"/> _____<input type="checkbox"/> _____<input type="checkbox"/> _____<input type="checkbox"/> _____<input type="checkbox"/> _____<input type="checkbox"/> _____<input type="checkbox"/> [777] Not observed<input type="checkbox"/> [999] Not applicable	
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Proceed to Page 9 for MyHealtheVet Authentication Steps

VVC: IPAD

STEPS TAKEN DURING VETERAN ENCOUNTER

NOTES/OBSERVATIONS

STEPS TAKEN DURING VETERAN ENCOUNTER		NOTES/OBSERVATIONS	
During Veteran encounter	Determining interest (4.1) [det_interest]	<input type="checkbox"/> [1] The Telehealth Coordinator offers an iPad mini to facilitate CVT in to the Veteran's home <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	[det_interest_n]
	Educating on device (4.2) [edd]	The telehealth coordinator educates the Veteran on: <input type="checkbox"/> [1] how to use the control buttons on the device (i.e. power up, volume up/down) <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] how to create the passcode to unlock the device <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [3] how to enter the passcode into the device <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [4] how to navigate the home screen and locate the applications that would be useful to the Veteran <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [5] how to log into email account to receive all emails on device <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [6] how to use the VMR application for video visits <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [7] Where to find emails with the VVC link for video visits <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [8] how to open and log into MyHealthVet <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [9] the uses of MyHealthVet <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable	[edd_n]
	Confirming interest (4.3) [intre]	<input type="checkbox"/> [1] Before ordering iPad, telehealth coordinator confirms that the veteran is interested and would like to use device for CVT <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	[intre_n]

During Veteran Encounter	Obtaining email address (4.4) [conem]	<input type="checkbox"/> [1] Telehealth coordinator confirms email address <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] If Veteran does not have own email address, telehealth coordinator makes a note to generate a static link once the iPad has been ordered <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	[conem_n]
	Other (4.5) [dpe_other3]	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	

Proceed to Page 9 for MyHealthVet Authentication Steps

MYHEALTHEVET

STEPS TAKEN DURING VETERAN ENCOUNTER		NOTES/OBSERVATIONS	
During Veteran encounter	Veteran with existing MyHealtheVet account (5.1) [mhev]	<p>If Veteran uses myHealtheVet or Jabber at other VA health care systems:</p> <p><input type="checkbox"/> [1] Telehealth Coordinator asks for permission to authenticate Veteran at VA New Jersey Healthcare System</p> <p style="padding-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="padding-left: 20px;"><input type="checkbox"/> [999] Not applicable</p> <p><input type="checkbox"/> [2] Veteran agrees to allow account to be authenticated and shares VAID with Telehealth Coordinator</p> <p style="padding-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="padding-left: 20px;"><input type="checkbox"/> [999] Not applicable</p>	[mhev_n]
	Enrolling Veteran in MyHealtheVet (5.2) [mheven]	<p><input type="checkbox"/> [1] Telehealth Coordinator educates Veteran on the functions of MyHealtheVet</p> <p style="padding-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="padding-left: 20px;"><input type="checkbox"/> [999] Not applicable</p> <p><input type="checkbox"/> [2] If interested the Veteran signs the "Individuals Request for a copy of their own health information" consent sheet</p> <p style="padding-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="padding-left: 20px;"><input type="checkbox"/> [999] Not applicable</p> <p><input type="checkbox"/> [3] Telehealth coordinator obtains email address to link Veteran's MyHealtheVet</p> <p style="padding-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="padding-left: 20px;"><input type="checkbox"/> [999] Not applicable</p>	[mheven_n]
	Other (5.3) [mhev_other]	<p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> [777] Not observed</p> <p><input type="checkbox"/> [999] Not applicable</p>	

Proceed to Page 10 for after Veteran encounter steps

C. AFTER VETERAN ENCOUNTER

STEPS TAKEN AFTER VETERAN ENCOUNTER		NOTES/OBSERVATIONS	
After Veteran encounter	Documenting (6.1) [doc]	<p>After the encounter the telehealth coordinator documents the results of the encounter in CPRS by way of virtual care consult note:</p> <ul style="list-style-type: none"> <input type="checkbox"/> [1] Documents if Veteran is a good candidate for CVT to home <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] Documents if Veteran is interest in CVT to home <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [3] Documents if device needs to be ordered for Veteran <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [4] Documents if MyHealtheVet enrollment was or was not completed <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable 	[doc_n]
	MyHealtheVet Authentication (6.2) [mheva]	<ul style="list-style-type: none"> <input type="checkbox"/> [1] The Telehealth Coordinator will send the completed “Individuals Request for a copy of their own health information” consent sheet to be scanned into the Veteran CPRS chart <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] The Telehealth Coordinator then authenticates the Veteran’s MyHealtheVet account <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [3] Telehealth Coordinator sends Veteran a secure message to ensure that MyHealtheVet account was successfully linked to the VA New Jersey Health Care team <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable 	[mheva_n]
	Ordering Device (6.3) [order]	<ul style="list-style-type: none"> <input type="checkbox"/> [1] SCI provider puts in a CVT consult and designates the telehealth coordinator on the consult <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [1] Telehealth Coordinator receives consult then orders the Veteran tablet in the ROES system <ul style="list-style-type: none"> <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable 	[order_n]

After Veteran encounter	Storing Veteran information (6.4) [store]	<input type="checkbox"/> [1] Veteran information is added to the seamless care list which is saved on the clinical sharepoint <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	[store_n]
	Other (6.5) [ape_n]	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	

D. VETERAN ENCOUNTER FOLLOW UP

VETERAN ENCOUNTER FOLLOW UP		NOTES/OBSERVATIONS
Veteran encounter follow up	Setting up Initial Connection (7.1) [setup_ic]	<input type="checkbox"/> [1] Telehealth Coordinator determines the best time to schedule an initial connection with the Veteran <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] Telehealth coordinator creates an appointment using the intrafacility appointment in CPRS and adds to the clinical calendar <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable
	Completing Enrollment (7.2) [pfu]	<p>If VVC iPad was ordered:</p> <input type="checkbox"/> [1] The telehealth coordinator will check ROES to ensure that device was successfully shipped <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] The telehealth coordinator will follow up with Veteran 1 week following device being shipped to confirm successful delivery and to schedule a time to complete the initial connection <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <p>If enrollment was not completed during initial encounter:</p> <input type="checkbox"/> [3] The telehealth coordinator will follow up with Veteran 1-2 weeks later to complete enrollment in CVT or MyHealthVet <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [4] Telehealth Coordinator will then document successful enrollment in Veteran chart <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable

	<p>Other (7.3) [pefu_other]</p>	<p><input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable</p>	
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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans
Observations of VHA Virtual Care *Installation* Checklist
(IRB #: 01425)

Verified **Unverified**

Study ID #: _____

Phase I: Observations of VHA Virtual Care Installation

[tc_i] TC: [1] TC_01 [2] TC_02 [3] TC_other

[loc_i] Location: [1] Inpatient [2] Outpatient [3] Over the Phone [4] via CVT

[pobs_i] Primary Observer: [1] DF [2] YE [3] NJ [sobs_i] Secondary Observer: [1] DF [2] YE [3] NJ

Encounter #1:

Encounter #2:

Encounter #3:

[statime_i1] start time: ____: ____ am / pm

[endtime_i1] End time: ____: ____ am / pm

[date_e1] Date: _____

[otc_e1] Outcome of Encounter:

- Installation was successful
 - Installation was unsuccessful
- Reason:

[statime_i2] start time: ____: ____ am / pm

[endtime_i2] End time: ____: ____ am / pm

[date_e1] Date: _____

[otc_e2] Outcome of Encounter:

- Installation was successful
 - Installation was unsuccessful
- Reason:

[statime_i3] start time: ____: ____ am / pm

[endtime_i3] End time: ____: ____ am / pm

[date_e1] Date: _____

[otc_e3] Outcome of Encounter:

- Installation was successful
 - Installation was unsuccessful
- Reason:

Instructions:

Before beginning the observations,

- the primary and secondary observers should first introduce themselves to the veteran being observed. This introduction should include not only an introduction to the research team, but the purpose of the observations.
- the observers should then take a moment to introduce the study and review the consent script with the Veteran.

[virtual_i] Current VHA Virtual Care Modalities of Veteran
(mark that apply):

- [1] Jabber
- [2] BL Tablet
- [3] Vital Tablet
- [4] MyHealthVet
- [5] Home Telehealth
- [6] VA Video Connect (VVC)
- [7] None

[reas_i] Reason for Encounter (mark all that apply):

- [1] Upgrade to VVC
- [2] Virtual Care Enrollment
- [3] Returning Device
- [4] Enrolling in MyHealthVet

[who_obs_i] Who is being observed?

- [1] Veteran
- [2] Caregiver

A. BEFORE VETERAN ENCOUNTER

STEPS TAKEN BEFORE VETERAN ENCOUNTER		NOTES/OBSERVATIONS
Before Veteran encounter	<p style="text-align: center;">Preparing for an over the phone installation (1.1) [prep]</p>	<p><input type="checkbox"/> [1] If Veteran is using personal device, telehealth coordinator sends email link for VVC virtual room</p> <p style="padding-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="padding-left: 20px;"><input type="checkbox"/> [999] Not Applicable</p> <p>Before contacting the Veteran, the telehealth coordinator:</p> <p style="padding-left: 20px;"><input type="checkbox"/> [2] goes to a secure room for confidentiality</p> <p style="padding-left: 40px;"><input type="checkbox"/> [777] Not Observed</p> <p style="padding-left: 40px;"><input type="checkbox"/> [999] Not Applicable</p> <p style="padding-left: 20px;"><input type="checkbox"/> [3] opens CPRS</p> <p style="padding-left: 40px;"><input type="checkbox"/> [777] Not Observed</p> <p style="padding-left: 40px;"><input type="checkbox"/> [999] Not Applicable</p>
	<p style="text-align: center;">Other (1.2)</p>	<p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> [777] Not observed</p> <p><input type="checkbox"/> [999] Not applicable</p>

B. DURING VETERAN ENCOUNTER

STEPS TAKEN DURING VETERAN ENCOUNTER		NOTES/OBSERVATIONS
During Veteran Encounter	Preparing for video visit (2.1) [prepvv]	<input type="checkbox"/> [1] The telehealth coordinator calls the Veteran at the scheduled time <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [2] Telehealth coordinator reminds Veteran of reason for call <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [3] The telehealth coordinator confirms scheduled initial connection time is still convenient for the Veteran <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [4] Telehealth coordinator prompts Veteran to turn on device <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable
	Personal device set up (2.2) [pdsu]	<input type="checkbox"/> [1] Telehealth coordinator reviews the “Clinical video telehealth into the home information sheet” with the Veteran <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [2] If Veteran is using an Apple device, the telehealth coordinator provides instructions on how to download the application “VA Video Connect” from the app store <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [3] Telehealth coordinator confirms the email address that the link for the video visit was sent to <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [4] locates email containing link in Outlook inbox and clicks link to join chat room <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable

During Veteran Encounter	VVC Tablet/personal device education (2.3) [tab_edu]	Telehealth coordinator educates Veteran on: <input type="checkbox"/> [1] how to use the control buttons on the device (i.e. power up, volume up/down) <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] how to create the passcode to unlock the device <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [3] how to enter the passcode into the device <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [4] how to navigate the home screen and locate the applications that would be useful to the Veteran <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [5] how to open and log into MyHealththeVet <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [6] the uses of MyHealththeVet <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable	
	Practice using device (2.4) [prac]	Telehealth coordinator has veteran/caregiver demonstrate <input type="checkbox"/> [1] Using the control buttons on the device (i.e. power up, volume up/down) <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [2] Inputting passcode <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [3] Navigating home screen <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [4] Properly identifying important applications <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable <input type="checkbox"/> [5] how to open and log into MyHealththeVet <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not applicable	

During Veteran Encounter	Connectivity test (2.5) [connt_test]	<input type="checkbox"/> [1] Telehealth coordinator creates static link using the excel sheet provided by the VA <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [2] Telehealth coordinator copies and pastes the static link into google chrome <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [3] Telehealth coordinator then enters provider name into the webpage that loads <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [4] Telehealth coordinator presses connect <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable	
	In the virtual chat room (2.6) [virtchrm]	<input type="checkbox"/> [1] Telehealth coordinator confirms the location and contact information of relatives/caregivers who can be contacted in the event of an emergency <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [2] Telehealth coordinator confirms the address of the Veteran <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [3] Telehealth coordinator prompts the Veteran to ask any questions regarding using the application, email link or VVC iPad <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [4] Telehealth coordinator addresses any clinical needs the Veteran may have <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable <input type="checkbox"/> [5] Telehealth coordinator confirms the audio/video quality of the video conference before ending the phone call <input type="checkbox"/> [777] Not Observed <input type="checkbox"/> [999] Not Applicable	

Other (2.7)	<input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> _____ <input type="checkbox"/> [777] Not observed <input type="checkbox"/> [999] Not applicable	
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C. AFTER VETERAN ENCOUNTER

STEPS TAKEN AFTER VETERAN ENCOUNTER		NOTES/OBSERVATIONS
After Veteran Encounter	<p style="text-align: center;">Ending video visit (3.1) [endvv]</p>	<p><input type="checkbox"/> [1] Telehealth coordinator closes out of chatroom</p> <p style="margin-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="margin-left: 20px;"><input type="checkbox"/> [999] Not Applicable</p> <p><input type="checkbox"/> [2] If any problems were encountered during the installation, telehealth coordinator schedules a time to follow up with the Veteran</p> <p style="margin-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="margin-left: 20px;"><input type="checkbox"/> [999] Not Applicable</p> <p><input type="checkbox"/> [3] Telehealth coordinator documents the results of the video visit in the Veteran's chart using a "CVT 2 Home Note" title</p> <p style="margin-left: 20px;"><input type="checkbox"/> [777] Not Observed</p> <p style="margin-left: 20px;"><input type="checkbox"/> [999] Not Applicable</p>
	<p style="text-align: center;">Other (3.2)</p>	<p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> _____</p> <p><input type="checkbox"/> [777] Not observed</p> <p><input type="checkbox"/> [999] Not applicable</p>

TRIANGLE OF HEALTHY CAREGIVING FOR SPINAL CORD INJURED VETERANS

PI: CAROL GIBSON-GILL, MD

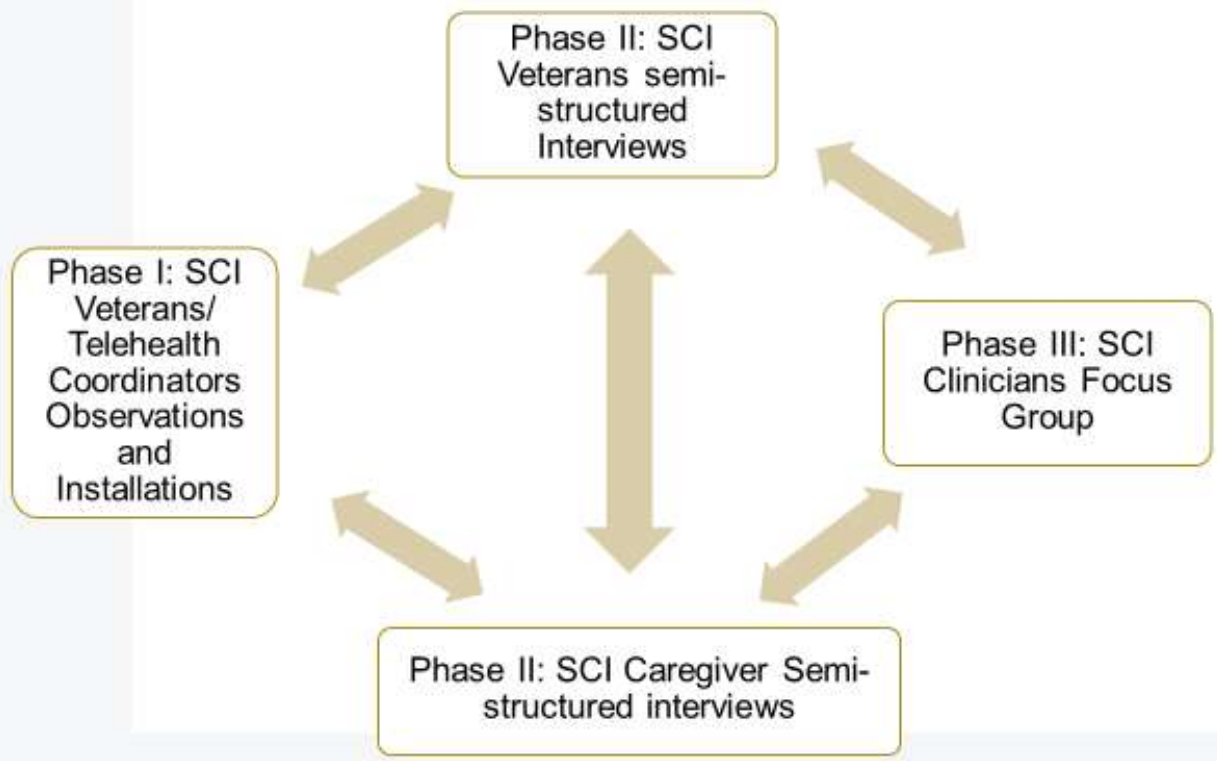
2022

FINAL REPORT (ATTACHMENT B) – DATA FROM
PHASES I, II AND III

Table of Contents

Study Phases		pg 3
Aims		pg 4
Phase 1		pg 5
Table 1: Telehealth Coordinators Demographics		pg 5
Phase 2		pg 6
<i>Veterans</i>		pg 6
Tables 1-5: Veteran Demographics		pg 6-7
Table 6: Reasons Veterans Enrolled Sample Quotes		pg 8
Table 7: Clinical Reasons for Enrolling		pg 8
Table 8: Clinical Reasons for Enrolling Sample Quotes		pg 9
Table 9: Veterans Comfort with CVT		pg 10
Table 10: Advantages of CVT		pg 10
Table 11: Advantages of CVT Sample Quotes		pg 11
Table 12: Technical Problems Reported by Veterans		pg 12
Table 13: Technical Problems Sample Quotes		pg 12
<i>Caregivers</i>		pg 13
Tables 1-5: Caregiver Demographics		pg 13
Table 6-7: CVT User Status		pg 15
Table 8-10: Caregiver Assistance and Comfort with CVT		pg 15
Phase 3		pg 17
Table 1: SCI Clinicians Demographics		pg 17
Table 2: Notable Clinician Quotes		pg 18

Study Phases



STUDY AIMS

Aim 1. Evaluate the SCI Veterans experience in the “Triangle of Healthy Caregiving for SCI Veterans”.

Research Question 1.1. What are SCI Veterans’ perceptions about the “Triangle of Healthy Caregiving for SCI Veterans” program in the provision and the ways that impacts the delivery of healthcare?

Research Question 1.2. What are the benefits and challenges the SCI veterans experienced during the implementation of the “Triangle of Healthy Caregiving for SCI Veterans” program in their homes?

Aim 2. Evaluate the SCI Veterans/Caregivers experience in the “Triangle of Healthy Caregiving for SCI Veterans”.

Research Question 2.1. What are SCI Veteran/Caregivers’ perceptions about the “Triangle of Healthy Caregiving for SCI Veterans” program in management of caregiver burden?

Research Question 2.2. What are the benefits and challenges that SCI Veterans/Caregivers experienced during the implementation of the “Triangle of Healthy Caregiving for SCI Veterans” program in the homes of SCI Veterans?

Aim 3. Evaluate the VA healthcare team’s experience delivering healthcare and providing supportive services using the “Triangle of Healthy Caregiving for SCI Veterans”.

Research Question 3.1. How do “Triangle of Healthy Caregiving for SCI Veterans” healthcare professionals use the intervention program to deliver care to SCI Veterans?

Research Question 3.2. Which elements of the “Triangle of Healthy Caregiving for SCI Veterans” work better in facilitating healthcare delivery? What are the key components of the intervention program? Which components need to be revised?

PHASE 1 TELEHEALTH COORDINATOR INTERVIEWS

Objective

The objective of Phase 1 was to:

- examine the experiences of the Telehealth Coordinators (staff hired to facilitate the use of Clinical Video Technology in the delivery of healthcare to Veterans) in delivering healthcare using Clinical Video Technology
- observe the process of enrolling veterans into the SCI/D virtual care program
- and observe the installation of equipment and devices in the Veterans homes for use by the Veterans.

Who were the Telehealth Coordinators Interviewed?

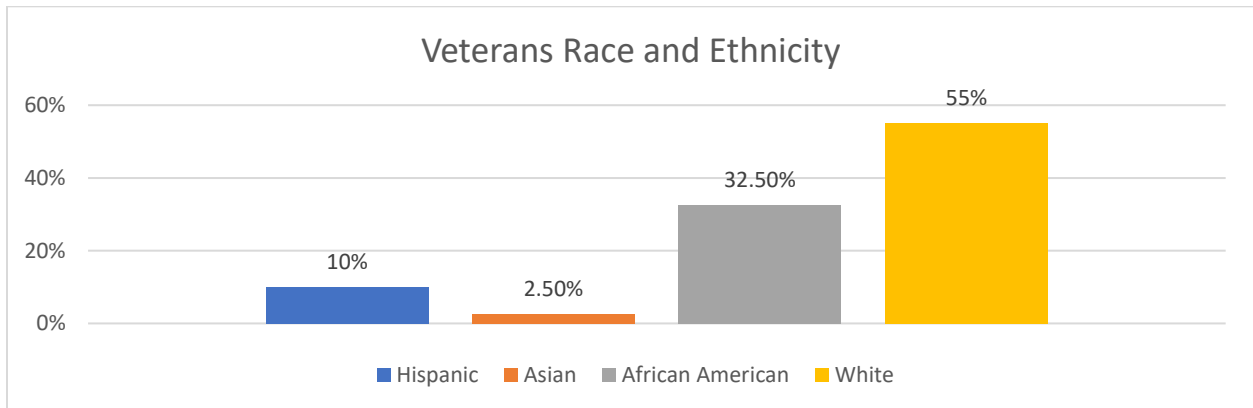
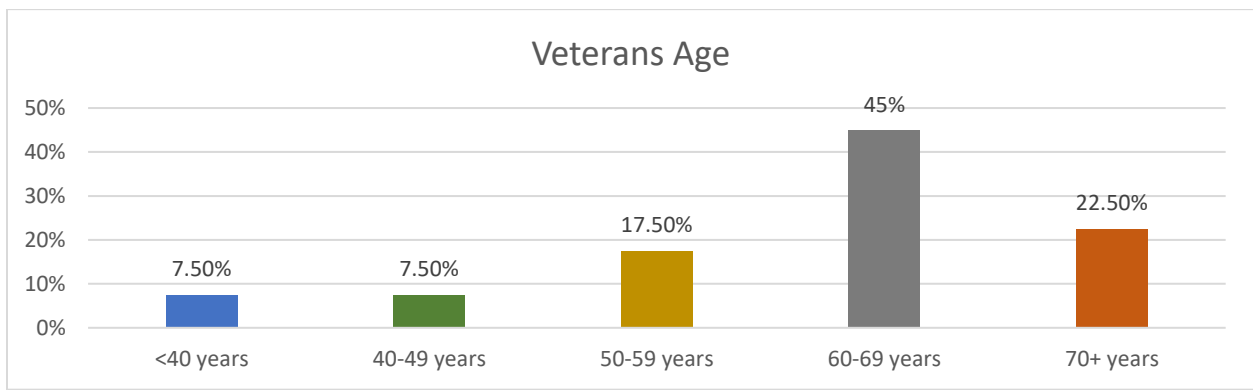
Demographic Variables (N = 2)	
Age	
Mean (SD)	40 (2.82)
Sex – No. (%)	
Female	2 (100)
Race/Ethnicity – No. (%)	
Hispanic	1 (50)
African American	1 (50)
Education – No. (%)	
Associates Degree	1 (50)
Bachelor's degree	1 (50)
Current Job Title – No. (%)	
Nurse	2 (100)
Years in working with SCI Veterans	
Mean (SD)	10.5 (0.71)
Provides Clinical Care at a VA SCI Hospital	
Yes	1 (50)

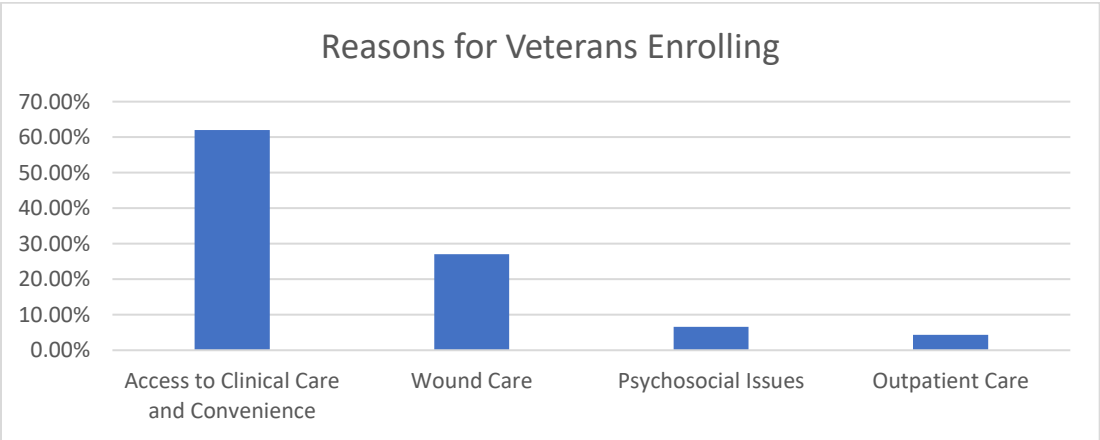
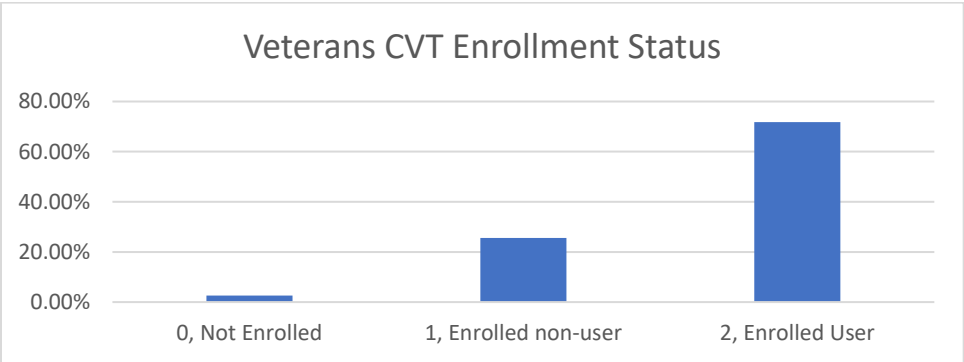
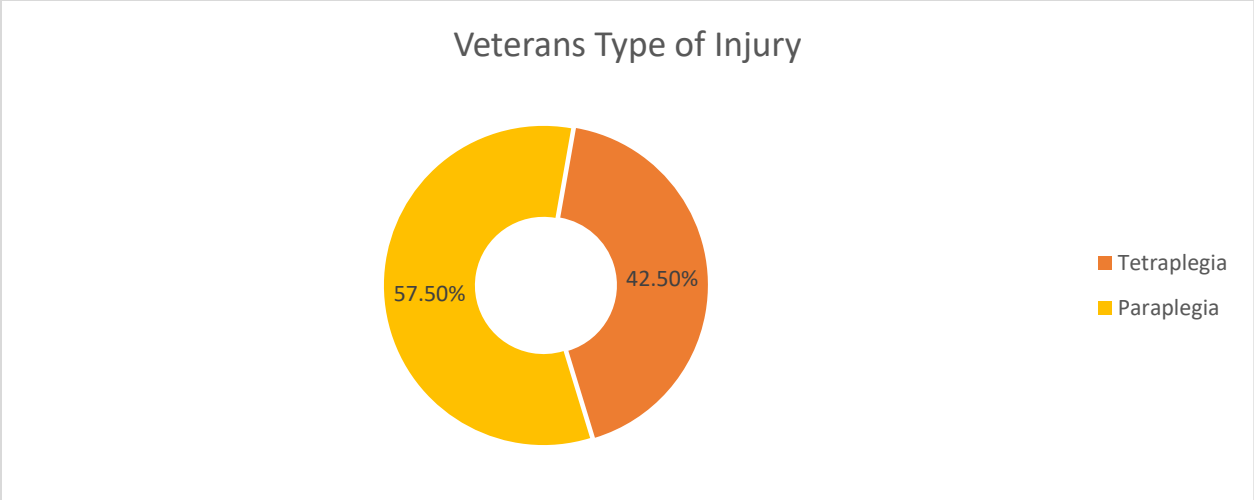
PHASE 2 VETERAN AND CAREGIVER INTERVIEWS

Veterans [n=39]

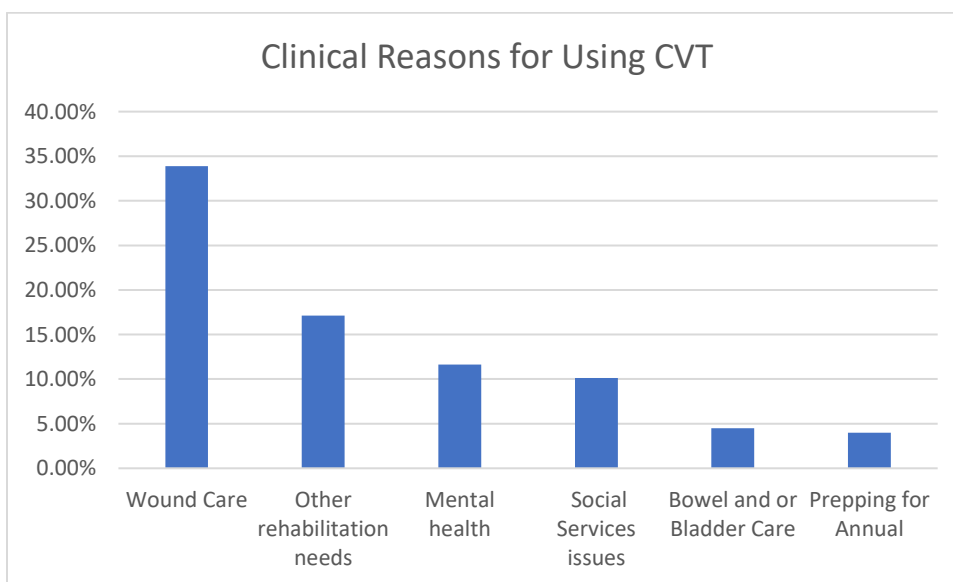
Aim 1. Evaluate the SCI Veterans experience in the “Triangle of Healthy Caregiving for SCI Veterans”.

Research Question 1.1. What are SCI Veterans’ perceptions about the “Triangle of Healthy Caregiving for SCI Veterans” program in the provision and the ways that impacts the delivery of healthcare?



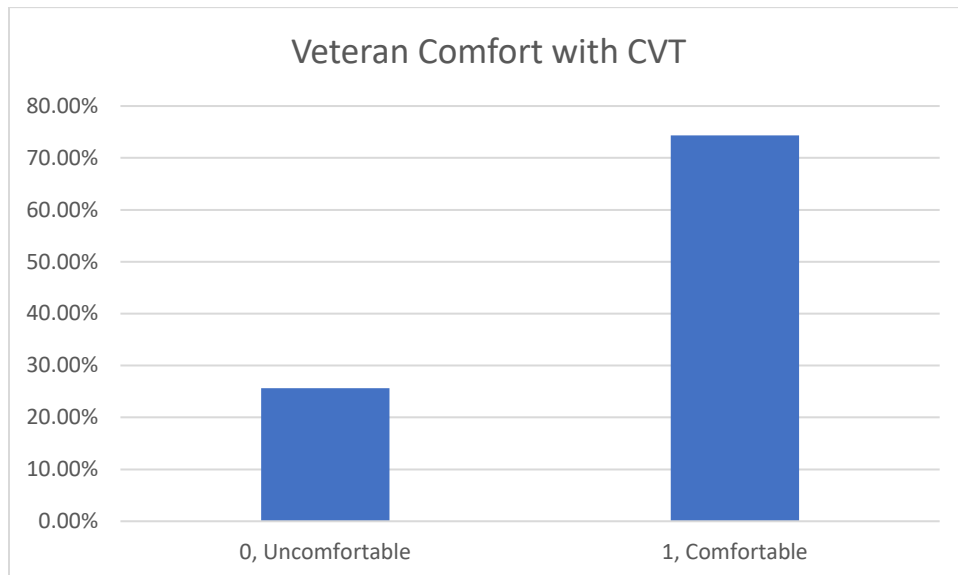


Themes from the Codebook	% of Veterans reported reasons enrolled	Sample of Veterans' Quotes
Access to Clinical Care and Convenience	62.04%	VA14: "Also, you get an appointment when like if I have an appointment, I know I have it whereas I go to the VA sometimes I have to wait you know to be seen or something like that. That's a definite appointment that you've got to and the people see you when they're supposed to."
Wound Care	27.01%	VA03: "Uh I didn't talk to XXXX [VA wound care nurse]. Only just talked to him in the hospital about this. Cause we were talking about it around my wounds and um you know getting my wounds treated"
Psychosocial Issues	6.57%	VA21: "I get overwhelmed and I can't keep cause the VA they give you those consecutive appointments and like my schedule is not like I don't have a set schedule so it's like the CVT allowed me like flexibility and allowed me to like get my appointments in."
Outpatient Care	4.38%	VA18: "Because I live such a distance away that um, um they wanted to follow up on my annual physical and other things."



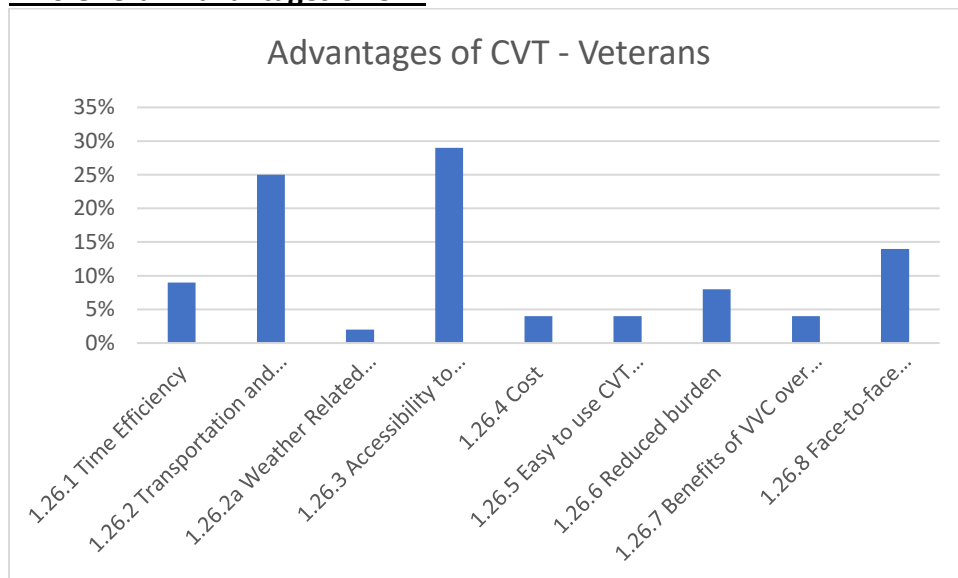
Themes from the Codebook	% of clinical reasons for using CVT mentioned by Veterans	Sample of Veterans' Quotes
Wound Care	33.89%	VA04: "Well if I do get a sore they can look at it...You know I can call and they can set an appointment to look at my skin"
Other rehabilitation needs	17.11%	VA27: "Then they also then they also asked if I get uh the prosthetic side of it... With the wheelchair and all those guys in..."
Mental health	11.63%	VA27: "Then also uh-uh with uh psychiatry too they do it all. They try to bring everybody on the team in and uh the last time I had one."
Social Services issues	10.13%	VA26: "Uh mostly when I'm doing my annual exams because I do a lot of them as an outpatient so I'm able to meet with the social worker"
Bowel and or Bladder Care	4.49%	VA22: "I can talk to I can talk to uh XXXX [VA Urologist] through the video."
Prepping for Annual	3.99%	VA26: "Uh mostly when I'm doing my annual exams because I do a lot of them as an outpatient so I'm able to meet with the social worker and um the psychiatrist and I meet with them when I'm doing my annual exams to get a lot of that stuff out of the way."

A. Veterans Comfort with CVT



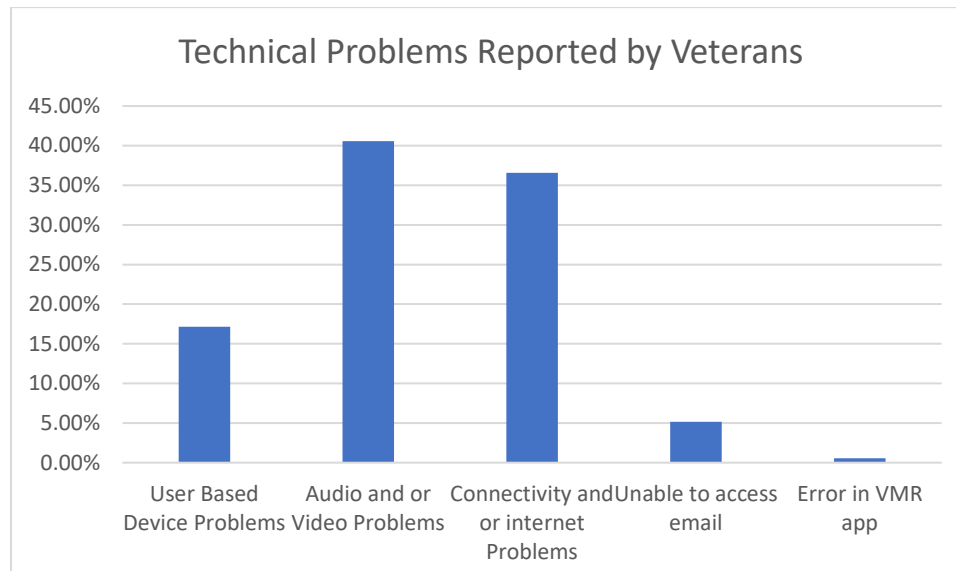
Research Question 1.2. What are the **benefits and challenges** the SCI veterans experienced during the implementation of the “Triangle of Healthy Caregiving for SCI Veterans” program in their homes?

1.26 Overall Advantages of CVT



Themes from the Codebook	% of Veterans who reported advantage	Sample of Veterans' Quotes
1.26.1 Time Efficiency	9%	VA31: "But I feel at the VA can save a lot of time and money from the tablets when they say uh I have to come up there like cardiology."
1.26.2 Transportation and or Travel	25%	VA30: "Um especially uh when XXXX [VA Wound care specialist] wanted me to uh stay 100% here and you know that um so I didn't have to drive the hour and a half up here for him to look at it and go back."
1.26.2a Weather Related Reason	2%	VA23: "And then you stay dry."
1.26.3 Accessibility to Clinical Care or Convenience	29%	VA21: "Uh I feel like the good is the accessibly and once you-once you learn how to use it then it's easy."
1.26.4 Cost	4%	VA03: "Yeah. You know and even still you know they paid for transportation going back and forth, but you know, you know I have [unclear] you know it's probably a lot cheaper just you know for maintenance or whatever just to keep it going."
1.26.5 Easy to use CVT device or software	4%	VA13: "When they email you the link you go and you click the link and you can click connect. If you got to right uh you know software and application that you know it'll work and you-it's very quick. "
1.26.6 Reduced burden	8%	VA05: "Oh yeah. It saves us a trip and uh it'll be a lot easier on-on my wife and me."
1.26.7 Benefits of VVC over past modalities	4%	VA23: "Uh it was an older model. Uh it didn't work good, no... I couldn't get no reception to it or anything else. This one works like a dream. It's really nice."
1.26.8 Face-to-face interaction with VA clinical team	14%	VA36: "Well we could talk directly to the doctor. I thought that was a great idea. And being able to see the doctor and the doctor to care for you."

Technical Challenges Reported by Veterans



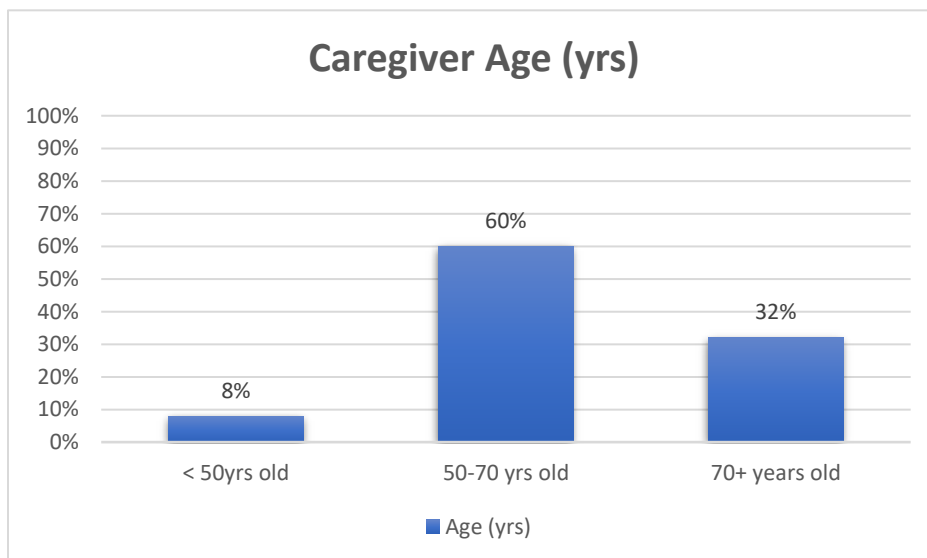
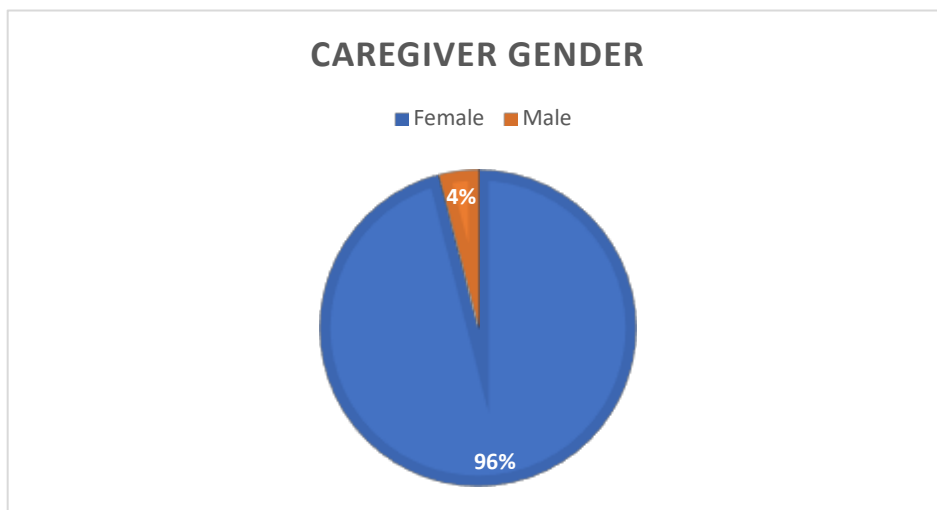
Themes from the Codebook	% of Veterans who reported technical problems	Sample of Veterans' Quotes
User Based Device Problems	17.14%	VA33: "It is yeah. We had-we got the tablet from the VA that seemed to work much more, but uh it was our fault we didn't have it charged up."
Audio and or Video Problems	40.57%	VA22: "And he likes to do the video. You know several times we do the video sometimes it on my end, it just drops you know it's no picture or nothing and everything shuts off then I gotta call them on the telephone."
Connectivity and or internet Problems	36.57%	VA07: "Well the jabber one, we had a little issue with because of the volume on it because the um WiFi around here wasn't-wasn't very good..."
Unable to access email	5.14%	VA34: "So, I use that-well when we first started it was a pain in the butt cause I didn't know the email for the thing to connect me with the iPad."
Error in VMR app	0.57%	VA21: "I was clicking it but it was giving me like a error-error thing like an error like it wasn't allowing me to download the app."

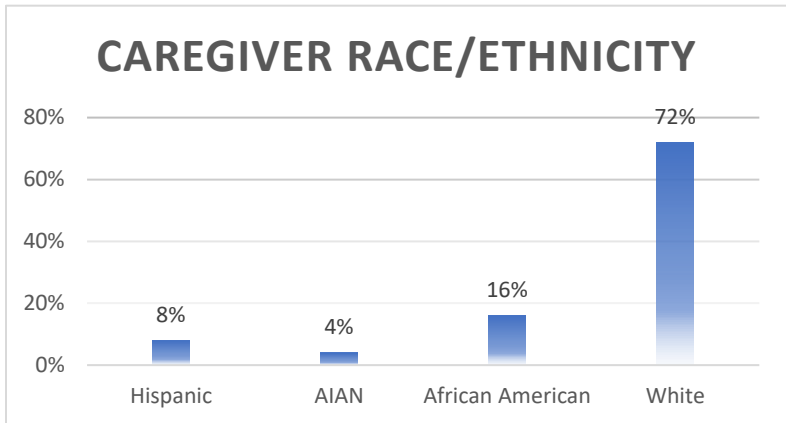
Caregivers Interviews:

Caregivers [n=25]

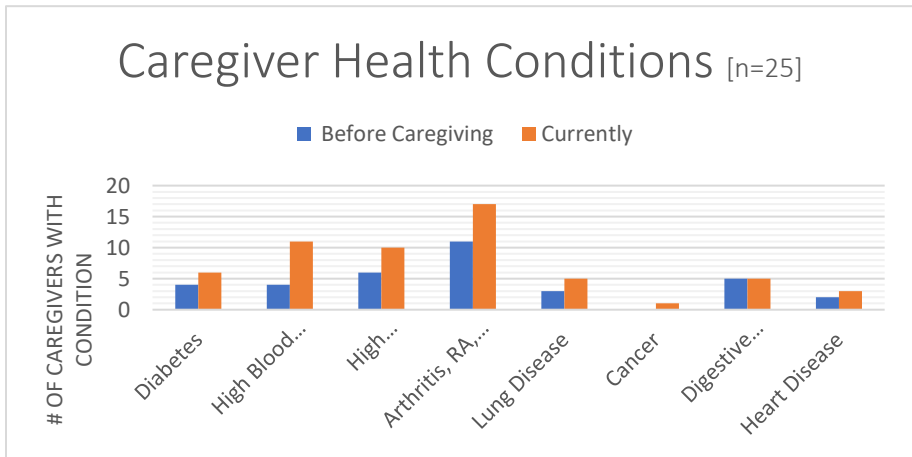
During Phase 2, the research team also gathered the perspectives of Caregivers on their experiences using CVT for their Veterans' health care. Semi-structured interviews were conducted with Caregivers and Veteran-Caregiver pairs. From these interviews, the team was able to gather data about:

- Caregivers' demographics,
- recommendations received from the Veterans and Caregivers on improving healthcare delivery through CVT,
- Caregiver related experiences,
- and common troubleshooting issues identified by the Veterans and the Caregivers.

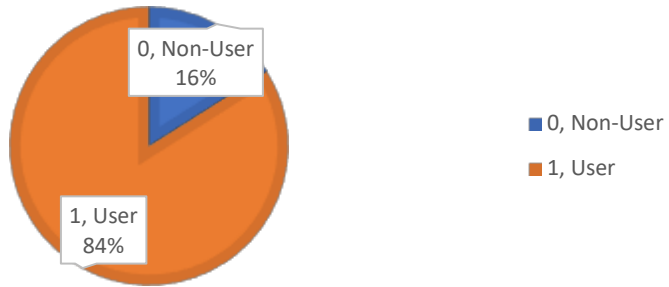




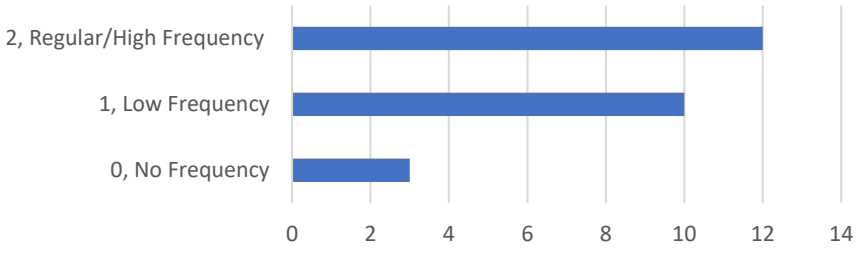
Caregiving	
Age of Veteran	
30-40	1 (4)
40-50	0
50-60	2 (8)
60-70	8 (32)
70-80	10 (40)
80+	4 (16)
Mean (SD)	69.9 (12.01)



CAREGIVER CVT USER STATUS

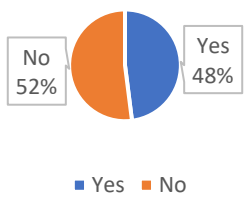


Caregiver Level of Involvement in CVT

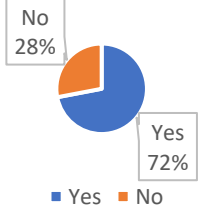


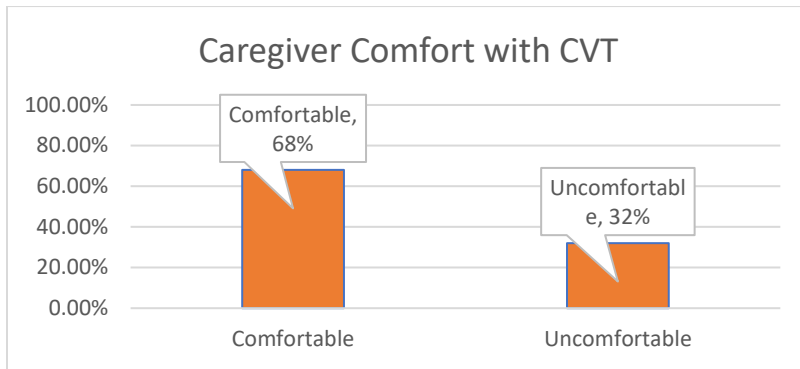
B. Assistance and Comfort

Caregiver receives assistance using CVT



Caregiver provides assistance to the Veteran while using CVT





PHASE 3 VA HEALTHCARE TEAM INTERVIEW

Aim 3. Evaluate the VA healthcare team’s experience delivering healthcare and providing supportive services using the “Triangle of Healthy Caregiving for SCI Veterans”.

Research Question 3.1. How do “Triangle of Healthy Caregiving for SCI Veterans” healthcare professionals use the intervention program to deliver care to SCI Veterans?

Research Question 3.2. Which elements of the “Triangle of Healthy Caregiving for SCI Veterans” work better in facilitating healthcare delivery? What are the key components of the intervention program? Which components need to be revised?

SCI Professionals [n=10]

Clinicians	N= 10
Demographics	
Age (Mean \pm SD)	44 \pm 6.99
Non-Hispanic Black (%)	5 (50)
Married (%)	9 (90)
College or greater (%)	9 (90)
Current Job Title: Nurse (%)	3 (30)
Years working with SCI Veterans (Mean \pm SD)	7.7 \pm 7.18
Number of veterans treated per week (Mean \pm SD)	24 \pm 29.2

Notable Clinician Quotes: Positive

Travel

- "...they have less barriers to just getting ready...They don't have to go through all those other factors related to travel and preparation."
- "...with VVC we can do it anywhere. They can be in the mall and we can connect with them."

Access to Care

- "It's a great tool for me to assess patient's home exercise compliance, retention of knowledge, as well... I use it to if I have to advance their exercise parameters..."
- "It's also phenomenal for continuity of care."

Convenience

- "It's just overall less stress on the veteran."
- "On a scale of one to five, five being outstanding or completely satisfied, we're getting a lot of fives across to board."

Notable Clinician Quotes: Dislikes

Technology

- "...if the connection isn't the greatest and the image is pixelated...or the audio is in and out and you're trying to do a verbal test that could compromise the validity of the assessment."
- "Equipment failure too...Sometimes you have the video but you don't have the audio so you're gonna end up looking for other available computers."

Privacy

- "...the nurse or wife keeps walking by, they're in the room, they're eavesdropping, they won't really give them the privacy that they're hoping they will have, and that affects the level of discomfort or freedom to feel like they can really disclose what they want."
- "...a challenge would be where is it going to be?...if she [neuropsychologist] has a CVT scheduled and her office busy. Where am I gonna go?"

Standardization

- "...the reliability and the validity of a lot of the tests haven't necessarily been established to use via video and they're standardized really more or in person visits."

Notable Clinician Quotes: Improvements

Improvements

- “...I think the limitation right now is staffing...to do a consistent pre-annual evaluation visit or pre-initial visit.”
- “...if we can do a visit beforehand, find out that they’re having equipment issues...we can have them on a schedule for CVT, we can set it up so they can know what the plan is...”

Key Steps for a Successful Enrollment

Enrollment	
<i>Before Enrollment Encounter</i>	
Identifying Veteran (1.1)	<p>Telehealth coordinator identifies potential Veteran for enrollment using:</p> <ul style="list-style-type: none"> <input type="checkbox"/> [1] Provider consult/referral <input type="checkbox"/> [2] Admissions List <input type="checkbox"/> [3] Outpatient Appointment <input type="checkbox"/> [4] During Morning report <input type="checkbox"/> [5] Seamless care list
Checking New SCI Veteran's CVT Equipment (initial evaluation) (1.2)	<p>Telehealth coordinator checks electronic medical record chart:</p> <ul style="list-style-type: none"> <input type="checkbox"/> [1] For enrollment in Home Based Care <input type="checkbox"/> [2] For previous provider technology consults <input type="checkbox"/> [3] For any enrollment in MyHealtheVet <input type="checkbox"/> [4] For any technology the Veteran may already have
Gathering encounter materials (1.3)	<p>If Veteran does not have technology, telehealth coordinator prepares to educate Veteran on available VHA Virtual Healthcare modalities by gathering:</p> <ul style="list-style-type: none"> <input type="checkbox"/> [1] "Individuals' request for a copy of their own health information" [for myhealthevet] <input type="checkbox"/> [2] "Clinical Video Telehealth into the home Information Sheet" [for VVC]
Confirming Known Veteran Information (1.4)	<ul style="list-style-type: none"> <input type="checkbox"/> [1] Telehealth Coordinator identifies the Veteran email address <input type="checkbox"/> [2] If Veteran is a new VANJHCS SCI patient, telehealth coordinator adds Veteran information to seamless care spreadsheet
Other (1.5)	
<i>During Enrollment Encounter</i>	
Education on VHA Virtual Healthcare Modalities (2.1)	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> [1] Telehealth Coordinator educates Veteran on the benefits and current modalities of CVT (i.e. MyHealtheVet, VVC)
Checking enrollment criteria (2.2)	<p>Telehealth Coordinator verifies that the Veteran meets the following enrollment criteria:</p> <ul style="list-style-type: none"> <input type="checkbox"/> [1] Veteran is interested in using CVT in home <input type="checkbox"/> [2] Veteran can use device or has a caregiver willing to assist
Assessing Compatibility of personal device	<ul style="list-style-type: none"> <input type="checkbox"/> [1] Telehealth coordinator asks Veteran if he/she has any device or technology capable of CVT

(2.3)	
Other (2.4)	
During Enrollment- If Veteran is using VVC: Personal device	
Providing VVC information (3.1)	<input type="checkbox"/> [1] Telehealth Coordinator reviews the “Clinical Video Telehealth into the home Information Sheet” with the Veteran <input type="checkbox"/> [2] Telehealth coordinator provides information on applications that need to be downloaded
Obtaining email address (3.2)	<input type="checkbox"/> [1] Telehealth coordinator informs Veteran that email address is needed to use VVC <input type="checkbox"/> [2] If they have their own email address, telehealth coordinator confirms email address with Veteran <input type="checkbox"/> [3] If Veteran does not have email, telehealth coordinator offers assistance in setting up email address during encounter
Follow Up (3.3)	<input type="checkbox"/> [1] Telehealth coordinator schedules a follow up session to install software and test connectivity
Providing VVC information (3.1)	<input type="checkbox"/> [1] Telehealth Coordinator reviews the “Clinical Video Telehealth into the home Information Sheet” with the Veteran <input type="checkbox"/> [2] Telehealth coordinator provides information on applications that need to be downloaded
Other (3.4)	
During Enrollment VVC: If Veteran is using an iPad	
Determining interest (4.1)	<input type="checkbox"/> [1] The Telehealth Coordinator offers an iPad mini to facilitate CVT in to the Veteran’s home
Educating on device (4.2)	<p>The telehealth coordinator educates the Veteran on:</p> <input type="checkbox"/> [1] how to use the control buttons on the device (i.e. power up, volume up/down) <input type="checkbox"/> [2] how to create the passcode to unlock the device <input type="checkbox"/> [3] how to enter the passcode into the device <input type="checkbox"/> [4] how to navigate the home screen and locate the applications that would be useful to the Veteran <input type="checkbox"/> [5] how to log into email account to receive all emails on device <input type="checkbox"/> [6] how to use the VMR application for video visits <input type="checkbox"/> [7] Where to find emails with the CVT link for video visits <input type="checkbox"/> [8] how to open and log into MyHealtheVet <input type="checkbox"/> [9] the uses of MyHealtheVet
Confirming interest (4.3)	<input type="checkbox"/> [1] Before ordering iPad, telehealth coordinator confirms that the veteran is interested and would like to use device for CVT
Obtaining email address (4.4)	<input type="checkbox"/> [1] Telehealth coordinator confirms email address <input type="checkbox"/> [2] If Veteran does not have own email address, telehealth coordinator

	<p>makes a note to generate a static link once the iPad has been ordered</p>
<p>Determining interest (4.1)</p>	<p><input type="checkbox"/> [1] The Telehealth Coordinator offers an iPad mini to facilitate CVT in to the Veteran's home</p>
<p>Other (4.5)</p>	
<p>During Enrollment: If Veteran uses MyHealthvet</p>	
<p>Veteran with existing MyHealthVet account (5.1)</p>	<p>If Veteran uses MyHealthVet or Jabber at other VA health care systems:</p> <p><input type="checkbox"/> [1] Telehealth Coordinator asks for permission to authenticate Veteran at VA New Jersey Healthcare System</p> <p><input type="checkbox"/> [2] Veteran agrees to allow account to be authenticated and shares VAID with Telehealth Coordinator</p>
<p>Enrolling Veteran in MyHealthVet (5.2)</p>	<p><input type="checkbox"/> [1] Telehealth Coordinator educates Veteran on the functions of MyHealthVet</p> <p><input type="checkbox"/> [2] If interested the Veteran signs the "Individuals Request for a copy of their own health information" consent sheet</p> <p><input type="checkbox"/> [3] Telehealth coordinator obtains email address to link Veteran's MyHealthVet</p>
<p>Other (5.3)</p>	
<p>After Veteran Encounter</p>	
<p>Documenting (6.1)</p>	<p>After the encounter the telehealth coordinator documents the results of the encounter in electronic medical record by way of virtual care consult note:</p> <p><input type="checkbox"/> [1] Documents if Veteran is a good candidate for CVT to home</p> <p><input type="checkbox"/> [2] Documents if Veteran is interest in CVT to home</p> <p><input type="checkbox"/> [3] Documents if device needs to be ordered for Veteran</p> <p><input type="checkbox"/> [4] Documents if MyHealthVet enrollment was or was not completed</p>
<p>MyHealthVet Authentication (6.2)</p>	<p><input type="checkbox"/> [1] The Telehealth Coordinator will send the completed "Individuals Request for a copy of their own health information" consent sheet to be scanned into the Veteran electronic medical record</p> <p><input type="checkbox"/> [2] The Telehealth Coordinator then authenticates the Veteran's MyHealthVet account</p> <p><input type="checkbox"/> [3] Telehealth Coordinator sends Veteran a secure message to ensure that MyHealthVet account was successfully linked to the VA New Jersey Health Care team</p>
<p>Ordering Device (6.3)</p>	<p><input type="checkbox"/> [1] SCI provider puts in a CVT consult and designates the telehealth coordinator on the consult</p> <p><input type="checkbox"/> [1] Telehealth Coordinator receives consult then orders the Veteran tablet in the ROES system</p>

<p>Storing Veteran information (6.4)</p>	<p><input type="checkbox"/>[1] Veteran information is added to the seamless care list which is saved on the clinical SharePoint</p>
<p>Other (6.5)</p>	
<p>Follow Up with Veteran after Encounter</p>	
<p>Setting up Initial Connection (7.1)</p>	<p><input type="checkbox"/>[1] Telehealth Coordinator determines the best time to schedule an initial connection with the Veteran <input type="checkbox"/>[2] Telehealth coordinator creates an appointment using the intrafacility appointment in the electronic medical record and adds to the clinical calendar</p>
<p>Completing Enrollment (7.2)</p>	<p>If VA iPad was ordered: <input type="checkbox"/>[1] The telehealth coordinator will check ROES to ensure that device was successfully shipped <input type="checkbox"/>[2] The telehealth coordinator will follow up with Veteran 1 week following device being shipped to confirm successful delivery and to schedule a time to complete the initial connection If enrollment was not completed during initial encounter: <input type="checkbox"/>[3] The telehealth coordinator will follow up with Veteran 1-2 weeks later to complete enrollment in CVT or MyHealtheVet <input type="checkbox"/>[4] Telehealth Coordinator will then document successful enrollment in Veteran chart</p>
<p>Other (7.3)</p>	

Key Steps for a Successful Installation

Installation	
<i>Before Installation Encounter</i>	
<p>Preparing for an over the phone installation (1.1)</p>	<p><input type="checkbox"/> [1] If Veteran is using personal device, telehealth coordinator sends email link for VVC virtual room</p> <p>Before contacting the Veteran, the telehealth coordinator:</p> <p><input type="checkbox"/> [2] goes to a secure room for confidentiality</p> <p><input type="checkbox"/> [3] opens the electronic medical record</p>
<p>Other (1.2)</p>	
<i>During Installation Encounter</i>	
<p>Preparing for video visit (2.1)</p>	<p><input type="checkbox"/> [1] The telehealth coordinator calls the Veteran at the scheduled time</p> <p><input type="checkbox"/> [2] Telehealth coordinator reminds Veteran of reason for call</p> <p><input type="checkbox"/> [3] The telehealth coordinator confirms scheduled initial connection time is still convenient for the Veteran</p> <p><input type="checkbox"/> [4] Telehealth coordinator prompts Veteran to turn on device</p>
<p>Personal device set up (2.2)</p>	<p><input type="checkbox"/> [1] Telehealth coordinator reviews the “Clinical video telehealth into the home information sheet” with the Veteran</p> <p><input type="checkbox"/> [2] If Veteran is using an Apple device, the telehealth coordinator provides instructions on how to download the application “VA Video Connect” from the app store</p> <p><input type="checkbox"/> [3] Telehealth coordinator confirms the email address that the link for the video visit was sent to</p> <p><input type="checkbox"/> [4] locates email containing link in Outlook inbox and clicks link to join chat room</p>
<p>VVC Tablet/personal device education (2.3)</p>	<p>Telehealth coordinator educates Veteran on:</p> <p><input type="checkbox"/> [1] how to use the control buttons on the device (i.e. power up, volume up/down)</p> <p><input type="checkbox"/> [2] how to create the passcode to unlock the device</p> <p><input type="checkbox"/> [3] how to enter the passcode into the device</p> <p><input type="checkbox"/> [4] how to navigate the home screen and locate the applications that would be useful to the Veteran</p> <p><input type="checkbox"/> [5] how to open and log into MyHealtheVet</p> <p><input type="checkbox"/> [6] the uses of MyHealtheVet</p>
<p>Practice using device (2.4)</p>	<p>Telehealth coordinator has veteran/caregiver demonstrate</p> <p><input type="checkbox"/> [1] Using the control buttons on the device (i.e. power up, volume up/down)</p> <p><input type="checkbox"/> [2] Inputting passcode</p> <p><input type="checkbox"/> [3] Navigating home screen</p> <p><input type="checkbox"/> [4] Properly identifying important applications</p> <p><input type="checkbox"/> [5] how to open and log into MyHealtheVet</p>

Connectivity test (2.5)	<input type="checkbox"/> [1] Telehealth coordinator creates static link using the excel sheet provided by the VA <input type="checkbox"/> [2] Telehealth coordinator copies and pastes the static link into google chrome <input type="checkbox"/> [3] Telehealth coordinator then enters provider name into the webpage that loads <input type="checkbox"/> [4] Telehealth coordinator presses connect
In the virtual chat room (2.6)	<input type="checkbox"/> [1] Telehealth coordinator confirms the location and contact information of relatives/caregivers who can be contacted in the event of an emergency <input type="checkbox"/> [2] Telehealth coordinator confirms the address of the Veteran <input type="checkbox"/> [3] Telehealth coordinator prompts the Veteran to ask any questions regarding using the application, email link or VVC iPad <input type="checkbox"/> [4] Telehealth coordinator addresses any clinical needs the Veteran may have <p style="text-align: center;">Applicable</p> <input type="checkbox"/> [5] Telehealth coordinator confirms the audio/video quality of the video conference before ending the phone call
Other (2.7)	
<i>After Veteran Encounter</i>	
Ending video visit (3.1)	<input type="checkbox"/> [1] Telehealth coordinator closes out of chatroom <input type="checkbox"/> [2] If any problems were encountered during the installation, telehealth coordinator schedules a time to follow up with the Veteran <input type="checkbox"/> [3] Telehealth coordinator documents the results of the video visit in the Veteran's chart using a "CVT 2 Home Note" title
Other (3.2)	

Common Troubleshooting Problems Identified when TCs were Setting up Veterans to use CVT

Common Trouble Shooting Problems			
Technical Problem	Frequency of Problem (n=10) n (%)	Corrective Action	Frequency of Corrective Action n(%)
Audio/Video issues	2 (20)	Reboot the chatroom	2 (100)
Unable to access email on device	1 (10)	Veteran used alternative device with access to email	1 (100)
Unable to establish connection	2 (20)	This issue was frequently seen for iMac users; veterans used alternative device	2 (100)
Error message from VMR app	4 (40)	1. Reset VHA CVT device	1 (25)
		2. Give VHA CVT device time do fully download all applications	2 (50)
		3. Contact National Help Desk to update settings on iPad	1 (25)
No technical issues	1 (10)	No action needed	1 (100)

*Figure: Common troubleshooting problems derived from the phase 1 telehealth coordinator interviews. Gibson-Gill, C., Fyffe, D. C., Williams, J., Ebanks, Y., & Jones, N. (2019). *Identifying Unspoken Challenges of Using Clinical Video Technology (CVT) for SCI Veterans*. Veterans Administration New Jersey Health Care System; Rutgers, New Jersey Medical School; Kessler Foundation.

Audio/Video Issues: Issues with the audio or video transmission between the Veteran/Caregiver and telehealth coordinator.

Frequency: Occurred in 20% of observations of installation

Corrective action: Rebooting the chatroom

Accessing email on device: When using a personal device, the Telehealth Coordinator sends an email with the video conference link. The link must be opened on the device being used for the video conference. During some encounters, Veterans/Caregivers had difficulty logging into their email account their device.

Frequency: Occurred in 10% of observations of installation

Corrective Action: Using an alternative device with access to email

Unable to establish a connection: When the Veteran/Caregiver clicked on the chatroom link, they were never connected to the chatroom

Frequency: Occurred in 20% of observation of installation

Corrective Action: Using an alternative device

Error message from “VMR” app: All VA issued VA devices have an app call “VMR” that is used for the video conferencing. During some encounters, when the Veteran/Caregiver opened the app, an error message was displayed across the screen

Frequency: Occurred in 40% of observations of installation

Corrective Action: (1) Reset the device through the settings; (2) Allow apps to fully download onto the device; (3) Contact the help desk to update settings on the VA device

CLINICAL CVT INSTALLATION GUIDE

Preparing your device for VA Video Connect (VVC)

For android users:

STEP 1: log into your email account on the device you want to use for video conferencing

STEP 2: locate the email from the Telehealth Coordinator with the subject "Please Join Your On-Demand VA Video Connect Visit"

STEP 3: click the link provided in the email that says "Click Here to Join the VA Video Connect appointment"

STEP 4: follow the prompts on the screen

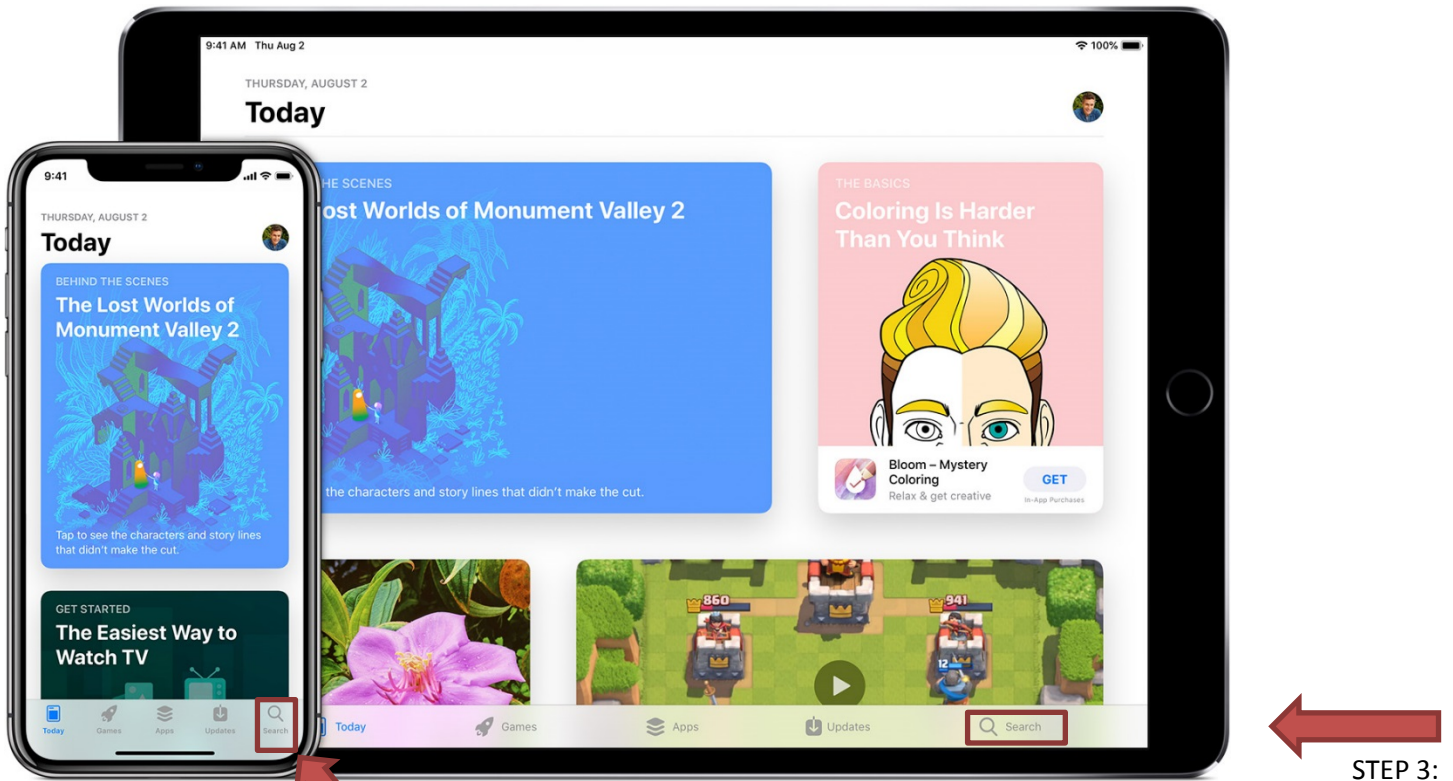
STEP 5: Smile!

For iPhone and iPad Users

STEP 1: Locate the "App Store" icon and tap it



STEP 2: Locate the "Search" option in the lower right corner of your screen then tap on it

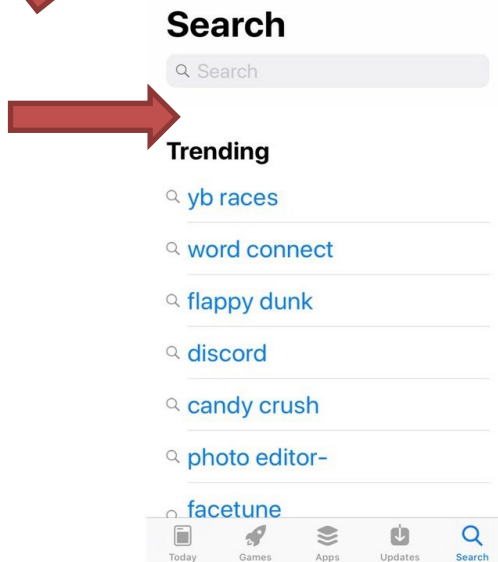


STEP 3:

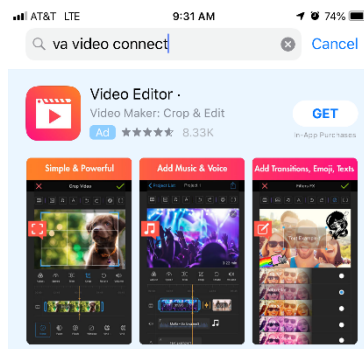
Enter "VA Video Connect" into the

No SIM 10:59 AM 42%

search field at the top of your screen



STEP 4: Next press the "Search" button on your keyboard



**You are looking for the app with this symbol



STEP 5: Now press the “Get” button

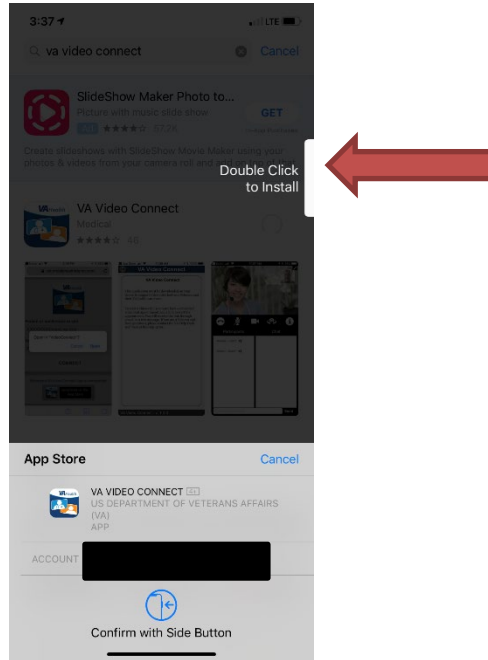


**If the “Get” button changes to this image  SKIP step 6 otherwise proceed to step 6

STEP 6: Your device may prompt you to do one of 3 things

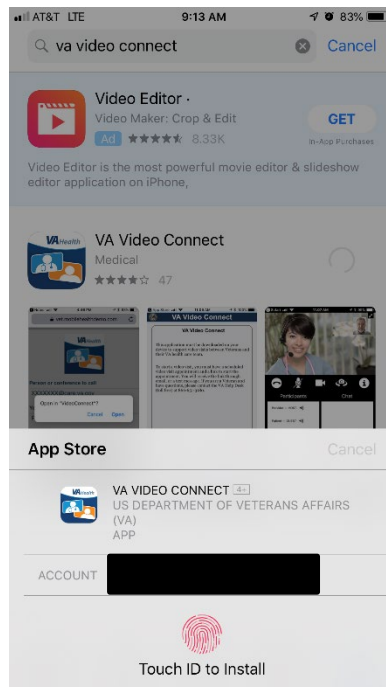
STEP 6a: If you see this screen, then press the lock button (located on the right side of the phone) two times;

**make sure you are holding the device so that it has a clear view of your face

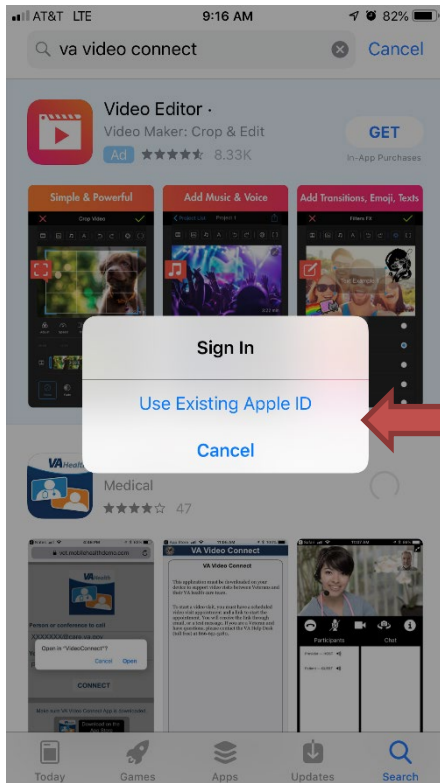


STEP 6b: If you see this screen, place your finger over the home button (the button located on the front of your screen)

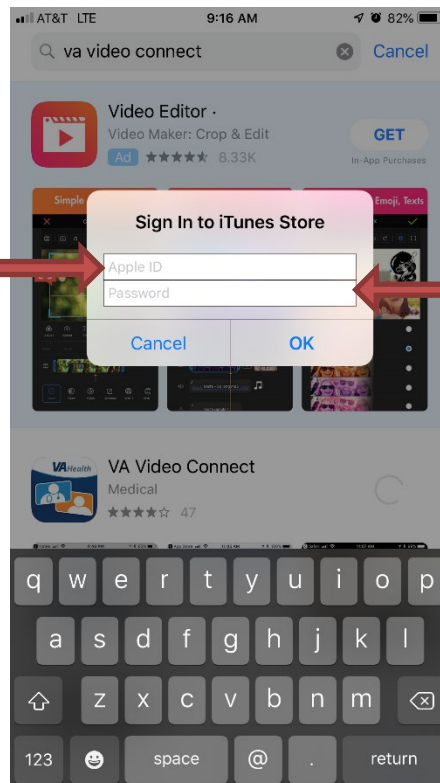
**make sure not to press the button simply place your finger over it




STEP 6c: If you see this screen, press "Use Existing Apple ID" then you have to type in your Apple ID and password; your Apple ID is the email address you used to set up your phone



Type your email



Type your password

**If you successfully completed STEP 6 the "Get" button will change to this image  then you can go onto STEP 7, if you do not see this image then repeat STEP 6

STEP 7: Press the home button to exit the App store and locate the downloading app; it will look like this before as it is downloading



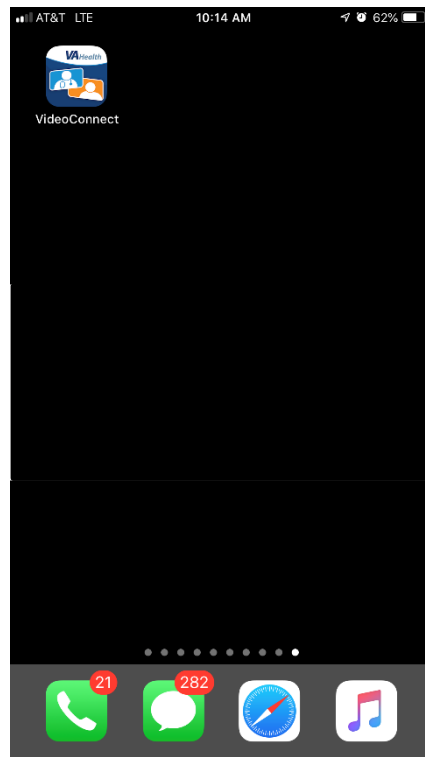
STEP 8: Once the app is finished downloading the word “Loading” will be replaced with “VideoConnect” which means the app is ready to be used



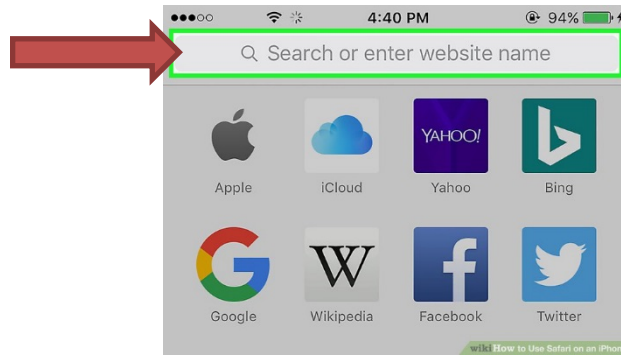
STEP 9: Now log into your email account; this can be done in two ways

METHOD 1:

step 1: locate and open the safari app



step 2: Enter the web address for your email account into the search bar for safari



step 3: When the webpage loads, log into your email account and locate the email entitled “Please Join Your On-Demand VA Video Connect Visit”
Locate the “Join the appointment” in the email and click the link in that email

Join the appointment:

 [Click Here to Join the VA Video Connect appointment](#)

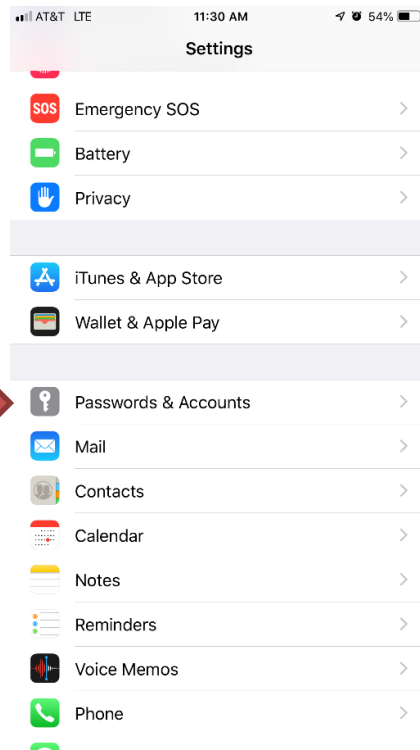
this will bring you to the VA Video Connect app you previously downloaded (Skip forward to STEP 10**)

METHOD 2

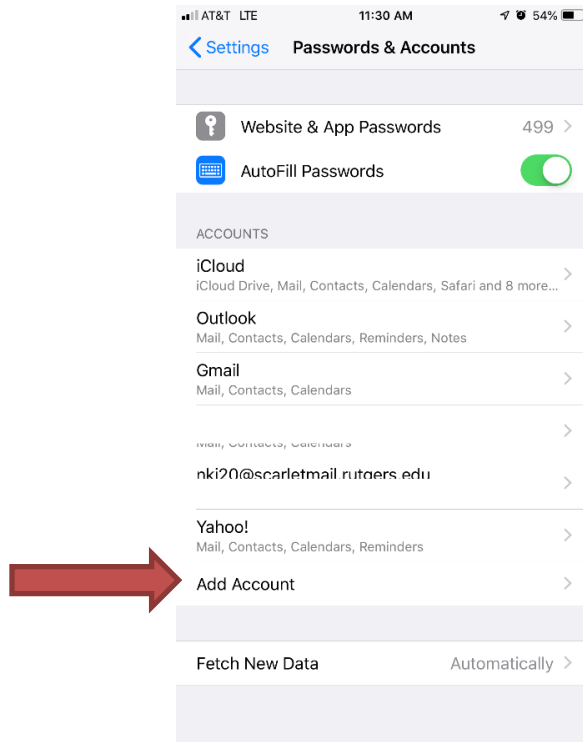
step 1: Locate and open the setting app on your phone



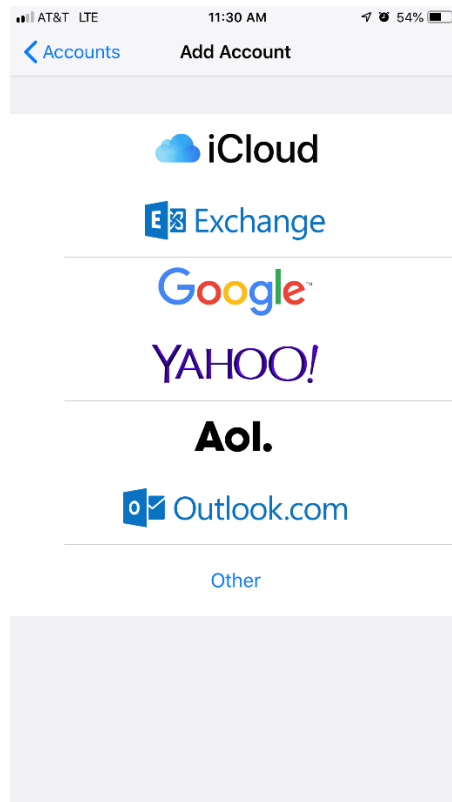
step 2: Scroll down the list until you see “Passwords & Accounts” and tap on it



step 3: On the next screen tap on “Add Account”




step 4: On the next screen, select your email provider and follow the prompts on the screen



step 5: Now locate and open the mail application

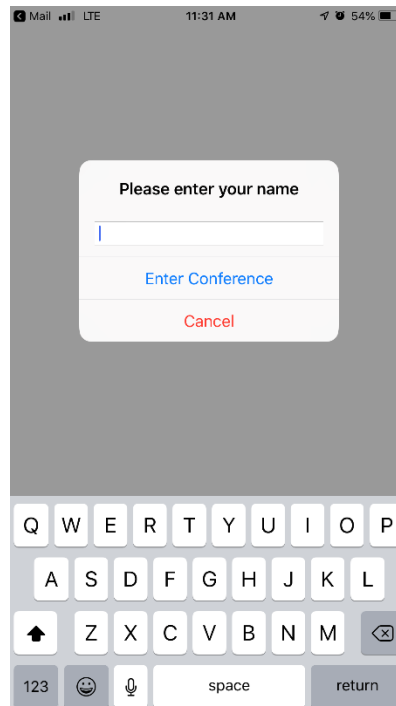


step 6: Locate the email with the subject “Please Join Your On-Demand VA Video Connect Visit” and tap the link that says “Click Here to Join the VA Video Connect appointment”

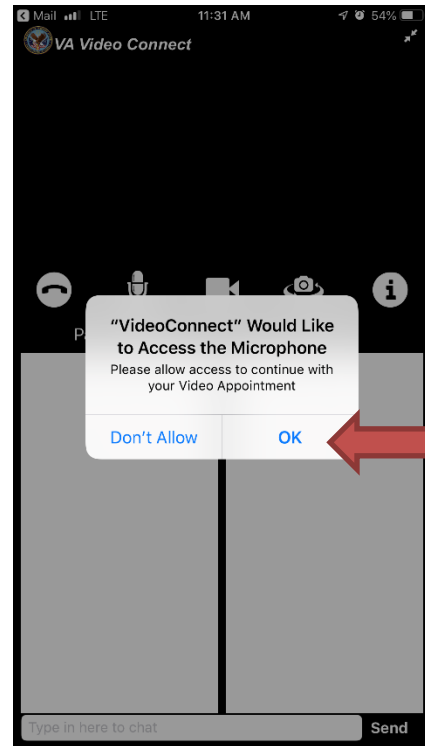
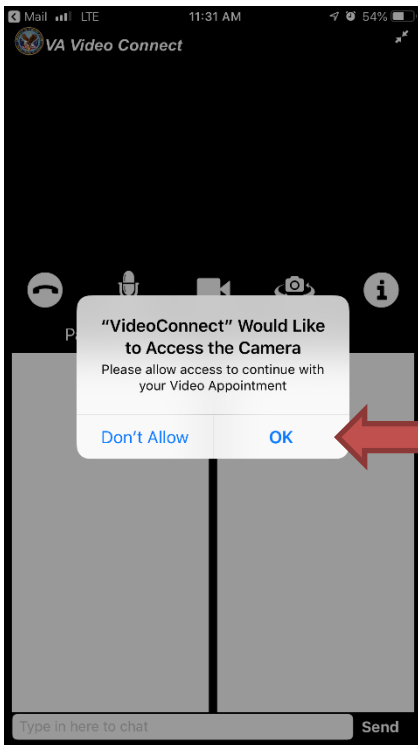
 **Join the appointment:**
[Click Here to Join the VA Video Connect appointment](#)

**this will bring you to the VA Video Connect app you previously downloaded

STEP 10: The app will prompt you to enter your name. Type it in and press “Enter Conference”



STEP 11: If this is your first time opening the application, the phone will ask you two questions. One will be to give the app access to your camera and the second will be for access to the microphone. You should select “Ok” or “Allow” in both pop-ups



Once you complete this last step you should be able to see yourself. If your provider is in the video conference room you will also be able to see your provider. On any future visits, you simply have to locate the email with the subject “Please Join Your On-Demand VA Video Connect Visit” and click the link to speak with your provider

If you have any questions or concerns about these instructions please contact:

Nicole Jones
Research Assistant, Spinal Cord Injury and Disorders Service (128)
SCI/D Research Program
ALS Program
VHA Multiple Sclerosis Center of Excellence NJ Regional Hub
VA New Jersey Health Care System
385 Tremont Avenue
East Orange, NJ 07018
Fax: 973-395-7186
Ph: 973-676-1000 ext 2558

Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

Table of Contents

1.0 CLINICAL VIDEO TECHNOLOGY (CVT)	3
1.1 ENROLLMENT AND INSTALLATION INTO CVT	3
1.11 Veteran/Caregiver’s initial introduction to CVT.....	3
1.12 CVT Enrollment and Installation Process.....	5
1.13 Reasons Veteran enrolled in CVT.....	6
1.14 Reasons Veteran DID/MAY NOT enroll in CVT.....	7
1.15 Acquisition of CVT Device.....	8
1.16 CVT education/training.....	9
1.17 Returning CVT Device.....	10
1.2 USING CVT FOR CLINICAL ENCOUNTERS	10
1.21 CVT Appointment Scheduling.....	10
1.22 Prepping for CVT Session.....	12
1.23 Veteran experiences with CVT.....	12
1.24 Clinical reasons for using CVT.....	13
1.25 Veteran’s reasons for not using CVT.....	14
1.26 Advantages of CVT.....	16
1.27 Disadvantages of CVT.....	19
1.3 RECOMMENDATIONS	20
1.31 Recommendations for pitching CVT to veterans and caregivers.....	20
1.32 General Recommendations for improving healthcare delivery using CVT.....	22
2.0 MYHEALTHVET (MHEV) CODES	25
2.10 VETERAN/CAREGIVER’S UNDERSTANDING OF MHEV.....	25
2.11 VETERAN/CAREGIVER’S INITIAL INTRODUCTION TO MHEV.....	25
2.12 VETERAN/CAREGIVER EXPERIENCES WITH MHEV.....	26
2.13 VETERAN/CAREGIVER FREQUENCY OF USE OF MHEV.....	27
2.14 REASONS VETERAN ENROLLED IN MHEV.....	27
2.15 REASONS VETERAN DID/MAY NOT ENROLL IN MHEV.....	27
2.16 REASONS VETERAN/CAREGIVER DOES NOT USE MHEV.....	27
2.17 ADVANTAGES OF MHEV.....	28
2.18 DISADVANTAGES OF MHEV.....	28
2.19 TROUBLESHOOTING MHEV.....	28

CVT = Clinical Video Technology; **VHA**: Veteran’s Health Administration; **VANJHCS** VA New Jersey Healthcare System; **VVC** VA Video Connect

Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

3.0 TROUBLESHOOTING CVT DEVICE.....	29
3.10 NO TROUBLESHOOTING REQUIRED.....	29
3.11 TECHNICAL PROBLEMS EXPERIENCED	29
3.12 TROUBLESHOOTING.....	30
4.0 VETERAN TECHNOLOGY & DEVICES.....	33
4.10 COMFORT/FAMILIARITY WITH TECHNOLOGY.....	33
4.20 DEVICES.....	33
5.0 OVERALL HEALTHCARE UTILIZATION CODES.....	37
5.10 VA HEALTHCARE	37
5.11 CIVILIAN HEALTHCARE	39
5.12 COORDINATING HEALTHCARE SERVICES ACROSS VA HEALTHCARE FACILITIES.....	40
5.13 COORDINATING HEALTHCARE SERVICES ACROSS VA AND PRIVATE SECTOR SETTINGS	41
5.14 COMPARING HEALTHCARE EXPERIENCES ACROSS DIFFERENT HEALTHCARE SYSTEMS	41
5.15 EXPERIENCES WITH FEDERAL GOVERNMENT MEDICAL FACILITIES (MILITARY HOSPITAL).....	42
6.0 SCI CHARACTERISTICS.....	ERROR! BOOKMARK NOT DEFINED.
6.10 SCI CHARACTERISTICS.....	43
6.11 REASON FOR SCI.....	43
6.12 SCI SECONDARY COMPLICATIONS.....	43
6.13 LESSONS LEARNED LIVING WITH AN SCI	43
6.14 CAREGIVER AND CAREGIVING EXPERIENCES	44
6.15 SCI FUNCTIONING AND FUNCTIONAL STATUS	45
6.16 SOCIOECONOMIC FACTORS RELATED TO SCI.....	46
CODING RULES FOR NVIVO & NVIVO ATTRIBUTES.....	47

CVT = Clinical Video Technology; **VHA**: Veteran’s Health Administration; **VANJHCS** VA New Jersey Healthcare System; **VVC** VA Video Connect

Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

1.0 Clinical Video Technology (CVT)

PARENT NODE	CHILD NODE	DESCRIPTION	EXAMPLE
1.01 Veteran/Caregiver's understanding of Clinical Video Technology		Veteran/Caregiver describes their understanding of CVT (i.e., what is CVT? How does CVT work?)	"It's like being face to face but it's through the internet.... It's like you're facetimeing with the doctor." [CG20]
1.1 ENROLLMENT AND INSTALLATION INTO CVT			
1.11 Veteran/Caregiver's initial introduction to CVT		Veteran/Caregiver describes where and how they were introduced to CVT	"Um our initial meeting with-with XXXX [Telehealth coordinator] I think at the VA cause we were in her office and she explained everything". (CG22)
	1.11.1 VANJHCS	Veteran/Caregiver describes the way CVT was introduced to them at VANJHCS	"Uhh. When I first learned. I think I learned it a-at XXXX [NJ VA]." [VA01]

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	1.11.2 Other VA	Veteran/Caregiver describes the way CVT was introduced to them at a VA Health Care Facility <u>other than the VANJHCS</u> (e.g..... Spoke site)	
	1.11.3 Caregiver’s introduction to CVT	Veteran/Caregiver describes how the Caregiver was involved in the initial introduction to CVT	“they were like oh and they’re gonna give you a tablet and they’re gonna give you this and this and I’m like what are you giving me a tablet for because he doesn’t know anything about a computer. And they’re like well in case you need it. And that’s how I got introduced to the tablet.” [CG12]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

1.12 CVT Enrollment and Installation Process		Veteran/Caregiver describes aspects of the CVT Enrollment/Installation Process (e.g., assistance with the enrollment/installation process)	“Yeah uh they one of the girls uh was teaching whoever it was down on 6B um suggested it and they showed me, they set up the computer the video pad for us. Showed us how to use it, which I have some knowledge with the computer.” [VA23]
	1.12.1 Enrollment	Veteran/Caregiver describes the process of signing up for CVT (e.g., how CVT was pitched to him/her)	“She did explain that if you get a sore you can set up an appointment. We can video in and you know other than that it might have been different yeah the pitch...and that’s why I agreed and yeah that’s why I agreed to take it.” [VA04]

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	1.12.2 Installation	Veteran/Caregiver describes the initial connection session with telehealth coordinator (e.g. testing the app, setting up the device)	"They told us that um there's that they called my home, they set it here we set a date that they could call me at home and I was ready with my laptop and they went through the whole thing...they called tech and he said that was something with my microphone so um they asked if I had an iPad and I did...we loaded it on the iPad and went from there." [CG22]
1.13 Reasons Veteran enrolled in CVT		Veteran/Caregiver's perception (lived experiences) of their reasons for enrolling in CVT	
	1.13.1 Wound care	Veteran/Caregiver identifies wound care management as the reason for enrolling in CVT (e.g., pressure injuries/sores)	"I mean it wa-that's cause I had a pressure sore. They wanted cause I had visiting nurse at the time and they wanted them to put that there to see the progress." [VA01]
	1.13.2 Psycho-social Issues	Veteran/Caregiver identifies social issues as the reason for enrolling in CVT	"um well I learned about that originally for the PTSD... Cause I-my mental health providers because I go to a CBOC." [VA21]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

	1.13.3 Outpatient Care	Veteran/Caregiver identifies outpatient medical follow-up as the reason for enrolling in CVT (e.g... Primary care, Therapy, NeuroUrology, Nutrition, Pre-admission etc...)	
	1.13.4 Access to Clinical Care/Convenience	Veteran/Caregiver describes easier access their clinical care (e.g., convenience, reduced burden getting to VA, clinician encounters provide undivided attention) as a reason to enroll in CVT	“They told him and it was like more convenient for him to use it and he don’t have to get out the house if he don’t want to.” [CG13]
1.14 Reasons Veteran DID/MAY NOT enroll in CVT		Veteran/Caregiver describes the reasons why they DID/MAY NOT enroll in CVT or potential reasons that other veterans might refuse CVT	“they-they don’t want to deal with you. They’d rather just-just do it over the TV and then mail you off.” [VA27]
	1.14.1 Fear of technology OR lack of privacy/confidentiality	Veteran/Caregiver expresses concerns about the lack of privacy and potential security breach as a reason to decline enrolling in CVT (e.g., “Big Brother”)	“Uh It depends on the guy’s mental status....Uh I don’t know. Some people like big brother some people don’t....I don’t like the intrusion. “ [VA01]
	1.14.2 Disinterest in CVT/Technology	Veteran/Caregiver expresses disinterest in using CVT for their healthcare (i.e. prefers in person encounters) OR disinterest in using any technology	“A few years back, but I ref- you know I said nah I didn’t want it...You know at first I didn’t have I told them no...That I didn’t-that I didn’t want it.” [VA04]
	1.14.3 Age	Veteran/Caregiver describes age related as a reason to decline CVT enrollment	“Not everybody-not everybody would be-l

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

			could see not everybody that's up in age uh or good at that may never even did it or had a computer." [CG05]
	1.14.4 Connection/Technical issues	Veteran/Caregiver indicates that he/she is unable to establish a CVT connection (e.g. no internet, no email, no device/equipment)	
	1.14.5 Lack of Understanding of CVT	Veteran/Caregiver states that his lack of understanding of CVT and how it worked as the reason for not wanting to use CVT	"Oh I don't know. I don't know. I didn't know nothing about it." [VA04]
	1.14.6 SCI functional Limitations	Veteran/Caregiver describes SCI-related functional limitations as their reasons for not enrolling in CVT	
	1.14.7 Other	Veteran/Caregiver describes other reasons for not enrolling in CVT	"they-they don't want to deal with you. They'd rather just-just do it over the TV and then mail you off. I mean I'm thinking of like the attitude [unclear]. Even though I'm-I'm not saying that attitude is what it is with employees, but I'm just saying that what's the perception that some people may have." [VA27]
1.15 Acquisition of CVT Device		Veteran/Caregiver describes how they acquired their CVT device	
	1.15.1 Positive Experience	Veteran/Caregiver describes positive experiences ordering/delivery of a VVC tablet	

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

	1.15.2 Negative Experience	Veteran/Caregiver describes negative experiences with the process of ordering/delivery of a VVC Tablet	“they were like oh and they’re gonna give you a tablet and they’re gonna give you this and this and I’m like what are you giving me a tablet for because he doesn’t know anything about a computer. And they’re like well in case you need it. And that’s how I got introduced to the tablet. So I didn’t even know what the hell they were giving it to me for.” [CG12]
	1.15.3 Personal device: no acquisition of CVT device required	Veteran/Caregiver describes using a personal device and thus not needing to order a VVC tablet	“No, it’s just a link. I’ve had my computer.” [VA03]
1.16 CVT education/training		Veteran/Caregiver describes experiences being trained to utilize VA CVT	
	1.16.1 No training	Veteran/Caregiver describes not being trained on how to use CVT since enrollment or since receiving device	“So I [unclear] you know and then like I said then when they finally did call, it was complicated because we didn’t know how to work it, we never did it before. Nobody ever showed us.” [CG12]
	1.16.2 Trained	Veteran/Caregiver reports that they received training since enrollment or since receiving device	
	1.16.3 Needs a refresher/booster session	Veteran/Caregiver reports that they would like a refresher/booster session with telehealth coordinator	“No she gotta a hold of me I think after I set it up she videoed me to see if it was

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

			I had it working so...Yeah but she's gonna have to do that again because it's been a while since I used it." [VA04]
1.17 Returning CVT Device		Veteran/Caregiver describes experiences returning the VA CVT device	"They uh well for a while there they gave out iPads, but then they but then I guess like uh maybe six months ago or a year ago they recalled all the iPads." [VA27]
1.2 USING CVT FOR CLINICAL ENCOUNTERS			
1.21 CVT Appointment Scheduling		Veteran/Caregiver describes the process of scheduling their CVT appointments	"It depends on what doctor it is. So like um. I think every doctor's pretty much independent. Right so like you'll tell me and then XXXX [VA doctor] through XXXX [VA outpatient clinic coordinator] and uh XXXX [VA dietician] in dietary uh informed us when she can when she was available so that kind of thing." [CG14]
	1.21.1 Scheduling challenges and negative experiences	Veteran/Caregiver describes actual and potential scheduling challenges and negative experience with scheduling CVT appointments	"Whereas I can understand with a caregiver you have them in from this time to this time and if the VA is not available from those times then you have to start looking to how do I

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

			get somebody in when they are available.” [VA07]
	1.21.2 Veteran/Caregiver initiated	Veteran/Caregiver identifies themselves as the one who initiates the scheduling of their CVT sessions	“And then when there if a um a concern of mine right, I will email XXXX [VA outpatient clinic coordinator] with who’s with XXXX [VA doctor] and then she’ll say ok we’ll set up a video chat.” [CG14]
	1.21.3 Provider initiated	Veteran/Caregiver identifies their VA Healthcare provider as the one who initiates scheduling CVT sessions	“I mean there-there’s sometimes doctors rather ha-rather have us do the video chat cause it’s easier for them cause we don’t have to make an appointment that’s what I think” [CG20]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

1.22 Prepping for CVT Session		Veteran/Caregiver describes the process that they use to set themselves up in their environment (e.g. home or VA spoke site) for a CVT encounter (NOTE: includes the challenges and things work when setting up for CVT)	CG05: “We have to make sure it’s charged and wait for the phone call. And make sure we’ve got make sure we uh put our-our uh password in there. And-and that’s it”
	1.22.1 Caregiver assistance prepping for CVT	Veteran/Caregiver describes caregiver involvement in prepping or setting up CVT session.	“Matter of fact well my wife does it really cause I can’t I can’t do it. I-I don’t have the use of my arms, my hands or anything.” [VA23]
1.23 Veteran experiences with CVT		Veteran/Caregiver describes experiences with CVT	“I-it makes it so much easier for me again like I said for my prescriptions remembering and-and keeping my appointments um and again I have a uh I have one scheduled for uh for the 12th already.” [VA07]
	1.23.1 CVT with a Spoke Site	Veteran describes experiences using CVT with the clinical team at a spoke site	“I was already up there at the hospital so it didn’t matter. I did with uh you know when they-we wanted to check in with the XXXX [VA PA].” [VA27]
	1.23.2 No Experience using CVT	Veteran describes having no experiences using CVT	

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

	1.23.3 Experiences using CVT with a caregiver	Veteran or caregiver describes experiences using CVT with a caregiver present or absent (this includes managing privacy and confidentiality during CVT encounters)	“Well. I set it up basically and then if CG09 has to um we try to make the appointments when I’m here. So she doesn’t have to deal with it [CVT] right. “ [CG14]
	1.23.4 Veteran/Caregiver conversations about Privacy and Confidentiality	Veteran/caregiver describes how manage privacy and confidentiality while using CVT...(they’ve talked about it...their decisions about how they manage privacy Established some ground rules	“If it has nothing to do with his health or anything, but you know the-the caregivers ought to know about it because he’s there all the time.” [VA27]
1.24 Clinical reasons for using CVT		Veteran describes an actual, planned or suggested clinical reason for using CVT	“Yeah it was it’s a way for them to tell if I had any issues, if I had any questions if I had any issues-.” [VA27]
	1.24.1 Wound Care	Veteran identifies using CVT for wound care management	“Well if I do get a sore they can look at it...You know I can call and they can set an appointment to look at my skin” [VA04]
	1.24.2 Bowel/Bladder Care	Veteran identifies using CVT for bowel/bladder care management	“we were just talking about um you know like how things were going and how long you know it takes for me like um you know how like with my care and everything like stuff like that. Like my bowel care

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			we were talking about and my bladder.” [VA03]
	1.24.3 Social Services issues	Veteran identifies using CVT for social services management (e.g. social work)	“Uh yeah XXXX [VA Wound care specialist] and then I spoke to the um she-she’s a social worker.” [VA23]
	1.24.4 Mental health	Veteran identifies using CVT for mental health services (with Psychiatry, clinical psychologist etc...)	“Then also uh-uh with uh psychiatry too they do it all. They try to bring everybody on the team in and uh the last time I had one.” [VA27]
	1.24.5 Education of family or paid caregiver	Veteran identifies using CVT for family caregiver management	
	1.24.6 Other rehabilitation needs	Veteran identifies using CVT for rehab services. (e.g wheelchair/equipment)	“Then they also then they also asked if I get uh the prosthetic side of it... With the wheelchair and all those guys in...” [VA27]
	1.24.7 Prepping for Annual	Veteran identifies using CVT in preparation for inpatient Annual Evaluation	
1.25 Veteran’s reasons for not using CVT		Veteran’s describe reasons for not using CVT despite being enrolled	
	1.25.1 No internet connection	Veteran describes having no internet connection	“No internet connection.” [VA01]
	1.25.2 No clinical need	Veteran explains that they did not have a clinical need to use CVT	“And luckily, I guess, we never had a need to do it.” [CG22]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

	1.25.3 Urgent clinical need	Veteran described an urgent clinical need that requires an ER visit/Urgent Care setting (rather than CVT)	“I think it would have taken longer to call to get hooked up with the doctor or nur-you know somebody who can walk me through things. But we still would’ve we still would’ve called the ambulance because I’m sure that they wouldn’t have wanted to take a chance so who ever was responding to the call wouldn’t want to take a chance to make sure that it was properly done.” [CG22]
	1.25.4 Prefers in-person visits	Veteran/Caregiver prefers in-person visits (e.g. face-to-face)	“Oh I’d rather be in person if I was on the be on the you know how this is used an all, but the next best thing is on the video. “ [VA27]
	1.25.5 Prefers using a different modality (e.g., mHeV)	Veteran/Caregiver prefers to use a different modality to CVT (e.g., phone; mHeV; secured messaging)	
	1.25.6 Veteran/caregiver dislikes the CVT device	Veteran/caregiver describes why they dislike CVT device.	“I think he’s uh the tablet like for him is too heavy and you have to get close to the speaker and it’s they don’t hear him.” [CG13]

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	1.25.7 Clinical care require a personal touch	Clinical needs of veteran/caregiver require a personal touch (e.g. in-person encounter required)	“Over a year to get this man a wheelchair. A manual regular wheelchair... No they have to do it in person because they have to measure them and stuff... They have to measure their legs and their side. Their waist. Their width. You know what I mean? So that’s why they have to do it in person.” [CG12]
1.26 Advantages of CVT		Veteran describes the reasons why they like it and personal advantages of using CVT for their healthcare	
	1.26.1 Time Efficiency	Veteran describes CVT as a more efficient use of time (in comparison to in-person visits)	“And they are they’re very accommodating as to as to my schedule.” [VA07]
	1.26.2 Transportation/Travel	Veteran describes transportation difficulties and how CVT helps to address these challenges and issues with arranging transportation/travel. (e.g. not having to travel in bad weather)	“Everybody can’t always make that trip you know like me. Sixty miles a d-in a trip up there. You might not want to make that trip all the time when you have a question. I’d rather just be able to go online and say hey I got a question...” [VA27]

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	1.26.2a Weather Related Reason	Veteran identifies using CVT as a result of weather conditions	“For a while I was without my car and I used to come to work during the winter time, I went uh three miles from the train station to the job and a mile from my house to the train station so four miles each direction every day...In the snow, in the rain etcetera.” [VA07]
	1.26.3 Accessibility to Clinical Care/Convenience	Veteran describes CVT as an easier way to access their clinical care (e.g., convenience, clinician encounters provide undivided attention; improving adherence)	‘My schedule is insane when I was going to Penn State....So, it was like I couldn’t make the normal appointments so as long as I can get to the CBOC someone would video on from wherever and I would take the appointment then.” [VA21]
	1.26.4 Cost	Veteran describes a reduce that using CVT has allowed them to see a reduce in cost since having a conversation with their Clinician through a device is cheaper than visiting them each time.	“It’s cheaper for them to do that than for me to come up and waste-waste all that time.” [CG04]
	1.26.5 Easy to use CVT device/software	Veteran explains than an advantage to CVT is that it’s easy to use the device/software	“once you learn how to use it then it’s easy.” (VA21)

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	1.26.6 Reduced burden	Lessens the burden of the managing the logistics required to get to an in-person clinical appointment (e.g., reduced effort and stress, avoiding bad weather)	“It’s also very hard to get VA14 out of the house because he can’t do anything for himself so every trip requires a lot of planning so if we don’t have to make trips that’s a good thing too.” [CG04]
	1.26.7 Benefits of VVC over past modalities	Veteran describes how VA Video Connect has improved on the previous CVT modalities	“Uh it was an older model. Uh it didn’t work good, no... I couldn’t get no reception to it or anything else. This one works like a dream. It’s really nice.” [VA23]
	1.26.8 Face-to-face interaction with VA clinical team	Veteran describes how CVT allows for face-to-face interaction that you cannot get over the phone	“I think its important because you know it becomes personal when you can see and you know you can talk to people but you’re not really seeing their expressions in that” [CG24]

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1.27 Disadvantages of CVT		Veteran describes things that delay onboarding and adapting CVT in their clinical care (e.g., learning curve)	“Oh yeah it took them like two or three times. Yeah it took them two or three times. And then they were like oh you gotta adjust the camera. You gotta do this. I’m like are you kidding me? I’m moving a three-hundred-pound paralyzed man.” [CG12]
	1.27.1 Privacy/Confidentiality	Veteran describes lack of privacy/confidentiality as disadvantage of CVT	“And like if you’re in your house talking and you don’t want your wife to know and she walks by and she hears something now yeah.” [VA21]
	1.27.2 No personal connection		“Um it went very well uh there wasn’t between the patient and the doctor there was no connection...It’s just that there was no personal connection.” [CG22]

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1.3 Recommendations			
1.31 Recommendations for pitching CVT to veterans and caregivers		Veteran provides recommendations on how to introduce idea of using CVT for the delivery of healthcare (i.e., this process occurs as a part of enrollment)	“What you need to do is you need to sit down with some people in your group or whatever and [unclear] operation, get everybody involved and you got to set up a whole game plan from point A to point B, how to lead them to-to the water and make them drink the water.” [VA27]
	1.31.1 Best person to pitch the idea	Veteran identifies who they believe to be the best person to introduce veterans to using CVT	“I guess I would need to get another veteran to do it...Cause they-they have more trust in the vets than in the employees. Just for the simple reason we have no agenda, an employee does. [VA27]
	1.31.2 Best time to pitch the idea to a Veteran/Caregiver	Veteran identifies a specific time frame that they believe is the best time for the clinical team to pitch the enrollment of CVT to them after admission or sustaining injury.	“I’m sure they would like to come in and see-see how far they get and-and they’ll get used to it I guess. And uh I-I would say quite a while. A month-two months whatever.” [CG05]
	1.31.3 Involving caregiver during the pitch	Veteran/Caregiver recommends having the caregiver present when introducing the veteran to CVT	“I-I think at the very beginning. Even if it’s not used so people can start

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

			getting used to the idea that um they don't have to travel all the time." [CG22]
	1.31.4 Selling points	Veteran describes some of the aspects of CVT to highlight when introducing CVT to a veteran	"tell them how to how it can be so convenient for them and um how-how fast they can get help about any issue or have any health issue. How fast they can get um results" [CG13]
	1.31.5 Demonstration of CVT	Veteran/Caregiver recommends demonstrating the CVT while pitching idea	"And uh if you can do something like that if you if you make a group of people let's say you have like five or six of them they when they come in have an easy c-easy going class, they feed ya lunch and then want to show ya using the system." [VA27]

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<p>1.32 General Recommendations for improving healthcare delivery using CVT</p>		<p>Recommendations made by the veteran that could help improve the experience of other veterans using CVT</p>	<p>“Well I mean I think if-if it if you do have a lot of people that said uh if you can get them to come in to the VA, you have a class one day to present it in a more friendly environment.” [VA27]</p>
	<p>1.32.1 Full-time CVT Staff</p>	<p>Veteran describes importance of having full-time CVT staff available to answer calls at a given moment (e.g... facility education, scheduling appointments, hearing a real person)</p>	<p>“You might need someone on uh on call in the CVT department in the middle of the night. Someone who sits there and can handle a middle of the night call.” [CG04]</p>
	<p>1.32.2 Recommendations for Scheduling</p>	<p>Veteran recommends ways to improve scheduling procedures for CVT (e.g. coordinating provider and veteran/caregiver schedules, making process easier)</p>	
	<p>1.32.3 Email reminders of CVT appointments</p>	<p>Veterans recommended sending email reminders of CVT</p>	<p>“So maybe see if there’s some way to provide a naming system in that email you know so they would have a header to look at and be directed to which-which appointment they’re actually going to.” [VA02]</p>
	<p>a. Provider focused Email</p>	<p>Veteran recommends having labels identifying which provider the CVT scheduled is scheduled with</p>	<p>“If you get multiple emails for one day I get, you know</p>

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			the only way they're gonna know is by order. So maybe see if there's some way to provide a naming system in that email you know so they would have a header to look at and be directed to which-which appointment they're actually going to." [VA02]
	b. Timely reminders	Veteran recommends receiving email reminders in advance of CVT session	
	1.32.4 CVT device and software recommendations	Veteran/caregiver recommends improves to CVT devices and their software	"I think the best solution would be to have somebody come with the machine and then you wouldn't have to leave it at their house where it can get broke?" [CG12]
	1.32.5 User Friendly Instructional Guide	Veteran recommends having user friendly instructions to help with further guidance at home	
	1.32.6 Educate or Train Veteran or Caregivers to use of CVT device	Veteran/caregiver recommends educating and training veterans/caregivers about how to use CVT device	"In other words have XXXX [telehealth coordinator] you know interface to his room via the internet...with that tablet...and that way he'll know how to use it." [VA01]

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	1.32.7 Connecting Veterans/Caregivers	Veteran/Caregiver recommends using CVT to connect with other Veterans/Caregivers	“Like well like my husband, what if he felt like uh connecting with uh another person who maybe needs a-another... Yes. Like you need to speak to someone in the same position or close to or worse.” [CG05]
	1.32.8 Assistive Technology	Veteran/Caregiver recommends incorporating assistive device (e.g., stand; glasses used for eye tracking) or software (e.g., voice activation software) to facilitate the use of CVT	“it has to be more-more assistive technology.” [CG04]
	1.32.9 Involving caregiver in CVT session	Veteran/Caregiver recommends including Caregivers in CVT sessions	“Cause they [caregivers] see them every day and they might pick up on subtle difference that the person wouldn’t pick up.” [VA27]

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2.0 MyHealtheVet (MHeV) Codes

2.10 Veteran/Caregiver's understanding of MHEV		Veteran/Caregiver describes their understanding of MHEV	
2.11 Veteran/Caregiver's initial introduction to MHeV		Veteran/Caregiver describes how they were introduced to MHeV	
	2.11.1 VANJHCS	Veteran/Caregiver indicates if MHeV was introduced at VANJHCS	"They suggested it right off the b-uh off the bat because of because it was it was uh difficult, its very difficult to get me to come into the uh hospital so anything that they can do to get me to eh to have visits they try... That was XXXX [VA doctor] and-and XXXX [VA wound care specialist]." [VA07]
	2.11.2 Other VA	Veteran/Caregiver indicates if MHeV was introduced at a VA other than the VANJHCS	
	2.11.3 Doesn't remember	Veteran/Caregiver Veteran indicates they do not remember how MHeV introduction to CVT was made	"I don't know. I-I quite honestly I don't remember but I think it would be with you because XXXX [PA VA] not really like...I don't know XXXX [PA VA] I don't really deal with XXXX [PA VA] too much." [VA03]
	2.11.4 Other	Veteran/Caregiver indicates another scenario of how MHeV was introduced to them.	

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

2.12 Veteran/Caregiver experiences with MHeV		Veteran/Caregiver describes positive or negative experiences using MHeV	“Yes. I use-I go down-I use it but I go down to the community computer a-an- and just order my meds and maybe send a message to my doctor in XXXX [town]. That’s it.” [VA01]
	2.12.1 Secured Messaging	Veteran/Caregiver describes how they utilize Secured Messaging within MHeV	“Yeah on the healthvet I use all the time...Oh for renewing prescriptions setting up appointments uh sending secured messages about things going on up at XXXX [VA NJ].” [VA27]
	2.12.2 Medication Management	Veteran/Caregiver describes how they manage their medication prescriptions using MHeV	“For the prescriptions we just go online and we order.” [CG22]
	2.12.3 Scheduling/Managing clinical appointments	Veteran/Caregiver describes using MHeV to schedule and manage their clinical appointments	“Oh for renewing prescriptions setting up appointments uh sending secured messages about things going on up at XXXX [VA NJ].” [VA27]
	2.12.4. Accessing medical history and records	Veteran/Caregiver describes using MHeV to access their medical history and records.	“And also I uses it, uh, when I need to know about my medical history because I do everything through the VA so that’s a uh good repository for uh that information.” [VA07]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

2.13 Veteran/Caregiver Frequency of use of MHeV		Veteran/Caregiver describes how frequently they use MHeV	
	2.13.1 MHeV User	Veteran/Caregiver regularly uses MHeV	“I’ve done this for a little while. And I’ll tell you MyHealtheVet uh I love it.” [VA07]
	2.13.2 MHeV Non-User	Veteran/Caregiver has access to MHeV, but does not use MHeV	“Nope. Oh they told me to use it but I won’t use it.” [CG12]
	2.13.3 Not enrolled – interested	Veteran/Caregiver was never enrolled in MHeV because they were never offered MHeV	
2.14 Reasons Veteran enrolled in MHeV		Veteran/Caregiver describes the reasons why the clinical team recommended CVT to them	
	2.14.1 Standard practice of Care	Veteran/Caregiver describes that they were approached as a standard practice of care with the SCI service	
	2.14.2 Outpatient Medical Follow-up	Veteran/Caregiver identifies outpatient medical follow-up as the reason for MHeV enrollment (e.g... secured messaging; ordering prescriptions...)	
2.15 Reasons Veteran DID/MAY NOT enroll in MHeV		Veteran/Caregiver describes the reasons why he DID/MAY NOT enroll in MHeV or potential reasons that other veterans refused MHeV	
2.16 Reasons Veteran/Caregiver does not use MHeV		Veteran/Caregiver describes reasons they are not able to use MHeV	
	2.16.1 Internet connection	Veteran/Caregiver describes having no internet connection as the reason for not using MHeV	

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

2.17 Advantages of MHeV		Veteran/Caregiver describes the advantages of MHeV	
	2.17.1 Time efficiency	Veteran/Caregiver describes more efficient use of time in sending messages to providers (as opposed to over the phone)	
	2.17.2 Accessibility to Care/Convenience	Veteran/Caregiver describes MHeV an easier way to access their clinical care (e.g., convenience, not having to remember prescription medication numbers etc...)	“I don’t have to remember numbers for my reorder medicine. You what I mean you had to spill out number this just to get that order yeah right.” [VA01]
	2.17.3 Medication management	Veteran/Caregiver describes MHeV as an way effective medication management system (e.g., medication is delivered in a timely manner)	“Oh yeah it does get to me in a timely manner and everything” [VA01]
2.18 Disadvantages of MHeV		Veteran/Caregiver describes the disadvantages of MHeV	
2.19 Troubleshooting MHeV		Veteran/Caregiver describes any troubleshooting done with MHeV	“Uh for some reason I’m not-I don’t know on MyHealthVet whether or not two hospitals can be accessed.” [VA01]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

3.0 Troubleshooting CVT Device

PARENT NODE	CHILD NODE	DESCRIPTION	EXAMPLE
3.10 No troubleshooting required		Veteran/Caregiver indicates that they did have to troubleshoot before or during a CVT encounter.	"No. No. I connected right to her." [VA04]
3.11 Technical Problems Experienced		Veteran/Caregiver describes any technical problems experienced when trying to utilize CVT equipment/devices	
	3.11.1 User Based Device Problems	Veteran/Caregiver describes problems using their device such as entering device passcode, downloading applications, or remembering to charge device	"We don't use it often. Cause we don't use it all that often. So maybe once a month or so and then we forget about it. So I got a write like on the calendar charge iPad." [CG14]
	3.11.2 Audio/Video Problems	Veteran/Caregiver describes audio or visual problems experienced once connected to the chat room	"I could see her and she could see me and everything went well but I couldn't hear I could hear-no they couldn't hear me" [CG22]
	3.11.3 Connectivity/Internet Problems	Veteran/Caregiver describes problems with connecting to the chatroom (e.g., unable to connect to chatroom; Wi-Fi problems)	"Well the jabber one, we had a little issue with because of the volume on it because the um WiFi around here wasn't-wasn't very good..."[VA07]
	3.11.4 Unable to access email	Veteran/Caregiver describes being unable to access email to receive VVC appointment link	"And then uh the email we forgot what the email was or the password and so then um we had to start all over again and I had to get technical support and what not." [CG14]
	3.11.5 Error in VMR app	Veteran/Caregiver describes receiving an error in the VMR app when attempting to complete a CVT session	

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

3.0 Troubleshooting CVT Device

3.12 Troubleshooting		Veteran/Caregiver describes any corrective action for CVT technical problems	“I mean when I was working for the VA, if I had an issue with something or I wanted to answer something, I would just go through my work email.” [VA27]
	3.12.1 Using phone as backup	Veteran/Caregiver describes experiences using phone as backup means of communication when troubleshooting CVT equipment/software was unsuccessful. [Phone is being used to support the use of CVT.]	“She’d stay on the line and um even though she couldn’t hear me I could hear her instructions. Then we turned back to the phone because I need to um disconnect that number so I could call back with the iPad. So we never lost communication” [CG22]
	3.12.2 Primary point of contact for troubleshooting	Veteran/Caregiver describes whom they contact when they have to troubleshoot CVT sessions	“That was uh that was with JXXXX [VA MIO Coordinator] we just decided—it was just too many issues here we’ll just I’ll re-she said I’ll just resend you the link. And that’s what we did.” [VA27]
	3.12.3 Rebooting chatroom	Veteran/Caregiver describes rebooting chatroom in order to correct technical problems experience; including using alternative web browser (eg. Switching from safari to google chrome)	

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

3.0 Troubleshooting CVT Device

	3.12.4 Using alternative or new device	<p>Veteran/Caregiver describes using alternative device for CVT session.</p> <p>Veteran is switching devices and using CVT on new device within the same encounter.</p>	<p>“She asked me what other um devices I had and I said the iPad and she said ok that’d be perfect. In another five six minutes we were hooked up with the iPad and everything was working perfectly” [CG22]</p>
	3.12.5 Troubleshooting CVT device	<p>Veteran/Caregiver describes having to troubleshoot device (e.g. resetting/rebooting CVT device [this includes personal and VA issued devices] , allowing applications to fully download...)</p>	<p>“My app when we did the app when we were downloading they were sending me the email to my gmail account, I was clicking it but it was giving me like a error-error thing like an error like it wasn’t allowing me to download the app.” [VA21]</p>
	3.12.6 Contacting help desk for assistance	<p>Veteran/Caregiver describes contacting or having telehealth coordinator contact the help desk for assistance with technical problems</p>	<p>“I could see her and she could see me and everything went well but I couldn’t hear I could hear-no they couldn’t hear me. That’s what it was. They couldn’t hear me. And they you know I see you and I see your mouth moving but I can’t hear you. And then they uh XXXX [VA outpatient clinic coordinator] called uh I guess the VA tech people and they got online and um kind of came down to do this, do this, do this.” [CG22]</p>
	3.12.7 Resending email link	<p>Veteran/Caregiver describes having provider resend VVC email link in order to establish a successful connection</p>	<p>“I don’t every once in a while the uh I don’t know we missed the link maybe on their end or my end whatever. The audio or the video</p>

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

3.0 Troubleshooting CVT Device

			is off and we just have to resend the link-redo the link.” [VA27]
	3.12.8 Focusing camera	Veteran/Caregiver describes how they were instructed to focus the CVT device	“Yeah you know it’s just that she was holding the tablet in the wrong direction.” [VA23]

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4.0 Veteran Technology & Devices

PARENT NODE	CHILD NODE	DESCRIPTION	EXAMPLE
4.10 Comfort/Familiarity with Technology		Veteran/Caregiver describes an overall sense of comfort/familiarity with using technology (regardless of CVT use)	"I'm like kind of savvy on this kind of stuff so" (VA21)
	4.10.1 Comfortable	Veteran/Caregiver expresses being very comfort/familiarity with using technology	"Oh I know how to use computers." [VA01]
	4.10.2 Uncomfortable	Veteran/Caregiver expresses not being very comfort/familiarity with using technology	"Um I probably would-still a little nervous about setting it up and everything. Especially now that I can't find the instructions with using it." [CG22]
4.20 Devices		Use this code to indicate the type of device the veteran/caregiver is describing their use or experiences (these experiences can be using CVT or not using CVT)	
	4.20.1 VA iPad	Veteran/Caregiver describes experiences using their VA issued iPad	"I have-I have a tablet. I have a tablet which I'll be using this week cause I want to show XXXX [VA Wound care specialist] how

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

			wonderful my sores are healing.” [VA23]
	4.20.2 Personal tablet/iPad	Veteran/Caregiver describes experiences using their personal tablet/iPad	“Um he just I literally took the tablet and showed the wound and he could see good enough you know to prescribe something.” [CG09]
	4.20.3 BL Tablet/Jabber	Veteran/Caregiver describes experiences using BL Tablet/Jabber. If referred to as CISCO then code for Jabber. These are VA issued devices.	
	4.20.4 Laptop/Computer	Veteran describes experiences using a laptop/computer	“I use the laptop yes.” [VA27]
	4.20.5 Smartphone	Veteran describes experiences using their smartphone	“Yeah they send me out a uh link and we do a secure link by cellphone.” [VA07]
	4.20.6 Alexa/voice activated assistants	Veteran/Caregiver describes experiences using Alexa or other voice activated assistants	“ Um so reallyI have used voice activation for like um like writing or like searching.” [VA03]
	4.20.7 SmartTV	Veteran/Caregiver describes experiences using their SmartTV	

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

	4.20.8 Assistive technology	Veteran/Caregiver describes experiences using assistive technology to facilitate their use of a CVT device	<p>“We have a new-we have a new system in that we haven’t yet got to work uh [unclear] it’s voice activated stuff. Haven’t yet gotten it to work right so I have to set it up and I have to call in to uh Sage whatever it is sage whatever they are and have them do the troubleshoot with us cause it responds when we’re not giving commands and when we give it commands it doesn’t respond so” [CG04]</p>
	4.20.9 Other type of device	Veteran/Caregiver describes experiences using other types of devices (not listed above)	<p>“When it first when it first started there was no video conference. It was just a little device that I have at home hooked up to wifi or hooked up to the internet to monitor you know my wellbeing. Every day I had to-to I had to punch a button to</p>

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

answer a few questions and that was about it.” [VA06]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

5.0 Overall Healthcare Utilization Codes

PARENT NODE	CHILD NODE	DESCRIPTION	EXAMPLE
5.10 VA healthcare		Veteran/Caregiver describes VA healthcare/rehabilitation experiences	“I don’t think you could do anything better with the whole VA system. They treated us-I tell you they treated us good, they did everything for us.” [VA23]
	5.10.1. VANJHCS Primary and Outpatient Care	Veteran/Caregiver describes their experiences using the VANJHCS as their primary source of healthcare and outpatient care	“For the most part I don’t really get sick too often so I really only see him for my annual checkup so... Uh my annual is at XXXX [NJ VA]... Well no well the outpatient clinic I don’t-no XXXX [PA VA] I always just talk on the phone I don’t know if they just don’t use CVT or you know they don’t know how.” [VA03]
	5.10.2. Other VA for healthcare	Veteran/Caregiver describes their healthcare/rehabilitation experiences using other VA (<i>i.e., not VANJHCS</i>)	“And we were still pretty new to the uh VA so we weren’t sure exactly how things went and we

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

5.0 Overall Healthcare Utilization Codes

			just found out that um XXXX [VA PA] only takes us maybe forty minutes to get there and his medication is taken care of there.” [CG22]
	5.10.3. VANJHCS Annual Examinations	Veteran/Caregiver describes experiences with Annual examinations at the VANJHCS	“Uh annual and when I have a pressure sore. That’s where I go.” [VA01]
	5.10.4 VA hospitalization	Veteran/Caregiver describes VA (re)hospitalization for a medical condition (<i>this code does not include annual examination</i>)	
	5.10.5. VA Emergency Room	Veteran/Caregiver describes a VA emergency room (ER) visit/experience	

CVT = Clinical Video Technology; **VHA**: Veteran’s Health Administration; **VANJHCS** VA New Jersey Healthcare System; **VVC** VA Video Connect

Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

5.0 Overall Healthcare Utilization Codes

5.11 Civilian healthcare		Veteran/Caregiver describes civilian healthcare/rehabilitation experiences	“I was just remembering because this uh I also work with XXXX [SCIMS hospital] and XXXX [SCIMS hospital] does did a lot of these same set up you know with research and everything and we did it, but that was all phone calls.” [VA02]
	5.11.1. Civilian primary or/and Outpatient Care	Veteran/Caregiver describes their experiences using the civilian healthcare/rehabilitation facility as their primary source of healthcare and outpatient care	
	5.11.2 Civilian hospitalization	Veteran/Caregiver describes civilian (re)hospitalization for a medical condition (this code does not include annual examination)	
	5.11.3 Civilian Emergency Room	Veteran/Caregiver describes a civilian emergency room (ER) visit/experience	“So what we, we just an ambulance just to make sure we went to [civilian hospital in PA] had a problem inserting it because it had already started to close.” [CG22]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

5.0 Overall Healthcare Utilization Codes

5.12 Coordinating healthcare services across VA healthcare facilities

Veteran/Caregiver describes how healthcare is managed across different VA healthcare facilities (e.g., referrals across different facilities)

“Spoke from XXXX [PA VA] to here. XXXX [VA wound care nurse] looked at it from video and that’s why he said I-I think the doctor like well when can you come cause they were gonna keep me in the hospital till I got an opening here. He said well tomorrow. Can you be here tomorrow VA04? And I’m like well I can be there if they tell-if they pick-bring me down yeah. And here I am.”
(VA04)

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

5.0 Overall Healthcare Utilization Codes

5.13 Coordinating healthcare services across VA and private sector settings		<p>Veteran/Caregiver describes how healthcare services between both the VA and private sector is coordinated (e.g., scheduling doctors; sharing medical information across VA and private sector healthcare facilities)</p> <p>TBD if include: e.g., which services he uses across different settings</p>	<p>“Uh well cause we had we were from Kessler. So uh the switch over to the VA was you know new to us so we had only signed up in October of '18 and that was that interview wasn't until January after during his first um full the annual exam.” [CG22]</p>
5.14 Comparing healthcare experiences across different healthcare systems		<p>Veteran/Caregiver directly compares his experiences with health care between different healthcare institutions</p>	
	5.14.1. Across VA healthcare settings	<p>Veteran/Caregiver directly compares his VA healthcare experiences across different VA healthcare settings</p>	<p>“I mean uh and-and actually the-five o'clock in the XXXX [PA VA] is I mean I thought XXXX [NJ VA] was bad but XXXX [PA VA] is even worse.” [VA27]</p>
	5.14.2. Across VA and private sector healthcare settings	<p>Veteran/Caregiver directly compares healthcare experiences across VA and the private sector</p>	

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

5.0 Overall Healthcare Utilization Codes

5.15 Experiences with federal government medical facilities (military hospital)

Veteran/Caregiver describes his experiences with military hospitals (federally funded hospitals) for those who are on active duty service (e.g., Walter Reed)

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

6.0. SCI CHARACTERISTICS

PARENT CODE	CHILD CODE	DESCRIPTION	EXAMPLE
6.10 SCI Characteristics		Veteran/Caregiver describes the characteristics of the Veteran's SCI (e.g., paraplegia/tetraplegia, level of injury, time since injury, etc..)	"I said wait just a minute, it took me fifteen years to learn quadriplegic and I'm not about to learn tetraplegic, so I want to be a quad." [VA23]
6.11 Reason for SCI		Veteran/Caregiver describes how and when the Veteran's SCI occurred (e.g., traumatic or non-traumatic injury, etiology, etc..)	
6.12 SCI Secondary complications		Veteran/Caregiver describes any SCI secondary complications the Veteran experiences (e.g., pain, spasticity)	"Except for one now that I-I need to get fixed, but uh I got a quality of life issue I wanna do with the uh bowel care... I want to go with uh ostomy." [VA27]
6.13 Lessons learned living with an SCI		Veteran describes lessons he has learned from his personal experiences from living with an SCI (or from others living with an SCI)	"But hey, shit happens you know life happens but the thing is-the difference is I-I've been able to see this as-as a blessing because it's allowed me to share to basically live life in another pair of shoes." [VA02]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

6.0. SCI CHARACTERISTICS

6.14 Caregiver and caregiving experiences		Veteran/Caregiver describes experiences related to caregivers and caregiving support and caregivers describing their daily routine	“Any time we’ve had you know just a scheduled visit and um any time I’ve had we had a couple of problems like with his catheter, but I would just call his um niece who’s an RN and they’re local and she would help me with it and now I’m on my own.” [CG22]
	6.14.1 Lack of caregiving support	Veteran describes lack of caregiver	
	6.14.2 Caregiver Burden	Caregiver’s description of the level of burden (e.g., physical and emotional burden) that they’re experiencing while caregiving (or engaging in other responsibilities such as childcare)	“so when my father-in-law first came to live with me I was fine. I wasn’t on any blood pressure medicine, by last year I was on four different blood pressure medicines and a patch, twice a day.” [CG12]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

6.0. SCI CHARACTERISTICS

6.15 SCI Functioning and Functional Status		Veteran/Caregiver describes Veteran’s SCI functioning and functional status	“Matter of fact well my wife does it really cause I can’t I can’t do it. I-I don’t have the use of my arms, my hands or anything.” [VA23]
	6.15.1 Level of independence	Veteran/Caregiver describes the Veteran’s level (or sense) of independence with their ADLs	I’m like well the sling would be alright, but I gotta do this myself. I gotta be independent. (VA04)
	6.15.2 Mobility	Veteran/Caregiver describes aspects of living with an SCI related to mobility (driving, transportation, wheelchair use, accessibility) for the Veteran	“They will arrange and they do arrange transportation for me but they have to go through a-a-a specific channel...” [VA02]
	6.15.3 Self-care	Veteran/Caregiver describes any aspects of living with an SCI related to self-care or ADLs (bladder and bowel program, skin/wound care, etc..)	“He’s still you know he won’t go out to dinner because we have to feed him and you know he’s still very um he internalizes a lot but um I for people that aren’t as mobile as we are, it’s a great thing.” [CG22]
	6.15.4 Home modifications	Veteran/Caregiver describes modifications of living space to assist with function and functional status after an SCI (stairs, doorways, bathrooms, bed/mattress, etc..)	“Like the guy that came to measure that to just see if he can get into my bathroom and to see if his bed would fit and everything.” “So I made them put a ramp in my house.” [CG12]

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

6.0. SCI CHARACTERISTICS

	6.15.5 Recreational Activities	<p>Veteran/Caregiver describes any recreational activities he does on own after his SCI (e.g., exercising, going to the gym, HEPs, sports, etc.)</p> <p>Coding Notes: this does NOT include physical therapy or occupational therapy done with a therapist; do not double code with self-care</p>	
6.16 Socioeconomic factors related to SCI		<p>Veteran/Caregiver describes any topics related to SCI and SES, or managing the cost of SCI specific needs (e.g., financial aspects related to home modifications, medications, medical appointments, therapy, transportation, etc.)</p>	<p>“I mean my-my-my mine is really awkward because of my unique I’m one hundred percent catastrophically disabled but I don’t receive a pension for it.” [VA02]</p>

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

CODING RULES FOR NVIVO & NVIVO ATTRIBUTES

ATTRIBUTES			
User			
Frequency			
Device?			
Enrollment Status			
Comfort with technology	Comfortable/uncomfortable		
VA healthcare (see demographic questionnaire)	VANJHCS experiences	Categorize care or capture their healthcare experiences	
	Other VA (e.g., spoke site) experiences		
	Civilian hospital		
	Both VA and civilian		
1.12 Veteran's CVT Enrollment Status	CODING NOTE: ONLY CODE FIRST MENTION OF CURRENT/PREVIOUS ENROLLMENT STATUS	Veteran describes their CVT status; whether or not they are enrolled in Clinical Video Technology	
	1.12.1. Previously Enrolled	Veteran indicates that they were previously enrolled in CVT	
	1.12.2 Previously Declined	Veteran indicates that they previously declined being enrolled in CVT	"A few years back, but I ref-you know I said nah I

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Triangle of Healthy Caregiving for Spinal Cord Injured Veterans/Caregivers Codebook

CODING RULES FOR NVIVO & NVIVO ATTRIBUTES

			<p>didn't want it...You know at first I didn't have I told them no... That I didn't- that I didn't want it...You know and then I guess was it last year or the year before I told them they kep-they asked me again...You change your mind or anything and I'm like yes send me an ipad." [VA04]</p>
	1.12.3 Currently Enrolled	Veteran indicates that they are currently enrolled in CVT	Round 2 for example
	1.12.4. Currently Declined	Veteran Indicates that they were approached about CVT enrollment and declined enrollment	
1.23 Veteran's frequency of use of CVT		Veteran/Caregiver describes the frequency of using CVT for their care	"Maybe a little bit less? We were doing it on a regular basis. The would try-they would try to do them like every six months with me." [VA27]
	1.23.1 User	Veteran describes using CVT for their healthcare (This includes Veterans who only use CVT for their annual exams)	"Mmhm, I would say well alright since well since the year began at least three. At least three or four." [VA02]
	1.23.2 Non-user	Veteran describes not using CVT for their healthcare (this includes those who have had an initial connection but no other contact after and those who have not had an initial connection)	"Well I'm not using it." [VA01]

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CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

Contents

1.0 What is Clinical Video Technology?.....	4
1.1. What is Clinical Video Technology?	4
1.1.1. Defining CVT.....	4
1.1.2. Goal of CVT	4
2.0 CVT Appointment	6
2.1 Before CVT Appointment.....	6
2.1.1 Scheduling Logistics.....	6
2.1.2 Notification	6
2.1.3 Prepping for CVT Session.....	6
2.1.4 Challenges.....	6
2.1.5 Missed Appointment Management.....	6
2.2 During CVT Appointment.....	7
2.2.1 CVT Appointment Location	7
2.2.2 Privacy and confidentiality concerns	7
2.21 CVT Challenges/Limitations.....	7
2.21.1 Lack of Private Office	7
2.21.2 Time Management	8
2.22 Technical Issues Experience with CVT	8
2.22.1 CVT Technical Problems.....	8
2.3 After CVT Appointment	8
2.3 After CVT Appointment	8
2.3.1 Steps after CVT appointment	8
2.3.2 Administrative Challenges	8
2.4 Recommendations for improvement	9

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

3.0 Clinician Experience with Clinical Video Technology	10
3.1 Clinical Reasons for Using CVT.....	10
3.1.1 Wound Care.....	10
3.1.2 Social Services Issues	10
3.1.3 Psychological Services.....	10
3.1.4 Educating Veterans, their family or paid caregiver.....	11
3.1.5 PT/OT.....	11
3.1.6 Durable Medical Equipment.....	11
3.1.7 Prepping for Annual.....	11
3.1.8 SCI Functional Limitations for Using CVT	11
3.1.9 Medication Management	11
3.1.10 Other Clinical visits	12
3.1.11 Home evaluation/assessment.....	12
3.1.12 Bowel/Bladder Care.....	12
3.2 Reasons for NOT Using CVT.....	12
3.2.1 Clinical care requires a personal touch	13
3.2.2 Home environment	13
3.3 Type of Patient Care	13
3.3.1 Outpatient	13
3.3.2 In Patient.....	13
3.4 Advantages	14
3.4.1 Transportation/Travel.....	14
3.4.2 Accessibility to Clinical Care/Convenience.....	14
3.4.3 Assess Veteran’s home environment.....	14
3.4.4. Educating and/or connecting with Caregivers and/or Veterans	14

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

3.4.5. Continuity of Care 14

3.4.7 Reducing Veteran/Caregiver burden 15

4.0 Clinical Video Technology Modalities 16

 3.5.1. MyHealtheVet..... 16

 3.5.2. BL Tablet..... 16

4.3 HealthBuddy 16

4.4 VVC/CVT..... 16

4.5 Other Modalities..... 16

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

1.0 What is Clinical Video Technology?			
PARENT NODE	CHILD NODE	DESCRIPTION	EXAMPLE
1.1. What is Clinical Video Technology?		Clinician describes CVT.	“I would say it’s a way to have a non-hands on visit with uh, with uh, with a patient um uh via uh video conference.” [VA_07CL]
	1.1.1. Defining CVT	SCI Clinicians describes their understanding of CVT (i.e., what is CVT? How does CVT work?)	“Clinical video telehealth where we visit with patients via a internet connection usually a tablet or some other modality they have to connect with us via a video link.” [VA03_CL]
	1.1.2. Goal of CVT	SCI Clinician describes their understanding of the goal of CVT.	“So I think the goals of uh of CVT is basically to meet the um veteran in the home where they are most comfortable” [VA_02CL]
1.2. Veteran Enrollment/Disenrollment		Clinician understanding of Veterans enrollment or disenrollment from CVT	“So pretty much, every you know we’re referring to XXXX [telehealth coordinator] who is not in that role anymore, so we have a vacancy and that’s gonna be filled soon hopefully. Um, but that-that person mainly has been introducing the concept of CVT.” [VA_01CL]
1.3 CVT Installation		Clinician understanding of CVT Installation	“we send them out equipment that they would need in order

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

			to uh be able to uh utilize that service (...)" [VA_03CL]
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2.0 CVT Appointment			
PARENT NODE	CHILD NODE	DESCRIPTION	EXAMPLE
2.1 Before CVT Appointment			
	2.1.1 Scheduling Logistics	Clinician describes the logistics of scheduling CVT appointments	“of-of the wound, but if I-I don’t know if this was part of the question outpatient and CVT neither one of them supersedes the either, but we won’t schedule them at the same time. Because that’s their visit. So they can’t be doing a CVT and have an inp-a outpatient visit at the same time. I really don’t get requests from them. I usually request to see them.” [VA_02CL]
	2.1.2 Notification	Clinician describes how they/Veterans are notified when they have an CVT appointment scheduled	“XXXX[telehealth nurse] usually tells me.” [VA_07CL]
	2.1.3 Prepping for CVT Session	Clinician describes the process or information that they use to set themselves up for a CVT encounter	“Well if I know that they have-if they’re coming in for an annual when there’s a you know a long schedule of things to do, and I know they have CVT and they are versed at using it.” [VA_02CL]
	2.1.4 Challenges	Clinician describes challenges encounter prior to the appointment	“I think that’s one of the challenges everybody has possibly gotten into so it’ll be no space and then how do you resolve it? If my office is free and I just happen to not be doing anything you know, well I’m always doing something, but if I can give up that time “sure you can do your CVT here.” [VA_02CL]
	2.1.5 Missed Appointment Management	Clinician describes how missed CVT appointments as handled.	“You have to call them (...) It just so happens you missed it. Can we go ahead about rescheduling? And they usually like to do so.”

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

2.2 During CVT Appointment			
	2.2.1 CVT Appointment Location	Clinician describes where they usually hold CVT visits	“I mean I can do it right in front of my desk. I’m hooked up so I can just flip up my video camera and I can do a video conference right there.”
	2.2.2 Privacy and confidentiality concerns	Clinicians or Veterans describes measures they take to ensure privacy and confidentiality during the CVT visit	“Can be as simple as closing the door I can speak to some just the patient factors. So for, again just thinking about like psychotherapy, sometimes you’re like great I have a one-on-one visit with the veteran today they’re there they got their tablet set up but maybe you know the nurse or the wife keeps walking by they’re in the room they’re eavesdropping, they won’t really give them the privacy that they’re hoping they will have.”
2.21 CVT Challenges/Limitations		Clinician describes challenges and limitations on the use of CVT.	
	2.21.1 Lack of Private Office	Clinicians describes lack of private office space as a lack of private office	“Just like [neuropsychologist] said, if her office is-if she has a CVT scheduled and her office is busy where am I gonna go? I think that’s one of the challenges everybody has possibly gotten into so it’ll be no space and then how do you resolve it?” [VA_02CL]

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

	2.21.2 Time Management	Clinicians describes time management difficulties associated with during a CVT visit (e.g., back to back sessions; having other clinicians in the CVT session)	“Sometimes you have not enough time. Sometimes it’s like you must really bring back the focus of the CVT because you’re running out of time because of course that’s just one visit one piece of your day. And so it’s a regular visit so you, time management. So I think time can be an issue.”
2.22 Technical Issues Experience with CVT		Clinicians describes their technical issues experiences when using CVT	”And just going back a little bit, although we’re not immune to technical difficulties as some things are beyond our control, we do always make it our business to do what we call an initial connection with anybody who’s looking to utilize this kind of service.” [VA_03CL]

2.3 After CVT Appointment

2.3 After CVT Appointment			
	2.3.1 Steps after CVT appointment	Clinicians describes the key steps required to implement after a CVT encounter	“You gotta complete your note.” [VA_02C]
	2.3.2 Administrative Challenges	Clinicians describes some challenges they have experienced after a CVT encounter	“Obviously, we all do our best to try to do the notes right away, obviously it’s easier when it’s fresher in your mind. You remember the

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

			<p>conversation, but sometimes if it's super com-y-you realize you went through a lot of things you might've taken quick notes but now you have to run to something else and come back later." [VA_05CL]</p>
<p>2.4 Recommendations for improvement</p>		<p>Clinicians describe recommendations to improve the delivery of healthcare to the Veterans and their Caregivers using CVT</p>	<p>"One big thing that I would like to see and I think the limitation right now is staffing, for us, is to um do like a consistent pre-annual evaluation visit or even pre-initial visit." [VA_01CL]</p>

3.0 Clinician Experience with Clinical Video Technology

PARENT NODE	CHILD NODE	DESCRIPTION	EXAMPLE
3.1 Clinical Reasons for Using CVT		Clinicians describe the types of clinical appointments and/or clinical reasons for using CVT	“So I just wanted to add that what I hear is a lot of special—that we provide a lot of specialty care to veterans that um without CVT we wouldn’t be able to bring into their home at a distance whether it’s physiatry, physical therapy, or mental health, you know wound care all the stuff provides us with a method to bring our specialty care to the veterans that wouldn’t you know necessarily be able to access that care” [VA_01CL]
	3.1.1 Wound Care	Clinician identifies using CVT for wound care management	“as-on an as needed basis [wound care nurse] if he’s monitoring a wound he can choose to see them by CVT every two weeks to see the progression.” [VA_02CL]
	3.1.2 Social Services Issues	Clinician identifies using CVT for social services management (e.g. social work)	“You might com-you know communicate with [Social worker] or maybe [neuropsychologist] about you know trying to do pieces of the annual by CVT.” [VA_01CL]
	3.1.3 Psychological Services	Clinician identifies using CVT for psychological and neuropsychological services.	“ So our evaluations and um psychotherapy sessions and um there is the ability very limited so to do some cognitive or neuropsychological testing, but I say very limited because again if it’s anything the requires uh hands on activities then kinda out of pocket with that just cause of the nature of

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

			the visit through clinical video.” [VA_04CL]
	3.1.4 Educating Veterans, their family or paid caregiver	Clinician identifies using CVT to educate Veterans, family, or paid Caregiver and for family caregiver management	“also be able to use it as a tool for teaching their caregivers so that they can you know whether it be their nurses or their family members or even providers at spoke sites you know so we’re constantly you know teaching the veteran, but teaching everybody else that’s in the room with them so it allows us to really spread our-our experience and our knowledge t-to a you know wider group of people.” [VA_01CL]
	3.1.5 PT/OT	Any PT/OT visits including assessing durable medical equipment (e.g., wheelchairs; catheters)	“sometimes I do therapeutic taping for a shoulder and I might train you know like I could you know convey it to the Veteran”[VA_07CL]
	3.1.6 Durable Medical Equipment	Clinician reports using CVT to assess and/or prescribe durable medical equipment.	“if there’s any wheelchair issues and you know if they need repair issues”[VA_07CL]
	3.1.7 Prepping for Annual	Clinician identifies using CVT in preparation for SCI annual Evaluation	“ And then we ca—one year they can have their, [neuropsychologist] piece of their annual in person the next year they can do it CVT so that can be different.”[VA_02CL]
	3.1.8 SCI Functional Limitations for Using CVT	Clinician describes SCI limitations as a reason to use CVT, including mobility.	“I mean all of our spinal cord injured veterans have challenges with mobility and coming back and forth for appointments so, I-I think we recommend it for everybody.” [VA_05CL]
	3.1.9 Medication Management	Clinician describes using CVT for medication management	So the telehealth care coordinator will take a graph or a list of readings and put it into CPRS. So then when the provider’s doing the CVT visit

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

			they have access to the information.” [VA_01CL]
	3.1.10 Other Clinical visits	Clinician mentions other clinical services not listed above (e.g., nursing; checking in; disease management – diabetes/hypertension)	“Just to be uh the nursing, you know the nursing perspective for um the veteran and the family if something comes up specifically for nursing”
	3.1.11 Home evaluation/assessment	Clinicians use CVT to conduct a home evaluation to assess their physical environment (e.g., clutter), equipment, and social dynamics.	“You get to know their families better. You get to know their home environment. You mentioned you can see their homes which is very, very, very eye opening. You know you can see the space issues they were trying to describe, but now you see them for yourself and how-how challenging they really are.” [VA_05CL]
	3.1.12 Bowel/Bladder Care	Clinicians use CVT for bowel/bladder care management and includes appointments with Urology and teaching Caregiving/Veteran how to manage care.	“There are also times when randomly um as on a-on a as needed basis uh where um I’ve been set up with um certain patients that a urologist recommends um that they use um a Duette catheter, a specialized type of catheter... Um so normally, it’s set up in such a way that I would demonstrate uh um via uh CVT with the patient and the caregiver to give them an idea about what it’s all about and actually show a catheter, show them how to flush it, how to reinsert it and all that.” [VA_09CL]
3.2 Reasons for NOT Using CVT			

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

	3.2.1 Clinical care requires a personal touch	Clinical needs of veteran/caregiver require a personal touch (e.g. in-person encounter required)	“Over a year to get this man a wheelchair. A manual regular wheelchair... No they have to do it in person because they have to measure them and stuff... They have to measure their legs and their side. Their waist. Their width. You know what I mean? So that’s why they have to do it in person.” [CG12]
	3.2.2 Home environment	Changes or disruptions in the home make CVT visits challenging.	“So for, again just thinking about like psychotherapy, sometimes you’re like great I have a one-on-one visit with the veteran today they’re there they got their tablet set up but maybe you know the nurse or the wife keeps walking by they’re in the room they’re eavesdropping, they won’t really give them the privacy that they’re hoping they will have and so that affects the level of dis-of uh comfort or uh uh freedom to feel like they can really disclose what they want which can impact the visit and also for the caregiver sometimes.” [VA_04CL]
3.3 Type of Patient Care			
	3.3.1 Outpatient	Clinician describe using CVT to provide services to someone who receive ambulatory care.	“ also for the outpatient uh CVTs um they’re usually on an hour. So I would schedule them, [neuropsychologist] at 11, [social worker] at 12 and t-the dietician at 1.” [VA_02CL]
	3.3.2 In Patient	Clinician describe using CVT to provide services to someone admitted to the hospital to stay overnight.	“On the inpatient side. Then that person’s role would be to go and meet that patient and introduce the

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

			concept of CVT. Maybe show them a little demo.” [VA01_CL]
3.4 Advantages		SCI Clinicians describes why they find CVT helpful. “CVT is beneficial because...”	“It’s like being face to face but it’s through the internet.... It’s like you’re facetimeing with the doctor.” [CG20]
	3.4.1 Transportation/Travel	Clinicians describes transportation difficulties and how CVT helps to address these challenges and issues with arranging transportation/travel.	“ I would say um it’s also convenient and um there are certain patients that may even not qualify for travel um this would be helpful to those patients to get the care needed.” [VA_09CL]
	3.4.2 Accessibility to Clinical Care/Convenience	Clinicians describes CVT as an easier way to access their clinical care (e.g., convenience, clinician encounters provide undivided attention, improving adherence)	“And that’s done prior to them coming, so when they do get here, for the things that they do have to be touched for um it’ll shorten the day for them.” [VA_02CL]
	3.4.3 Assess Veteran’s home environment	Clinician describes the advantages of being able to assess the Veterans’ home environment	“You know uh but also it does give me the opportunity to actually look into people’s homes. Not to be nosey but its good [laughter] sometimes it’s actually good to see what their physical environment is.”
	3.4.4. Educating and/or connecting with Caregivers and/or Veterans	Clinician describes CVT as a way to deliver and assess education of family or paid caregiver (e.g., home health aide) and/or Veterans.	“I’ve done video conferences with their caregivers and their nurses” [VA_07CL]
	3.4.5. Continuity of Care	Clinicians descriptive CVT as an easy way for the care team to cooperatively involved in ongoing health care management of Veterans (this includes extending care into Veteran’s home or spoke site).	“For me I would say um , it’s a great tool for me to assess patient’s home exercise compliance, retention of knowledge, as well as, um I use it to like if I have to advance their exercise parameters and all that stuff” [VA_10CL]

CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

	3.4.6 Reducing Veteran/Caregiver burden	Clinicians describe how CVT reduces Veteran/Caregiver burden	“and i-it you know that’s probably not less stress cause they’re getting told on, but um I think overall I think it’s less stress on the veteran. Physically. Emotionally. Everything.” [VA_02CL]
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CLINICIANS CODEBOOK – TRIANGLE of Healthy Caregiving for Spinal Cord Injured

4.0 Clinical Video Technology Modalities			
PARENT NODE	CHILD NODE	DESCRIPTION	EXAMPLE
4.0 Clinical Video Technology Modalities			
	4.1 MyHealtheVet	Clinicians describe type of modality used for CVT.	“And even just MyHealtheVet which is not actually secure messaging, but MyHealtheVet has a list of their medications so when they click on their last refill they can let us know and say hey, I just clicked on my last refill instead of waiting on their last and realize that they have no more refills.” [VA_01CL]
	4.2 BL Tablet		“Like connecting through a BL Tablet versus we are now utilizing where they can incorporate a phone a tablet of their own or a laptop or a desktop and we then in turn are able to connect with them in that during that utilizing that method.”
	4.3 HealthBuddy	Disease management platform used by clinician to monitor blood pressure; diabetes; depression; COPD.	“When uh you know most of those tools I cannot use, but I know you can take people’s vitals via CVT.” [VA_07CL]
	4.4 VVC/CVT		“you know everybody if they have access to email you know we offer them MyHealtheVet and encourage them to communicate with by-by um secured message. Um...a-and you know usually hypertension and diabetes for telehealth. And then CVT for pretty much anybody else.” [VA VA_01CL]
	4.5 Other Modalities	Other modalities including secured messaging	“...we are now utilizing where they can incorporate a phone a tablet of their own or a laptop or a desktop and we then in turn are able to connect with them in that during that utilizing that method.”

Triangle of Healthy Caregiving for Spinal Cord Injured Veterans

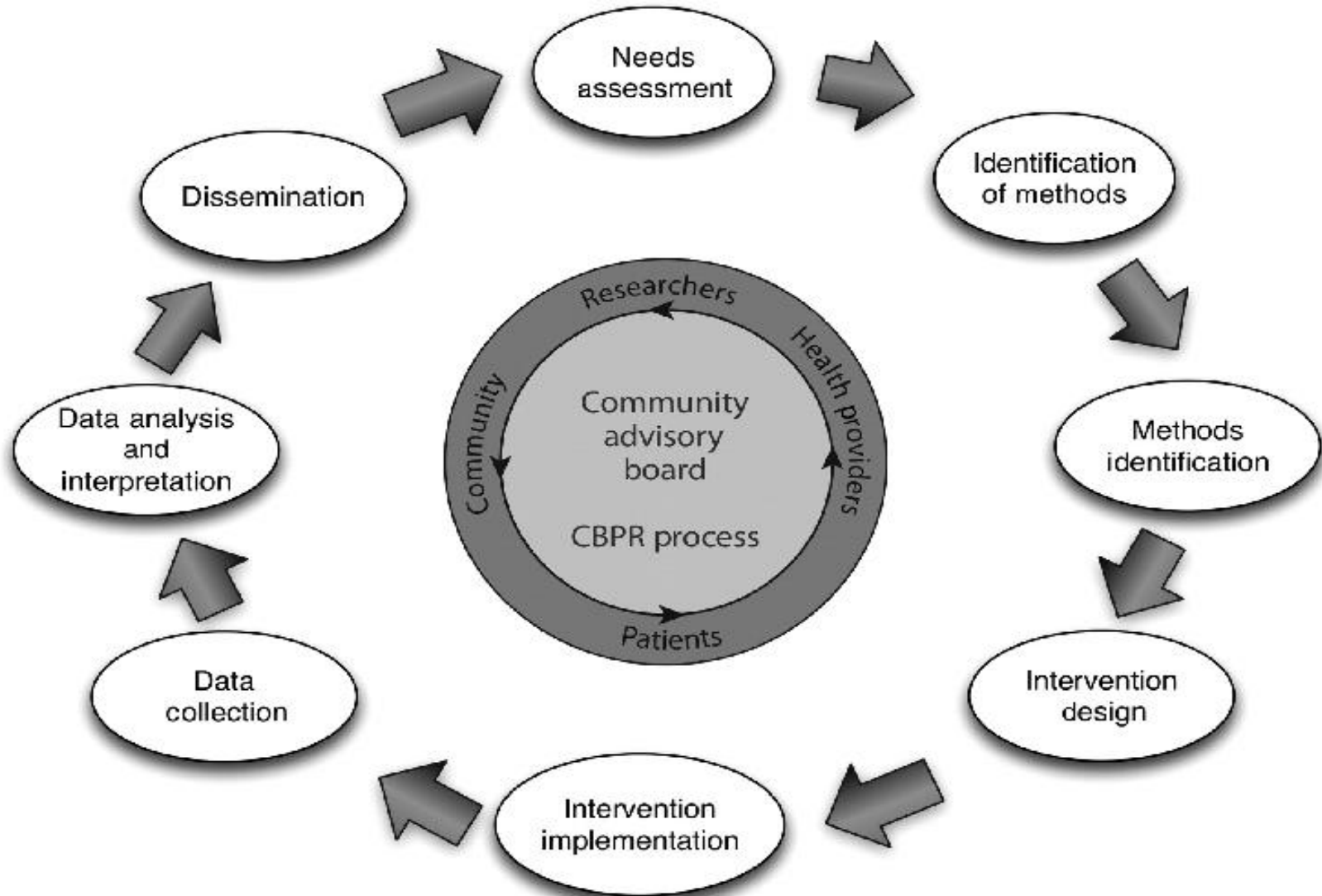
Consumer Volunteer Meeting

09/29/2017

Study Team

- Community Advisory Board
- Veterans Administration New Jersey Healthcare System (VANJHCS)
 - Carol Gill, MD, Chief of Spinal Cord Injury/Disorders (SCI/D)
 - Joyce Williams, LCSW, SCI/D and ALS Coordinator
 - Yasheca Ebanks, Study Coordinator
 - Nicole Jones, Research Assistant
- Kessler Foundation
 - Denise Fyffe, PhD, Senior Research Scientist

What is a Community Advisory Board?



Background

- Spinal Cord Injury(SCI) is among the most devastating and disabling medical conditions affected wounded veterans. These veterans require special health care and face physical limitations resulting in a frequent need for assistance from caregivers.
- The “Triangle of Healthy Caregiving for SCI Veterans” is a patient-centered intervention incorporating SCI veterans’ caregivers into the VA SCI healthcare team(HCT) and extends into the homes of SCI veterans using real-time clinical video teleconferencing(CVT) developed by the VA New Jersey Health Care System’s Spinal Cord Injury & Disorders(SCI/D) Department

Research Problem

- To qualitatively assess the direct or indirect impact of the “Triangle of Healthy Caregiving for SCI Veterans” on SCI Veterans, their caregivers and the VA healthcare team using perspectives and experiences

VA virtual care technologies



Study Goals

- Evaluate the SCI Veterans experience in the “Triangle of Healthy Caregiving for SCI Veterans”
- Evaluate the SCI Veterans caregivers experience in the “Triangle of Healthy Caregiving for SCI Veterans”
- Evaluate the VA HCT’s experience delivering healthcare and providing supportive services using the “Triangle of Healthy Caregiving for SCI Veterans”

Data Collection (table on pg 6 of grant)

Phase	Data Collection Methods	Purpose	Products
I	In-depth Interviews	Conduct 2 in-depth interviews with Telehealth Coordinators for SCI	Description of the enrollment and home instillation process
	Observations of SCI Veterans' enrollment and home installation	Conduct 15-20 observations of the patient enrollment and home instillation of equipment/devices	Observation data of the enrollment and instillation process
II	Semi-Structured Interviews	Conduct 35-40 semi-structured interviews with SCI Veterans enrolled in the "Triangle of Healthy Caregiving for SCI Veterans" program Conduct 35-40 semi-structured interviews with caregivers of SCI Veterans enrolled in the "Triangle of Healthy Caregiving for SCI Veterans" program	Qualitative data(semi-structured interview transcripts, field notes)
III	Focus groups	Conduct 1 focus group with virtual healthcare team professionals	Focus group findings about the delivery of healthcare to SCI Veterans, education and support to their caregivers

Phase 1: *Enrollment and Installation of equipment/devices*

- *In-depth interviews with Telehealth Coordinators:*
- *Observations Enrollment and Equipment/Device Installation:*

Phase 2:

- Semi-structured one-on-one interviews (in-person or via virtual care technology) with SCI veterans and caregivers
- Determine the SCI veterans and caregivers perceptions(benefits and challenges) and experiences participating in the “Triangle of Healthy Caregiving for SCI Veterans”

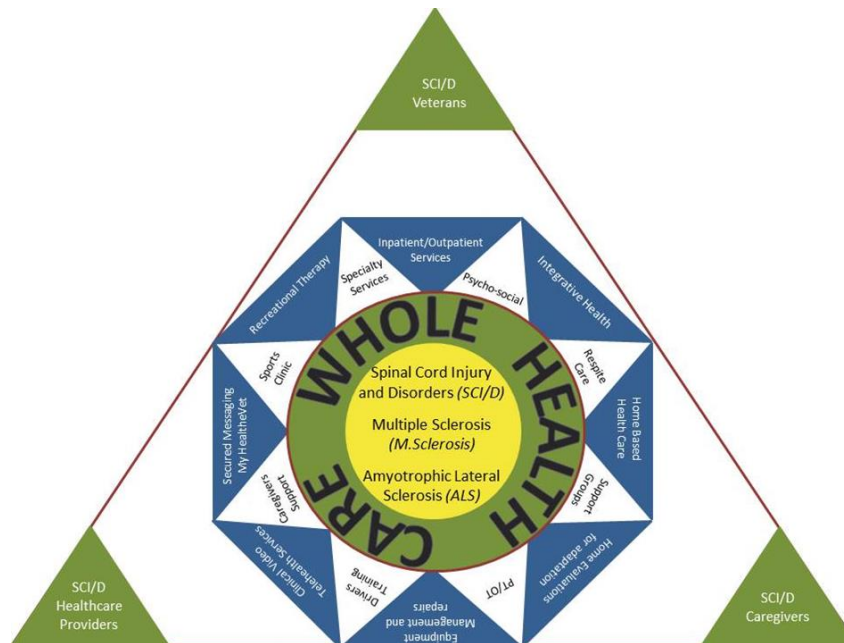
Phase 3:

- Focus Groups to explore perceptions of healthcare professionals
- Recruitment of 10-12 SCI virtual medicine professionals evaluate how useful the “Triangle of Health Caregiving for SCI Veterans” is for healthcare delivery

What next?

- Develop and refine data collection instruments
 - Phase I: in-depth interviews and observations
 - Phase II: Interview questions with SCI Veterans
 - Phase III: SCI Caregiver focus group questions
- Community Advisory Board meeting in March

Triangle of Healthy Caregiving for Spinal Cord Injured Veterans



Consumer Volunteer Meeting

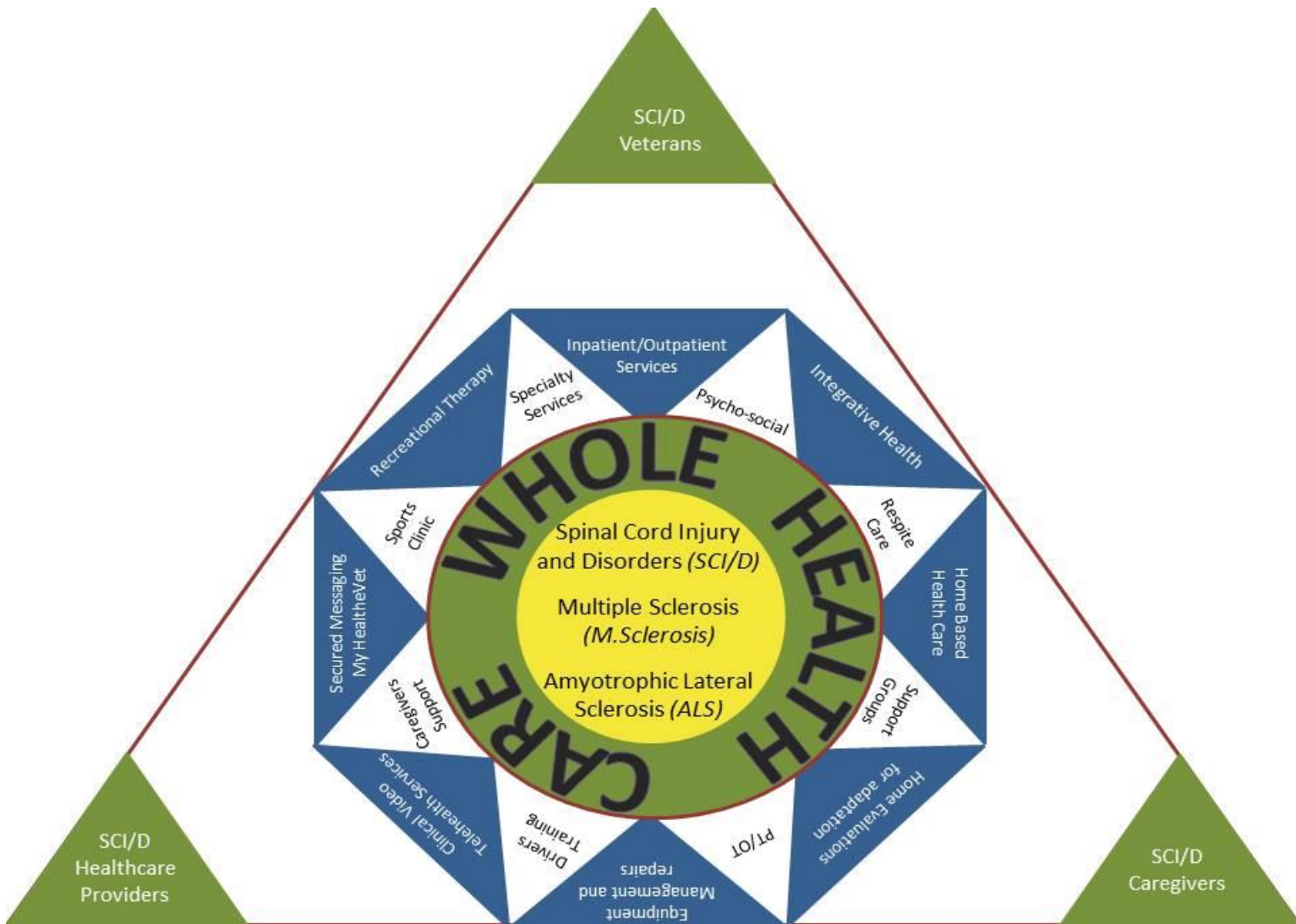
02/08/19

Research Problem

To qualitatively assess the direct or indirect impact of the “Triangle of Healthy Caregiving for SCI Veterans” on SCI Veterans, their caregivers and the VA healthcare team using perspectives and experiences.

Progress To Date

- Held our first CAB meeting (09/28/17)
- IRB approval
- Submitting approvals to HRPO



History of your introduction to CVT

- Do you remember which VA staff member introduced you CVT?
- When were you introduced to CVT?
- Why was CVT introduced to you?

VITAL Welcome, Patient!

SIGN OUT



VITAL Medical
Video



VITAL Connect



VITAL Patient
Assessment Tool



VITAL Health
Book



VITAL Meds



VITAL Rehab



VITAL Cardio
Pulmonary



VITAL Web



VITAL Wellness



VITAL Wound
Care

8/5/2015
10:06:47 AM



Connecting providers and patients around the globe



Your Experience Using CVT

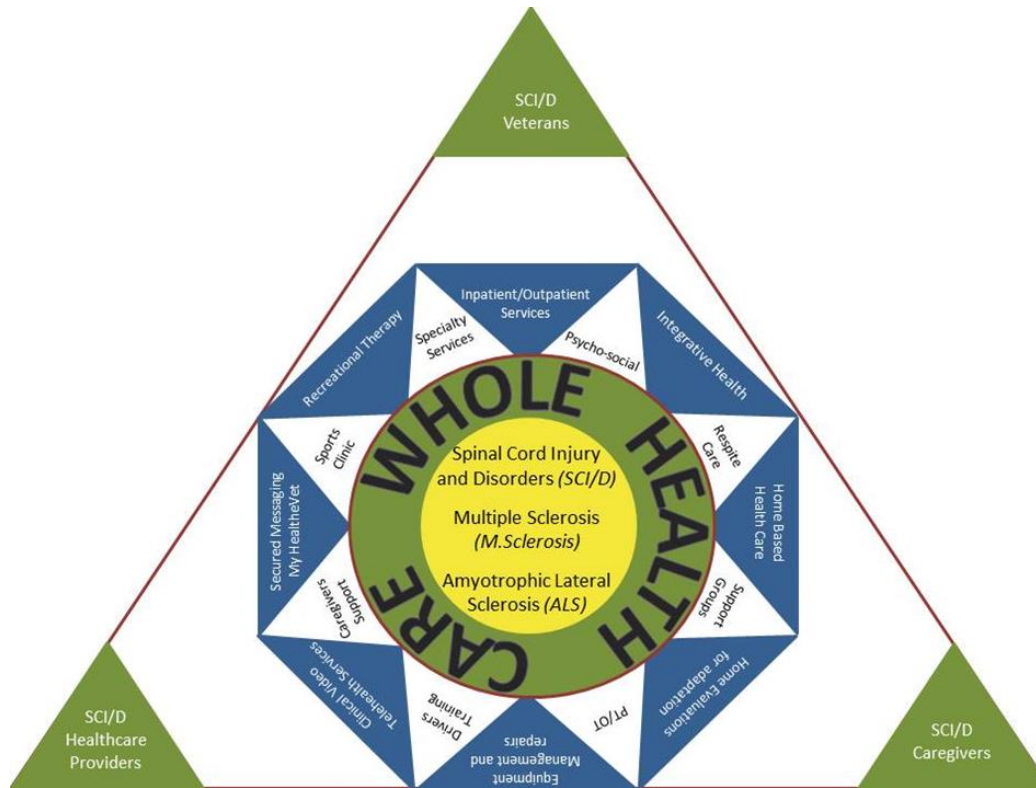
- What types of CVT devices do you have in your home?
- What do you like about your CVT devices?
- What kind of problems have you run into using the CVT devices?

What would you like to learn about using CVT?

- From Veterans
- From Caregivers
- From SCI Clinicians

Next Steps

- In-depth interviews with Tele-health coordinators
 - What would you like to ask the Tele-health Coordinators?
- Conduct 15 to 20 observations of the patient enrollment and home installation of equipment/devices
 - What would you look for in participants homes?



Triangle of Healthy Caregiving for Spinal Cord Injured Veterans

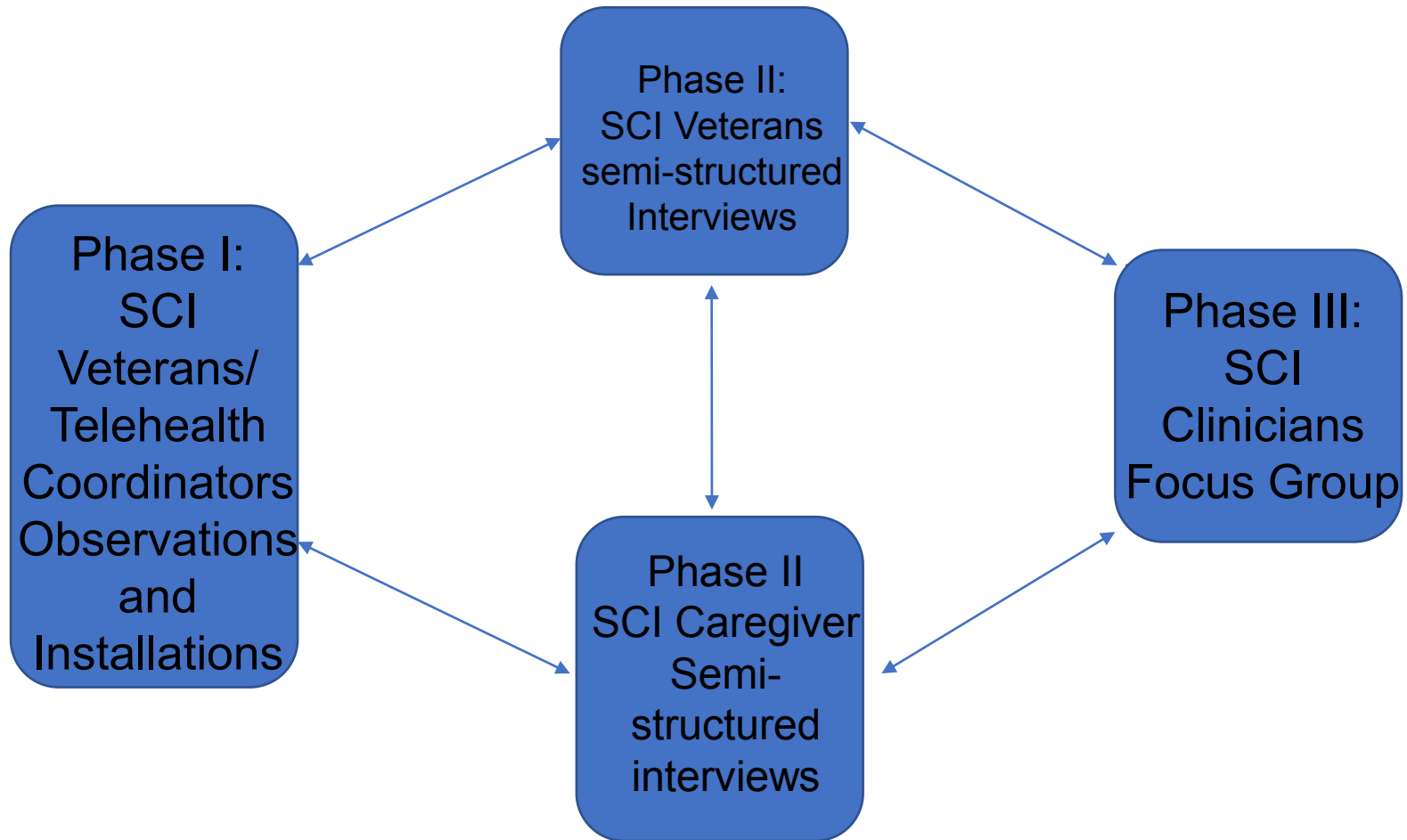
Consumer Volunteer Meeting

06/08/20

Research Problem

To qualitatively assess the direct or indirect impact of the “Triangle of Healthy Caregiving for SCI Veterans” on SCI Veterans, their caregivers and the VA healthcare team using perspectives and experiences.

Study Phases



Phase I

In-depth Interviews with Telehealth Coordinators
and
Observations of Enrollment and Installation

Phase I: Overview

- Objectives

- To examine the experiences of the telehealth coordinators in delivering healthcare using Clinical Video Technology
- To observe the process of enrolling veterans into the SCI/D virtual care program and the installation of equipment and devices

- Study Procedures

- Interviews and observations were conducted at the VA New Jersey Healthcare System SCI/D Service

Results from In-depth interviews: Enrollment

Before Enrollment Encounter

- Identify Veterans and their current modalities (if any)
- Contact veterans to discuss the potential of using VVC to improve access to care
- Discuss the type of device they have or don't have

During Enrollment Encounter

- Educate veterans about virtual care modalities (e.g. VVC, MyHealtheVet)
- Confirm of enrollment criteria and Veteran interest
- Determine best device to use: personal device vs. VA iPad

After Enrollment Encounter

- Schedule installation
- Document (e.g. virtual care consult)
- Order iPad (if applicable)

Results from In-depth interviews: Installation

Before Installation Encounter

- Identify type of device (i.e. Personal Device or VA iPad)
- Locate a secure, private room for encounter

During Installation Encounter

- If Veteran is using personal device
 - Provide application download instructions (if applicable)
 - Confirm veteran email address before sending VVC link
- If Veteran is using VVC iPad
 - Generate static link
- Confirm audio/visual quality in virtual chat room
- Troubleshoot any technical issues that may be encountered

After Installation Encounter

- Schedule a follow up session if technical issues were not resolved
- Document (e.g. virtual care consult)

Results from Observations

Common Trouble Shooting Problems			
Technical Problem	Frequency of Problem (n=10) n (%)	Corrective Action	Frequency of Corrective Action n(%)
Audio/Video issues	2 (20)	Reboot the chatroom	2 (100)
Unable to access email on device	1 (10)	Veteran used alternative device with access to email	1 (100)
Unable to establish connection	2 (20)	This issue was frequently seen for iMac users; veterans used alternative device	2 (100)
Error message from VMR app	4 (40)	1. Reset VHA CVT device	1 (25)
		2. Give VHA CVT device time do fully download all applications	2 (50)
		3. Contact National Help Desk to update settings on iPad	1 (25)
No technical Issues	1 (10)	No action needed	1 (100)

Phase II: Veteran and Caregiver Interviews

Semi-structured interviews with Veteran and
Caregivers

Phase II: Veteran/Caregiver Interviews

- Objectives
 - To gather the perspectives of veterans and caregivers on their experiences using CVT for their health care
- Study Procedures
 - Semi-structured interviews conducted with veterans, caregivers and veteran-caregiver pairs
- Outcomes:
 - Veteran interviews n= 30
 - Caregiver interviews n= 14
 - Veteran-Caregiver Dyad interviews n = 10

Veterans	N= 40
Demographics	
Age (Mean \pm SD)	61.45 \pm 12.83
Non-Hispanic White (%)	22 (55)
Married (%)	23 (57.5)
Transportation: Private car, truck or van (%)	32 (80)
Caregiver and caregiving support	
Family Caregiver: Yes (%)	29 (72.5)
Skilled Care: Yes (%)	25 (62.5)
Spinal Cord Injury Status	
Veterans living with Paraplegia	23 (57.5)
Veterans living with Tetraplegia	17 (42.5)
Years Injured (Mean \pm SD)	20 \pm 15.18
Injury Etiology (%)	
Motor Vehicle Accident	12 (30)
Fall	13 (32.5)

Veterans	N= 40
Health Status	
Overall Health Status	
Good (%)	13 (32.5)
Fair (%)	11 (27.5)
VA Virtual Care Modalities	
VA Video Connect (%)	37 (92.5)
MyHealtheVet (%)	16 (40)
Home Telehealth (%)	2 (5)
No Virtual Care Modality (%)	2 (5)

Caregivers	N= 25
<i>Demographics</i>	
Age (Mean \pm SD)	63.76 \pm 9.7
Non-Hispanic White (%)	21 (84)
Married (%)	23 (92)
Catholic (%)	14 (56)
<i>Caregiving</i>	
Age of veteran being cared for (Mean \pm SD)	69.9 \pm 12.01
Length of caregiving (Mean \pm SD)	13.2 \pm 13.3
Hours spent caregiving	
80+ hours (%)	20 (80)
30 hours or less (%)	5 (20)
Caregiver Burden	
High Burden	7 (28)
Low Burden	18 (72)

Preliminary QUAL Data

- Example quotes from the codebook
 - Reasons people used
 - Reasons people did not use
 - Recommendations (both pitching/general)
 - Caregiver related
 - Troubleshooting

Code	Example Quote
1.11 Veteran's initial introduction to CVT	
1.25 Clinical reasons for using CVT	<p data-bbox="697 282 1812 458">“Well if I do get a sore they can look at it...You know I can call and they can set an appointment to look at my skin” [VA04]</p> <p data-bbox="697 539 1831 654">“The only-I’ll be honest he goes just for the yearly thing. He does use it for.” [CG20]</p>
1.26 Veteran's reasons for not using CVT	<p data-bbox="697 775 1823 889">“And luckily, I guess, we never had a need to do it.” [CG22]</p> <p data-bbox="716 968 1812 1143">“I think he’s uh the tablet like for him is too heavy and you have to get close to the speaker and it’s they don’t hear him” [CG13]</p> <p data-bbox="900 1222 1624 1268">“No internet connection.” [VA01]</p>

Phase III

Clinician Focus Groups

Phase 3: Clinician Focus Groups

- Objectives
 - To gather the perspectives of clinicians on their experiences in delivering healthcare to veterans living with a spinal cord injury using CVT
- Study Procedures
 - Focus group with ten members of the VANJ SCI/D interdisciplinary team

Clinicians	N= 10
Demographics	
Age (Mean \pm SD)	44 \pm 6.99
Non-Hispanic Black (%)	5 (50)
Married (%)	9 (90)
College or greater (%)	9 (90)
Current Job Title: Nurse (%)	3 (30)
Years working with SCI Veterans (Mean \pm SD)	7.7 \pm 7.18
Number of veterans treated per week (Mean \pm SD)	24 \pm 29.2

Notable Clinician Quotes: Positive

Travel

- “...they have less barriers to just getting ready...They don’t have to go through all those other factors related to travel and preparation.”
- “...with VVC we can do it anywhere. They can be in the mall and we can connect with them.”

Access to Care

- “It’s a great tool for me to assess patient’s home exercise compliance, retention of knowledge, as well... I use it to if I have to advance their exercise parameters...”
- “It’s also phenomenal for continuity of care.”

Convenience

- “It’s just overall less stress on the veteran.”
- “On a scale of one to five, five being outstanding or completely satisfied, we’re getting a lot of fives across to board.”

Notable Clinician Quotes: Dislikes

Technology

- “...if the connection isn’t the greatest and the image is pixelated...or the audio is in and out and you’re trying to do a verbal test that could compromise the validity of the assessment.”
- “Equipment failure too...Sometimes you have the video but you don’t have the audio so you’re gonna end up looking for other available computers.”

Privacy

- “...the nurse or wife keeps walking by, they’re in the room, they’re eavesdropping, they won’t really give them the privacy that they’re hoping they will have, and that affects the level of discomfort or freedom to feel like they can really disclose what they want.”
- ...a challenge would be where is it going to be?...if she [neuropsychologist] has a CVT scheduled and her office busy. Where am I gonna go?”

Standardization

- “...the reliability and the validity of a lot of the tests haven’t necessarily been established to use via video and they’re standardized really more or in person visits.”

Notable Clinician Quotes: Improvements

Improvements

- “...I think the limitation right now is staffing...to do a consistent pre-annual evaluation visit or pre-initial visit.”
- “...if we can do a visit beforehand, find out that they’re having equipment issues...we can have them on a schedule for CVT, we can set it up so they can know what the plan is...”

Dissemination

- “Identifying Unspoken Challenges of Using Clinical Video Technology (CVT) for SCI Veterans” presented at the ACRM conference
- “Triangle of Healthy Caregiving for Spinal Cord Injured Veterans” presented at the Planetree Conference 2019
- “Triangle of Healthy Caregiving for Spinal Cord Injured Veterans” presented at the East Orange VA Research Week 2019
- *“Triangle of Healthy Caregiving for Veterans With Spinal Cord Injury: Proposal for a Mixed Methods Study”* published in JMIR



Next Steps

- No Cost Extension Year
- Expansion Grant
 - We would like you to be on our CAB for this upcoming grant

Triangle of Healthy Caregiving for Spinal Cord Injured Veterans

Consumer Volunteer Meeting
November 30, 2020 at 11:00AM

Phone Conference Line:

800-767-1750

Conference code:

05970



Objectives



Overview of Project



Data Analysis



Next Steps





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-  You have a few minor questions for your doctor that can be answered over live video.
-  You lack time to attend an in-person appointment.
-  A hands-on physical examination is not required.

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VA



U.S. Department of Veterans Affairs

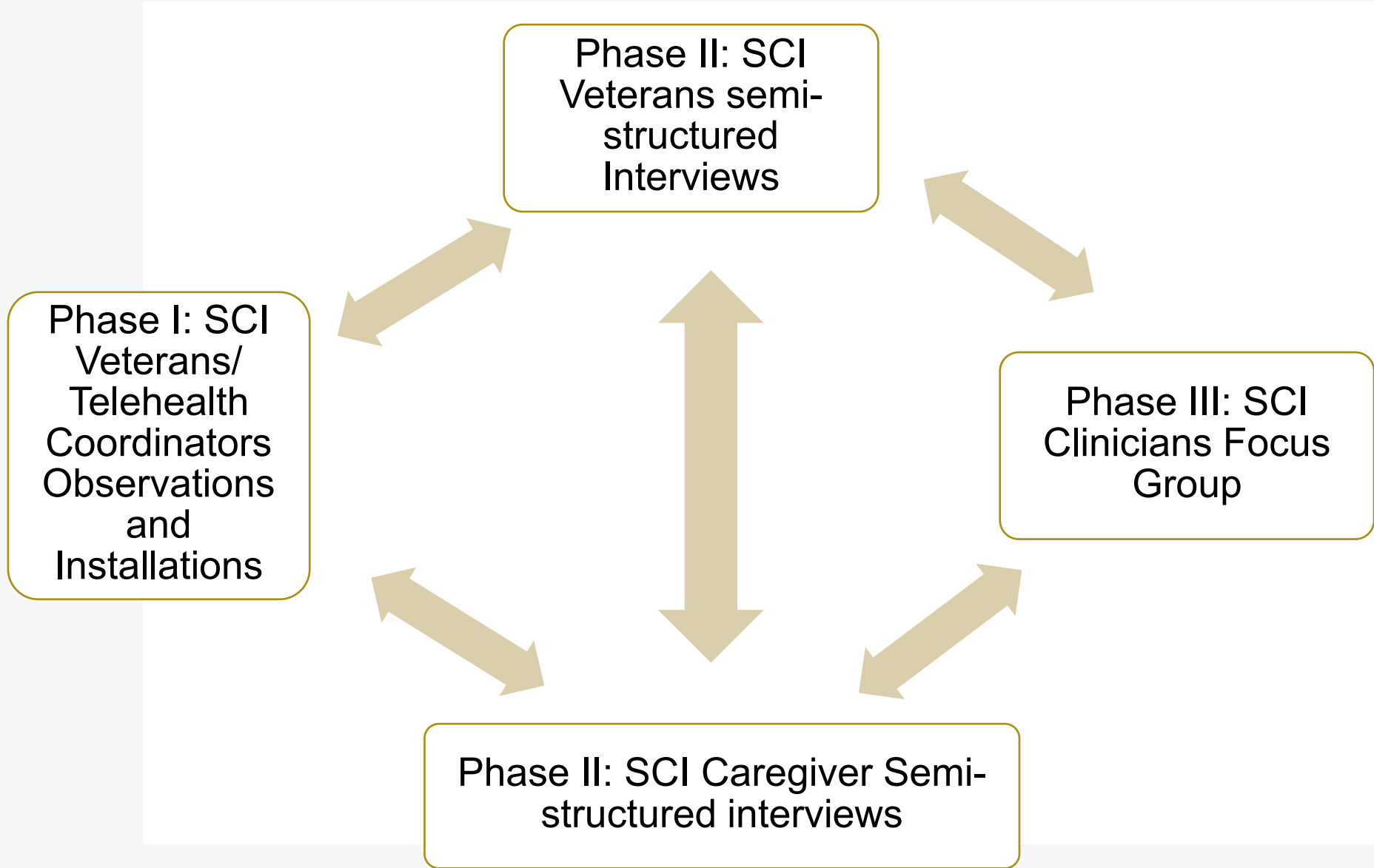
Veterans Health Administration
Overton Brooks VA Medical Center
VISN 16 | Shreveport, LA

Research Problem

To qualitatively assess the direct or indirect impact of the “*Triangle of Healthy Caregiving for SCI Veterans*” on SCI Veterans, their caregivers and the VA healthcare team using perspectives and experiences.



Study Phase



Phase 1: Overview

Objectives

- ♦ Examine the experiences of the telehealth coordinators in delivering healthcare using Clinical Video Technology (CVT)
- ♦ Observe the process of enrolling veterans / caregivers into the CVT program and installation of CVT equipment and devices

Study Procedures

- ♦ All data collection took place at VA New Jersey Healthcare System SCI/D Service
- ♦ Conduct interviews with telehealth coordinators
- ♦ Conduct observations of the enrollment process



Phase 2: Veteran / Caregiver Interviews

Objectives

- ♦ Gather Veterans' and Caregivers' perspectives and experiences using CVT for their health care

Study Procedures

- ♦ Semi-structured interviews conducted with veterans, caregivers and veteran-caregiver pairs

Outcomes

- ♦ Veteran interviews n= 30
- ♦ Caregiver interviews n= 14
- ♦ Veteran-Caregiver Dyad interviews n = 10



Phase 3: Clinician Focus Groups

Objectives

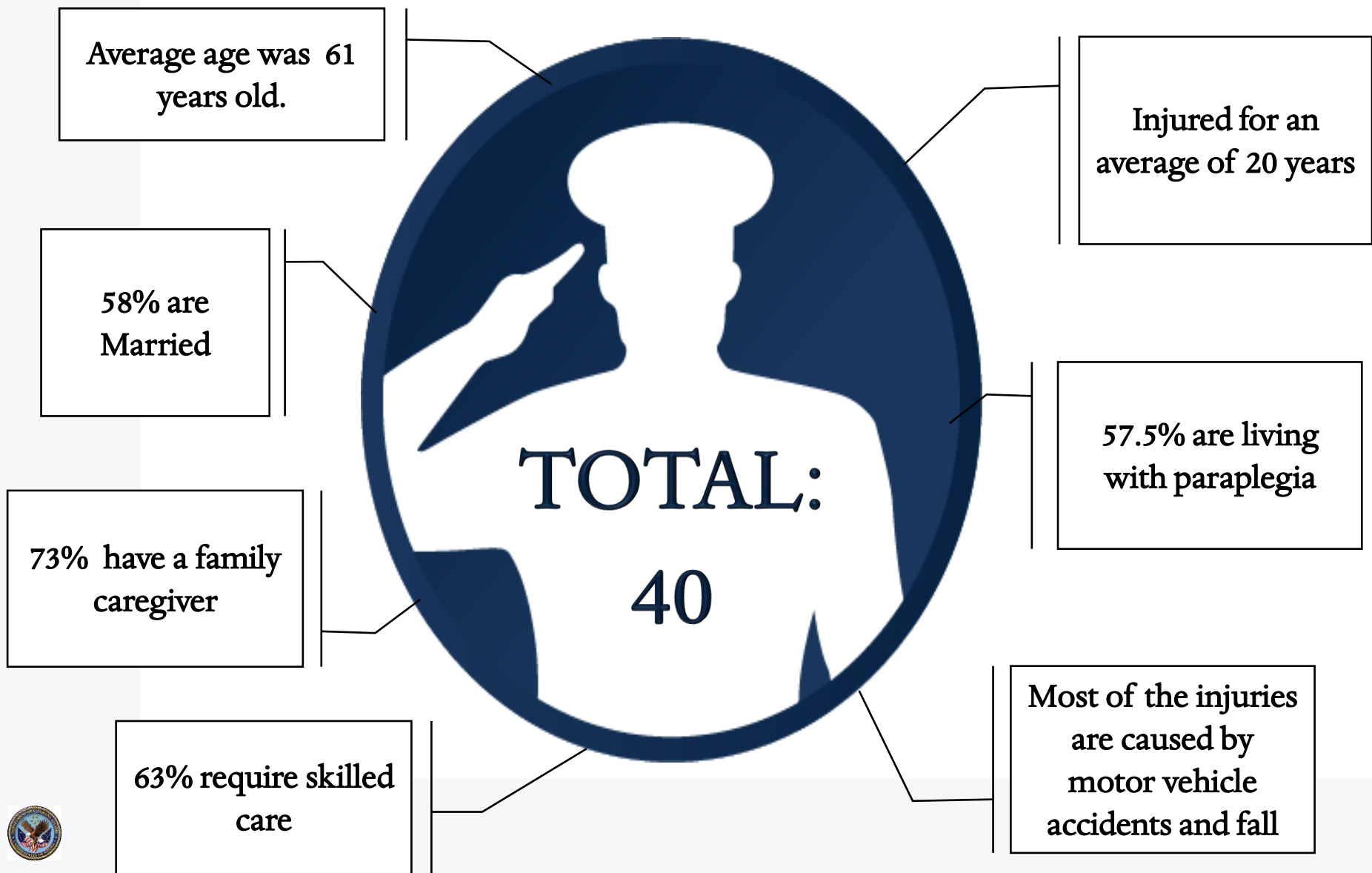
- ♦ To gather VANJHCS SCI/D Clinicians' perspectives about their experiences in delivering healthcare to veterans/ caregivers using CVT

Study Procedures

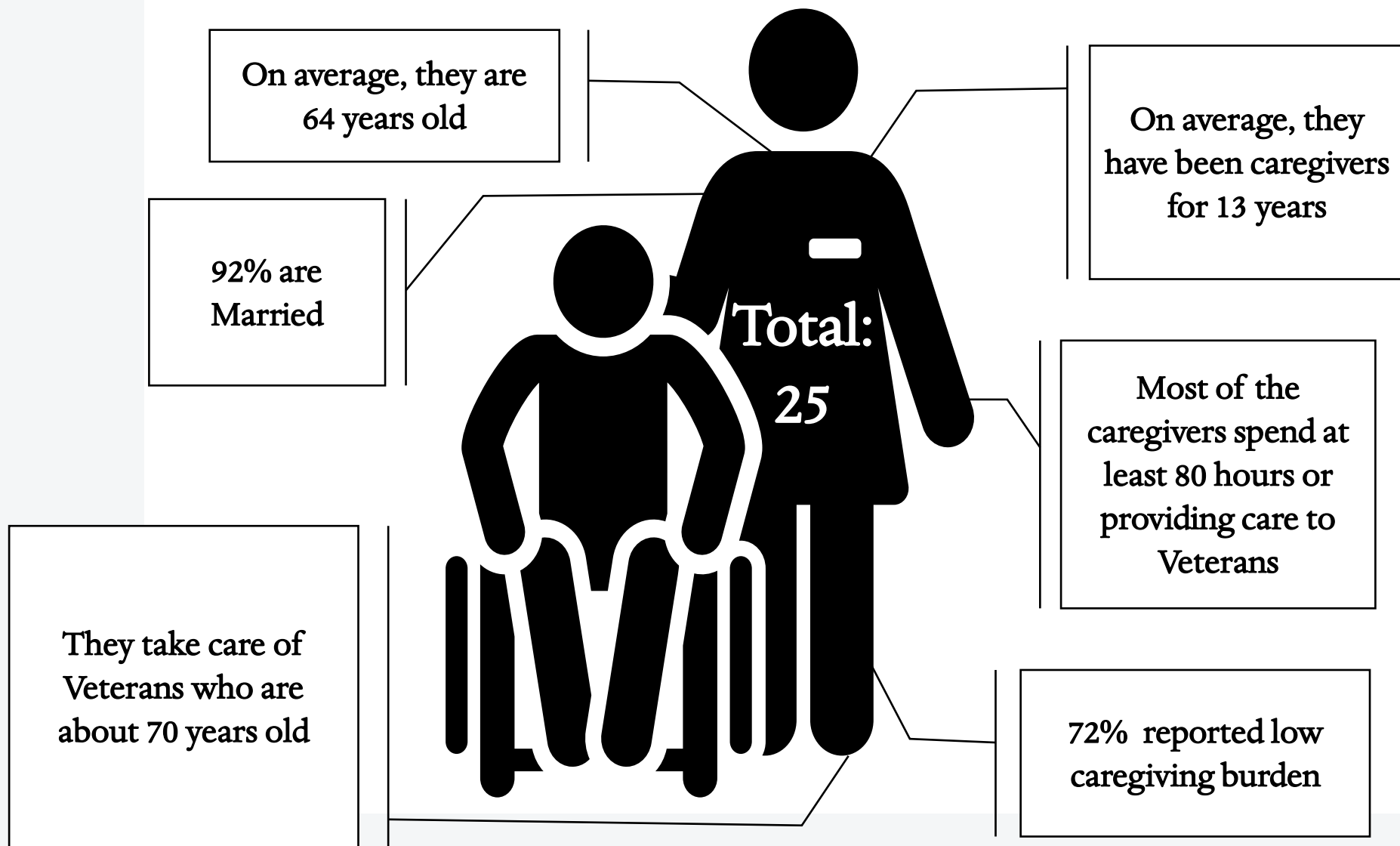
- ♦ Focus group with ten members of the VANJHCS SCI/D interdisciplinary team



Who are Veterans that participated in our study?



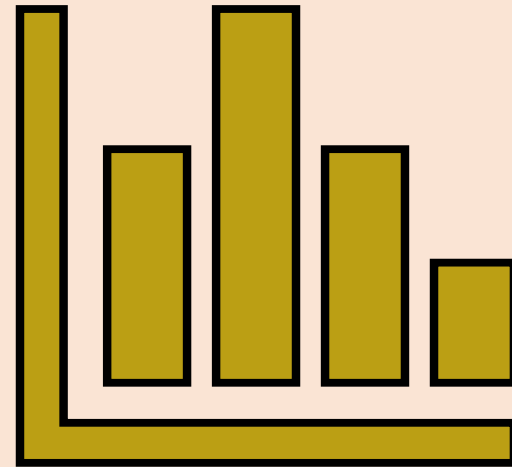
Who are Caregivers that participated in our study?



Where Are We Now?

Phase 2 Data Analysis

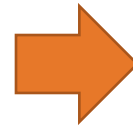
Veteran Interviews



How do we analyze the data?



Interview Transcription



with Elizabeth who is an early career researcher at XXX University.

ie to be here and why are you interested in

to talk to a variety of people from a variety of will tell you.

fessor and associate professor of psychology, lea that research has sort of been, and my is professor of mathematics, so I have grown ry academic background, research has been at people do as long as I remember, and it was is something that was interesting and exciting lly found out new things and people passed who had discovered new things, which we re dinner tables so -

This suggests that Elizabeth is sufficiently a researcher that she thinks about the method of the research she is engaging in

Always there

Discovery

Find Meaning in the Conversation

CVT Key Points

• Step 1. Enrollment



• Step 2. Usage

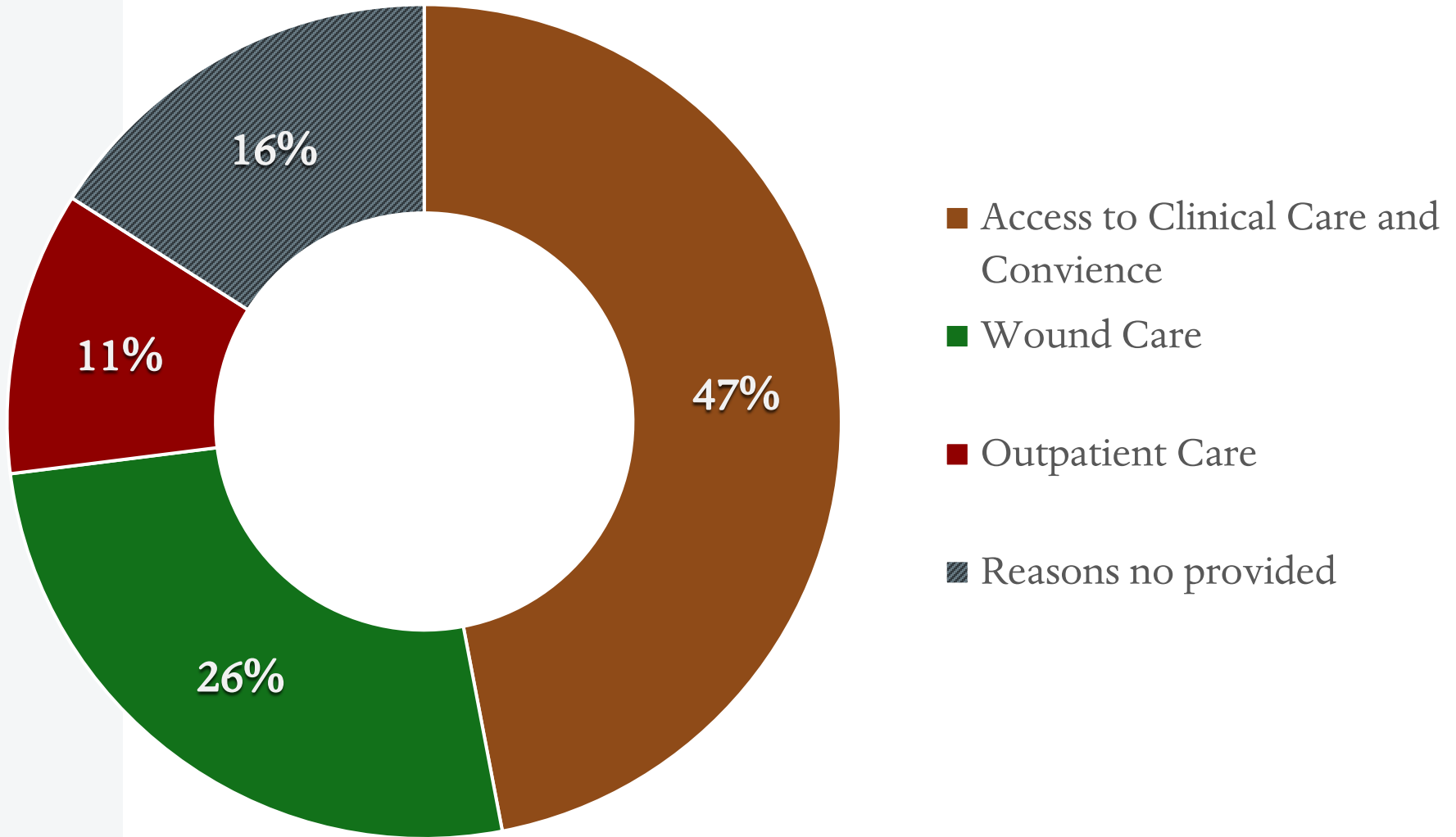


CVT Key Points

Step 1. Enrollment



Top Reasons for Enrollment in CVT



*Sample size of 19 Veterans



Top Reasons for Enrollment in CVT

Wound Care

“I had a pressure sore. They wanted cause I had visiting nurse at the time and they wanted them to put that there to see the progress”

Outpatient Care

“ My glucose was up to about like 12 and uh and my A1C and uh they thought I was a candidate for heart attack or stroke. So that’s how the-the uh introduction to the technology happened”

Access to Clinical Care and Convenience

“I thought that was one of those things where we could uh w-while I was home if we had a problem we could get on the-we could call XXXX [telehealth coordinator] and then get on the iPad and talk back and forth where we could see one another.”



CVT Key Points

Step 2. Usage



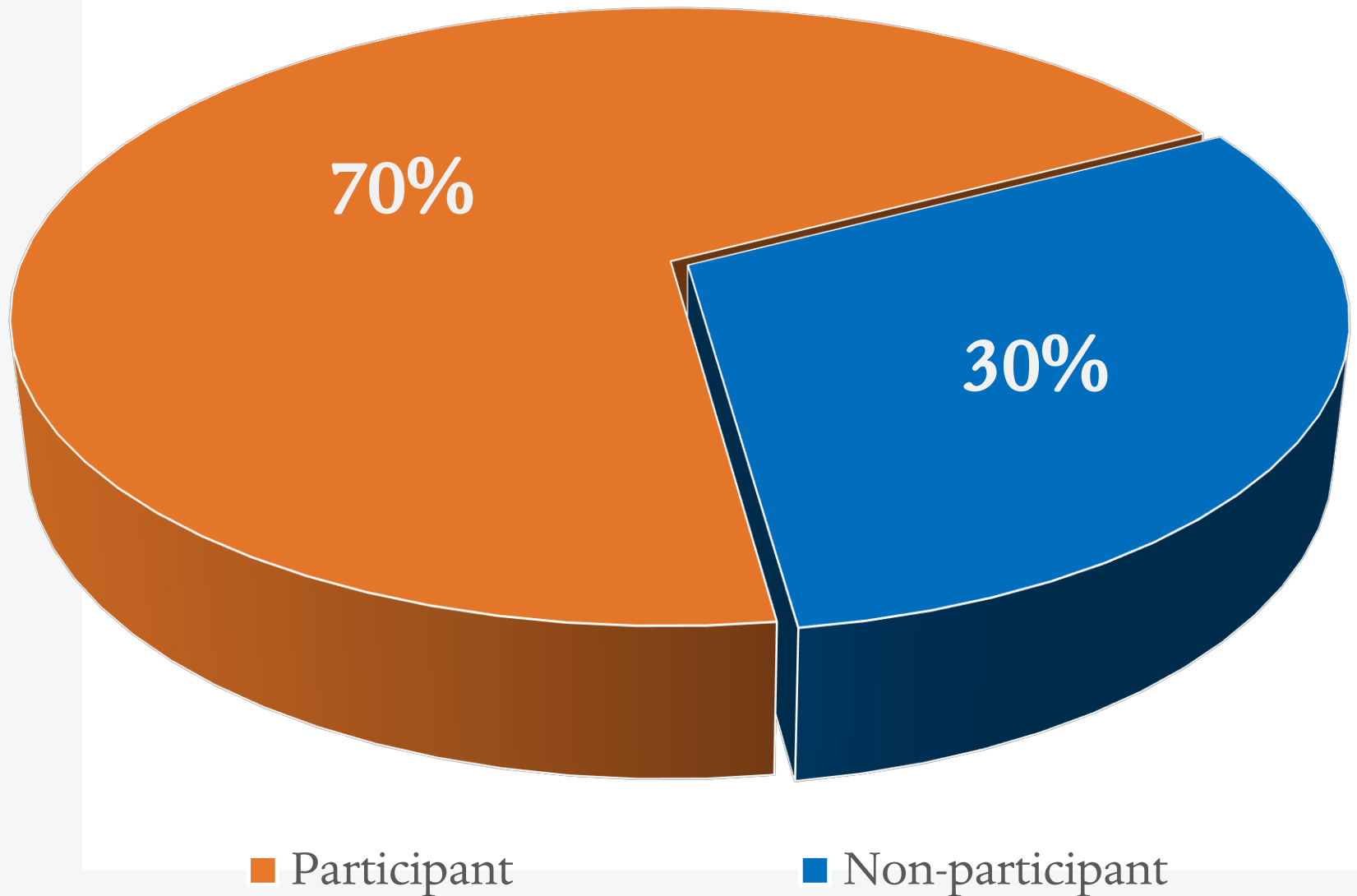
Three Top Reasons for Participating in CVT



*Sample size of 19 Veterans



Percentage of Patient Using CVT



*23 veteran transcripts have been reconciled out of the 40 Veterans interviewed



Clinical Reasons for Using CVT

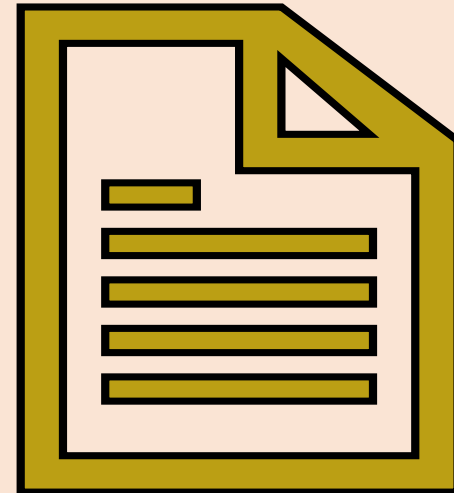


“(..) And I was able to use the device so that he could actually see the wound without me having to run all they way in there so that he could suggest um suggest treatment.” [VA07]



Next Steps

- ♦ Dissemination



Dissemination

Writing Articles

Presentations

Expansion Grants

Guidance and
Recommendations

Topics

Phase 1

- Evolution of using Telehealth to deliver healthcare to Veterans living with an SCI
- Installation guide development (include case study)
- Enrollment and Installation of CVT with Veterans living with Caregivers and their Caregivers
- Troubleshooting CVT enrollment and installation

Phase 2

- Caregivers: Benefits and experiences of using CVT related to level of SCI
- CVT utilization patterns of Veterans living with SCI
- Barriers and facilitators using CVT with Veterans living with an SCI and their Caregivers
- CVT Recommendations to Pitch/Enroll Veterans and Healthcare delivery

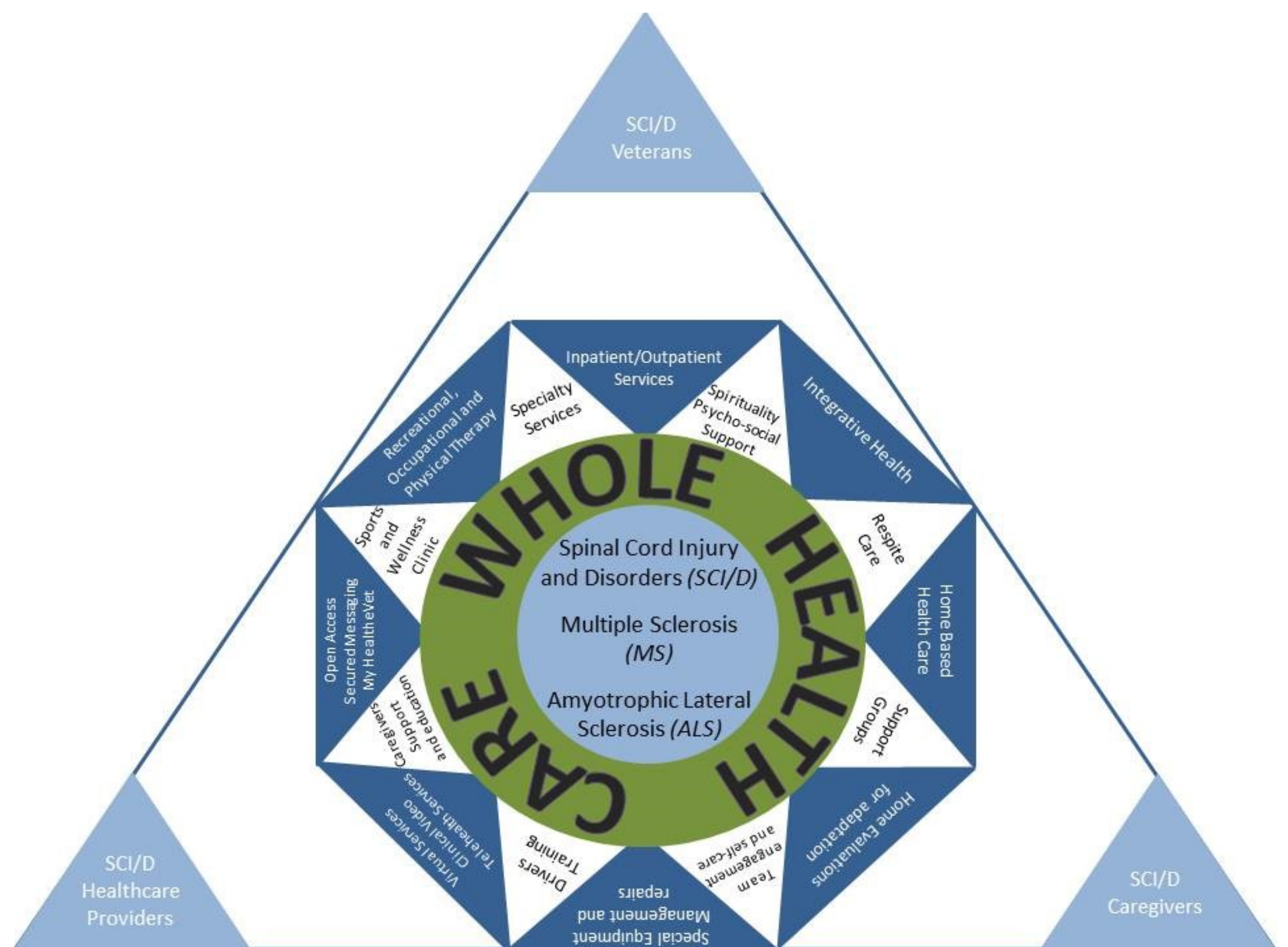
Phase 3

- Clinician's perspectives about delivering healthcare to veterans and caregivers using CVT

GET TO KNOW OUR SPINAL CORD INJURIES AND DISORDERS RESEARCH PROGRAM

Background

Spinal Cord Injury and Disorders (SCI/D) are among the most devastating and disabling medical conditions affecting wounded military personnel. The Department of Veteran Affairs is the single largest SCI/D comprehensive healthcare provider in the nation. Veterans with SCI/D often need specialized clinical healthcare and face physical limitations that create critical needs for assistance from others to maintain health and full integration into society. Through research, this specialized care can be assessed and improved to provide the maximum benefit to its Veteran Population.



Current Research

Currently, the SCI/D Service has two funded research studies. Both projects are funded through the Department of Defense. The work done by both studies will help to improve patient care in the Veteran population. The programs are:

Spinal Cord Injury Veterans: Disability Benefits, Outcomes and Healthcare Utilization Patterns

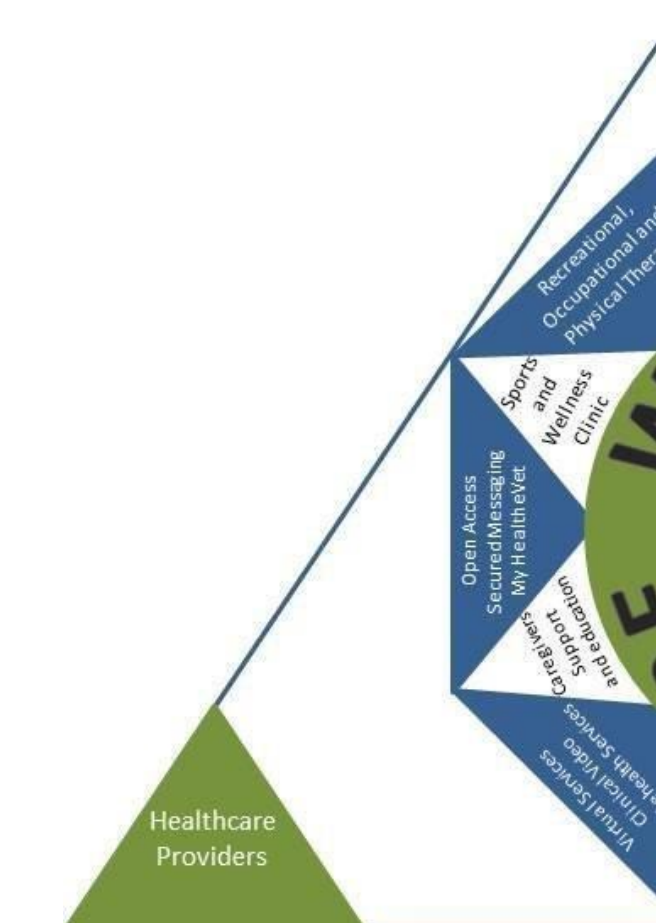
The goal of this study is to examine the impact of disability compensation benefits on the health and well-being of SCI Veterans who seek their healthcare through both VA and non-VA systems of care. Two study sites that serve SCI veterans in the New Jersey area collected the data for this study: Veterans Health Administration New Jersey Health Care System and Northern New Jersey Spinal Cord Injury System. Carol Gibson-Gill, MD, Denise Fyffe, PhD, and Joyce Williams, LCSW are the Principal Investigators for this study. Ashleigh Quinn, BS and Yasheca Ebanks-Williams, MS, CCRC are the Research Coordinators for the study sites. Together, this team gathers data through interviews, focus groups, questionnaires and medical chart reviews to better understand the impact of VA service-connected disability compensation.

The Triangle of Healthy Caregiving for Spinal Cord Injured Veterans

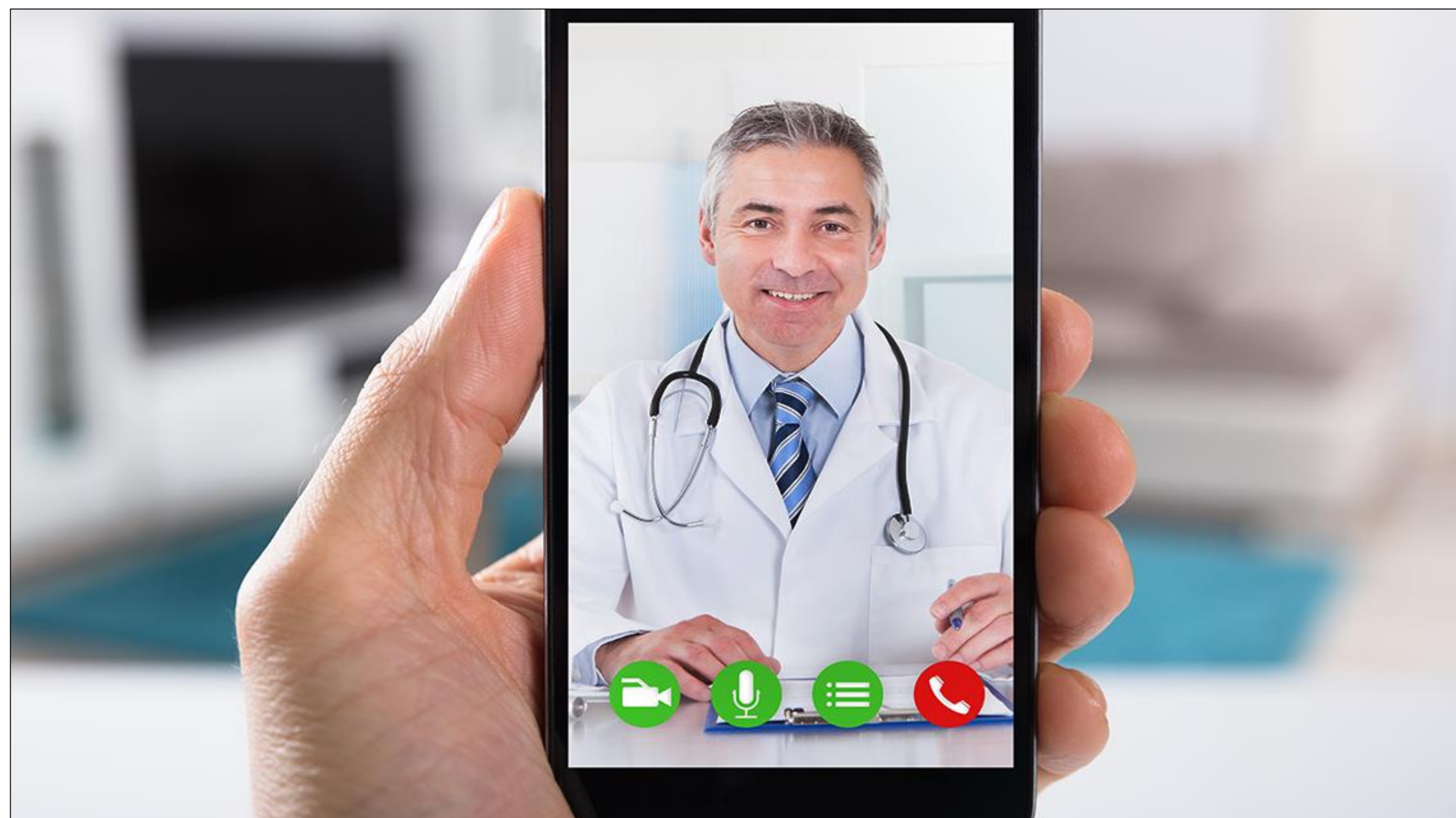
The “Triangle of Healthy Caregiving for Spinal Cord Injured Veterans” is a patient-centered intervention which includes the spinal cord injured Veterans’ caregivers into the VA SCI healthcare team and extends into the home using clinical video teleconferencing. The goal of this study is to assess the direct or indirect impacts of the “Triangle of Healthy Caregiving” on SCI veterans, their caregivers and the SCI healthcare team. Carol Gibson-Gill, MD, Denise Fyffe, PhD and Joyce Williams, LCSW are the Principal Investigators for this study. Yasheca Ebanks-Williams, MS, CCRC is the research coordinator and Nicole Jones, BS is the research assistant for this study. By gathering data through interviews, observations, focus groups and questionnaires, the study team hopes to ultimately identify the areas of this model of healthcare delivery that work best and the areas that are in need of improvement.



The Problem: The goal of this study is to validate the information gathered from the in-depth interviews with the Telehealth Coordinators. Enrollment observations will record face-to-face consultation with SCI veterans (and caregiver) who were newly referred to the “Triangle of Healthy Caregiving for SCI Veterans”. The goal of the consultation is to provide SCI Veterans with a 1) description of CVT and various modalities; 2) explanation of CVT installation/equipment in their home; 3) logistics of the delivery of CVT material and equipment and 4) obtain patient signatures (e.g., liability waiver).



Clinical Video Technology Enrollment



Clinical Video Technology Installation

Preparing your device for VA Video Connect (VVC)

For android users:

STEP 1: log into your email account on the device for video conferencing

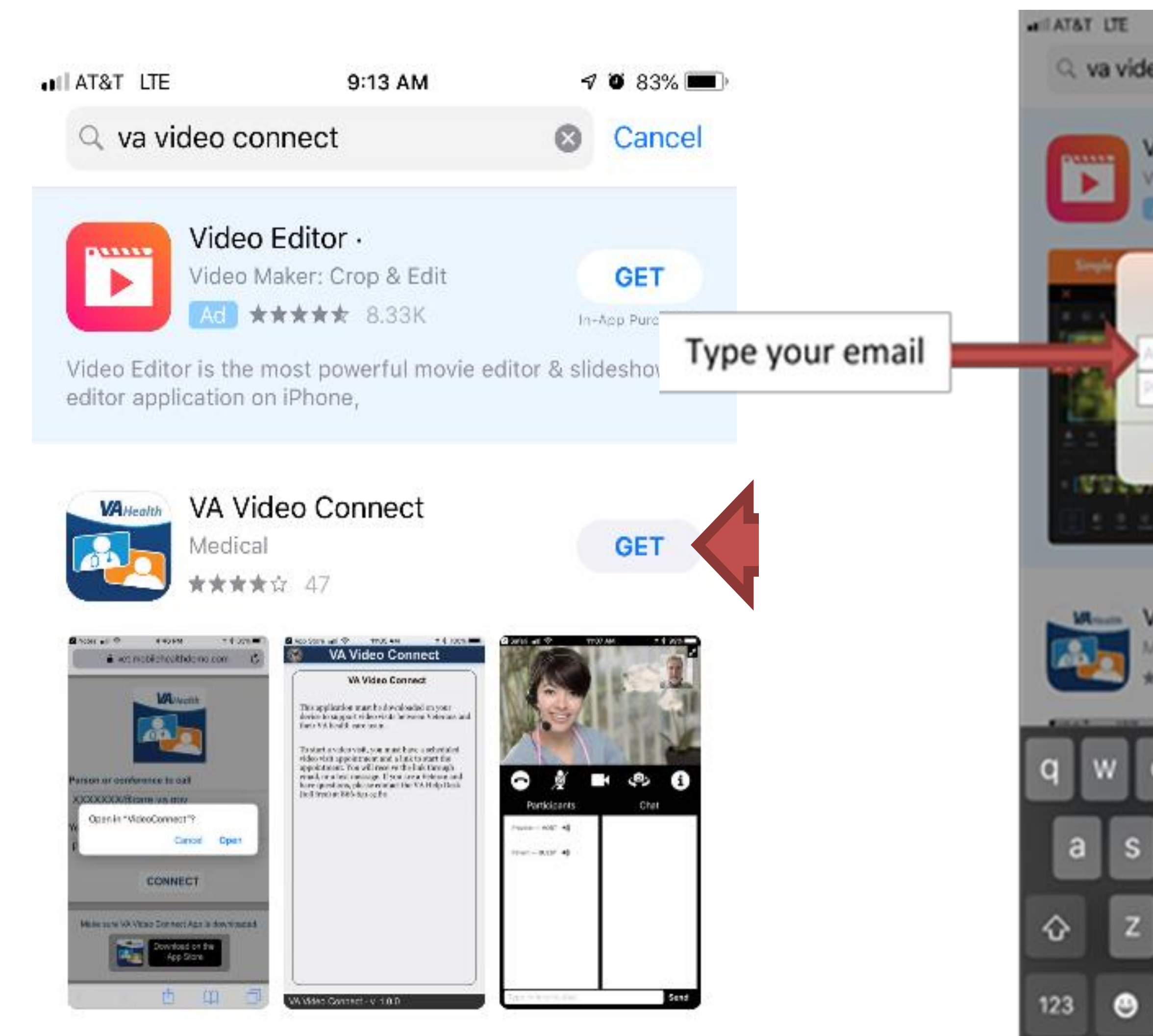
STEP 2: locate the email from the Telehealth Coordinator with the subject line “Please Join Your On-Demand VA Video Connect Appointment”

STEP 3: click the link provided in the email that says “Join My VA Video Connect appointment”

STEP 4: follow the prompts on the screen

STEP 5: Smile!

For iPhone and iPad Users



Steps Taken Before Veteran Encounter

- Identify the Veteran
- Check SCI Veteran’s CVT Equipment(Initial Evaluation)
- Gather encounter materials
- Confirm Veteran information

- VVC: VA VMR Tablet
 - Determine interest
 - Educate Veteran on device
 - Confirm interest
 - Obtain email address

Steps Taken After Veteran Encounter

- Document in CPRS
- MyHealthVet Authentication
- Order device (if applicable)
- Store/record Veteran information

Steps taken during Veteran Encounter

- Education on VHA Virtual Healthcare Modalities
- Check enrollment criteria
- Assess the compatibility of personal device in the home
 - VVC: Personal device
 - Provide VVC information
 - Obtain email address
 - Schedule follow up session to validate equipment

Veteran Encounter Follow up

- Set-up Initial connection
- Complete Enrollment

Background

Spinal cord injury (SCI) can be a very devastating and disabling medical condition with significant impact on quality of life, as well as, can be very costly on several levels to the patient, their families and the healthcare system. The “Triangle of Healthy Caregiving for Spinal Cord Injured Veterans” is a patient-centered intervention which includes the spinal cord injured (SCI) Veterans’ caregivers into the VA SCI healthcare team and extends into the home using clinical video teleconferencing (CVT) at the VA New Jersey Health Care System. The role of family or friend caregivers in assisting the SCI/D medical rehabilitative team with caring for persons living SCI/D, including Veterans, is increasingly being recognized as instrumental to SCI/D healthcare management. As the healthcare team (HCT) for this specialized population living with chronic medical conditions, the SCI/D Department of the Veterans Administration New Jersey Healthcare System (VANJHCS) realized that to successfully achieve the health and quality of life goals of the patients, we would need a healthy model of care that includes a close interaction between the patients, their designated Caregivers and the HCT.



Figure 1: VA virtual health services use technology and health informatics to provide Veterans with better access and more effective care management.

Methods

Goal: The goal of the current study is to qualitatively assess the acceptability and utilization of the “Triangle of Healthy Caregiving for SCI Veterans” intervention with SCI Veterans, caregivers, and healthcare teams to modify, improve, and refine the “Triangle of Healthy Caregiving for SCI Veterans” intervention accordingly. Information gleaned can prove useful in decision making re: the expansion of the services using these technologies provided by this facility’s SCI HCT and other VA and nonVA health care providers.

Design: Using a mixed -methods study design, we will conduct a study to assess the implementation process and outcomes of the “Triangle of Healthy Caregiving for SCI Veterans” using clinical video technology (CVT) with key stakeholders involved in the intervention: SCI Veterans, their caregivers, SCI/D healthcare team. We will evaluate their experiences with the aims to answer the following research questions:

1. What are SCI Veterans’ perceptions about the “Triangle of Healthy Caregiving for SCI Veterans” program in the provision and the ways that impacts the delivery of healthcare?
2. What are the benefits and challenges the SCI veterans experienced during the implementation of the “Triangle of Healthy Caregiving for SCI Veterans” program in their homes?
3. What are SCI Veteran caregivers’ perceptions about the “Triangle of Healthy Caregiving for SCI Veterans” program in management of caregiver burden?
4. What are the benefits and challenges that SCI Veterans caregivers experienced during the implementation of the “Triangle of Healthy Caregiving for SCI Veterans” program in the homes of SCI Veterans?
5. How do “Triangle of Healthy Caregiving for SCI Veterans” healthcare professionals use the intervention program to deliver care to SCI Veterans?
6. Which elements of the “Triangle of Healthy Caregiving for SCI Veterans” work better in facilitating healthcare delivery? What are the key components of the intervention program? Which components need to be revised?

See Figure 2

Using technology, we have been able to address care, addressed ongoing and urgent issues for Veterans and Caregivers, assess and address Caregiver burden, post-surgical care, address medical and behavioral health. In year 2017, we saved 213 of our SCI/D Veterans 92,914.10 miles to see the HCT (120 of which were VA). Anecdotal feedback from the Veterans and Caregivers reporting that they don’t feel isolated and can more readily access the HCT if/when issues arise. Caregivers can schedule readily via technology and avoid the need to travel to the facility. The Telehealth coordination and the interviews are being transcribed for research. Patients’ enrollment and installation of technology is ongoing.

Discussion

The education and support provided to caregivers has been received and they verbalize that they feel supported and like having technology. Using Virtual Care technology has allowed this model for healthy delivery of care to be brought from the facility into the Veterans’ homes. This has provided access to care for the Veterans and their caregivers. This has fostered a remarkable partnership between the VA and the community.

Table 1(Milestones to achieve for each phase):

Phase	Data Collection Methods	Purpose	Products
1	In-depth interviews Observations of SCI Veterans’ enrollment and home installation of equipment/devices	- Conduct 2 in-depth interviews with Telehealth Coordinators for the SCI - Conduct 15-20 observations of the patient enrollment and home installation of equipment/devices	- Description of the enrollment and home installation process - Observation data of the enrollment and installation process
2	Semi-structured interviews	- Conduct 35-40 semi-structured interviews with SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program - Conduct 35-40 semi-structured interviews with caregivers of SCI Veterans enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program	- Qualitative data (semi- structured interview transcripts, field notes)
3	Focus group	- Conduct 1 focus group with virtual healthcare team professionals	- Focus group findings about the delivery of healthcare to SCI Veterans, education and support to their caregivers

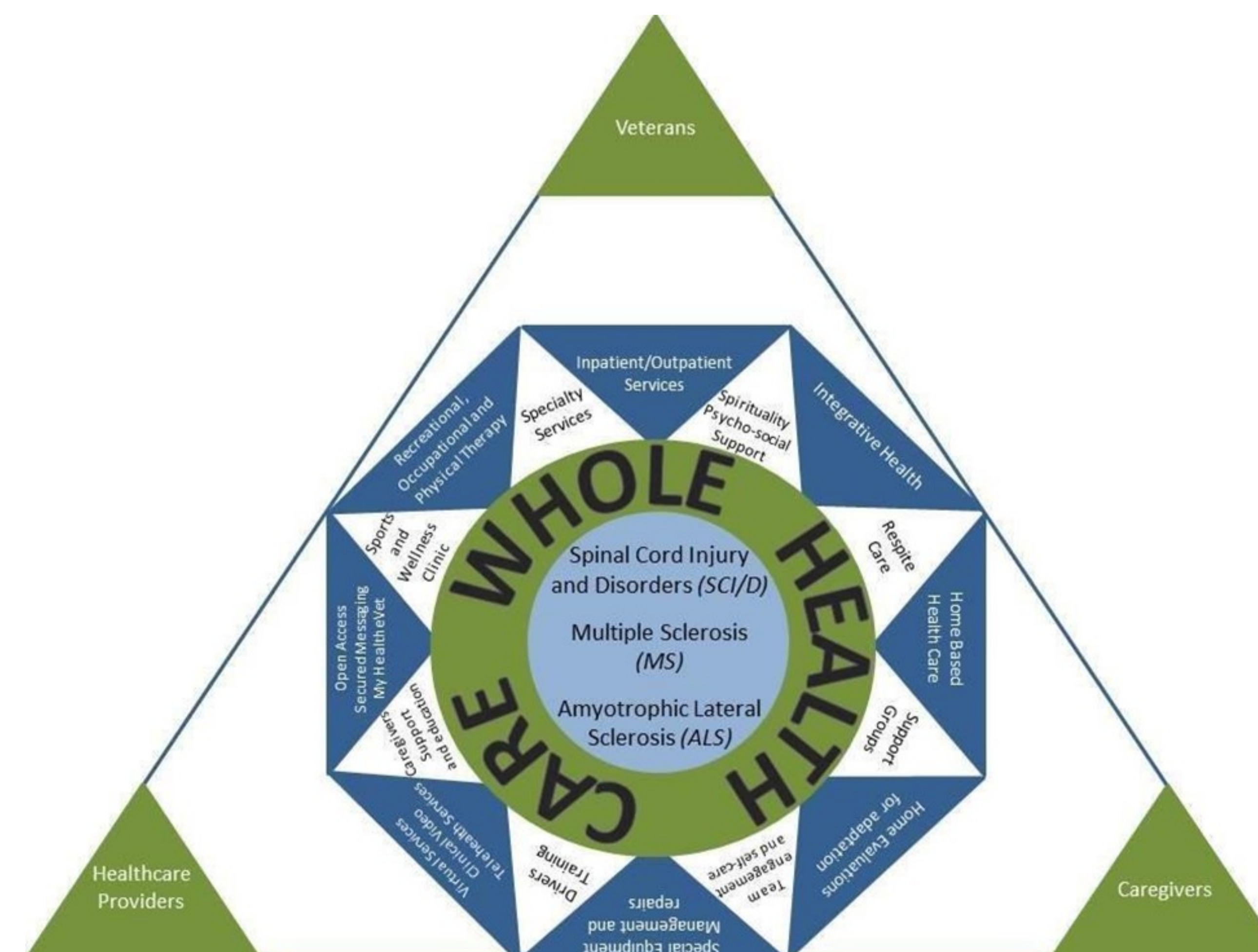


Figure 2: The “Triangle of Healthy Caregiving for SCI Veterans” is a patient and caregiver-centered intervention which incorporates SCI Veterans’ caregivers into the VA SCI healthcare team (HCT) and extends into the homes of SCI Veterans using real-time clinical video teleconferencing (CVT).

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DESIGN

This cross-sectional qualitative study conducted in-depth interviews with telehealth coordinators and a focus group with SCI interdisciplinary rehabilitative team. Enrollment of Veterans living with SCI into the Virtual care program was observed as well as the installation of VA clinical video technology (CVT).

METHODS

Setting: Interviews, observations and focus group were conducted at VA New Jersey Healthcare Service SCI/D Center.

Participants: Two telehealth coordinators were interviewed; 15 Veterans who are living with an SCI and 2 Caregivers were recruited to participate in the observations of their enrollment and installation of CVT; 10 SCI rehabilitation providers participated in a focus group.

Common Trouble Shooting Problems

Technical Problem	Frequency of Problem (n=10) n (%)	Resolution
Audio/Video issues	2 (20)	Reboot the chatroom
Unable to access email on device	1 (10)	Veteran used alternate device to email
Unable to establish connection	2 (20)	This issue was frequent for new users; veterans used alternate device
Error message from VMR app	4 (40)	<ol style="list-style-type: none"> 1. Reset VHA CVT 2. Give VHA CVT device and load all applications 3. Contact National Support Center for settings on iPad
No technical Issues	1 (10)	No action needed



Veterans with SCI utilize CVT for a variety of reasons, including pressure injury prevention and management, psychosocial and rehabilitation needs, health education, Caregiver education and support.



Benefits of CVT reported by SCI clinicians include: 1) improved accessibility by SCI Veterans and their Caregivers to address issues in a timely fashion; 2) provide Caregivers with timely educational and support services.



Clinicians' recommendations include increasing CVT staff, troubleshooting time during clinical visits, and complete pre-admission visits for SCI Veterans prior to admission.

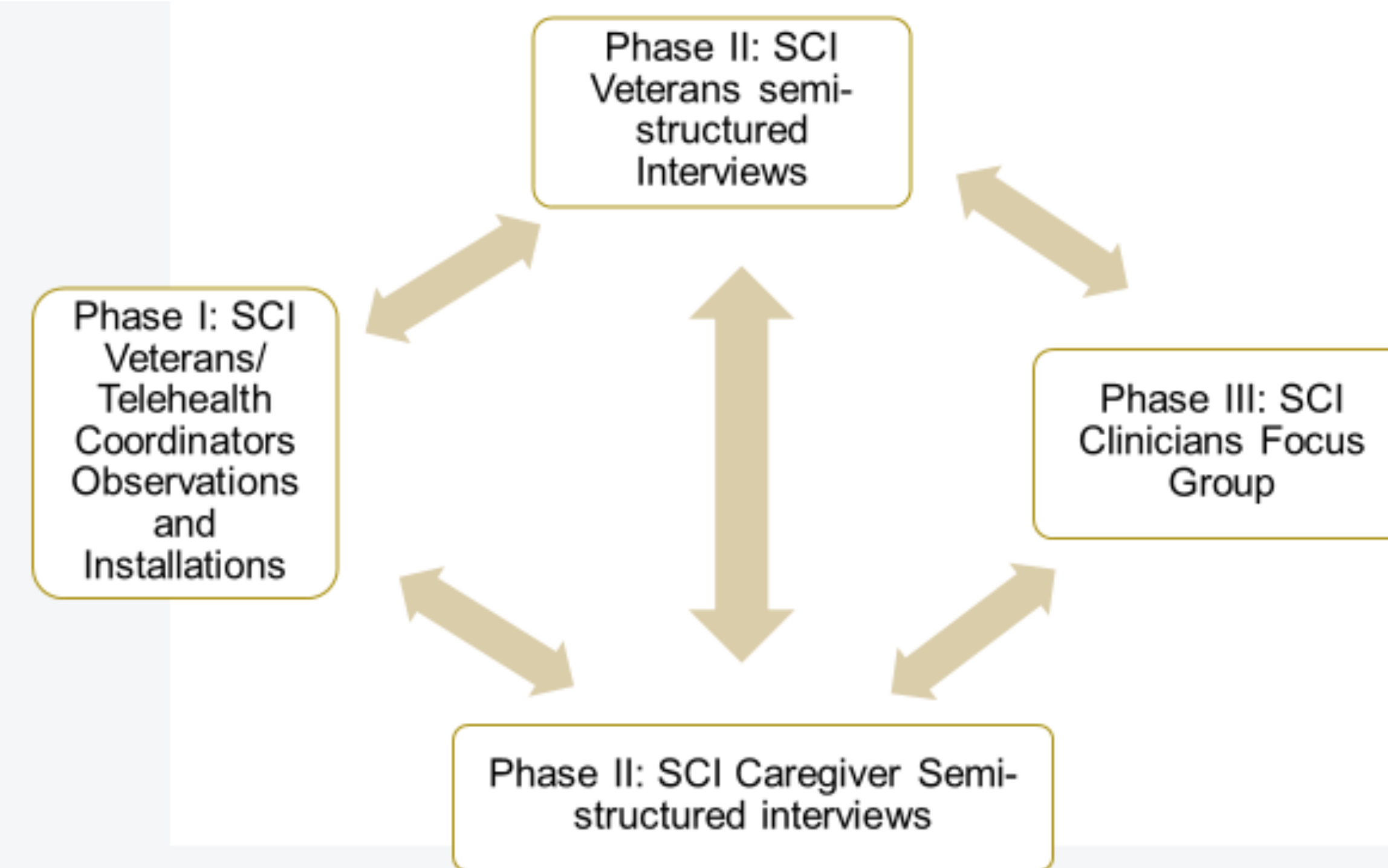
BACKGROUND & SIGNIFICANCE

The “Triangle of Healthy Caregiving for Spinal Cord Injured Veterans” is a patient-centered intervention which includes the spinal cord injured (SCI) Veterans’ Caregivers into the VANJHCS SCI Healthcare Team (HCT) and extends into the home using Virtual care technologies (VCT) / clinical video teleconferencing (CVT). CVT facilitate video-clinic visits, which include clinical evaluations, therapy physical/occupational, or supportive services (e.g., social work). The “Triangle of Healthy Caregiving for SCI Veterans” builds on interactive, inter-disciplinary healthcare relationships that exist between the SCI Veteran, their Caregivers, and VANJHCS SCI HCT. SCI Veterans’ propensity to multiple secondary complications makes a healthy partnership crucial for the success of keeping better health, functional outcomes, and overall quality of life while living in their homes. Virtual care technologies can help to: 1) improve accessibility by SCI Veterans and their Caregivers to the VA SCI HCT to address issues in a timely fashion; 2) reduce inconvenience or difficulties SCI Veterans may experience in getting to the healthcare facility to see their SCI specialists; and 3) provide Caregivers with timely educational and support services.

Design: This cross-sectional study gathering data used in-depth interviews with Telehealth Coordinators, semi-structured interviews with Veterans and Caregivers, a focus group with Clinicians, and questionnaires.

Setting: The study was conducted at the Veterans Administration New Jersey Healthcare System (VANJHCS) SCI/D Department.

STUDY PHASES



Today, we are presenting the lessons learned from VANJHCS SCI Healthcare Team in Phase III.

Objectives

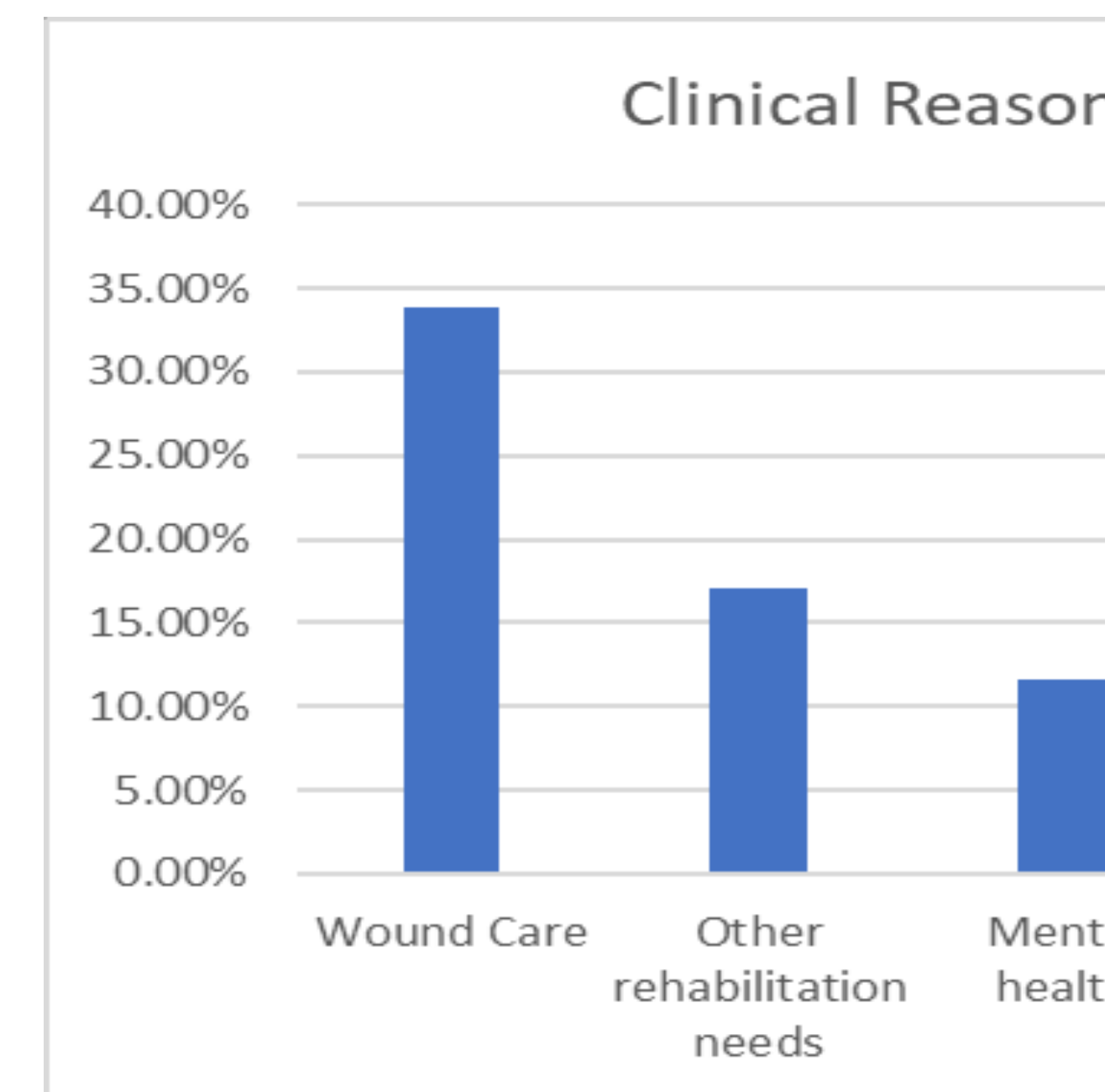
- To gather VANJHCS SCI/D clinicians' perspectives about their experiences in delivering healthcare to Veterans/Caregivers using VCT

Study Procedures

- Focus group with ten members of the VANJHCS SCI/D interdisciplinary team

RESULTS

How do the “Triangle of Healthy Caregiving for SCI Veterans” professionals use the intervention program? What are some of the reasons for using the program?



NOTABLE CLINICIAN QUOTES

POSITIVE

Travel:

- “...they have less barriers to just getting ready...They don't have to go through all those other factors related to travel and preparation.”
- “...with VVC we can do it anywhere. They can be in the mall and we can connect with them.”

Access to Care:

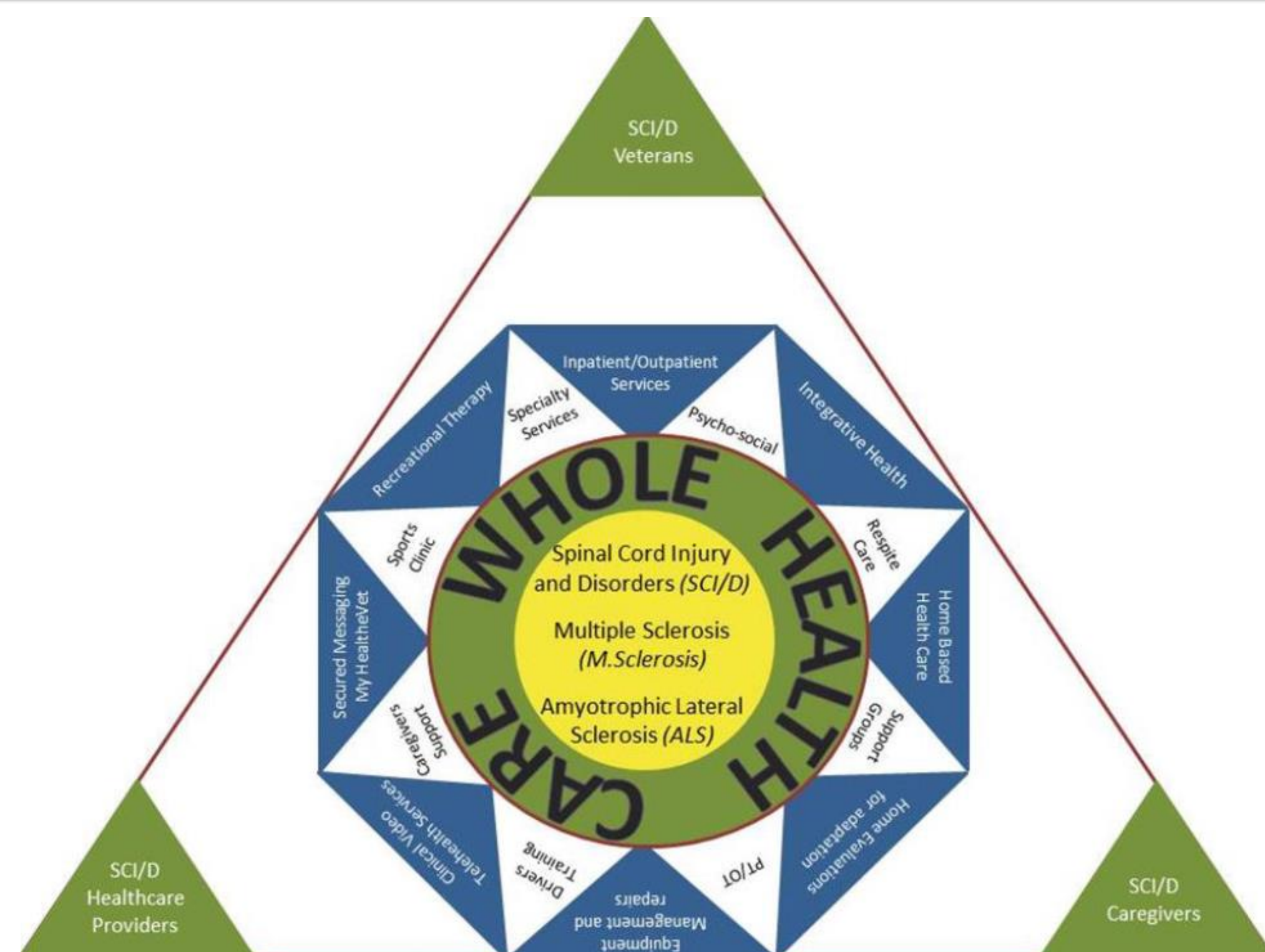
- “It's a great tool for me to assess patient's home exercise compliance, retention of knowledge, as well... I use it to if I have to advance their exercise parameters...”
- “It's also phenomenal for continuity of care.”

Convenience:

- “It's just overall less stress on the veteran.”
- “On a scale of one to five, five being outstanding or completely satisfied, we're getting a lot of fives across to board.”

RECOMMENDATIONS

Utilizing clinical virtual technologies to provide SCI Veterans is essential as we seek to improve Caregivers, while reducing the cost of travel and technology can be used for a variety of reasons above., but not all Mental health tests can be performed. We recommend increasing staff dedicated to troubleshooting, completing pre-admission visits prior to Veteran centered annual evaluation, and more efficient the lack of privacy in the homes for dependent



Proposal

Triangle of Healthy Caregiving for Veterans With Spinal Cord Injury: Proposal for a Mixed Methods Study

Carol McMara Gibson-Gill^{1,2*}, MD; Joyce Williams^{1*}, MSW; Denise Fyffe^{2,3*}, PhD

¹Veterans Administration, New Jersey Health Care System, East Orange, NJ, United States

²Department of Physical Medicine and Rehabilitation, Rutgers New Jersey Medical School, Newark, NJ, United States

³Kessler Foundation, West Orange, NJ, United States

* all authors contributed equally

Corresponding Author:

Carol McMara Gibson-Gill, MD

Veterans Administration

New Jersey Health Care System

385 Tremont Avenue

East Orange, NJ, 07018

United States

Phone: 1 9736761000 ext 1564

Email: Carol.Gibson-Gill@Va.Gov

Abstract

Background: Spinal cord injury (SCI) is a debilitating injury that results in chronic paralysis, impaired functioning, and drastically altered quality of life (QOL). The Department of Veterans Affairs (VA) estimates that approximately 450 newly injured veterans and active-duty members receive rehabilitation at VA's Spinal Cord Injury/Disorders Centers annually. VA virtual health services use technology and health informatics to provide veterans with better access and more effective care management. The "Triangle of Healthy Caregiving for SCI Veterans" is a patient-centered intervention that incorporates SCI veterans' caregivers into the VA SCI health care team and extends into the homes of veterans with SCI by using real-time clinical video teleconferencing (CVT). CVT facilitates video-clinic visits, which can include different types of clinical evaluations, therapy (physical/occupational), or psychosocial services. The "Triangle of Healthy Caregiving for SCI Veterans" builds on interactive, interdisciplinary health care relationships that exist between the veterans with SCI, their caregivers, and the VA SCI health care team. SCI veterans' propensity to multiple secondary complications makes a healthy partnership crucial for the success of keeping better health and functional outcomes as well as quality of life while living in their homes.

Objective: The goal of the proposed mixed methods project will assess SCI veterans', their caregivers', and the VA health care team's perspectives and experiences in the "Triangle of Healthy Caregiving for SCI Veterans" to determine the benefits, challenges, and outcomes for everyone involved in the intervention.

Methods: Data collection methods will be implemented over three sequential phases. First, in-depth interviews will be conducted with the telehealth coordinators to systematically document the administrative procedures involved in enrollment of veterans with SCI into the CVT system. Next, structured observation of the CVT enrollment process and logistics of home installation of the CVT system will be conducted to validate the content of the in-depth interviews and highlight any discrepancies observed. Semistructured interviews will be conducted to assess specific elements of the "Triangle of Healthy Caregiving for SCI Veterans" program, their perceived utility, and effectiveness of the CVT system as well as the general impressions of the impact of the intervention on the SCI veterans' health and function outcomes, caregiver burden, and daily caregiver burden. Finally, the research team will conduct a focus group to evaluate the ways in which the "Triangle of Healthy Caregiving for SCI Veterans" is useful for health care delivery to veterans with SCI and support services to SCI caregivers.

Results: This proposal was funded in July 2017. It was reviewed and received institutional review board approval in March 2018, and the project was started immediately after, in the same month. As of September 2019, we have completed Phases I and III and have recruited 52 subjects for Phase II. We are beginning the data analysis. The study is projected to be completed in late summer of 2020, and the expected results are to be published in the fall of 2020.

Conclusions: The findings from this study will highlight the ways in which virtual health care technologies can be used to improve access to SCI specialized care for veterans and provide an estimation of the potential impact on clinical outcomes for veterans with SCI and their caregivers.

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KEYWORDS

veterans health; spinal cord injury; telemedicine; telehealth; delivery of health care; virtual health; health services accessibility; quality of life; patient care team; caregivers

Introduction

Background

Spinal cord injury (SCI) is a devastating and disabling medical condition with significant impact on quality of life (QOL) and finances on multiple levels for wounded members of the military, their families, and the health care system [1-3]. The Department of Veterans Affairs (VA) is the single largest comprehensive health care provider for SCI in the nation [4,5]. There are approximately 44,000 veterans with SCI receiving health care at VA facilities [4,5]. In addition to requiring specialized and costly clinical health care, SCI often results in physical limitations that make assistance from others critical to maintaining health and facilitating full societal integration [6,7]. As such, the role of caregivers is increasingly being recognized as instrumental to SCI health care management. Caregivers have been identified as critical members of the SCI medical rehabilitative team, who are responsible for providing assistance, supervision, and health care to persons living with an SCI, including veterans [8-13]. Despite the presence of a caregiver, accessing SCI specialty care may be further challenged with the development of complexities evident in chronic SCI, including the effects of aging, transportation costs, or the distance to the VA hospital or outpatient services [8-10,14-17]. Therefore, methods to facilitate improved access to rehabilitative medical care are crucial.

Virtual care is the practice of delivering health care to patients separated from the provider by a physical distance by using a variety of technologies [18]. It includes using land-based telephone communications as well as more advanced technologies as follows: (1) Telehealth, which uses technology that the patients use to enter health facts (eg, their blood pressure or fingerstick blood glucose level) that get transmitted to their provider, who can then make adjustments in the management of their condition based on this information. It also provides disease-specific education to the patients based on the patient's responses to specific questions. (2) Telemedicine videoconferencing (clinical videoconference technology) permits real-time, secured, face-to-face visits between providers and patients. The patients are able to meet with individual providers or multiple members of the team simultaneously. Physical examination of the patients can be performed via some of these technologies as well as education, counseling, and other assessments. (3) Secure messaging (eg, veterans communicating securely with their health care team by email, which interfaces with their electronic medical record) [18]. All of these modalities

have specific features to help veterans and their providers access each other in a timely fashion.

Over the past 16 years, the VA New Jersey Health Care System's (VANJHCS's) Spinal Cord Injury & Disorders (SCI/D) SCI health care team (HCT) has successfully implemented veteran-centered care for the SCI/D population. This veteran-centered care views veterans and their caregivers as one system that works in partnership with the HCT. Through this partnership, described as "The Triangle of Healthy Caregiving," the HCT incorporates the use of virtual care technologies (real-time clinical video teleconferencing [CVT]) in their delivery of primary care and specialty services directly to the veteran and caregiver based on the clinical needs identified [19-21]. For the proposed project, the research team will use qualitative and quantitative data collection methods to assess the perspectives and experiences of key stakeholders involved in the intervention—veterans with SCI, their caregivers, and the VA health care team—to ascertain the benefits, challenges, and outcomes for these key stakeholders involved in the intervention.

Research Problem

Improved health care access helps prevent costly secondary conditions among people with SCI [1,22-24]. Patients with spinal cord injury require lifelong monitoring to effectively address and prevent secondary conditions while promoting stability in functionality as they age [25]. The lifetime cost of providing care to patients with SCI can range from US \$40,589 to US \$177,808 annually, depending on the level of injury and age of initial injury [24]. In fiscal year 2004, the Veterans Health Administration SCI program accounted for approximately US \$716 million in direct medical costs for 18,539 enrolled veterans (Veterans Health Administration intranet) [1]. A cross-sectional study using the National Spinal Cord Injury Statistical Center database reported that a significant proportion of persons with SCI visited a doctor for at least one medical complication at the time of their annual checkup, which does not include other medical conditions they did not have treated [26]. Utilizing telehealth technologies to provide ongoing primary and specialty health care to veterans with SCI is essential, as we seek to improve the experience of our veterans and their caregivers while reducing the cost of travel and the need for emergency care [16,25,27].

VA virtual health services use technology and health informatics to provide veterans with better access and more effective care management [27,28]. VA is improving patient-facing and clinician-facing electronic health systems by expanding the

development and use of health-related virtual modalities. These modalities include telehealth; electronic consult, where the consultant makes recommendations to the referring provider based on patient chart reviews; Secure Messaging in MyHealtheVet, which allows veterans to access their medical records, order medication refills, and communicate with their VA health care team, etc, through this secured patient portal; and mobile apps. VA is aligning virtual care technologies to create a seamless, unified experience for all VA patient-facing technologies [27,28].

Despite advances in VA virtual care technologies and growing empirical evidence about the unique relationship between veterans with SCI and their caregivers, there is a growing need to fully understand how utilizing virtual care technologies impacts the health and QOL of both veterans with SCI and their caregivers [21]. Promising results from video/telecommunication technology studies with caregivers of veterans with SCI indicated improvements in the caregivers' problem-solving skills and QOL outcomes [10,16,29,30]. To address the health care needs of veterans with SCI, support their caregivers, and provide timely access to health care providers, the VANJHCS's SCI/D Department developed the "Triangle of Healthy Caregiving for SCI Veterans" [19-21]. The "Triangle of Healthy Caregiving for SCI Veterans" is a patient-centered program that incorporates SCI Veterans' Caregivers into the VA SCI HCT and extends into the homes of Veterans with SCI using real-time CVT. CVT facilitates video-clinic visits, which include clinical evaluations, therapy (physical/occupational), and supportive services (eg, social work). The "Triangle of Healthy Caregiving for SCI Veterans" builds on interactive, interdisciplinary health care relationships that exist between the SCI veteran, their caregivers, and the VA SCI HCT. SCI veterans' propensity to develop multiple secondary complications makes a healthy partnership crucial for the success of maintaining better health, functional outcomes, and overall QOL while the veterans live in their homes. Virtual medicine technologies can help improve accessibility by veterans with SCI and their caregivers to the VA SCI HCT in order to address issues in a timely fashion, reduce inconvenience or difficulties veterans with SCI may experience in reaching the health care facility to see their SCI specialists, and provide caregivers with timely educational and support services. The direct or indirect impact of the "Triangle of Healthy Caregiving for SCI Veterans" program has not yet been determined. The goal of this study is to assess the acceptability and utilization of the "Triangle of Healthy Caregiving for SCI Veterans" program by Veterans with SCI, Caregivers, and health care teams to modify, improve, and refine it accordingly.

Specific Aims

This study aims to conduct a mixed methods descriptive study to assess the implementation process and outcomes of using CVT in the model of health care delivery that the SCI Center uses, called "Triangle of Healthy Caregiving for SCI Veterans." Mixed methods research involves integrating quantitative and qualitative approaches to generating new knowledge. Combining methods activates their complementary strengths and helps overcome their discrete weaknesses [31]. Mixed methods have the advantage of allowing us to address these aims in a manner

that is meaningful to those who are actively involved in the "Triangle of Healthy Caregiving for SCI Veterans": veterans with SCI, family caregivers, and SCI clinicians.

Aim 1

Our first aim is to evaluate the SCI veterans' experience in the "Triangle of Healthy Caregiving for SCI Veterans." Our research questions are as follows:

1. *What are SCI veterans' perceptions about the provision and ways that the "Triangle of Healthy Caregiving for SCI Veterans" program impacts the delivery of health care?*
2. *What are the benefits and challenges the veterans with SCI experienced during implementation of the "Triangle of Healthy Caregiving for SCI Veterans" program in their homes?*

Aim 2

Our second aim is to evaluate the SCI veteran caregivers' experience in the "Triangle of Healthy Caregiving for SCI Veterans." Our research questions are as follows:

1. *What are SCI veteran caregivers' perceptions about the "Triangle of Healthy Caregiving for SCI Veterans" program in management of caregiver burden?*
2. *What are the benefits and challenges that SCI veteran caregivers experienced during the implementation of the "Triangle of Healthy Caregiving for SCI Veterans" program in the homes of SCI veterans?*

Aim 3

Our third aim is to evaluate the VA HCT's experience in delivering health care and providing supportive services using the "Triangle of Healthy Caregiving for SCI Veterans." Our research questions are as follows:

1. *How do the "Triangle of Healthy Caregiving for SCI Veterans" health care professionals use the program to deliver care to Veterans with SCI?*
2. *Which elements of the "Triangle of Healthy Caregiving for SCI Veterans" work better in facilitating health care delivery? What are the key components of the program? Which components need to be revised?*

Methods

Study Design

Preliminary Studies

As a result of clinical observations and anecdotal reports, the VANJHCS's SCI Center's Outpatient Clinic identified the financial, psychosocial, and other intangible costs specific to veterans with SCI, which incurred when they come to VANJHCS for care: (1) exorbitant cost of travel to/from appointments ranges from US \$600 to US \$2000 per visit, depending on the mode of transport (ie, wheelchair coach, stretcher, and advanced cardiovascular life support transport)

and distance of veteran's residence from medical center; (2) additional trauma to the wound during transport to and from the clinic appointment; (3) increased risk of developing more wounds during transport; and (4) inconvenience and discomfort for the veteran with SCI and caregiver.

Since the year 2000, the VANJHCS' SCI Center has successfully integrated virtual care technologies to address negative factors associated with the travel to the VANJHCS SCI Center. The VANJHCS's SCI/D SCI HCT implemented veteran-centered care for the SCI/D population. The "Triangle of Healthy Caregiving for SCI Veterans" utilizes a three-pronged approach to evaluations and educational interventions:

1. *Caregiving balance*: This component of the program focuses on educating veterans on what caregiving is from a caregivers' perspective and the need for caregivers to care for themselves. Our veterans enlist in becoming caregiving partners with their caregivers, promoting a healthy relationship pattern.
2. *Caring for the caregivers*: This component educates and empowers Caregivers about ways to enhance the provision of care by learning to take care of themselves. Caregivers are also offered to participate in caregivers' conferences where they learn from groups of caregivers and health care professionals about creative techniques to care for themselves. For example, caregivers learn coping techniques (eg, memoir writing, dance, and meditation) and skills they can implement on their own.
3. *VA virtual care HCT*: Veterans with SCI and caregivers have timely access to the SCI HCT using virtual care technologies to help prevent complications of medical issues seen after SCI as well as emotional and psychological burdens that would impact them and their caregiver's capacity to provide the in home caregiving the veterans may need.

As a result of these key components, veterans with SCI report an increased understanding of what it means to be a caregiver to an SCI veteran. Our caregivers report a decreased sense of isolation and that they were implementing the coping skills they learned in their lives. Preliminary anecdotal feedback from the HCT indicate that veterans with SCI enrolled in the Home Telehealth Disease Management Protocols and the MyHealtheVet Secure Messaging platform have reported that the daily DMP sessions keep them focused on their health and wellbeing, and they learn new information through closer communications with their health care team. Veterans with SCI and caregivers reported that MyHealtheVet Secure Messaging is one of the best virtual care tools available because it is easy to use for renewing medications and messaging the SCI virtual HCT.

Key components and clinical procedures of the "Triangle of Healthy Caregiving for SCI Veterans" have been disseminated at professional conferences [19-36].

Participants

The veterans with SCI, SCI veteran caregivers, and virtual HCT will be recruited from the Spinal Cord Injury/Disorders (SCI/D) Department at the VANJHCS. The VANJHCS SCI/D

Department serves an average of 480 SCI/D veterans on their patient registry with 147 veterans with SCI and 80 caregivers using the virtual care telehealth technologies.

Data Collection

Subject Recruitment

The proposed study will receive approval from the VANJHCS Institutional Review Board. The study will collect data from three key stakeholders involved in the "Triangle of Healthy Caregiving for SCI Veterans" model of care who use CVT as part of the delivery of health care: veterans with SCI, SCI Veterans' caregivers, and SCI virtual health care professionals (including telehealth coordinators). We will use purposive sampling to recruit a sample of veterans with SCI and caregivers who are newly referred and currently active or inactive users of CVT in the "Triangle of Healthy Caregiving for SCI Veterans" model of care. Purposeful sampling is a technique widely used in qualitative research that involves identifying participants that are especially knowledgeable about or experienced with a phenomenon [37].

Saturation is the point at which only minimal new information is gained from each new interview [38-40]. Data saturation has become the gold standard by which purposive sample sizes are determined in qualitative research [38-40]. The sample sizes proposed for each study phase described below are based on minimum sample size recommendations for common qualitative study designs [41]. Further, our sampling strategy will be flexible, evolving as the study progresses through the study phases until the point of redundancy in emerging themes is reached to meet the purposes of the study.

Veterans With Spinal Cord Injury

All veterans with SCI who receive clinical care at the VANJHCS are screened for enrollment on virtual care technologies as part of the "Triangle of Healthy Caregiving for SCI Veterans" program. However, based on the clinical experience of our research team, veterans with SCI at VANJHCS who are homebound, newly injured, affected by acute secondary complications (eg, pressure ulcer), and live in rural areas that are significant distance from the VANJHCS are more likely to enroll. There are currently 147 veterans with SCI actively using CVT in their homes. For the purposes of the study, we will recruit and enroll veterans with SCI based on the VANJHCS SCI/D clinical practice protocol. The inclusion criteria for the proposed study will include any veteran with SCI who is potentially or currently enrolled in the "Triangle of Healthy Caregiving for SCI Veterans" program. Veterans with SCI will be ineligible for entry into the study if any of the following exclusionary criteria are present: moderate to severe cognitive impairment or no ongoing landline or cell phone access.

Spinal Cord Injury Veterans' Caregivers

We will recruit caregivers of veterans with SCI at the VANJHCS who are potentially or currently enrolled in the "Triangle of Healthy Caregiving for SCI Veterans" program. There are currently 80 caregivers actively involved in the program. We will recruit a sample of 25-30 SCI veteran family caregivers who have provided care on a daily basis for at least 6 months

to veterans with SCI and, preferably, these family members identify as the “primary” caregivers.

Telehealth Coordinators

We will conduct in-depth interviews with the two telehealth coordinators using an interview guide focused on existing structure and practices related to preparation and implementation of CVT in the homes of veterans with SCI who are enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program.

Spinal Cord Injury Virtual Care Clinical Team

Clinicians’ perceptions are important because they may affect patient-provider relationships, the course, and the outcome of treatment. Clinicians have knowledge of the medical and functional consequences of SCI and experience providing training to veterans with SCI and their family caregivers to plan for adjusting to home life and community reintegration. The

SCI virtual health care team includes the following professional staff: physicians, advanced nurse practitioners, nurses, therapists (ie, occupational, physical, and recreation), social workers, psychologists, nutritionists, and clergy. We will recruit 8-10 VANJHCS SCI clinicians who are currently treating veterans with SCI and supporting their caregivers enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program to participate in one focus group.

Data Collection Methods

Data collection methods will be implemented over three phases of sequential qualitative and quantitative data collection outlined in [Table 1](#). Results from each phase will be analyzed separately and then merged to inform the content of the subsequent phases as well as a set of recommendations for the “Triangle of Healthy Caregiving for SCI Veterans” to the VA National Office of Telehealth and the National SCI/D Systems of Care office.

Table 1. Data collection methods, purpose, and products.

Phase	Data collection methods	Purpose	Products
I	• In-depth interviews	• Conduct 2 in-depth interviews with the telehealth coordinators for the SCI ^a	• Description of the enrollment and home installation process
	• Observations of SCI Veterans’ enrollment and home installation	• Conduct 15-20 observations of the patient enrollment and home installation of equipment/devices	• Observation data of the enrollment and installation process
II	• Semistructured interviews	<ul style="list-style-type: none"> • Conduct 35-40 semistructured interviews with veterans with SCI enrolled in the “Triangle of Health Caregiving for SCI Veterans” program • Conduct 25-30 semistructured interviews with caregivers of veterans with SCI enrolled in the “Triangle of Healthy Caregiving for SCI Veterans” program 	• Qualitative data (semistructured interview transcripts, field notes)
III	• Focus groups	• Conduct one focus group with virtual health care team professionals	• Focus group findings about the delivery of health care to veterans with SCI, education, and support to their caregivers

^aSCI: spinal cord injury.

Phase I: Enrollment and Installation of Equipment/Devices

We will use two qualitative data sources to assess the processes and logistics of enrollment in the program and the installation of CVT capability (equipment/devices/software) in SCI veterans’ homes: in-depth interviews and observations. In-depth interviews are one of the most common qualitative methods. In-depth interviews are open-ended interviews and enable respondents to discuss their point of view using their own language related to a topic with no predetermined list of responses. Structured observation of the CVT enrollment process and logistics of home installation of the CVT system will be conducted to validate the content of the in-depth interviews and highlight any discrepancies observed. Documentation data will consist of field notes that will be electronically recorded in Research Electronic Data Capture (REDCap) [42] (see Data Management System description below). The field notes will account for key events that took place during CVT enrollment

and the home installation process and how the veteran with SCI or caregiver behaved or reacted in the interaction with the telehealth coordinator that services patients with SCI at VANJHCS.

In-Depth Interviews With Telehealth Coordinators

We will conduct two in-depth interviews with telehealth coordinators to systematically document the administrative procedures involved in the enrollment of veterans with SCI into the CVT system. For example, the research team will ask administrative technicians to describe the ways in which description of CVT and various modalities and explanation of CVT installation/equipment in the home are discussed with veterans with SCI, and logistics of the delivery of CVT material and equipment will be reviewed. Additionally, the research team will assess the types of real-time problems of delivering health care to the veterans with SCI from the administrative technicians’ perspectives. They will summarize and review the information gathered from the interviews. The research team will use these data to develop observations forms to be used in

the observations of the veterans' enrollment and CVT equipment/device installation in their homes.

Observations of Enrollments and Equipment/Device Installation

Direct observation will be performed of SCI veterans' enrollment in the CVT program during consultations with the telehealth coordinators. The goal of this observation is to validate the information gathered from the in-depth interviews with the telehealth coordinators. Enrollment observations will record a face-to-face consultation with veterans with SCI (and caregiver) that was newly referred to the "Triangle of Healthy Caregiving for SCI Veterans" with the CVT administrative technician. The goal of the consultation is to provide veterans with SCI a description of CVT and various modalities, explanation of CVT installation/equipment in the home, and logistics of the delivery of CVT material and equipment and to obtain patient signatures (eg, commitment to ensure privacy during clinical visits, liability waiver, and protection of equipment the VA may give them).

Home observations of the installation process and utilization of the virtual care equipment in a sample of veterans with SCI households will provide the research team a context for the CVT installation process. The research team will take observation field notes to document the practicalities of CVT use in the home and any difficulties associated with home installation and usage. The observations will assess the length of installation

time, the questions or concerns mentioned by the SCI veteran or caregiver during the installation, problems encountered by the CVT technicians during installation, and problems encountered during the testing of the CVT modalities (eg, accuracy of medical devices and display of educational modules).

Phase II: Semistructured Interviews

Semistructured interviews will be conducted to assess specific elements of the "Triangle of Healthy Caregiving for SCI Veterans" program, their perceived utility, and the effectiveness of the CVT system as well as general impressions of the impact of the intervention on the SCI veterans' health and functioning outcomes (caregiver burden and daily caregiver burden). The semistructured interviews will include open-ended questions, closed-ended questions, and outcome measures. One-on-one interviews (in-person or via virtual care technology) with veterans with SCI (n=35-40) and their caregivers (n=25-30) will be conducted to capture SCI veterans' and caregivers' perceptions (including benefits and challenges) and experiences of participating in the "Triangle of Healthy Caregiving for SCI Veterans" program by using CVT. After consent is obtained, the research assistant will contact participants to complete a demographic questionnaire and health, function, and community participation outcome measures (Table 2). Upon completion of the outcome measures and semistructured interviews, participants will be compensated for their time.

Table 2. Outcome measures of veterans with spinal cord injury and caregivers.

Measures/scale	Outcome	Administration time (minutes)
Veterans' outcome measures		
Spinal Cord Injury Functional Index Short Forms (Jette et al 2012 [43]; Heineman et al 2014 [44])	Will ask persons with SCI ^a to relate their perceived ability to complete function activities in four domains: wheel chair mobility, self-care, fine-motor function, and basic mobility	~5
Veterans RAND 12-Item Health Survey (Selim et al 2008 [45])	Will assess quality of life thorough eight domains including physical functioning, vitality, role limitations due to physical problems, role limitations due to emotional problems, bodily pain, general health, social functioning, and mental health	<5
Craig Handicap Assessment and Reporting Technique Short Form (Whiteneck 2011 [46])	Assess participation in society and subscales measuring physical independence, cognitive independence, mobility, occupation, social integration, and economic self-sufficiency	
Caregivers' outcome measures		
Caregiver Appraisal Scale (Lawton et al 1989 [47])	Measure caregiving satisfaction, perceived caregiving impact, caregiving mastery, caregiving ideology, and subjective caregiving burden	~15
Caregiver Burden Scale (Elmstahl et al 1996 [48])	Assess amount of burden caregivers feel using five categories including general strain, isolation, disappointment, emotional involvement, and environmental strain	~10

^aSCI: spinal cord injury.

A semistructured interview guide will be developed based on previous literature and findings of Phase I of this project. The interview will ask participants to express their perceptions and experiences with the "Triangle of Healthy Caregiving for SCI Veterans" program by using CVT. These interviews will give the research team the opportunity to further explore the topics that were of greatest interest and concern based on the

observations in Phase I of the study. To ensure data quality, interviews will be audiotaped and transcribed. After the interview is completed, the research coordinator and research assistant will summarize their notes and review the results with the research team. Spot checks of the transcripts comparing them with the audiotapes will be performed to ensure accuracy of the transcripts.

Phase III: Spinal Cord Injury Virtual Medicine Clinician Focus Group

We will conduct a focus group to evaluate the ways in which the “Triangle of Healthy Caregiving for SCI Veterans” is useful in health care delivery to veterans with SCI and support services to SCI caregivers. A sample of approximately 8-10 SCI virtual care clinicians will participate in 90-minute focus groups to derive a meaningful understanding of the ways in which CVT can provide health care to veterans with SCI and support to their caregivers. Focus groups capitalize on group interaction to produce data and insights that might be less accessible without interaction among individuals with common experiences [49,50]. The SCI virtual health care team includes the following professional staff: physicians, nurses, therapists (ie, occupational, physical, and recreation), nurse practitioners, social workers, psychologists, nutritionists, and clergy. The focus group discussion will ask clinicians to describe some of the key positive outcomes/results that have occurred in terms of patient care as a result of the introduction of the “Triangle of Healthy Caregiving for SCI Veterans” program and use of CVT (eg, cost savings, clinical effectiveness, and quality of life).

Focus groups are an efficient way to collect data from several people simultaneously, and they explicitly use group interaction as part of the method [49,50]. Focus groups will allow us to elucidate clinicians’ shared experiences and challenges of providing health care to veterans with SCI and support to veterans with SCI using the CVT technology in the “Triangle of Healthy Caregiving for SCI Veterans” program. The research coordinator or research assistant will take field notes on a structured data-recording sheet based on the focus group script/interview guide. The focus group will be recorded with a password-enabled digital recorder, and the recordings will be transferred to the secure VA network for transcription. The research team will debrief immediately after the focus group to share their impressions, critical points, and notable quotes.

Data Management System

We will utilize the VA Information Resource Center’s REDCap electronic data capture tool hosted by the VA Information Resource Center to store and manage the qualitative and quantitative data from each phase of the study [42]. REDCap is a secure Web app for building and managing online surveys and databases and permits data collection via a Web browser either locally or from remote locations. The NVivo (version 12; QSR International Pty Ltd, Melbourne, Australia) software supports mixed methods research to help research teams organize, analyze, and identify insights in unstructured or qualitative data and integrate quantitative data. NVivo also facilitates the export of demographic and qualitative data into quantitative analysis tools like SPSS (IBM Corp, Armonk, New York), which will be used for the quantitative analyses. The research team will integrate the qualitative and quantitative data.

Data Analysis

Qualitative Analyses

Qualitative data analyses will be guided by the Consolidated Framework for Implementation Research [51,52] using

intervention-specific codes that will be developed throughout Phases I, II, and III by using a constant comparison analytic approach [53]. The research team will construct a preliminary codebook both deductively and inductively from the qualitative data and previous literature. Potential codes may include impact on patient health and functional outcomes, impact on health care utilization, reimbursement issues, CVT utility, and communication with health care team members. These codes will be applied using NVivo to develop an initial set of themes. The codebook will be elaborated upon and adjusted as the results of each phase of the study are reviewed, until thematic saturation is achieved within and across each phase of the study. Additional sources of qualitative data (eg, field notes) will be included in the dataset. The research team will summarize the data coded to the themes that will be independently reviewed by each member of the research team, discussed to derive consensus, and synthesized for each research question.

Quantitative Analyses

In addition to identifying themes and patterns qualitatively, we will examine the health and functional outcomes observed among veterans with SCI and caregivers in terms of the outcome data (aim 1 and 2) and coded qualitative data. We will explore descriptive data from Phases I to III using descriptive statistics (eg, means, SDs, percentiles, and ranges) and graphical techniques (eg, histograms and scatter plots) to characterize participant groups on key aspects (eg, working status).

Standard outcome measure scores will be generated by normative data. Separate analyses will be conducted for SCI veterans’ and caregivers’ outcome scores using analysis of covariance, with age and education as covariates. Once the qualitative data have been coded, more complex statistical analyses can be employed through the transformation of coded data into theoretically meaningful units of measure, as previously outlined [31,54,55]. This will allow examination of the differences between strategy utilization and health, function, and community participation outcomes.

Integrating Findings: Practice Recommendations

To design a useful set of practice recommendations, we will analyze results from each study phase separately and compare and merge the results across the quantitative and qualitative data sources. Qualitative and quantitative data will be triangulated. Triangulation is a methodological approach that contributes to the validity and reliability of integration when both qualitative and quantitative data collection methods are employed [56,57]. Triangulation will allow us to compare, contrast, and integrate the results from observations, interviews, focus group, and outcome measures. Triangulation from these three sources will also allow us to ensure the results are confirmed across data sources and identify data that are uniquely provided by different data sources. This is a side-by-side comparative analysis of the qualitative data and outcome scores to validate the findings across both sources of data collection.

Using the themes generated from the triangulated data, the research team will identify the most frequently cited factors (ie, benefits and challenges) that are important to key stakeholders in the “Triangle of Healthy Caregiving for SCI Veterans,” which

are mentioned by more than one data source and across samples of participants—a process known as “group-to-group validation.” [50]. We will apply similar review methods to the differential patterns in the outcome measures. The research team will hold bimonthly consensus meetings to evaluate aspects of the most frequently cited benefits and challenges generated from the data based on the importance across the samples and modifiability of factors. After identifying factors that are both important and modifiable, the research team will prepare a summary of consumer-informed recommendations for the “Triangle of Healthy Caregiving for SCI Veterans” for the VA National Office of Telehealth and the national SCI/D Systems of Care office.

Results

This proposal was funded in July 2017. It was reviewed and received institutional review board approval in March 2018, and the project was started immediately after, in the same month. As of September 2019, we have completed Phases I and III and have recruited 52 subjects for Phase II. We are beginning the

data analysis. The study is projected to be completed in late summer of 2020, and the expected results are to be published in the fall of 2020.

Discussion

SCI is a devastating, disabling medical condition with significant impact on quality of life and is very costly for patients, their families, and the health care system. Increasing access to specialized care can be paramount in preventing and managing the sequelae of SCI. Increasing the use and benefit of virtual care technologies in health care delivery have been noted, and the benefits of these technologies can also be seen when delivering care to people living with SCI. This study will help us understand the benefits, challenges, and outcomes of using virtual care technologies in health care delivery to veterans living with SCI by learning directly from veterans, their caregivers, and their health care team who have virtual health care integrated in the model of care. This information can also be expanded beyond the veteran population to potentially benefit all people living with SCI.

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Conflicts of Interest

None declared.

Multimedia Appendix 1

Peer-reviewer report.

[\[PDF File \(Adobe PDF File\), 115 KB-Multimedia Appendix 1\]](#)

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Abbreviations

CVT: clinical video teleconferencing
HCT: health care team
REDCap: Research Electronic Data Capture
SCI: spinal cord injury
SCI/D: Spinal Cord Injury/Disorders
QOL: quality of life
VA: Veterans Affairs
VANJHCS: Veterans Affairs New Jersey Health Care System

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