Assistive Technology
AT

PM&R Assistive Technology Programs

Inside this issue:

Accessing MyHealtheVet... A Team Effort

A Veteran and his Richmond SCI team found different ways he could utilize Sip and Puff technology to manage his care from home. Betty Rogers is his home care RN and has seen him evolve over time and has always encouraged him to try to be more independent. At first the patient was not too enthusiastic about learning new skills and was just trying to get acclimated to his new reality....he had a new caregiver and lots of new skills to learn, and he just was not ready to open the door to anything new and unfamiliar.

Well, Ms. Rogers is nothing but persistent and she eventually won him over and convinced him to sign up for MyHealtheVet. Once he was registered with a Premium account, Melodie Anderson, SCI Telehealth coordinator, set up a telehealth visit so the MyHealtheVet Coordinator, Gwen McMillian, could assist with navigation....there was only one issue...the Veteran's Sip and Puff technology made his portal look very different from what Mrs. McMillian was familiar with in the MHV office. It displayed differently than anything seen before on a mobile device, or desktop and they had difficulty trying to figure out how to "Enter" using the Sip and Puff. She could find the my way around with a bit of practice, but couldn't select "Enter" so we could move forward. There was no mouse or any keys to utilize, so she decided she needed to call in the big guns to help us.

Enter Melissa Oliver and Seth Hills our Richmond Assistive Technology guru's! They helped Veteran learn how to "Enter" using the adaptive technologies...so now they were off to the races! Since then, Veteran has learned how to refill his own prescriptions and has even sent us a Secure Message. Becoming comfortable with the MHV portal has given him the confidence to try even more technology and he has since learned how to FaceTime his family as well. He was even willing to be our *first eve*r Home Care SCI patient to participate in Video Interdisciplinary Team Meeting where he meets with many of his providers via VA Video Connect (VVC) so he does not need to come into the facility. Ms. Anderson utilized secure messaging to follow up after his VVC visit to ensure all of his questions and concerns were met, and he is learning how to tie all technology that the VA offers together.

The change in the Veteran has been remarkable and he really has learned how to spread his wings to soar! It's amazing that utilizing technology has opened up his entire world....from learning how to send a Secure Message he is now keeping in touch with more family and receptive to learning even more. We are so very proud of him and would love to share his story in hopes of encouraging another Veteran or MHV coordinator.

Gwen McMillian, Betty Rogers, RN, and Melodie Anderson

AT PRODUCT REVIEW: Rio Mobility- Firefly, full power hand cycle

By: Erin Brandon, DPT and Katherine Kapus, OTR/L

Overview

The Firefly Electric attachable handcycle converts a manual wheelchair into a three wheel powered scooter. The attachment has a 350W brushless electric motor with disc and V-brakes that allows both forward and reverse directions and can reach a top speed of 12 mph. It comes with a removable light weight lithium ion battery that lasts up to 15 miles on a single charge.

Indications

The Firefly electric handcycle is intended to increase ease with mobility while in a manual wheelchair by providing power assistance. It is indicated for individuals that have difficulty with mobility secondary to upper extremity and/or shoulder deficits and decreased endurance.

Wheelchair requirements are as follows:

- Seat width between 14" and 22"
- Frame tube diameter must be either:
  ◊ 22.2 mm/ 7/8 inch, 25.4mm/ 1 inch, 28.6mm/ 1.125inch
  ◊ 30.5 mm/ 1.2inch, or 31.8mm/ 1.25 inch
  ◊ If you do not know the diameter of the tubing the company offers a ruler cut out that can be wrapped around the tubing to measure width.
- Anti-tips must be installed on the wheelchair to avoid tipping backwards when attaching and detaching the handcycle
- Seat belt is strongly recommended
- Must have Wheel Locks installed
- Combined wheelchair and user weight must be less than 280 lbs.

Contraindications

This device is not intended for exclusive mobility nor for competition purposes (including stunt riding, jumping, or other similar activities). The user should not carry anything that obstructs their view or interferes with the handle bar operation. It is also not intended for children.

Criteria for Evaluation of Assistive Technology Device

{Using the factors listed below, explain how the specific product meets or does not meet the specific headings. Refer to Batavia and Hammer1 for a description of each category attached under Categories on the main AT Evaluation Page.}

Affordability:

The cost of the Firefly electric scooter attachment is $2395. The cost of the battery is $395. Shipping costs for this device is $45 within the USA, $95 to Canada and Mexico, and $225 to all other locations.

Compatibility:

The Firefly electric handcycle is compatible with most manual wheelchairs without the need for special adapters. The website outlines which wheelchairs are compatible.

Consumer Repairability:

All bolts must be tightened using a torque limiter wrench (included in packaging). The torque required is 12 Newton Meter (Nm). Check and tighten hardware initially and then on a weekly basis. The company recommends inspecting the brake pad wear every 6 months. Rio Mobility recommends cleaning the handcycle with a damp cloth and avoid spraying with water or using detergents.

Rio Mobility warrants the Firefly for one year from the date of initial consumer purchase. The warranty covers any defects in materials and workmanship. The company also warrants the lithium ion battery for three months from the date of initial purchase. They also offer users the ability to buy additional lithium batteries through their website.

Dependability:

Attaches with quick-release ball and socket "quick dock" and can be taken on and off within 4 steps. Takes practice to line up and attach. Offers separate forward and reverse thumb throttles.

Durability:

The Firefly attachment has an aluminum frame and will come apart without tools for transport and storage. The device will run up to 15 miles on a single charge. The Firefly is water resistant, not water proof. Rio Mobility recommends covering the battery and controller with a plastic bag if caught in the rain. Rio Mobility recommends adhering to the following checklist to ensure safety and longevity of the device:

Safety Checklist

- Helmet and seat belt are recommended
- Always engage the Wheel Locks on your wheelchair before attaching and detaching the handcycle
- Always check to make sure that your latches are fully engaged before operating your handcycle
- Check to make sure all nuts and bolts are tight and all latches are secured
- Make sure the hand brakes work properly before riding
- Do not add any parts or accessories not authorized by Rio Mobility to your handcycle, this could be unsafe and you will void the warranty

Ease of Assembly:

Website reports installation takes 30 minutes to one hour and offers a YouTube video with step-by-step instructions on how to assemble. Product comes with a lightweight removable lithium battery for easy storage and charging by the user. It also is fully adjustable for optimal fit and easily removable so the user can install or remove the device independently in most cases.

Ease of Maintenance:

Maintenance-Free Electric Motor. The firefly device is made up of a sealed and maintenance free brushless electric hub motor that does not need to be maintained or cleaned. The device is easily wiped down between uses. Lastly, the unit comes with an allen wrench that provides quick tightening of all bolts on the system should any work themselves loose to ensure a well maintained system for years of reliable service.

Full details of maintenance required for device can be found in page 3 of the user manual, including a time frame for when areas need to be maintained, charged, or cleaned.

AT PRODUCT REVIEW: Rio Mobility- Firefly, cont.

Effectiveness:

The use of this powered add on to an end-users ability to access community environments and distances from their manual wheelchair is extremely effective. Although it does add to the turning radius of the chair's profile, it provides energy conservation and all terrain access across a variety of surfaces that would otherwise not be available to someone in a manual wheelchair alone.

Flexibility:

The Firefly unit is flexible in its versatility with a wide variety of manual wheelchair models and set ups in order to accommodate a wide variety of patients. It has an easy to control lever and switch system and can be set up at varying heights for ergonomic access to the equipment. However, the unit does not allow for flexibility within the programming of the controls or right vs left hand access and comes as a fully assembled unit.

Learnability:

This device, once installed properly, is very easy to learn. The mounting latches and control interface are both straightforward requiring only initial training with the end user of no more than 30 minutes. The owner's manual has recommendations for turning, navigating inclines/declines, and small curbs, for safe use.

Operability:

The controls are easy to understand and operate with a variety of available hand functions and are quick to respond for ease of use.

Personal Acceptability:

The device is rugged and well made, providing a sleek aesthetically pleasing look for the user to enjoy a wide variety of outdoor activities with confidence.

Physical Comfort:

The advantage of the Firefly device is the ease in which a user can access outdoor

environments of varying terrains, conserve energy, and preserve shoulder function compared to traditional manual wheelchair propulsion. The disadvantage of the Firefly is the weight for loading and unloading the device and setting it up on the chair. If the user has compromised trunk control or bilateral upper extremity strength, this device may be difficult to load into a vehicle or set up on their chair independently due to it's weight of 24 lbs.

Portability:

The device can be detached and stored in the trunk of any sedan or vehicle of larger size without difficulty. The device can be broken down into parts by removing the battery if needed to decrease weight when lifting for storage. Per the riomobility.com website, the specifications are below:

SPECIFICATIONS (see website for details).

Securability:

Although the device is easily removed from the user's chair, it does require specific mounting hardware making it difficult for someone to steal and use.

Supplier Repairability:

It is unclear if local repair companies would be able to repair this item. The website and company suggests shipping it back to their facility in California, however, were not clear on the expected turn around time. The company suggests the user keeps the shipping packaging in case such a need arises.

1	2	3	4	5
Not satisfied at all	Not very satisfied	More or less satisfied	Quite Satisfied	Very Satisfied
	Category		Score	
	Affordability		4	
	Compatibility		4	
	Consumer Repairability		4	
	Dependability		3	
	Durability		4	
	Ease of Assembly		3	
	Ease of Maintenance		4	
	Effectiveness		4	
	Flexibility		4	
	Learnability		5	
	Operability		4	
	Personal acceptability		4	
	Physical Comfort		4	
	Physical Security		4	
	Portability		3	
	Securability		3	
	Supplier Repairability		3	
	Average		3.76	

AT PRODUCT REVIEW: Pictello by AssistiveWare

By: Ryan Curfman, SLP Graduate Clinician
Telina Caudill, MS, CCC-SLP, ATP

Overview:

Pictello is an iOS application that allows users to create a talking photo album via a series of pictures or videos with digitized recordings and text labels. This allows communication of complex information and ideas, aiding those with speech, language, or cognitive impairments in sharing or reviewing their experiences, plans, and more.

Indications:

Those that have difficulty in communicating or remembering stories, memories, schedules, or events. Primary populations include ASD, dementia, cerebral palsy, down syndrome, selective mutism, TBI, ALS, people with Aphasia, or anyone with significant barriers to vocal communication.   Ideal users should be familiar with iOS devices and either have UE function for touchscreen use or have switch access that is being used for communication.

Contraindications:

Severe visual impairments that would impact using the onscreen display/keyboard. Language/literacy impairments impacting ability to follow instructions or create messages. Physical impairments including tremor or paresis (if not using switch access). Those that are inexperienced with iOS devices or uninterested in creating a series of pictures with audio to create a story.

Criteria for Evaluation of Assistive Technology Device

Affordability:

Pictello is an iOS application available on Apple's App Store for $19.99. There is no free or "light" version available.

Compatibility:

At this point, the application is only accessible on devices that use iOS, as is the case with all AssistiveWare products. There is no current indication that the product will be available on Windows or Android devices in the future.

Consumer Repairability:

In the event that the iPad or iPhone needs to be repaired, users will typically require a professional to fix their device. If experiencing issues within the app, it would likely be resolved by quitting and reopening the app, restarting the device, checking for app updates, or directly emailing the customer support team.

Dependability:

It is this writer's experience that the application has been very dependable and reliable. No issues, glitches, or crashing have been experienced.

Durability:

iPads and iPhones are somewhat durable, with the primary concern being protecting the glass screen. It would be suggested to utilize some type of protective case on the device to prevent any damage that would inhibit access.

Ease of Assembly:

Some assistance may be required in setup of the device that will hold the application, including an Apple ID username, password, and internet connection. Once the device is ready, the app is simply downloaded from the AppStore and is ready to use once opened.

Ease of Maintenance:

Maintenance is dependent upon which device is being used - either iPad or iPhone. Occasional updates may need to be downloaded to have the most current version of the software.

Effectiveness:

The app is functional and effective in doing what it claims, which is creating "talking" visual stories. It enhances communication via being able to independently share a story with pictures and voiceover, much like we do in everyday life.

Flexibility:

Pictello does not have any additional or alternative versions, but it does use Acapela Group's synthetic voice software, in which users can choose between many different voices, or use their own. Over 130 different text-to-speech voices in almost 30 languages are available for download (full feature voices are available in English, Spanish, French, Dutch, German, and Italian). If a user wants to record their own voice, choose record and it will access your device's microphone to record whatever message you would like for the picture. It also allows alternative access to utilize switch control. Different viewing modes are available to use on any created story in which stories can progress manually or automatically for physical impairment.

Learnability:

This is an app that can be mastered quickly given some familiarity with other iOS apps or computer programs like PowerPoint. It's limited "depth" allows users to navigate with ease due to a limited number of options.

AT PRODUCT REVIEW: Speech Assistant AAC App, cont.

Operability:

Pictello is easy to use and reviewers have had positive experiences with it according to AppStore reviews. It's two-layer interface is either in the library accessing which story to choose, or within a pre-made story or new story. Once within a story, the question symbol at the top right corner provides help with editing tasks. You begin by creating your story with a title and cover picture with voice label. Add as many pictures with audio as you desire for your story; when finished, choose "done" and it will save to the library. Within the library you can delete, edit, move, cut, copy, and share any story. To change settings, select the cog at the bottom left when in the library. This opens in-app volume control, voice manager for rate of speech and pronunciation, speak-as you-type, and a host of playback options including slide show settings (timing, transitions), text highlighting (literacy aid), image auto-scaling, and tap/swipe gesture options. Stories can be organized into folders like a computer desktop. Settings can be saved with login information, which can be used to share across devices. An 8 digit "story code" can be used to download and share any story to another device with Pictello**.**

Personal Acceptability:

Given the sleekness and popularity of using iPads and iPhones, it is very acceptable to utilize these in pubic during everyday activities. This app would be used with someone who has difficulty verbally communicating stories or events, so it would likely be used to communicate with people of whom he/she would be comfortable enough with to explain a sequence of events to; it could be in a public setting, but would likely be used with friends, family, or in support groups. If the user is already comfortable and accepting of using text-to-speech apps for communication needs, using Pictello should be a natural transition.

Physical Comfort:

There should be no physical discomfort in using this application unless the user experiences physical pain while using the touchscreen on their device for other tasks.

Portability:

The ability for this app to be portable for daily use depends on the device to which it is paired to. iPads and iPhones are both very portable and can be used with or without mounts as needed.

Securability: No specific security is available for accessing Pictello once on the unlocked iOS device. Securing the iPhone or iPad with a password would be the primary security available. It is possible that an Apple tablet or phone could easily be stolen if left unsupervised. Registering the device to be tracked with other iOS devices would be recommended if possible.

Supplier Repairability:

AssistiveWare provides a link for email support if experiencing issues with the application, as well as another link to the website to access the user manual and additional tips. Hardware repairability will be dependent on which iOS device is being used.

1	2	3	4	5
Not satisfied at all	Not very satisfied	More or less satis-	Quite Satisfied	Very Satisfied
	Category		Score	
	Affordablitity		4	
	Compatibility		3	
	Consumer Repairability		5	
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	Durability		5	
	Ease of Assembly		5	
	Ease of Maintenance		5	
	Effectiveness		5	
	Flexibility		4	
	Learnability		5	
	Operability		4	
	Personal acceptability		5	
	Physical Comfort		5	
	Physical Security		5	
	Portability		5	
	Securability		4	
	Supplier Repairability		3	
	Average		4.5	

Site Updates…San Antonio

New on Board

Evie Ehret served in the Marine Corps for six years. She graduated from the University of Saint Augustine in San Marcos, CA with a MOT in 2015. She worked at the Central Alabama VA in their outpatient Occupational Therapy clinic in 2016 and transferred to the AT/Wheeled Mobility Clinic at the San Antonio, TX VA in July 2019. She received her ATP credentials in Oct 2017.

Tav Green earned his OT degree from San Jose State University in 2000. His experience in wheeled mobility started while working with the SCI Team at Kaiser Foundation Rehabilitation Center from 2001-2017. Tav worked as a Regional Manager and Rehabilitation Product Specialist for Quantum Rehabilitation and Stealth Products until joining the AT/Wheeled Mobility team at the San Antonio, TX VA in April 2019. Tav earned his ATP credentials a number of years ago.

Nicole Palmer (Barnes) graduated from Richard Stockton University in New Jersey in 2015 with a B.S. in Speech-Language Pathology and an M.S. M.S. in Speech-Language Pathology from the University of North Texas in 2017. She trained as a graduate student at the Dallas VAMC where she began working with assistive technology, specifically AAC devices with ALS patients. She completed her fellowship at Audie L. Murphy VA Hospital in San Antonio and transitioned to become a full-time employee in 2018. Nicole has just joined us in our outpatient AT Lab.

New on Space

Effective November 2019, the Polytrauma Center will have new dedicated space for a formal AT Lab where AT evaluation and trialing can take place. This will serve both the inpatient and outpt population.

More Cool Stuff

Alternative drive control systems are being uses as a tool to determine signs of emergence for Emerging Conscious patients. One of the criteria for emergence form Minimally Conscious Sate, is consistent volitional motoric control and applying those actions to a task or level of engagement. Some patients do not have this level of control due to neuro-physical impairment and not necessarily a cognitive impairment. To meet the Motor Function Scale's - Functional Object Use the patient must demonstrate functional use (understood, intentional, accurate) of 2 objects. Incorporating adaptive/alternative controls on a power wheel chair allows the therapist to tap into the patient's minimally controlled movements and pair them with adaptive switch controls (like proximity switches) to create a desired volitional effect (i.e.: moving the PWC forward and turning) and establish cause/effect relationships such as "go" and "stop". This has proven to more motivating that using switches to merely turn other devices on or off.

New areas of Intervention

The San Antonio VA is collaborating with the Biomedical Engineering Department at the University of Texas in San Antonio through, The Quality of Life Plus Program. This is an effort to engage biomedical engineering students in providing an innovative, individualized, design product to assist veterans with hand tremors. The main focus is improving use of hand tools and self-feeding/drinking from a mug.

Tav Green and Evie Ehret

Site Updates…Tampa

OUTREACH

♦ Bay Pines E-consults - 1

♦ West Palm Beach E-consults – 1

♦ Miami E-consults – 1

♦ Orlando E-consults – 1

♦ New Orleans E-consults – 2

♦ Participated in the annual SCI Fair

♦ Provided AT in-services to the Psychology department and Primary Care (Gold Team)

♦ Participated in a multi-disciplinary conference call with San Antonio staff for a Q&A session on AT for poly-trauma and ALS

♦ Ursula and the AT program were highlighted in Borne The Battle #157 podcast

PRESENTATIONS

♦ Telina Caudill, Jenifer Juengling-Sudkamp (New Orleans) and Ellen Cohn (University of Pittsburgh) will be co-presenting on Tele-AAC for Veterans with ALS and Movement Disorders at the American Speech-Language and Hearing Association (ASHA) Convention in Orlando, FL in November

TELEHEALTH

♦ Telehealth to home visits for FY 2019 to date total 159

CURRENT PROJECTS AND PERFORMANCE IMPROVEMENT

♦ Ongoing additions to the AT YouTube playlist training resource library; now totaling 22

♦ Ongoing preparations for our 4th CARF Survey Spring 2020

♦ AT Mentoring with New Orleans

Site Updates…Minneapolis

Staffing Changes:

The PM&R AT Program in Minneapolis is undergoing a comprehensive systems reorganization after significant staffing changes in early 2019 with the departure of its director, Dr. Brian Fay. Ben Barrett, OTR/L, ATP has been selected as his replacement. Ben has been an occupational therapist at the Minneapolis VA since 2015, working in custom seating/mobility, chronic pain rehab, and telerehab for the Minneapolis TREWI hub site. Ben is partnering with Minneapolis SCI/D AT Program Director Beau Bedore in this reorganization effort.

Research:
The AT program continues to collaborate with the Minneapolis Adaptive Design and Engineering (MADE) program for grant funded projects including: studying the effect of constraint-induced gaming therapy in an acute care setting, use of head-mounted virtual reality in the treatment of upper extremity function in acute TBI rehabilitation, and advancing development of a Comprehensive Mobile Assessment of Pressure (CMAP) system as a self-monitoring tool for pressure injury prevention.

Tele-AAC: A model for consultation, evaluation, and treatment services

Telina Caudill MS, CCC-SLP, ATP 1, Ursula Draper, OTR/L, ATP 1 and Jenifer Juengling, PhD CCC-SLP 2

James A. Haley VA Hospital1; Southeast Louisiana Veterans Health Care System 2

INITIAL CONDITION BEFORE IMPROVEMENT

Most Veterans who require access to AAC services have acquired medical conditions, which will vary in severity and may change throughout their lifespan. AAC services are vitally important to provide Veterans access and participation in their medical care across settings. Speech-language pathology staff at SLVHCS required access to specialized training and equipment to address the AAC needs of the SLVHCS patient population. Therefore, patients with complex communication needs were sent to the Louisiana State University [LSU] Department of Communication Disorders clinic to access comprehensive AAC assessment, including equipment and intervention recommendations. At the time, LSU was the only provider within a 75-mile radius of New Orleans qualified to perform this highly skilled service and Veterans' wait time to access an appointment for the service was in excess of eight months. Most Veterans who required access to comprehensive AAC services presented with progressive speech deterioration and needed expedited access to services that matched their needs. Additionally, critical resources such as low-tech, mid-tech, and high-tech devices were unavailable to SLVHCS speech pathology department to adequately assess Veterans. The devices, several of which are costly, often become obsolete in less than six months as the technology improves and the older systems become unsupported. Therefore, an alternate equipment procurement process was imperative to establish a sustainable AAC laboratory at SLVHCS.

The SLVHCS targeted state is to develop a comprehensive state-of the-art AAC laboratory to accommodate timely assessment and treatment intervention for our Veterans. The AAC program would work with vendors to secure updated loaner AAC devices in the lab. These loaner devices would enable the clinician the ability to determine the best system and plan of care to address the Veterans' immediate and long-term communication needs. The long-term goal of the AAC program is to be a valuable resource to support AAC services across all speech-language pathology programs in VISN 16.

SOLUTIONS USED TO IMPROVE SERVICE ACCESS

- SLVHCS speech-language pathology staff attended an extensive VHA training in 2018, Expanding Telehealth for Audiology and Speech-Language Pathology Services
- Collaboration with the AAC/AT laboratory at James A. Haley Veterans' Hospital in Tampa, Florida.
- Develop and maintain relationship with vendors to sustain access to updated and the most current AAC/AT equipment
- Maintain active partnership with LSU School of Allied Health, Communication Science & Disorders program to develop a training program for students at SLVHCS and to improve the quality of care provided to Veterans.

LOGISTICS

Once individual parties agreed to the mentorship, contact was made between the two supervisors for approval. The team, New Orleans SLP and Tampa SLP and OT, collaborated via email to identify an agreed upon recurring meeting date and time and then created an Outlook Calendar event for a weekly Skype meeting, 1x/week for 30 minutes. Skype meetings allowed the team video conferencing, screensharing of desktops and providing resources, links, etc. through chat as needed. Additional team members from New Orleans were invited and joined the initial meetings for introductions and towards the development of an inter-disciplinary approach. The team agreed upon extending that same date/time as needed should a clinical video telehealth (CVT) session be warranted to co-evaluate a patient. As such, with advance notice, the team could reserve the regularly scheduled meeting time for 60-90 minutes instead of 30.

With a goal of minimizing administrative duties and expediting the process to facilitate quick access to video-consultative services for patient care, the development of an inter-facility consult was avoided. Rather, an informal approach was adopted in which the referring New Orleans provider sent an encrypted email with the patient's name and last four to the Tampa providers when consultation was indicated. With the advent of Joint Legacy Viewer (JLV), Tampa providers were then able to review the medical chart including prior rehab services and prosthetics consults for medical equipment received and/or ordered.

Tampa quickly learned that documentation and billing for consultative services in this manner was impossible without access to the patient's chart within CPRS. We were directed to a contact within Enrollment and Eligibility to assist in this matter. Given the Veteran's full name and *full* social security number, Tampa providers can now typically request and access the intended medical chart within CPRS on the same day. We learned two key lessons on this throughout our endeavors. One, the *full* social security number rather than the last four are necessary to gain access to the chart. Two, access to the Veteran's information *prior* to our video call with New Orleans is also necessary, to allow providers to write the note and complete the encounter on the day of the visit.

MEETING FORMAT

Initial meetings focused on programmatic information vs patient care. For example, we discussed processes for building an AT inventory to facilitate in-house AT service provision. A copy of Tampa's equipment spreadsheet including demonstration/ evaluation devices for augmentative-alternative communication, assistive technology for cognition, computer access, electronic aids to daily living,,

Tele-AAC: A model for consultation, evaluation, and treatment services, cont.

desktop computers, printers, laptops, scanners, laminators, textbooks, tests, etc. was shared. Similarly, New Orleans provided their comprehensive wish-list so that Tampa could review and provide feedback. This was helpful to share learned experiences and maximize use of the budget highlighting what is utilized in a clinic vs what one thinks may be utilized, how many of each item is necessary, etc. The team also discussed realistic expectations in terms of obtaining equipment in terms of budget constraints, OIT restrictions and wait-times. Alternative solutions were provided including establishing relationships with local vendors. Given vendor support, loaner and demo devices are often available for clinic use. This offers many advantages beyond fiscal savings and includes eliminating paperwork such as obtaining quotes and writing justifications and allowing for updated evaluation devices as the systems change. Contacts for various vendors as well as information for state AT loan libraries was shared. Processes for supplementing the inventory through the donation of equipment from deceased Veterans, as desired by the caregiver, were discussed. Processes for ordering duplicates of items (small cost items) via prosthetics were discussed as an additional method for increasing clinic supplies and having evaluation devices on-hand. Lastly, a list of stock items maintained within clinic for regularly issued equipment was provided including name of item and vendor.

The team discussed processes for maintaining equipment including creation of accounts for clinic iPads, obtaining apps, adequate bandwidth requirements for software updates via WIFI, etc. As the programmatic information began to take shape, the team quickly transitioned and shifted the focus

to patient care, discussing individual cases with complex presentations. We found that discussing the case, reviewing the chart, delineating an evaluation plan and brainstorming technology trials was helpful initially; scheduling the tele-AAC visit out at least 1-2 weeks, longer if needed equipment was not readily available. The referring provider could then begin to prepare materials and suggested demo equipment as well as become acquainted with the technology prior to the scheduled tele-AAC visit. A case study highlighting one of our tele-AAC visit follows.

CASE EXAMPLE

History, in brief: Veteran is a 54 year old left handed black man with history of idiopathic Parkinson's Disease [dx 2015] and later diagnosed with progressive supranuclear ophthalmoplegia [Oct 22, 2018] with progressive decline in postural stability and voluntary eye movements, history of head injury [1999] that resulted in jaw fracture that required surgical intervention, head injury s/p fall with mandibular fracture [Feb 12, 2018] s/p OMFS, and cannabis use with c/o noticeable progressive decline in speech function and decreased ability to "Respond" with an onset in 2015. Veteran known to Southeast Louisiana Veterans Health Care speech-language pathology department for management of voice dysfunction, dysarthria, and dysphagia. Results of Neuropsychology evaluation in

April 2016 indicated Veteran demonstrated average, slightly above and just slightly below average performance on neurocognitive tasks. He was referred by the neurologist to the outpatient VA speech pathology clinic for a comprehensive augmentative alternative communication evaluation.

Problem- patient c/o of

_____ Stutter/stammer [onset 2015]

_____ saliva/drooling

_____ reduced loudness, "I don't have the strength to say words loud."

_____ "Frozen and can't get the words out."

BARRIERS TO ACCESS SPECIALITY SPEECH-PATHOLOGY SERVICE

• Transportation to the outpatient clinic

• Facility has limited AAC equipment

• SLPs, OTs, and PTs at the facility with limited comprehensive AAC evaluation experience

• Community SLP with comprehensive AAC evaluation experience with four+ month wait list.

RESOURCES AVAILABLE TO OVERCOME THE BARRIERS

• AAC and AT experts accessible within the VHA Health Care System [VAHCS]

• VA EMR accessible nationally

• Implementation of a National VA SLP mentorship initiative with telehealth

• Telepractice [telehealth] widely accepted and utilized across the VAHCS

• Veteran and his family were open to explore collaborative opportunities with providers within the VA facility and with other VA facilities, (cont. page 10).

Tele-AAC: A model for consultation, evaluation, and treatment services, cont.

Telina Caudill MS, CCC-SLP, ATP 1, Ursula Draper, OTR/L, ATP 1 and Jenifer Juengling, PhD CCC-SLP 2
James A. Haley VA Hospital1; Southeast Louisiana Veterans Health Care System 2

(cont. from page 9).

• Veteran was familiar with accessing outpatient speech services via telehealth over the past 6 months and relatively techno-savvy

INITIAL AAC EQUIPMENT TRIAL

Veteran was accompanied by his brother and presented to the SLVHCS outpatient speech pathology department. He verbally consented to the SLP to establish secure video connection using VA Video Connect with the Tampa team. Staff introductions to Veteran and family completed by each of the clinicians. Throughout the evaluation the Tampa SLP and OT guided the evaluation process [modeled procedures for SLVHCS SLP], equipment trial, and provided recommendations that the SLVHCS SLP implemented with the Veteran. Although connectivity was adequate and without interruptions, the clinicians were challenged with

attaining optimal simultaneous views of the client, family, and Veteran's equipment operation. The Veteran participated in three device trials and the Team [in-person and telehealth clinicians] provided technology support and objective feedback with each of the trials. Veteran rated features of each device using Communication Needs Questionnaire & Data Collection Forms - Lisa Bardach and selected the device and mounting system that effectively improved his communication function.

VETERAN'S OUTCOMES

• Veteran & family "Very satisfied" with the delivery of the comprehensive AAC evaluation.

• Accessed necessary specialty service within 30 days compared to 120+days.

• Maintained continuity of care within the VA Health System

• Access to a feasible plan to access AAC

services throughout his disease progression

• Demonstrated independence [competency] with the SGD during initial evaluation and four follow-up sessions

• Access to Tampa SLP and OT AAC/AT specialists to provide consultative services via telepractice, as needed, to support Veteran's medical care.

Collaboration between Professions

-Karen DeMarco, MS, OTR/L

I used to think Merriam Webster Dictionary was named after an old, famous woman. Merriam-Webster is the last names of two men who are the founders of the dictionary we know today. This is the first time Merriam-Webster disappointed me. The second time I was disappointed was when looking up the definition of collaborate. According to Merriam-Webster, the definition of collaborate is "to work jointly with others or together especially in an intellectual endeavor." This definition of collaborate does not give enough justice to the collaboration, although surely intellectual, going on at the Richmond VAMC through the Assistive Technology Program.

The Assistive Technology (AT) Program allows multiple professional disciplines to work together to help veterans improve their quality of life and be able to do activities they want and need to do. These professional disciplines within Physical Medicine and Rehabilitation Service (PM&RS) include occupational therapy, physical therapy, recreational therapy, kinesiotherapy, speech and language pathology, physicians, and rehabilitation engineering. The PM&RS staff members were asked to provide examples of collaboration between professions which improved veteran quality of care and outcomes. Several important areas stood out when reviewing the examples provided, including self-care, communication, mobility, and leisure participation.

Self-care is a daily set of activities that can sometimes be taken for granted. Completing basic self-care activities can be challenging for many veterans with disabilities and/or illnesses. Self-care consists of feeding, bathing, grooming, dressing, toileting, and any other activity to take care of oneself. Physical strength, endurance, flexibility, and coordination are only some of the requirements to complete these basic self-care activities. An occupational therapist collaborated with an AT rehabilitation engineer to help a veteran with ALS be able to apply deodorant on his own.

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This veteran was experiencing upper extremity weakness making it difficult to hold and apply deodorant. The occupational therapist and rehabilitation engineer collaborated on an adaptive deodorant applicator idea. They created a long handled deodorant applicator with a custom 3-D printed deodorant holder on one end and a universal cuff adaptive handle on the other. Telehealth services were used with the veteran to ensure the applicator worked well and met the veteran's needs.

Communication is another important area of life in which assistive technology collaboration can improve the life of a veteran. Occupational therapists, physical therapists, and AT rehabilitation engineers have brainstormed together on numerous occasions to promote independence with communication for veterans experiencing access problems. These examples include a 3-D printed pen holder, adaptive keyboard assessment and training to return to work, one handed smart phone use with adjusted settings, and adaptive call bell for hospital beds, such as a head switch. In addition, eye gaze communication systems for veterans with difficulty speaking require the collaboration between speech and language pathology, occupational therapy, physical therapy, and rehabilitation engineering to obtain the best outcome for specific veteran needs. The AT team can also provide comprehensive application searches, for instance a search for a calendar app that allows for an analog clock display and the ability to import pictures in place of text. Unfortunately, after a thorough and exhaustive search, it was determined there are not readily available apps for people with aphasia.

On the other hand, sometimes assistive technology can help us determine more about a veteran's abilities and even surprise us. A good example of this was when an occupational therapist worked with a psychologist on a switch-adapted phone for a veteran with cognitive impairments. This veteran was able to use the switch-adapted, phone to call the Dallas Cowboys hotline to determine when the next game was playing. It appeared this veteran was more cognitively intact than previously believed!

The next area to discuss is mobility, particularly operating and navigating a manual or power wheelchair. Physical therapists, occupational therapists, and AT rehabilitation engineers regularly work together on wheelchair positioning needs and alternative drive control options to enhance a veteran's ability to independently operate a manual or power wheelchair. Custom joysticks for a power wheelchair can be designed to fit the specific needs of a veteran. The goal of all these professions is to promote functional mobility independence, despite physical or cognitive challenges.

Leisure and social participation is an extensive area in which AT collaboration can advance the quality of life for a veteran. Recreational therapists and occupational therapists work with AT rehabilitation engineers for adaptive gaming systems for veterans with limited physical function, for instance from tetraplegia or a stroke. Game controllers have been adapted for one handed use or truly any function the veteran has voluntary control over. 3D printing can help with designing custom pieces to work with already available game controls. Consulting with AT can even help introduce you as a professional to new equipment and devices already existing. Additionally, AT collaboration has helped veterans with limited movement be able to use switch access to change the channel on the television, another daily task of life sometimes overlooked.

Some of the examples obtained for this article do not nicely fit into a category, so I will call this "other" instances of collaboration. Rehabilitation engineering and occupational therapy worked together for medical intervention ideas as well, including a way to change pads on an alpha stim unit and to use a Myoelectric arm more efficiently. Physicians and AT rehab engineers have even joined up to determine an adaptive device for a PM&RS resident with a hand deficiency be able to use an ultrasound machine for invasive procedures!

Most of these examples took multiple trials and errors before arriving at the best solution. However, the veterans in these stories received the quality of care and dedication to their goals they deserved. Collaboration is important because each profession brings a different and enlightening perspective on the same situation and issue. Without this type of welcomed collaboration, we would be missing a piece to the puzzle. Collaboration with other professions allows the veteran to receive a holistic assessment and well-rounded outcome. Challenges veterans are experiencing can potentially be resolved with an AT consult and combined creative ideas. The veteran benefits when we as professionals are open to new and innovative ideas, especially from another professional with a varying education background and viewpoint.

Assistive Technology Program Mission

To enhance the ability of Veterans and Active Duty members with disabilities to fulfill life goals through the coordination and provision of appropriate interdisciplinary assistive technology services.

To serve as an expert resource to support the application of assistive technology within the VA health care system

Site Update…Richmond

Presentations:
- Interdisciplinary Approach to Optimize Resources in AT (VA Webinar to Rehabilitation Nursing and OT)
- Telerehabilitation for AT and Blind Rehab Services, An Interdisciplinary Approach (VA Webinar)
- Cognitive Prosthetics for mTBI and Return to School (Heading Forward Together, Virginia Brian Injury Conference)
- Alternative Ways to Engage in the Use of Technology (2019 VISN 6 SCI Conference)

Telehealth:
- 100% of AT team is telehealth ready
- Went from 7 providers to 19 providers using telehealth
- Established new interfacility consults several sites

Projects:
- Collaboration with surgery and radiology for medical modeling using 3D printing for education and pre-surgical planning
- Awarded Investment Funding from VHA Innovation for an AT Catalogue of innovative devices

Fun Fact:
Richmond VA Assistive Technology Program recently won an award at the ACT_IAC Igniting Innovation Conference in D.C. this past Thursday. Brian Burkhardt and Melissa Oliver

hosted a booth showcasing our program: assistive technology devices, clinical rehabilitation engineering, veteran centered 3D printing, AT and Telerehabilitation and medical modeling.

- There were 207 applicants (15% were related to healthcare)
- Our program was a top 40 finalist (25% of the finalists were related to healthcare)
- 4 VA programs were represented as a top 40 finalists
- Our program won a Dynamite Award in our category of Transformer (defined as Innovation that uses existing technology and transforms or extends existing capabilities resulting in new or broadened applicability and use).

Because we are a Dynamite Award recipient, we are invited to the Imagine National ELC 2019 Conference https://www.actiac.org/events/imagine-nation-elc-2019 to showcase our innovations.