Tele-AAC Fundamentals for Clinical Practice

NERISSA HALL, PHD, CCC-SLP, ATP
JENIFER JUENGLING, PHD, CCC-SLP
MICHELLE GUTMANN, PHD, CCC-SLP
ELLEN COHN, PHD, CCC-SLP, ASHA-F

INTRODUCTIONS

Nerissa Hall

Nerissa Hall, PhD, CCC-SLP, ATP is co-founder of Commūnicāre, LLC. She specializes in augmentative and alternative communication, assistive technology, telepractice, and tele-AAC working primarily with school-aged individuals, providing specialized, evidence-based intervention and consultation services. Nerissa received her Doctorate at the University of Massachusetts-Amherst, focusing on tele-AAC, and has presented nationally regarding this and related topics.

Jenifer L. Juengling-Sudkamp

Jenifer L. Juengling-Sudkamp PhD, CCC-SLP is a speech-language pathologist at the Southeast Louisiana Veterans Health Care System/VA. She provides assessments and interventions to Veterans with neurodegenerative disorders and traumatic brain injury in the outpatient, Home and Community Program, and Telespeech. Her research interests include the development of functional rehabilitation interventions in the areas of cognition, communication, and swallowing disorders (dysphagia) to improve daily function and quality of life among persons with neurological disorders. She is also an adjunct professor, Tulane University School of Medicine.

Michelle L. Gutmann

Michelle L. Gutmann, PhD is a clinical professor at Purdue University Department of Speech, Language, and Hearing Sciences. She is active in research and clinical endeavors related to the application and implementation of AAC for adults with neurogenic communication disorders and/or neurodegenerative disease. Michelle has published and presented nationally about her work.

Ellen Cohn

Ellen Cohn PhD, CCC-SLP, ASHA-F, is professor, University of Pittsburgh Department of Communication Science and Disorders. She has authored a book and articles on telepractice, including Tele-AAC. She is a past director of the American Telemedicine Association. Cohn is the founding Editor of the International Journal of Telerehabilitation. She served as a co-investigator for a Department of Education - NIDRR, Rehabilitation Engineering Research Center on Telerehabilitation at the University of Pittsburgh.

Abstract

Tele-AAC in 2018 is a promising, relatively new service delivery model. Practitioners need to be aware that telepractice operates in a dynamic environment with numerous co-existing influencers (i.e., new and unexpected technologies; state and federal regulations; state professional licensure boards; professional association regulations; reimbursement; standards and guidelines; privacy and security requirements; and powerful financial forces).

This presentation will provide aspirational practice strategies for telepractice and Tele-AAC, and highlight available resources. Using a case-based approach, the presentation will underscore the essentials of implementation of tele-AAC across populations such as children with ASD, adults with ALS, and military service members with mTBI.

LEARNING OUTCOMES
Participants will be able to:

- Identify evidence-based benefits of telepractice.
- Describe clinical applications of Tele-AAC (3)
- Identify telepractice fundamentals:
  - Professional state licensure requirements to engage in Tele-AAC across state lines
- Principles (3) of tele-ethics as they apply to the practice of Tele-AAC.

Workshop Structure

- Introductions
- Learning Objectives (introduced)
- Telepractice Fundamentals:
  - Environmental Influencers
  - Privacy, Security, and Client Safety
- Tele-AAC Standards, Aspirational Practices, and Resources
- Telepresence for Tele-AAC
- Tele-AAC and Adults with Neuro-degenerative Disorders

- Tele-AAC and military service members with mTB
- Client Selection for Tele-AAC
- Tele-AAC for Children with Complex Communication Needs
- Tele-AAC for Children with ASD
- Tele- AAC for School-aged Individuals – Additional Considerations
- Discussion
- Learning Objectives (revisited)

CONFLICTS OF INTEREST

FINANCIAL:

Book royalties (Telepractice, Springer, UK)

Salary (University of Pittsburgh)

RESNA (pre-conference registration fee waived for participation)

NON-FINANCIAL

American Telemedicine Association, membership; prior board and accreditation committee

ASHA SIG 18 –Telepractice

Editor (open e-journal) International Journal of Telerehabilitation, telerehab.pitt.edu

Why Tele-AAC?

TELE & AAC:
A Beautiful
Pairing!

DISTRIBUTED EXPERTISE

TRAVELS WELL AND SAVES TIME

DECREASES CANCELLATIONS

BEST ENJOYED WITH OTHERS (INTERPROFESSIONAL/ INDUSTRY COLLABORATION)

FLOURISHES IN NATURALISTIC ENVIRONMENTS

CONSUMED BY A TECHNOLOGY SAVVY WORKFORCE

Tele Basics

NOMENCLATURE

"Telepractice is the application of telecommunications technology to the delivery of speech language pathology and audiology professional services at a distance by linking clinician to client/patient or clinician to clinician for assessment, intervention, and/or consultation."

- ASHA Telepractice Portal: http://www.asha.org/Practice-Portal/Professional-Issues/Telepractice/

PREVAILING TELE-LANGUAGE

Telemedicine (numerous medical tele-specialties)

Telehealth [OT]

Telerehabilitation [ATA]

Telepractice [ASHA only]
- Tele-speech
- Tele-audiology
- Tele-AAC (emerging)

m-health

e-health

WHY IS NOMENCLATURE IMPORTANT?

Regulations
- state
- federal
- professional

Reimbursement

Malpractice

PERSISTENT CHALLENGES

Policy can't keep up with technology changes

Reimbursement
- General rule: charge the same fees as non-tele
- Do not "price fix" and violate anti-trust regs.

Inter-operability
- Equipment (Tele-AAC: 2 web cams; vendor consultations)
- EHR

Malpractice
- Often covered; but alert insurance carrier

WHAT MODES ARE ACCEPTED?

Synchronous
- Real-time videoconferencing
- Phone (debated)

Asynchronous
- E-mail, text messages, fax, are variably accepted
- "Store and Forward"

LOCATION OF CLIENT/ CLINICIAN

Face-to-face or f2f)
- "In the same room"
- An outdated term….
  - …. because video also allows simultaneous facial visualization.

In-Person
- "In the same room"

Hybrid
- Combination of telepractice and in-person services
  - May differ from session to session
  - May use both in the same session (e.g., in-room plus expert on video)

2014 TELEPRACTICE SURVEY – SIG 18

SLPs: Homes (50%); elementary schools (52%); secondary schools (40%)

Audiologists: Veterans Affairs hospitals or medical centers (37%); clients' homes (30%)

Tele-SLPs: most are self-employed

Tele-Audiologists: most employed by federal, state, or local government agency

Tele Environment

TELEPRACTICE in 2018: IT'S COMPLICATED!

Telepractice operates within a complex and dynamic environment with many influencers:
- New technologies
- Regulatory and professional bodies
- Reimbursement
- Standards and guidelines
- **Powerful financial forces**

Tele-ethics is relevant to each of these areas.

TELEPRACTICE INFLUENCERS IN 2018

Professional Associations: AMA, ASHA, AOTA, APTA…

Professional-Trade Association: ATA

State Professional Licensure Boards (and, national bodies of state boards)

Federal Government: US Congress, CMS, FCC, FDA and other regulatory agencies

State Governors and State legislative bodies

K Street (Alliance for Connected Care):
- Anthem, CVS Health, Walgreens, TelaDoc, Specialists on Call, Verizon, WellPoint, HealthSpot, Doctor on Demand, Welch Allyn, and MDLIVE, Care Innovations and Cardinal Health.

Ex-senator Thomas A. Daschle (D-S.D.), far left, attends a meeting of Alliance for Connected Care, a group seeking changes to rules controlling telehealth.

"We unfortunately don't have a regulatory environment . . . that accommodates the new technology," Daschle says. *Washington Post.*

Three former senators discussed health care on Monday. The three, from left, Trent Lott, John B. Breaux and Tom Daschle, together are supporting more use of remote digital technology. Credit Stephen Crowley/The New York

MORE TELEPRACTICE INFLUENCERS...

Big Business: Pharmacy chains, Walmart, Nike,

Multi-national Publishing/Media Companies, etc.

Health Plans/Insurers

Hospital Systems

EHR/Practice Management Companies

Publishers of SLP Assessment/Therapy Tools

SLP for-profits

Telecommunications service carriers: cable, satellite

Consumers

PREDICTION

The coming decade will see growth in the numbers and types of financially driven partnerships.

Some may not be immediately obvious
◦ Telehealth Companies + Insurers
◦ Industry + Legislatures (re: Schools)
◦ Associations + Industry
◦ Publishers + legislators, associations and cyber-schools

A NEW TELEPRACTICE MARKETING STRATEGY

[De-identified company] to offer award-winning online speech and occupational therapy services to xxxx member districts in xxxx and neighboring states
XXXCITY, September 9, 2015 – **[**de-identified company] has been named as a preferred vendor by xxx, a purchasing cooperative for xxxxxxxx and neighboring states. As a result, xxxx's 170 member districts will be able to purchase [deidentified company]'s award-winning online speech and occupational (OT) therapy services at pre-negotiated prices through xxxXXX's procurement process.

"By partnering with [de-identified company], education agencies can fill service gaps related to acute and chronic shortages of special education and related services personnel, reduce high caseloads for onsite personnel, reduce their backlog of assessments, improve student outcomes, and improve efficiency.
Since 20xx, [de-identified company] has delivered more than 1 million live, online therapy sessions to students in public, charter, and virtual schools across the U.S. and globally, proving that online delivery of special education and related services is practical, convenient, and highly effective."

SHIFTING EMPLOYMENT PATTERNS

Independent tele-contractors
◦ Part-time or full-time?
◦ Benefits?
◦ Seniority rewarded?
◦ Who pays for state licensure fees?

Highly capitalized tele-corporations
◦ Schools-based and healthcare

IF YOU KNOW ONE STATE...YOU KNOW ONE STATE.

MULTIPLE STATE LICENSURE CHALLLENGES

Time, expense, and delays

Public safety concerns
◦ Who is responsible for enforcement?

Different CE and jurisdictional requirements and schedules

Different renewal schedules

RE-FRAMING: AN UNFORTUNATE STRATEGY TO SUBVERT STATE LICENSURE

- I'm not conducting aphasia therapy this is a (paid) peer support group.
- I'm not providing expert advice concerning an patient – I'm giving general advice to another clinician.
- I'm conducting "voice improvement" sessions -not voice therapy.

and the list goes on…..

GROWING EVIDENCE FOR TELEPRACTICE

Comparable or better outcomes:
◦ Equivalence and efficacy
◦ Cost savings
◦ Travel time
◦ Consumer and provider satisfaction

Reaches the under-served; increased accessibility to services.

More research is needed; not all clients are candidates.

WHAT TECHNOLOGIES ARE TELE-PRACTITIONERS USING?

Mobile Telepractice Model

Smart Phones, tablets

DESKTOP TELEPRACTICE MODEL

Personal computers, web-cams, microphone and software
◦ (e.g., Adobe Connect, Apple FaceTime, Blackboard Collaborate, Cisco Jabber, ConnectUs Communications, Elluminate, Google Talk, GoToMeeting, ooVoo, Skype, WebEx, Yahoo Messenger, Vidyo, Zoom).

Disclaimer: Not an endorsement/incomplete list.

PORTABLE (DEDICATED) TELEPRACTICE MODEL

High end, dedicated systems (e.g., Cisco, Polycom)

Immersive Virtual Telepractice Model

Virtual meeting environment

NEW/UPCOMING TECHNOLOGIES

Games and Simulation Learning Experiences

Gesture Based Computing

Socially Interactive Robots

    (Williams, Stacy.)

POTENTIAL VoIP PRIVACY VULNERABILITIES*

Personal Information (PI): Who is listening? Will the company share it?

Retention: How long is PI retained?

Voicemail/Video: Archived? Transferred to 3rd party? Other countries?

Encryption: Sufficient? Wiretap vulnerability? (Can an intruder act like a legitimate user?) [ATA: S&G for Primary/Urgicare: FIPS 140-2: Federal Information Processing Standard for encryption]

Anti-spyware and anti-virus protection?

Audit system activity? What is the breach notification protocol?

Personnel trained in confidentiality?

Equipment: Stand alone workstations? Servers protected at rest?

*See Appendix B, Watzlaf et. al.; ATA Accreditation document/Standards & Guidelines. *Note: Privacy policies are not always actualized.*

CASE STUDY: PRIVACY AND SECURITY

WHAT'S WRONG IN THIS SCENARIO?

Mr. Jones travels often, requires evening treatment appointments, and is comfortable with electronic communication. He decides to seek a clinician who engages in telepractice. He locates a SLP (Ms. Smith) through an Internet search. After reviewing Ms. Smith's training and qualifications via her website, "TelefluencyServicebySmith.com," Mr. Jones registers for services and selects a date and time of therapy. As per the pre-meeting instructions, Mr. Jones calls a telephone number and relates his history of fluency problems and a brief medical history. Ms. Smith is out for the evening when Mr. Jones calls, so her home-based telephone answering machine records the message. (As the message is recorded, it is audible to her two children and a childcare provider.) The recorded narrative conveniently attaches to Ms. Smith's personal e-mail account, so she can listen to the message on an iPhone's "speaker" while she waiting for her friends at a restaurant. Mr. Jones also faxes a signed consent for treatment and financial agreement to Ms. Smith's fax machine that is shared by her family. **ANYTHING DONE RIGHT?**

Later... The Therapy Session

Several days later, Mr. Jones and Ms. Smith "meet" for their first evening telepractice session. The therapy is conducted using a popular, free, Internet-based technology: Voice over the Internet Protocol (VoIP, much like Skype). Ms. Smith does not work at home due to the presence of her family and a frequently barking dog. Instead, she selects an isolated table at a local coffee shop and makes use of that venue's free Internet connection, believing that the change in venue is both cost-saving to her practice and protective of the client's privacy.

SEEM OK?

After the Session...

After the session, Ms. Smith types brief notes of the clinical contact and transmits them to herself via a free, e-mail service. She packs up her laptop computer, and upon return to her home sets up the computer on her dining room table, for use by her family between telepractice sessions. Billing and payment are managed electronically.

Ms. Smith gladly accepts her client's "Friend" invitation (all of her e-mail contacts are shared with FB and LinkedIn.)

DID YOU LOCATE ALL THE "WORST PRACTICES?"

EXPECTED CONNECTIVITY*

"Connectivity **shall** have adequate bandwidth, resolution, and speed for clinical consultations.

Bandwidth **shall** be set at a minimum bandwidth of 384 Kbps in both the downlink and uplink directions.

Resolution **shall** be set at a minimum of 640X360 and speed of 30 frames per second."

Professional **shall** have a back-up plan in place if connectivity is interrupted. (e.g., telephone contact)

* ATA Practice Guidelines for Live, On Demand Primary and Urgent Care

ASHA COE & TELEPRACTICE

The entire ASHA-COE informs the conduct of telepractice.

INTERSTATE LICENSURE

Principle of Ethics 1: Rules of Ethics L.

"Individuals may practice by telecommunication (e.g., telehealth /e-health) where not prohibited by law."

Is a license needed for:
◦ *Clinician or client vacations?*
◦ *Consultation?*
◦ *Supervision?*
◦ *Expert witness testimony?*

CLINICIAN "PRESENCE"

How about first patient encounters? Must they be "in-person?"

For states with initial "in-person" requirements, what constitutes a "pre-existing patient" who was seen "in-person?"

Does an "e-mailed" request for help constitute an encounter? What is our responsibility to respond to unsolicited encounters?

PROVIDER COMPETENCE

Principle of Ethics I, Rule of Ethics B

"Practitioners should have knowledge and application of telepractice research and competent use of telepractice techniques and technologies."

[For telepractice: evidence based practice; establishing and maintaining eye contact and engagement; creating a distraction free immersive environment; use of equipment; safety; privacy; generalization and practice in the online environment; etc.]

Should there be minimal standards of training?

EQUIVALENCE OF SERVICES

Telepractice services should be equivalent or superior to in-person services.

What can/should be different about telepractice? [e.g., visual backgrounds; equipment; bandwidth availability; assessment instruments; visualization; use of therapy materials; ability to establish relationships in schools, etc.]

What are acceptable modalities?

When are hybrid approaches preferable?

CASE STUDY: SAFETY

"WE'VE GOT YOU COVERED. WE'VE SEEN IT ALL. "

SAFETY

Sterilization of telepractice equipment (e.g., in a community based health center, etc.)

When does a session (and your responsibility for safety) end?

Does the SLP possess information on local emergency numbers?
  ◦ *Does the SLP know where the client actually is – each session?*

Should the client know where a home-based clinician lives?

Ms. Smith, who lives in Illinois, is treating Ms. Wright via telepractice. During their sessions, Ms. Wright is usually alone in her home, situated in a small town in Vermont. However, this frigid and snowy week in February, Ms. Wright is visiting her son and his family in Florida. [Ms. Wright, an independent 78-year-old, previously fractured her hip and is afraid of falling on the ice.] The therapy session commences at the usual time/day, while the rest of the family is at school/work. Ms. Smith is not aware, at the outset of the session, that Ms. Wright is now in balmy Florida. The very large and active family dog hears the ongoing session, enters the room, is very excited to see Ms. Wright, and begs for treats! He jumps up, and knocks her to the floor. **WHAT DID THE CLINICIAN FAIL TO LEARN BEFORE THE SESSION?**

PRIVACY

Privacy of Information: HIPAA, FERPA, and other regulations

Privacy or Person/Place: The privacy of others in the home, clinic, hospital or classroom is maintained; user exercises control of recording/monitoring systems. Greater electronic usage, provides increased opportunities for privacy violations (e.g., computers, servers, Wi-Fi, e-mail, fax, recorded phone messages, e-mail, websites, etc.).

How about the clinician's privacy?

Sessions with minors?

INFORMED CONSENT

The client understands and agrees to the options and limitations of telepractice, the limits of privacy and security, and qualifications of clinicians and assistants.

NON-DISCRIMINATION/PATIENT SELECTION

Telepractice can reduce inequities in service.

Telepractice does not enable a clinician's refusal to engage in in-person therapy on the basis of "race or ethnicity, gender, gender identity/gender expression, age, religion, national origin, sexual orientation, or disability."

How about "patient selection' for telepractice: rule-outs due to disability/behavior?
  ◦ *Should a private practice post required Technical Standards?*

OBLIGATION TO REFER

Telepractice use must be appropriate to the client and situation. The client is trained to properly participate in telepractice.

What if a client appears to be an appropriate candidate for telepractice, but does not make the expected progress using this therapy mode?

ETHICAL REPRESENTATION AND MARKETING OF TELEPRACTICE SERVICES

How can a client be certain of a clinician's identity?
  ◦ *How can a clinician be certain of a client's identity?*

Do clients have access to a complaint mechanism?

Are fees and charges known to the client before a session?

Is the transmission of funds secure?

Is knowledge of ownership of the clinical practice transparent?

Is there a mechanism in place to inform clients of breached data?

Should an insurer be informed that telepractice is occurring?

Does the clinician's malpractice insurance cover telepractice?

TELE-SUPERVISION

Telepractice support personnel, students, and caretaker assistants should be properly trained. Client is informed of role of students and support personnel.

What training in telepractice is required of "e-helpers" or "care-taker helpers?"

Do the same requirements hold for clients located outside of the US?

What is the obligation of university training programs to offer instruction in telepractice, and to avail students of a variety of telepractice experiences?

Does a state (or both states) allow tele-supervision?

RESEARCH

Principle of Ethics I, Rules of Ethics D: Individuals shall enroll and include persons as participants in research or teaching demonstrations only if their participation is voluntary without coercion, and with their informed consent."

The same requirements apply to telepractice.

TELEPRACTICE BUSINESS PRACTICES - DIFFICULT ISSUES

Vendor relationships and purchasing
  ◦ Includes: recommending equipment to clients

Is it ethical to offer telepractice services to a school or health system (i.e., seeking potential contracts) at a lower rate than current in-person services?

"Telepractice in the healthcare arena is currently surfing in the wake of medicine."

"RE: Telepractice in the educational arena. SLPS need to know there could be a huge tsunami headed their way."

CONCLUSIONS

Telemedicine, telehealth, and telepractice are poised for rapid growth.

The environment (and influencers) are complicated and dynamic.

Policy, ethics, reimbursement, and training lag behind technology development.

Consumer awareness of telehealth is nascent. Consumer advocacy is similarly weak.

TELE AND AAC: BEAUTIFUL TOGETHER

Telepractice and AAC (Tele-AAC)

ELLEN COHN, PHD, CCC-SLP, ASHA-F

NERISSA HALL, PHD, CCC-SLP, ATP

JENIFER JUENGLING, PHD, CCC-SLP

MICHELLE GUTMANN, PHD, CCC-SLP

Tele-AAC with School-Aged Individuals

CONFLICTS OF INTEREST

FINANCIAL:

RESNA (honorarium?)

NON-FINANCIAL

ASHA SIG 12 – Augmentative and Alternative Communication

ASHA SIG 18 – Telepractice

RESNA

TELE-AAC vs. TELEPRACTICE

Includes an AAC system or AAC tool

The treating clinician is able to "have eyes" on the student's AAC system (may mean having a second computer or iPad to be able to have a visual of the student, etc.)

DIFFERENT TELE-AAC SERVICES

Direct Services

Evaluations

Consultation

Tele-AAC for Intervention	Tele-AAC for Assessments	Tele-AAC for Consultation
• Real-time services that replicate in-person sessions • Can involve other team members • Synchronous	• Supports collaboration • Can be synchronous or asynchronous depending on case • Less overwhelming for individual	• Intensive consultation for those with little AAC experience • Van be for supervisory purposes • Can be "hands on" • Synchronous or asynchronous

DIRECT SERVICES VIA TELE-AAC

We work directly with the individual through the Internet to work on his or her AAC goals.

There would generally be another person at the individual's location for either the whole session or to help set up and break down.

Advantages:
◦ allows us to coordinate schedules more easily,
◦ saves on travel time,
◦ enables parents and team members to "tune in," and
◦ is sometimes more motivating.

Direct Text-Based Tele-AAC	DIrect Tele-AAC with 2 SGDs	Direct Tele-AAC with 1 SGD	Direct Tele-AAC with 1 Integrated SGD
• Involves screen-sharing intervention materials that includes text. • The individual using AAC needs to be able to read.	• Both the individual and the clinician have speech generating devices (SGDs). • J-Mounts are used to project the image of the AAC system on both ends.	• The clinician uses simulation/ emulation software to model target words/phrases. • The image of the individual's AAC device is projected through a J-Mount or comparable tool.	• The individual has a dedicated AAC device that is connected to the Internet. • The individual runs the videoconferencing session and gives presenter controls to the clinician to be able to model.

EVALUATIONS VIA TELE-AAC

Two of our clinicians work together to do the evaluation.

One works directly with the individual at his or her location.

The other clinician views the session via the Internet.

Advantages:
◦ less overwhelming for the individual,
◦ allows us to include specialists who otherwise couldn't travel, and
◦ enables us to write the report more quickly.

CONSULTATION VIA TELE-AAC

Our clinician works with team members that are working with an individual needing our support.

In real time or store-and-forward.

May involve the individual or not.

Real video or photo images or simulation/emulation tools.

Advantages:
◦ allows us to coordinate schedules more easily,
◦ saves on travel time, and
◦ empowers collaboration in effective ways using videos and other tools.

TELE-AAC COMPARED TO IN-PERSON INTERVENTION

Depends on the individual (needs/candidacy assessment).

Growing amount of evidence to support that services are comparable.

For those who are good candidates for tele-AAC, the computer is motivating and engaging → intervention can be more interesting.

Can involve more team members, which can support generalization.

TELE-AAC COMPARED TO IN-PERSON CONSULTATION

It really depends on the team.

Talking about technology using technology can be overwhelming.

Tele-AAC helps address scheduling challenges.

With the appropriate permissions, sessions can be recorded and shared with those who couldn't participate or who want to review the info.

Tele-AAC empowers parents and team members to "tune in."

Screen-sharing techniques allow team members to practice in real-time.

TELE-AAC CANDIDACY

Tele-AAC may not be for everyone.

For students receiving direct intervention services, it is important that they are able to:
◦ attend to the clinician on the screen,
◦ follow directions,
◦ respond within a given timeframe,
◦ use his or her AAC system independently or, at least be responsive to AAC modeling and prompting presented remotely.

EQUIPMENT FOR TELE-AAC

A large enough computer to view the clinician/student and the intervention materials (touch screen in some cases).

Specialized webcam set-up to support our tele-AAC services.

In some cases, it is important to have emulation software or a second AAC system for the purposes of AAC modeling.

SETTINGS FOR TELE-AAC

School

Home

"We loved having access to tele-AAC because we learned alongside of Will! The encouragement we shared from our clinicians made our son want to participant actively, and stretch his knowledge to include us. The sessions were effective and so convenient...and fun as we all navigated through new things."

~ Maria Burke (parent), Holyoke, MA

Case Example - Ava

Tele-AAC for Intervention
- Live, real-time intervention
- Young lady using LAMP
- Enables parent involvement
- AAC system
- J-Mount (to Chromebook)
- 1 computer
- Shared controls
- Shared activity

Tele practice and AAC (Tele-AAC)

ELLEN COHN, PHD, CCC-SLP
NERISSA HALL, PHD, CCC-SLP, ATP
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Veterans Administration & Funding

- Provided as Title 38 of the U.S. Code
- Equipment that is deemed medically necessary or part of rehabilitation intervention

Diagnostic Accuracy and Intervention Efficacy Data for Tele-AAC and Adults with Acquired Neurological Disorders

Evidence-based practice emphasizes consideration of
- Current best research as part of clinical decision making
- Clinical expertise
- Patient's perspectives and values
- Unique needs of adults with acquired neurological disorders

http://www.asha.org/Research/EBP/

Sackett et al., 1996

https://missionsouthpacific.files.wordpress.com/2011/04/kid-eating-pudding-300x231.jpg

Adult Neurological Disorders and Tele-AAC services

A mechanism must be in place to re-evaluate and adjust communication supports over time as needs and skills change.

Advantage of tele practice:

- Supports energy conservation; eliminates travel while maintaining access to specialty care
- Provides opportunities to practice communication supports in the natural environment(s)
- Minimizes
  - travel cost & time loss from work
- Link to multiple specialists to coordinate interdisciplinary care

Beukelman et al., 2011; Fried-Oken et al., 2015; McClellan et al., 2013

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Telemedicine access

SLP department at Southeast Louisiana Veterans Health Care System provides Veterans with access to

-Medical management & Secure email communication to providers through the portal, MyhealtheVet. We also use the modality for Store and Forward

-Clinical Video teleconferencing to
  ◦ the home
  ◦ a Community-Based Outpatient Clinic

-The SLPs also use tele practice to consult with clinical specialists within the VA and Vendor Technology Support

Speech Staging System for ALS [ALS Clinical Pathways]

STAGES	INTERVENTION
Stage 1: Not detectable speech disorder	Stage 1: Voice banking, message banking, video recording, energy conservation training, voice amplification system,; low tech AEIOU board
	Assessment: Speaking rate [words per minute]; intelligibility; communication effectiveness
	Education: natural course of speech deterioration, low-tech/high-tech AAC options, timing of AAC assessment, and instruction

Yorkston et al., 1999

Voice Banking

-Our clients had limited success with home recordings and often require banking their voices in an outpatient setting [sound proof/audiology booth]

-Exploring software options that require low voice demand to successfully access a personalized voice

Speech Staging System for ALS [ALS Clinical Pathways]

STAGES	INTERVENTION
Stage 2: Obvious speech disorder with intelligible speech	Stage 2: Energy conservation; speech and environmental strategies
	Assessment: Speaking rate [words per minute]; intelligibility; communication effectiveness.
Stage 3: Reduction in speech intelligibility	Referral for AAC assessment: [speech rate=/<125 wpm; intelligibility =/<90%; communication effectiveness is reported to be severe
	AAC: Needs assessment; assessment of social and technology support; cognitive-communication function; and feature matching

Yorkston et al., 1999

Comprehensive AAC Consult

-Initiate needs assessment, feature matching, technology support, and equipment inventory during tele-AAC visit(s)

-Referral to Community AAC specialist with AAC/AT lab [in-person]

-Coordinate device trials with vendors after AAC assessment [tele practice]

-Assess client's success with the device(s) [tele practice]

-Collaborate with client and caregiver regarding device selection [tele-practice]

Speech Staging System for ALS [ALS Clinical Pathways]

STAGES	INTERVENTION
Stage 4: Natural speech supplemented with AAC	Stage 4: Implementation of AAC strategies recommended in the AAC assessment and continues until death.
Stage 5: No useful natural speech	Assessment: Communication needs and capabilities; access
	Collaboration: with OT/PT to retain access through disease progression; sgd customer support/tech support for device modifications; AAC specialist; caregiver for technology support/training

Yorkston et al., 1999

Case description

Mr. Veteran is a 65 year old right handed Caucasian man with diagnosis of **brachial amyotrophic diplegia, a form of ALS**, at John Hopkins in 2012.

Occupation:

Military: Vietnam Era (Navy, SEP 4, 1973 to JUL 29, 1977). Military occupational specialty: radio communications. He served on a Destroyer without combat exposure.

Post-Military: construction, boilermaker, construction foreman until April 2013.

Sport participation reported: Football until 10th grade.

Case Description

2006 • Decline in lower extremity motor skills, bilateral shoulder & arm weakness, difficulty walking, and occasional swallow difficulty.

2008 • Parkinson's Diagnosis

2012 • Dx: Brachial amyotrophic diplegia, a form of ALS
• Dx at Johns Hopkins

Case Study (cont'd.)

2013 • Medically disabled, unable to participate in his vocational activities
• Onset of detectible dysarthria and dysfluency

Case description-Stage 2

April 4, 2013: Initial VA SLP evaluation during ALS Interdisciplinary Clinic;

Speech estimated to be 99% intelligible with speech strategies; instructed on compensatory speech strategies [exaggerated articulation and fluency strategies]

-Mild dysarthria most consistent with mixed classification characterized by imprecise articulation; adult onset of fluency disorder/stuttering without activity limitations.

https://www.visn16.va.gov/images/NO.jpg

Case description-Stage 2

Service delivery: April 2013 to Aug 2013

Setting: In-person; Outpatient VA Interdisciplinary Clinic;

Frequency: Once every 2 months;

Compensatory strategy training: Voice amplification system; environment modifications during conversations; energy conservation

Education: natural progressive decline of speech; low and high tech AAC options; voice banking;

Referral to non-VA [specialist] SLP for comprehensive AAC evaluation

Case Study – Stage 2-3

Aug. 2013 • SGD with eye gaze technology ordered

Dec. 2013 • Referral to non-VA home health SLP for training in the use of multimodal communication.

Feb. 2014 • Natural speech estimated to be 75% intelligible with use of speech strategies.
• Limited competency demonstrated for use of SGD.

Case description-Stage 3 to 4

Feb 20, 2014 to June 19, 2014

-Speech ~75% intelligible with use of speech strategies. Limited competency demonstrated for use SGD.

Moderate dysarthria most consistent with mixed classification characterized by imprecise articulation, hypophonia; adult onset of mild to moderate fluency disorder/stuttering. Moderate activity limitation with participation in conversations

Barriers to AAC use: operation and modification/programming knowledge; Home health SLP with limited AAC knowledge

-Service Delivery: In-person; outpatient Interdisciplinary Clinic; -Referral to outpatient AAC speciali for device modifications/programming in the Spring of 2014 (1 visit for device programming/modification, June 2014)

Competency Assessment Completion

Anywhere to Anywhere

Recent VA Memo published this year allows Veterans to access providers within or outside of their residence.

Initiation of Tele-AAC

January, 2015

-Speech ~ **50% intelligible** with use of speech strategies. Decline in speech fluency compared to April 2014. Limited competency demonstrated for use of SGD.

-Moderate dysarthria most consistent with mixed classification characterized by imprecise articulation, hypophonia; adult onset of severe fluency disorder/stuttering. Moderate activity limitation with participation in conversations

Barriers to AAC use: operation and modification/programming knowledge; limited practice; equipment needs change

Initiation of Tele-AAC

Hybrid Service Delivery

-TeleAAC initiated. Spouse served as E-helper.

-Services: Device modifications, programming, practice use of voice amplification system.

Delivery: In-person; outpatient ALS Interdisciplinary Clinic;, Tele-AAC

Logistics

https://www.neworleans.va.gov/images/rendering.jpg

Setting: Medical Center to Patient's Home

-Frequency of Tele-AAC: 2x/month

-Technology support:
- Spouse; VA National Telehealth Tech Support
- Vendor Technology Support [provide remote access for device programming/modifications]

-Patient Equipment: VA issued Tablet with video web camera ; VA Video Connect Software [pre-loaded on locked commercial off the shelf tablet]; voice amplification system; iPad with Predictable software]; internet access; SGD with eye gaze control (i12)

-Provider Equipment: - Dell Optiplex 990 PC with built in microphone; VA Video Connect Software; Internet;- Logitech HD1080p video web camera; Sennheiser HD 280 pro Headphones

Veteran Owned Devices

https://mobile.va.gov/sites/default/files/VVC-presentation-MobileApps-508-1.8.pdf

Locked VA tablets with access to VA apps

Locations of Veterans accessing Tele AAC

-Veterans with ALS , Parkinson's Disease, MS, and Progressive Supranuclear Palsy typically access their tele-AAC service from their homes.

-Caregivers/spouse typically in the home with the Veteran and serve as E-Helper

Typical Telehealth Clinic Room

https://mobile.va.gov/sites/default/files/VVC-presentation-MobileApps-508-1.8.pdf

Case description-Stage 4

June 2016 to Current

-Speech ~ **50% intelligible** with use of speech strategies. Decline in speech fluency compared to Jan 2015. Competent with SGD with emerging carryover during participation in conversations.

-Moderate dysarthria most consistent with mixed classification characterized by imprecise articulation, hypophonia; adult onset of severe fluency disorder/stuttering. Moderate activity limitation with participation in conversations

Barriers to AAC use: limited practice in natural environments;

Potential barrier: onset of blepharospasms

-Service Delivery: Tele-AAC and In-person; outpatient Interdisciplinary Clinic;

AT and Tele practice

Clinical profile of Veterans accessing the service at our facility

-22-51 years of age

-History of exposure to blasts resulting in symptoms of mTBI

-Comorbidities [PTSD; OSA; chronic pain; tinnitus]

-Multiple medical appointments to manage neurobehavioral symptoms

-Employed and/or pursuing academic goals; family responsibilities

AT and Tele practice

Electronic Cognitive Device Assessment and Strategy training [Sohlberg & Turkstra (2011)

Maintain the principles of training : Why, When, and How to apply the strategies.

-Smartphone/tablet with specific software/apps

-Reading and reading comprehension software

-Smartpen

-Cognitive strategies [Cornell Notes; SQ3R, cognitive pacing, attention strategies]

Locations of Veterans accessing Tele AT

-Job site during scheduled breaks [e.g., breakroom, outside a barn in their truck,)

-Hotel room during a family vacation

-Dance studio while waiting for daughter's dress rehearsal performance

-Home

Typically treatment duration is 1x/week for 4 to 6 sessions.

Anecdotal Outcomes

-"I don't have to rush to get to the appointment, rush to get a parking spot, rush to the clinic and then rush back to work. I love it"

-"I don't have all this PTO to come to the VA all the time. This [Telespeech] is great."

-"I thought I was going to miss my clinic appointment with you today. I wasn't sure how all this technology was going to work and was skeptical. I didn't miss my appointment today and didn't have to sit in the bridge traffic. Thank you."

-Caregiver

-"He's still in his night clothes this morning. We usually don't get dressed until 10:00 or 11:00. It's so nice not to rush."

-"This is so easy! "

VA Telehealth Service

https://www.telehealth.va.gov/real-time/index.asp

- Polytrauma
- TeleCardiology
- TeleGenomics
- TeleICU
- TeleMental Health
- TeleNeurology
- TeleNutrition
- TelePrimary Care
- TelePulmonology (Sleep Services)
- TeleRehabilitation
- TeleAmputation Clinics
- TeleKinesiology
- TeleOccupational Therapy
- TeleSpinal Cord Injury/Disorder
- TeleSurgery [Consultation]
- TeleMOVE!

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ALS Augmentative Communication Program at Boston Children's Hospital, John Costello, MA, CCC-SLP Director, Augmentative Communication Program 718.216.2220 john.costello@childrens.harvard.edu

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