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Reassessment and Treatment Plan – Summer 2018

Date of Reassessment: 6/11/18, 6/12/18, 6/13/18, 6/14/18	
Name: Zachary Holm	Spouse: Sara Holm
Address: PO Box 4501, Incline Village, NV 89450	Telephone: 775-772-0398 (Zack)
DOB: 3/1/1972	Alt. Telephone: 775-671-0955 (Sara)
Age: 46	
SLP: Amanda Morrissey M.S. CCC-SLP	Referred By: Emily Smith, M.D.
Graduate Clinicians: Jourdan Burke, B.S., & Sierra Cassels, B.S.	CPT Code: 92507- Treatment of speech, language, voice, communication and/or auditory processing, individual
ICD-10 Code(s): I69.320 Aphasia following cerebral infarction, I69.390 Apraxia following cerebral infarction	

I. Background Information:

Mr. Zachary "Zack" Holm is a 46 year old male who has been receiving speech therapy at the University of Nevada, Reno (UNR) Speech and Hearing Clinic since April 28th, 2017. Briefly, Mr. Holm was initially referred to the UNR Speech and Hearing Clinic by Dr. Emily Smith for evaluation and treatment of communication impairment following a cerebral infarction.

Per UNR Speech and Hearing Clinic report dated 6/28/2016, Mr. Holm was hospitalized at Renown Regional Medical Center 4/4/2015-4/8/2015 secondary to a left brain hematoma. Mr. Holm was readmitted to the hospital on 4/20/2015 secondary to a reduced level of consciousness. A larger hematoma was found at the same site of the first hematoma and required craniotomy on 4/25/2015. He was transferred to Renown Rehabilitation Hospital from 5/3/2015-5/8/2015, and was transferred back to acute care ICU secondary to stroke. Mr. Holm was transferred back to Renown Rehabilitation Hospital until 6/10/2015. Cranioplasty was performed 6/10/2015 and rehabilitation therapy resumed 6/12/2015. Mr. Holm was discharged to home on 6/19/2015.

Initial evaluation performed at our clinic on 4/28/2016 was remarkable for non-fluent aphasia, anomia, and apraxia of speech (AoS). Previous treatment periods have focused functional communication goals with emphasis on speech intelligibility and expressive language skills. In the previous 6 treatment periods, Mr. Holm has demonstrated steady gains in relation to naming functional nouns, Correct Information Units (CIUs), and production of speech sounds. He demonstrated reduced accuracy with production of multiple parts of speech including determiners, prepositions, and pronouns. Previous treatment techniques have included Combined Aphasia and Apraxia of Speech Treatment (CAAST), Verb Network Strengthening Treatment (VNeST) and Speech Production Treatment.

Summer 2018 term will be Mr. Holm's 7th treatment period. His current concerns include focusing on improving production of intended words. Currently, Mr. Holm's expressive language is characterized by auxiliary verbs (i.e. went), general nouns (i.e. food, hike, house, work, music), and filler words (i.e. generally, you know). Mr. Holm's employs the use of his phone with the whiteboard



app and photos to compensate for his observed word finding difficulties. He also uses a whiteboard to write names of people, numbers, and letters to compensate for his aphasia and apraxia of speech

Mr. Holm is highly motivated during therapy sessions and continues to look for ways to challenge himself. Mr. Holm works as the owner and operator of his construction company and lives with his wife Sara in Reno, Nevada. His hobbies include hiking, skiing, and attending local community events (concerts and sporting events). He is independent for all ADLs and IADLs; he does benefit from assistance with communication.

Current medications per patient report: Pradaxa- dabigatran etexilate 150mg BID (Anticoagulant), Atorvastatin - Apotex 10 mg daily (Cholesterol), Folic acid 800 mcg daily (supplement), D₃2000 IU daily (supplement).

II. Reassessment:

A. Expressive Language Skills

Correct Information Units:

Correct information unit (CIU) is a means of assessing overall language performance in those who have aphasia. Scoring is based on specific rules that create a system for measuring the effectiveness of the client's communication in connected speech. The CIU system looks at communicative informativeness and communicative efficiency. It must be noted that neither percent-CIUs nor words-per-minute alone will provide a complete picture of a speaker's efficiency. There is no indication of the relative importance of the information conveyed or whether information has been left out (Nicholas & Brookshire, 1993). In CIU analysis, the accuracy, relevance, and informativeness of the words produced by the individual are evaluated.

Descriptive CIUs: Correct Information Units (CIUs) were calculated following the descriptive prompt "Tell a personal story." Mr. Holm described meeting his wife, Sarah. Words per minute, CIUs per minute, and percentage of CIUs were calculated. Words expressed in a compensatory effort, but not spoken by Mr. Holm, were not counted during calculations. Results are shown in the table below.

TASK	Words Per Minute	CIU Per Minute	Percent CIU
*Personal Story	49	42	86%

* See Appendix A for transcript

Overall CIU percentage of 86% indicates effective communication of information during conversation. Verbal output was characterized by frequent repetitions and many filler words (i.e. "generally"). CIUs are further described by reduced verbal production of numbers including time, money, and months of the year.

Mr. Holm was observed to independently integrate writing as a compensatory strategy during episodes of impaired word finding. He appeared to benefit from clinician supports via occasional phonemic cues to facilitate improved word finding.



Procedural CIUs: To evaluate informativeness and efficiency of connected speech in a procedural task, Mr. Holm was asked to narrate a daily work procedure. Words per minute (WPM), CIU's per minute (CIUs/min), and percent CIU's (%CIU) were measured to reliably quantify efficiency and informativeness of connected speech.

TASK:	WPM	CIU/min	%CIU
Work Procedure	48	40	83%

*See Appendix B

Mr. Holm's narrative contained non-word fillers (i.e., "umm"), repetitions of new ideas that did not add new information to the utterance, vague words (i.e. "stuff"), and modifiers used as fillers (i.e. "generally"). Pronoun errors were also observed ("he" for "she").

B. Parts of Speech

Mr. Holm's use of pronouns and present progressive verbs were informally evaluated. After being provided the definitions for pronouns and present progressives (below), Mr. Holm was presented written sentences and accompanying colored images to elicit each targeted part of speech. He was prompted to fill in the blank with the corresponding word. The results of each probe set are listed below; correct responses are bolded:

Part of Speech	Definition
Pronoun	A word used in place of a noun.
Present Progressive	Indicates a continuing action

	Words Produced	Accuracy
Pronouns	1. The kid 2. I 3. She 4. N/R 5. She 6. N/R 7. Kid 8. Thee 9. Phone one 10. Nine	1/10 (10%)
Present Progressive Verb Tense	1. Standing 2. Sweeping 3. The Kid 4. N/R 5. N/R 6. Fishing 7. Picture 8. Winning 9. Driving 10. Swinging	6/10 (60%)

Mr. Holm demonstrated reduced use of pronouns and present progressive verb tenses. Responses were delayed and accompanied by filler words ("umm" and "generally"). Occasionally, Mr. Holm was observed to shake his head "no" and moved on to the next probe. He was observed to repeat initial consonants ("f,f,f") to aide in producing the target 'fishing.' Mr. Holm occasionally produced words that appropriately described the target but were not the stimulus targets solicited for the probe task. Mr. Holm demonstrated the ability to complete pronoun recognition probes with 100% accuracy when provided three responses (he, she, it). Suspect that oral reading and apraxia of speech is impacting accuracy, and not pronoun comprehension.



C. Production of Numbers

Mr. Holm's ability to verbalize numbers presented in the form of a digital clock was assessed. Correct responses are in bold:

	Numbers	Responses	Accuracy
Times:	11:30	11, 3, 30	4/11 (36%)
	5:45	47	
	5:00	5 o'clock	
	3:45	3:45	
	4:00	40 o'clock	
	12:45	13:45	
	7:15	8:40	
	10:15	10:45	
	2:45	2:45	
	12:15	12:45	
	Real Time on phone: 3:18	3:18	

To reduce the complexity of the task, Mr. Holm was presented 5 opportunities to identify the correct clock time from a field of 3 responses. He demonstrated the ability to complete 5/5 probes with 100% accuracy independently. Suspect that oral reading and apraxia of speech is impacting accuracy, and not number recognition.

D. Cognitive Linguistic Quick Test

The Cognitive Linguistic Quick Test (CLQT) is a screening of cognitive function across five cognitive domains (attention, memory, executive functions, language, and visuospatial skills) in adults with suspected neurological impairments following strokes, traumatic brain injury, or dementia. The CLQT is a criterion-referenced test with severity ratings for two separate age ranges (18-69 and 70-89). Severity ratings ranging from normal to severe are established for each of the cognitive domains. A total Composite Severity Rating and a Clock Drawing Severity Rating are also obtained.

Domains:	Attention:	Memory:	Executive Functions:	Language:	Visuospatial Skills:
Cognitive Domain Scores:	196	96	31	17	102
Severity Rating:	WNL	Severe	WNL	Severe	WNL
Composite Severity Rating:	Mild		Clock Drawing	WNL	

Mr. Holm's CLQT performance achieved "Within Normal Limits" (WNL) on 3/5 cognitive domains: attention, executive function, and visuospatial skills. His performance



corresponded to "Severe" in the 2/5 cognitive domains: memory and language. Performance was further examined by exploring the 10 assessment tasks. Mr. Holm's performance achieved scores at or above the criterion cut scores on 6/10 tasks (Symbol Cancellation, Clock Drawing, Symbol Trials, Design Memory, Mazes, and Design Generation). Tasks completed below the criterion cut scores included the following 4 tasks: Personal Facts, Confrontation Naming, Story Retelling, and Generative Naming. His overall performance yielded a composite severity rating of "Mild." It is suspected that Mr. Holm's criterion cut scores, cognitive domain scores, and overall composite severity rating were strongly influenced by the nature of his non-fluent aphasia and apraxia of speech diagnoses and less influenced by cognitive deficits.

E. Dr. Fry's High Frequency Sight Words

Dr. Fry's High Frequency Sight Words are the most common words used in the English language ranked in order of frequency. These words encompass a majority of written materials from newspaper articles to novels. The words should be instantly recognized by individuals to increase efficiency and comprehension of written material.

Dr. Fry's 100 words (List 1)	Results
1-25 words (List A)	15/25 (60%)

Mr. Holm's results indicated reduced oral reading of high frequency sight words. Of note, his previous treatment period last targeted List A and performance this term indicate a reduction in accuracy from the prior term. Mr. Holm was probed for the 10 erred verbal productions; he completed comprehension probes with 100% accuracy.

III. Semantic Feature Analysis (SFA)

Informal probes using Semantic Feature Analysis (SFA) were explored as a possible future compensation for circumlocuting word finding difficulties in conversation. This strategy revealed production of many nouns in isolation and few descriptive elements of nouns (i.e. category, purpose/use). Mr. Holm's consistently omitted verbs and pronouns, which may have influenced the descriptive task.

IV.

Observations

Mr. Holm arrived unaccompanied. He willingly initiated and engaged in conversation. Mr. Holm appeared to be in good spirits and was very motivated to work and engage with the clinicians. Mr. Holm expressed his primary concern for the semester; He would this treatment term to focus on his ability to produce his intended words in all environments. Multiple episodes of impaired word finding was observed. He was also observed to self-monitor and self-correct throughout the sessions Mr. Holm independently integrated writing as a compensatory strategies to supplement word finding.

V. Summary of Findings

Reassessment revealed impairments within expressive language and oral reading characterized by word finding difficulties, impaired CIUs, omission of multiple parts of speech (i.e. verbs, pronouns, prepositions, determiners), and apraxia of speech. Mr. Holm demonstrated high motivation to compensate for his expressive language impairments. He



integrated compensatory strategies (gestures, pictures, writing) to compensate during episodes of impaired word finding with fair-good success. Stimulability testing for Semantic Features appeared to enhance word finding and expressive language.

Frequency and Anticipated Duration of Therapy:

It is recommended that Mr. Holm attend speech and language therapy four times weekly for the duration of the Summer 2018 treatment period at the UNR Speech and Hearing Clinic. It is not anticipated that the impairments identified will self-correct without skilled intervention. Services provided in this clinic are not of an educational nature. Increasing expressive language should be the focus of therapy.

VI. Treatment Plan:

- o **Goal 1: Mr. Holm will improve his oral expressive language abilities by increasing Correct Information Units (CIUs) in descriptive and procedural tasks.**
 - **Rationale:** CIUs are a means of assessing overall language performance in those who have aphasia and looks at communicative informativeness and communicative efficiency (Nicholas & Brookshire, 1993). Mr. Holm presents with deficits in his expressive language. This impacts his ability to communicate effectively with others and express his wants and needs.
 - **Baseline:** Please see Appendix A and B. Mr. Holm was observed to conversationally speak telegraphically, use fillers while trying to find the intended word, and employed strategies (writing on a white board) to produce the intended word. Word were often guessed by the communication partner.
 - **Objective 1:** Mr. Holm will use four descriptors to compensate for word finding difficulties in conversational speech with 80% accuracy in a structured clinical environment with minimal clinician support.
 - **Objective 2:** Mr. Holm will produce verbs in subject-verb-object sentence forms with 80% accuracy and minimal clinician support.
 - **Objective 3:** Mr. Holm will produce pronouns in subject-verb-object sentence forms with 80% accuracy using a visual representation and minimal clinician support.

Date Report Completed: July 3rd, 2018

Name: Amanda Morrissey, M.S. CCC-SLP
Speech-Language Pathologist/Supervisor

Name: Jourdan Burke, B.S.
Graduate Student Clinician

Name: Sierra Cassels, B.S.
Graduate Student Clinician



***Appendix A**

Story - How you met your wife

**TWC = total words correct; CIU = correct information units*

Clinician: So tell me how you met your wife, Sarah.

Z: Well... I went college and...umm I went to the um ...kind of well I remember yesterday, um we went to um the hut where hiking, and... yeah so sarah and I went and like different but we like went, and we did um... um... it's kind of the um... um um the... hut is... um we, we did it for um a lot of um.. like hiking and stuff so we did like the um hike, and uh little bit hiking, but the food for the people and a lot of different stuff... umm and it was fun actually, it really a lot of fun. Umm and then so, we did it, fine, but fine, but not, oh sarah great, so so but its kind of we went to um... New stampure, New Hampshire, and um so... I think sarah went um skiing uh different one and we do um skiing, but different one. I wanted to um um um... snowmaker... yeah it was really fun.... Yeah It's not crazy but it is really fun, and ... yeah and then I went same thing the same huts, but kind of different for the um... the um... the... it's the kind of like just sierra um...

TWC: 178; CIU: 146

Clinician: Is it a club?

Z: Yeah... but it's like...

TWC: 4; CIU: 4

Clinician: Not here

Z: yeah, exactly

TWC: 2; CIU: 2

Clinician: Is the hut a club too?

Z: It's a lot of things actually

TWC: 6; CIU: 6

Clinician: So what is the hut?

Z: The hut is well the... the kind of like um... who um ...

TWC: 10; CIU: 9

Clinician: Hotel?

Z: Not yeah, kind of.



TWC: 4; CIU: 4

Clinician: Is that where the hikers get food and stay when they are in this club hiking?

Z: So sarah used to be a lot of things and I first one, oh that's kind of cool, but it's not... ummm... it's different. So the um, so the people, it is like another like um...tenting and stuff. And yeah, so probably just me yeah, and I would go and well pay and not the people, it like, I don't know like...not a lot, but here is a lot like a hundred.

TWC: 71; CIU: 64

Clinician: And here is?

Z: Um Just... it's just... the tent is nothing but its like the uh... mmm coilets and stuff.

TWC: 16; CIU: 13

Clinician: the nicer..

Z: Kind of, here is better.

TWC: 5; CIU: 5

Clinician: So this is basic and this is the nice stay?

Z: So yeah and so yeah I did and I did hi-hike uh trail making and kind of things it's better. . Here is kind of, it's good, al-all of it is good, but here is kind of different ones. And yeah, it was fun. So.. I guess Sar, like little bit... probably I went like uhhh probably... um, 7 um years and then it kind of... we do.

TWC: 64; CIU: 59

Clinician: so Over the years of doing the same hiking and ran into her more and kind of...

Z: Yeah, and it was good.

TWC: 5; CIU: 5

Total Word Count: 365

Total CIU: 317

Percent CIU: 86%

Total Time: 7 minutes, 26 seconds.

Words per minute: 49 words

CIU per minute: 42 words



Appendix B

Procedural - Work procedure for construction business

**TWC = total words correct; CIU = correct information units*

Z: Well...no because it's the here (phone gesture) is not good.

TWC: 9; CIU: 9

Clinician: okay, very true, so how do you go about that or how do you compensate?

Z: So... we did, well the... umm.. the supervisor or the supervisor in the office.

TWC: 13; CIU: 6

Clinician: John, is that his name?

Z: John yeah. Umm... so... it... yeah, so... generally... well... um ...the what's the um... mm...could I use some paper.

TWC: 16; CIU: 7

Clinician: Absolutely, would you like some paper? Here's some paper for ya.

Z: Yeah. Um.. we do um, yelp. Yeah and so a lot of people. -11

TWC: 11; CIU: 11

Clinician: Oh, so you can put in requests on yelp for work?

Z: No, we... we generally the client is doing, what? oh, I want to contractor and...

TWC: 15; CIU: 14

Clinician: Oh so they find you on Yelp?

Z: Exactly, yeah. And...

TWC: 3; CIU: 3

Clinician: then they contact the front office?

Z: Is correct, and yeah some is good and some of it bad or and a long time. and actually today ...I did a um here, just um... (shows iPhone)

TWC: 25; CIU: 23

Clinician: so this is your last name?



Z: yup.. mhm.. yup.

TWC: 2; CIU: 1

Clinician: so, this is your business?

Z: yeah and so it's ... yeah um so generally um... here, is another one um... ad, we'll see but incline is right here so, ummm... so yeah here and here is a lot of people. - 30

TWC: 30; CIU: 23

Clinician: Mhmm, yeah! So, you guys stay busy?

Z: Every day, I mean...uh a lot.

TWC: 6; CIU: 6

Clinician: so how does someone put in a request for work? They just contact (points to yelp)

Z: yep.

TWC: 1; CIU: 1

Clinician: and then what happens?

Z: Umm... they call. They call and.... then Stephanie and he like... oh... how are you and like, ummm and incline ...and condo or... and then, and then john we go to the house and um yeah... and we'll see.

TWC: 36; CIU: 29

Clinician: then you go to the house and see for yourself?

Z: Yeah generally I don't...um I do a couple of things, but um.... I don't know... it.

TWC: 15; CIU: 15

Clinician: So what do you do?

Z: not a lot, kind of I mean so I go to the office and like well like I do checks, yes, but the carpenters I do the ...um....the clients and... how .. is it going like all... the uh... yeah, generally how is it going, is it good or bad or ... what not good and so.

TWC: 54; CIU: 47

Clinician: So you oversee everyone then.

Z: Yeah. Kind of. That's what I do every day, and then... yeah and then well speech a lot and I ski and riding and stuff.

TWC: 25; CIU: 22



Total Word Count: 261

Total Correct Information Units: 217

Percent CIU: 83%

Total Time: 5 minutes, 22 seconds.

Words per minute: 48

CIUs per minute: 40

