Augmentative Communication News

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UPFRONT

This issue highlights the use of augmentative and alternative communication (AAC) techniques and strategies for those who have a **severe, chronic aphasia** and whose speech is not sufficient to allow them to be independent verbal communicators in all situations.[1] These individuals are likely to have had a stroke and be over 65 years old. Some ACN readers (e.g., those who work in a rehabilitation or nursing facilities) may interact daily with people who are aphasic. Others, may never have an adult aphasic on their caseload. In either case, you probably know or will know someone who has aphasia (e.g., spouse, grandparent, parent, neighbor).

In **For Consumers**, the question "what does AAC have to offer the area of aphasia rehabilitation" is discussed. **Clinical News** contains intervention guidelines and practical suggestions. The **Equipment** section considers desirable features for the design of communication devices for persons with severe aphasia. In **Governmental**, public policy issues are raised. Finally, **University/ Research** describes research projects at Ranch Los Amigos Medical Center. Many thanks to those interviewed *(see page 8)* for sharing so much information, knowledge and valuable material.

In my opinion, much can be gained from a closer collaboration among professionals in the area of Aphasia and AAC. *(cont. on pg. 2)*

For Consumers

Persons with severe aphasia: What does AAC have to offer?

*Imagine waking up in a hospital, surrounded by doctors, nurses, and concerned-looking family members. Imagine not understanding what is being said and not being able to talk. Imagine life without words . . . without language. You've had a massive stroke [i.e., cerebral vascular accident (CVA)] in the left hemisphere of your brain (LCVA). Not only do you have trouble moving the right side of your body, you have a severe "aphasia."**

Have you ever visited a foreign land and been unable to express even the most basic of thoughts, needs, and ideas? Can you recall trying to talk or gesture, but people just looked at you? Remember feeling foolish, frustrated, and confused? In a basic sense, aphasia forever prevents people from returning home, even to their spouse, children, and friends. Aphasia affects everyone in a family. When it is severe, communication remains difficult.

Not all people who are unable to speak after a stroke, are aphasic. Strokes (e.g., *in the brain stem*) may result in severe speech impairment (i.e., dysarthria and/or apraxia) with language capabilities that remain intact or are only mildly affected. For them, AAC techniques and devices are often very effective. However, for those with severe, chronic aphasia who are nonspeaking (including those with speech motor problems), *(cont. on page 2)*

*Aphasia, meaning loss of or lack of access to language, is caused by a localized lesion (most commonly a stroke in the left or dominant hemisphere of the brain.) Although the term "aphasia" is sometimes used to describe language disturbances seen after more diffuse brain injuries (e.g., head trauma, dementia), these "aphasias" are not covered in this issue.

Augmentative Communication News

UPFRONT *(continued from page 1)*
Aphasiology is a well-established clinical area, solidly grounded in research. AAC is a relatively new area of clinical practice with a unique focus on functional communication and multi-modality inter actions. In addition, AAC professionals are familiar with a range of man-machine interaction issues.

I wish to pay tribute to Karoly Galyas, a colleague from Sweden, who lost his long fight against cancer in November, 1990. His contributions to AAC focused on the use of synthetic speech in multiple languages, including Blissymbols, and in literacy enhancement. He was a talented, humane man committed to worthwhile endeavors. Finally, we worry about the safety of our friends and colleagues around the world (and their friends and families). And, we hope for peace. Keep in touch.

Sarah W. Blackstone, Author

REMINDER: It is time to register for 1991 ASHA CEUs (1.2). Send $10. Be sure you keep all 1991 issues where you can find them next December.

The ACN HOTLINE number is (408) 649-3050.

For Consumers (cont. from page 1)

the primary barrier to communication is not a lack of speech (as is the case with most AAC users), but their severe deficits in language.

An estimated 1 million people in the U.S. (0.4%) are aphasic as a result of a stroke. Up to an additional 100,000 people have a stroke and become aphasic each year.[2] World-wide data are not available. Aphasias are classified according to widely accepted taxonomies: Broca's, Wernicke's, Fluent, Nonfluent, Mixed, Transcortical, and Global aphasia, for example. These classical aphasic syndromes are based on neurological and behavioral profiles, and often reflect performance on specific standardized tests (e.g., the *Western Aphasia Battery*, the *Boston Diagnostic Aphasia Evaluation*, the *Porch Index of Communication Ability*). To aphasiologists (speech-language pathologists, neuropsychologists, neurologists, linguists specializing in aphasia), these taxonomies describe, at least to some extent, an individual's profile of linguistic deficits and residual symbolic capabilities. They also provide a common vocabulary and a reference point for professional discussions and research. According to Wertz,[3] over 50% of people with aphasia will change classifications over time. Roughly 1/3 are "global" at some time; 20% have Wernicke's (posterior) aphasia, and 20% have Broca's (anterior) aphasia. The remaining 27-30% have anomic, transcortical sensory or transcortical motor aphasia.

Problems with aphasia classifications, aphasia tests, and related controversies are not tackled here!

Recovery from aphasia

After a stroke, neurophysiological and behavioral changes can be rapid and substantial for the first few months. People, for whom AAC techniques are considered, typically have global aphasia *(severe across modalities)*, nonfluent or Broca's aphasia *(severe expressive aphasia/apraxia with comprehension less affected)*. Few nonspeaking aphasics return to work because of their age, other health problems, and difficulties reading, writing, speaking, and understanding.

In a survey of 15 rehabilitation facilities in North America where professionals use AAC systems with nonspeaking aphasic patients, 60% of the 15 respondents reported no one had returned to work," 33% indicated 2-5% went back to work, and 7% replied they did not know.[4]

Despite their severe language deficits, however, these individuals often retain communicative competencies, particularly when discussing familiar topics,[5,6] or when participating in daily routines such as eating or paging through a newspaper.[7]

Measuring outcome. Traditionally, "recovery" or "change" has been measured by performance on an aphasia battery over time or on tasks that relate to components of linguistic performance (e.g., *number of objects labelled correctly*). Increasingly however, funding agencies are requiring care providers to measure "functional outcomes."[8] Consensus is lacking as to what constitutes "functional" communication and how to measure it. (*See* **Governmental.** *section.)*

In AAC, outcome measures are often based on an individual's ability to accomplish certain communication tasks, e.g., ordering food in a restaurant, or repairing breakdowns in a conversation. Outcome could also be measured by asking a panel of lay people whether treatment was "effective" after showing them videotapes of an individual, pre and post intervention.[3]

Historical Perspective

How does AAC fit in? Kraat[9] provides a historical review of the application of AAC aids, techniques, symbols, and strategies in aphasia rehabilitation.

-- In the **1960's and 1970's**, clinicians and researchers began to teach "aphasics" graphic symbols and manual signs. Some noted these approaches seemed to facilitate the re-acquisition of spoken language skills. Signs, symbols, and AAC technologies offered new hope to many populations, including people with severe aphasia.

-- In the **1980's,** communication books/boards, Amer-Ind gestures, Blissymbols, and communication devices were being used. Researchers were asking whether persons with severe aphasia could acquire manual signs/graphic symbols and how many? The answer was "Yes. . . BUT!" Few researchers

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were asking whether AAC techniques were actually used in daily communication and/or what were the limits of an aphasic's ability to use non-speech forms.[9,10,11] Clinical reports began to surface that persons with aphasia:

- 1. were not using the aids, symbols and techniques they were taught "outside of structured treatment contexts"
- 2. had difficulty utilizing large arrays of symbols, and
- 3. had difficulty producing syntactical utterances and acquiring and retaining some word classes (particularly verbs) in any alternate mode.

For example, a recent follow-up study of 500 nonspeaking patients, conducted at Rancho Los Amigos[4] *(see University/Research section)*, revealed that 71 patients (14%) were nonspeaking as a result of a stroke: 15 had brain stem strokes; 56 had left CVAs (LCVA).

For patients with LCVA: Staff had recommended word boards (35%), picture based boards (65%), and no electronic devices. For patients with brain stem lesions and intact language, staff had prescribed both electronic and non-electronic systems (i.e., symbol systems, communication boards, books, yes/no systems, dedicated devices; or multi-purpose/computer systems.)

Twenty three (23) of the nonspeaking patients with LCVA for whom AAC systems had been recommended, were seen by researchers at discharge, 2 months, and 6 months post discharge. During these visits, master clinicians were asked to judge: 1) whether the recommended communication device was "appropriate," and 2) if the patient was "still using the system as they had been taught." Results: At discharge, all recommended AAC systems were considered appropriate, and most patients (87%) were using them as recommended. However, just 6 months after discharge, and despite the fact that professionals still considered 83% of the AAC systems appropriate, only 43% were using them as originally designed. Thirty nine percent (39%) of the clients had discarded them completely.

-- As the **1990's** begin, AAC techniques and symbols occupy a "tenuous place in aphasia rehabilitation." Acknowledging that language-based AAC techniques and aids have done little to compensate for the daily communication problems of people with severe aphasia, Kraat *(and others interviewed)* suggest the time has come to ask better questions.

The Road Ahead

What constitutes a "successful" outcome? How can meaningful changes be facilitated in aphasia treatment? Which variables predict which types of recovery patterns? Which therapeutic approaches are most efficacious for which individuals and types of aphasia? Where and when should intervention be provided?

Collaboration among professionals in AAC and aphasiology may provide new ways to consider these and other issues. Here are some of my thoughts.

1. Principles of intervention. As an area of practice, AAC is evolving "theories of therapy" with particular applicability to the rehabilitation of persons with severe aphasia. In my opinion, Table I lists excellent examples of AAC principles that could be applied.[7]

Table I. Principles of AAC intervention applicable to aphasia rehabilitation
[Garrett and Beukelman (in press)]7

1. a wholistic and family-centered orientation to communication intervention that considers the person, his or her lifestyle, family and partners, environment, needs and life goals.
2. an emphasis on enhancing the participation of the individual in important life activities
3. an emphasis on the communication of meaning and intent
4. a decreased emphasis on viewing treatment as a process of strengthening the subskills of communication (e.g., motor movements, word repetition, command following) in a hierarchical order using stimulus-response training approaches
5. an increased emphasis on capitalizing upon the residual strengths of the individual rather than focusing on deficits
6. the importance of providing communication opportunities
7. the importance of skilled communication partners
8. an emphasis on communication as a multimodal process, a package of "whatever works" strategies, including AAC techniques and natural speech.
9. a recognition of communication as idiosyncratic and individualistic.

2. Treatment efficacy. Devices and signs/symbols are tools that may (or may not) improve an individual's communication performance in one (or more) specific contexts. While current AAC techniques do not bypass a person's language disorder, the efficacy of interventions that offer compensatory strategies and use a range of AAC techniques and tools (both natural and taught) to bring about maximum functional interaction is not well explored.[9]

Funding agencies are asking care providers to take a more functional, outcome-oriented approach to treatment and to measure results accordingly. To date, most refuse to cover the costs of augmentative techniques/aids or the services required to implement AAC intervention, despite its functional orientation. Not surprisingly, they demand proof. *Both single case studies and experimental studies are needed.*

3. Neurophysiological/neurolinguistic organization of the brain A systems-based theory, as opposed to a brain structure/localization theory, is strongly postulated as an explanation for the central nervous system's response to insults resulting in aphasia.[12,13] This theoretical milieu of *integrated brain function being greater than the sum of its parts,* supports a more eclectic approach to intervention. Who knows? . . . perhaps AAC's systematic use of multimodalities, environmental support, and context-based training is well-grounded in systems theory.[7,9,14]

Summary

Knowing about assistive technology and augmentative communication strategies does not prepare AAC professionals to help someone with aphasia. Knowing about aphasia does not prepare aphasiologists and others to implement AAC strategies and techniques. Families and people with aphasia are asking for assistance. If we are to respond in a responsible manner, a more active collaboration must ensue; and has begun.

Will the consumer benefit from our collaboration? Many people think so. We look to those who specialize in both areas to pave the way, define the path, and move us forward. I believe that for persons with aphasia, we may yet construct bridges that positively affect their daily communication experiences and lead them closer to home, as they live out their lives.

Clinical News

When functional communication is the goal

Two major approaches to aphasia intervention are:

- A deficit strengthening approach. This approach targets intervention at the level of impairment,** i.e., language. Goals relate to improving language understanding and use. Attempts are made to "plug up deficits" and "capitalize on strengths."
- A functional approach. This approach focuses intervention at the level of disability,** i.e., improving an individual's participation in daily activities and the level of handicap,** i.e., improving perceptions of society in order to enhance an individual's opportunities. Goals are to increase participation by teaching interaction skills to individuals with disabilities and their communication partners in their homes and communities.

** World Health Organization (1980). International classification of impairments, disabilities, and handicaps. Geneva: World Health Organization.

AAC intervention is, by definition, a functional approach.

Improving communication interaction

Intervention framework: Light[15] provides a useful intervention framework, which divides communication interaction into four categories according to purpose:

- 1) information transfer
- 2) wants/needs
- 3) social closeness, and
- 4) social etiquette.

The purpose, she notes, of any communicative exchange is highly dependent on the context (partner, environment, activity) and the skills and abilities of individuals involved. For example, communication of wants/needs is seldom the central purpose of an able-bodied adult's communication efforts.

Several interviewed apply this framework to aphasia intervention. They note that after a stroke, social etiquette often remains intact while information transfer is likely to decrease as a priority over time because of severe linguistic deficits. Interventions focused on social closeness, expression of relevant wants/needs, and ways to exchange "real" information without relying on language, are recommended.

The Tools: Unfortunately, there is a broad-based misconception that the area of AAC is synonymous with devices, communication boards, books, and graphic symbols. That is not the case. AAC devices, boards, and symbols are not solutions. They are, in a sense, human responses to

"Now! *That* should clear up a few things around here!"

frustration/problems. They are a means to an end . . . not an end in themselves. They are tools.

People with severe aphasia and their speaking partners can learn to use tools to solve communication problems by also learning special AAC techniques and strategies. Even though some AAC "tools" appear simple, communication is a complicated process. A carpenter's apprentice learns how to use a hammer and nails to build a cabinet from someone who: a) understands the cabinet making process b) knows all about hammers and nails, and c) knows how to teach. It is fallacious to think that "anyone" could introduce a communication board/book to an individual and family. AAC intervention is about the communication process, not it's tools. Enough said!

Guidelines for training people with severe aphasia

Getting started: AAC takes an eclectic, multimodality approach to: a) the analysis of communication patterns between individuals who have difficulty speaking AND their speaking partners and b) the development and everyday use of strategies that enhance participation and communicative interaction. Clinicians, with expertise in aphasia and AAC, indicate they look at what the client does naturally before deciding what AAC approach(es) to pursue. For example,

- if a client reaches in his wallet or looks at a magazine to provide information, communication books or situation-specific cards may be useful.
- if no symbolic, nonverbal behaviors *(pantomime, embellished gestures)* are observed, teaching graphic symbols or signs may not make sense. Try exploring other avenues (*drawing, reading words in context, pointing to a map*) and teaching partners how to support conversational exchanges.
- if individuals use symbolic gestures and multiple modes, the question becomes "do they shift strategies?" See Beukelman and Garrett[16] for a description of how to teach someone to shift AAC strategies.

Making It Happen: The term severe aphasia or global aphasia tells a practitioner little, if anything, about how to proceed. Garrett and Beukeleman[7] are proposing a highly useful intervention model for persons with severe aphasia. Table II summarizes (to a limited extent, of course), this valuable contribution.

Additional Hints:

1) If possible, partners should participate in, not observe, therapy.

2) Be aware that well-established communication patterns are not easily modified. For example, involving a spouse as a primary facilitator after stroke may not be effective, if minimal communication was going on prior to the stroke.

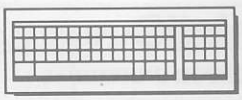
3) Communication should be honest. Often, partners "pretend to understand", ask questions they know the answer to, and play "therapist." Sincerity is important.

4) Total communication is the key. Do any thing you can, any way you can!

TABLE II. GARRETT'S & BEUKELMAN'S INTERVENTION MODEL FOR PERSONS WITH SEVERE APHASIA[7]

TYPE	RESIDUAL SKILLS	INTERVENTION GOALS/SKILLS	SUGGESTED ACTIVITIES FOR PARTNERS	SUGGESTED ACTIVITIES FOR INDIVIDUAL
BASIC CHOICE COMMUNICATOR (Chronic global aphasia w/severe neurological impairment.)	Prelinguistic. With maximal assistance can make basic choices & develop turn taking skills in familiar contexts.	Focus on partner training. Develop affirmation, turn-taking, choice making, indicating reference, establishing joint reference.	a. Create family scrap book for patient. b. Learn about the individual. c. Be sincere d. Participate in interactive choice making. e. facilitate participation in games.	a. Choose items to meet grooming needs during daily routine. b. Choose pictured items in context of a functional activity (e.g., clothes) from catalog. c. Participate in tic-tac-toe. d. Participate in simple card game (Uno, War, Old Maids). e. Communicate affirmation (head nod) and refusal (head shake). f. Add features to outline drawing of man, house in interactive context.
CONTROLLED SITUATION COMMUNICATOR. (Chronic Global, Broca's, Wernicke's aphasia.)	Initiates communication w/assistance in structured situations. Often too limb apraxic to use gestures. Speech is stereotypic/non-existent. Can communicate specific information, opinions, feelings	Teach use of choice making. Train partners. Develop use of AAC strategies and tools to allow participation in controlled, predictable exchanges and routine conversations	a. Identify interesting conversational topics. b. Incorporate rating scales into conversations. c. Respond to all modes of interaction d. Pause. Make effort to determine message person is trying to convey. e. Converse by providing written/ graphic choices	a. Call for attention/assistance. b. Introduce self. c. Communicate biographical information by pointing to contextual written choices. d. Communicate specific information to answer question by pointing to contextual cues. **EXAMPLE** of conversational exchange between clinician (C) and Frank (F): C: You're wearing overalls. Are you a farmer **(writes choice)** or a rancher **(writes choice)**? F: points to farmer. C: I grew up on a farm, too. What do you raise in your part of the country? corn **(writes choice)** or wheat **(writes choice)**? F: points to corn. C: **(draws scale from 1 to 5)** Frank, is this going to be the best crop you ever had **(points to 5)**, so-so **(points to 3)**, or the worst one **(points to 1)**? F: (half-hearted smile, looks at hemiplegic arm. C: Oh, you're not sure since you've had a stroke. Lets ask your son. F: nods.
COMPREHENSIVE COMMUNICATOR. (Chronic Broca's and conduction aphasia.)	Communicates using more than one modality (limited speech, drawing, gestures, first letter spelling, pointing to pre-stored words or symbols). Often person provides scraps of information to partners, who may (or may not) be able to figure out the message.	Develop integrated use of multi-modalities. Inventory communication needs across environments. Provide appropriate vocabulary. Teach in environment.	a. Allow to introduce self & explain disability. b. Identify biographical information for notebook. c. Ask & respond to "yes/no" questions appropriately, attempt to express needs, and questions requiring qualitative responses (using rating scales.). d. Interpret and guess at specific attempts to communicate (pointing to word fragments, drawing, pointing to a map). e. Encourage to shift modalities. f. Encourage use of control phrase care. g. Participate in selecting vocabulary for notebook.	a. Introduce self. b. Communicate biographical information by pointing to previously stored information in a multimodal system. c. Communicate yes/no via gesture or pointing to words. d. Communicate physical needs by pointing to self or previously stored words. e. Communicate opinions and preferences by pointing to number on 5 point rating scales. f. Communicate specific information within topics by pointing to written or pictured words stored in notebook/technical system. g. Communicate novel information by pointing to first letter of word on alphabet card and assist partner until target word is guessed. h. Initiate questions (e.g. pointing to prestored written questions). i. Communicate location information by pointing to a map or by drawing a schematic. j. Draw relational figures or objects to communicate novel information. k. write first letter or word fragments to communicate novel information. l. Resolve break-downs by using control phrases in conversational situations. m. Organize and access memorabilia, scraps of information, appointment cards, and notes from notebook. n. Switch between communication modes as needed to maintain conversation.
SPECIFIC NEED COMMUNICATOR. (All classification categories.)	Benefits from support in situations requiring specificity, clarity or efficiency (e.g., shopping).	Use phone, participate in community leisure activities, participate in family & share responsibilities.	a. Identify specific situations & specific messages. b. Assist in developing system components. c. Provide opportunities to use system components.	a. Communicate specific information via telephone. b. Communicate key information in community leisure activities.
AUGMENTED INPUT COMMUNICATOR (Wernicke's aphasia; auditory processing deficits.)	Benefits from listener generating key words or written choices to supplement auditory input. May speak well.	Develop ability to comprehend key points in a conversation given key words	a. Use gestures. b. Identify breakdowns in auditory comprehension. c. Write key words denoting topics, etc. during conversation.	a. Carry notebook with blank pages and instructions for partners. b. Comprehend key points in conversation given supplemental written key words.

Adapted from Garrett, K. & Beukelman, D. (in press). Augmentative communication approaches for the person with severe aphasia. In K. Yorkston, Ed. Augmentative communication in the acute medical setting.. Tucson: AZ: Communication Skill Builders. Anticipated publication in Spring, 1992.



Equipment

Designing devices for severe aphasia

Communication devices that require users to find and select language/symbols to produce a message were not designed for persons with severe aphasia. Thus, it is not surprising electronic communication aids are rarely recommended for this group. AAC technology designed for persons with severe language deficits will be based on different concepts, e.g., providing "links" to support the user's access to both linguistic and other types of organizational schema.

In the early 80's, Colby introduced the Intelligent Word Finder for persons with aphasia who had mild-moderate word retrieval problems.[17] Patients could input cues (e.g., number of syllables, first letter, etc.) and the machine "guessed" which word was desired. Today, products being developed in several countries, are taking into account the support individuals may need and are attempting to address interactive needs.[18]

LINGRAPHICA is a 15 lb., battery operated device that will available in February, 1991. It allows for text search and provides a lexicon organized in a hierarchical fashion (e.g., a floor plan of a house. Users can open up room, go into desk drawers, etc.). Keyboard and trackball access. Transparent to partner through speech output or printed English. U.S. $5,950. Available from Tolfa Corp., 1860 Embarcadero Rd, Palo Alto, CA 94303.
Note: The research and development on this product has included systematic performance evaluations of severely aphasic patients.[19]
Results: Global aphasics (as defined by PICA scores) do better with the device than with natural language.

Desirable device features

"What device features would facilitate more independent communication for persons with severe aphasia." Here's ACN's Top 30.

A device should:

- allow individuals to input shreds of information using icons, words, first letters of the alphabet, categories, colors, etc.
- provide a field of choices
- go beyond linguistic prediction to more associative linking
- permit movement among links and associations, e.g., tree branching
- be designed for use in the environments that users will be living in (i.e., nursing home, home)
- include efficacious training methods
- make allowances for underlying cognitive problems, e.g., ability to make abstractions, sustain attention, stay on task
- provide means to cue user to initiate
- provide an external memory aid
- identify perseverative behaviors and attempt to modify by cuing user
- be affordable
- be technically transparent
- be logical
- be flexible
- be operable with 1 hand (likely the person's nondominant hand).
- have a Touch screen option
- be small in size, be portable
- account for right visual neglect
- provide clear graphics. Ideally, a VGA screen/color enhancement
- have a dynamic screen
- provide multimodal support to the user, i.e., non-print modalities, linguistic and nonlinguistic symbols, sounds (not just speech)
- focus on pragmatic rather than syntactic and semantic elements
- allow for personalized vocabulary
- provide a way to make basic choices
- provide cues for partners. For example, "Ask me yes/no questions." "Give me choices I can point to."
- be able to embellish topics after being provided with minimal information
- animate verbs
- build in concepts of communication notebook/communication wallet
- allow for, but not require, sequencing/construction of message components.

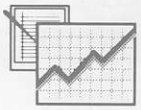
NOTE: Holland suggests using barcodes. You put barcodes for items around the house. Then, if an individual wants to know the name, he can use a barcode reader with speech output. Same idea as the cartoon on page 4!

Governmental

Aphasia rehabilitation and public policy

Initial communication intervention occurs in the hospital (acute phase of illness) and involves some assessment of the patient and support to the family. After people stabilize medically, they are discharged to their home, an acute or long-term rehabilitation program, or nursing home. Intervention may occur at any of these locations, but AAC-related approaches are more likely to occur in an acute rehabilitation facility. In reality, public policy and third party payers (including national health care systems) often dictate the length and extent of care received by persons with aphasia. Because of dwindling health care resources, several issues are being debated in aphasiology that are relevant to AAC.

- *Delivering communication services*. Alternate service delivery models are being explored. For example, Vaughn introduced the use of teletherapy for persons with aphasia in the 1970s in an effort to reach those who were unable to come into a clinic. Because patients with deficits in the auditory-verbal modality did not benefit from this approach, Wertz[3] recently compared 3 intervention models in the assessment and treatment 108 persons with aphasia: 1) traditional face to face therapy; 2) closed circuit T.V. 3) Computer controlled laser disc over the phone. Results: No difference re: assessment or treatment outcomes. In a second project, clients are coming to a community clinic to use the computer controlled videodisc under the collaborative tutelage of aphasiologists and community professionals.
- *Prioritizing resources*. Difficult professional and ethical issues are eloquently discussed in a series of articles in Aphasiology.[20] Discussants consider whether those with severe aphasia (*who may progress on test scores, but remain dependent communicators*) have received attention at the expense of those with mild aphasia.
- *Functional communication assessment*. For years, Holland, Sarno, and other aphasiologists pioneered the development of reliable, valid measures of functional communication. These tests correlate highly with linguistic batteries, suggesting they measure the same things. Frattali[8] in a thorough review of functional assessment states, "If public policy can be used as a barometer of preferred clinical practice patterns, functional assessment of communication should be submitted to much greater scientific scrutiny and clinical use than is currently practiced. Professionals should work together, she suggests, "to advance the field of functional assessment, and to respond to and shape public policy in both national and international healthcare arenas."



University & Research

Rancho Los Amigos Medical Center
Downey, California

The Rancho Los Amigos Medical Center, founded in 1888, is the largest rehabilitation facility in the U.S. Located in Southern California, the Center has approximately 90,000 patient contacts per year. Children and adults with a range of disabilities receive a variety of specialized rehabilitation services. Highlighted below are those programs currently addressing research and training issues in AAC and related areas.

1. **Center for Applied Rehabilitation Technology (C.A.R.T.)**. Director, *Frank DeRuyter, Ph.D.* This program offers clinical assessment, prescription, and training services to persons in the hospital and/or the community. The team includes professionals with expertise in augmentative communication, seating, mobility, computer access, environmental control, rehabilitation engineering, educational and vocational services, and independent living. Collaboratively funded by Las Floristas Women's Guild, Rancho (County of Los Angeles), and Los Amigos Research and Education Institute, C.A.R.T. became fully operational in June, 1990. The Center has a communication enhancement lab, a computer access and use lab, a model home and work sites that allow for simulations, etc. Current research projects in the area of AAC nearing completion include:

Nonspeaking and acquired brain injuries. *Frank DeRuyter, Molly Doyle, Mary Kennedy*. Project goals include:

- Associating certain AAC related variables to specific cognitive levels of nonspeaking persons with traumatic brain injury (TBI). The variables include determining: 1) interactive needs, 2) vocabulary trends, 3) type of augmentative devices/ techniques used, and 4) vocabulary expansion strategies being employed. Each variable is then associated with specific Rancho Los Amigos Levels of Cognitive Function in TBI.[19] *(Note: ACN, November, 1989 issue focused on TBI.)*
- Determining the outcome usage and appropriateness of AAC system components for persons who are nonspeaking as a result of TBI, brainstem lesion, and stroke.
- Surveying other facilities in North America who are providing AAC services to nonspeaking patients with acquired brain injuries.

Assistive technology usage outcome. *Frank DeRuyter, Molly Doyle*. This project aims to provide professionals, reimbursing agencies and consumers with objective information on how assistive technology is used. Staff are collecting and analyzing outcome data up to 2 years after delivery and proper training of assistive technology. Patient-, technology-, and professional-related variables are being investigated.

2. **Rehabilitation Engineering Centers (REC)**. Rancho Los Amigos Medical Center has two RECs currently funded by the National Institute for Disability and Rehabilitation Research:

Rehabilitation Technology Transfer: Principal investigator, *Don McNeal, Ph.D.* Funded in 1988, goals are to facilitate the flow of rehabilitation technology from the research lab to the manufacturer/vendor to the end user. Projects, mostly focused in the O.T. area include outcome surveys, and plans to facilitate tech transfer.

Technology for children with orthopedic disabilities: Principal investigators, *Mark Hoffer, M.D. and Don McNeal, Ph.D.* This REC, funded in 1990, is committed to research, scientific evaluation and training programs that advance the rehabilitation of children with orthopedic disabilities and emphasize independent mobility and functional independence. Current research and development efforts include:

- developing a system to reduce knee and elbow joint contractures
- developing predictors to begin powered mobility training with very young children.

Other research and training projects are underway in collaboration with C.A.R.T. staff (*Frank DeRuyter, Molly Doyle, Paula Guerette, Nancy Somerville, and Donita Tefft.*)

- Assessment procedures and training programs for children 1 to 5 years who can benefit from appropriately prescribed powered wheelchairs.
- Prescriptive guidelines for integrated control interfaces for persons who have few access sites, but multiple devices to control.
- Developing guidelines and training for mainstreaming children with severe disabilities in public schools.
- Establishing labs to enable consumers, families and professionals to try equipment.
- Developing a consumer's guide to funding assistive technology. The guide will be based on responses of consumers to a national survey identifying successful strategies to obtain funding.

For further information, contact, Frank DeRuyter, Director, Communication Disorders Department and Center for Applied Rehabilitation Technology, 7601 E. Imperial Highway, Downey, CA 90242. (213) 940-6800.

Research Studies in Aphasia: ACN Wish List

- Demographic studies of clinical categories, i.e., clean up terminology.
- Studies of the validity of Garrett/Beukelman intervention model for severe aphasia.
- Which AAC approaches work with whom, i.e., which "linkages" help?
- What do people with severe aphasia talk about? Do topics vary with age/sex/context?
- How do topic starter sentences influence interaction?
- How does carryover compare when skills are taught in contextual vs. drill approaches?
- Why do aphasics comprehend contextually written information when they don't demonstrate this ability on standardized tests?
- How do outcomes compare when therapy is conducted as funding agencies specify (i.e., intense while in the hospital) versus in ways that "make sense." (e.g., periodic visits to support interaction at home and in the community?)

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FORUM

Daryle Jean Gardner-Bonneau writes in response to article on Work Stations (**Equipment**, November, 1990). " *Given the weight of wheelchairs, I suspect that cords under carpets would be particularly susceptible to fraying. This can cause a devastating fire. Cabling/wiring underneath the floor may be okay, but I wouldn't advocate running cords under carpets.*" Excellent point!

1991 Topics: We have issues planned for ACN 1991. However, if you have a request, let us know! We are flexible!
Look for Training Partners in March, 1991

Phil Odor requested corrections (**University/Research**, November, 1990). 1. CALL Centre is the (Communication Aids for Language and Learning) 2. Amy Joss. 3. COMSPEC, with the Nordic Council.

RESOURCES

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