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Augmentative Communication, Inc.
1 Surf Way, #237, Monterey, Ca 93940

Augmentative Communication News

March, 1989 Vol. 2, No.2

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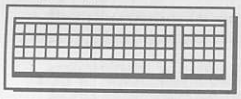
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UPFRONT

"Ambulatory individuals are our toughest challenge," say the professionals I interviewed for this issue. Particularly challenging are those with developmental apraxia of speech (DAS). **For Consumers** and **Clinical News** synthesize important issues and controversies surrounding this group. Master clinicians (see list of resources) graciously shared their insights, current practices and concerns.

Commercially available communication aids are now more portable and intelligible. I sense a growing excitement. Technology is providing more and better options! The **Equipment** section discusses nonelectronic displays and those portable electronic aids introduced to the AAC area within the past year.

University and Research highlights the masters and doctoral degree programs in AAC at the University of Minnesota. The **Governmental** section describes a U.S. government funded program, the Regional Information Exchange. It identifies exemplary practices in the area of transitions, supported work, & independent living.

Good News! ACN was recently approved by the American Speech-Language-Hearing Association to offer continuing education credits. The first newsletter ever to receive such distinction! Read about how you can receive CEUs in the insert enclosed. *(cont. pg. 2)*

For Consumers

Those who Walk: In Search of Better Solutions

You hear, you understand, you talk (but not very well). You may be clumsy, but you don't have cerebral palsy. You get around and do almost everything anyone else can. You probably have learning problems, particularly in receptive and expressive language areas. Your biggest disability, however, is speech. You, your family, teachers, caregivers, employers feel frustrated and perplexed. It seems the harder you try to talk, the worse it gets! Sometimes you just "give up" or pretend you said something you didn't, rather than keep trying. As you get older, you generally become withdrawn and/or "act out" your frustrations. You seem to "get along" socially using gestures, speech approximations, facial expressions, and vocalizations, but exchanging information can be a major problem. Somewhere in your records you may find the diagnosis -- DAS developmental apraxia of speech.

Developmental apraxia of speech (DAS) means difficulty with volitional or imitative production of speech sounds and sequences (secondary to neurological impairment) in the absence of paralysis of the speech musculature. Whereas adults with acquired apraxia of speech often have had a stroke, the cause of DAS generally remains unknown. Males, by the way, are more likely to have DAS (3:1).[1]

Historical Controversies

1. Does DAS exist?

The term DAS first appeared in the literature in the late 1960s, early 70s. Researchers and clinicians still do not agree on which symptoms and signs are crucial to the diagnosis of DAS and which *(cont. pg. 2)*

UPFRONT (from page 1)

ACN staff (Gary Poock and I) are getting ready to send out *thousands* of letters to potential subscribers. If you have any names/lists of individuals who might be interested in receiving information about ACN, please let us know. We depend on and greatly appreciate your support. Thanks!

Thanks also to folks in North Carolina. It was a pleasure to be your featured speaker at the NCACA Conference.

Finally, *Happy Springtime* to everyone! Keep in touch on the Hotline (408) 649-3050!

Those Who Walk (from page 1)

are merely associated with it. Some question whether DAS exists at all. They suggest the symptoms are caused by a severe functional articulation disorder or a severe language disorder. Because appropriate intervention is based on complete and accurate understanding of problems, the outcome of this controversy matters. In the interim, speech-language pathologists and augmentative communication teams continue to try to help.

Recent acoustic and physiologic studies have lead some researchers to conclude apraxia does exist as a single entity.[2] Individuals with "apraxia" demonstrate "difficulty programming the timing, coordination, and articulatory adjustments necessary for normal speech production" when compared to other groups. Apraxia, they concluded, is the symptom of a *speech motor system unable to make rapid transitions and implement dynamic motor subprograms.** Research to confirm or refute these findings for individuals with DAS is needed. *See references for extensive reviews.*[2,3,4,5]

*Note: These data come as no surprise to most clinicians working directly with these individuals.

2. Will AAC affect speech?

Beginning in the 1970s, some speech-language pathologists, teachers, and parents became dissatisfied watching receptive-expressive language gaps widen and frustration increase in children with DAS. Speech, they reasoned, is not an end in itself. It is a tool used for communication. Asking a child to do what they are not capable of doing (i.e., sequencing phonemes to produce intelligible speech) is unfair. . . sometime I think it borders on being abusive. Professionals began exploring other tools, e.g., manual signs, symbol boards and books.

It got hot for awhile! Professionals were accused of "giving up on speech." Fears were expressed children would *stop trying to talk* if signs or communication aids were used. Gradually the panic has subsided. Case reports show the introduction of manual signs and/or communication displays do not interfere and even seem to facilitate speech and language growth.

Today's Realities

We still do not know much about DAS or what works best. However, these individuals need and are receiving help from AAC professionals. For example, at Sunny Hill Hospital in Vancouver (a technology assessment center), they currently follow 11 children who are ambulatory and use communication devices. Of these, 6 have a diagnosis of DAS (ages 3 1/2 to 16 years); the others have diagnoses of severe-profound hearing loss, cerebral palsy, or cleft palate.[6] At the W.E. Fernald State School in Massachusetts, a residential facility for 700 adults with substantial degrees of intellectual delay, 60 of their 90 nonspeaking residents who function at a symbolic level are ambulatory. The etiologies of their speech impairments also include DAS.[7]

Future Issues

As we continue to face controversial issues from the past, many new issues and concerns are being raised. Below are some thoughts and ideas on important consumer issues.

1. **Family Acceptance of AAC.** Parents often have difficulty hearing and supporting recommendations to add AAC approaches to an existing speech therapy program. This is understandable. However, precious time may be wasted.

- 1. Discuss and demonstrate the reason for an individual's speech problem. Explain what is involved in producing speech and how the speech system develops.
- 2. Introduce the concept of parallel programming. Talk about sound stimulation, articulation, language, and communication training using AAC techniques. There is lots to be done! Ask caregivers (as primary team members) to help set priorities, assign tasks, and measure effectiveness.
- 3. Set up an activity to demonstrate what the individual with DAS can do using a particular AAC technique.
- 4. Offer family members written information about DAS and AAC. Follow up with discussion.
- 5. Arrange to have family members talk with others whose child has been successful using recommended aids/techniques.
- 6. Show videotapes of individuals with similar problems communicating successfully using AAC.
- 7. If possible, make a videotape of case examples illustrating improvement in speech, language and communication skills over time.
- 8. If the family does not want to use AAC aids and techniques at home, begin at school or in some other context.
- 9. Be patient and honest. If caregivers refuse to allow the team to implement special AAC techniques, recommend working on speech, standard augmentative techniques (gestures, vocalizations, drawing.) Teach conversational repair strategies, letter cueing, etc. Periodically, reintroduce the idea of special AAC approaches.

Independence. Individuals and families often wrestle with independence issues. Parents and teachers are understandably reluctant to allow children who are unable to produce intelligible speech to participate in some situations. They have legitimate concerns about physical and psychological safety. However, individuals learn the necessary skills to live independently as adults by *experiencing life*. While providing supportive environments is important, allowing individuals to take risks and even fail on occasion, promotes growth as well. Encourage parents and teachers to provide *(cont. pg. 3)*

AUGMENTATIVE COMMUNICATION NEWS is an independent, non-membership publication.
Editor, Sarah W. Blackstone, Ph.D.; Publisher, Gary K. Poock, Ph.D.
Published by Sunset Enterprises, One Surf Way, Suite #215, Monterey, CA 93940
Subscriptions: By personal check U.S.$37 (1 yr), U.S.$67 (2 yrs), U.S.$97 (3 yrs). Single issues $8.
Overseas - U.S. $47 (1 yr.), U.S. $85 (2 yrs.), or U.S. $123 (3 yrs.).
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ISSN #0897-9278 Telephone (408) 649-3050

plenty of support, and to let go. . . a little at a time.

Self Awareness and Acceptance. Most individuals with DAS know they are different at least by the time they get to 2nd or 3rd grade. *Note: Awareness begins much, much earlier...watch the efforts of a 3 year old attempting to speak, a 4 year old who tantrums when he can't be understood, a 5 year old withdrawing from activities in the neighborhood.*

* 1. The theme song is "It is okay to be different." Any tune will do! Introduce others with similar problems, talk about differences, be open and honest about strengths and weaknesses. Answer all questions.
* 2. Verbalize feelings for the individual (e.g., I know it makes you angry...you try to talk, but your mouth just doesn't do what you want it to). Provide vocabulary that permits her/him to express feelings.
* 3. Take some of the blame (e.g., Sorry I didn't understand. Guess I wasn't listening very well. I'll try harder.)
* 4. Encourage attempts to talk (e.g. I am so proud of you. I know how hard you try. You have important things to say.) Reinforce success.
* 5. Acknowledge and applaud all efforts to communicate (e.g., drawing, pantomime, gestures, communication book)
* 6. Consider formal counseling to build self esteem.

Individual preferences. The personal preferences of each individual with DAS will and should influence all intervention decisions. However, prior to "developing a preference," individuals and their partners should use AAC aids, techniques, and strategies. Signs, communication books, voice output communication aids, etc. make people look "different." Therefore, many individuals are reluctant to use them in the community. Encouragement and success are required. Intelligibility is critical! When AAC techniques work and partners enthusiastically support their use, they are much more likely to be "preferred."

Hints

In response to our January '89 issue on literacy, Dave Schmitt (Resource Center, Easter Seal Society, Lakewood, CO 303-233-1666) reports 2 new, excellent software lines in early literacy: Reading Magic series, by Tom Snyder Productions, and Curious George series, by DLM.

Also, Walt Woltoscz (Words +, Inc, Lancaster, CA 805-949-8331) pointed out features of EZ Keys and other Word + software can help individuals **compensate** for problems. Thanks Walt and Dave!

Clinical News

Issues and Practices

Primary goals of AAC interventions for individuals with DAS are to:

1. Serve as a bridge leading to the development of speech and language skills.

2. Enhance daily communication.

3. Provide information about an individual's profile of skills and abilities.

Clinical experience and case reports suggest the prognosis for the development of functional speech and improved expressive and receptive language is enhanced if individuals with DAS participate in AAC interventions. Certainly, the use of conversational repair strategies, signs, communication books, miniboards, signs, electronic devices, and computers provide a means of expression and allow daily communication tasks to be accomplished. AAC intervention also can assist teachers and clinicians to select appropriate instructional goals by providing information about what an individual understands. In trying to accomplish these goals, we face a number of issues.

1. Early Intervention

Many clinicians feel AAC interventions should begin before an individual experiences "communicative dissonance," i.e., a dissociation between one's ability to understand and to speak, which can occur as early as 2 years of age. Children with DAS, however, are typically not referred to speech-language pathologists and AAC teams until much later. Advantages of early intervention are:

* Early exposure to AAC aids and techniques so children and partners can incorporate augmentative components into developing communication systems.
* Facilitation of speech motor skills during a time of rapid development.
* Exposure to appropriate language models, both aided and unaided to optimize receptive and expressive language development.
* Avoidance of communication failure.
* Increased partner understanding, acceptance, & development of realistic goals.

2. Outcome

We know very little about the clinical course of children with DAS. Retrospective studies, longitudinal case data, and videotaped documentation over time are not available. Many individuals seen during preschool and early childhood are lost to followup. Clinicians warn, *"Don't assume no news is good news!"* [8] Find out what's happening, be researchers!

What do individuals with DAS think about AAC aids and techniques? What AAC aids and techniques are used successfully over time and why? Does intelligible speech develop? When? What happens in school & employment settings? How are individuals with DAS perceived? What conversational repair strategies are most useful? and so on.

3. Mobility*

Those able to walk often can take care of their own basic needs. They are not restricted in their access to the environment and to social interactions. This affects vocabulary selection and AAC aids and techniques. They must be very portable, unobtrusive, and intelligible to all potential communication partners.

4. Vocabulary

Because individuals with DAS often need access to large, flexible, novel vocabularies, a major emphasis should be on the development of literacy skills.** For those unable to read, clinicians recommend using symbol displays with single word formats rather than phrases and sentences to enable individuals to say novel things.

Table I (page 4) contains guidelines found to be useful in judging how large a vocabulary *should be.* Kravitz[7] suggests if someone is not "motivated" to use a communication display, try "pumping up the vocabulary" so they have more to "say." Good point!

Motorically, these individuals generally can handle levels and multiple overlays. Vocabulary displays can be carried, worn, or strategically placed in the environment.

5. Unaided vs. Aided approaches.

This is not an either/or question; it is a question of emphasis. *(cont. pg. 4)*

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* Independent mobility increases communication opportunities and experiences. Providing mobility to nonambulatory individuals is one of our best AAC intervention strategies!

** See the November, 1988 and the January, 1989 issues of **Augmentative Communication News** for discussions of issues and practices related to Vocabulary Selection and Literacy.

Table I. Vocabulary Size

(from Speech and Language Development Chart, Gard, A., Gillman, L, Gorman, J., Word Making Productions, Salt Lake City, UT 84115)

Developmental Ages	Vocabulary (spoken words)
13 to18 mos.	3-20
19 to 24 mos.	50
2 to 2.6 yrs.	200
2.6 to 3 yrs.	500
3 to 3.6 yrs.	800

Clinicians report the trend with this population is to use a small number of easily recognizable manual signs and to stress aided approaches. In the past manual signs were preferred; however, manual sign programs required extensive training, and in the end, individuals with DAS still needed an interpreter. Why? (1) The world doesn't sign. (2) Individuals with DAS often have difficulty producing intelligible signs because of limb apraxia, and (3) Individuals and even well meaning partners often do not "remember" or use signs they have been taught.

A major **advantage** of aided approaches, then, is intelligibility to partners. Visual displays provide access to language and enable persons to exchange information, make comments, tell a joke, etc. Displays also may be designed to stimulate speech production, facilitate language understanding and expression, help compensate for memory deficits, and provide cues to assist in repairing conversational breakdowns. Electronic aids can further expand opportunities. **Disadvantages** reflect portability issues and the resulting unavailability of displays. Also, aids make it nearly impossible to walk and "talk" simultaneously.

6. Multi-modality Approach.

Clinicians describe individuals engaged in social exchanges as follows:

. . . they tend to rely on vocalizations and speech approximations, informal gesture systems and pantomime. Some signs may be used. Communication boards/books/wallets generally serve a cue generator, the actual focus of a social exchange, and/or to communicate emergency information.

Ideally, an individual will learn to choose specific modes for specific situations; however, clinicians agree it requires direct teaching. What is the effect of being asked to use a variety of different AAC aids and techniques, particularly if you are learning and/or language impaired? We need to consider this.

7. Service delivery

Individuals with DAS often "need" intensive speech therapy and AAC training. Partners also require training. The time and personnel required to meet these needs is extensive. AAC professionals often function under severe time constraints imposed by service delivery systems designed to meet the needs of other populations. For example, Kravitz[7] shared the following Time Study from her facility:

Speech-language pathologists spend approximately 12 hours developing miniboards from start to finish (i.e., observe individual in communication context, develop vocabulary, select symbols, design board, make board) and between 40 to 80 hours developing a large vocabulary communication notebook.

Consider the labor costs. Go ahead...use your salary! Now add the cost for materials. Don't forget training. Still think electronic aids are expensive?! New service delivery approaches are needed.*

8. Intervention Strategies

Facilitating Speech Every intelligible word/phrase is worth it! Select realistic speech-motor targets and provide lots of practice. How about the "Word of the Week!" For a review of various therapy techniques, the reader is referred to sources in the references. A recent approach with documented success is Melodic Intonation Therapy.[3,4,5]

Facilitating Language. Providing language models is important. In a Total Communication approach, facilitators sign as they speak.[9] In an Aided Language Stimulation approach,[10] the facilitator points to a display containing language symbols to stimulate language understanding and expression while engaged in activities. Displays can be anywhere (and should be everywhere!). The facilitator does not ask lots of questions or give directives. They suggest highlighting symbols selected. Either hold an applique squeaker (available in fabric stores) and *squeak it* or shine a pen light on symbols as you point. As the individual begins to select symbols, fade these cues.

Facilitating Communication
Clinicians feel teaching clarification and repair strategies is critical. Individuals need to assume responsibility for solving the communication problems they encounter. Metacommunication strategies are important techniques to use with this population. You can begin in preschool. Musselwhite[11] suggests keeping track of strategies individuals use successfully. Then, provide the list to all partners so they can reinforce and prompt the individual's use of these strategies. Strategies may include: Repetition, rephrasing, adding or changing modes, gesturing, using body language/pantomime, pointing to a cue in the environment, using a cueing display (list of frequently used topics, "first sound is", "same color as", "sounds like," etc.). Gradually fade out prompts. Intervention programs for partners are also important.[12]

Strategies to Avoid[8]

1. Using intrusive direct prompts such as "Is it in your book?" may send clients in the wrong direction. Wait to see what strategy the client selects and then, try to help.

2. Using large displays or electronic communication aids with lots of vocabulary because of portability problems.

3. Expecting individuals to use displays everywhere when information exchange is not a priority (e.g., at recess).

4. Expecting child to use a variety of modes in the same situation. It is difficult until or unless strategies become a natural, unconscious part of her/his behavior.

* My thoughts on this topic were recently published in the January 1989 issue of Asha magazine. If you want a copy of the article, send a self addressed envelope and $1 to cover costs.

University & Research

University of Minnesota-Twin Cities

Students interested in AAC can receive a masters or doctoral degree in Special Education (Educational Psychology) or Communication Disorders at the University of Minnesota. This relatively new program, which is partially funded through the U.S. Department of Education, focuses on the application of AAC techniques and aids with individuals who have severe intellectual delays. Educational experiences are provided through direct coursework and teaching seminars, clinical practicum, and research opportunities. The accomplished faculty reflects a multidisciplinary team focus:

Joe Reichle, Ph.D., Director of the Augmentative Communication Program, is an Associate Professor of Communication Disorders with an adjunct appointment in Special Education. He is also co-director of the newly NIDRR funded Rehabilitation Research and Training Center.

Jennifer York, Ph.D. is a Registered Physical Therapist with a doctorate in Special Education. She is Associate Director for training at the University's Center on Community Integration.

Peggy Locke, who has a masters degree in Special Education, is Project Director of the AC Project and soon will be completing her doctorate from the University of Nebraska.

Linda Hinderscheit has a masters in Speech-Langauge Pathology. She is Associate Clinical Specialist at the University.

Specific AAC Coursework

The initial course, which enrolls both community professionals (approximately 25%) and graduate students (75%), takes a case example approach to a wide range of AAC methodologies. Following this course, students participate in an ongoing seminar, which is issues-oriented and research related. Each spring a seminar is offered covering electronic communication aids and devices and their AAC applications. Students take advantage of the Department of Communication Disorders Electronic Library.

For additional courses, students draw on the knowledge and skills of faculty from Special Education, Communication Disorders, and other academic departments. They also learn from faculty at the University's Center on Community Integration. This Center is concerned with successful integration of persons with developmental disabilities in the community. It houses the Rehabilitation Research and Training (RRT) Center. Some projects underway at RRT are examining the impact of communication intervention in dealing with socially-motivated, excess behaviors (e.g., tantruming, aggression, self-injurious behavior).

Clinical Practicum

Students can fulfill practicum requirements with clinical experiences in AAC at St. Paul Public School classrooms under the supervision of both university-based personnel and school district speech-language pathologists. Other experiences are available through the Pine County Special Education Cooperative and in several community-based homes and vocational programs serving adults with developmental disabilities.

Research

Current research interests reflect the program's emphasis on teaching functional communication to learners with severe intellectual delay. Within this broad area, specific research interests include:

Relative advantages of electronic versus nonelectronic communication aids

The intelligibility of synthesized speech

Developing empirical methods for the selection of augmentative modes

Establishing a correspondence between communicative and noncommunicative behavior

Teaching functional communication skills in community settings

Investigating the relationship between methods of mobility and communicative needs of learners with multiple disabilities

Comparison of explicit versus generic vocabulary during the acquisition of an initial communicative repertoire

Two projects recently completed are:

Doss, S. & Reichle, J. Establishing communicative alternatives to the emission of socially motivated excess behavior. Submitted for publication.

Sigafoos, J., Doss, S. & Reichle, J. (in press,) Developing mand and tact repertoires in persons with severe developmental disabilities using graphic symbols. Research in Developmental Disabilities.

Development of Technical Assistance Materials

Faculty and students in the AAC program are currently involved in several technical assistance projects:

Development of a training module in AAC for the Minnesota Department of Human Services- Teresa Mustonen, Jeff Sigafoos, Gloria Wiemann (doctoral students) are developing a module to educate direct-care staff in the state.

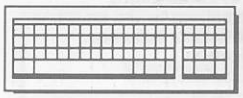
Development of a technical assistance model for providing AAC services in public schools- Project director, Peggy Locke, is developing materials to increase the expertise of school district personnel in providing technical assistance to students in need of AAC services at their home school. Some materials may be available in the Fall of 1989.

Establishing guidelines for applications to secure funding for AAC devices. Consumer guidelines for submitting applications to Medical Assistance of Minnesota are being developed.

Financial Support for Students

A Personnel Preparation grant and a Leadership Training Grant in AAC and Adaptive Mobility enable the University of Minnesota to offer 10 masters students, 4 doctoral students, and 1 post doctoral student financial support. Masters students receive a partial tuition waiver and $442 monthly for a 9 month school year. Doctoral students receive full tuition and $916 monthly. The masters program in Communication Disorders takes about 2 years to complete and includes a research component. The Special Education program with a focus in AAC requires 1 1/2 to 2 years. *(Note: openings are available).*

For further information contact Joe Reichle, Ph.D., 106 Pattee Hall, 150 Pillsbury Drive, S. E., Minneapolis, MN 55455 (612) 625-6542. Thanks to J. Reichle, P. Locke, & J. Sigafoos for assisting with this article.



Equipment
For Ambulatory Individuals

For those who are literate a paper and pencil and/or a small alphabet board are often preferred for face to face conversation. Individuals write or point to letters and partners predict. Portable, electronic writing aids and intelligible, text-to-speech devices may also be used to accomplish some communication tasks (transmitting messages, making phone calls). A few examples are:

1. The Canon Communicator M ($424.95). A small, very portable, battery operated device which stores only 5 messages (19 characters each), prints on a strip, and requires minimal training. Accessory unit ($285) allows unit to operate printer, typewriter or computer. Available from Crestwood, P.O. Box 04606, Milwaukee, WI 53204-0606.

2. QED Scribe ($1225). Also very portable. Stores up to 52 messages, has an LED display and built in adding machine-type printer. Requires minimal training. Note: the new QED Secretary ($1995) has limited speech capability. Users can record up to 10 spoken messages (32 seconds of speech). Available from Zygo Industries, P.O. Box 1008, Portland, OR 97207-1008

3. Commercially available portable and pocket typewriters/computers (e.g., Casio $159.95).

For those unable to spell, clinicians report using the following approaches:

Displays Located in Environment

1. Non-electronic - Symbols, miniboards, wall charts, mealtime placemats, etc. can be located on a table, floor, refrigerator, TV, toy chest, bathtub, sand box, dashboard of a car, kitchen counter, at McDonalds, etc. These displays provide context-specific vocabulary and opportunities for aided language stimulation and modeling. The idea is to surround the individual with opportunities to communicate. Velcro & indoor/outdoor carpet play a big part!

2. Electronic - To make routine statements (e.g., in the classroom) and for emergency phone messages, a loop tape recorder may be used. To order a pizza, leave messages, and even carry on a conversation, consider these commercially available products:

Loguitur,($450) This training aid records up to 4 messages. It is easy to use & flexible. Available from Don Johnston Developmental Equipment, P.O. Box 639, Wauconda, IL 60085.

Mini Talking Card Reader ($62 plus cost of tape) records 2 seconds of sound for each inch of tape. Tape is mounted on cards. Symbols/words identify the message on each card. Cards are run through the Reader.

Here's a **Great** phone application from Musselwhite![11]
The user develops a Phone Catalog of Mini-Cards. Before each call, she selects cards-
Hello, this is Carol. Is Cindy there?
What are you going to Wear to the movies?
Bye for now. Call me later.
Throughout the conversation, the catalog can be used to make relevant comments:
Way out! It's awesome. Tell you later.

Displays Worn by Individuals

1. Limited vocabulary apron boards, bib boards, sleeve displays can be used in specific contexts. They allow hands to remain free.

2. A new commercial product is the:

Communication Carrier. It looks like a "back pack," but is worn in front. Units are designed for electronic systems ($75), non-electronic board ($65), early intervention boards ($45). Available from Communication Carrier, Box 17, Niwot, CO 80544-0017

Displays Worn by Facilitators - Communication vests,[10] displays worn on aprons, boards strung around the neck, and even devices mounted on a facilitator (e.g., the SuperWolf) can serve as communication displays and can be used for aided language stimulation. Velcro again plays a *key* role.

Displays Carried by Individuals

1. Communication books, notebooks: Clinicians design books and notebooks to fit the needs of the populations they serve. They agree that it is important to use something that looks "normal" and can be carried. For example, Kravitz[7] suggests for large vocabularies using a soft cover, 3-ring notebook with all black, laminated pages. Symbols are placed on pages and covered with contact paper. Mystic cloth tape is put over holes, which are then punched. Pieces of sponge are placed between the pages to seperate them, making them easier to turn.

2. Brief cases, wallets, & purses - Communication symbols can be placed on the outside and inside of a brief case, wallet, or large purse.

3. Boards and miniboards - Culp[12] suggests starting out on a single surface with a sticker book or photo album. Put symbols on the front and back covers. When more symbols are needed, use the other side. This decreases the motor demands required to "flip" pages. How to carry boards is a critical decision. Typically shoulder straps, a special bag or knap sack are used.

4. Commercially available non-electronic products - Examples are:

Talking Picture Kits and **Porta Books/Boards** ($23-$40). Can order pictures, metal rings, vinyl sheet protectors. Available from Crestwood Co. (see above)

Fold-It System wallet, attache, tri-fold boards ($14-36). Available from Don Johnston Developmental Equipment (see above)

5. Electronic voice output aids for conversation

At the 1987 Closing the Gap conference, a small group developed some specifications for an electronic aid for ambulatory persons.[13] Such an aid, they said, must be portable, durable, and cosmetically pleasing. It must be worn so hands are free, and be operable with only one hand. It must permit access to a large vocabulary and allow messages to be stored and retrieved rapidly. We are getting much closer! Below is a brief description of rather new, portable, low cost, speech output devices.

Digitized speech technologies - These devices "speak" any language or dialect, "babble" "burp" and "hum." They are easy to program (just push a button and talk). Consider using them in your speech and language training programs!

1. **Parrot** ($595) comes with a strap which is worn around the neck. It looks like a Walk-Man, is portable, and requires minimal training. 32 seconds of speech recorded in up to 16 locations. Must be, recorded in sequence. Recordings can be made quickly if overlays are prepared with a script (cont. page 7)

attached to each. Available from Zygo Industries.

2. **Macaw** ($995) comes with a strap and a handle. Similar to, but more powerful, flexible, and expensive than the Parrot. 64 seconds of "high quality" speech and 128 seconds of "regular quality" speech on the 32 display panel. Special function keys allow clinicians to manipulate the device for training purposes. A key link feature permits 6 messages to be programmed under 3 keys. Available from Zygo.

3. **IntroTalker** ($595) has a carrying case. It has 32 seconds of "high" and 64 seconds of "regular" quality speech. 32 or 8 locations. It allows users to access "themes" for early training in Minspeak™. Minimal training required. Easy to use. A new product, the **Walker Talker** is in the works. It will behave, but not look like the IntroTalker. Look for an announcement soon. Available from Prentke Romich Co., 1022 Heyl Road, Wooster, OH 44691

Synthesized speech technologies

1. **SuperWolf** ($275) has 36 levels; 36 locations. Fixed section programmed at the "factory" according to user's specifications (500 words), New clinician programmable section (phoneme-based) 36 levels with up to 800 words). Speech is reasonably intelligible; Available from ADAMLAB, 33500 Van Born Rd., Wayne, MI 48184

2. **CATT 525** ($595) 10 levels, 14 locations, all, but 1 level is pre-programmed at the "factory" for individual users. Portable with strap provided, pouch attached for overlays. Speech is okay, but speaker is not directed toward listener.
Note: The new **CATT 425** ($495) has 32 seconds of digitized speech (14 locations, 1 level). Recordings must be specially made at factory or using appropriate software for IBM must be purchased (approximately $300). Available from Medical Technology Systems, Inc., 90 Great Oaks Blvd. Suite 214, San Jose, CA 95119.

Clinicians stress the need for "normality." Look to what "normal" people carry around with them and try to duplicate that look. Here's a "wish list."

1. A wristwatch-like device or a folder with a calculator-like communication aid on the front (Culp).
2. A device for those who sign attached to their hands which speaks what they sign in real time. (VanTatenhove) Guess what! It's called the "Talking Glove" and is presently under development at the Palo Alto V.A. in CA.
3. A very small computer and monitor with a touch sensitive screen and speech output. Software would provide picture overlay which user could change almost instantaneously. (Kravitz)

Governmental

U. S. Regional Information Exchange

Transitions, supported work*, competitive employment, independent living...these terms represent a great challenge to professionals and consumers in AAC. In the past, having a severe expressive communication disorder (particularly with a concomitant physically and/or mentally handicapping condition) seemed to preclude individuals from being employed and living in the community.

Professional and consumer "mind sets" are changing. We now ask "What types of jobs and living arrangements are available or could be created in the community" for individuals with disabilities--no matter how severe.

The National Institute on Disability and Rehabilitation Research (NIDRR) in the U.S. presently funds five regional programs as part of a Regional Information Exchange (RIE). The purpose of RIE is to identify and validate nominated programs/practices with significant potential for wider utilization and to assist professionals and organizations to replicate these programs.

The first two regional programs were initially funded in 1983. There are now five programs funded for 3 year periods. Ellen Liberti (202-732-1206), Project Director at NIDRR, describes the RIE programs as "facilitators of change" as well as programs disseminating information and providing technical assistance. Each RIE identifies exemplary practices within a designated region using a similar process:

- Solicit nominations
- Collect detailed data from nominated programs in their region
- Weigh data against established criteria in each core area
- Confirm data through site visits
- Conduct peer review of the summary material by an advisory group
- Designate programs as "exemplary models"
- Replicate the program through the provision of technical assistance, and
- Disseminate information on the selected programs

*Transition programs provide support between school and college or school and employment. Supported employment programs are those that provide on-the-job assistance in order to retain individuals with severe disabilities in paid employment.

Regional programs address core areas differently. For example:

Regional Rehabilitation Exchange (RRX) - **Region VI** (Arkansas, Louisiana, New Mexico, Oklahoma, Texas.) This program is the oldest and was initially funded in 1983. Its core focus has included: transitional programs with both ongoing and short term services; independent living service programs; job placement/job development programs; supportive services for postsecondary disabled students; adult learning disabled programs; high technology applications in the vocational rehabilitation process. The RRX has identified more than 44 model programs that are, in turn, providing technical assistance to others. The efficacy of these programs is measured in actual and sustained employment and independent living arrangements. Programs serve individuals with a wide range of disabling conditions. Contact John D. Westbrook, Ph.D., Project Director. c/o SEDL, 211 E. 7th Street, Austin, TX 78701 (512) 476-6861.

Regional Information Exchange (RIE) - **Region IX** (Arizona, California, Hawaii, Nevada, and the Pacific Territories.) This program has also been funded since 1983. Priority areas are: transition/supported employment programs; management/client assessment computer software systems; rehabilitation technology related to vocational rehabilitation. Currently Region IX's program has identified and validated approximately 40 innovative transition programs and 50 innovative computer software systems. Directories of each are available at cost. Contact Dann Grant, Project Coordinator. Human Interaction Research Institute, 1849 Sawtelle Blvd, Suite 102, Los Angeles, CA 90025 (213) 479-3028.

PEER Regional Network - Region II (New York, New Jersey, Puerto Rico, Virgin Islands). The PEER (Programs that are Exemplary in Education and Rehabilitation) network was funded in 1986. Core areas are transition and supported employment programs. PEER has identified 14 exemplary programs in transitional and supported employment in both educational and rehabilitation settings. Currently, agencies serving the chronically mentally ill in either a transitional or supported employment capacity are being sought. Contact Robert Rosati, Ph.D., Project Director, Human Resources Center, I.U. Willets Road, Albertson, NY 11507 (516)747-5400, x1179.

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Rehabilitation Network of New England - Region I (Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont). This program was also funded in 1986. Core areas are: supported employment; school-to-work transition programs for students with learning disabilities; programs that provide least restrictive environments for people with severe disabilities, and independent living programs. They have selected 9 exemplary programs; more are presently being identified. Contact Deborah Roody, Project Director, c/o The Network, Inc., 290 South Main Street, Andover, MA 01810 (508) 470-1080).

The Sharing Methods & Applications in Rehabilitation Technology (S.M.A.R.T) Exchange - **Region IV** (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee). This recently funded program focuses on technology applications with all ages. The SMART Exchange is currently accepting nominations for "exemplary programs" serving all ages. "Exemplary programs " should utilize technology related assistance in the areas of **augmentative communication, seating & positioning, computer access, adaptive toys and/or adaptive environments.** Applications are due April 3. Initial selections will be made in June. Contact Shelley Kaplan, Project Director, P.O. Box 7247704 Atlanta, GA 30339 (404) 238-4568. Note: Many ACN subscribers in Region IV are doing excellent work. Check this out!

NOTE: Project Directors make a sincere effort to respond to all requests for information, even outside their regions. Newsletters, directories, and workshops are available. If you live within Region I, II, IV, VI, IX, contact your Project Director. If you live outside these Regions, write to all Project Directors and Ellen Liberti at NIDRR. Ask specific questions. It may take a few letters and phone calls, but ultimately the RIE can help by sharing the experiences and expertise of others.

NEWS

On April 27th at 1 to 3:30 P.M. Eastern Time. **A Video Teleconference on Communication Aids and Devices for the Disabled.** If you want to know how to participate, call your local PBS Television Station to determine if they plan to carry the program. For additional information, you can also call Brian Callahan, Central Education Network (312) 390-8700 or Charles Blaschke, Education TURNKEY Systems, Inc. (703) 536-2310.

Resources and References

Cassatt-James, Cindy. Johns Hopkins Center for Technology, Baltimore, MD (301) 338-0959.

Fishman, Iris. Private Practice/Prentke Romich Consultant, New York, NY (212) 724-1910.

Lytton, Richard. Meeting Street School, E. Providence, RI (401) 438-9500.

Mathy-Laikko, Pamela. Meyer Children's Rehab. Center, Omaha, NB (402) 550-5754.

VanTatenhove, Gail. Private practice/Prentke Romich Consultant. (407) 876-3423.

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[1] Mirrenda, P. & Mathy-Laikko, P. (in press). Augmentative and alternative communication applications for persons with severe congenital communication disorders: An introduction. Augmentative and Alternative Communication. Baltimore: Williams & Wilkins.

[2] Kearns, K. & Simmons, N. Motor speech disorders: The dysarthria and apraxia of speech. In N. Lass, L. McReynolds, J. Northern, D. Yoder (Eds) Handbook of speech-langauge pathology and audiology. Toronto: B.C. Decker, Inc.

[3] Marquardt, T., Dunn, C. & Davis, B. (1985). Apraxia of speech in children. In J. Darby (Ed). Speech and Language Evaluation in Neurology. San Diego: Grune & Stratton, Inc.

[4] Schumacher, J. & Yoder, D. (1984). Developmental apraxia of speech: A mystery disorder? Journal of New Jersey Speech-Language-Hearing Association.

[5] Thompson, C. (1988). Articulation disorders in the child with neurogenic pathology. In N. Lass, L. McReynolds, J. Northern, D. Yoder (Eds) Handbook of speech-langauge pathology and audiology. Toronto: B.C. Decker, Inc.

[6] Brockenberger, Susan (with Lorraine Camp). Sunnyhill Hospital, Vancouver, BC, CANADA (604) 434-1331.

[7] Kravitz, Ellen. W.E. Fernald State School, Belmont, MA (617)894-3600 x2352 or 2285

[8] Rothchild, Nora (with ACS staff). Hugh McMillan Center, Toronto, Canada (416) 425-6220.

[9] Roth, F. & Cassatt-James, E. (in press). The language assessment process: Clinical implications for augmented communicators. Augmentative and Alternative Communication. Baltimore: Williams & Wilkins.

[10] Goossens', Carol. AC Services, United Cerebral Palsy of Greater Birmingham, Birmingham, AL (205) 251-0165. Handouts available upon request.

[11] Musselwhite, Carolyn. Irene Wortham Center, Asheville, NC (704) 275-7554.

[12] Culp, D. (in press). Developmental apraxia and augmentative or alternative communication - A case example. Augmentative and Alternative Communication. Baltimore: Williams & Wilkins. Callier Center, Dallas, TX. (214) 783-3000.

[13] Romich, Barry. Prentke Romich Co. Wooster, OH (800) 642-8255.

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PLEASE FORWARD