Augmentative and Alternative Communication in the Early Childhood Years

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For most people, communication involves spoken language. However, for some, the ability to hear speech or to speak is compromised. There are children who cannot use speech because they have difficulty moving the required muscles, developmental disabilities, or hearing impairments. For these children, nonspeech communication strategies, called augmentative and alternative communication (AAC) systems, may be beneficial. AAC systems can *augment* existing communication skills or provide an *alternative* to speech.

What is AAC?

AAC systems of communication do not rely on speech. For some children, an AAC may be the primary means of communication; others may use an AAC to clarify and expand their speech (McNairn & Shioleno 2000). AAC systems are categorized in several ways (Heller 2004). Below is common terminology.

No technology (no tech): These AAC systems involve only the individual's body. Some systems involve formalized languages, such as American Sign Language (ASL). A simpler system may involve gestures unique to a particular child that the caregiver understands (for example, when a child touches her cheek to ask for a hug).

Low technology (low tech): Low-tech systems are nonelectronic but involve materials outside the child's body. Examples are photographs, drawings, and/or words that are kept in a notebook or photo album, fastened to a piece of Plexiglas (or any other lightweight material that

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is easily cleaned) with Velcro or by metal rings. A low-tech system may also involve a collection of objects (such as a spoon to represent the desire to eat) kept in a box or fastened to Plexiglas. For example, when a child chooses a book to be read to him, he might choose from photos of book covers attached to Plexiglas. When offering choices of what shirt to wear, his mother might exchange the book covers with small pieces of colored felt. The child points to, looks at, or otherwise indicates the symbol that represents his choice.

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High technology (high tech): High-tech systems include the use of electronic communication boards and/or computerized speech synthesizers. Electronic communication boards have a display of communicative messages using photographs, line drawings, phrases, words, or letters. The message is activated by touch or laser beam to produce a printout or synthesized/digitized speech (synthesized speech is computer generated; digitized speech is recorded using a human voice).

Developing an AAC system

The selection of a particular AAC system for a specific child is best made through a collaborative team decision-making process. The team actively involves family members and typically includes teachers, child care providers, administrators, AAC technicians, physicians, and speech and language, occupational, and physical therapists. Answering the questions below can help the team make decisions about the most appropriate type of AAC system for an individual child (Blackstone & Hunt Berg 2003).

What are the child's communication needs? Consider why and how the child communicates now. Does he need to learn to communicate to get basic needs met (such as hunger)? Does he need to learn to communicate more with peers in play?

What AAC system is most likely to build on the child's abilities? For example, a child who has developed her own gestural system to communicate may do well with sign language.

How will the child communicate using an AAC system? Consider the child's motor abilities. Can she point? Reach and touch? Form signs with her fingers? Does she rely on eye gaze? Will she need a head pointer?

What are the child's cognitive and visual abilities? A child who is not yet able to understand letters may benefit from a system using pictures, drawings, or photographs, and a child who is not yet able to understand drawings or images may need objects. A child with a visual disability will need symbols large enough and with sufficient contrast to be visible.

How will the symbol system be displayed? Consider how best to make the AAC available to the child. A child who uses a wheelchair may need a communication board attached to his chair. A physically active child may prefer a small set of picture cards attached to her belt.

With whom will the child be interacting and in what settings? Answering this question will help determine how portable the system must be and what types of communicative messages should be included. A child who frequently plays Chutes and Ladders with his sister must have symbols to communicate about that activity. A child whose family enjoys hiking may need a very light and portable system.

The details of the system are usually worked out in close consultation by a speech and language therapist, a special educator, and/or an AAC technician. Choosing a vocabulary is the first step.

The first words should be motivating to the child—for example, naming favorite toys, activities, foods, or drinks. Parents and other caregivers can provide valuable insight into the child's preferences and needs. The vocabulary also should reflect the culture of the child and the culture(s) in which the child will use the AAC system (Janzen 2003). As children become older and more proficient in the use of the AAC, being able to communicate emotions, ask questions, and use the vocabulary of their peers becomes more important.

Using AAC at home and in early education settings

Language intervention programs are most effective when they take place in the child's natural language-learning settings (for example, in the home, school, or community) and when the child's family is actively involved (Wetherby & Prizant 1992; National Research Council 2001; see "Research on the Effectiveness of AAC Systems" for further research). Most parents and child care providers who have had little or no experience with AAC systems need professional guidance—usually from a speech therapist—to begin using a system. Soon they become competent and creative in the use and continued development of the system.

When using AAC systems at home, it is critical that families maintain their typical routines. The professional can help families incorporate the systems

Research on the Effectiveness of AAC Systems

Children with cognitive disability, developmental delay, physical disabilities, and autism can use AAC systems to request items and respond to simple questions (Blackstone & Hunt Berg 2003; Ganz & Simpson 2004; Schlosser & Raghavendra 2004; Romski et al. 2005). Other studies show that the use of AAC improves the quantity and quality of children's verbal communication (Kravits et al. 2002; Tincani 2004), their receptive language abilities (Schmit et al. 2000), and their ability to form speech sounds (Cummings & Williams 2000; Keen, Sigafoos, & Woodyatt 2001). In other studies, teachers and parents were able to learn to use the AAC devices with children in home and school environments (Stiebel 1999; Magiati & Howlin 2003; Nunes, Hanline, & Kashinath 2005).

into their usual activities. Here is an example of a mother using an AAC system with her four-year-old during a play routine:

Juliann shows Clara a Plexiglas picture board with separate photographs of blue, red, yellow, and white playdough. Each photo is attached to a different corner of the picture board. Juliann asks Clara, "What color of playdough would you like?" When Clara makes her choice by pointing to the photo of the blue playdough, Juliann hands her the playdough and says, "Here's the blue playdough you asked for."

Juliann next sets up the communication board containing photos of tools often used with playdough (such as a rolling pin and cookie cutters), but she puts the tools themselves slightly out of Clara's reach. Clara has to point to the photo of the tool of her choice each time she wants a different tool.

Clara uses this AAC system because she has the ability to learn a more complex system and this is the first step in the learning process. Throughout their play, Juliann talks to Clara about what she is doing and about the choices she makes with her AAC system.

Integrating a system into the classroom

In an early education setting an AAC system should be integrated into ongoing activities. Professionals, such as speech therapists, special educators, and early interventionists, experienced in using AAC, can collaborate with child care providers to determine ways the child can use the system within routines and play activities. Teachers can help the other children in the group to understand the AAC system and use it to communicate with the child. Adults should continue to talk with and encourage the child to make sounds or speak. Here is an example of using an AAC system during a program's daily routine:

Teachers can help the other children in the group to understand the AAC system and use it to communicate with the child.

Four-year-old Diego and his twin sister Emma arrive at the child care center with their father Manny. Diego has a severe hearing impairment preventing him from hearing and understanding speech; Emma's hearing is normal. Shannon, the teacher, greets them, signing HI. Manny and Diego sign HI back, and Emma gives Shannon a good morning hug. "How is everyone today?" Shannon asks, and after a brief exchange, she adds, "Okay, kids. Take off your jackets and hang them up." She signs JACKET OFF

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and points to the hooks in the children's cubbies. The twins say good-bye to their father.

Shannon, while signing PLAY, says, "Now it's time to choose a play activity." Emma quickly chooses blocks and tells Shannon she wants to build a zoo. Diego signs PAINT. Shannon says (and signs), "Great, Diego. You can go paint with brushes at the easel."

Throughout the day Shannon interacts with Diego with sign and spoken language, encouraging him to use both sign and speech to communicate his needs. At the end of every day, after the twins go home, she learns several new signs to introduce to Diego the next day.

Obtaining resources

Teachers can help families obtain resources by collaborating with community agencies to have a child evaluated for an AAC system, secure funds for purchase of the system, and arrange training for the people who will be helping the child learn to use the system. Some families have private health insurance that pays for speech and language therapy and AAC systems.

Children three and older who receive special education services from public schools can have assistive technology services provided though the school system under the Individuals with Disabilities Education Act (IDEA; Part B, Section 619; 34CFR & 300.308), if the services are specified in a child's Individual Education Plan (IEP). Services may include evaluating the needs of the child, providing for the acquisition of assistive technology devices (such as an AAC system), and training and assistance for families and professionals in the use of the devices. In addition, on a case-by-case basis, IDEA allows school-purchased assistive technology devices to be used in a child's home or other setting.

For children under three, if assistive technology is identified as part of a child's Individual Family Service Plan (IFSP) and if the family has exhausted all other possible sources of funding, such as Medicaid or health insurance, it must be provided "at no cost" under Part C of IDEA (34CFR & 303.527). No eligible child can be denied an assistive technology device or service because of a family's inability to pay.

Additional information about funding for AACs can be found at the link provided on the NECTAC Web site listed in "Web Resources for Augmentative and Alternative Communication" (see p. 6).

Conclusion

Augmentative and alternative communication systems provide individuals unable to communicate effectively with speech a method of communicating. The choice and use of an AAC system is a complex and challenging process. It is best accomplished within a collaborative team model involving family members, child care providers and teachers, therapists, and other people who interact with the child on a regular basis.

A young child's ability to communicate with family and friends in everyday environments and activities fosters learning, socialization, and overall development. Appropriate AAC systems can increase children's independence as well as support their inclusion in activities with other children and with family members.

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Web Resources for Augmentative and Alternative Communication

AbleData compiles a database of assistive technology products and rehabilitation equipment available from domestic and international sources. Products are not sold on the site. **www.abledata.com**

The Alliance for Technology Access (ATA), a national network, helps locate resource centers, technology vendors and developers, and providers in local communities. Links provide information about AAC systems within No Child Left Behind regulations. **www.ataccess.org**

American Speech-Language-Hearing Association (ASHA) provides descriptions of AAC systems and information about how to use them and tells how to establish a team to support the use of an AAC system and how to assess outcomes and progress. **www.asha.org/public/speech/disorders/AAC.htm**

The Association for Persons with Severe Handicaps (TASH) provides support for educators, parents, and service providers, and a publication list of books, monographs, and videos. **www.tash.org**. Link to its catalog of products and training information. Some manuals are available to download free of charge. **www.tashinc.com**

Augmentative and Alternative Communication Centers provides information about vendors of AAC systems, early intervention and AAC, and the use of AAC worldwide. **http://aac.unl.edu**

Augmentative and Alternative Communication (AAC) **Connecting Young Kids** (YAACK) gives practical and easy-to-understand information about AAC and AAC-related issues for children at various stages of communication ability. **http://aac.unl.edu/yaack**

Augmentative Communication Inc. focuses on keeping those working with AAC systems up-to-date on the latest developments. **www.augcominc.com/links.html**

Closing the Gap Inc. highlights assistive technology through its newspaper, resource directory, and Web services. **www.closingthegap.com**

International Society for Augmentative and Alternative Communication (ISAAC) gives information about joining the organization and provides links to other sites with information about AAC. **www.isaac-online.org/en/home.shtml**

National Early Childhood Technical Assistance Center (NECTAC) has information about funding, laws, and other issues related to AAC and young children, which can be found by selecting Assistive Technology in the drop-down list under Topic Pages on the home page. **www.nectas.unc.edu**