



Communication Devices

Assistive Technology Quick Reference Series

Augmentative and alternative communication (AAC) devices are typically used by people who do not speak, are difficult to understand, or have language retrieval issues. AAC devices are used by people of all ages with a variety of disabilities. A person can send a message through printed words, speech or voice output, pictures, or any combination of these. Devices range from having basic components and performing fundamental language functions to having the ability to perform computer-like functions and control household appliances.

AAC devices are designed to be used as supplementary modes of communication for existing communication strategies and can be configured or customized to

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address most communication needs. Many augmented communicators use a combination of electronic and non-electronic AAC systems. Non-electronic AAC systems can include alphabet boards, picture books, facial expressions, gestures, sign language, and residual speech. This Quick Reference Guide will focus on information relating to electronic communication devices.

FREQUENTLY ASKED QUESTIONS:

What types of communication devices are available?

There are a variety of communication devices available. Devices can have a single message or multiple messages. Medicare categorizes devices based on the following features.

1. **Speech Output-** *Digitized* (recorded human speech) or *Synthesized* (electronic conversion of text into speech).
2. **Message Type-** *Prerecorded* (messages that are stored) or *Message Formulation* (can spontaneously create novel messages).
3. **Recording Time-** *less than or equal to 8 minutes, greater than 8 minutes*, or based on the memory size of the device in general (e.g., 16 MB).

4. Access Method- *Direct Physical Contact with Device or Multiple Access Methods* (e.g., switch, mouse, joystick, etc.).

5. Message Formulation Technique- *Spelling only or Spelling and Other Methods.*

Additionally, devices have different display types (dynamic, static or both). Dynamic displays are similar to a computer monitor. The selection set or level changes automatically on a dynamic display screen as the user makes choices. Some dynamic displays can be activated by touch or through a pointing tool (e.g., stylus). Dynamic displays can be color or black and white. Typically, the information on these screens is difficult to see places with bright lighting. These screens can also be damaged by misuse or accidental impact.

Static displays have fixed selection sets or levels that can be manually changed. Most static displays are easier to see in lighted situations depending on the quality of the information you are displaying (e.g., photographs, text, etc.).

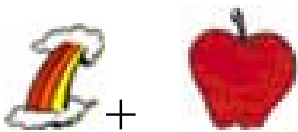


Static Display



Dynamic Display

Displays contain selection sets or symbols to represent language. Selection sets can be any combination of photographs, line drawings, text, objects (on some static display devices), or other graphic symbols. Symbols can vary in size and may be in color or black and white depending on the device. Symbols can represent entire messages (e.g., a picture of a toilet to represent “I have to use the bathroom.”), single words or letters. Some symbols must be combined with others symbols to create words, sentences, or complete messages (e.g., Minspeak).



Minspeak
(might mean “Red”)



Line Drawing



Photograph

Does a person have to use his or her hands to operate a communication device?

No. Although some devices can only be accessed by directly pressing or touching, most communication devices will accept alternative input. The way in which a person physically selects the messages is called the *Access Method*. If a person is unable to directly select the message through pointing (with a finger, headpointer, mouthstick or other tool), he or she will need to use an alternative input device.

Alternative input devices include mouse emulators and specialized switches. A mouse emulator is a device that simulates mouse movements with the assistance of a driver or other software. Some examples of mouse emulators used with communication devices are joysticks, trackballs, and infrared pointers.



Joystick



Trackball



Jouse

Specialized switches are used with the scanning feature on some devices. Specialized switches can be activated by almost any body part or body action. Some examples of specialized switches include sip and puff, myoelectrical, mercury, eye blink, and vibration.



Sip and Puff
Switch



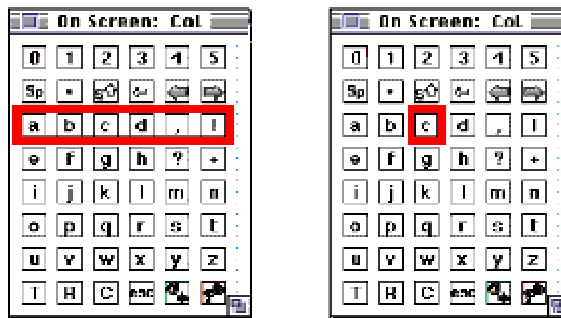
Twitch Switch



Direct contact
switch at face

Scanning is a selection method that presents choices or messages in a sequence. To make a selection, an individual activates a switch when the choice or message is presented to make a selection. Scanning presentation can be through visual patterns, auditory cues, or a combination of both. Scanning patterns can vary depending on the skills of the individual. Typical patterns include: *linear* (choices or messages are automatically presented individually), *row-column* (rows are automatically presented, then each choice or message in that row is presented), and *step* (the individual uses his or her switch to step or scan through

the choices or messages and then makes a selection with the switch). Scanning rate (how fast the items are scanned) and timing (the amount of time that the switch needs to be activated to make a selection) can also be adjusted according to the individual.



Row-Column Scanning

Does a person need to be able to read to use a communication device?

No. Some devices require keyboarding or spelling skills, but most devices can include pictures in the display. Additionally, voice output allows the user to hear the message and correct it if it wasn't what they intended.

Will using a communication device stop someone from trying to talk?

Not likely. There is research that supports the idea that using a communication device does not hinder the development or return of natural speech. In fact, most people using a device find it faster to use natural speech if they can be understood by others.

Is training required to use a communication device?

Most of the time, some form of training will be required before operating a communication device. Minimal training (e.g., how to turn it on, how to recharge it, etc.) will be necessary with most devices; however, some devices require more extensive training. The manufacturer or distributor of the device typically offers training. Local agencies, professionals, or experienced users familiar with AAC may also be able to provide training. Funding is usually available for training through major funding entities.

Are there ways to help pay for a communication device?

Yes, there are some funding options for communication devices. A formal AAC assessment performed by a Speech-Language Pathologist is usually required prior

to seeking funding. A physician's prescription may also be required by some funding sources. The following are brief descriptions of funding options. Refer to the specific funding source for details. Some of these options can be combined.

Private Insurance: Some private insurance companies will fund AAC equipment. Prior authorization is usually required and coverage depends on the policy. The insurance company may need an explanation of what the AAC device does. The insurance company may also need to be convinced of the medical necessity of the device.

Schools: Schools are legally required to provide appropriate assistive technology services for students. The Individuals with Disabilities Education Act (IDEA, P.L. 101-476) and the 1997 amendment specifically address the inclusion of assistive technology in the Individualized Education Plan (IEP). Services must be provided at no cost to the parents if the IEP team determines that a student requires this type of assistive technology in order to receive a free and appropriate public education and designates the assistive technology as either part of special education or a related service.

Medicaid: The purchase of AAC equipment is typically covered for individuals up to age 21 in most states. Many states cover the purchase of equipment for individuals of all ages. However, each state varies as to their submission and coverage guidelines. Equipment manufacturers should be familiar with specific state funding practices and can assist in determining the documentation necessary for funding.

Division of Vocational Rehabilitation: The Individualized Plan for Employment (IPE) or comparable plan of action outlines the services provided through VR for the purpose of seeking employment. If AAC is required to meet established goals, funding may be available.

Medicare: Medicare is now funding assistive technology devices for Medicare Part B enrollees who live in their own home or in an assisted living facility. Medicare requires that a Speech-Language Pathologist perform an evaluation that meets the guidelines according to the Regional Medical Review Policies (this information is available from the AAC-RERC).

Tricare: Tricare, formerly CHAMPUS, the health benefits program for dependents of active duty military service members and military retirees, now covers AAC devices for all program enrollees who require them. Congress explicitly directed the expansion of Tricare AAC device coverage in the FY 2002 military reauthorization bill, signed by the President on December 28, 2001.

How much do communication devices cost?

Devices range in price. Basic, single message devices cost anywhere from \$10 to \$100. Devices with more messages and/or more options can cost up to \$8000 and more. Medicare has set cost guidelines for predefined device categories.

- 1.Devices with digitized speech and eight minutes or less of recording time = \$389.13
- 2.Devices with digitized speech and more than eight minutes of recording time = \$1504.03
- 3.Devices with synthesized speech, message formulation by spelling and physical contact with the device to access messages= \$3558.93
- 4.Devices with synthesized speech, multiple message formulation methods and multiple access methods= \$6734.78

Are there ways to try out communication devices?

The selection of a communication device can be a very difficult decision. It is always helpful to seek the assistance of an experienced Speech-Language Pathologist and/or Assistive Technology Practitioner for a complete and thorough evaluation. Be sure to investigate the features, support, and warranty of several devices before purchasing one. Additionally, research the funding options in your area and if possible, arrange to borrow the particular device for an extended period of time (typical loan or rental periods range from 2 weeks to 3 months).

INFORMATION RESOURCES:

Augmentative Communication, Inc.

One Surf Way #237

Monterey, CA 93940

Phone: 831-649-3050

<http://www.augcominc.com>

Publishes *Augmentative Communication News* and *Alternatively Speaking*.

AAC Institute

338 Meadville Street

Edinboro, PA 16412

Phone: 814-392-6625

<http://www.aacinstitute.org>

Not-for-profit charitable organization providing AAC resources.

Augmentative Communication On-Line User Group
(ACOLUG)

http://www.temple.edu/inst_disabilities/acolug

Internet user group.

American Speech-Language-Hearing Association (ASHA)

10801 Rockville Pike

Rockville, MD 20852

Phone: 800-638-8255

<http://www.asha.org>

The national organization for Speech-Language Pathologists and Audiologists.

Assistivetech.net - Georgia Tech Center for Assistive
Technology and Environmental Access

490 Tenth Street, NW

Atlanta, GA 30318

Phone: 800-726-9119 (V/TTY)

<http://www.assistivetech.net>

Searchable Internet database for assistive technology.

Assistive Technology Industry Association (ATIA)

526 Davis Street, Suite 217

Evanston, IL 60201-4686

Phone: 877-OUR-ATIA (877-687-2842)

<http://www.atia.org>

Not-for-profit organization for manufacturers or sellers of assistive technology, and service providers.

Communication Aid Manufacturers Association
(CAMA)

P.O. Box 1039

Evanston, IL 60204

Phone: 800-441-CAMA (-2262)

<http://www.aacproducts.org>

Not-for-profit organization for AAC manufacturers.

RERC on Communication Enhancement

Duke University Medical Center

Box 3888

Durham, NC 27710

Phone: 1-919-681-9983

<http://www.aac-rerc.com>

The Rehabilitation Engineering Research Center for AAC.

Support Helps Others Use Technology (SHOUT)

1000 Killarney Dr.

Pittsburgh, PA 15234

Phone: 412-885-8541

Fax: 412-885-8548

Not-for-profit organization that advocates for people who are non-speaking.

United States Society for Augmentative and Alternative Communication (USSAAC)

PO Box 21418

Sarasota, FL 34276

Phone: 941-312-0992

<http://www.ussaac.org>

Organization for users of AAC, families, friends, and professionals.

University of Nebraska

<http://aac.unl.edu>

The resource page for the University of Nebraska's Barkley Speech and Hearing Clinic.