Complicated Sensory Systems ACCESSING AAC

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As of 2018

- There are nearly 1.7 million children who have enrolled in the Medicaid Children's Health Insurance Program (CHIP) in Arizona.
- This is an increase of more than 40% since 2013. Medicaid provides Assistive Technology (AT) device coverage when states support the acquisition of the equipment.
- Arizona has consistently elected the 1915(i) benefit of the Home and Community Based State Plan Option and provides medically necessary AT assessments, equipment, and training through AHCCCS, it's own unique expression of Medicaid.

Augmentative and Alternative Communication (AAC)

- AAC devices are often necessary when individuals with disabilities require an alternative or assistive means of communication.
- These devices serve as a voice for those who are not able to speak in a way that others can understand them.
- AAC devices are covered by AHCCCS and there are currently 5 entities that were awarded contracts to evaluate and recommend devices for the state of Arizona.

AZ is special

- Arizona is less exclusive than other states (in terms of evaluations and viable candidates).
  - For example, some teams will not recommend AAC for those with CVI
    - This reflects lack of knowledge of CVI, rather than the ability of the non verbal client
  - Others do not refer those that can't use their hands for direct select
    - Again, this has to do of the lack of understanding alternative access
  - Verbal clients are often excluded from a referral for AAC without analysis of the effectiveness of their verbal speech
  - In AZ, the SLP is allowed to include an OT

Our Study

- AAC research often examines single device access method, diagnosis specific communication, single case studies or a single language system.
- This study looked at data from over 180 deidentified AAC evaluations that were conducted in the state of Arizona in 2017 in an effort to better understand how multiple diagnoses impact AAC recommendations.
- The results demonstrated the importance of a specialist in the areas of vision, visual perception delays, complex motor systems, delayed sensory systems and dual sensory delays.

Age

- 43% between the ages of 2-5
- 23% between the ages of 6-8

When is vision fully developed?

Depth perception?

Who is trained on motor and vision development?

Diagnosis

- 41% Autism
- 24% Seizure Disorders
- 20% Cerebral Palsy
- 19% Cognitive Impairment
- 13% Down Syndrome
- 7% chromosomal abnormality
- 5% premature (less than 35 weeks)
- 2% Developmental Delay
- 42% had OTHER diagnosis even more rare than the above categories

This adds up to way more to 100% due to dual diagnosis

Diagnosis

- 52% have a dual diagnosis
- Why so many diagnosis?
  - Do they qualify for more services?
  - Does it get them a better school placement?
  - Do those looking at AAC have complicated bodies?
  - Are SLPs alone qualified to assess alternative communication?

Autism Diagnosis

- 41% had the autism diagnosis
- 33% of those were a dual diagnosis
- What does that mean?
  - Complicated sensory and motor systems qualify for the autism diagnosis
  - In some cases there is no way to differentially diagnosis the source of a deficit

Let’s take a look at these complicated bodies

Vision

- 50% had vision within functional limits
- This makes a vision impairment a higher incidence than Autism

Talk Points

- Why is this important?
  - We nee a professional in on this
- Who studies the development of the vision system as it relates to motor?
  - Occupational therapists

Vision Continued

- 12% CVI
  - All evaluators must understand more about this diagnosis
- 12% Strabismus
- 4% Astigmatism
- 11% nearsighted
- 7% farsighted
- 22% have glasses
- 8% have glasses but won't wear them

Hearing

- 80% have hearing within functional limits
- 70% of those with hearing issues also have visual impairments

Talk Points

- Who is trained in looking at dual sensory loss?
  - Occupational Therapists

Sensory and Self Regulation

- 62% report deficits in this area

Talk Points

- What percentage can focus, motor plan, attend, access AAC better with a sensory diet?
- Who addresses and is trained in sensory and self regulation? Occupational Therapists
  - 43% present with sensory seeking behaviors which can look like stimming on the device
  - 47% can be easily over stimulates which should be considered when selecting number of buttons on a screen

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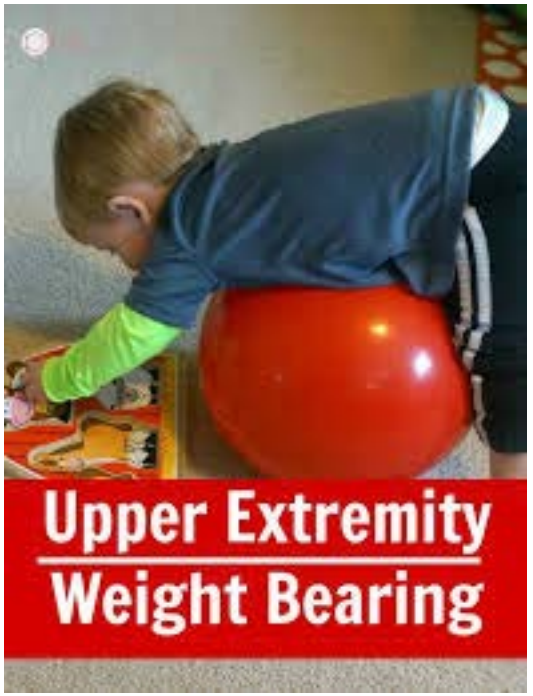
Upper Extremity Use

- 60% were found to be within normal limits
- 23% decreased strength – access could be fatiguing if not positioned appropriately
- 12% Limited Use
- 4% No Functional Use of Upper Extremities



When a person is resistant to using AAC all day long, who is looking at the role of upper extremity use? – Occupational therapists

Ambulation

- 68% Walk independently
- 32% don’t – which means they have equipment to physically support them
- 27% (48/181) required mounting equipment

Communication

- How are we measuring receptive language skills?
  - 57% can follow one step directions
  - 36% can follow two step directions
  - Total: 93% report ability to follow directions within motor ability
- Facial expression may be a more obvious indicator of receptive language but it is VERY difficult to measure

Verbal Ability

- 2% had the diagnosis of apraxia
  - Is this under diagnosed and possibly therefore undertreated?
- 28% have intelligibility less than 80%
- 6% report echolalia
  - Are we under referring those that repeat lagnuage by calling echolalia “language”

So what does AAC look like in these complicated bodies?

Touch Access Method

- 87% were able to use touch access (158)
- 32% required a keyguard for accurate access (50)
- 34% required the red upon selection feature to meet visual and/or sensory needs (53)

Alternative Access

- Switches 3%
  - (6 total- 4 head switches; 1 with hand; 1 with finger)
  - 66% could not hit the switch with their hand

Talk Points

- Why do SLPs and teachers do hand over hand with switches? Let's find individual switch sites – with your OT?

Eye Gaze / Headpointing

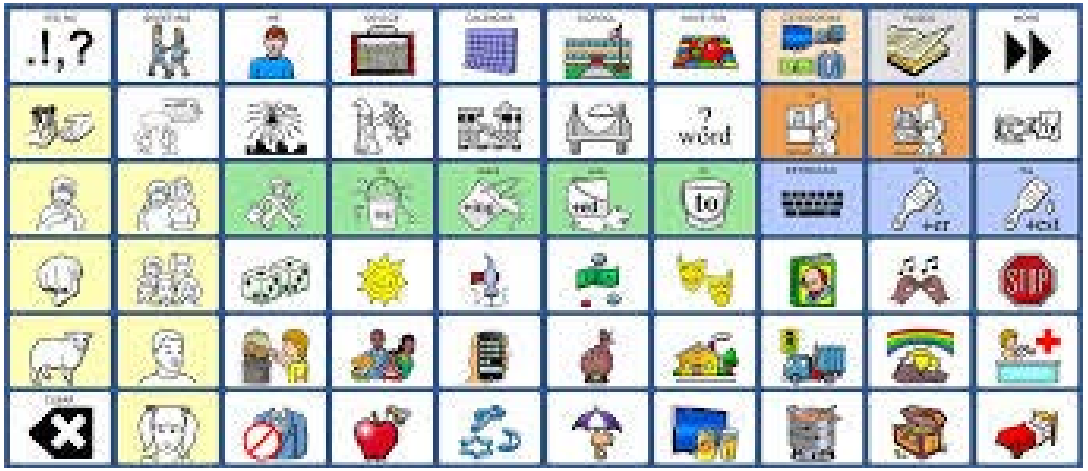
- Eye Gaze – 9% (16 total)
  - 56% have vision issues (9/16)
  - One even legally Blind
- Headpointing – 1% (1 total)
  - Possibly due to activation even when eyes are closed makes this access method seem less reliable

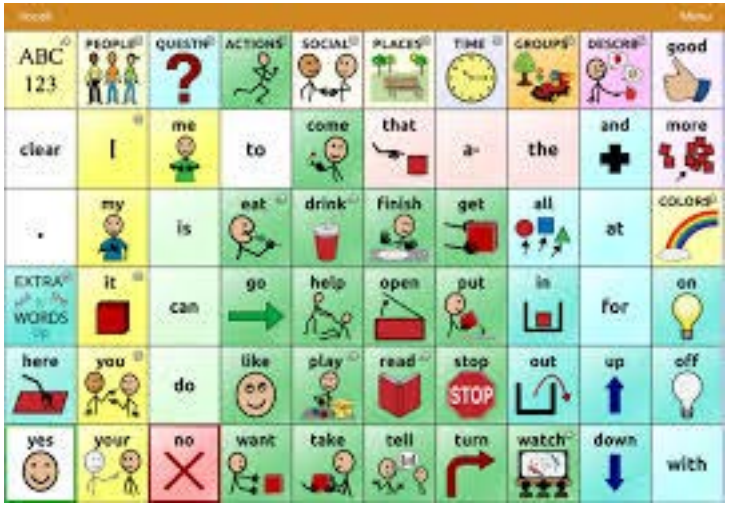
Layouts

Out of the 178 who qualified for a communication device

- 18% started at 2-9 buttons (32)
- 43% (77) started between 15-20 buttons
- 15% started between 24-42 buttons
- 24% (42) started at 60 or more buttons

Over 80% started with 15 or more buttons.





Who did qualify?

178 (98%)

- Everyone with a motor impairment qualified
- Everyone who had a vision impairment qualified
- Everyone with a hearing impairment qualified
- Everyone with a cognitive impairment qualified
- Everyone with a language impairment qualified

Who did NOT qualify?

- 2% (3 total)
- Diagnosis – Autism
- ***Proficiently Verbal***
- Became engrossed in the device and non verbal infront of the device
- In all case, when family saw their child's reaction to the device, they do longer wanted the systen

Who did NOT qualify?

- An unknown number of people that were never referred to due to their complicated body

Preliminary Conclusions

- An AAC evalautionis more than just communication
- Motor Matters
- Vision Matters
- Sensory and Self Regulation Matters

- ACCESS TRUMPS LANGUAGE