AAC Assessments: Don’t Get Chopped!

Katya Hill, PhD, CCC-SLP
University of Pittsburgh
ICAN® talk Clinics of the AAC Institute
June 2011

My sons!

Learning Outcomes

• Participants will identify and compare AAC Assessment Models.
• Participants will identify and describe required elements for conducting a comprehensive AAC evaluation.
• Participants will discuss strategies, tools and resources to support evidence-based AAC assessments.
Reasons to be Chopped

- The how and why of SLPs’ decisions in conducting AAC assessments and selecting SGD.
- Lack of evidence-based decision-making?
- The “default” assessment standard that compromises a comprehensive AAC assessments?

Don’t Let Your Customer be Chopped

- In the final analysis what funding source reviewers question about SGD requests lead to denials!

An Evidence-based Approach to the AAC Assessment Process

AAC ASSESSMENT MODELS: RECIPES MAKE A DIFFERENCE
Ingredients & factors that ruin results

- Confusion between these 2 separate tasks
- Funding influences
- AAC team members’ experience
- Time limitations
- The default assessment process
- Administrators emphasize fiscally responsible.
- Reviewer criteria takes in cost savings for payer

Assessment Model Influences

Needs-Based or Functional
- Basic and functional needs
  - state physical needs, expression a feeling, greet/part, biographical information, choose activities, communicate about present activity only.
- Participation Model
- Feature-Match Model or Matching Person w/ Technology

Language-Based
- Content, Use & Form (Bloom & Lahey, 1978)
- Normative Data
- AAC Language-based model (Hill, 1998)

AAC Language Based Assessment and Intervention Model (Hill, 1998)
The Evidence-based practice (EBP) Process and AAC Assessments

**Background & Foreground**
- Client Profile
- Formulate meaningful questions

**Appraisal & Decisions**
- Collect clinical and personal evidence
- Collect external evidence

**Fidelity & Monitoring**
- Use evidence to make treatment decisions
- Measure performance and outcome gains

---

AAC Assessments Requirements

**Areas to evaluate**
- Speech/Voice/oral-motor
- Language
- Cognition
- Sensory
- Swallowing

**Selection of evaluation tools**
- Language Samples
- Standardized
- Criterion-referenced
- Normative data
- Inventories & interviews
- Observation
- Modifications and accommodations to instruments

---

Feature Match Model

- Needs Based Approach?
- Language Based Approach?
Matching Persons & Technology

<table>
<thead>
<tr>
<th>Primary Components</th>
<th>Vocabulary</th>
<th>Methods of Utterance Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Language Representations Methods</td>
<td>Single Meaning/Phrase, Action-Based, Semantic Coexistence</td>
<td>Utterance generated, Word generation, Pre-coded responses</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Components</th>
<th>Control Interface – Selection Methods</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Interface</td>
<td>Direct Selection, Keyboard, head pointing, eye gaze scanning, Physiologic</td>
<td>Symbols, Text, Electronic/Infrared/Radio Frequency Data logging</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tertiary Components</th>
<th>Training and Support</th>
<th>Telecommunication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peripheral and Integrated Features</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Impressions versus Real Data

- What clinical data supports the differential diagnosis (type & severity) of a communication disorder?
- What clinical data supports the use of the Recommended AAC system?
- Quantitative or performance data
  - PeRT and/or PeRT summary measures
- Language Activity Monitoring (LAM) data
- Qualitative or user-satisfaction data

AAC Assessments Across the Lifespan

<table>
<thead>
<tr>
<th>Purpose of AAC</th>
<th>Developmental</th>
<th>Acquired</th>
<th>Degenerative</th>
<th>Temporary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population(s)</td>
<td>Autism, CP</td>
<td>Aphasia, TBI</td>
<td>ALS, Huntington’s disease</td>
<td>Hospitals, ICUs, rehab, SNFs</td>
</tr>
<tr>
<td>Acquire language through the use of AAC</td>
<td>Regaining and retrieval of language or compensation for language lost</td>
<td>Maintain current language levels, allow for continued typical communication</td>
<td>Meeting regulations to provide means of communication</td>
<td></td>
</tr>
</tbody>
</table>
Questions

An Evidence-based Approach to the AAC Assessment Process

AAC EVALUATIONS TO SUPPORT BUILDING LANGUAGE COMPETENCE
Language Transitions (Paul, 1997; Hill, 2009)

- Pragmatics to Semantics
- Semantics to Syntax
- Phonology to Metaphonology

Transition 1: Pragmatics - Semantics

**Characteristics**
- Typically 10-18 months
- Illocutionary to locutionary communication (Bates, 1976).
- Communicative intent to a conventional form of expression for the same intent.
- Conventional symbolic representation being established

**Evidence-based strategies**
- Naturalistic language intervention
- Joint attention or shared focus
- Aided language stimulation
- Verbal behavior approaches
- Prompting hierarchies

Transition 2: Semantics - Syntax

**Characteristics**
- Typically 18 months to 4 years
- Fast mapping vocabulary
- 25-30 expressive symbols
- Early word order transitions to more complex hierarchical relationships in syntax.
- Morphology (Brown’s Stages)

**Evidence-based Strategies**
- Building on strategies from previous transition
- Co-construction
- Recasts
- Expansions
- Contrastive targets
- Sentence imitation
- Sentence completion
Transition 3: Phonology - Metaphonology

Characteristics
- Typically 4-6 years
- Typically end of preschool
- Skills in metalinguistics and phonological awareness.
- Literacy skills and learning to read through a decoding method

Evidence-based Strategies
- Building on previous strategies
- Contrasting targets
- Sentence imitation
- Sentence completion
- Incorporating literacy instructional methods, e.g. Word Walls

Feature comparisons

Joint attention bubble routines
Choosing AAC Interventions: Data on 2.5 y.o. boy with developmental disabilities showing the number of pages and icons identified and used spontaneously for functional communication after 3 week trial period using dynamic display.

<table>
<thead>
<tr>
<th>8 CHILD Pages</th>
<th>Number of Icons used appropriately</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 want page</td>
<td>5</td>
</tr>
<tr>
<td>8 toy page</td>
<td>4</td>
</tr>
<tr>
<td>8 bubble page</td>
<td>7</td>
</tr>
<tr>
<td>8 fun page</td>
<td>3</td>
</tr>
<tr>
<td>8 read page</td>
<td>8</td>
</tr>
<tr>
<td>8 food page</td>
<td>4</td>
</tr>
<tr>
<td>Total of 6 pages</td>
<td>Total of 31 icons</td>
</tr>
</tbody>
</table>

Picture Word Power represents language using: single meaning pictures & alphabet-based methods.

Unity 128 represents language using: single-meaning pictures, alphabet-based methods and semantic compaction.
Choosing AAC Interventions: Performance comparison between Unity 128 and Picture Word Power (PWP) (language sample during 1-hour session for 13 y.o. with DD)

<table>
<thead>
<tr>
<th>Measures</th>
<th>PWP/PF (9 months of use)</th>
<th>Unity 128 PF (3 weeks of use)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Utterances</td>
<td>31</td>
<td>67</td>
</tr>
<tr>
<td>SNUG %</td>
<td>77%</td>
<td>88%</td>
</tr>
<tr>
<td>MLU-w</td>
<td>1.21</td>
<td>2.41</td>
</tr>
<tr>
<td>TNW</td>
<td>29</td>
<td>142</td>
</tr>
<tr>
<td>DWR</td>
<td>22</td>
<td>74</td>
</tr>
<tr>
<td>Core %</td>
<td>17%</td>
<td>60%</td>
</tr>
</tbody>
</table>

SGD Funding Request

Comprehensive Assessment
- Evaluation of type and severity of communication and swallowing disorders.
- Matching Person with Technology Process and trials.
- Measuring and comparing performance/outcomes of trial.

SGD Funding Request
- Met required criteria
- Identified SGD features needed to achieved functional communication goals.
- Functional communication goals relate to medical necessity.
- External, clinical, & personal evidence support medical necessity and selected SGD.

Questions
An Evidence-based Approach to the AAC Assessment Process

AAC EVALUATIONS & MAINTAINING OR REGAINING LANGUAGE COMPETENCE

Clinical Populations

Degenerative Disorders
- ALS/MND
- Huntington’s
- Parkinson’s
- Primary Progressive Aphasia

Acquired
- Stroke related communication disorders
  - Aphasia
  - Dysarthria
  - Verbal Apraxia
  - Combination
- Traumatic Brain Injury (TBI)
  - Language disorder
  - Cognitive disorder (right brain?)

AAC Language Based Assessment and Intervention Model (Hill, 1998)
Matching Persons & Technology

Primary Components

<table>
<thead>
<tr>
<th>Language Representation Methods</th>
<th>Vocabulary</th>
<th>Methods of Utterance Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Meaning/Phrasing</td>
<td>Core</td>
<td>Varied</td>
</tr>
<tr>
<td>Aphasia-Based Methods</td>
<td>Standard</td>
<td>Pre-recorded</td>
</tr>
<tr>
<td>Generalized Comprehension</td>
<td></td>
<td>Pre-chosen</td>
</tr>
</tbody>
</table>

Secondary Components

<table>
<thead>
<tr>
<th>User Interface</th>
<th>Control Interface – Selection Methods</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speech</td>
<td>Keyboard, head pointing</td>
<td>Speech</td>
</tr>
<tr>
<td>Navigation</td>
<td>Electronic/Infrared/RF</td>
<td>Navigation</td>
</tr>
<tr>
<td>Autonomy</td>
<td>Data logging</td>
<td></td>
</tr>
<tr>
<td>Human Factors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tertiary Components

<table>
<thead>
<tr>
<th>Peripheral and Integrated Features</th>
<th>Training and Support</th>
<th>Telecommunication</th>
</tr>
</thead>
</table>

Reasons to Get Chopped

• Delays – you have plenty of time before you need an SGD
• AAC services are NOT included with early SLP services
• Speech is evaluated as still functional ( intelligibility versus rate of speech)
• Severity of loss – time for trials or immediate needs
• Adults read and write (Roger Ebert phenomena).
• Ease of use at first encounter

You’ll be chopped when you don’t...

• Perform a comprehensive assessment of the speech and language disorders
• Integrate therapeutic strategies (exemplary practices) when assessing
• Provide client and/or family centered services
• Ensure clients and families are fully informed
• Make sure families are accept the disorder and level of functioning
• See the big picture of communication
Successful Strategies

• Transitional AAC systems and monitoring
  – from iPAD to BCI (Brain Computer Interface)
• Full explanation and demonstration of options for treatment
• Flexibility of SGD and AAC strategies
• Performance comparisons and changes in performance over time

Assessment Data

• Important to gather an accurate picture of patients current functioning
  – Make appropriate modifications during assessment process
  – Example:
    • Allow for use of AAC strategy to answer questions
    • Modify assessments and be flexible with answers
      – Point is to understand patient functioning

SLP’s procedure could chop client

• Task: Draw a clock that reads 12:15
When assessing language functioning...

- Allow patient to use AAC strategy to respond..
  - Make sure using display that is not taxing to patient (distractions, colors, etc.)
  - Not part of trial!
  - Point of using AAC is to allow patient a way to answer that allows for reflection of true skills
- Know test battery to program AAC system

Remember...

- Primarily focus: Determine client’s current language functioning
- Once this is achieved..
  - Determine software that maximize pts functioning so that they can..
    1. Say what they want to say
    2. So they can say it as fast as possible

Evaluating the User Interface

Examples
**SGD Funding Request**

- Comprehensive Assessment
  - Evaluation of type and severity of communication and swallowing disorders.
  - Matching Person with Technology Process and trials.
  - Measuring and comparing performance/outcomes of trial.

- SGD Funding Request
  - Met required criteria
  - Identified SGD features needed to achieve functional communication goals.
  - Functional communication goals relate to medical necessity.
  - External, clinical, & personal evidence support medical necessity and selected SGD.

---

**Would you have data for an appeal?**

Received June 6, 2011 from GATEWAY Health Plan:

“Denied completely because Gateway has denied as not medically necessary the requested SGD from a non-participating Gateway provider as there are devices available through our participating provider. Augmentative Communication Consultants such as the ABC SGD which would meet clients’ current and future needs for communication.”

---

**TAKE HOME**

AAC Assessments:
Don’t Get Chopped!
CHOPPED

Be Truthful!

• A comprehensive assessment CANNOT be completed within billable hours.
• Clinical evidence on the nature and severity of the communication (cognitive-linguistic) disorder is critical for an acceptable feature-match process.
• The Matching Person with Technology (MPT) process MUST evaluate AAC interventions based on primary, secondary & tertiary features.
• Clinical evidence MUST include quantitative data.
• Personal evidence should be gathered systematically as qualitative data.

AAC Institute & ICAN™ Talk
Clinic Resources

• Directory of Local Resources
• EBP Symposium
• AAC Camp
• Papers on AAC topics
• Self-Study Program
• Videoconference teaching
• Parents’ Corner
• AAC ConsumerNet
• CAAC Research Conference

SAVE THE DATES!
15th Biennial Conference of the International Society for Augmentative and Alternative Communication

ISAAC 2012
July 28-August 4, 2012

PITTSBURGH • WOW
ISAAC 2012
Questions

Thank you!

Katya Hill, Ph.D., CCC-SLP
Associate Professor
AAC Performance and Testing Teaching Lab
6017 Forbes Tower
University of Pittsburgh
Pittsburgh, PA 15260 US
412-383-6559
khill@pitt.edu

Katya Hill, Ph.D., CCC-SLP
Executive and Clinical Director
AAC Institute & ICAN™ Talk Clinics
1401 Forbes Ave., Suite 206
Pittsburgh, PA 15219 US
412-523-6424
khill@aacinstitute.org

www.aacinstitute.org