AAC Evidence-Based Practice: Four Steps to Optimized Communication

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Placing the client's benefits first, evidence-based practitioners adopt a process of lifelong learning that involves continually posing specific questions of direct practical importance to clients, searching objectively and efficiently for the current best evidence relative to each question, and taking appropriate action guided by evidence (Gibbs, 2003, p. 6).

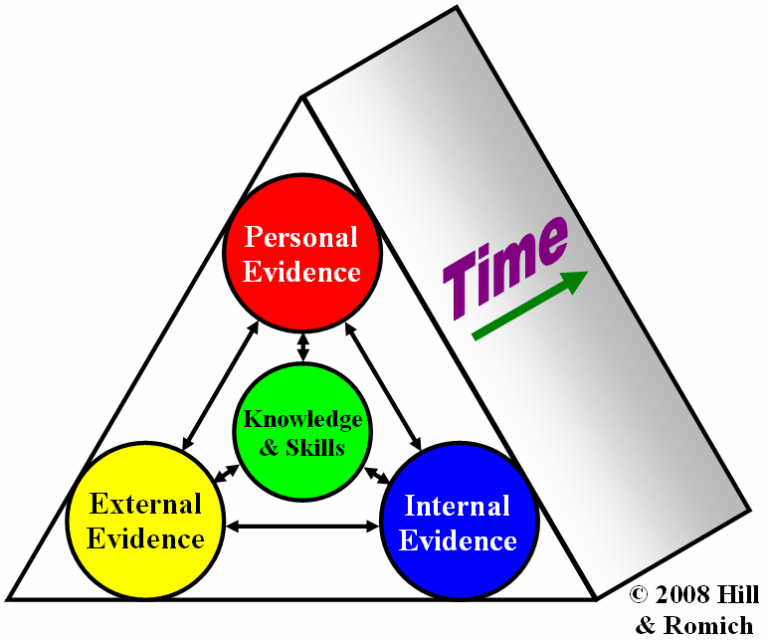

Figure 1. Evidence-based practice integrates personal, internal and external evidence.

Authority-based approaches to augmentative and alternative communication (AAC) decision-making historically placed teams in the position of relying on "expert opinions" and hierarchical approaches to selecting AAC interventions. Authority-based practice may be particularly comfortable to professionals when clients present with severe communication challenges and cannot speak. Rather than being bombarded by a range of options and an endless list of features and devices from which to choose, the choices become limited by subscribing to a hierarchy established by an "authority." Yet, the field of communication disorders has become aware of the limitations of expert opinion as the basis for decision making (ASHA, 2004). Using authority-based methods means that an individual with a significant communication disability is likely to receive three different AAC solutions from three different teams, based on the policies, procedures, and experience in authority. It is likely that all three solutions would not result in optimized communication performance.

For children and adults who rely on AAC, their life experience is and will be a function of their ability to use language to communicate. People who use AAC tell us that the two most important values in their use of AAC are **1) saying exactly what they want to say** and **2) saying it as fast as they can**. Parents with children who rely on AAC share these same values (Hurd, 2005). When surveyed, individuals with disabilities and family members expressed a clear sense of maximizing potential and independence as an important outcome (Pain, Dunn, Anderson, Darrah, Kratochvil, 1998). In other words, they want to be "the best they can be". The AAC service delivery process must honor these values. Evidence-based practice provides the principles and process to honor and adhere to the goals, values, and expectations of individuals who benefit from AAC.

A Model for AAC Evidence-Based Practice

AAC evidence-based practice (EBP) requires the collection, evaluation, and integration of the best evidence available. The types of evidence used to drive the EBP process are critical to making decisions that make a difference to client outcomes. Recently, Dollaghan (2007) has recommended that three types of evidence (E^3) are essential to the EBP process: personal evidence, internal evidence, and external evidence. Figure 1 represents the synergy that occurs among these evidence categories when savvy clinicians apply E^3BP. The EBP flow chart put forward in 2001 (Hill & Romich, 2002) has been revised to reflect Dollaghan's three essential evidence categories.

The E^3BP flow chart (Figure 2) serves as a systems model for clinical service delivery. The model provides the framework for following the **four basic steps for E^3BP**: **1) asking meaningful EBP questions**; **2) collecting and reviewing the personal and internal evidence**; 3); **locating and reviewing the external evidence** and **4) using the evidence to make assessment and intervention decisions**. The model illustrates how the processes identified by Sackett et al. (1997), when followed, provide for the collection of the personal, internal and external evidence needed for data-driven decisions.

Develop Client Profile

The process starts with characterizing the individual. Applying the principles of EBP is not possible without a thorough assessment of the individual's abilities, skills, expectations and values. Assessment concerns one of the most vital tasks in practice (Gibbs, 2003). Therefore, comprehensive information and data collection and reporting are fundamental. Characterizing the individual is a crucial process that identifies, classifies and prioritizes the areas and issues associated with a communication disorder. No data are more important to formulating and answering the best questions for an individual than data on language functioning. This clinical diagnostic course of action drives us toward specific evidence and AAC interventions. A primary purpose of this step is to permit the retrieval of communication performance that others with similar profiles have been able to achieve.

Step 1: Ask Meaningful EBP Questions

A difference between an authority-based process and EBP is the desire to decrease the uncertainty in making clinical decisions about care. Rather than the presumption of knowing what is best, teams use quantitative data to guide evidence-based decisions. Teams applying EBP seek, appraise and integrate external evidence. However, how can team members feel confident about the evidence they collect to make decisions about an individual's life experience? Identifying evidence depends largely on something that happens before the search begins: namely, on how questions about evidence are framed (Dollaghan, 2007). Learning how to ask meaningful questions that result in successful searches is the critical first step in the EBP process.

Client-oriented questions are formulated that allow teams to search and evaluate the best evidence to base recommendations about AAC interventions. Evidence-based medicine uses the PICO (Patient/Problem, Intervention, Comparison and Outcome) frame to structure questions (Sackett,et al., 2000). Gibbs (2003) recommends a comparable question formulation strategy called COPES or Client-Oriented Practical Evidence Search. COPES reminds teams that evidence should have practical significance for applying treatment that will make a difference in the achieved outcomes. Each strategy recommends the following four (4) elements for a

well-built question: **1) the client type**; **2) what you might do**; **3) an alternative course of action or no treatment**; **4) what you want to accomplish**. As you identify what you want to accomplish, consider that the "best evidence" includes the critical performance measures important for monitoring client outcomes.

Let's take a closer look at the elements of well-formulated questions and some possible questions, that when answered, would make a difference in the treatment outcomes. Table 1 shows examples of frequently asked question types related to AAC decisions based on Gibbs (2003). Being able to compare and contrast the internal evidence collected as part of Step 2 and the external evidence located as part of Step 3 demonstrates how important consistent and reliable measures of communication competence are for the process to lead to successful results.

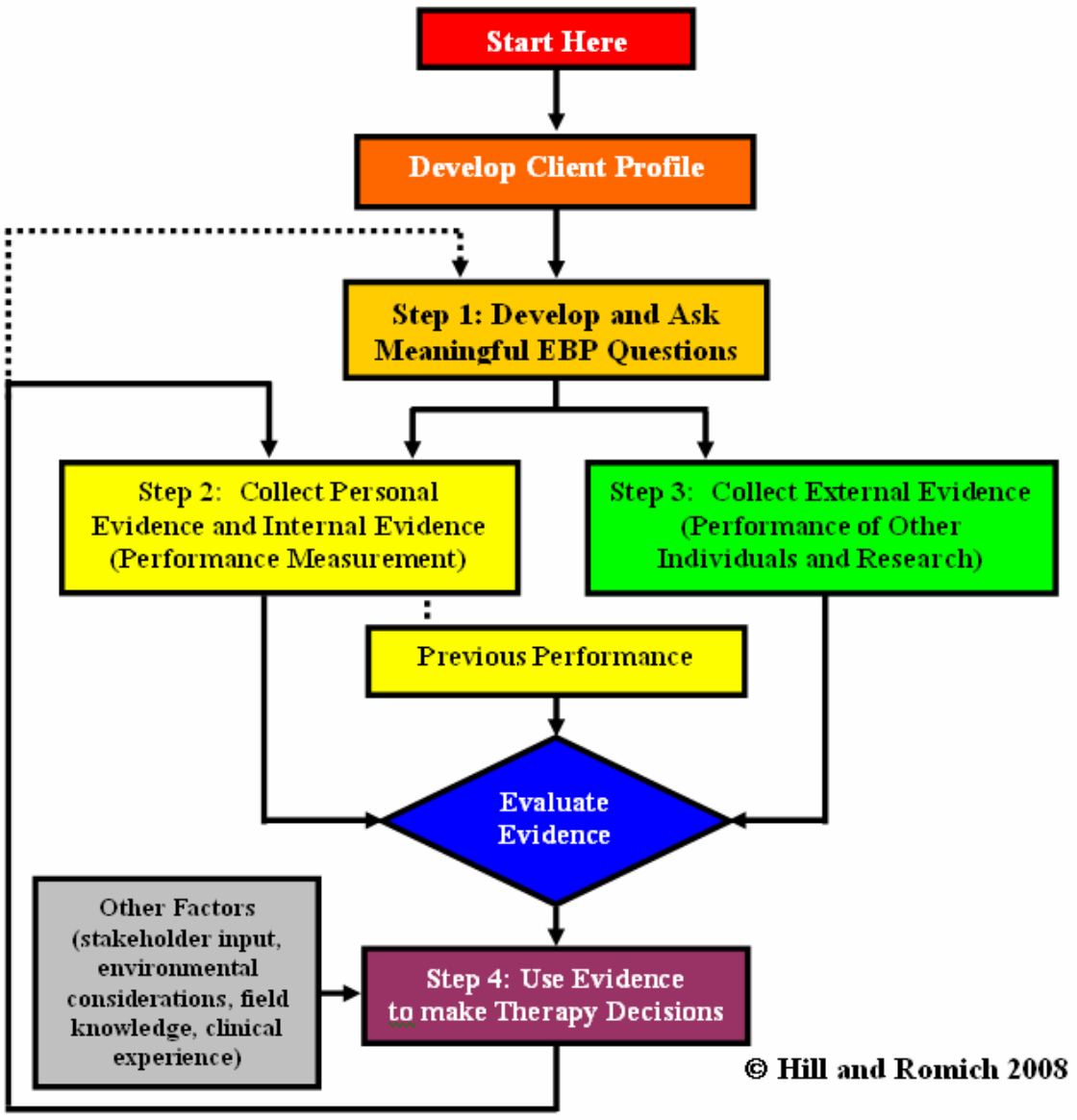

Figure 2: Evidence-Based Practice (E^3BP) Flow Chart

Table 1. PICO / COPES question types with the four elements of a well-built question.

	Four Elements of a Well-Formulated Question			
Question Type	**Client Type**	**What You Might Do**	**Alternative Course of Action**	**What You Want to Accomplish**
	How would I describe a client or a group of clients with a similar profile? Be specific.	Perform an assessment; Apply a treatment; Measure to assess abilities; Survey clients…	What is the main alternative other than in the box to the left? This may mean *no treatment* or *no intervention*.	Optimize communication? Maintain functions? Performance or outcome of assessment or treatment? Reliable and valid measure?
Examples				
Assessment question	For persons recently diagnosed with ALS in Stage 2	would initiating the assessment for high technology AAC interventions as soon as possible	or postponing the assessment until speech has significantly deteriorated	lead to significantly better communication performance?
Treatment question	For school-aged children who rely on AAC,	will language based treatment	or activity based treatment	lead to significantly greater core vocabulary gains?
Training question	For a preschool child with autism using an AAC system	will a parent training program	or a 1 day/week training with classroom support	result in significantly greater gains in expressive language skills?
Delivery question	For teams providing AAC evaluations	will a language-based assessment model	or a needs-based assessment model	result in AAC recommendations that achieve optimal communication and reduce abandonment or disuse of systems?

Step 2: Collect Personal Evidence and Internal Evidence

Personal evidence is collected by having the client and family identify their values, goals, and expectations related to quality of life and use of AAC assistive technology. Internal evidence is collected through quantitative analysis of language samples, resulting in performance data on how someone uses AAC assistive technology and strategies. This step provides for baseline data prior to initiating any changes to current status. Light and Binger (1998) emphasize the importance of language sampling and data collection to establish performance baselines for individuals using AAC systems. LAM (language activity monitoring) refers to collection and subsequent analysis and reporting of communication using an AAC system and/or AAC strategies. More specifically, LAM is a feature in an AAC system that supports the automated recording of events representing how an AAC system is used by an individual to communicate and thus provides reliable and valid performance measures to support EBP (Hill, 2004).

Step 3: Collect External Evidence

Step 3 expects that teams are committed to searching fairly and honestly for disconfirming and confirming evidence (Gibbs, 2003). EBP requires that teams collect, interpret and integrate valid, important and applicable evidence (McKibbon, Wilczynski, Hayward, Walker-Dilks, & Haynes, 1995). Research on clients with similar profiles to the client in question that reports specific performance and outcome measures is particularly valuable as evidence (Hill, 2006). A growing database of evidence reporting performance data to support AAC practice, specifically Step 3, is a resource available at the web site of the AAC Institute <www.aacinstitute.org.> The database reflects five Levels of Evidence based on the American Academy for Cerebral Palsy and Developmental Medicine (AACPDM; Butler, 2001). However, the categories of evidence reflect the distinction between research that is based on individuals who rely on AAC and research this is not.

For many, research results reporting performance data provide the most important and relevant evidence for decision-making. Performance data provide the benchmarks to strive toward, to raise expectations, or to motivate teams to go beyond the results for the benefit of the client.

Why is evidence on performance data the most important and applicable evidence to use for making a decision about AAC practice? A performance-based understanding of communication competence has been a long-standing goal of AAC. Historically, our understanding of communication competence has been based on the collection and analysis of language samples. Reviewing the research assessing the performance of individuals who rely on AAC shows the practical significance of specific measures in monitoring results such as language representation method use, vocabulary frequency, utterance generation strategies, and communication rate. These parameters of performance are reliable and valid in measuring communication competence and evaluating the effectiveness of an AAC system for individuals whose natural speech is not meeting communication abilities and needs.

Step 4: Use Evidence to Make Therapy Decisions

This step involves monitoring the progress or results of implementing the recommended intervention(s). The performance and outcomes data selected and reported as baseline data are collected, analyzed, and reported to make decisions about the success of the decisions by the team. Routine reporting of client performance provides for timely adjustments and modifications to the AAC assessment and intervention processes, thus ensuring that the client is achieving maximum benefit. Finally, Step 4 moves teams away from authority-based decisions to evidence-based decisions. Decisions are no longer based on impressions of effectiveness, but on quantified performance.

Summary

In summary, EBP expects teams to conscientiously and judiciously use the best evidence or data to support decisions (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). Personal and internal evidence guide action that is of practical importance to clients. External evidence reporting performance and outcomes data provide the benchmarks to build communication competence. When we place the benefits of people who rely on AAC first, then the desired outcome is the most effective, independent communication possible for a full life experience.

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ACKNOWLEDGEMENTS

The authors wish to express their gratitude and appreciation to Len Gibbs and Christine Dollaghan for their contributions to advance the principles the evidence-based practice in their reflective fields, and for motivating our thinking about applying EBP and clinical evidence to AAC service delivery. The authors gratefully appreciate the review of this paper by…

ABOUT THE AAC INSTITUTE

The AAC Institute, established in 2000, is a resource for all who are interested in optimizing the communication of people who rely on AAC. Organized as a 501c3 not-for-profit charitable organization, AAC Institute offers information and provides services worldwide. AAC Institute promotes the goal of AAC, the AAC Rules of Commitment, and evidence-based clinical practice. This mission is accomplished through service delivery, research, information dissemination, and education. The AAC Institute Press publishes peer-reviewed materials to support AAC evidence-based practice and to advance the field of AAC clinical service delivery.

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