

## **ABA Therapy for Autism Spectrum Disorder Staff Update**

### **Introduction**

HTA selected ABA Therapy for Autism Spectrum Disorder (ASD) to undergo a health technology assessment where an independent vendor systematically reviews the evidence available on its safety, efficacy, and cost-effectiveness, and then an independent committee of health care providers (HTCC) makes a coverage decision for state agencies. HTA posted the topic and gathered public input on all available evidence. HTA posts Key questions which guide the development of the draft evidence report. In this case, HTA posted the key questions from a federal agency, Agency for Healthcare Research and Quality, AHRQ, who is already conducting an evidence review on interventions for ASD, including ABA Therapy. To avoid redundancy, HTA

When using an evidence report developed by another entity, HTA ensures that standards and questions relevant to the HTCC are met, supplemented by additional materials. HTA is providing a staff update on the topic and seeking input from the HTCC at its public meeting to guide development of the report(s).

### **Report Status**

Report: AHRQ selected the topic of Therapies for Children with Autism Spectrum Disorders in 2009. The research protocol and key questions were finalized in December 2009. The proposed report scope is broader than the WA HTA topic, but the key questions include ABA therapy as one of multiple interventions for review and comparison. A draft evidence report was posted for comment in August 2010 and is now undergoing revision based on public comments and peer review.

- Staff will have to await the final evidence report before determining whether the methods are substantially similar to HTA commissioned work, which is necessary given our program purpose. For ABA Therapy there has been substantial debate on trial inclusion criteria and appropriate evidence standards because, as detailed further below, this service has been called educational, behavioral, and medical; and each may use different evaluation approaches. Finally outcomes of interest can vary among the disciplines, and HTA needs to ensure that all patient oriented clinical outcomes are addressed.

Supplemental materials: The AHRQ report will not have any information on guidelines, Medicare and other coverage policies, WA state agency utilization and experience data, or WA prevalence information.

- The MED OHSU project, has completed a quality review of two primary Autism treatment guidelines (National Autism Council (NAC) and Scottish Intercollegiate Guidelines Network (SIGN)); a review of state policies; and information about single subject study design
- OHSU can incorporate WA utilization, cost, and experience data as necessary and provide an overview linking the evidence review and supplemental materials, or will perform the evidence review if the AHRQ report does not meet program needs.

## **Background**

Autism Spectrum Disorders (ASDs) are a group of neurodevelopmental disorders that affect a person throughout their lifespan. ASDs are viewed as a spectrum of disorders in that the core deficits can range in severity. These core deficits are in the areas of communication and socialization, as well as patterns of restricted or repetitive behaviors. There are other symptoms and co-morbidities commonly experienced by people with ASDs. Thus, the clinical profile varies considerably between individuals depending on their language ability, cognitive ability and chronological age, among other things.

The biological causes of ASD are not known, nor are the pathways through which the underlying biology develops into the specific cluster of symptoms that must be present for a diagnosis. An increase in prevalence estimates has been observed over time, and in 2007 the CDC reported the prevalence of ASDs in the US to be as high as 1 in 150.

Each person with an ASD needs intervention to meet his or her individual needs and the needs of the family. A wide range of psycho-educational, speech therapy, occupational therapy and physical therapy interventions are available, incorporating a mix of behavioral, developmental and education approaches. These services may be provided by professionals in a variety of settings and by or with the involvement of families. Interventions can include services that (a) are called "treatments" and billed as health care services if performed by an appropriately licensed professional; (b) can be delivered by educators, speech language pathologists, or psychologists interchangeably (or by unlicensed individuals under their supervision) in either health care or educational settings; or (c) may be provided by people who are not licensed. The recent AHRQ draft report identifies the following categories:

- Behavioral interventions
- Educational interventions
- Medical and related interventions
- Allied health interventions
- Complementary and alternative medicine interventions (CAM)

This reflects a unique challenge posed by autism: support needs cross social, educational, health and community organizations. Families and individuals may receive services from multiple agencies and programs but these services are frequently not coordinated. The rapid increase in numbers of individuals being identified with ASD, the complexity and diversity of their needs, limited resources, exert increasing pressure on existing education and social services systems and health care. Increasingly, parents and providers have advocated that all interventions be provided or reimbursed through the education or health care system. Especially in the area of psycho-educational or behavioral interventions, there is a lack of clarity in that interventions are long-term and developmental in the same way that education is long term and developmental, but they are also being devised by professionals in the health care disciplines to address a disease process.

The initial topic, Applied Behavioral Analysis (ABA) Therapy is one type of the behavioral or psycho-educational intervention and is the most widely studied. At this point, public and private health insurance generally covers medical interventions, but does not generally cover behavioral interventions and other services related to ASD. The role of health insurance in providing specific behavioral interventions, frequently identified as applied behavioral analysis, to individuals with Autism Spectrum Disorder has been controversial.

1. There is debate over whether the interventions found most successful for young children on the Spectrum are best described as educational or medical.

- *This issue is not within the scope of the HTCC, though input from the HTCC could be considered by legislative and executive bodies setting policy*
- 2. Medical systems are not well designed for coordinating and integrating care with other service providers.
  - *This issue is significant, but premature – additional guidance may be sought from HTCC if necessary when the other issues are resolved around provider qualification etc*
- 3. There is disagreement whether the interventions meet the appropriate standard of evidence for medical insurance.
  - *This is the issue to be addressed by HTCC*

REFERENCE: the current [HTA Key Questions](#)

## Washington State Health Care Authority, HTA Program Key Questions and Background ABA Therapy for Autism Spectrum Disorder

### **Introduction**

HTA has selected ABA Therapy for Autism Spectrum Disorder to undergo a health technology assessment where an independent vendor will systematically review the evidence available on the safety, efficacy, and cost-effectiveness. HTA posted the topic and gathered public input on all available evidence. HTA is now publishing the Draft Key Questions to gather input about the key questions and any additional evidence to be considered in the evidence review, and will review the public comments submitted and finalize the key questions. Key questions guide the development of the draft evidence report.

*In this case, a federal research agency, AHRQ, also selected this topic. AHRQ previously posted for public comment its key questions and has just released a draft report. HTA strives to make economical use of state resources and to not duplicate other systematic reviews where current reports meet our statutory mandate and are timely.*

Therefore, HTA is seeking comment on the key questions that are posed in the AHRQ report, and comments on whether any additional questions would be needed to meet HTA's specific purposes. Regardless of outcome, HTA strongly encourages stakeholders interested in this topic to also participate in the AHRQ review and comment process. The AHRQ comment form on the draft report is open until August 6<sup>th</sup> and can be accessed at:

<http://www.effectivehealthcare.ahrq.gov/index.cfm/research-available-for-comment/comment-draft-reports/?pageaction=displayDraftCommentForm&topicid=106&productID=478>

### **Proposed Key Questions** (As specified in AHRQ report)

Source:

<http://www.effectivehealthcare.ahrq.gov/ehc/products/106/366/Therapies%20for%20Autism%20Spectrum%20Disorder%20%2082-9-2010%29.pdf>

**KQ1:** Among children ages 2-12 with ASD, what are the short and long-term effects of available behavioral, educational, family, medical, allied health, or CAM treatment approaches? Specifically,

**KQ1a:** What are the effects on core symptoms (e.g. social deficits, communication deficits and repetitive behaviors), in the short term ( $\leq 6$  months)?

**KQ1b:** What are the effects on commonly associated symptoms (e.g. motor, sensory, medical, mood/anxiety, irritability, and hyperactivity) in the short term ( $\leq 6$  months)?

**KQ1c:** What are the longer-term effects ( $> 6$  mos) on core symptoms (e.g. social deficits, communication deficits and repetitive behaviors)?

**KQ1d:** What are the longer-term effects ( $> 6$  mos) on commonly associated symptoms (e.g. motor, sensory, medical, mood/anxiety, irritability, and hyperactivity)?

**KQ2:** Among children ages 2-12, what are the modifiers of outcome for different treatments or approaches?

**KQ2a:** Is the effectiveness of the therapies reviewed affected by the frequency, duration, and intensity of the intervention?

**KQ2b:** Is the effectiveness of the therapies reviewed affected by the training and/or experience of the individual providing the therapy?

**KQ2c:** What characteristics, if any, of the child modify the effectiveness of the therapies reviewed?

**KQ2d:** What characteristics, if any, of the family modify the effectiveness of the therapies reviewed?

**KQ3:** Are there any identifiable changes early in the treatment phase that predict treatment outcomes?

**KQ4:** What is the evidence that effects measured at the end of the treatment phase predict long term functional outcomes?

**KQ5:** What is the evidence that specific intervention effects measured in the treatment context generalize to other contexts (e.g., people, places, materials)?

**KQ6:** What evidence supports specific components of treatment as driving outcomes, either within a single treatment or across treatments?

**KQ7:** What evidence supports the use of a specific treatment approach in children under the age of 2 who are at high risk of developing autism based upon behavioral, medical, or genetic risk factors?

## **PICOTS** (From AHRQ Report)

**Population.** Children ages 2 – 12 who are diagnosed with an autism spectrum disorder (ASD) and children under age 2 at risk for diagnosis of an ASD

**Interventions.** Behavioral interventions, including variations of applied behavior analysis as well as developmentally-based models such as DIR/Floortime, among others; educational interventions, including the TEACCH program; allied health interventions, including occupational, physical, and speech therapy; medical interventions, including prescription and non-prescription treatments; and CAM approaches, including music therapy and nutritional therapies intended to modify the core symptoms of ASD

**Comparators.** No treatment, placebo, or comparative interventions from intervention list or combinations of interventions.

### **Outcomes and adverse events.**

*Primary outcomes.*

- Changes in short-term targeted outcome areas, including social skills/interaction, language and communication, repetitive and other maladaptive behaviors, psychological distress, adaptive skills development and academic skills development

## **Technology Background**

*Technology:* Autism Spectrum Disorders (ASD) are common neurodevelopmental disorders, with an estimated prevalence of one in 110 children in the United States. Individuals with ASD have significant impairments in social interaction, behavior, and communication. Children with ASD may also have impaired cognitive skills and sensory perception. The expression and severity of symptoms of ASD differ widely, and treatments include a range of behavioral, psychosocial, educational, medical, and complementary approaches that vary by a child's age and developmental status. The goals of treatment for ASD focus on improving core deficits in communication, social interactions, or restricted behaviors, with the idea that changing these fundamental deficits may help children develop greater functional skills and independence. Individual goals for treatment will vary for different children, and may include combinations of medical and related therapies, behavioral therapies, educational therapies, allied health therapies and complementary and alternative medicine (CAM) therapies. Important questions remain about the efficacy and safety of therapies, including Applied Behavioral Therapy, which groups of individuals with ASD may benefit, and whether a combination of medical and other therapies is necessary.