White Paper Critique on
What Works Clearinghouse Intervention Report:
Lovaas Model of Applied Behavior Analysis

It is encouraging to see a report of an autism treatment in the What Works Clearinghouse (WWC). However, the *WWC Intervention Report: Lovaas Model of Applied Behavior Analysis* (WWC, 2010) unfortunately misinterpreted the available research resulting in misguided and inappropriate conclusions.

The report reviewed the evidence of Lovaas-based (Lovaas, 1981, 1987, 2003) applications of applied behavior analysis (ABA; often referred to as early intensive behavioral intervention [EIBI]) for two studies employing randomized control trial methodology (Smith et al., 2000; Sallows & Graupner, 2005). Smith et al. compared EIBI, in which children received an average of 25 hours of therapy per week, to a less intensive parent-training group, in which parents received 5 hours per week of parent training and were asked to provide behavioral therapy to their child for an additional 5 hours per week. Although the parents in the parent-training group were trained to deliver ABA therapy, the intensity was much less and not intensive and is well below the commonly recommended 25 hours per week (e.g., National Research Council, 2001). The results showed the children receiving EIBI had statistically significant higher levels of cognition and language than the parent-training group after greater than two years of treatment.

Sallows and Graupner (2005) compared clinic-directed EIBI and parent-directed EIBI. On average, both groups received greater than 30 hours of direct treatment per week (39 and 32 hours per week during the first year for the clinic-directed group and parent-directed group, respectively). In both groups, the therapy the children received was delivered by therapists hired from the same agency. The main difference between these groups was the parents determined the number of hours of therapy per week for their child in the parent-directed group. Although the parent-direct group received, on average, fewer hours of treatment per week, the average number of hours per week (i.e., 32) exceeds the commonly recommended 25 hours per week (e.g., National Research Council, 2001) and the number of hours per week the EIBI group in the Smith et al. (2000) study received; thus, the treatment received by the parent-direct group in the Sallows and Graupner study should be considered intensive. Sallows and Graupner found no statistically significant differences between the clinic-directed EIBI group and the parent-directed EIBI group on measures of cognition, adaptive behaviors, and language – on average, the children in both conditions made comparable (and large) gains in cognition and language and smaller gains in areas of adaptive behavior. The lack of difference between the clinic-directed EIBI and parent-directed EIBI groups is not surprising since both groups received similar amounts of intensive intervention (i.e., EIBI) delivered by therapists from the same agency.

The WWC Report concluded that, “based on these two studies…the extent of evidence for the *Lovaas Model* for children with disabilities [is] small for cognitive development, communication/language competencies, social-emotional development and behavior, and functional abilities…the *Lovaas Model* was found to have potentially positive effects on cognitive development for children with disabilities and no discernible effects for communication and language competencies, social-emotional
development/behavior, and functional abilities.” (WWC, 2010, p. 1-2). The unfortunate misinterpretation in the WWC Report stems from its treatment of the parent-directed EIBI group of Sallows and Graupner (2005) as a control group. In this study the parent-directed group was not equivalent to a traditional no-treatment control group or a treatment as usual contrast group and should not be considered as such (see Smith et al., 2009 for further explanation).

The conclusions of the WWC are in stark contrast to the building evidence from syntheses of EIBI conducted using meta-analytic techniques and likely relate to the restrictive requirements of research imposed by the WWC. Four recent meta-analyses (Eldevik et al., 2009; Makrygianni & Reed, 2010; Reichow & Wolery, 2009; Virués-Ortega, 2010) found EIBI to be an effective and powerful intervention for both cognitive development and adaptive behaviors for many children with ASDs. Statistical syntheses of language and psychopathology (e.g., autistic symptomatology) have not occurred in most meta-analyses because they have been less frequently or less consistently measured, respectively. Thus, conclusions about the average effects of EIBI on these outcomes are difficult to conclude at this time. These meta-analyses did not limit study inclusion to RCTs, therefore, more studies, and therefore more participant data, were included. In sum, the meta-analyses supported and demonstrated the efficacy of EIBI, which is a conclusion that has also been reached in numerous descriptive and systematic reviews (e.g., Granpeesheh et al., 2009; Eikeseth, 2009; Matson & Smith, 2008; National Research Council, 2001; Rogers & Vismara, 2008).

In sum, the WWC Report on the Lovaas Model of ABA misinterpreted key research and presented findings inconsistent with multiple meta-analytic and descriptive reviews of EIBI, including one meta-analysis (Reichow & Wolery, 2009) that focused exclusively on studies utilizing Lovaas ABA. Furthermore, the current evidence on the effectiveness of EIBI meets the criteria for the highest levels of evidence-based treatments for many organizations (e.g., Kratochwill & Stoiber, 2002; National Autism Center, 2009; Odom et al., 2005; Silverman & Hinshaw, 2008) and should be considered as such. Although more research is needed on the effects of EIBI on the core symptoms of ASDs and the child’s behavior in their natural environment, EIBI remains the comprehensive treatment approach for individuals with ASD with the greatest empirical support and should therefore be given strong consideration when determining treatment options for young children with ASDs.

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