

## **INTERVENTION MODELS AND PROCESSES SUBCOMMITTEE BACKGROUND AND RECOMMENDATIONS**

The task of the Intervention Models Subcommittee was to identify, and recommend to the Autism Spectrum Disorders (ASD) Workgroup, intervention models and processes for children ages birth to six that best prepare children with ASD to benefit long-term from our educational systems and their life experiences. These interventions should reflect the stated values and assumptions of the Workgroup, along with promoting the Workgroup's identified results. As the Workgroup values family choice of practices that are evidence-based and effective, the Intervention Models subcommittee focused on the identification of evidence based and effective Intervention Models.

Michigan Department of Community Health (DCH) has begun an initiative to implement Evidence-Based Practice (EBP) within our service delivery system for individuals with mental health and substance abuse problems. The current effort represents an extension of EBP to services for individuals with developmental disabilities and within our educational system. Many states and professions are moving to endorsement of and fostering implementation of evidence-based practices. Within this approach, intervention models are classified according to the level of evidence supporting the intervention. Multiple similar classification systems are available and were referenced by the sub-committee. Ultimately, the subcommittee modified the *Guide for Child Welfare Administrators on Evidence Based Practice/Child Welfare Practice Classification System* for our purposes and classified relevant interventions based on reviewing the research literature. The result is the 'Practice Classification System for Young Children with Autism Spectrum Disorders'.

In the area of autism treatment, a wide range of potential options are available and information about options is available from a variety of sources. Unfortunately, not all of those treatments have strong research-based evidence to support their effectiveness with young children with autism. Additionally, information is not always provided independent of financial interests of service providers. The subcommittee's classification system and the overall Evidence Based Practice (EBP) initiative fosters provision of free, up-to-date, easily-accessible scientific information about practices to family members and consumers to facilitate their decision-making and honor consumer choice. It is also not intended to coerce families to agree to use only EBPs or to limit or eliminate the use of other practices that yield positive results for an individual child. The goal is to encourage schools and mental health agencies to integrate EBPs into their systems and evaluate their outcomes. The EBP initiative recognizes that families have unique desired outcomes for their loved ones that vary according to individual case. However, desired outcomes should be measured for everyone and these measures should guide practice and accountability to families, clinicians, and the state of Michigan for the effectiveness of interventions.

The subcommittee classification system is structured such that general models of intervention are arranged together (e.g., EIBI, Developmental Language Models) but information is provided for specific intervention practices (e.g., Hanen, ECO) when they are available. Each model or practice has been compared to the classification system criteria and the level of currently existing support is rated. Note that an intervention may be a generally acceptable practice (i.e., widely used, not unethical, not harmful) even if that practice does not have strong scientific evidence to support clear effects with young children with autism. Essential information is provided for each intervention regarding the time investment for family, specific credentials recommended for practitioners, and other information needed to make informed choices. Often multiple service options (e.g., EIBI, family respite, OT) can be accessed simultaneously with great benefit; however, empirical studies may not have directly examined the combined or additive effects of interventions. A comprehensive program may include multiple interventions that are conceptually integrated to excellent effect. However, caution should be exercised in pursuing equal amounts of an “eclectic” mix of interventions because evidence suggests that eclectic programming, even when provided at more than 25 hours per week, does not produce effects that are optimal or equal to intensive delivery of a uniform curriculum and instructional approach (Howard et al, 2005). With that said, the workgroup recommends that empirical studies be conducted in Michigan to directly examine the combined or additive effects of interventions.

The intervention models the subcommittee has determined to be evidenced-based must be taken within a context that clearly:

1. Identifies the role of person-centered planning and family centered practice.
2. Emphasizes the importance of family collaboration and choice of practices.
3. Values selection and measurement of outcomes and indicators as specified by the outcomes and indicators subcommittee.
4. Emphasizes the importance of individual outcomes measurement and the efficacy of interventions at an individual and systems level.
5. Specifies the limitations of the available research.
6. Identifies the parameters within which these intervention models must be practiced in order to be effective, based upon the research.
7. Acknowledges the rapid rate of ongoing research and the need to review/revise the practice classification system in a dynamic process and every year at a minimum.
8. States the role of Positive Behavior Support within the education system as specified by IDEA.
9. Identifies processes/strategies that result in increasing the use of EBPs.

## Role of Person-centered planning

### Person-Centered Planning (adapted from Autism Society of Michigan)

Michigan's approach to Person Centered Planning came about as a result of the Michigan Mental Health Code, Act No. 290, Public Acts of 1995. Person Centered Planning is an approach that includes the preferences of the person who receives the services. It also assists individuals in creating a personalized map to his or her desired future. The development of such a plan suggests a process that can organize and guide community change in an effort to surround the individual with a circle of support.

Children under the age of 18 also have a right to person-centered planning if they receive services from the public mental health system. However, person-centered planning for a child must recognize the importance of the family and the fact that supports and services impact the entire family. Parents will be involved in pre-planning and person-centered planning using 'family centered practice' in the delivery of support services and treatment for their children.

The following components are essential to all person-centered plans:

1. The plan must be person directed and person-centered. In creating a Person Centered Plan, it should be an accurate reflection of that person's vision of what he or she would like to be and do. The plan is not static, but rather it changes as new opportunities and obstacles arise. The focus must continually be on the person for whom the plan is being developed, and not on plugging the person into available slots in a program. The individual's choices and preferences must be honored.
2. The plan must be capacity building. Planning focuses on the person's gifts, talents and skills rather than deficits. It builds upon the individual's capacities and affords opportunities that will reasonably encourage individuals to engage in activities that promote a sense of belonging in the community.
3. The plan must be network building. The process brings together people who care about the person, and are committed to helping the person articulate their vision of a desirable future. They learn together and invent new courses of action to make the vision a reality.
4. The plan must be outcome based. The plan focuses on increasing any or all of the following experiences, which are valued by the individual:
  - Growing in relationships or having friends.
  - Contributing or performing functional/meaningful activities.

- Sharing ordinary places or being part of their own community.
  - Gaining respect or having a valued role which expresses their gifts and talents.
  - Making choices that are meaningful and express individual identity.
5. The plan must assure adequate supports when there are issues of health and safety, while respecting and according full dignity as a fully participating member of the community.

### Family collaboration and choice of practices

The recommended Intervention Models must be viewed within the context of expanding options for children and families. The subcommittee believes that families have a right to be informed by providers of the potential implications of their choices. Being informed of the implications of their choices includes providing parents with detailed information (e.g., recommended dosage, costs, time investment, recommended provider credentials, available financial help) about the intervention and the range of outcomes the intervention model has been demonstrated to realistically yield for young children with autism. Additionally, parents should be informed that there is no single intervention model proven effective for all young children with ASD. Parents are the primary 'experts' on their children; thus, their input, observations, and choices of interventions must be respected. Parents should be offered the option of being trained in specific interventions and data collection. The ASD Workgroup values and assumptions with specific relevance to the work of this subcommittee include the following:

- 'We value family choice of practices that are evidence based and effective, based on the consensus of experts, including clinicians and parents.'
- 'We value practices that include evaluation and identify outcomes.'
- 'Early Identification and intervention leads to better outcomes for children with ASD.'
- 'Intensive, evidence-based and effective practices lead to better results for children and families.'

### Outcomes and Indicators

The ASD Workgroup Outcomes and Indicators Subcommittee identified the following Outcomes and Indicators.

### CHILD OUTCOMES AND INDICATORS

1. Children with Autism Spectrum Disorders feel good about themselves.
  - Percent of families who report that, in general, their children with Autism Spectrum Disorders feel good about themselves.
2. Children with Autism Spectrum Disorders acquire and use knowledge and skills.
  - Percent of children with Autism Spectrum Disorders who maintain or make gains in acquiring skills and knowledge.
  - Percent of children with Autism Spectrum Disorders who utilize skills and knowledge across environments.
3. Children with Autism Spectrum Disorders take appropriate actions to meet their needs.
  - Percent of children with Autism Spectrum Disorder who maintain or make progress in meeting their self-help needs.
  - Percent of children with Autism Spectrum Disorders who can functionally communicate.

### FAMILY OUTCOMES

1. Families of children with Autism Spectrum Disorders understand their children's strengths and special needs.
  - Percent of families who report they understand the effect of Autism Spectrum Disorders on their child's functioning and behavior.
2. Families of children with Autism Spectrum Disorders have access to comprehensive and objective information about services, interventions and supports.
  - Percent of families who report they have received or obtained information about several different services, interventions, supports and providers.
3. Families of children with Autism Spectrum Disorders advocate for their children.
  - Percent of families who report they are partners in planning treatment and educational goals.

- Percent of families who report they can obtain or modify services, interventions and supports to meet their child's and family's needs.

## SYSTEM OUTCOMES

1. Children with Autism Spectrum Disorders are identified as early as possible.
  - Percent of all children screened for Autism Spectrum Disorders at each of the recommended age intervals.
  - Percent of children with a positive screen for Autism Spectrum Disorders who are assessed within three months of the screen.
  - Percent of families who report they received assessment results within three weeks of the assessment.
2. Families and their children with Autism Spectrum Disorders have timely access to an integrated system of effective services and supports.
  - Percent of children with Autism Spectrum Disorders, not already receiving education services, who are referred by the assessor to *Early On* or Special Education within one week of the date the family receives the results of the assessment.
  - Percent of children with Autism Spectrum Disorders who commence intervention within thirty days of receiving a medical or educational diagnosis.
3. Families and their children with Autism Spectrum Disorders are included in typical environments.
  - Percent of families who report that adequate accommodations are made so they can participate in community activities with their children with Autism Spectrum Disorders.
  - Percent of families who report they participate in community activities with their children with Autism Spectrum Disorders.
  - Percent of families who report their family feels welcome participating in community activities with their children with Autism Spectrum Disorders.
  - Percent of children with Autism Spectrum Disorders who are in pre-school settings with typically developing peers.

## Individual and Systems Level Measurement of Outcomes and Treatment Efficacy

It is imperative that systems clearly demonstrate the positive outcomes of interventions for children, families and communities to garner support for private and public funding of EBPs for young children with ASD. Consequently, the subcommittee has identified strategies and processes to increase the use of practices that have been shown to promote positive outcomes for young children with ASD.

1. The subcommittee recommends that the practice of any intervention must include evaluation of outcomes and family satisfaction. This evaluation component will serve to both increase the evidence base for effective practices and phase out the use of practices that do not result in progress toward identified outcomes. Best practice dictates that intervention planning must include the development of measurable, relevant goals for the child and specify the amount, scope and duration of intervention that should reasonable achieve specific outcomes. The National Research Council (2001) recommends:

‘Ongoing measurement of educational objectives must be documented in order to determine whether a child is benefiting from a particular intervention. Every child’s response to the educational program should be assessed after *a short period of time*. Progress should be monitored frequently and objectives adjusted accordingly.’

Further, it is recommended that a ‘short period of time’ for children birth to six be defined as 3 months or less. Wolery and McWilliam (1998) state ‘Monitoring involves assessment of children’s progress, usually occurring 1 to 3 month intervals.’<sup>1</sup>

2. The subcommittee recommends that Michigan agencies consider the use of incentives to motivate providers to integrate EBPs into the service array in a timely manner. In addition, to facilitate the increase in use of EBPs, the subcommittee recommends increasing training initiatives on the identified EBPs.
3. The subcommittee also recommends that a tool be developed to assist in assessment and monitoring of practices and outcomes. This tool should be developed to include a) systems monitoring components that determine the degree to which EBPs are being used and are being implemented as recommended in the literature, and b) suggested desired outcomes and conditions for measuring progress against those outcomes.

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<sup>1</sup> Wolery, M., McWilliam, R.A. (1998) Classroom-based practices for preschoolers with disabilities. *Intervention in School and Clinic*, 34, 95-102.

4. Finally, the subcommittee recommends that comprehensive programs be prioritized over specifically focused interventions, though supplemental interventions certainly can be useful additions to a theoretically cohesive, comprehensive intervention program.

### Current Research Limitations

The rate of research on intervention models for young children with ASD has increased substantially in the past 15 years; however, this research is still limited in several ways. First, intervention studies with children with ASD typically include relatively small sample sizes for the existing group design studies, especially compared with medical studies of EBP (e.g., cancer treatments, diabetes treatments). These studies are also generally hindered by a lack of randomization and lack of no-treatment control groups due to the ethical concerns of withholding interventions from children with such substantial needs. Second, too few single subject design experiments examine broad scope outcomes. Third, there is an overall lack of longitudinal studies reporting valued life outcomes for adolescents and adults in the research literature. A few of the published studies provide relatively short-term outcomes of intensive behavioral intervention (McEachin, Smith & Lovaas, 1993; Harris & Handleman, 2000; Sallows & Graupner, 2005) at 2-7 year follow-up, but follow-up data does not yet exist for other intervention models. Eventually we must determine the broad-scope, socially valued life outcomes produced 20, and 30 years after intervention with the understanding that early intervention (i.e., ages 0-6) does not produce effects independent of subsequent life experiences but hopefully enables individuals to better benefit from those later experiences. In summary, there are too few studies, too few with the 0-6 age group, and a complete lack of longitudinal studies. For some interventions, effectiveness studies exist with other populations but do not exist with young children with autism.

These limitations are important factors to consider when identifying evidence-based practices. The classification system, as currently delineated, ranks more highly those interventions with a greater number of studies that used the most rigorous methodologies. Some interventions, but only a few, meet the criteria for the required number of studies and the required methodological rigor. It is possible to conduct well-controlled studies in the form of group design studies that use alternative treatment control groups or a greater number of single subject design studies that sample longer-term broad outcomes. Future studies should be held to the expectation of multiple outcome measures sampling a broad range of aspects of functioning, including those most closely tied to the diagnostic criteria of ASDs. It is the expectation of this group that those studies will continue to be published and will result in identification of a greater number of studies classified as EBP, possibly within the next year or two. Additionally, federal funding sources have begun targeting comprehensive intervention

programs that often combine several of the interventions classified in the current system. As those projects are published, it may become necessary to reconfigure the classification system to match the new configuration of interventions.

### Recommended practice parameters

The subcommittee believes that the effectiveness of the recommended intervention models is contingent upon the practice parameters outlined by the 2001 National Research Council report 'Educating Children with Autism' and findings in published studies. The National Research Council (2001) identified the following critical characteristics of effective interventions:

- entry into intervention programs as soon as an autism spectrum diagnosis is seriously considered; age at diagnosis predicts higher outcomes at follow-up (Harris & Handleman, 2000; Turner, Stone, Pozdol, & Coonrod, 2006)
- active engagement in intensive instructional programming for a minimum of the equivalent of a full school day 5 days (at least 25 hours) a week (Smith, 1999; Green, 1996; Smith, Groen & Wynn, 2000), with full calendar year programming varied according to the child's chronological age and developmental level;
- repeated, planned teaching opportunities generally organized around relatively brief periods of time for the youngest children (15-20 minute intervals), including sufficient amounts of adult attentions in one-to-one and very small group instruction to meet individualized goals (Dawson & Osterling, 1997);
- inclusion of a family component, including parent training (Dawson & Osterling, 1997; Kaiser & Hancock, 2003);
- low student/teacher ratios (no more than two young children with autistic spectrum disorders per adult in the classroom) (Dawson & Osterling, 1997); and
- mechanisms for ongoing program evaluation and assessments of individual children's progress, with results translated into adjustments in programming.

The subcommittee believes these 'critical characteristics' should be further clarified with the following statements:

- Interventions should be individualized and occur in a variety of settings.
- Initially, young children may require services in a ratio as intense as 1 adult to 1 child for maximum benefit. Low student-staff ratios that result in effective services should be implemented with a systematic progression to less intense service ratios based on systematic evaluation of individual child needs.

- The subcommittee expresses preference for interventions where there is a systematic progression of teaching in various environments such that skills generalize to a variety of natural environments.
- Programmatic intervention is most beneficial when occurring at a minimum of 25 hours per week in a full calendar year program.

### Rapid rate of research

The subcommittee found that there is rapid, ongoing change in our understanding of the effectiveness of intervention models for children with autism spectrum disorders related to the amount of research on these intervention models. Consequently, the subcommittee recommends that the ‘Practice Classification System for young children with ASD’ be revised based on the publication of new literature and at a minimum of once per year. The structure of the current classification system may need to be revised at a 5- or 10-year interval if the groupings of interventions change. Additionally, the recommended practice parameters should be updated as new research delineates the specific conditions under which interventions prove most effective.

### Individuals with Disabilities Education Act (IDEA) and Positive Behavior Support

Positive Behavior Support is an Intervention Model that the subcommittee reviewed and classified in the practice classification system. The model deserves special consideration as IDEA requires a child's Individualized Education Planning (IEP) Team pay special attention to a child's behavior if it gets in the way of his or her education or the education of others. The IEP team must consider the use of positive behavior interventions. The (proposed/unpublished) IDEA 2004 regulations do not change IDEA 97's stance on this issue.

The 2004 Amendments to IDEA are explicit in what they require of an IEP team addressing behavioral problems of children with disabilities:

#### 614(d)(3)(B)(i)

(i) in the case of a child whose behavior impedes the child's learning or that of others, consider the use of positive behavioral interventions and supports, and other strategies, to address that behavior,

#### 615(K)(1)(D)(ii)

(ii) receive, as appropriate, a functional behavioral assessment, behavioral intervention services and modifications, that are designed to address the behavior violation so that it does not recur.

#### 654(3)(B)(iii)(I)

(iii) provide training in methods of—

- (I) positive behavioral interventions and supports to improve student behavior in the classroom.

## **ASD WORKGROUP INTERVENTION MODELS AND PROCESSES RECOMMENDATIONS**

The Autism Spectrum Disorders (ASD) Intervention Models Subcommittee recommends[1] to the ASD Workgroup that the State of Michigan:

1. Encourage the integration of evidence-based practices (EBPs) for young children with ASD into publicly funded agencies by providing financial incentives, information, training and technical assistance to those agencies.

2. \*Provide families of young children with ASD and practitioners free, current and objective information about evidence-based practice as well as all intervention models, including:

a. The limitations of current research and how the research on each intervention rates according to the Classification System;b. The amount of time and financial investment a family and agency must make in order to achieve the intended outcomes; c. The specific credentials required of practitioners of the intervention models; and

d. The fact that there is no single intervention model proven effective for all young children with ASD.

3. \* Require that families be given the opportunity to:

a. Offer input and share observations that will help drive the decision-making.

b. Be trained in and make informed choices about the interventions models to be used with their children.

4. \*Expect that any intervention model for a young child with ASD to be purchased by the public mental health system will be chosen in the context of the person-centered planning process and a family-centered approach.

5. \*Endorse “**The Classification System Criteria for Young Children with Autism Spectrum Disorders.**” (Attachment A).

6. **Consider to be evidence-based those intervention models that meet the criteria in the Classification System for Well-Supported, Efficacious Practice; Supported and Probably Efficacious Practice; Supported and Acceptable Practice; and Acceptable Practice. (Attachment B).**

7.\* Recognize that there are existing practices in the state’s publicly-funded agencies that do not currently possess the research to be considered an EBP but may yield desired outcomes for individual children.

Therefore, the State will not cease funding those practices unless and until there is evidence that there is potential for harm or that desired outcomes are not achieved.

8. Support and encourage the use of the practice parameters identified by the 2001 National Research Council’s report on “Educating Children with Autism’ and the following additional critical characteristics:

- a. Interventions should be individualized and occur in a variety of settings.
  - b. Initially, young children may require services in a ratio as intense as one adult to one child for maximum benefit. Low student-staff ratios that result in effective services should be implemented with a systematic progression to less intense service ratios based on systematic evaluation of each child's needs.
  - c. Intervention should include a systematic progression of teaching in various environments so that skills generalize to a variety of natural environments.
  - d. Programmatic intervention is most beneficial when occurring at a minimum of 25 hours per week in a full calendar year program.
9. \*Require that outcomes for young children with ASD receiving publicly funded intervention services be measured and reported to the relevant state agencies. The individual child, family and systems outcomes have been identified by the Results/Outcomes and Indicators Subcommittee. Standardized tools to measure outcomes will be determined by a subcommittee comprised of members of the ASD Workgroup.

10. \* Establish a permanent panel of experts (including families, practitioners, and researchers who have opportunities for training in research methods, evidence-based practice, etc.) to:
- a. Review the research literature on at least an annual basis;
  - b. Review outcomes from the implementation of interventions with young children with ASD;
  - c. Make recommendations about re-classification of intervention models as 'evidence-based'; and
  - d. Update the free information for families and practitioners.

[1] Recommendations with \* received unanimous support from the sub-committee members present at the 8/1/406 meeting. All other recommendations received a majority support.