Service Guideline 1

Autism Spectrum Disorder

Intervention guidance for service providers

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PREFACE

The purpose of this guideline is to help families and service providers develop and carry out intervention plans for families of children who have characteristics of disorders on the Autism Spectrum, including Pervasive Developmental Disorder (PDD). The Connecticut Birth to Three System originally developed its autism guideline in June, 1997 and significantly revised it in 2002 and 2008. This latest revision takes advantage of the latest evidence-based practices and research, while maintaining all of the 2002 and 2008 guiding principles. Information most relevant for families has been moved to the “Families’ Overview and Summary of Best Practices”, a companion to this document. For the purposes of this document, the term Autism Spectrum Disorder (or ASD) is used throughout.

The information in this document is compiled from a review of research-based methods as well as discussions with state and national program directors, service providers, experts in the field of autism, and family members who have children with ASD. It is the Connecticut Birth to Three System’s interpretation of its responsibility under the Infants and Toddlers with Disabilities section of the Individuals with Disabilities Education Act (IDEA) and in accordance with the mission of the Connecticut Birth to Three System (See Appendix One.)

WHAT ARE AUTISM SPECTRUM DISORDERS (ASD)?

“Autism spectrum disorders are present from birth or very early in development and affect essential human behaviors such as social interaction, the ability to communicate ideas and feelings, imagination, and the development of relationships with others. Although precise neurobiological mechanisms have not yet been established, it is clear that autism spectrum disorders reflect the operation of factors in the developing brain” (National Research Council, 2001). There are many estimates as to how often ASD occurs, with the Centers for Disease Control reporting an average of one in 110 children based on information about 8-year olds across a variety of U. S. surveillance sites (CDC, 2006). Autism is four to five times more common in boys than in girls. Family income, lifestyle, race, ethnicity, and education do not affect the chances of a child having ASD. (While it is not part of the IDEA classification or diagnosis of ASD, it is noted that many children with ASD can also be picky eaters, have allergies, and or/have hyper- or hypo-sensitivities to sound, textures, or light.)

There is both an educational classification of autism found in the Individuals with Disabilities Education Act and a diagnosis of ASD consistent with the American Psychiatric Association’s “Diagnostic and Statistical Manual of Mental Disorders IV Text-Revision” or DSM-IV TR (see Appendix Two). In 2005, The Connecticut State Department of Education Guidelines for the Identification and Education of children and Youth with Autism (2005) articulated a distinction between a DSM-IV diagnosis of autism and “meeting the educational classification of ASD under the IDEA Part B”. This distinction allowed the delivery of appropriate educational services without families having to wait for appointments at diagnostic clinics. It also acknowledged that it is not the diagnosis of autism that requires a school district to provide special education services but rather that the autism has an adverse impact on the child’s education.
In Birth to Three and IDEA Part C however, a diagnosis of autism by a health care practitioner who has the qualifications and experience with autism spectrum disorders does make the child automatically eligible for early intervention services (what is called a “diagnosed condition”) and such a diagnosis may also allow a parent or a Birth to Three program to bill health insurance for autism services. Therefore, Birth to Three will accept either an IDEA classification or a DSM-IV diagnosis from a clinical psychologist, physician, or licensed clinical social worker as the rationale for providing autism services and may sometimes require both for third-party reimbursement reasons.

The following summary of information about autism is included for three reasons: 1) Some children will come to the Birth to Three System with a DSM-IV diagnosis of autism; 2) Many more children will obtain such a diagnosis before they turn three; and 3) the distinction between educational identification and DSM-IV diagnosis is not in any way intended to discourage parents from seeking such a diagnosis and appropriate medical follow-up for their children (see Appendix Five).

ASD is referred to as a spectrum disorder because there is a range of symptoms and characteristics that present themselves in different ways. Within the autism spectrum, there are different subgroups. These sub-groups or types are noted in the following diagram (Minnesota Department of Children, Families and Learning, 1996):

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The Identification Process
Pervasive Developmental Disorder (PDD)
(Spectrum of Autism)

Rett’s Disorder

Childhood Disintegrative Disorder

Autistic Disorder

Asperger’s Disorder

PDD Not Otherwise Specified (PDD-NOS)
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In the DSM-IV Text Revision (American Psychiatric Association, 2000), children are identified as having a disorder on the autism spectrum because they have a severe and pervasive problem in all three of the following areas of development: social interaction, communication, and a restricted range of interests and activities. This DSM-IV diagnosis excludes Rett’s Disorder and Childhood Disintegrative Disorder which are separate diagnoses. The IDEA describes autism broadly as “a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three that adversely affects a child’s educational performance.” Currently, the DSM-IV is under revision and updated information will be provided when changes are finalized and a DSM-V is published.

Some of the sub-group labels above are used to better describe a child’s unique characteristics in these three areas of development. For example, Asperger’s Syndrome is sometimes referred to as “high functioning autism.” Children with Asperger’s Syndrome typically have difficulty in the social and behavioral areas, but their communication skills are strong and they test in the average to above average range of intelligence. Children with Pervasive Developmental Disorder – Not Otherwise Specified (PDD-NOS) have severe problems in the major areas of development, but do not meet
the criteria for a diagnosis of autism in all three areas. “Although experienced clinicians and educators can reliably identify the constellation of behaviors that define ASD, even in very young children, distinctions among ‘classical autism’ and atypical autism, PDD-NOS, and Asperger’s Disorder are not nearly as reliable” (Autism Society of America, 1999). Childhood Disintegrative Disorder and Rett’s Syndrome are far less common and are not the focus of this guideline.

**WHAT CAUSES AUTISM SPECTRUM DISORDERS (ASD)?**

The simple answer is that we don't know. Researchers from all over the world are devoting considerable time and energy to finding the answer to this critical question. One of the things that we do know is that autism is not caused by bad parenting. Through twin studies, scientists have determined that autism is a genetically based condition. If one identical twin has autism then there is an 80-90% chance that the other twin will also be diagnosed with an autism spectrum disorder. For non-identical twins, there is a 3-10% chance that both twins will develop autism spectrum disorder. The chance that siblings will both be affected by ASD is also approximately 3-10%. Scientists are unsure what, if any, environmental triggers may be involved in autism. (http://www.autismsciencefoundation.org/aboutautism.html).

The Centers for Disease Control is working on one of the largest U.S. Studies to date, called the Study to Explore Early Development (SEED). SEED is looking at many possible risk factors for ASDs and other developmental disabilities, including genetic, environmental, pregnancy, and behavioral factors. The study includes 2700 children ages 2-5 from six states (http://www.cdc.gov/ncbddd/autism/seed.html).

**WHAT HAS THE CONNECTICUT BIRTH TO THREE SYSTEM DONE TO ADDRESS THE ISSUE?**

Based on the increasing numbers of children being identified earlier and earlier and the difficulty ensuring that every Birth to Three general program has sufficient numbers of knowledgeable, experienced personnel to deliver services, the Birth to Three System contracted with autism-specific early intervention programs that cover the state. Each program has particular towns in which they are obligated to provide services, but programs may also serve children in other towns at parent request. The map showing the coverage area for each program and a brief description is posted at www.birth23.org/Providers/SG.html. Each of those programs has the ability to assess and diagnose children with ASD and to provide comprehensive services. Once a child has been identified as having an ASD, the parent can choose to enroll in one of these programs or can choose to continue with the general early intervention program or enroll in a different general program.

The Birth to Three System has both autism-specific programs and general programs. Ensuring that the system has the capacity to provide high quality services to children with ASD and their families throughout the state is a priority. General Birth to Three programs have traditionally served children with ASD and typically have expertise in this area. A family may already have a child enrolled in a general program or be familiar with one or make a strong positive connection with the initial evaluators from a general program. In any of these cases, remaining with the general program and developing an IFSP to receive services in accordance with this guideline may be the best choice.
GUIDING PRINCIPLES

The crafting of this guideline has been influenced deeply by a set of principles that reflect both the science of early intervention and a core group of values. These principles are:

Principle 1: The earliest possible start to intervention is essential.
Principle 2: Services must be individualized for each child and family
Principle 3: Family involvement and participation is critical.
Principle 4: Families have a right to evidence-based practices.
Principle 5: Intervention is based on a developmental curriculum designed to address the specialized needs of the infant or toddler with ASD.
Principle 6: Intervention is planned and systematic.
Principle 7: Infants and toddlers with ASD should have regular and deliberate exposure to typically developing peers.
Principle 8: Challenging behaviors are addressed using positive behavioral interventions and supports.
Principle 9: Intervention should focus on developing communication skills.
Principle 10: The development of social relationships is integral to successful outcomes.
Principle 11: Getting to quality outcomes is not just about hours of direct services.
Principle 12: The transition from the Birth to Three System to preschool special education and related services should be well planned.

Principle 1 The earliest possible start to intervention is essential

Children who receive appropriate services earlier achieve better results. One of the most exciting accomplishments in the field of ASD is the ability to recognize and treat the disorder at a very early age. Routine screening can identify risk for ASD in children who are 16 months and older. The earlier children receive intervention, the more positive the outlook for their future. Research on treatment for ASD is encouraging. Although characteristics of ASD may be life-long, having ASD is no longer considered a barrier to a full and happy life. Today people with ASD, including those with complex challenges, can be found living in communities, attending K-12 schools and colleges, and working as productive adults.

All children referred to Birth to Three who are at least 16 months old are screened for ASD as part of the initial evaluation process. If a child has been recently screened as part of routine medical care, the screening results will be used in lieu of conducting an additional autism screening. Preferred Birth to Three screening instruments include the Modified Checklist for Autism in Toddlers (M-CHAT) (Robins, Fein, Barton & Green, 1991) and the Brief Infant Toddler Social-Emotional Assessment (BITSEA) (Briggs-Gowen & Carter, 2001). At this time there are no reliable autism screening instruments for children younger than 16 months of age. As the field advances, many experts are anxious to be able to reliably screen for autism in children younger than 16 months old. When additional factors exist, such as older siblings or parents with ASD, Birth to Three programs are encouraged to carefully observe the child’s development in the areas of social interaction, communication development and the presence of stereotypical and/or repetitive behaviors and develop an appropriate plan of services. If there are questions about the child’s overall communication development or the child is very young, the
program may choose to use the Communication and Symbolic Behavior Scales Developmental Profile (CSBS DP Infant-Toddler Checklist). This instrument is appropriate for assessing potential risk for autism in children as young as six months (Wetherby & Prizant, 2002). More information on these three tools can be found in Appendix 4. General programs must remember to also screen children who are enrolled in Birth to Three at an earlier age when those children reach 16 months of age.

When the screening tool indicates that the child may have ASD, the general Birth to Three Program will offer the family an autism assessment. Most often, this will be conducted by one of the autism-specific Birth to Three programs that are able to look at whether a child meets the criteria for an education classification of autism under the IDEA and are also able to provide a DSM-IV diagnosis if it is needed for insurance billing or other purposes. It is important to know, at the time of assessment, whether the child’s hearing is adequate for speech, through either a hearing screening or an audiological exam.

This process is not one that only happens at the time a child is referred to Birth to Three. If, at any time, a parent, a Birth to Three provider, the referral source, a care provider, or someone else who knows the child observes that a child is having difficulty with developing meaningful communication or is regressing in communication skills, has issues with social reciprocity, and/or is limited in development by repetitive behaviors, it is essential that the IFSP team have a discussion with the family about the advisability of repeating the ASD screening. This may be a more difficult discussion than the one that was held initially, since it will arise as the result of concerns rather than as a routine procedure. Birth to Three staff must be prepared to have a well-thought-out, helpful, professional, and supportive conversation with a family about a challenging topic. Postponing this conversation, not allowing adequate time for the parent to reflect on it, excluding family members, or being equivocal can have serious negative consequences for the child, family, and program.

The purpose of this screening and assessment process is to assure that children who meet the criteria for an educational classification of autism under the IDEA or who have a DSM-IV diagnosis of ASD have access to appropriate services provided either by autism-specific programs or, if families prefer, by general programs. Autism assessment reports (as well as those diagnostic evaluation reports received from outside evaluators, must include information on the three core deficit areas of ASD (communication, social interaction, and a restricted range of interests and activities) as well as general developmental information to indicate what led the evaluator(s) or diagnostician to conclude that the child has an autism spectrum disorder. The assessors should also be able to make a differential diagnosis, i.e. why they think this child has ASD rather than some other primary diagnosis or classification such as ADHD, deafness, or sensory processing issues. At the same time, the assessors need to consider co-occurring diagnoses because a child with ASD can also have ADHD, deafness, or sensory processing issues. An occupational therapist on the assessment team may help the team to think about the role of sensory issues in the diagnosis/classification.

Additional information on early indicators of ASD is found in Early Indicators for Screening - Appendix Three. Additional assessment tools for ASD are listed in Appendix Four.
**Principle 2  Services must be individualized for children and families.**

“Individualization” means that each child’s and family’s services are based on that child’s needs, strengths and interests and the family’s concerns, priorities and resources. This is different for each child and family because each child and family is unique and has different needs and values. The development of the intervention plan, known as the Individualized Family Service Plan (IFSP), and ongoing changes in the plan are done with the family. Families have a decision-making role as members of the IFSP team. The team determines who will be involved in the program, when services will take place, and what will be the focus of the services. Families determine how they will be involved in implementing their child’s IFSP. Even though the intervention may follow a specific curriculum, the infusion of intervention into daily activities and routines must be customized for each family. Therefore, it is essential that the IFSP be sensitive to and respectful of the enormous diversity in family life circumstances that impact family member’s participation in intervention. The life circumstances include, but are not limited to: family structure, income stability, informal supports, and coordination with other relevant services.

**Principle 3  Family involvement and participation is critical**

The mission of the Connecticut Birth to Three System is to help families meet the developmental needs of their infants and toddlers (See Appendix One). Families are the first and most important teachers for their children. They are the constant in their children’s lives. Infants and toddlers learn as they experience life with their families. Service systems and personnel will change over time, but families maintain the continuity from day-to-day and year-to-year. Families become lifelong advocates for their children. The partnership between Birth to Three and the family begins when the family places a call to Child Development Infoline because of concerns about their child’. Throughout the eligibility determination process and the developing of outcomes for the IFSP, the family identifies how their child functions in family life and routines and what areas of need are most important to them. The IFSP process describes the roles of service providers, family members, and others in achieving the family’s identified outcomes. The Birth to Three System will provide families with education, support, and guidance to help them develop the skills necessary to help their child with ASD reach his or her potential.

The provision of Birth to Three services is only a small part of the process of helping a child with ASD develop. Family members and early interventionists work together constantly to connect what the child is doing with family life to the content of the visits. Active dialogue between interventionists and parents, modeling and practicing during visits, tailoring carry-over strategies to changes in the family and child’s life, designing and carrying out manageable record keeping systems are all parts of the Birth to Three experience. Family members and team members together can determine when it is time to consider revising the IFSP, what to work on next, and how to change activities or strategies that have not been as successful as hoped. Visits need to be scheduled at times and in ways that family members can fully participate. The content of all visits must be directed to assuring that family members and other caregivers acquire the skills and resources to help the child develop. It is almost certain that progress toward outcomes will be slower if families are not an active part of every part of the Birth to Three process including home visits.
Families need to be actively involved in their children’s program, at a minimum, in the following ways:

1. planning and helping to decide what services their children will receive;
2. providing information to support developing outcomes which are of importance to them;
3. participating in the selection of strategies for addressing the needs of their children and family;
4. implementing strategies and instructing and assisting with activities of daily living within their capacity to do so correctly and consistently; and
5. assisting in the evaluation of progress of their children.

Relationships between families and professional should reflect a respectful reciprocity where both parties learn from each other. Family members are not expected to be primarily responsible for delivering the specialized services on the IFSP; however, they are absolutely necessary partners in implementing intervention strategies within daily routines and activities.

Principle 4  Families have a right to evidence-based practices

Part C of the IDEA mandates that states have in effect a policy that “ensures that appropriate early intervention services based on scientifically based research, to the extent practicable, are available to all infants and toddlers with disabilities and their families…” (20 U.S.C.1435(a)(2)). Families should expect that all services delivered as part of the Individualized Family Services Plan (IFSP) are based upon a contemporary understanding of efficacious intervention practices as articulated by the National Autism Center’s National Standards Project report (2009) and the National Professional Development Center on Autism Spectrum Disorders definition of evidence based practices (EBP) for children with ASD (2009). Moreover, families should have a right to services that address all the core deficits of ASD.

Intervention selection is complicated and should be made by a team of individuals who consider the unique needs and history of the infant or toddler with ASD and their family along with the environments in which he or she lives. However, in all cases, it is strongly encouraged that the IFSP team selects established evidence-based practice (see Evidence-Based Interventions section beginning on page 27) for service delivery to any infant or toddler with ASD. Established interventions have sufficient evidence of effectiveness. The IFSP team must give serious consideration to these interventions because a) these methods have produced beneficial effects for children involved in the research studies published in the scientific literature and, b) access to methods that work can be expected to produce more positive long-term outcomes. However, it should not be assumed that these methods will universally produce favorable outcomes for all children with ASD.

In addition to relying on established interventions first, the judgment of professionals with expertise in working with the individual child with ASD must be taken into consideration (see Strategies for Designing IFSPs section, page 17). Once methods are selected,
these professionals should collect data to determine if a method is effective. Professional judgment plays a particularly important role in decision-making when:

- A method has been correctly implemented in the past and was not effective or had harmful side effects.
- The method is contraindicated based on other information (e.g., the use of prompts for a child with a prompt dependency history).

Moreover, the values and preference of the parents or other primary caregivers play an important role in decision-making.

Finally, early intervention providers should be well positioned to correctly implement the selected intervention. Developing capacity and sustainability of an established method may take a great deal of time and effort, but all people involved in intervention to young children with ASD should have proper training, adequate resources, and ongoing feedback about fidelity. Capacity plays a particularly important role in decision-making when:

- A program has never implemented the intervention. Many evidenced-based methods are very complex and require precise use of techniques that can only be developed over time.
- A program has implemented a system for years without a process in place to ensure the intervention is being implemented correctly (with fidelity).

| Principle 5 | Intervention is based on a developmental curriculum designed to address the specialized needs of the infant or toddler with ASD |

IFSPs for infants and toddlers with ASD should be based on widely accepted principles of child development. The instructional program builds on these principles and the child’s individual strengths while also addressing his or her unique needs. The curriculum for a young child with ASD needs concentrated or specialized instruction to address the areas of language, social interaction, play skills, and interests. The essential areas for a specialized curriculum for an infant or toddler with ASD include:

1. attending to and staying engaged in the environment, including people and developmentally appropriate play materials;
2. using verbal and non-verbal communication such as gestures, vocalizations and words;
3. understanding and using language to communicate;
4. playing appropriately with toys;
5. playful interactions with others;
6. reciprocal interactions;
7. spontaneous interactions;
8. making choices;
9. following daily routines and variations in routines; and
10. addressing atypical sensory preferences and aversions.
Principle 6  Intervention is planned and systematic

Intervention is carefully planned, concentrated, and consistent. It involves assessing, planning, teaching, and consistent measuring of progress with each intervention step. Each step is coordinated toward a meaningful set of outcomes or goals. The only reliable way to determine if the intervention is effective is to be systematic and to measure progress on a regular basis. It is important to note that many indicators that are easiest to measure, such as vocabulary, intelligibility of words, or duration of eye contact may not be as meaningful or important to the family as the sense of the child and family’s quality of life, such as reduced frequency or tantrums, ease of transition between home and other settings, or the ability of family members to spend quality time together.

Systematic instruction relies on intervention decisions that are driven by the results of data collection. Data is used to measure the change in a behavior or skill over time. For example, data may be taken on the frequency (how often) a behavior does or does not occur, the duration (how long) a behavior does or does not occur, and the independent nature of a behavior (how much support or prompting a child needs). In order to use data in reviewing the effectiveness of intervention the following must happen:

1. An assessment is completed prior to intervention;
2. objectives are written in measurable and functional terms. There must be a specific description of the desired behavior;
3. data on outcomes and objectives are taken prior to intervention and used as a baseline for intervention;
4. steps or tasks towards outcomes are analyzed and defined;
5. instructional strategies and supports are identified (e.g. where, when, with whom, level of support);
6. methods for motivating or reinforcing the desired behaviors are identified;
7. methods and timelines for measuring progress are determined;
8. data is taken and analyzed on a routine basis; and,
9. adjustments in intervention plans are made based on analyzing progress on the IFSP outcomes.

Ongoing collaboration between the family and service providers in the analysis of data and adjustment of strategies is a key to successful teaching and learning. Continuation of ineffective strategies or relying on techniques merely because they have been shown to be effective with other children may be harmful. The Birth to Three System highly recommends that a regularly scheduled meeting of all team members (including the family) is important to review data, maintain consistency in intervention, and make timely changes in the intervention. The team meeting should be included in the IFSP service grid and if it is, programs will be reimbursed for team meeting time. It is also essential that services are carefully coordinated and involve the disciplines needed to address the unique needs of the child and family.

Principle 7  Infants and toddlers with ASD should have regular and deliberate exposure to typically developing peers

This empirical and values based principle has, at its core, two irrefutable facts. First, children with ASD experience significant social relationship delays that represent primary diagnostic
criteria (Luisell, Russo, Christian, Wilczynski, 2008; Mahoney & Perales, 2003; Strain & Schwartz, 2009). Second, by a wide margin, the most effective intervention in this domain involves teaching typically developing children to be therapeutic resources (National Autism Center, 2009; Strain & Bovey, 2008). For children ages birth through two years, this means involvement in preschool/child care settings, "play dates", or planned interactions between siblings, where the early intervention team could facilitate peer training scenarios.

**Principle 8**  **Challenging behaviors are addressed using positive behavioral support (PBIS).**

Positive behavioral support is a set of principles that frame how to think about and respond to children and their behavior (Carr et al., 2002). The principles are grounded in the appreciation of each child’s strengths and needs. To practice positive behavioral support means getting to know the whole child and understanding that his or her behavior, a) has meaning, and b) is a form of communication. It requires recognizing that a child develops and responds best when he or she is respected and supported to enjoy relationships and make choices. Challenging behaviors displayed by a young child with ASD are complex and may create frustration and confusion for those who interact with the child. Behavior may range from aggression, tantrums, or self-injury to withdrawal or repetitive, stereotypical actions. Some of these behaviors also occur in a child who is typically developing. For an infant or toddler with ASD, behaviors can be extreme, occur more frequently, disrupt development, or contribute to high levels of stress among family members.

Before developing IFSP outcomes and strategies to address problem behavior, a thorough assessment of the behavior must take place. This assessment, which may be referred to as a “functional behavioral analysis” is completed by the appropriate members of the IFSP team and is designed to answer questions such as: “Why is the behavior happening?” “When does the behavior occur?” “What function does the behavior serve?” “Is the behavior preceded by any biological, environmental, sensory, and/or emotional conditions?” The assessment also looks at what happens after the behavior occurs: “How do people respond to the behavior?” The assessment helps the team understand how their response to the child’s behavior may increase or decrease the behavior.

Once the assessment is completed, a positive behavioral support plan is developed as part of the IFSP. The plan includes developing strategies to keep the behavior from occurring, providing the child with new skills to replace the undesirable behavior, and assisting family members or other caregivers to respond to the behavior in new ways. The ultimate goal of the plan is to help the child and family gain access to new activities and settings, have positive social interactions, develop friendships, and learn new communication skills. The result of the support should be that the child has fewer problem behaviors and more typical ways of interacting with others (Dunlap & Fox, 1999).
The importance of having an effective communication system cannot be understated. Communication is much broader than simply talking to others. A good communicator uses verbal as well as non-verbal behavior to engage a listener. Children communicate to make their needs known long before they can talk. As young children develop, their non-verbal communication (i.e. pointing to desired object, lifting their hands to be picked up) becomes natural and is understood by others. Young children with ASD, whether verbal or non-verbal, must develop some type of communication system in order to be successful socially. They must be able to communicate in a manner that others will understand.

Some toddlers with ASD lack verbal communication while others with ASD may have large vocabularies or imitate spoken language well, but lack joint attention skills or functional use of language to communicate. Alternative or augmentative communication systems are one way to assist a toddler who has limited verbal language. The type of communication system used varies depending on the child and the activities and environments in which he or she spends time. The system may include simple gestures, sign language, objects, pictures, or an electronic communication device. The use of an alternative system does not mean that the child does not develop verbal language skills or speech. The communication system is used as an aid to improve communication and speech, increase social interactions, and provide structure to daily activities or routines. Because a child with ASD tends to have strong visual skills, he or she is often successful with picture communication systems such as the Picture Exchange Communication System (PECS) (Bondy & Frost, 1994). If a child has difficulty understanding spoken communication, pictures are often used to give more information. For example, a child may be offered a choice of what he wants to play with by showing him two pictures. The child chooses what he or she wants by pointing to the picture or handing it to the adult. The purpose of an alternative system is to expand the ways in which the child can interact with and be understood by a variety of people.

Whether a child is using an alternative communication system or not, communication interventions noted in the IFSP should focus on the development of functional communication, including receptive and expressive language skills such as getting someone’s attention, requesting, commenting, pointing to objects, asking for help, and greeting others appropriately.

A first step in addressing communication issues with children who are suspected of having ASD is to assure that their hearing has been reliably tested. Hearing or an alternative to hearing such as sign language is a critical component of communication. An observer may not know whether 1) a hearing loss is causing autistic behavior, or 2) autism makes it seem as if a child has hearing loss, or 3) the child has both autism and communications issues. Obtaining an accurate hearing assessment of a child with ASD can be challenging.
Principle 10  The development of social relationships is integral to successful outcomes

In addition to difficulties with communication, infants and toddlers with ASD typically lack appropriate interaction and social skills. Intervention for a child with ASD needs to specifically address this core, defining characteristic as early as possible.

Promoting the social development of infants and toddlers with ASD must be one of the primary goals of early intervention services, as is facilitating the ability of young children with social delays to develop appropriate friendships. With early and intensive intervention, the seemingly pervasive social skill deficits of many children with ASD can be remediated (Lovaa, 1987; McGee, Daly & Jacobs, 1993; Strain, 1987). To successfully target these important skills, intervention efforts, even within early intervention must include; a) regular access to typical peers, b) thoughtful planning of meaningful social situations embedded throughout the day, c) the use of “social” toys, d) multiple-setting opportunities (home or inclusive, community-based) to practice emerging social skills, and e) intensive data collection in order to make midcourse corrections to existing intervention plans (Strain & Danko, 1995).

Before focusing on social interaction in play, the child needs to have some skills for using toys in a playful way. Usually children begin interacting with toys by playing by themselves. To increase a child’s success while playing, the environment needs to be well organized. The physical space should be defined in a way that is clear for the child, for example, sitting at a table or on a rug. The choices of toys and activities need to be planned. The length of the play period and how to end the play session should be determined. Initial sessions for learning how to use toys may include simple actions on toys such as dumping, pulling, and building. Once the child becomes more sophisticated in his or her use of toys, he or she will move on to symbolic use of toys. This will include simple imitation such as giving a baby doll a drink or talking on a play telephone. To encourage the generalization of skills and caregiver’s ability to target identified outcomes it is important for providers to utilize play items and materials that are available to the child, a) in their natural environments, and b) on a daily basis and providers should refrain from bringing special (novel) toys into homes that are used only during intervention sessions.

Social play begins when a child plays with a parent or alongside another child or sibling using the same materials. This is referred to as parallel play. As the children interact with materials, they learn to share materials and themes in a play routine. Moving into play that is more cooperative or social requires skills such as turn-taking and sharing. For children with ASD, these skills may have to be taught. Children develop from simple cooperative play to participation in small group activities. Again, for a child with ASD this often requires planning and support to be successful. Just placing a child with ASD in a group setting with children is not sufficient. Often it is helpful to begin with a short, planned “play date.” The number of children should be limited to one or two familiar children and the environment should also be familiar. The toys that will be most motivating for the child with ASD should be identified and there should be sufficient number of toys for both children to have their own set.
A child’s social behavior with adults and peers needs to be a focus of intervention. This focus usually begins with child--adult interactions which, over time, become child--child interactions.

The basic structure for planning for social interactions in home and community settings should include the following:

1. define the space;
2. organize the choices, toys or materials;
3. organize which materials are to be shared;
4. organize the expectations of the activity;
5. define the social expectations for the children;
6. determine how long the activity will continue; and
7. determine how the activity will end.

These same guidelines can be used when introducing a child with ASD to a larger group setting such as a play group or nursery school class.

It may also be helpful to use the same structure in planning community experiences for the young child with ASD. Community settings may be difficult for the child with ASD because they are unpredictable. Although all aspects of a community outing cannot be organized, establishing some of the above parameters will help the child stay calm and focused throughout the experience. Community outings should begin in the presence of a parent or caregiver. The goal is for the child to become familiar enough with the peers to be comfortable in the community or group setting with less adult support over time.

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**Principle 11  Getting to quality outcomes is not just about hours of direct services**

There can be no doubt that achieving quality outcomes is first and foremost on the minds of families affected by ASD. In many situations, and for many years, families and providers have assumed that getting a certain amount of hours of direct service or a certain intervention practice is the essential ingredient to achieving quality outcomes. Regretfully, this simple and seductive formula is highly questionable and misleading.

Related to the amount of service hours, much of the focus has been on an “estimated” 25 hours per week that was part of the National Research Council’s (2001) report on early treatment for ASD. Essentially, what the report authors did was add up the hours delivered in eight preschool (not infant-toddler) models with varying efficacy data then divided by the number of models to yield an average of 25 hours. The models in fact ranged in hours from 15-40 and the report clearly states that no clear outcome differences were evident across hours. As was true then, it is still the case that there are no credible studies in which the same intervention has been delivered at different levels of hours. For a variety of ethical and practical reasons it is doubtful that such research will ever be available.
Similarly, there has been a narrow focus on delivering a singular intervention approach. Some individuals advocate for only Pivotal Response Training, or Discrete Trial Instruction, or Incidental Teaching, and so on. The problem is that these established interventions vary greatly in their relative efficacy for certain target behaviors. For example, Peer-mediated Intervention has been shown to be the strongest evidence approach for target behaviors in the social domain. Incidental teaching has been used almost exclusively with verbal language behaviors. Visual schedules are particularly helpful during transition times, and so on. The point is that no one approach can hope to yield the best outcomes across all the likely goals of any child or family.

If a narrow focus on hours or a narrow focus on getting a certain intervention model is not recommended, then what are the relevant factors? These are five evidence-based factors that are suggested:

Factor 1. Intensity. While hours of service may not be a particularly valid measure of intensity, intensity is a highly relevant factor. The alternative view of intensity is based on several decades of research showing that the level of children’s active and appropriate engagement in everyday routines is a powerful predictor of developmental growth (McWilliam, et al, 2009; Strain & Schwartz, 2009). That is, when young children are actively and appropriately engaged one can assume that skill acquisition is occurring. Instead of asking “How many hours of service are on the IFSP,” the alternative question could be, “Are the IFSP outcomes, strategies and corresponding early intervention services sufficient to influence the child’s engagement across all daily routines (dressing, eating, play, bedtime, etc). Intensity with toddlers must also be sensitive to the fact that essential interventions can be delivered across many routines by adult family members who have been coached by providers in specific teaching strategies. Moreover, keep in mind that very young children with ASD (and any similar age children) require adequate time during the day for rest and sleep. Very young children are simply not “developmentally available” for the same level of intensive intervention as are older children.

Factor 2. Fidelity of intervention delivery. Selecting an “Established Intervention” does not guarantee that the infant or toddler will receive the intended approach. It is essential to ask what experience providers have with the intervention approach, do they have a protocol for judging that the intervention is correctly implemented, and what are the plans if intended outcomes are not achieved.

Factor 3. Social validity of goals. Social Validity refers to the degree to which there is an immediate impact on the child’s quality of life when a particular goal or objective has been met. For example, teaching a toddler to label colors when presented with 3x5 cards of different colors would have low social validity compared to teaching the same toddler color recognition when a peer at an art table says, “Do you want some red?” or when her mom says, “Want your red or blue pajamas?” In the latter cases, the child’s new color knowledge can directly control her environment and meet immediate needs. Therefore, this teaching goal would have high social validity.

Factor 4. Comprehensiveness of intervention. One of the more clear findings from the last several decades of intervention research on children with ASD is that progress in one domain of performance has a minimal impact on other domains (Lovaas, 1987; National Research Council, 2001; Strain & Hoyson, 2000). This widely replicated finding
necessitates an approach to IFSP design that addresses all relevant domains of performance for the child receiving early intervention services.

**Factor 5. Data-based decision making.** As has been emphasized elsewhere in this guidance document, a key component to effective early intervention is to install a data monitoring system and related decision-making strategies to optimize the delivery of effective services.

In considering all five factors one might pose that the formula associated with quality outcomes is actually multiplicative. That is, the formula is as follows:

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\text{(Intensity) x (Fidelity) x (Social Validity) x (Comprehensiveness) x (Data-Based Decision-Making) = Quality Outcomes}
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In this formula the fundamental message is that as any factor approaches a “zero value” then the sum or outcome will approach zero as well. The formula also suggests that for many infants and toddlers with ASD, the resulting plan may well involve a large number of hours of direct service. The key difference is that the number of hours should be the product of a carefully designed IFSP and not determined arbitrarily. As mentioned earlier related to Factor 1 (Intensity), the ultimate number of hours must be sensitive to the developmental availability of toddlers in general to engage in instructional sessions. Related research by Dunst and colleagues suggests that early intervention plans that result in families having a narrow and sole focus on getting the maximum amount of intervention may have harmful effects on both family functioning and on ultimate child outcomes (Dunst, Trivette & Hamby, 2007). Implementation of these guidelines will ensure that more and more children and families affected by ASD will achieve the quality outcomes they desire and deserve.

**Principle 12  The transition from the Birth to Three System to preschool special education and related services should be well planned**

Toddlers with ASD often have difficulty with change, including change experienced when starting something new and different. During the transition to a school based program there will be changes in adults, children, settings, and routines. Children with ASD may be so sensitive to change as to notice differences that others do not. There are significant differences between the service delivery model used in the Birth to Three System and an educationally based program developed by a local school district for special education services. Planning and flexibility on the part of Birth to Three providers and preschool programs are necessary to assist families and children with adjusting to this change.

When planning the transition from a Birth to Three program to a school program, the following is helpful:

1. the earliest possible referral, with parent consent, to the local school district for a preschool special education (IDEA Part B) evaluation. This must occur
before a transition conference with the local school district takes place (which can be as early as nine months prior to age three). Early referral allows the school district time to plan for the child with ASD.

2. the earliest possible communication (with parent consent) with the school district about the strengths and needs of the child and family;
3. details of the early intervention services that are in place and strategies that have been successful;
4. a focus on supporting the family as well as the child throughout the transition process.

Flexibility and creativity on the part of the school district and the Birth to Three program is needed for transitions to meet the needs of the child and family. As an example of one possible Planning and Placement Team decision, if a child turns three in the late spring or summer and the IEP includes Extended School Year Services, the school district may want to investigate whether it is possible to contract with the child’s Birth to Three program so that the services in the IFSP can continue until the next school year begins. If the child is turning three early in the school year, it may make sense for the school district to consider asking the Birth to Three program to deliver its services in the school setting or to fully enroll the child in school earlier than age three. It is possible for an IFSP and an IEP to overlap for a child younger than three, as long as the intent of both plans is to make the transition smooth and not to merely add classroom services to existing home-based or child-care based services.

Unfortunately, many children with ASD are not identified until very shortly before their third birthday. If that is the case, Birth to Three providers must work diligently to help parents understand the need to share information with the school district as soon as possible. Transition and transition activities should be a major focus of IFSPs for all toddlers with ASD but especially for those nearing the age of three. Cooperation between the Birth to Three program and the school district is essential for effective transitions. School districts may wish to participate in joint evaluations or observations of the child. Prior to the transition conference it may be helpful to identify skills that can be introduced at home but that will be helpful in a school-based program. In addition, community resources for necessary family supports should be identified that may be not available from the school.

Parents and Birth to Three programs should be aware that the determination of eligibility for special education services is made by the school district’s Planning and Placement Team (PPT). And there may be instances where a child is determined to be eligible for Part B services and has participated in an autism-specific Birth to Three program but the PPT prefers to report the child to the State Department of Education in the IDEA category of “developmental delay” instead of “autism.” The district is still obligated to provide appropriate services to meet the needs of the child in the areas of communication, social interaction, and behaviors or any other areas of need that are identified through an evaluation, regardless of the selected IDEA primary disability category.
DETAILED GUIDANCE FOR KEY PRACTICE ISSUES

**Strategies for Designing Individualized Family Service Plans**

The IFSP is a process that uses a written plan to (a) document current levels of development, (b) identify functional outcomes for the child and family, and (c) specify early intervention services needed by the eligible child and family. The IFSP process is family directed and developed jointly by the family, other individuals of the family’s choice, members of the assessment team (for the initial IFSP), the service coordinator, and appropriate early intervention service providers. While the general process for the development of an IFSP is well documented, the following bullets describe some key ingredients that should characterize all IFSPs:

- Family information, including their resources, concerns and priorities for their child as identified by the parents through interviews, assessments and informal contacts with the service coordinator, child care staff, doctors, nurses and other family members
- A child’s present physical, cognitive, communication, social emotional, and adaptive development levels and needs, obtained from a multidisciplinary evaluation
- Functional outcomes expected to be achieved for the child and their family in the following six months to a year and the strategies to meet those outcomes
- Specific services a child will be receiving
- Where the services will be provided within a child’s natural environments (e.g., home, child care). If the services will not be provided in the natural environment, the IFSP must include a statement justifying why not and strategies for moving the services back into their natural environment
- How often a child will receive each service and how long each session will last
- Whether the service will be provided one-on-one, in a group or through consultation with a caregiver or provider
- Who will pay for the services, if someone other than Birth to Three is paying
- Name of the service coordinator overseeing the implementation of the IFSP
- Steps to be taken to support a child’s transition out of early intervention and into another program when the time comes
- Other services a family may be interested in for coordination purposes

The IFSP needs to be reviewed, and updated if appropriate, at least every six months and is rewritten annually. The IFSP must be fully explained to the parents, and their suggestions must be considered. A parent or guardian must give written consent before services can start and is free to disagree with some services while giving consent for other services to begin.

Creating an IFSP that meets the needs of infants and toddlers and families affected by ASD is, in many cases, a complex and evolving process. The available research base for early intervention service delivery to very young children with ASD is quite limited. The scientific-based practices are evolving as early intervention providers and researchers use ongoing data systems to guide the developing body of knowledge about how to determine what services, methodologies, intensities and frequencies yield meaningful behavioral change in children under the age of three years.
In the absence of definitive research on interventions for children under age three, it is recommended that early intervention teams ask themselves the following questions to guide the IFSP planning process for children with ASD in order to support the delivery of services that are individualized, evidenced-based and comprehensive (this list is also provided in Appendix Six for teams to use):

Question 1. Have multiple child and family assessments been used to document the infant or toddler and family needs identified in the IFSP that are:
   a) Specific (observable, measurable, and valued by adult family members)
   b) Functional (related to specific skills that help the child access everyday life)

Question 2. Are there evidence-based strategies in place on the IFSP that:
   a) Address each area of need identified by the team?
   b) Match functional outcomes that include addressing the defining characteristics of ASD (communication, social skills, and behavioral concerns)?
   c) Specifically address the child and family being successful with daily routines (e.g., dressing, feeding, bedtime, community outings, etc.)?
   d) Include strategies to equip family members with the information and skills needed to provide consistency in intervention when early intervention providers are not present?

Question 3. Has the IFSP team carefully considered the following, taking into account the child’s developmental availability for intervention and the family’s dynamics and available resources:
   a) what early intervention services are needed to implement the evidenced-based practices;
   b) who will deliver the services;
   c) where the services will be provided, and
   d) when and how frequently the services will occur.

Question 4. Are the proposed providers fluent with the evidence-based practices to be delivered? If not, what plans are in place to provide training, supervision or coaching for those providers?

Question 5. Is there a plan in place to use a primary provider service model or, where multiple providers are seeing the child, a plan to meet frequently to communicate, plan logically consistent services and review progress?

Question 6. Do the planned strategies include ongoing data collection (see section on Monitoring Progress, page 46) and clear decision-making guidelines regarding the continuation or modification of the plan that results in progress for meeting child and family outcomes?

Together, the practice principles discussed in the previous section with the straightforward answers to these questions will help to ensure that plans are sufficiently comprehensive, designed to produce functional outcomes in essential real world
settings, are using evidence-based practices, and are delivered in a competent, coordinated and data-based fashion. In order to maximize the child’s skill generalization across persons, settings, and time it is essential to first consider the child’s planned learning opportunities delivered by adult family members and/or adults in other community settings prior to determining the number of direct service hours on the IFSP.

For children with ASD, Birth to Three suggests using two tools to help the parents identify and communicate their child’s current levels of functioning around common everyday experiences at home and in the community. One example is the About Our Child assessment tool, (Strain, 2002) (see Appendix Seven) that aids parents or other caregivers in identifying skills their child currently demonstrates in common everyday activities and routines. Additionally, the tool helps to identify skills that parents would like their child to learn in these areas. The About Our Child document which can be left with parents to complete on their own starts by asking parents or other caregivers to list what the child can do in the following areas:

1. Play – Skills such as appropriate toy play, sharing, taking turns, playing by themselves (independence) and playing with other children.
2. Language – Includes skills such as communicating wants and needs, following directions, listening skills, understanding concepts (e.g., in, on, up, etc.).
3. Adaptive – Skills such as dressing, hand washing and toilet training.
4. Meal Time – Skills such as eating with utensils, eating a variety of foods, using a cup and sitting at the table for meals.
5. Bath Time – Skills such as sitting in the tub, washing body parts, brushing teeth, combing hair.
6. Cognitive – Includes skills such as understanding simple stories, identifying pictures of objects, letters and numbers, shapes, colors, matching, sorting and making choices.
7. Motor – Covers gross motor skills like running and jumping, rolling, catching and throwing a ball and fine motor skills including opening containers, turning door knobs, holding crayons and markers, using scissors and playing with material like play dough.
8. Community Activities – Skills such as sitting in a cart at the grocery store, riding in a stroller, playing at a playground and riding in the car.
9. Behavior – Behaviors that interfere with learning, that the parent(s) would like the child to do less often, are aggressive, self injurious or deal with sensory sensitivities.

After parents have a chance to list skills their child demonstrates across these areas parents are asked to list new skills they would like their child to learn in each of these areas. Because parents spend time with their child doing these things on a daily basis it can provide assessment teams valuable information regarding the child’s functional skill set throughout the day which can be used alongside any additional formal or informal assessments the team has conducted. Ideas generated through the About Our Child can be shaped directly into outcomes and strategies on the IFSP. Moreover, the form is a good starting place for building an intervention that is contextually relevant to the everyday activities that families experience. The form may be completed by the family or other caregivers themselves or through interview with the family by a service coordinator or provider.
A second recommended tool to gather family information is through the use of the Routines-Based Interview (McWilliam Casey & Sims, 2009). The RBI is a part of a functional intervention planning process and helps determine what skills or behaviors a child must learn to be successful in daily routines. This protocol is an excellent supplement to About Our Child as it more directly pinpoints the daily routines that will serve as the context for service delivery. The RBI also meets IDEA standards as a parent interview, a required component of the IFSP process. Further description of the RBI and tools for use in conducting the RBI can be found through the Siskin Institute at http://www.siskin.org/www/docs/112.190/.

A Tiered Model for Thinking about Specific needed Early Intervention Services to Prevent and Address Challenging Behaviors

This section of guidance provides a general approach for building a set of IFSP services based on a thorough review of needs and preferences. One of the great challenges in the early intervention field is the brief time available for the delivery of services to infants and toddlers with ASD. Even in the best case, it is likely that IFSPs will be in place for no more than 18 months, and many will be in place for much shorter periods. In such a “time-critical” circumstance it is essential that services are optimized to yield the most functional and powerful outcomes in a context where public resources are scarce. It is in this complex context that the following model is offered as a general guide for conceptualizing and planning early intervention services.

The tiered model being advanced for infants and toddlers with ASD is based on the three-level model of prevention that has been increasingly common in many arenas of social services, including public health and education (e.g., Fox, Dunlap, Hemmeter, Joseph, & Strain, 2003; Simeonsson, 1991; Sugai et al., 2000; Walker et al., 1996). The model begins by defining target behaviors in need of prevention, such as social isolation, destructive/disruptive behaviors by infants and toddlers with ASD, or high levels of parental stress. Strategies intended to prevent the occurrence or further development of the target behaviors are then categorized along a hierarchy related to the proportion of the population for whom the strategy would be pertinent, the intensity of the strategy, and in terms of the stage of the target behavior’s development. Level 1 strategies are intended for all infants and toddlers and families affected by ASD or challenging behaviors. The strategies are geared to an early stage of prevention and are relatively easy to implement. This level is referred to as primary prevention, involving universal applications. For example, a universal strategy for the prevention of disruptive behavior might include establishing a functional system of communication, especially one by which the individual can readily express wants, needs and irritants. A universal strategy to prevent parent stress that interferes with the child’s development might include guided opportunities for family members to discuss issues they face with others in similar circumstances. Universal strategies for infants and toddlers with ASD would be implemented for all children and families, as early as possible. Additional examples of Level 1 strategies include building strong parent-child relationships, including a focus on joint attention, environmental organization, the use of visual schedules and ensuring sound physical health for the infant or toddler.

Level 2 is referred to as secondary prevention, and is intended for young children for whom Level 1 is insufficient and who are clearly at risk for, or who are already demonstrating, early indications of the negative target behaviors. For infants and
toddlers with ASD, Level 2 might include specific procedures designed to teach appropriate problem solving, self-regulation and coping, and to divert them from using problem behavior. An example of a Level 2 strategy for a two year-old who has as an objective to wait for three seconds before accessing a requested item would be the use of a large size visual and auditory timer. Once the timer signals the end of a three-second interval, the mother can grant access to the requested item. This could be done during simple home routines, such as the toddler and another family member (a sibling, the father, an aunt) taking turns to request a favorite snack item and waiting for three seconds for its delivery.

Level 2 strategies to prevent parental stress might include systematic, group-based training in strategies that make daily routines more enjoyable. Level 2 strategies are more focused than Level 1, involve a smaller proportion of the population, and are less intensive than Level 3 strategies. Still, for infants and toddlers with ASD, due to their substantial risk factors, it is likely that most infants and toddlers with ASD will require and benefit from Level 2 strategies. Level 2 strategies, to a large extent, are based in the science of Applied Behavior Analysis (Baer, Wolf & Risley, 1968). Examples of additional Level 2 strategies include using naturalistic teaching strategies such as incidental teaching; using Pivotal Response Training and modeling to teach appropriate play skills, increasing engagement and motivation; using antecedent prompting to prevent challenging behaviors’ using discrete trial instruction; and the use of peer-mediated interventions.

Level 3 is for infants and toddlers and their families when children are already displaying the target behaviors and require relatively intensive and individualized interventions. This level is referred to as tertiary prevention, with individualized, intensive intervention procedures. Level 3 involves individualized assessment and assessment-based interventions that are relatively well-represented in the current literature on positive behavior support and Applied Behavior Analysis. Level 3 also assumes that providers will work, in part, with an individual infant or toddler and his or her family on a one-to-one basis. These strategies are markedly more intensive in terms of resources and time required than Levels 1 or 2. It is important to clarify that Level 3 is not just one level of intensity. It is actually a set of procedures on a continuum of intensity that is based on the extent to which challenges are severe, long-lasting, and demonstrably resistant to change. For example, if a toddler is beginning to display tantrums at home, but the tantrums are limited to one or two daily occurrences (i.e. seeking attention at mealtimes) and have not been exhibited in the community or other settings, then the procedures need not be as time consuming or especially effortful, although they may still require individualized assessment and an individualized intervention plan (Dunlap & Fox, 1999; Strain & Schwartz, 2009). On the other hand, if a child has demonstrated severe problem behaviors for several months, and the problems have persisted in many environments despite multiple efforts of remediation, then the Level 3 process is likely to require a considerable investment of time and resources to be effective.

The multi-tiered prevention model is represented in Figure 1. The bottom tier, Level 1, is intended for all infants and toddlers with ASD and other young children with severe communication and/or behavioral delays, while Levels 2 and 3 build increasingly focused and intensive supports for those infants and toddlers who demonstrate high risk factors and needs related to overall development and problem behaviors.
Figure 1
Tiered Intervention Model for Children with ASD to Prevent and Address Challenging Behaviors

LEVEL 3: Individualized Intensive Interventions

LEVEL 2: Building social and communicative competencies inconsistent with problem behavior

LEVEL 1: Building positive relationships, supportive environments, and optimal health
The following descriptions provide further details on of the three levels along with examples of intervention strategies. Much greater detail on evidence-based strategies is contained in the Pool of Evidence-based Practices on page 27 of these guidelines.

Level 1 Strategies for infants and toddlers with ASD.
It is understood that infants and toddlers with ASD have more difficulties interacting with and managing their environments than young children who are typically developing. As a result, there are undoubtedly more events and circumstances in the environment (including the child’s physiological environment) that can be irritants to the child and which cannot be resolved as efficiently as with a typically developing child. Therefore, it is important to take concerted measures to reduce potential irritants and to teach the child, from a very early age, that interacting with the social environment is pleasurable and satisfying. Level 1 strategies are geared to all children with a diagnosis or classification of ASD and they should be implemented as soon as possible.

One category of Level 1 strategies involves the development of positive relationships between parents (and other family members and care-givers) and the infant or toddler. The intent is to teach the child that parents and caregivers can be relied on as stable, secure, and safe figures that provide nurturance, comfort, pleasure and guidance. Developing attachments is a challenge for infants or toddlers with ASD, so special efforts are required, even when signs of a child’s interest are not apparent. This might require that a parent or caregiver identify the activities, objects, settings, and interactions that the child finds pleasurable and provide those events and items to the child contingent on a social interaction behavior (rather than non-contingently in a manner meant to keep a child satisfied without social interaction). For example, a tickle game might be initiated with a child and then interrupted by the caregiver with the expectation that the child look at the adult or repeat a gesture to continue. A key objective of efforts to form positive relationships is to ensure that the interactions are pleasurable and that they are associated with the child receiving input that is consistent with needs and interests. Importantly, successful efforts to form strong, positive bonds when a child is very young result in a subsequent relationship in which an adult has considerable influence over a child’s behavior, and this influence can be essential for the guidance and instruction that the adult (parent or other caregiver) must provide on an ongoing basis.

A second category of Level 1 strategies involves the provision of a safe, comprehensible, stimulating and responsive environment. As children with ASD often have difficulty navigating their surroundings, it is useful to be sure that clear physical cues are consistently available to help children locate desired items and to make appropriate requests. The understanding of the environment, schedule, and requests is often enhanced through the use of visual supports or object cues that provide the child with additional information on what is expected (e.g., Dettmer, Simpson, Myles, & Ganz, 2000; Olley & Reeve, 1997). Similarly, toys and other objects of interest should be available, especially of the type that are likely to provide occasions for social interaction. For example, children’s books provide an excellent opportunity for turn-taking exchanges and exposure to print language. Other toys, such as balls, blocks, and art materials are easily used to support the child’s motor, cognitive, and social development. In addition, environments should be set up so that a child’s initiations are met with appropriate responses, along with guidance and support to sustain interactions and help insure that the child’s motivations are fulfilled. A correlate of this category is
that a child with ASD should be exposed to a variety of community and social contexts, while being supported by assistance and positive guidance to insure that these experiences are enjoyable and successful for the child. The active engagement of the child within meaningful activities and social interactions is pivotal to the child’s overall development and ability to navigate social environments (Kohler & Strain, 1992). Thus, the pervasive use of passive activities (e.g., watching videos, playing alone repetitively) that do not require that the child communicate or socially interact can be detrimental to the child’s potential for developing a repertoire of social and communication skills.

Third, a key category of Level 1 strategies involves procedures to insure that the child’s physical health is sound, that somatic complaints are understood and addressed, that the child has daily opportunities for vigorous exercise (e.g., Kern, Koegel, & Dunlap, 1984), and that the child consumes food and beverages that are nutritious. A child’s physiological well being is an important factor in preventing the emergence of problem behaviors as it is likely that some problem behaviors begin as simple expressions of internal discomfort (e.g., crying elicited by a stomach ache) which are then inadvertently shaped by external contingencies (e.g., provision of attention) into full-fledged problem behaviors (e.g., violent tantrums). The relationship between physiological circumstances and problem behavior has not been studied extensively, however there is no doubt that the link is a powerful one and that improved medical assessment and care can be a powerful Level 1 strategy of prevention (Carr & Owen-DeSchryver, 2007).

And, finally, Level 1 also includes intentional instruction to help infants and toddlers acquire functional communication skills needed to effectively and conventionally control aspects of the environment. For example, even when a child has no other distinguishable language, parents can help toddlers with ASD to use vocalizations or gestures to request or reject objects and activities, and they can help build communication exchanges by responding to the child’s nonverbal expressions as comments or requests for information. A young child’s communicative competence is one of the most salient factors related to the extent that children with ASD develop social relationships and achieve desired lifestyle outcomes (Woods & Wetherby, 2003). A focus on the development of communication and language skills should include an emphasis on the forms of communication (e.g., from using gestures to words) as well as the pragmatics of communication (e.g., the social process of communication) including initiating interactions, establishing joint attention, and maintaining a conversation. For children with ASD, it is necessary to pursue this kind of instruction intentionally and deliberately and, always, with awareness of what the instruction does to help the child be an active participant and, to some extent, manager of his or her surroundings. Although many types of personnel are experienced in developing communication skills, the Connecticut Birth to Three System strongly recommends that a licensed speech and language pathologist be included on the IFSP of every child with ASD providing, at a minimum, consultative services to other team members.

In addition to the instruction of communication skills, the toddler with ASD most likely needs explicit instruction and support to meet other developmental milestones including self-care skills (e.g., assisting with dressing or toileting), play skills, independence, and some motor skills (e.g., using a crayon or a spoon). The promotion of the toddler’s overall skill development often requires repeated, intentional, instructional episodes and the provision of systematic prompting and encouragement to assist the child in achieving independence.
Level 2 Strategies for infants and toddlers with ASD.

While Level 1 strategies involve the provision of experiences and supports that are reasonable for any infant or toddler, regardless of the child’s abilities and challenges (though strategies for infants and toddlers with ASD may require more intentional effort on the part of the parents or caregivers). Level 2 strategies involve specific procedures designed to enhance a young child’s behavioral competencies and, indirectly, help prevent the development or display of problem behaviors. Level 2 is for infants and toddlers with ASD for whom Level 1 is insufficient and who have risk factors that indicate a need for more deliberate strategies. Such risk factors include obvious delays in language development, notable avoidance of social interactions, and a failure to acquire functional skills. These criteria suggest that most infants and toddlers with ASD may require Level 2 supports, and that is indeed the case, though the actual proportions are unknown and must await the completion of considerable research.

Strain and Schwartz (2009) provide examples of Level 2 strategies for preventing the development of problem behaviors in the repertoires of infants and toddlers with ASD. These authors note, first of all, that a primary consideration of programs for young children with ASD is to provide an environment that is designed to prevent problem behaviors, promote engagement and participation, and facilitate successful interactions with typically developing peers. They illustrate such environments with reference to two model programs: LEAP (Learning Experiences: An Alternative Program), developed by Strain, and Project DATA, developed by Schwartz. Embedded within the programs’ structures and curricula are Level 2 strategies designed to build skills and simultaneously reduce the probability of problem behaviors. One strategy is an “appropriate engagement strategy” in which the procedural focus is on increasing children’s appropriate engagement with materials and activities. Although not designed explicitly as an intervention for problem behaviors, increases in engagement tend to be related to reduced occurrences of problem behavior and, thus, the engagement serves as a strategy for preventing problems without an intensive behavior intervention plan (Kohler & Strain, 1992; Dunlap & Strain, 2010). For example, for a child who wanders around the home, climbs on furniture or dumps out baskets of toys, teaching simple play skills like building with blocks, pushing cars or doing puzzles not only increases their appropriate engagement but also likely decreases the amount of time the child spends in the inappropriate behaviors listed above.

Level 2 strategies are also found in many Birth to Three programs for helping young children with ASD (e.g., Koegel & Koegel, 2006; Mahoney & Perales, 2003). Such strategies are often components of the larger program that can be implemented in home and community contexts, whether or not the comprehensive program is available. For instance, Pivotal Response Training (PRT) (Koegel & Koegel, 2006) is a unified and comprehensive approach to intervention for children with ASD. Included within the program are numerous procedures that are useful for increasing the motivation and engagement of children with ASD, and such variables serve not only to enhance children’s cognitive, communicative and social development, they also serve to prevent problem behaviors. Examples of such procedures include following the child’s lead, using preferred items or activities, providing clear instructions, teaching within natural contexts, providing choices, discrete trial instruction, reinforcing the child’s attempts, varying and interspersing tasks, and using naturally-occurring reinforcers (Koegel & Koegel, 2006). In addition to PRT, other related evidence-based strategies include
incidental teaching (McGee, Daly & Morrier, 1999), modeling, various antecedent prompting tactics, and peer-mediated intervention (see Section 3 below). Such procedures involve less effort and intensity than Level 3 strategies, yet they can be extremely useful for promoting communication, social and cognitive development and preventing the development of problem behaviors. Please see Pool of Evidence-based Interventions for more detailed descriptions of Level 2 interventions.

Level 3 Strategies for infants and toddlers with ASD.
Level 3 strategies are comprised of procedures that are most readily associated with problem behavior interventions because these are the strategies that are deployed after problem behaviors have developed to the point that they have become acknowledged obstacles to early learning and healthy social emotional development, and when they present threats to the physical and emotional safety of the infant or toddler with ASD, peers or others in the vicinity.

At one time, the predominant approach for problem behaviors was based almost entirely on contingency management, in which interventions consisted of manipulations of reinforcers and punishers. While contingency management is still important, Level 3 strategies have broadened considerably over the past two decades and now include a focus on rearrangements of the antecedent environment and instruction on functional alternatives to the problem behaviors. Level 3 strategies now place a strong emphasis on prevention rather than suppression. In addition, Level 3 interventions are generally preceded by a process of functional assessment, designed to identify intervention components that address the individualized functions of the particular child’s problem behaviors. The overall process of assessment and intervention is commonly referred to as “positive behavior support” (PBS) (Carr et al., 2002).

Implications for Implementation
The 3-tiered model carries two major implications for practice. The first is that an early and concerted emphasis on preventive strategies has the potential to influence a child’s development in the direction of more pro-social behaviors and a lower likelihood of severe problem behaviors. It is reasonable to assume that a proportion of children with ASD who eventually come to develop problem behaviors might be diverted from this negative trajectory if Level 1 and Level 2 strategies are implemented early enough and with sufficient intensity and consistency (Dunlap, Johnson, & Robbins, 1990; Strain & Schwartz, 2009). Therefore, a major implication of the model is that much greater consideration should be given to Level 1 strategies such as health care, the provision of stimulating and enjoyable environments, and supported participation in complex social contexts. Supporting families to gain knowledge and skills of Level 1 strategies is critical to the ongoing support they can provide to their children throughout their early childhood development and beyond.

A second important implication of the model is that, even for infants and toddlers with very severe disabilities and prominent risk factors (e.g., an absence of functional, conventional communication skills), a solid foundation of Level 1 and Level 2 strategies should reduce the need for more labor intensive interventions at the tertiary level. For infants and toddlers with ASD and their families, the fundamental issue is that implementing Level 1 and Level 2 strategies does not simply lessen the need for more intensive supports, it often prevents the onset of challenging behaviors, prevents adult stress, and improves developmental functioning in key areas of
communication and social skills. The significance of this cannot be overstated. That is, even if Level 3 strategies are needed, the presence of Level 1 and Level 2 procedures will reduce the effort associated with the Level 3 interventions that are required to effectively address existing needs.

EVIDENCE-BASED INTERVENTIONS AND MEASURING OUTCOMES

While the tiered model described above offers teams a way of conceptualizing services in general this section provides an overview of very specific, evidence-based practices that can be fit within the conceptual model.

There are literally hundreds of intervention methods that have been used to improve the core symptoms of ASD. Some methods are highly effective, some less so, still others are ineffective. What seems certain is that regardless of demonstrated effectiveness, many methods are vigorously marketed to providers and families. The guiding principle that children and families should be provided with evidence-based practices has led directly to the following set of recommendations based upon the National Autism Center’s National Standards Project (NSP) (2009). Moreover, these practices are also in line with those recommended by the National Professional Development Center on ASD (2009). Of course, in a rapidly changing field, recommended practices at one point in time should always be revisited as new data become available.

The NSP, by far the most comprehensive and rigorous review of the scientific literature on children with ASD to date, was designed with three purposes in mind:

1. To identify the level of research support currently available for educational and behavioral interventions used with infants and toddlers with ASD. Knowing levels of research support is an important component in selecting interventions that are appropriate for individuals on the autism spectrum.

2. To help parents, caregivers, educators, and service providers understand how to integrate critical information in making intervention decisions. Specifically, evidence-based practice involves the integration of research findings with (a) professional judgment and data-based clinical decision-making, (b) values and preferences of families, and (c) assessing and improving the capacity of the system to implement the intervention with a high degree of accuracy.

3. To identify limitations of the existing treatment research involving infants and toddlers with ASD.

Established Interventions in the National Standards Project

Details regarding the NSP methodology for identifying interventions and rating them can be found online through the National Autism Center’s website at http://www.nationalautismcenter.org/affiliates. Eleven interventions were identified as Established (i.e., they were established as effective) for individuals with ASD. Established Interventions are those for which several well-controlled studies showed the intervention to produce beneficial effects. There is compelling scientific evidence to
show these interventions are effective; however, even among Established Interventions, universal improvements cannot be expected to occur for all individual children with ASD. The NSP also categorized other interventions as emerging (i.e., some tentative evidence of effectiveness) or un-established (i.e., no data upon which to recommend use).

The NSP identified the following interventions to be Established:
1. Antecedent Package (Prompting)
2. Behavior Package (Discrete Trial Training and Positive Behavior Support)
3. Comprehensive Behavioral Treatment for Young Children with Autism
4. Joint Attention Intervention
5. Modeling
6. Naturalistic Teaching Strategies (e.g., Incidental Teaching)
7. Peer Training Package
8. Pivotal Response Training
9. Schedules
10. Self-management
11. Story-based Intervention Package

For information on other levels of effectiveness see the full NSP report at http://www.nationalautismcenter.org/affiliates/model.php.

Self-management and Story-based interventions, which rely on complex language and cognitive skills are not included in these guidelines as they will likely not be used for many children under the age of three years. However, given the heterogeneity of ASD, practitioners may reasonably consider these intervention methods for high-functioning children. Comprehensive Behavioral Treatment was also excluded from the detailed interventions that follow. The literature from which this category was derived is based solely upon enrollment of children with ASD in research-based behavioral intervention programs that are not generally available. Additionally, among all these programs there are no unique individual interventions that are not covered by the remaining discrete interventions that are recommended herein.

Additionally, one “emerging” strategy is included – Augmentative and Alternative Communication. Since many children with ASD in this age range do not have functional speech it is very likely that these non-verbal communication systems will be needed.

Are Nine Strategies Enough?
While the wide diversity and unique needs of children with ASD must always be considered, the nine interventions detailed below represent a wide range of strategies sufficient to address all the core symptoms of autism in young children. Importantly, these interventions have been implemented successfully by a broad range of providers, families, and in some cases, other children. The recommendation is that teams become proficient at delivering these interventions, plan on delivering these interventions first, and then examine Emerging Intervention options only after data indicate less than desired outcomes using these interventions.

The Nine Interventions: Description and Application
Below is a general description of the nine interventions, their implementation for infants and toddlers with ASD and readings that offer more procedural detail. Following this
general description are examples of intervention use with three case studies of children and families.

1. **Antecedent Package (Prompting).** Antecedent (before) prompting (clues, support, or hints) is a group of strategies in which the adult gives verbal or physical prompts to the child to help him/her engage in desired behaviors. It is important to give the correct amount of prompting to ensure a correct response, ensuring the child does not learn and practice errors. Three of these widely used strategies are most-to-least prompting, least-to-most prompting, and using time-delays during prompting.

   **A. Most-to-Least Prompting**
   This involves the adult initially using the most amount of prompting necessary for the child to perform a correct response. The prompts themselves can be full physical prompts, such as hand-on-hand guidance (such as pointing to a picture), or physically moving body parts (such as opening the kitchen cabinet). As the child demonstrates proficiency in the behavior/response, the prompts are faded and the physical guidance is reduced. For instance, instead of hand-on-hand prompting, the child may, overtime, only require a light touch on the arm. Typically, most-to-least prompts begin with physical guidance, move to visual prompts, such as showing a child a picture of the kitchen cabinet as a prompt to open it, to verbal instructions, such as, “open the cabinet” to natural cues in the environment, such as the child opening the cabinet when the parent tells the child, “breakfast time!”

   **B. Least-to-Most Prompting**
   This procedure is the opposite of most-to-least and begins with the adult giving the child the opportunity to respond with the least amount of prompting. The amount of prompting by the adult increases with each behavior/response that the child fails to perform or performs incorrectly. For instance, if the child does not open the kitchen cabinet three seconds after the parent says “breakfast time!” she can start prompting by saying “breakfast time!” again, and then verbally ask the child to open the cabinet. Least-to-most prompting begins with using natural environmental cues, then proceeds to using verbal instructions, possibly with an additional visual cue (picture, gesture or modeling), and then to partial physical and full physical prompting.

   **C. Time Delay**
   Time delays can be used as part of these antecedent prompting procedures by varying the time interval between the initial prompt for the child to give a response/behavior and the subsequent prompting given by the parent if the child does not respond correctly. See the diagram on the next page:
2. Behavioral Intervention Package:
   A. Discrete Trial Training
   Discrete Trial Training (DTT) is a structured teaching strategy that involves distinct
   and repetitive responses following a specific stimulus, and resulting in reinforcement.
   Each trial is typically defined as (A) Antecedent, (B) Behavior, and (C) Consequence,
   and has a definitive beginning and end, thereby, being ‘discrete’ and is depicted below:
   (Cooper, Heron, & Heward, 2007).

   ![Diagram of a complete discrete trial]

   A = Antecedent
   B = Behavior
   B = Consequence

   A Complete Discrete Trial

   A question
   A command
   An instruction
   A Discriminative Stimulus

   “What color is this truck?”

   →

   An answer
   A behavior
   A response

   “Blue”

   →

   A reinforcer (e.g., toy, praise)
   Teacher’s reaction to response

   “Yeah, right answer, here is your toy.” (gives toy to child)

   Key elements of using DTT to teach toddlers with ASD include breaking skills into
   small chunks (behaviors) so each chunk can be taught directly and learned to
mastery before chaining the behaviors together (De Boer, 2007; Fein & Dunn, 2007). In addition, teaching typically involves the use of prompting and fading (dependent on child’s needs) and there needs to be a rich supply of child-specific reinforcers given (e.g., toys, objects, games) contingent on the child’s responses. Behaviors can be shaped dependent on the speed and value of the reinforcers after a response (Alberto & Troutman, 1999; Cooper et al., 2007). For instance, an easy or mastered response can be reinforced with a low-preferred reinforcer such as a “high five!” whereas a new and difficult response can be reinforced with a high-preference reinforcer such as jumping on a trampoline or swinging on a swing.

The prompting procedures used in DTT can be physical and/or verbal, such as holding and manipulating a child’s hands to demonstrate clapping, or saying “It’s red” after being shown a red car and asked “What color?” (De Boer, 2007; Fein & Dunn, 2007; Vargas, 2009). Prompting procedures are very important in DTT, as the child should always be prompted to give the correct response, also known as errorless learning. Errorless learning contributes to a positive learning environment, prevents the child from performing and practicing errors, and may reduce a child’s frustration (De Boer, 2007; Vargas, 2009). As DTT is highly structured and some toddlers with ASD may display avoidance or escape behaviors to this type of learning environment, the adult should use positive pairing, so he or she is viewed by the child as a reinforcer. Positive pairing can be achieved by engaging in preferred activities with the child or being the source of obtaining what the child wants or enjoys (reinforcer) (De Boer, 2007).

Where to get more information on Discrete Trial Training

B. Positive Behavior Intervention and Support (PBIS).
A Positive Behavior Intervention and Support plan is a separate plan specifically designed to address a child’s persistent challenging behaviors using positive behavior changing strategies. The five essential elements of PBIS are described below:

(1). Establishing a team and gaining a unified understanding of the child and an agreement on the short and long-term goals of intervention. For Level 3 interventions, more than one person is generally required for purposes of planning, assessment and implementation. For infants and toddlers, one member of the team must be a parent, guardian or key family member, and other team members also include child care teachers, early intervention personnel from a variety of disciplines, advocates, close friends and, as needed, administrators. It is expected that the team will include at least one member with knowledge and experience with applied behavior analysis and positive behavior support.
An initial responsibility of the team is to gain consensus on the child’s strengths and challenges and to form agreement on immediate goals for intervention as well as a vision for the child’s accomplishments over the coming one to three years. The Routines-based Interview is a process that has proven to be very useful for achieving this kind of unified vision (McWilliam et al., 2009).

(2). Conducting a functional assessment of problem behavior. The next step is to use procedures of functional assessment to gain an understanding of how the targeted problem behavior(s) are governed by events and circumstances in the environment. There are numerous books and manuals that specify the particulars of the functional assessment process (e.g., O’Neill et al., 1997), but they generally boil down to direct observational and indirect interview methods for answering core questions, such as:

- a) what is the function or purpose of the problem behavior;
- b) under what specific circumstances is the problem behavior most likely to occur; and
- c) under what specific circumstances is the problem behavior least likely to occur?

Answers to these questions should help team members identify effective and efficient components for a behavior intervention plan. Additionally, information gleaned from the initial goal setting and IFSP processes are used to construct an individualized PBIS plan. Team members provide vital input related to their willingness and ability to carry out potential intervention components. Components are generally selected from procedures that have been previously demonstrated to be effective in similar situations.

(3). Designing the PBIS plan. The PBIS plan often includes components from several categories of strategies. One of those strategies is antecedent manipulations that include changes in the stimuli that are found to precede or evoke problem behavior. Such stimuli can be removed or ameliorated, while stimuli associated with desirable behavior can be inserted. Teaching strategies involve identifying functional alternatives to the problem behavior and arranging for such alternatives to be systematically prompted for and reinforced at times that problem behaviors might otherwise occur. Functional communication training is a well-established procedure for accomplishing this useful, instructional approach. For example, for a child that goes to the refrigerator or to a parent and cries when they are hungry, the child is taught a functional replacement behavior like requesting to eat by giving a picture card to the parent. Reinforcement strategies involve changes in the contingencies that govern the child’s problem behavior; in particular, removing reinforcers that maintain the problem and increasing reinforcers for other behaviors. For example, using the scenario above, if the parent previously responded to the crying by giving the child something to eat, a reinforcement strategy they could use is to instead ignore the crying and physically redirect the child to get the picture card and give it to them. This behavior, giving the picture card to the parent, is then reinforced by the parent giving the child something to eat. The PBIS plan should also include specific instructions for the adults who will be implementing the plan, including guidance for what to do if the problem behavior occurs as in the example above.
(4). Implementing the PBIS plan. A key aspect of implementation is incorporating procedures to help insure that the PBIS plan is implemented as intended. Intervention agents (siblings, parents, child care provider) often benefit from scripts or other prompts to cue them about what to do and when. It is also useful to monitor implementation to be sure that procedures are executed with fidelity, which can be defined as implementing the PBIS plan or procedures exactly as intended. Then, if data indicate that anticipated changes in challenging behaviors are not occurring, the team can analyze fidelity as one possible reason for inadequate outcomes. Strategies can be included to heighten fidelity or the plan can be adjusted to include components that will be easier to implement. For example, a child’s team is using a specific prompting strategy to get the child to follow a direction instead of engaging in an escape behavior. The procedure involves three basic steps: 1) giving the direction, 2) giving the direction a second time with an additional visual cue or gesture and then, if necessary, 3) giving the direction a third time while providing physical assistance to fully complete the task. If data indicate improvements are not occurring related to this behavior, the team may look more closely at each step of the procedure to see if they are being implemented correctly or if there is some variation in how the child is being prompted.

(5). Evaluating the effects of the intervention. The PBIS plan also needs to include a means for evaluating whether the plan is achieving its intended effects. Data collection should be:
   a) simple, so that all relevant parties can record data without difficulty, and
   b) valid, so that the data truly reflect the changes that are the purpose of the intervention.

   Simple evaluation tools include rating scales to indicate how a session (e.g., a community outing, a regular home routine) rated on a five-point scale ranging from, for example, “terrible” to “excellent.” The point is that some kind of useful evaluation data needs to be collected in order for the team to know if the plan is producing benefits as expected, or if adjustments to the plan are required. Using the example above, the child’s overall compliance with following directions could be rated from one to five with a “1” indicating no directions were followed to a “5” indicating all directions were followed.

The strategies described above are examples of positive behavior intervention and support (PBIS) which has been demonstrated in numerous studies, literature reviews and syntheses to be effective in building desirable skills and reducing or eliminating problem behaviors (Carr et al., 1999; Dunlap & Carr, 2007). As testimony to its effectiveness, the methods and outcomes of PBIS have been described in an immense number of web sites, articles, manuals, and books and the vast majority of these resources offer information and guidance that is evidence-based, credible and useful.

Where to get more information on PBS
3. Joint Attention. Joint attention (JA) is a strategy in which a child and a parent or another individual engage in mutual interest or show attention to the same object, activity or experience. Joint attention (JA) includes a range of behaviors such as eye gaze and gestures. The majority of infants and toddlers with ASD do not have good joint attention skills. Infants and toddlers with ASD may demonstrate some form of JA if they are trying to get something they want, such as a cookie, but they typically do not seek out another person for social attention. Generally, a toddler with ASD will not run up to their dad and show him a picture s/he just drew or want a hug, acts typically seen in children without ASD (Adamson & Bakeman, 1985, 1991; Adamson & Chance, 1998; Brooks & Meltzoff, 2002; Bruner, 1983; Butterworth & Jarrett, 1991; Carpenter, Nagell, & Tomasello 1998; Morales, Mundy, & Rojas, 1998; Toth, Munson, Meltzoff, & Dawson, 2006).

Joint attention skills are very important as research has shown they are linked to positive outcomes in later communication and social skills, therefore it is important to teach joint attention skills during early intervention (Rollins, 1994: Rollins & Snow, 1998). Joint attention includes the following types of behaviors:

• A parent and child looking at an object together,
• A parent and child making eye contact,
• A child pointing to an object to show their interest to their parent,
• Playing with or sharing the focus on a toy together,
• Trying to gain a child/parent’s attention by “catching their eye” or gesturing to them, and
• A child sharing facial expressions with a parent, such as smiling or winking.

4. Modeling. These interventions rely on an adult or peer providing a demonstration of the target behavior by the infant or toddler with ASD. Modeling can include simple and complex behaviors. This intervention is often combined with other strategies such as prompting and reinforcement. In the example on the next page, the team is using a sibling to model how to push a train (functional toy-play skill on IFSP).
5. Naturalistic Teaching. Naturalistic teaching is a structured form of presenting learning opportunities in the child’s natural environment utilizing the child’s natural motivation and reinforcers, such as using a child’s interest in trains to ask for and play with the train set. For children with ASD naturalistic teaching is implemented to increase generalized language and social skills, and differs from other teaching methods as it is child-oriented rather than adult-oriented (Fenske, Krantz, & McClannahan, 2001; Hart & Risley, 1968, 1975, 1982). For instance, the child takes the lead on selecting an activity, and the adult uses this selected activity as a ‘teachable moment,’ an opportunity to be intentional in working with the child on a teaching goal. Naturalistic teaching involves an intentional plan to include opportunities throughout a child’s typical daily schedule. By incorporating teachable moments through the day, any activity or routine can become a teaching opportunity, such as brushing teeth, eating, playing ball, or looking at a book. The key to successful naturalistic teaching is to plan the child’s goals and objectives and then identify the activities that can offer teachable moments (Fenske, et al, 2001; Hart & Risley, 1968, 1975, 1982).

Once a learning opportunity has been identified, it is important to reinforce the child’s communication (attempts) and encourage him/her to elaborate on the response(s). The teaching moment should remain brief and reinforcing so the child does not avoid future interactions and all adults in the child’s life should be trained to identify similar teachable moments so the child can generalize among settings, people and activities (Schreck & Foxx, 2005). If a child does not respond in a teachable moment, such as reaching for a favorite doll, the parent
can implement verbal prompts, saying, “What do you want?” “What is this?” or “doll,” with time delays to allow the child to respond. Prompting for naturalistic teaching is individualized by the child’s specific communication needs. An example of how naturalistic teaching in the home can be used is as follows:

Jane knows that playing with clay is her son Anthony’s favorite activity, so she gets down the container from the cabinet in the family room where the modeling clay is kept. Immediately Anthony runs over to his mom and pulls at the clay box. Jane blocks Anthony’s hand and looks at him expectantly for a request for the clay box. Anthony does not respond, so Jane asks “Anthony, what do you want?” and Anthony says, “Want clay.” Jane then replies, “That’s great asking, here is the clay box.” One of Anthony’s IFSP outcomes is to identify primary colors, so after Anthony has been playing with the clay for a few minutes, Jane sits next to him and starts to play with a green ball of clay. Jane says, “My clay is green, I will make a tree.” What color is your clay?” Anthony thinks for a moment and then replies, “Yellow.”

This example used a preferred activity, planned by the parent, but selected by Anthony, to teach her how to ask for items, and work on her predetermined goal of identifying colors.

Where to get more information on Naturalistic Teaching

6. Peer Training Package. With early and intensive intervention the seemingly pervasive social skill deficits of many children with ASD can be remediated (Lovaaas, 1987; McGee et al., 1993; Strain, 1987). If there is such a thing as a “recipe for success” it must include regular access to typical peers, thoughtful planning of social situations, the use of “social” toys and multiple-setting opportunities to practice emerging social skills. The Peer Training Package involves providing instruction to typical peers to engage the targeted child in frequent and successful social response opportunities. Peers, such as siblings or other young children at a child care or other community setting, are initially taught strategies to successfully gain the attention of the infant or toddler with ASD (the target child) followed by strategies to share materials that are highly preferred by the target child and later extend to requesting items from the target child and giving directions around play. The example on the next page describes a planned play sequence.
Pivotal Response Training is a teaching approach based on the premise that by providing intervention to infants and toddlers with ASD in pivotal areas, positive collateral effects will occur in related behavior. Teaching fundamental behaviors will have far-reaching effects on the child acquiring other behaviors beyond those that were taught. For instance, teaching in the area of functional communication may produce a decrease in self-injurious behavior, and teaching social skills such can have collateral effects on language development.

Areas that are targeted as pivotal include:

- **Multiple cues** – teaching responses to a variety of cues and reducing stimulus over-selectivity (e.g., in which children with ASD typically over generalize and have a small responding repertoire, such as saying “dog” to every animal they see). Although this generalization is common in all young children, for those with ASD this deficit continues whereas other infants and toddlers without ASD learn to distinguish different characteristics and adapt their response repertoires.

- **Motivation** – (measured as the child’s responding) is targeted as a pivotal area as increases in motivation can lead to better social skills, higher

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**Where to get more information on Peer Training**


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**7. Pivotal Response Training.** Pivotal response training (PRT) is a teaching approach based on the premise that by providing intervention to infants and toddlers with ASD in pivotal areas, positive collateral effects will occur in related behavior. Teaching fundamental behaviors will have far-reaching effects on the child acquiring other behaviors beyond those that were taught. For instance, teaching in the area of functional communication may produce a decrease in self-injurious behavior, and teaching social skills such can have collateral effects on language development.
responses in completing tasks and activities and also increase speed of responding. For instance if Stacie is motivated to color her picture she will finish it faster than if she was unmotivated.

- **Self-management** – teaching in the area of self-management has demonstrated greater independence outcomes as the focus of responsibility is shifted from the parent to the child. The child will learn to make choices and monitor behavior so s/he can learn to function in different environments and learn that his/her behaviors cause environmental change.

Pivotal response training involves using applied behavior analysis procedures, including shaping and chaining behaviors, reinforcement, and discrimination. Training typically occurs in the child’s natural environment and involves parents as teachers. In the example below Jahan’s mother uses functional communication to reduce her 30 month old daughter’s self-injurious behavior.

8. **Schedules (Use of Visuals).** Pictures can also serve the function of visual schedules in which a child is “shown” what to do, or what comes next in their day. Using visuals are very successful with children with ASD as they are generally visual learners. For infants and toddlers, these visual schedules can be adapted to simply using one or two pictures so children know what they
have to do, such as holding a picture of a car so the child knows that a car ride is the next activity (perhaps a non-preferred activity). These pictures may help to smooth transitions from one activity to the next so the child feels safe when their environment changes, as many children with ASD do not like change and find transitions very difficult. For instance, 32 month-old Louis spends several days a week at his Grandmother’s house while his mother is working. As his mom’s schedule changes frequently each week as she is a shift worker, it is important to help Louis transition from one house to the other successfully. In order to help Louis, she has two visual schedule books: one called *Home with Mom* and the other called *Home with Grandma*. Inside the books there are photographs of Louis in the car in front of each house, and lots of photographs of the different activities and tasks for him to do in each of the houses. For instance, in his book *Home with Mom*, there is a photograph of him brushing his teeth with his yellow toothbrush and sleeping in his bedroom with animals on the walls, and in *Home with Grandma*, there is a photograph of him brushing his teeth with his blue toothbrush and sleeping in his bedroom with dark blue curtains. Louis’s mom and grandmother look at the photographs with him before he has to go to the other house to make sure he knows where he is going and what he is going to do when he gets there, thereby helping him to achieve smooth transitions during their busy days.

Where to get more information on Schedules


9. Augmentative and Alternative Communication (AAC). Augmentative and Alternative Communication (AAC) is the term for a variety of tools and strategies that support individuals with communication impairments or little functional speech. AAC either enhances or ‘augments’ the speaker’s communication or offers an ‘alternative’ to vocal speech. AAC is divided into two main categories, (a) aided, and (b) unaided. Aided AAC involves using an external object for communication (Zangari, 2000). Various forms of aided AAC include communication devices, such as electronic communication boards in which the child presses a button to elicit an electronic voice output (also known as assistive technology). These range from simple devices with a few communication outputs, to highly advanced computers, personal digital assistants (PDAs), and iPad applications. It is also possible to record a same-age, same-sex peer to record the vocals for the output in some devices. Less technical forms of AAC include using pictures as communications, for instance, the child exchanges a picture of a cup for some juice, or points to a graphic symbol of a slide to communicate a want to go outside and play. For children who use aided AAC systems it is important that the communicative partners understand how the system works, ensures the system is reachable to the child at all times, and any high technology devices must be fully charged or have
spare batteries on hand (Cafiero, 2005; Mirenda, 2009; Ogletree & Oren, 2006; Zangari, 2000). Some high-tech devices may be too advanced for very young children which may contribute to frustration and inappropriate behaviors. Therefore, it is probably best to begin with simple pictures on cards, or simple single pictures on electronic devices for this young population.

Unaided AAC systems do not require an external object in order for the child to communicate. An example of an unaided system is Sign Language, in which a child uses his/her hands, or other symbols, signs, and gestures. Again the consideration is that the communicative partner understands the system used, especially if the signs or gestures are child-specific (Cafiero, 2005; Mirenda, 2009; Ogletree & Oren, 2006; Zangari, 2000).

The use of AAC with infants and toddlers with ASD is a complex area as the unique needs and communication impairments among this population vary. Not all children with ASD will require AAC, but for some the use of an AAC system can temporarily (until speech develops) or permanently aid their functional communication (Mirenda, 2009). However, the decision to implement a system presents a multitude of challenges and considerations in order to select the most useful system to meet a child’s individualized needs (Drager, Light, & Finke, 2009).

Where to get more information on AAC

Case Studies
In order to provide the reader with examples of the Established Interventions in action, the following material reviews three case studies. For each case a brief set of descriptive information is offered along with a tabled subset of individualized intervention plans (Table 2) that were developed by the IFSP team using the aforementioned “About Our Child” protocol and the Routines-Based Interview. Carlos’ team used the content of Table 2 to complete the assessment, outcomes and services and support sections of his IFSP.
Case Study 1:

Carlos. Carlos is a 24 month old little boy who lives with his mother, father and three sisters (two older and one infant). Carlos is not using any spontaneous functional language although his parents report hearing him say a few words. He occasionally imitates a sound, usually after his parents have repeated a sound he has just made. Carlos does not indicate his wants or needs or ask for things. If he needs something he often whines and his parents try to figure out what he wants. He also walks to the refrigerator and stands next to it when he wants something to eat or drink. Carlos drinks from a sippy cup and feeds himself with his fingers, but is not using utensils yet.

Carlos does not make consistent eye contact with his parents or siblings and while he occasionally approaches his parents, he generally ignores his sisters unless they initiate with him. They are most successful in engaging him in rough and tumble play. Carlos has limited play skills and interest in toys. He approaches his parents, he generally ignores his sisters unless they initiate with him. They are most successful in engaging him in rough and tumble play. Carlos has limited play skills and interest in toys. He

Based on this information gathered from the RBI and the “About Our Child” the following priorities were identified by Carlos’ family; a) help with dressing in the mornings and evenings; b) asking (either using words or with pictures) for what he wants; c) interacting with others (play with children and saying “hi” and “bye” to people), and d) playing with toys like other kids his age.

Table 1: Carlos’ “Established Interventions”

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<tr>
<th>Priority</th>
<th>Outcomes</th>
<th>Setting and Participants</th>
<th>Methodologies and Strategies</th>
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</thead>
<tbody>
<tr>
<td>Carlos will help dress himself.</td>
<td>Carlos will assist with dressing by pulling his pants up and down.</td>
<td>Home with mom or dad.</td>
<td>Antecedent Package: Most to least prompting (use physical prompting initially, then fade to partial physical, then to verbal cues), Providing choices of what to wear.</td>
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<tr>
<td>Carlos will ask for what he wants.</td>
<td>Carlos will request a snack by using pictures or words.</td>
<td>Home and childcare parents, childcare providers, siblings, peers and therapists</td>
<td>Visuals: Have pictures of his favorite food and drink items velcroed to the refrigerator door. Naturalistic Teaching &amp; Visuals: When Carlos stands by the refrigerator prompt him to look at the pictures and select what he wants. Once Carlos selects a picture model the verbal response “I want cereal” and immediately follow-up with the delivery of the requested item. Provide small snack portions to allow for multiple requesting opportunities.</td>
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<tr>
<td>Carlos will say “hi” and “bye” to people.</td>
<td>Carlos will respond to adult and peer greetings by waving.</td>
<td>Home and childcare parents, childcare providers, siblings, peers and therapists</td>
<td>Antecedent Package: Provide least to most prompting to respond (if Carlos does not respond to the greeting then verbally cue him to wave, if he does not respond provide physical assistance with the verbal cue). Before entering childcare remind Carlos that he is going to “wave hi” to the teacher and his friends. Peer Mediated: Childcare providers will remind two or three peers to come and greet Carlos each day.</td>
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<td>Priority</td>
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<tr>
<td>Carlos will play with toys like other kids his age.</td>
<td>Carlos will play appropriately with cause and effect toys, such as his “See and Say,” for 10 minutes.</td>
<td>Home and childcare</td>
<td>Naturalistic Teaching &amp; Pivotal Response Training: Provide multiple, desired toys for Carlos to play with. Follow cues to determine his favorite toy. Model: Adults and peers will model how to use the toy Carlos has selected. Peer Mediated: Have peers play with the chosen toys along with Carlos. Peers will provide assistance to Carlos to use toys appropriately. Peers will offer (share) play materials with Carlos.</td>
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<tr>
<td>Carlos will play with other children.</td>
<td>Carlos will accept toys from peers.</td>
<td>Parents, childcare providers, siblings, peers and therapists</td>
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<tr>
<td>Carlos will play with toys (including cleaning up)</td>
<td>Carlos will help clean up toys after playing with them.</td>
<td>Home and childcare, peers and therapists</td>
<td>Antecedent Package: Have clear plastic containers for each toy clearly labeled with pictures of the item. Provide least to most prompting to participate in cleaning up (adults will start with a verbal prompt and proceed to partial physical and full physical prompting only as needed).</td>
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<tr>
<td>Carlos will ask for what he wants.</td>
<td>Carlos will request one of his favorite videos</td>
<td>Home with mom, dad, sisters.</td>
<td>Antecedent Package: Carlos’ family has pictures of five of Carlos’ favorite videos. Peer Mediated: One of Carlos older sisters will present him with two video choices. Naturalistic Teaching: When appropriate, parents will follow Carlos’ lead prompting him to request a video when he shows interest.</td>
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**Case Study 2:**

**Nick.** Nick is a 32 month-old boy of recently divorced parents who have joint custody. He lives at home with his mother but spends Friday, Saturday and Wednesday nights with his father. Nick communicates effectively using three and four word phrases to request and comment. Nick also has some perseverative language and at times he recites scenes from favorite TV shows and movies. When he is doing this he is very hard to distract and redirect to something appropriate.

Nick appears to show interest in other children and watches them play although he seems to have trouble interacting with them. His parents report that he likes to play “his way” and attempts to redirect him generally result in Nick getting frustrated. When other children have toys or materials he wants he typically tries to take them by force but doesn’t usually use aggression. He simply tries to take the toy out of their hand and say things like “My Thomas!”

Nick’s parents also report a good deal of frustration with his ability to follow routines. Because of the recent separation, Nick’s routine is constantly changing and they report he has a difficult time with this. Bed time is especially difficult and his mom reports getting Nick to stay in his room and go to sleep is a nightly battle.
Based on this information gathered from the RBI and the About Our Child the following priorities were identified by Nick’s family; 1) using sentences when asking for things and reducing his scripting; 2) playing with other children and sharing toys; 3) following routines; and 4) staying in his room at bedtime.

Table 2. Nick’s “Established Interventions”

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<tr>
<th>Priority</th>
<th>Outcomes</th>
<th>Setting and Participants</th>
<th>Strategies and Methodologies</th>
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<tr>
<td><strong>Meals and Snacks</strong></td>
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<tr>
<td>Nick will use sentences to ask for what he wants.</td>
<td>Nick will ask for the food that he wants using complete sentences.</td>
<td>Home and childcare, Parents and childcare providers</td>
<td><strong>Naturalistic Teaching</strong>: Allow Nick to choose and request what he wants for breakfast. Prompt Nick to verbally ask for the desired food, “I want yogurt, please”, when given choice of foods.</td>
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<tr>
<td>Nick will follow a routine.</td>
<td>Nick will help clean up his dishes after eating.</td>
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<td><strong>Schedules</strong>: Use picture cues (sink) to remind Nick to bring his dish(es) to the sink.</td>
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<tr>
<td><strong>Play Time</strong></td>
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<tr>
<td>Nick will play cooperatively with other children.</td>
<td>Nick will request a turn with a toy during each playtime with others.</td>
<td>Home or Community with peers</td>
<td><strong>Naturalistic Teaching</strong>: Give peers one of Nick’s favorite toys. Prompt Nick to request the toy, “I want truck, please,” while putting out his hand or pointing to the toy.</td>
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<td></td>
<td>Nick will give a toy to a peer when requested during each playtime with others.</td>
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<td><strong>Peer Mediated</strong>: Adults will cue one or two peers to request toys from Nick.</td>
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<td><strong>Throughout the Day</strong></td>
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<td><strong>Antecedent Prompting</strong>: Adult will provide Nick with least to most prompting (use verbal prompting initially then partial physical assistance, then full physical assistance only if necessary) to give toys to peers and wait for another turn.</td>
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<td>Nick will participate in activities throughout the day.</td>
<td>Nick will be engaged in at least two activities during the day without reciting scenes.</td>
<td>Home or childcare</td>
<td><strong>Antecedent Prompt</strong>: Interrupt Nick, redirect to current task using most-to-least prompting. Praise after completion.</td>
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<td>Nick will participate in daily tasks.</td>
<td>Nick will take of his coat and shoes and wash his hands after he comes inside from playing outside.</td>
<td>Home with mom or dad</td>
<td><strong>Peer Mediated</strong>: Use peer to cue Nick to look at the toy.</td>
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<td><strong>Schedules</strong>: Use pictures of the three tasks that Nick has to perform: 1) take off coat, 2) take off shoes, 3) wash hands. Provide most to least assistance.</td>
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<tr>
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</table>
| Nick will follow the bedtime routine | Nick will complete his bedtime routine each night. | Home with mom or dad. | Behavior Intervention Package - PBS  
Antecedent prompt: Provide countdown to bedtime, 10 minutes, 5 minutes, 2 minutes. Provide least to most prompting to complete each step of the bedtime routine.  
Schedules: Show Nick his bedtime schedule and review the bedtime routine, 1) PJs picture, “We are going upstairs to put on PJs,” 2) Toothbrush picture, “then we are going to brush your teeth so they stay nice and healthy and shiny,” 3) Book picture, “then you get to pick a book, and 4) Sleep picture, “then it will be time to turn out the light.  
Consequence Strategy (Reinforcement): Provide praise for getting through each step of the routine. Once Nick is in bed he can pick which story he wants to hear. Use these books only for bedtime routine.  
Consequence Strategy (Redirection): If Nick leaves his room, matter-of-factly redirect him back to bed. Limit attention (eye contact, talking to him) to only what is necessary. Use positive language, (i.e., “you need to stay in bed.”). |
| Nick will sleep in and stay in his own bed. | Nick will sleep in his bed throughout the night. | | |

**Case Study 3:**

**Hannah.** Hannah is a 30 month-old girl who lives with her mother and father. She was just diagnosed with ASD although her parents had expressed concerns to their pediatrician starting at around 18 months. Hannah has good use of nouns to label and request objects, can use some verbs in two to three word combinations and also has a variety or rote phrases that she uses mostly out of context or to calm herself (e.g., “We don’t bite”, “I know what you mean” or “Don’t poke eyes”). Hannah demonstrates what her parents call selective hearing, at times responding well to their requests and at other times appearing to not hear them at all.

Hannah seeks out sensory input and likes to play with items like play dough and shaving cream and also likes activities like swings and jumping on the trampoline, but she demonstrates little functional play with traditional age appropriate toys like dolls or blocks. In social situations, Hannah, at times, approaches other adults, although she seems more hesitant with men than women. She generally shows little interest in other children her age, however, when peers initiate an interaction with her she often is aggressive trying to scratch or bite them. Hannah’s parents are hesitant to bring her to play with other children or take her to places other children go because of the likelihood of her biting another child.

Hannah gets very upset when her routine changes or she is asked to stop doing something she enjoys. At these times she generally falls to the ground, screaming or crying. In these situations when she is frustrated Hannah occasionally demonstrates self-injurious behavior including biting or scratching her arm and poking her eyes with her thumbs.

Based on this information gathered from the RBI and the About Our Child the following priorities were identified by Hannah’s family: 1) using sentences when asking for things and expressing herself when upset; 2) playing with toys and other children; 3) transitioning from one activity to another; 4) completing everyday routines and 5) decreasing self-injurious behavior.
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<tr>
<th>Priority</th>
<th>Outcomes</th>
<th>Setting and Participants</th>
<th>Strategies and Methodologies</th>
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<tbody>
<tr>
<td><strong>Dressing and Diaper Changes</strong></td>
<td><strong>Hannah will calmly transition to diaper changes.</strong></td>
<td>Hannah will remain calm while transitioning from the previous activity to diaper changing.</td>
<td><strong>Antecedent Package:</strong> Give Hannah a two minute warning before the diaper change. Use least to most prompting for diaper changes and dressing.</td>
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<td></td>
<td><strong>Hannah will complete an everyday routine.</strong></td>
<td>Hannah will help dress herself each morning.</td>
<td><strong>Schedules:</strong> Use Pictures of each article of clothing and a visual schedule for what Hannah needs to put on for dressing.</td>
</tr>
<tr>
<td><strong>Transitions</strong></td>
<td><strong>Hannah will move from activity to activity with getting upset.</strong></td>
<td>Hannah will successfully end one activity and move on to the next throughout the day,</td>
<td><strong>Schedules:</strong> Use pictures of daily activities/routines as a visual schedule. If Hannah protests during a transition use least-to-most prompting to have her check her schedule and review what she needs to do next.</td>
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<tr>
<td><strong>Meal Time</strong></td>
<td><strong>Hannah will be able to tell us what she wants to eat.</strong></td>
<td>Hannah will request foods using 3+ word sentences during meal time.</td>
<td><strong>Naturalistic Teaching:</strong> When Hannah requests food or drink, prompt her for a sentence by saying “I...” and using wait time. After two prompts accept her 1 or 2 word request.</td>
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<tr>
<td><strong>Play Time</strong></td>
<td><strong>Hannah will play cooperatively with others.</strong></td>
<td>Hannah will take turns in play with a peer or adult.</td>
<td><strong>Modeling:</strong> Adults and peers will model appropriate play for Hannah. Give play direction and use least-to-most prompting. Use preferred materials (sensory) and commenting to encourage joint attention around play materials.</td>
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<tr>
<td>Priority</td>
<td>Outcomes</td>
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<td><strong>Hannah will interact with other children.</strong></td>
<td>Hannah will independently say “hi” to a peer in response to the peer’s initiation. Hannah will accept an item from a peer.</td>
<td>Community Center playgroup with mom, teacher, and five peers</td>
<td><strong>Peer Mediated:</strong> Peers at the playgroup will be prompted to say “hi” to Hannah. Hannah will be verbally prompted by the teacher to respond by saying “hi” to the peer. In response to Hannah’s “Hi”, peers will give Hannah a small play dough container or other preferred sensory materials.</td>
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<tr>
<td><strong>Hannah will show that she has the skills that other children her age have.</strong></td>
<td>Hannah will identify 5 colors while at playgroup.</td>
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<td><strong>Naturalistic Teaching:</strong> Once Hannah has two or three play dough containers, the play group leader will use them to teach Hannah colors.</td>
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<td><strong>Hannah will have awareness of her environment.</strong></td>
<td>Hannah will identify where things are at playgroup through the understanding of 10 prepositions, such as beneath, over, under, etc.</td>
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<td><strong>DTT:</strong> One of Hannah’s IFSP team members (speech pathologist) will meet her at the playgroup on a daily basis. The SLP will join Hannah in her routine and will work on expanding vocabulary by asking Hannah and her peers to expressively identify prepositions in the environment.</td>
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<tr>
<td><strong>Hannah will participate in playgroup activities without screaming or injuring herself or others.</strong></td>
<td>Hannah will follow simple one-step directions during activities at playgroup. Hannah will remain calm when approached by a peer.</td>
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<td><strong>Positive Behavior Interventions and Supports:</strong> Give Hannah short, one-step directions, and to allow at least 5 seconds for her to respond. Teach peers to approach Hannah slowly making sure that she sees them coming toward her. Peers will give Hannah preferred sensory materials. If Hannah attempts to bite an adult will interrupt her, show her a picture of a stop sign and redirecting her to a different activity (such as completing a puzzle). Once calm she will be offered to engage in a preferred activity with the peer or adult that triggered the aggressive behaviors.</td>
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**Monitoring Progress**

The link between achieving good outcomes for infants and toddler with ASD and their families and the use of ongoing data collection is clear and undeniable. Every Established Intervention described above has only been used in conjunction with ongoing data collection. Within the context of early intervention for infants and toddlers with ASD careful progress monitoring is essential because:

- No practice is universally effective and thus there is a professional and ethical imperative to detect less than needed effects and change methods in a timely fashion.
- Many of the behaviors targeted for change (e.g., tantrums, self-injury, repetitive speech) with this population engender strong emotions in both families and providers by their presence or absence. Thus, it is essential to have methods for the objective measurement of behavior over time.
- Many Established Interventions rely on incoming data to make individualized modifications and accommodations to reach maximum effectiveness. That is, the best version of Incidental Teaching, for example, to teach language to Aaron is slightly different than the best version to teach language to Karen. Only by using ongoing data systems can providers hope to make these small but incredibly important variations for each child and family. Involvement of the family in reviewing data is important to ensure behavior changes are generalized across people and settings.

The challenge is to select measurement methods that yield meaningful data while at the same time not being too burdensome to all involved. In recent years a variety of relatively simple behavior rating scales have been utilized by parents and providers to achieve these dual purposes (Dunlap et al., 2010; Strain & Schwartz, 2009).

On the following pages is an overview of sample rating scales that have been used to track a wide variety of behavioral outcomes.
For use with general cognitive, adaptive, and self-help skills, a “Prompting Hierarchy Scale” is recommended. The categories in the hierarchy are:

4 = Child can complete the skill independently or when given a group direction.
3 = Adult points/gestures/models/or verbally directs the child to perform skill.
2 = Adult provides partial physical assistance to complete skill, but child can do some independently.
1 = Adult provides 100% physical (hand over hand) assistance to complete skill.
0 = Child refuses to perform skill; walks away; ignores adult; says “No”; tantrums.
N/A = No data for that session.

The contemporary level or criterion for each objective is set one level above the child’s current capability. For example, if the objective is to “remove socks and shoes”, and the child can currently take off his socks and shoes with partial assistance, then the level to be achieved is set at Level 3. Each time the child attempts the task a tick mark is placed by the level at which the task was performed. At the end of the day, providers or parents circle the level at which more tick marks were placed. If two levels receive the same number of tick marks, then the lower level is circled because the goal is for mastery. Once the child is at Level 3 for several (3-5) consecutive days the team should shift the criterion to Level 4 – independent performance.

For use with objectives where the basic goal is to have the child comply with a necessary routine such as diapering the following type of hierarchy scale is recommended. Just like the previous scale, an initial performance level is set one step above the child’s baseline performance and work continues until “independent” performance is achieved.
For use with objectives that involve verbal language production the following type of hierarchy scale is recommended. This is, of course, a version of a prompting hierarchy, but one specific to verbal behaviors where physical prompting is not possible.

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<tr>
<td>Requests breakfast items using 2-3 words sentences</td>
<td>Level: 3</td>
<td>Criteria: 5 sessions</td>
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4 = Nick requests items using 2-3 word sentences independently. No adult support is necessary.
3 = Adult shows Nick the breakfast item and provides a first word “I…” prompt.
2 = Adult models the desired response for Nick “I want waffle”.
1 = Adult accepts an easier response from Nick “Waffle”, or the use of a picture exchange or point.
0 = Nick refuses to request any of his favorite items, walks away, tantrums.
ND = No data for that session

For inappropriate or challenging behaviors we recommend tracking the behaviors based on a specific, observable dimension of the behavior and developing a unique key specific to the behavior.

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<tr>
<td>Screams Frequently</td>
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<td>Rarely Screams</td>
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Key: Screaming to protest (loud, inappropriate voice):
5 = 16 or more times
4 = 9-15 times
3 = 5-8 times
2 = 2-4 times
1 = 0-2 times

Making Smart Decisions about Data Systems
There are two sets of decisions that are crucial in using data. The first has to do with the frequency or intensity of data collection. While it is imprudent to offer fixed, theoretical guidance the Birth to Three System suggests the following considerations. First, if target behaviors are considered crucial to safety and well being (e.g., self-injury, running into street, hurting others) then the team should consider maximizing data collection resources accordingly. Second, anytime a new skill is targeted or a new tactic is implemented then the team should consider these events as occasions for more intensive data collection.
A second set of decisions center on the adoption of guidelines under which decisions are made regarding changes to intervention approaches. The goal here is to have a reliable system of data review in place such that children and families are not needlessly exposed to ineffective or less than optimal interventions. Many of the most widely researched and replicated models of early autism services (e.g., LEAP; Project Data, Walden Preschool, Princeton Child Development Center, etc) employ a very similar decision making system. Specifically, the operational rule is that the intervention team must meet to discuss potential modifications to any intervention after two weeks (10 successive data-days) of data indicating no progress or regression. In many cases, the outcome is not to abandon an approach but to see if it is being implemented faithfully, or if it needs to be “tweaked” to address some unique child need or preference.
References


Centers for Disease Control (2011). Autism spectrum disorders (ASDs): Study to explore early development


Mirenda & T. Iacono (Eds.), *Autism spectrum disorders and AAC* (pp.247). Baltimore: Paul H. Brookes.


<table>
<thead>
<tr>
<th>Appendix One</th>
<th>Mission of the Connecticut Birth to Three System</th>
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<tbody>
<tr>
<td>Appendix Two</td>
<td>IDEA Classification and DSM-IV Diagnosis Definitions</td>
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<tr>
<td>Appendix Three</td>
<td>M-CHAT, BITSEA, and CSBS-DP Checklists</td>
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<tr>
<td>Appendix Four</td>
<td>Screening and Assessment Instruments for Autism Spectrum Disorders</td>
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<td>Appendix Five</td>
<td>Medical Follow-up for Children Identified with ASD</td>
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<td>Appendix Six</td>
<td>Questions to Guide the Individualized Family Service Plan Planning Process for Children with Autism Spectrum Disorders</td>
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<tr>
<td>Appendix Seven</td>
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</tr>
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<td>Appendix Eight</td>
<td>Additional Resources</td>
</tr>
</tbody>
</table>
Appendix One

MISSION

The Mission of the Connecticut Birth to Three System is to strengthen the capacity of Connecticut’s families to meet the developmental and health-related needs of their infants and toddlers who have delays or disabilities. The system will ensure that all families have equal access to a coordinated program of comprehensive services and supports that:

- foster collaborative partnerships
- are family centered
- occur in natural environments
- recognize current best practices in early intervention
- are built upon mutual respect and choice

Partnerships: Effective supports for families depend on providers and families working closely with a variety of community, state and federal programs.

Family Centered: Evaluation, planning and services are designed around the family’s needs, concerns, and priorities and keep the whole family in mind.

Natural Environments: Providing services within activities that occur in the child and family’s home and community offers opportunities for the child to learn and practice new skills and participate more fully in his regular daily routine.

Best Practices: Research and laws continually require new approaches to services. Providers use up-to-date, effective service strategies.

Respect and Choice: Families choose their Birth to Three program. Decisions about services and supports reflect the family’s knowledge, beliefs, hopes, family characteristics and culture. Achievements are made by families and providers working together on the same level and recognizing that each has important information to share.
APPENDIX TWO

IDEA Classification and DSM-IV Diagnosis Definitions

The IDEA and its regulations provide the following broad definition of Autism: 34 CFR 300.8(c)(1) “Autism means a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three, that adversely affects a child's educational performance. Other characteristics often associated with autism are engagement in repetitive activities and stereotyped movements, resistance to environmental change or change in daily routines, and unusual responses to sensory experiences.” (1)

The Diagnostic and Statistical Manual-IV definition of autism is:

(I) A total of six (or more) items from (A), (B), and (C), with at least two from (A), and one each from (B) and (C)

(A) qualitative impairment in social interaction, as manifested by at least two of the following:
   1. marked impairments in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body posture, and gestures to regulate social interaction
   2. failure to develop peer relationships appropriate to developmental level
   3. a lack of spontaneous seeking to share enjoyment, interests, or achievements with other people, (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)
   4. lack of social or emotional reciprocity (note: in the description, it gives the following as examples: not actively participating in simple social play or games, preferring solitary activities, or involving others in activities only as tools or "mechanical" aids)

(B) qualitative impairments in communication as manifested by at least one of the following:
   1. delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication such as gesture or mime)
   2. in individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others
   3. stereotyped and repetitive use of language or idiosyncratic language
   4. lack of varied, spontaneous make-believe play or social imitative play appropriate to developmental level

(C) restricted repetitive and stereotyped patterns of behavior, interests and activities, as manifested by at least two of the following:
   1. encompassing preoccupation with one or more stereotyped and restricted patterns of interest that is abnormal either in intensity or focus
   2. apparently inflexible adherence to specific, nonfunctional routines or rituals
   3. stereotyped and repetitive motor mannerisms (e.g hand or finger flapping or twisting, or complex whole-body movements)
   4. persistent preoccupation with parts of objects
(II) Delays or abnormal functioning in at least one of the following areas, with onset prior to age 3 years:
  (A) social interaction
  (B) language as used in social communication
  (C) symbolic or imaginative play

(III) The disturbance is not better accounted for by Rett's Disorder or Childhood Disintegrative Disorder
Appendix Three

The M-CHAT, The BITSEA & The CSBS-DP

M-CHAT Modified Checklist for Autism in Toddlers

Please fill out the following about how your child *usually* is. Please try to answer every question. If the behavior is rare (e.g., you’ve seen it once or twice), please answer as if the child does not do it.

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does your child enjoy being swung, bounced on your knee, etc.?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Does your child take an interest in other children?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Does your child like climbing on things, such as up stairs?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Does your child enjoy playing peek-a-boo/hide-and-seek?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Does your child ever pretend, for example to talk on the phone or take care of dolls, or pretend other things?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Does your child ever use his/her index finger to point, to ask for something?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Does your child ever use his/her index finger to point, to indicate interest in something?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Can your child play properly with small toys (e.g., cars or bricks) without just mouthing, fiddling, or dropping them?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Does your child ever bring objects over to you (parent) to show you something?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Does your child look you in the eye for more than a second or two?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Does your child ever seem oversensitive to noise? (e.g., plugging ears)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Does your child smile in response to your face or your smile?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Does your child imitate you? (e.g., you make a face-will your child imitate it?)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Does your child respond to his/her name when you call?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. If you point at a toy across the room, does your child look at it?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Does your child walk?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Does your child look at things you are looking at?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18. Does your child make unusual finger movements near his/her face?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Does your child try to attract your attention to his/her own activity?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Have you ever wondered if your child is deaf?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Does your child understand what people say?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Does your child sometimes stare at nothing or wander with no purpose?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23. Does your child look at your face to check your reaction when faced with something unfamiliar?</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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The authors of the M-CHAT recommend conservative scoring rules in order to miss as few children on the autism spectrum as possible. Any child who fails three or more items on the entire M-CHAT, or two or more of the critical items should receive a comprehensive evaluation. The critical items are 2, 7, 9, 13, 14, and 15.
**The Brief Infant-Toddler Social & Emotional Assessment (BITSEA)**

(Briggs-Gowan & Carter, 2002) ©

---

**Child's birth date:**

*month* / *day* / *year*

**Today's date:**

*month* / *day* / *year*

**Sex of child:**
1: Boy  
2: Girl

**Your relationship to child:**
1: Mother  
2: Father  
3: Other

**Child's ethnicity:**
1: White/Caucasian  
2: Black/African American  
3: Hispanic/Latino  
4: Asian/Pacific Islander  
5: Native American/Eskimo  
6: Other: ________________________

---

**Instructions:**

This questionnaire contains statements about 1- to 3-year-old children. Many statements describe normal feelings and behaviors, but some describe things that can be problems. Some may seem too young or too old for your child. Please do your best to answer every question.

For each statement, please circle the answer that best describes your child in the LAST MONTH. Circle 0 to indicate “Not True or Rarely.” Circle 1 to indicate “Somewhat True or Sometimes.” Circle 2 to indicate “Very True or Often.”

Please choose the answer that best describes your child in the LAST MONTH:

<table>
<thead>
<tr>
<th></th>
<th>0 = not true/rarely</th>
<th>1 = somewhat true/sometimes</th>
<th>2 = very true/often</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shows pleasure when s/he succeeds (For example, claps for self).</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>2. Gets hurt so often that you can’t take your eyes off him/her.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>3. Seems nervous, tense or fearful.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>4. Is restless and can’t sit still.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5. Follows rules.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>6. Wakes up at night and needs help to fall asleep again.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>7. Cries or tantrums until s/he is exhausted.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. Is afraid of certain places, animals or things. What is s/he afraid of?</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>9. Has less fun than other children.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>10. Looks for you (or other parent) when upset.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>11. Cries or hangs onto you when you try to leave.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>12. Worries a lot or is very serious.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>13. Looks right at you when you say his/her name.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>14. Does not react when hurt.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15. Is affectionate with loved ones.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>16. Won’t touch some objects because of how they feel.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>17. Has trouble falling asleep or staying asleep.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>18. Runs away in public places.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>19. Plays well with other children (not including brother/sister). (N = No contact with other children)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>20. Can pay attention for a long time. (Not including TV)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>21. Has trouble adjusting to changes.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>22. Tries to help when someone is hurt. For example, gives a toy.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>23. Often gets very upset.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>24. Gags or chokes on food.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

The following questions are about feelings and behaviors that can be problems for young children. Some of the questions may be a bit hard to understand, especially if you have not seen them in a child. Please do your best to answer them anyway.

<table>
<thead>
<tr>
<th></th>
<th>0 = not true/rarely</th>
<th>1 = somewhat true/sometimes</th>
<th>2 = very true/often</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Imitates playful sounds when you ask him/her to.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>26. Refuses to eat.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>27. Hits, shoves, kicks, or bites children (not including brother/sister). (N = No contact with other children)</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>28. Is destructive. Breaks or ruins things on purpose.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>29. Points to show you something far away.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>30. Hits, bits or kicks you (or other parent).</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>31. Hugs or feeds dolls or stuffed animals.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>32. Seems very unhappy, sad, depressed or withdrawn.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>33. Purposely tries to hurt you (or other parent).</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>34. When upset, gets very still, freezes or doesn't move.</td>
<td>0</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

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Scoring Instructions:

1) Convert all “N” (no opportunity) responses to 0

   N responses are possible for the following two items:
   “Plays well with other children”
   “Hits, shoves, kicks or bites other children.”

2) Problem domain:
   Sum the responses to the following questions: 2, 3, 4, 6, 7, 8, 9, 11, 12, 14, 16, 17, 18, 21, 23, 24, 26, 27, 28, 30, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42

   If 6 or more problem questions are unanswered, we recommend that you do not use the problem sum.

3) Competence domain:
   Sum the responses to the following questions: 1, 5, 10, 13, 15, 19, 20, 22, 25, 29, 31

   If 2 or more competence questions are unanswered, we recommend that you do not use the competence sum.

Cutpoints:

   Problem scores that fall at or above the values listed below are considered high problems.
   Competence scores that fall at or below the values listed below are considered to indicate low competence.

<table>
<thead>
<tr>
<th>BITSEA Scale:</th>
<th>Girls Cutpoint</th>
<th>Boys Cutpoint</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problems</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-17 months</td>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>18-23 months</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>24-29 months</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>30-35 months</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td><strong>Competence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-17 months</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>18-23 months</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>24-29 months</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>30-35 months</td>
<td>15</td>
<td>14</td>
</tr>
</tbody>
</table>

Combining a child’s status on the Problem and Competence cutpoints provides most sensitive detection of problems and delays in competence. By combining cutpoints we mean that if a child has a high problem score and/or a low competence score s/he would be considered to screen positive on the BITSEA.

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<table>
<thead>
<tr>
<th><strong>Emotion and Eye Gaze</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you know when your child is happy and when your child is upset? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>2. When your child plays with toys, does he/she look at you to see if you are watching? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>3. Does your child smile or laugh while looking at you? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>4. When you look at and point to a toy across the room, does your child look at it? □ Not Yet □ Sometimes □ Often</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Communication</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Does your child let you know that he/she needs help or wants an object out of reach? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>6. When you are not paying attention to your child, does he/she try to get your attention? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>7. Does your child do things just to get you to laugh? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>8. Does your child try to get you to notice interesting objects—just to get you to look at the objects, not to get you to do anything with them? □ Not Yet □ Sometimes □ Often</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Gestures</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Does your child pick up objects and give them to you? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>10. Does your child show objects to you without giving you the object? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>11. Does your child wave to greet people? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>12. Does your child point to objects? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>13. Does your child nod his/her head to indicate yes? □ Not Yet □ Sometimes □ Often</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Sounds</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Does your child use sounds or words to get attention or help? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>15. Does your child string sounds together, such as uh oh, mama, gaga, bye bye, baba? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>16. About how many of the following consonant sounds does your child use: ma, na, ba, da, ga, wa, la, ya, sa, sha? □ None □ 1-2 □ 3-4 □ 5-8 □ over 8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Words</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>17. About how many different words does your child use meaningfully that you recognize (such as baby for bottle; gaggie for doggie)? □ None □ 1-3 □ 4-10 □ 11-30 □ over 30</td>
</tr>
<tr>
<td>18. Does your child put two words together (for example, more cookie, bye bye Daddy)? □ Not Yet □ Sometimes □ Often</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Understanding</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>19. When you call your child’s name, does he/she respond by looking or turning toward you? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>20. About how many different words or phrases does your child understand without gestures? For example, if you say “where’s your tummy,” “where’s Daddy,” “give me the ball,” or “come here,” without showing or pointing, your child will respond appropriately. □ None □ 1-3 □ 4-10 □ 11-30 □ over 30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Object Use</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>21. Does your child show interest in playing with a variety of objects? □ Not Yet □ Sometimes □ Often</td>
</tr>
<tr>
<td>22. About how many of the following objects does your child use appropriately: cup, bottle, bowl, spoon, comb or brush, toothbrush, washcloth, ball, toy vehicle, toy telephone? □ None □ 1-2 □ 3-4 □ 5-8 □ over 8</td>
</tr>
<tr>
<td>23. About how many blocks (or rings) does your child stack? □ Stacks □ None □ 2 blocks □ 3-4 blocks □ 5 or more</td>
</tr>
<tr>
<td>24. Does your child pretend to play with toys (for example, feed a stuffed animal, put a doll to sleep, put an animal figure in a vehicle)? □ Not Yet □ Sometimes □ Often</td>
</tr>
</tbody>
</table>

---

Information on scoring this instrument may be found at [http://firstwords.fsu.edu/](http://firstwords.fsu.edu/)
### Screening Instruments

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pervasive Developmental Disorders Screening Test-II, Primary Care Screener Siegel, B., (2004) PsychCorp</td>
<td>12-48 months</td>
</tr>
</tbody>
</table>

### Assessment Instruments

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Age Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Childhood Autism Rating Scale (CARS) Schopler, E., Reichler, R., &amp; Renner, B. (1988) Western Psychological Services</td>
<td>Ages 2 years and up</td>
</tr>
</tbody>
</table>
Appendix Five

Medical follow-up for children identified with ASD

This information is included to help parents and providers know what to expect in the course of medical follow-up for children with ASD. It may provide guidance about what kinds of questions to ask in order to understand and enhance the medical follow-up.

It is important to include the following in any developmental or family history:

- the level of developmental skills obtained
- whether there were any regressions in skill development, especially in language or social skill area
- a description of the quality of the child’s relationships and play
- unusual eating or feeding behavior
- unusual behaviors including motor stereotypes
- unusual sensory sensitivities or reactions
- history of medical events such as head trauma, infection, birth difficulty
- history of staring episodes or seizure disorder
- history of ear infections, gastrointestinal disturbances, or allergies
- family history of ASD, intellectual disabilities, Attention Deficit Hyperactive Disorder (ADHD), learning disabilities, Fragile X Syndrome, Tuberous Sclerosis, anxiety or depressive disorders or hearing impairment.

All referrals to medical specialists should be done through the child’s primary health care provider. Medical follow-up is very specific to the unique profile and needs of the child and family.

- Audiological assessment including Brainstem Evoked Response (BSER) if child is not otherwise testable
- Complete Blood Count (CBC)
- Lead level screening
- Dermatological/Skin exam to rule out Tuberous Sclerosis
- Fragile X testing in presence of significantly delayed development and if maternal family has history of learning disabilities, intellectual disabilities or attention disorders
- Genetic testing (chromosomal evaluation) in presence of significant delayed development, unusual facial or body features, or family history of ASD
- Referral for neurologic assessment in presence of staring, seizures, developmental regression. This should include evaluation of head circumference, muscle tone and motor asymmetries. The neurologist may order a 24 hour EEG if sleep deprived or a MRI if EEG is abnormal
- Referral to gastroenterologist in presence of history of gastrointestinal distress including chronic diarrhea, vomiting, constipation or abdominal pain.
• Referral to allergist if significant history of food allergies or eczema in child or very strong history of family history of allergic disorders

• Referral to nutritionist to oversee “elimination” diet if food allergy is diagnosed. Diet therapies most commonly involve the elimination of milk or wheat products from the diet. It is suggested that some young children with autism are allergic to milk and/or wheat and that eliminating these foods from the diet can result in an improvement in manifestations of autism. Most of the literature focuses on eliminating cow’s milk or casein and/or wheat products or gluten. If food allergies are documented, the child should be treated with standard allergy testing methods, including elimination diets. Since children with ASD often only eat a very small number of foods, it is important that a nutritionist be consulted before beginning any diet therapy, since one could be eliminating a child’s only source of important nutrients.
Appendix Six


The following checklist is provided for early intervention teams to guide the IFSP planning process for children with ASD in order to support the delivery of services that are comprehensive, individualized, evidence-based and of sufficient intensity:

<table>
<thead>
<tr>
<th>Question</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have assessment strategies been utilized to document the child and family needs identified in the IFSP that are:</td>
<td></td>
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<tr>
<td>a) Specific (observable, measurable, and valued by adult family members).</td>
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<tr>
<td>b) Functional (related to specific skills that help the child access everyday life)?</td>
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<tr>
<td>2. Are there evidence-based strategies in place that:</td>
<td></td>
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<tr>
<td>a) address each area of need identified by the team?</td>
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<tr>
<td>b) include functional outcomes addressing the defining characteristics of ASD (communication, social skills, and behavioral concerns)?</td>
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<tr>
<td>c) specifically addresses the child and family being successful with daily routines (e.g., dressing, feeding, bedtime, community outings, etc.)?</td>
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<tr>
<td>d) include strategies to equip family members with the information and skills needed to provide consistency in intervention when early intervention providers are not present?</td>
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<tr>
<td>3. Has the IFSP team carefully considered the following taking into account the child’s developmental availability for intervention and the families dynamics and available resources:</td>
<td></td>
</tr>
<tr>
<td>a) What early intervention services are needed to implement the evidence-based practices?</td>
<td></td>
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<tr>
<td>b) Who will deliver the services?</td>
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<tr>
<td>c) Where the services will be provided?</td>
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<tr>
<td>d) When and how frequent the services will occur?</td>
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<tr>
<td>e) What available funding sources will be accessed?</td>
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<tr>
<td>4. Are the proposed providers fluent with the evidence-based practices to be delivered? If not, what plans are in place to provide training, supervision or coaching for those providers?</td>
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<tr>
<td>5. Is there a plan in place whereby multiple providers, if utilized, meet frequently to communicate, plan logically consistent services and review progress?</td>
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<tr>
<td>6. Do the planned strategies include an ongoing data collection system and clear decision-making guidelines regarding the continuation or modification of the plan that results in progress for meeting child and family outcomes?</td>
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</tbody>
</table>
### Appendix Seven

**About Our Child Questionnaire**

#### Area

<table>
<thead>
<tr>
<th>Area</th>
<th>What our child knows or already does in this area:</th>
<th>Skills we would like our child to learn in this area:</th>
<th>Priority Level (low, medium or high)</th>
<th>We would like information about this</th>
<th>We would like to work on this at home</th>
<th>We would like strategies for teaching this</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Play Skills</strong></td>
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<tr>
<td>(skills such as appropriate toy play, sharing, taking turns, playing by self, playing with other children...)</td>
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<tr>
<td><strong>Language &amp; Communication</strong></td>
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<tr>
<td>(skills such as communicating needs, following directions, listening skills, concepts such as in, on, up, down...)</td>
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<td><strong>Adaptive / Self Help</strong></td>
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<tr>
<td>(skills such as dressing, undressing, zipper, buttoning, toilet training, sitting or standing at potty, toileting schedule...)</td>
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<tr>
<td><strong>Meal Time</strong></td>
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<tr>
<td>(skills such as eating with utensils, eating more of a variety of foods, pouring juice, eating more slowly, table manners...)</td>
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<tr>
<td>Area</td>
<td>What our child knows or already does in this area:</td>
<td>Skills we would like our child to learn in this area:</td>
<td>Priority Level (Low, medium or high)</td>
<td>We would like information about this</td>
<td>We would like to work on this at home</td>
<td>We would like strategies for teaching this</td>
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<tr>
<td>Bath time</td>
<td>(skills such as sitting (staying) in the tub, washing self, combing hair, brushing teeth....)</td>
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<tr>
<td>Community Activities</td>
<td>(skills such as shopping with family members, eating out in restaurants, riding in the car...)</td>
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<tr>
<td>Cognitive</td>
<td>(skills such as understanding cause and effect, identifying numbers, letters, colors, shapes; sorting objects...)</td>
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<tr>
<td>Motor</td>
<td>(skills such as running, jumping, playing ball, coloring, building with blocks...)</td>
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<tr>
<td>Behavior</td>
<td>(Behaviors that interfere with learning or that you would like your child to do less often...)</td>
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<td></td>
</tr>
</tbody>
</table>
Appendix Eight

Additional Published Resources


Maurice, C., Green, G., & Luce, S. (Eds.) (1996). Behavioral Interventions for Young Children with Autism, A Manual for Parents and Professionals. Austin, TX, Pro-Ed.


Southeastern Regional Education Service Center, Inc., (2001). *Decision Maker’s Tool Kit – For Those Who Live and Work With Young Children With Autism/Pervasive Developmental Disorders*. Perry, NH: SERESC. Cwoodman@seresc.net


