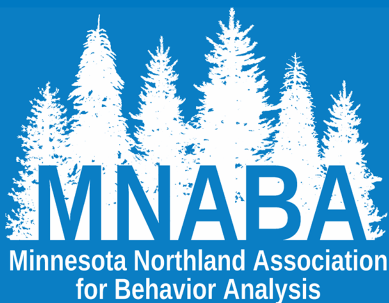
Standards of Practice for Applied Behavior Analysis in Minnesota



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Part I. Executive Summary

What is Applied Behavior Analysis?

Applied Behavior Analysis (ABA) is a set of rigorous, data-driven practices grounded in over 40 years of peer-refereed evidence in the treatment of disordered behavior and skill deficits. Using the relationship between human behavior and its environmental antecedents and consequences as the basis for assessment and intervention, the impact of ABA has been demonstrated in clinical settings, homes, schools, community, and the workplace, and across age and ability spectrums. Currently ABA is prevalent in the treatment of autism spectrum disorders but is also a critical component of successful intervention in traumatic brain injury, disruptive and oppositional behavior disorders, and intellectual and developmental disabilities.

Outcomes of ABA-based Treatments

Treatments based in ABA are cost-saving investments that are proven to improve the lives of individuals with complex disabilities and promote the independence of families. When ABA is practiced by appropriately trained professionals (Board Certified Behavior Analysts and other licensed mental health professionals with stated competency in ABA), it results in decreased medical needs and decreased reliance on paid supports, creating enormous cost savings over the lifespan.

ABA in Minnesota

Minnesota has a strong legacy of support for and leadership in behavior analysis. At the University level, B.F Skinner did some of his seminal studies while at the University of Minnesota; St. Cloud State University became one of the first programs to offer course sequences for professional training in ABA approved by the Behavior Analyst Certification Board (BACB) . The state Department of Human Services was an early adopter of ABA in the treatment of people with complex disabilities, formally incorporating ABA into state services in the 1980s. In recent years, Minnesota's school districts have created professional positions for Behavior Analysts. Positive Behavior Support, a framework for the application of behavior analysis, is being implemented in Minnesota schools by the Department of Education and in home & community-based settings by the Minnesota Department of Human Services.

ABA Across the United States

Nationally and internationally, the practice of ABA is increasing. The professional base of Board Certified Behavior Analysts now includes over 10,000 certificants in 40 countries worldwide. Over 30 states in the U.S. now recognize BCBAs as licensed professionals who are third-party billable. Board

Certification requires a masters' degree including 245 hours of coursework (in assessment, treatment, single-subject experimental design, and ethics) and 1500 hours of supervised practice. The Behavior Analyst Certification Board issued comprehensive conduct guidelines for the practice of behavior analysis in 2004, which were updated in 2010. The Association for Applied Behavior Analysis International (ABAI), the Association for Professional Behavior Analysts (APBA), and state chapters of ABAI and APBA around the United States have called for specific practice standards including credentialing of Behavior Analysts by the BACB to ensure a high quality of service for consumers.

Purpose of this Document

As the technology of behavior analysis has been adopted across professions and the consumer base has widened, it has become necessary to articulate what behavior analysis is and who is qualified to practice behavior analysis in the public domain. Many common parenting, educational, and therapeutic strategies developed by behavior analysts enjoy widespread use (e.g. positive reinforcement, task analysis, exposure therapies).

This document has been developed to provide consumers, policy makers, and funding agencies critical information about essential components of ABA-based interventions (i.e., what ABA is) and the professionals allowed to call themselves Behavior Analysts and claim to practice 'ABA' or 'Behavior Analysis' (i.e., who can offer ABA services to the public). The science of behavior and applications for consumers has advanced dramatically since the field of ABA emerged in 1968. To protect consumers and ensure correct application of ABA techniques, the terminology must be standardized and carefully defined in accordance with scientific and clinically standard terms in the field. For example, a Behavior Analyst practices the science of Behavior Analysis. The term 'behavior modification' is outdated and should no longer be used; 'behavior therapy' is non-specific and does not necessarily refer to the science of Behavior Analysis.

The Importance of Establishing Applied Behavior Analysis in Benefit Sets

We contend it is more consistent with a mission to improve the lives of people with mental health disorders to manage treatment outcomes than treatment processes. Treatments based in ABA are individually-tailored and produce outcome data that ensure accountability to consumers and funders. ABA-based treatments have empirical bases for efficacy across a wide range of disorders and when the treatment is effective, the data support it. When treatment is not effective, the data are clear about that too. Behavior Analysts request additional funding for effective treatment, and refer to other providers when their treatment is ineffective.

The burgeoning demand for services for people with mental health disorders, coupled with limited health care dollars, renders critical the expectation for rigorous outcome measurement by all service providers. Justifying health care expenditures is best done through objective outcome data, rather than simply ensuring that people have access to services designed ostensibly for their diagnostic category, even those with empirical support for the treatment of specific disorders. Providers of ABA-based treatments are leaders not only in developing and using evidence based practices but also in demonstrating those practices are effective with each individual for whom they are brought to bear, and seeking alternatives for the consumer when the data do not support continuation.

Associated with the burgeoning demand for services is the lack of available mental health resources, including Behavior Analysts, throughout Minnesota. The Minnesota Department of Health designates 9 of the 11 regions in Minnesota (and 70 of Minnesota's 87 counties) as meeting federal criteria for mental health professional critical shortage areas. Specific reimbursement models are needed in order to enable professional outreach to rural areas, and to challenging urban environments.

How ABA Can Contribute to Cost Savings in Minnesota

In addition to its clinical effectiveness, Comprehensive ABA reduces total cost of care for children with ASD across the lifespan. In a 2007 study by Chasson, Harris, and Neely, costs associated with Comprehensive ABA were compared with special education costs in the state of Texas. Results indicated that Texas would save $208,500 per person across eighteen years of Comprehensive ABA. Based on approximately 10,000 children with autism in Texas, a total savings of $2.09 billion was estimated.

In 1998, Jacobson, Mulick, and Green estimated that individuals diagnosed with autism or other pervasive developmental disorders require specialized services costing approximately $4 million per person over their lifetimes. With the implementation of Comprehensive ABA, savings of between $1 million to over $2 million per individual were estimated across their life span.

In 2006, researchers in Ontario, Canada completed a study to determine the cost-effectiveness of expanding Comprehensive ABA treatment to all children diagnosed with autism (Motiwala, Gupta, Lilly, Ungar, and Coyte, 2006). Results indicated that "total savings from expansion of the current program were $45,133,011 in 2003 Canadian dollars" (p. 136). In addition, the authors stated that "expansion of IBI [intensive behavioral intervention, synonymous with Comprehensive ABA] to all eligible person represents a cost-savings policy whereby total costs for care of autistic individuals are lower and gains in dependency-free life years are higher" (p. 136).

Regardless of the many factors underlying the current increases in autism diagnosis, the extent to which early intervention including Comprehensive ABA prevents a person from needing these expensive services can result in tremendous cost savings as well as reducing the number of people who will require life-long intensive care and treatment.

Recommendations

1. Establish Applied Behavior Analysis as covered treatment in the benefit sets for children, adolescents, and adults with developmental and mental health disorders.
2. Require any professional using the title 'Behavior Analyst' or claiming to practice 'Applied Behavior Analysis', 'Behavior Analysis', or 'ABA' to be either (a) credentialed by the Behavior Analyst Certification Board as a Board Certified Behavior Analyst (the educational and experiential requirements are available at *http://www.bacb.com/index.php?page=158* or (b) have Applied Behavior Analysis listed on competencies filed with that professional's relevant licensing board.
3. Establish the Board Certified Behavior Analyst as a sufficient credential for third-party reimbursement.
4. Work with the MNABA to employ methods derived from current best practices in ABA to evaluate outcomes for individual recipients of mental health treatment that will ensure that appropriate, cost-effective services are provided to consumers.
5. Use MNABA and other nationally-recognized expert resources such as the Association of Professional Behavior Analysts, the Behavior Analysis Certification Board, and the Association for Behavior Analysis International, to identify qualified experts for prior review activities that can help determine appropriate, cost-effective services for consumers.

Part II. Standards for Service Delivery

Treatment Consultation to Parents and Professionals: Mediator Models for Intervention Across the Lifespan

These services are time-limited and achieve clinical outcomes for the person with a disability through enhancing the skills of the most relevant 'mediators' in the person's life, such as parents (see Appendix 1) or professionals in the home, school, or community (see Appendix 2). In doing so, the contextual fit and sustainability of the treatment, and therefore quality of life for the family and stakeholders, improve. Working effectively with mediators to develop and implement high-quality treatment plans, and achieve clinically significant behavior change, requires expertise in behavior analysis applied at the level of the person and at the level of the mediator. This model does not include direct service to the person with disabilities.

What Clinical Activities are Involved?

The clinical focus of a mediator model is empowering the mediator to develop and implement treatment plans that they can sustain in the absence of clinical support. Mediator input is therefore critical at all phases of service—the goal is not simply knowledge transfer from Behavior Analyst to mediator, but a mediator-professional partnership in which the Behavior Analyst's expertise in ABA is combined with the mediator's expertise of the family and the context to produce a desirable and sustainable outcome. A key assumption is that behavior change of the person with a disability is accomplished through the mediator changing his/her behavior. To accomplish this, a functional assessment of mediator behavior should occur in addition to functional assessment of the focus person's behavior. A functional assessment includes interviews and observations (described below) that are aimed at understanding the relationship between environmental circumstances and the behaviors of interest. Conducting functional assessments is one of the core skills of a Behavior Analyst.

Mediator models of service should include the elements listed below. It is expected that individual service providers will have varied emphases but generally design their services and address the needs of unique populations (e.g., mediators with disabilities) within this framework, contributing their results to the growing evidence base.

1. **Functional assessment of the person's and the mediator's behavior (interview and direct observation).** Functional assessment results are then linked directly to intervention components, and are developed in conjunction with mediator.
2. **Hands-on coaching and feedback to develop the mediators as skilled interventionists.** Mediators are coached, in the natural environment, using a combination of verbal prompting, gestural prompting, and descriptive feedback. Mediators should be challenged to identify what they did well and what aspects of the intervention plan they could improve upon in the coming observation interval.
3. **Tailoring technically-sound behavior analysis interventions into the intervention context.** This is the heart of the mediator-professional relationship. The proposed plan must be technically correct (an intervention that fits the findings of the assessment) and must also involve the mediators to ensure a fit between the intervention and the context. Over time the mediator will take a more active and independent role in implementation. Without this contextual fit, a technically correct intervention will not be adhered to over time and will not sustainably improve the quality of life for the person, family, classroom, roommates, or other stakeholders.
4. **Data-based decision-making.** Mediators will collect data on a regular schedule so a record of the person's challenging and desirable behavior is available to judge the effectiveness of the intervention plan in the absence of daily staff supports. This record of mediator adherence to the plan in the absence of clinical staff should be available to compare to the observations of the clinical staff.
5. **Regular data review and intervention development.** Data-based decision-making is standard for any behavior analysis service, but should also be a training focus for mediators in a mediator model of service. A desirable outcome should be mediator independence in data summary and interpretation, as well as intervention development.
6. **Adherence in the absence of clinical support.** Mediators are encouraged to leave each meeting with the clinical team having made a verbal commitment to a plan of action (e.g. "say what you will do")until the clinical team returns. At the next visit this is the first focus of the mediator/clinician data review (e.g. "How well do the data you collected show that you did what you said you would do.") If they did not do what they said they'd do, the clinician's job is to determine with the mediator what barriers were in the way, and uncover solutions to those barriers so the mediator can be more successful/adherent to what they say they'll do in the coming days and weeks. If they implemented the plan as designed, the data will provide strong evidence of intervention efficacy or need for further tailoring.

Who Should Receive These Services?

Mediators of individuals with severe emotional disturbances who commit to a mediator-focused intervention in which they will be the focus of clinical attention on behalf of the person in their care should participate in this model of service. Determining if a mediator-focused intervention will be a good fit should be accomplished via rigorous screening. Screening should address —

- Mediator capacity to participate in mediator-focused intervention. Determine if life context (e.g., marital relationship, job/financial status, family/friends stressors, sibling concerns, etc) or work context (supportive school or agency administration/co-workers, sufficient paraprofessional staffing, limited upcoming turnover, etc) supports enrolling in the service.
- Mediator preference for an intensive mediator-focused intervention. Is it appealing for the mediators, or do they prefer a therapy focused on the person with a disability?
- Barriers that may exist, currently or in the near future, to persistent participation in the service (upcoming long vacations, other conflicting therapies).

- Whether mediator-focused intervention can successfully address the needs of the person with a disability.

It is important to note that if mediators are desperate for services they may be inclined to give the 'right' answers to screening questions and enroll in a service that is too intensive, inconsistent with their parenting/teaching/professional philosophies, or ill-timed given other responsibilities and stressors in their lives or workplace. Well-meaning but inexperienced or poorly trained clinicians may enroll clients who will not or cannot benefit from mediator-focused training.

How Often Should a Specific Service be Provided?

Two 3- hour sessions, 1-3 times per week. More/longer sessions may be required in high-needs cases (e.g., multiple person being served in the same environment). Mediators should commit to a minimum length of participation in the service to master all components of the particular curriculum. Prior to fading the intensity of services, the person's behavior should be improved in key routines in the training environment and generalization environments that are important to them and their stakeholders. Ideally, mediators should have contributed substantially to the development of the intervention plans for at least 1 routine without assistance from the clinical team.

How to Ensure that Services are Useful and Effective

Prior to enrolling in any mediator-focused service, a rigorous screening-in process should occur to ensure the service is a good fit for all involved, and that the mediator is willing and able to commit the time required to complete the program or full scope of the service. Screenings can include phone and/or in-person conversations.

The intervention plan should be based on a comprehensive functional assessment, including at minimum a functional assessment interview and direct observation of behavior. The intervention plan should be developed collaboratively with mediators (and the person, if able) and guided directly by the information gained in the functional assessment process. The plan should identify general goals, specific objectives, measurable outcomes, and level of service for consumers and for mediators of the intervention.

Before making a determination to continue, modify, or terminate services, objective measures of the behaviors (e.g., frequency, duration, or intensity) identified in the agreed-upon treatment plan must be available for review. Measures of the mediator's treatment plan implementation across relevant environments to help ensure generalization and/or maintenance of learned skills should also be reviewed. Commercial and non-commercial quality-of-life measures can also assist in determining the overall impact of the service on the person and the family/classroom/residence in which they function. Periodic summative data evaluation should be conducted every 6 months to determine the ongoing fit of, and medical necessity for, the intervention.

Service coordination is a responsibility of Behavior Analysts. In this capacity Behavior Analysts will be in contact with other mental health professionals, medical professionals, and related therapists who are currently involved with the person's care and treatment. A primary strength of a behavior analysis service is the use of behavioral baselines that can serve as a record of treatment effectiveness for the individual and combined effects of the treatments the person is receiving. These other treatments can inform treatment goals for the behavior analysis service (e.g., if a person is receiving counseling and is working on expressing feelings with a counselor, the Behavior Analyst can work with the mediators to create the conditions for practicing the expression of feelings and record data on the behavior during naturally-occurring opportunities throughout the day).

The Behavior Analyst should be informed about other clinical service options in the community and available supports that might help to make the mediator-focused ABA service realistic for a family with substantial barriers to participation in such a service. For example PCA or respite services may be important to include in order for mediators to make time for mediator-focused training. In turn, they may need to train PCA and respite staff to implement any successful intervention to ensure maximum benefit of the intervention for the person.

When there are questions about the appropriateness or efficacy of services, these should be reviewed by an expert panel of Behavior Analysts and other professionals.

What Qualifications and Performance Standards are Required of the Service Providers?

The qualifications of those conducting assessments, developing treatment plans, and providing consultation, parent education/training, ongoing monitoring and supervision of behavioral services should be —

- [Preferred] Board Certified Behavior Analysts (BCBA) or be enrolled in formal academic and supervision program leading to BCBA
- If not a BCBA, then 1) Master's degree in a related field, 15 units of graduate level coursework in behavior analysis or 2) licensed or certified in related field with behavior analysis in its scope of practice.
- In addition, 3–5 years of experience delivering and supervising treatment programs for person, adolescents, and adults with developmental disabilities, or licensed or certified in related field with behavior analysis as its scope of practice (e.g. licensed speech therapist with specialized training in ABA).

Responsibilities and Training of Parents and other Mediators of Treatment

Mediator models of ABA services involve full commitment to participation and leadership in the treatment by the mediator. The treatment will of limited benefit otherwise.

Self-Directed or Self-Determination Option for These Services

A great strength of an applied behavior analysis service is the use of objective behavioral baselines that can be used to evaluate the individual and combined effects of the variety of interventions often utilized by person with complex behavioral and mental health needs. A Behavior Analyst should involve parents in summarizing the data they collect, interpreting it, making decisions about next steps based on it, and designing new support plans for routines/situations they and their person would like to improve. Often the data will reflect the person's response to more than one treatment - person may be involved with medical treatment, occupational therapy, speech therapy, counseling, etc. Parents should be encouraged to work with all of their person's clinicians to start/stop/adjust treatments with reference to the behavioral baselines so a proper evaluation of the impact of the treatment can be made. In the best case, the behavior analyst properly prepares the parent to have effective data review and treatment planning conversations with each of their person's clinicians. By virtue of participating in an applied behavior analysis service and developing an understanding of data-based evaluation of treatment effects, parents should be empowered members of any treatment team making decisions on behalf of their person and family.

At the conclusion of the service, person should experience improved behavioral repertories and parents should experience greater independence in developing interventions, interpreting data, and making data-based decisions about next steps. In the best case, parents should be afforded the chance to systematically train support staff implement the effective interventions.

In this spirit, as much as parents care to expand and generalize effective interventions, they can and should cover more and more of the person's day, and additional specific interventions should be developed to address the key routines of the day that require attention. It is recommended that, for person with severe challenging behavior, intervention begin in the home setting and generalize to community locations when an effective plan has been established. Parents should feel comfortable and confident implementing behavior analysis interventions prior to using them in the community. Responding effectively to challenging behavior should be established in their repertoires. The person's challenging behavior should be under effective stimulus control of the intervention plan's key components prior to attempting to use the plan in the community. Exposure to the community should initially be brief to ensure success, gradually fading in time spent in community based on success. Following these guidelines emphasizes the safety of the person, the effectiveness of the plan, and builds a history of success for the parent.

Focused Behavior Intervention

These models of intervention focus on the remediation of specific behavioral challenges that limit the safety, quality of life, or independence of person (and often the people they live and interact with). These services differ from consultation and mediator training in that they not only provide support to the parent or professional, but also direct therapy to the person. Depending on the nature of the clinical challenges and the existing capacity of the mediators, the duration of these services may be longer or shorter than the mediator model and more or less intensive (see Appendix 3).

Who Should Receive these Services?

People whose mental health symptoms include behavioral challenges (e.g., aggression, self-injury, noncompliance) in specific routines (e.g., toileting, dressing, feeding) that threaten the health or safety of the person or others and act as a barrier to the person's ability to remain in the least restrictive setting, limit participation in family, social, and community life, and restrict overall independence.

As is the case with any ABA-based service, Focused Behavioral Intervention is not specific to a particular disorder or age range. Although the presence of aberrant behavior is commonly used to identify appropriate consumers of Focused Behavior Intervention, the absence of appropriate behaviors must also be considered when determining who should receive such services. Therefore, individuals who require skill building are also appropriate for this service.

How Often Should a Specific Service be Provided?

Behavioral services should be individualized to the consumer's needs and be based on the presenting problem behavior's function as well as its frequency, duration and severity, as well as breadth and impact of skill deficits.

Accordingly, Focused Behavioral Intervention services may range from a weekly minimum of 2 hours of parent education/training along with 2–4 hours of direct therapy with the person to 20 hours a week of a combination of parent and person-focused therapy. Services are typically provided for 6 months to 2 years.

How to Ensure that Services are Useful and Effective

Focused Behavioral Interventions are designed to decrease aberrant behavior related to the developmental and mental health disorders of children, adolescents, and adults, and equip them with critical social and adaptive skills in order to fully participate in family and community life. These services also rely on properly preparing mediators to use positive behavior management strategies effectively. Focused Behavioral Interventions services are tailored to the individual needs of the consumer.

Before making a determination to continue, modify, or terminate services, objective measures of the behaviors (e.g., frequency, duration, or intensity) identified in the agreed-upon treatment plan must be available for review. Measures of the mediator's treatment plan implementation across relevant environments to help ensure generalization and/or maintenance of learned skills should also be reviewed. Standardized and non-standardized, quantitative quality-of-life measures can also assist in determining the overall impact of the service on the person and the family/classroom/residence in which they function. Periodic summative data evaluation should be conducted every 6 months to determine the ongoing fit of, and medical necessity for, the intervention.

A functional behavioral assessment (evaluation of environmental/behavior relations using observations, interviews and record reviews) or functional analysis (evaluation of environmental/behavior relationship by structured manipulation of the environment) of the problem behavior(s), and adaptive behavior assessment (evaluation of preexisting levels and types

of behaviors that could replace problem behavior), should be conducted and used to develop an appropriate treatment plan. The treatment plan should identify general goals, specific objectives, measurable outcomes, and level of service for consumers and for their parents and/or primary caregivers. Formative data should be collected on a daily basis and evaluated at least every 2 weeks to and used to determine short-term next steps in treatment. Periodic summative data evaluation should be conducted every 6 months to determine the ongoing fit of, and medical necessity for, the intervention. The plan should also indicate that the consumer would be a good candidate for Focused Behavior Intervention, and that the family/caregiver agrees to participate in and implement, as appropriate, the recommended treatment plans.

Mediator involvement throughout the delivery of intervention will enhance treatment effectiveness. Mediators (family members, professionals, paraprofessionals, etc) must receive training in order to assist in maintaining benefits of treatment outside regular therapy sessions. Clinicians should help design training materials, instruction sheets and data collection forms that are user-friendly for mediators and provide them with structured opportunities to practice the new skills they are developing as part of their person's intervention program.

When there are questions about the appropriateness or efficacy of services, these should be reviewed by an expert panel of Behavior Analysts and other professionals.

What Qualifications and Performance Standards are Required of the Service Providers?

The qualifications of those conducting assessments, developing treatment plans, and providing consultation, parent education/training, ongoing monitoring and supervision of behavioral services should be —

- [Preferred] Board Certified Behavior Analysts (BCBA) or be enrolled in formal academic and supervision program leading to BCBA
- If not a BCBA, then 1) Master's degree in a related field, 15 units of graduate level coursework in behavior analysis or 2) licensed or certified in related field with behavior analysis in the scope of practice within that field.
- In addition, 3–5 years of experience delivering and supervising treatment programs for person, adolescents, and adults with developmental disabilities, or licensed or certified in related field with behavior analysis as its scope of practice.

The qualifications of those providing intensive services directly to the person should include —

- [Preferred] Bachelor's degree in psychology, Board Certified Assistant Behavior Analyst (BCaBA), or a related field with relevant experience.
- If no Bachelor's degree, then a high school diploma with competency-based training, and in all cases with regular on-site supervision and a background check.

Responsibilities and Training of Parents and Other Mediators of Treatment

Mediator training (e.g., implementation of the treatment plan, generalization and maintenance of acquired skills) is an integral part of Focused Behavioral Intervention and must occur in order for the full benefits of the intervention to be realized. Training should be provided at least bi-weekly.

Self-Directed or Self-Determination Option for These Services

It would be difficult for most families to readily determine the necessary training and experience for professionals qualified to provide ABA treatment.

Comprehensive Applied Behavior Analysis Treatment

Comprehensive ABA is well documented in more than 500 studies and multiple task force reports as the most effective and well-established treatment for individuals with autism spectrum disorders (ASD). It is important to emphasize that Comprehensive ABA is not long-term caretaking—it is an intensive approach that has been empirically demonstrated to remediate the core symptoms of autism to a greater extent than any other intervention through its high-dose treatment methodology, intentional generalization from the treatment setting to the natural environment, and frequent use of data-based decision-making.

Comprehensive ABA is a medically-necessary treatment for autism that has the unique potential to restore normal functioning. Numerous national and state task forces endorse ABA as having the strongest evidence of efficacy to consistently produce meaningful benefits to children diagnosed with ASD, reflecting the established and growing body of peer-reviewed literature. The list below is only a sample of national support for the effectiveness of a Comprehensive ABA approach for the treatment of autism —

- U. S. Department of Health and Human Services (1999) Mental health: A report of the surgeon general *http://www.surgeongeneral.gov/library/mentalhealth/chapter3/sec1.htmlwww.surgeongeneral.gov/library/mentalhealth/chapter3/sec1.html*
- American Academy of Pediatrics (2012) *http://www.healthychildren.org/English/health-issues/conditions/developmental-disabilities/Pages/Autism-Spectrum-Disorders.aspx*
- National Autism Center (2009), National Standards Report *http://www.nationalautismcenter.org/pdf/NAC%20Findings%20&%20Conclusions.pdf*
- Centers for Medicare and Medicaid for the U.S. Dept. of Health and Human Services (2010)*http://www.impaqint.com/files/4-Content/1-6-publications/1-6-2-project-reports/FinalASDReport.pdf*

Who Should Receive These Services?

Children with a diagnosis of ASD who display significant delays in development as well as severe behavior disorders are appropriately treated with Comprehensive ABA treatment. The disorder is so severe that the children are unlikely to a) be safe in the home or community; b) attain normal developmental milestones; or c) succeed in a regular classroom without substantial one-to-one support.

Comprehensive ABA treatment is only appropriate for children for whom the goal of treatment is to restore normal functioning as much as possible, and who demonstrate strong response to treatment on objective quantitative measures. While the age range of person benefitting from Comprehensive ABA treatment has been thoroughly studied with persons aged between one to 12 years, existing data suggest response to treatment can be evaluated after six months of treatment and that age at intake is not necessarily a predictor of treatment response. For children whose six month learning pattern suggests a positive response to this treatment package, the range in duration of treatment can be six months to five years, with an average of three years.

How Often Should a Specific Service be Provided?

Comprehensive ABA (appendix 4) is typically delivered intensively in the home or center, directly to the child, at as young an age as is possible (ideally commencing prior to age 4). Treatment requires many of hours of service weekly and may last in duration for 1–5 years. The research supports 10–60 hours per week (3–12 hours daily, 5–7 days/week), depending on the needs of the child. The intensity of treatment is gradually increased over the first six months and is often faded during the last course of treatment. This service is delivered to consumers in rural areas in an outreach model (appendix 5) with hours per week often determined by proximity to a provider.

Because these services are aimed at remediating all symptoms of the mental health disorder of autism (challenging behavior, skill deficits) that impact almost all areas of development, the treatment objectives are comprehensive rather than focused. The majority of the hours of treatment are delivered directly to the person by highly trained staff, and parents receive substantial support in participating in the treatment. Current research indicates that effective treatment is initially intensive in very structured sessions, and incorporates naturalistic teaching techniques as soon as the child demonstrates that she/he benefits from this type of treatment. As the child progresses and meets established criteria for placement in small group settings, she/he should receive treatment in those settings (e.g., community outings, playgroups, etc.).

If 6-month summative data do not indicate progress, then transition to special education supports is recommended.

How to Ensure that Services are Useful and Effective

Comprehensive ABA is designed to remediate the symptoms of autism and equip children with critical social and adaptive skills in order to fully participate in family, school, and community life. These services also rely on properly preparing family members participate in the treatment to promote generalization and maintenance of treatment gains. Comprehensive ABA services are tailored to the individual symptoms and needs of the child.

Before making a determination to continue, modify, or terminate services, quantitative measures of the behaviors (e.g., frequency, duration, or intensity) identified in the agreed-upon treatment plan must be reviewed. Standardized and non-standardized quantitative quality-of-life measures can assist in determining the overall impact of the service on the child and the family in which they function. Periodic summative data evaluation should be conducted every 6 months to determine the ongoing fit of, and medical necessity for, the intervention.

A developmentally-appropriate behavioral assessment should determine the targets of the treatment plan. The treatment plan should identify goals, objectives, measurable outcomes, and level of service for the child. Frequent review of the data will guide frequent adjustments to the treatment plan. The supervisor should review direct observation data on a weekly basis at minimum, while treatment plans are typically reviewed every 3 months.

Clinical Supervision should be provided at a minimum of 2 hours per week. The Clinical Supervision ratio should be a minimum of 1 hours of supervision for every 10 hours of treatment, with a typical ratio of 1 hour of Behavioral Assessment, Clinical Supervision, Case Management, and Parent and Community Training for every two hours of direct therapy. Supervision time may need to be increased to meet the needs of individual person (e.g., start up, assessment, and new staff training).

Parent training throughout the delivery of intervention will enhance treatment effectiveness. Family members must receive training in order to assist in generalizing and maintaining benefits of treatment outside regular therapy sessions. Clinicians should help design training materials, instruction sheets and data collection forms that are user-friendly for family members and provide them with structured opportunities to practice the new skills they are developing as part of their child's intervention program.

Comprehensive ABA services could be determined to be ineffective for various reasons: lack of family participation in the program, frequent absences, or cancellation of treatment sessions. Alternately, the child may master skills to the point that she/he no longer demonstrates sufficient deficits to warrant intensive services.

When there are questions about the appropriateness or efficacy of services, these should be reviewed by an expert panel of Behavior Analysts and other professionals.

What Qualifications and Performance Standards are Required of the Service Providers?

The qualifications of those conducting the behavioral assessments, developing the treatment plans, and providing consultation, parent education/training, and/or ongoing monitoring and supervision of behavioral services should be:

Applied Behavior Analysis Professional: Board Certified Behavior Analyst-Doctoral (BCBA-D), Board Certified Behavior Analyst (BCBA) or be enrolled in formal academic and supervision program leading to BCBA. (If not a BCBA, then 1) Master's degree in a related field, 15 units of graduate level coursework in behavior analysis or 2) licensed or certified in related field with behavior analysis in its scope of practice).

In addition, 5 years of experience delivering and supervising treatment programs for person with autism is preferred.

For the purpose of accessibility, the BCBA-D or BCBA should take responsibility to delegate Behavior Assessment, Behavior Analysis, Case Management and Clinical Direction responsibilities to a Board Certified Associate Behavior Analyst (BCaBA), whenever possible. However in no cases would the case be appropriately supervised without a minimum level of direct onsite supervision by the BCBA-D or BCBA.

The qualifications of those providing intensive services directly to the child should include —

- **Applied Behavior Analysis Technician:** Behavior Therapist, Bachelor's degree in psychology, Board Certified Assistant Behavior Analyst (BCaBA), or a related field with relevant experience .
- **Behavior Technician or Behavior Aide:** If no Bachelor's degree, then a two-year degree or high school diploma with competency-based training, and in all cases, regular on-site supervision and a background check.

Responsibilites and Training of Parents and Caregivers

Family training (e.g., implementation of the treatment plan, generalization and maintenance of acquired skills) is an integral part of Comprehensive ABA. Training for parents/caregivers should be provided at least monthly. Additional training should be included for parents/caregivers who are able to observe sessions, and for skills that are rapidly changing and need to be carried over outside of the sessions. Families must be involved in the treatment in order for the full benefits to be realized.

Self-Directed or Self-Determination Option for These Services

It would be difficult for most families to readily determine the necessary training and experience for professionals qualified to provide ABA treatment.

Part III. Recommended Guidelines for Billing and Reimbursement

Since 1998 the Behavior Analyst Certification Board has defined the national and international standards for the applied practice of behavior analysis. Throughout the United States and countries around the world, the credential of Board Certified Behavior Analyst (BCBA) is the standard for third party reimbursement and other practice privileges. The BACB increasingly represents the minimum requirement for a professional to claim to offer behavior analysis or ABA in their clinical practice, and we suggest Minnesota adopt this rigorous standard to protect the public interest and ensure best outcomes for consumers.

Qualified Applied Behavior Analysis Professional

A professional with expertise in Applied Behavior Analysis who uses Applied Behavior Analysis principles and procedures to functionally analyze behavior disorders, assess circumstances associated with skill deficits and problems as well as strengths, designs and oversee treatment implementation, and monitors treatment outcome. Qualified professionals are ethically obligated to employ state-of–the-art evidence-based treatment procedures.

Qualified professionals with expertise in Applied Behavior Analysis include licensed behavioral health professionals (e.g., psychologists, social workers) with expertise in Applied Behavior Analysis (e.g., in competencies claimed to their licensing board), licensed Behavior Analysts, and professionals certified by the Behavior Analyst Certification Board.

Reimbursement for services rendered by an Applied Behavior Analysis Professional would be made for the following CPT codes —

90866: **Applied Behavior Analysis Assessment** includes behavioral interviewing of the patient and caregivers; designing, conducting and interpreting functional behavioral assessments, functional analyses, criterion-referenced assessments, preference assessments, and direct observation and recording of behavior; per hour of the qualified professional's time, including face-to-face time administering the assessments to the patient and time interpreting the results and preparing the report

90871: **Applied Behavior Analysis Intervention** includes developing, implementing, supervising, monitoring, or refining applied behavior analysis intervention plans for individual patients that emphasize identifying and altering environmental events (e.g., motivating operations, setting events, antecedents, consequences) that are functionally relevant to establishing and shaping new responses, increasing appropriate responses, and reducing problem behaviors; each hour of the qualified professional's time

90873: **Applied Behavior Analysis Consultation** includes training parents, teachers, technicians, other caregivers, and organizations on the use of behavior-analytic strategies for increasing appropriate behavior and decreasing problem behavior; each hour of the qualified professional's time

90874: **Team Conferences for Applied Behavior Analysis** includes applied behavior analysis program goal development and/or review of patient progress toward goals with family; each hour of the qualified professional's time.

Registered Behavioral Technician

An individual who has had some college coursework and supervised practical experience in applied behavior analysis. ABA technicians use ABA principles and procedures to assist in functionally analyzing problem behaviors, assessing circumstances associated with skill deficits and strengths, implementing some ABA interventions, and monitoring treatment outcomes under the supervision of a qualified professional. Some ABA service provider agencies designate technicians with the most training and experience as "lead therapists" who are responsible for some aspects of day-in, day-out intervention for some patients, such as (a) monitoring treatment integrity, (b) updating and maintaining data graphs, (c) making certain changes in treatment goals and procedures, and (d) assisting with parent and therapist training, all under supervision and in close consultation with the qualified professional.

Reimbursement for services rendered by an Applied Behavior Analysis Technician would be made for the following CPT codes —

90867: **Applied Behavior Analysis Assessment** includes behavioral interviewing of the patient and caregivers; conducting functional behavioral assessments, functional analyses, criterion-referenced assessments, preference assessments, and direct observation and recording of behavior administered by a technician under the direction of and with interpretation by a qualified professional; each 15 minutes of the technician's time

90872: **Applied Behavior Analysis Intervention** includes implementation of applied behavior analysis intervention plans for individual patients that emphasize identifying and altering environmental events (e.g., motivating operations, setting events, antecedents, consequences) that are functionally relevant to establishing and shaping new responses, increasing appropriate responses, and reducing problem behaviors by a technician under the direction of a professional; each 15 minutes of the technician's time

Outreach Services Modifier

Minnesota currently experiences a shortage of mental health professionals and Behavior Analysts in rural areas. Consumers in these areas are chronically underserved. In order to deliver medically-necessary services to consumers in rural areas, additional funding is required to compensate for the greater costs of travel. In addition, telemedicine and electronic consulting avenues (such as detailed email or telephone communication) need to be reimbursed at the same rates as the "face-to-face" services described in the above section.

Conclusion

Applied Behavior Analysis is a treatment methodology with a rigorous empirical basis, having shown efficacy in the treatment of a variety of developmental and mental health disorders across the lifespan. At the heart of the science of Applied Behavior Analysis is a commitment to tailoring intervention based on quantitative outcome measures that make a clinically-significant difference in the lives of people. The burgeoning demand for services and declining funding outlooks require funders and policymakers to rigorously measure outcomes and take steps to ensure that limited funds are being spent on medically necessary services that produce real-world results. Applied Behavior Analysis offers evidence-based practices with data-driven tailoring for the individual needs of consumers and their stakeholders in pursuit of meaningful, sustainable change and improved quality of life. MNABA looks forward to working with the Department of Human Services and related agencies to put Minnesota on the forefront of cost-effective and results-oriented services.

Members and Advisors of the Standards Task Force

Members of the Task Force were selected based on several criteria among the following —

1. Graduate (Masters or Doctorate) degree in Applied Behavior Analysis or closely related field
2. Board Certified Behavior Analyst (BCBA)
3. Considerable experience in providing ABA services to individuals and families
4. Considerable familiarity with contemporary research in ABA services
5. Leadership positions in developing and monitoring service delivery standards

Agency Endorsers and Advisors

- Alliant Behavioral Pediatrics
- Autism Matters
- Behavioral Dimensions, Inc.
- Behavior Therapy Solutions of Minnesota
- Holland Center
- Lazarus Project
- Lovaas Institute for Early Intervention
- Minnesota Early Autism Project
- Rochester Center for Autism
- University of Minnesota Autism Spectrum Disorders Clinic

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