CASP The Council of Autism Service Providers

Applied Behavior Analysis Practice Guidelines for the Treatment of Autism Spectrum Disorder:

Guidance for Healthcare Funders, Regulatory Bodies, Service Providers, and Consumers

THIRD EDITION

SECTION 1.1 EXECUTIVE SUMMARY

The purpose of these Practice Guidelines is to inform decision-making regarding the use of Applied Behavior Analysis (ABA) as a medically necessary, efficacious, and cost-effective treatment to develop, maintain, or restore, to the maximum practical extent, the functioning of individuals with Autism Spectrum Disorder (ASD).[1]

These Practice Guidelines are based on the best available scientific evidence and expert clinical opinion regarding the use of ABA as a behavioral health treatment for people diagnosed with ASD. The guidelines are intended to provide a concise, user-friendly introduction to the delivery of ABA services for ASD and to reflect consensus standards for the effective practice of these services. They are written for healthcare funders, agents of government health programs and private health insurance plans, leaders of regulatory bodies, consumers, and ABA practitioners and employers.

As a behavioral health treatment, ABA includes many unique clinical and delivery components. Those charged with building a provider network and conducting care management or utilization review must understand the features of ABA. These Practice Guidelines provide information about standards of care in ABA that can be used to plan for and evaluate assessment and treatment services.

This is the third edition of this resource manual, and it will be periodically updated to reflect changes in accepted clinical practice and recent research findings. Additional references and information can be found in the appendices. Supplemental electronic resources are located at www.casproviders.org.

SECTION 1.2 GENERAL PRINCIPLES AND CONSIDERATIONS

- This document provides guidance regarding ABA treatment only; other behavioral health treatments are not addressed.

- This document contains guidelines and recommendations that reflect established research findings and best clinical practices. Individualized treatment is an integral component of ABA, which is one reason why ABA is successful in treating ASD.

- People diagnosed with ASD are entitled to the same rights to services, in accordance with generally accepted standards of care, as people with any other mental or physical health condition.

- Most people diagnosed with ASD have co-occurring behavioral health and medical conditions, including, but not limited to: intellectual disabilities, seizure disorders, psychiatric and psychological disorders, mobility difficulties, sensory impairments, chromosomal abnormalities, feeding

disorders, sleep disorders, elimination disorders, challenging behaviors (e.g., self-injury and aggression), and a variety of other conditions that require additional medical or behavioral health treatment. These guidelines also apply to autistic people who have been diagnosed with one or more of these co-occurring conditions, as research has established that ABA is an effective treatment for these patient populations. The presence of co-occurring conditions is not a valid reason to deny or limit access to ABA treatment, nor should an ASD diagnosis result in coverage limitations relating to the co-occurring conditions. In fact, ABA can be effective for these populations even when individuals may not yet have an established diagnosis of ASD.

- These guidelines should not be used to diminish the availability, quality, or frequency of currently available ABA services.

- Coverage of ABA treatment for ASD by healthcare funders and managers cannot supplant the responsibilities of educational or governmental entities. In addition, coverage of ABA by healthcare funders and managers should not be excluded or limited on the basis that those services should be or could be covered by a public entitlement program, including, but not limited to: special education, an individualized family service plan, individualized education program, an individualized service plan, or Medicaid.

- Coverage of ABA treatment must not be restricted to specific settings but should be covered in any location where there will be therapeutic benefit. Treatment should be delivered in settings that maximize access and treatment outcomes for the individual patient.

- Coverage of ABA should not be excluded, denied, or limited based on the degree of participation of caregivers.

- Coverage of ABA should not be limited by age, nature, scope and degree of impairment.

SECTION 1.3 OVERVIEW OF ABA TREATMENT FOR ASD

What Is ASD?

ASD is characterized by varying degrees of difficulty in social interaction and verbal and nonverbal communication, and the presence of repetitive behavior and/or restricted interests. ASD is a lifelong diagnosis[2] and therefore may require treatment at any point across the lifespan. Due to the variability of symptom presentation, no two people with an ASD diagnosis are the same with respect to how the disorder manifests throughout the lifespan. Caregivers' abilities may also change over time. Thus, treatment for ASD should be based on an individualized treatment plan of evidence-based practices developed by a qualified clinician who regularly interacts with the autistic person and their caregivers.

What Is ABA?

ABA is a well-developed scientific discipline that focuses on analyzing, designing, implementing, and evaluating social and other environmental modifications to produce meaningful changes in human behavior. This treatment approach has proven effective across the lifespan, and for a variety of disorders and conditions. The use of ABA to achieve successful remediation of deficits caused by ASD, and the development, restoration, and maintenance of abilities, has been documented in hundreds of peer-reviewed studies published over the past 50 years (see Appendix A). The success of this treatment approach has made ABA the standard of care for the treatment of ASD. It is widely recognized by a number of authorities, including the U.S. Surgeon General, the American Academy of Pediatrics, and the National Institute of Mental Health.

ABA is based on the understanding that behavior is determined by previous experiences and current environments, in combination with genetic and physiological variables. The interaction between a person and their environment is critical to behavior and learning. Therefore, one focus of ABA is on changing the environment in ways that will lead to practical and progressive changes in behavior. ABA programs identify significant behaviors, address these behaviors by setting achievable goals for new behavior, change the environment to allow practice of the new behaviors, and successively reinforce each instance of progress, until the person can consistently display them across environments.

ABA interventions are not limited to addressing maladaptive behaviors but also apply to skill acquisition. They are tailored to the specific needs of the person and are designed in collaboration with them, and their caregivers when possible. They focus on a range of essential learning, social, language, and independence skills. Depending on the person's needs, treatment can span several months to several years, or even across the lifespan.

Identifying ABA

The following are core characteristics of ABA:

- Objective assessment and analysis of the person's condition by observing how the environment affects their behavior, as evidenced through appropriate data collection.

- Importance given to understanding the context of the behavior and the behavior's value to the person, their caregivers and the community. Promotion of the person's dignity is vital.

- Utilization of the principles and procedures of behavior analysis to improve the person's health, independence, and quality of life.

- Consistent, ongoing, objective assessment and data analysis to inform clinical decision-making.

Essential Practice Elements of ABA

The four core characteristics listed above should be apparent throughout all phases of assessment and treatment in the form of these essential practice elements:

- Comprehensive assessment that describes specific levels of behavior(s) at baseline and informs subsequent establishment of treatment goals.

- An emphasis on understanding the current and future value or social importance of behavior(s) targeted for treatment.

- Collaboration with the person receiving treatment and those who support them (i.e., caregivers) in developing treatment goals.

- A practical focus on establishing small units of behavior that build towards larger, more significant changes in functioning related to improved health, safety, skill acquisition, and levels of independence.

- Collection, quantification, and analysis of direct observational data on behavioral targets during treatment and follow-up to maximize and maintain progress toward treatment goals.

- Efforts to design, establish, and manage the social and learning environment(s) to minimize challenging behavior(s) and maximize the rate of progress toward all goals.

- An approach to the treatment of challenging behavior that links the function of (or the reason for) the behavior to the programmed intervention strategies.

- Use of a carefully constructed, individualized, and detailed behavior-analytic treatment plan that utilizes reinforcement and other behavioral principles and excludes methods or techniques that lack consensus about their effectiveness (based on evidence in peer-reviewed publications).

- Use of treatment protocols that are implemented repeatedly, frequently, and consistently across environments until discharge criteria are met.

- An emphasis on ongoing and frequent direct assessment, analysis, and adjustments to the treatment plan based on patient progress as determined by observations and objective data analysis.

- Direct support and training of caregivers, and other involved professionals, as appropriate, to support increased functioning and generalization and maintenance of behavioral improvements.

- A comprehensive infrastructure for supervision of all assessment and treatment by a Behavior Analyst.

PART II: Training, Certification, Licensure, and Staffing

ABA is a specialized behavioral health treatment approach. Specialized training occurs in graduate training programs specifically focused on ABA. Most graduate and postgraduate university programs in psychology, counseling, social work, or other areas of clinical practice do not provide in-depth training in ABA. Practitioners of ABA are called Behavior Analysts. Training, certification and licensure requirements facilitate accountability and excellence by establishing ethical and professional standards, and education, competency, and supervision requirements.

Like other medical and behavioral health providers, Behavior Analysts rely on strategies and procedures documented in peer-reviewed literature, established treatment protocols, and clinical decision-making frameworks. They continually evaluate patient needs and customize treatment options based on direct observation and data from a range of other assessments. Behavior Analysts also solicit and integrate information from the patient, their caregivers, and coordinate care with other professionals. Behavior Analysts guide the course of treatment and supervise treatment delivery through models of tiered service delivery. Tiered service-delivery models are the primary mechanism utilized by Behavior Analysts for achieving significant improvements in cognitive, language, social, behavioral, and adaptive domains documented in the peer-reviewed literature. This section provides an overview of certification and licensure requirements and delivery models that maintain the professionalism of ABA services and providers.

SECTION 2.1 TRAINING AND CERTIFICATION

The oldest and largest national certification organization in ABA is the Behavior Analyst Certification Board®[3] (BACB®). The BACB is a non-profit organization established in 1998 to certify ABA practitioners. BACB certification assists health plans and their subscribers in identifying providers who meet the entry-level competencies to practice ABA. The online BACB Certificant Registry[4] is the primary resource for quickly and easily verifying a person's certification status and determining if they have reportable disciplinary actions associated with their certification. Guidance on finding a person's certification status can be found on the Verifying BACB Certification[5] webpage.

The BACB's certification programs are accredited by the National Commission for Certifying Agencies (NCCA). NCCA's Standards for the Accreditation of Certification Programs[6] were the first standards developed for professional certification programs to help ensure the health, welfare, and safety of the public. NCCA standards articulate the essential elements of a high-quality certification program. Consistent with these standards, the BACB's certification requirements, examination content, and procedures undergo regular review by subject matter experts in the discipline.

The ethics requirements for BACB certificants serve to promote standards of professional conduct in the practice of ABA and to protect the public from practitioners who do not meet those standards. The BACB operates a robust system for evaluating and processing notices of alleged ethics violations against its certificants and applicants. Guidance for submitting notices of alleged ethics violations can be found on the BACB's Ethics[7] webpage.

The BACB certifies ABA practitioners at three levels:
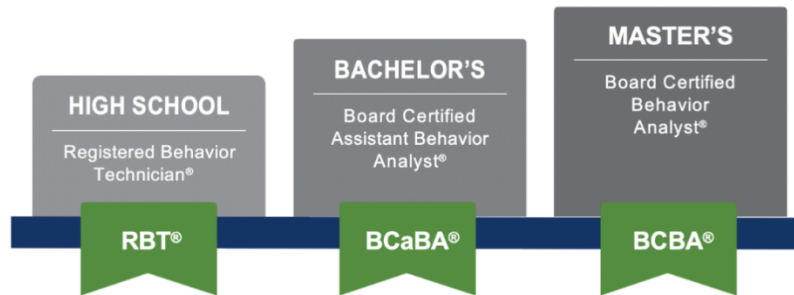
ABA treatment services are delivered using a tiered service-delivery model involving various combinations of certified providers, such as BCBA/Ds, BCaBAs, and RBTs (see below). The two-tiered service delivery model is the most commonly used method, with the BCBA/D supervising the RBT. There may be rare instances in which a BCBA/D provides all services for a patient (e.g., only consulting with the caregiver and not interacting with the patient). Parent led interventions should only occur in rare cases based on unique clinical needs or as preparation for more intensive services.

Board Certified Behavior Analysts® (BCBA®)

The BCBA[8] is a graduate-level certification in behavior analysis. Professionals certified at this level are independent practitioners who provide ABA services. Applicants for BCBA certification must meet eligibility requirements that include a master's degree or higher, defined graduate coursework in behavior analysis (e.g., concepts and principles, methods, ethics, assessment, intervention, supervision), and supervised fieldwork before they are approved to take a professionally developed and scored examination.[9] In addition, BCBAs must obtain ongoing continuing education and adhere to their ethics code to maintain certification.

BCBAs who have explicit doctoral training in behavior analysis can apply for a doctoral-level designation: the Board Certified Behavior Analyst-Doctoral[10] (BCBA-D). The BCBA-D is not a separate certification, and it does not grant any privileges above or beyond BCBA certification. BCBA-Ds function in the same capacity as BCBAs (i.e., as independent practitioners who provide behavior-analytic services) and are required to meet all BCBA maintenance requirements.

BCBA/Ds supervise the work of Board-Certified Assistant Behavior Analysts (BCaBAs, or equivalent), Registered Behavior Technicians (RBTs), and other professionals who implement behavior-analytic services

Board Certified Assistant Behavior Analysts® (BCaBA®)

The BCaBA[11] is an undergraduate-level certification in behavior analysis. Professionals certified at the BCaBA level provide ABA services under the supervision of a BCBA/D. Applicants for BCaBA certification must meet eligibility requirements that include an undergraduate degree, defined undergraduate coursework in behavior analysis (e.g., concepts

and principles, methods, ethics, assessment, intervention, supervision), and supervised fieldwork before they are approved to take a professionally developed and scored examination. The required number of hours of coursework and supervised fieldwork are lower than those required for BCBA/D certification. BCaBAs are required to obtain ongoing continuing education, to adhere to the ethics code, and must also adhere to supervision requirements of their ongoing practice to maintain their certification.

Professionals certified at the BCaBA level may only practice ABA, including supervising the work of RBTs, under the supervision of a BCBA/D.

Registered Behavior Technician® (RBT®)

The RBT[12] is a paraprofessional certification in behavior analysis. RBTs do not exercise independent professional judgement, including describing clinical phenomenon, analyzing, or prescribing, but assist in delivering ABA services and practice under the direction and close supervision of a BCBA/D or BCaBA. Applicants for RBT certification must be at least 18 years of age, meet eligibility requirements that include a high-school diploma (or equivalent), a background check, defined training in ABA, and a competency assessment. In addition, RBTs must meet ongoing maintenance requirements that include demonstrating competence in critical practice skills, adhering to their ethics code, and adhering to supervision requirements of their ongoing practice.

Paraprofessionals certified at the RBT level may only practice ABA under the supervision of a BCBA/D or BCaBA.

SECTION 2.2 LICENSURE OF BEHAVIOR ANALYSTS

The practice of ABA is regulated through licensure in the majority of states. Licensure is established by state law to regulate the practice of the profession in that state. The primary pathway to licensure in the vast majority of states is Behavior Analyst Certification Board (BACB) certification. In states that license Behavior Analysts, licensure should be considered the primary practice credential. In states that do not license Behavior Analysts, funders widely accept certification by the BACB as the required practice credential. For a current list of U.S. states that license Behavior Analysts, see bacb.com/US licensure of behavior-analysts.

When the practice of ABA is regulated through licensure, notices of alleged professional misconduct by anyone, whether certified or non-certified, may generally be submitted to the applicable licensure board for potential disciplinary action d.

SECTION 2.3 TIERED SERVICE MODELS

Tiered Service Models

Tiered service-delivery models utilize treatment teams working under the supervision of a BCBA/D. **These models have been the primary mechanism for achieving significant improvements in cognitive, language, social, behavioral, and adaptive domains documented in the peer-reviewed literature.**
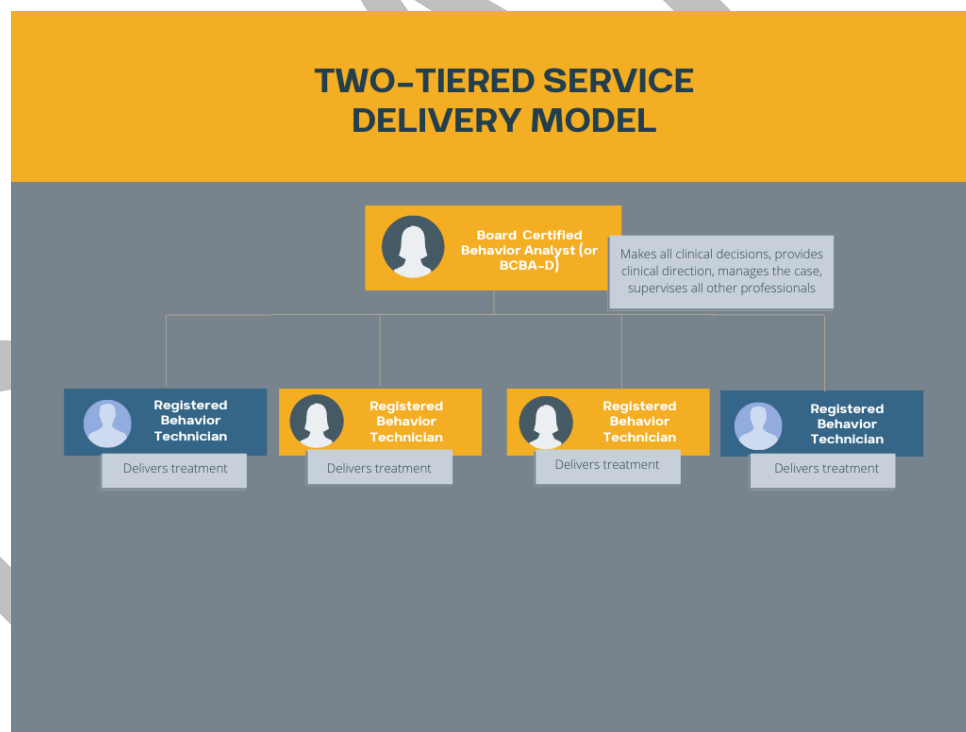
For a tiered service-delivery model to be effective:

- The BCBA/D must know the ability of each member of the treatment team to effectively carry out various treatment activities before assigning them.

- The BCBA/D must be familiar with the patient's needs and treatment plan and regularly observe the team implementing the plan.

- The providers in each tier must operate within their scope of competence, be carefully trained, and receive or provide an appropriate amount of high-quality supervision based on their role.

Most ABA treatment services are delivered using a tiered service-delivery model, although there may be instances in which a BCBA/D provides all services for a patient based on their individual needs.The treatment team is generally two-tiered but can be three-tiered as described below.

Two-tiered delivery model

A two-tiered treatment delivery model consists of one or more RBTs responsible for direct delivery of ABA treatment services for a given patient under the direction and supervision of a BCBA/D.

TWO–TIERED SERVICE DELIVERY MODEL

Board Certified Behavior Analyst (or BCBA-D)
Makes all clinical decisions, provides clinical direction, manages the case, supervises all other professionals

Registered Behavior Technician — Delivers treatment
Registered Behavior Technician — Delivers treatment
Registered Behavior Technician — Delivers treatment
Registered Behavior Technician — Delivers treatment

- The primary role of the BCBA/D is to

    o design the comprehensive set of treatment services,

   o design the treatment protocols,

- oversee the delivery of the treatment services according to those protocols,

- monitor the effectiveness of protocols, and

- modify them regularly to increase their effectiveness.

- The primary role of the RBT is to deliver treatment according to the individualized protocols.

Engagement in these activities assumes:

- The BCBA/D provides close oversight of treatment activities via direct observation and record review.

- The BCBA/D trains the RBT to a high level of competency for specific treatment procedures in addition to general training for the position.

Three-tiered delivery model

A three-tiered model consists of a treatment team of RBTs who deliver ABA services under the supervision of both a BCBA/D and an additional supervisor at the mid-tier level, who may be a BCaBA or have other qualifying education and experience (i.e., in training for certification). These two levels of supervisors work together to provide direction and oversight to the team to ensure that intervention implementation is carried out exactly as designed by the BCBA/D.

THREE–TIERED SERVICE DELIVERY MODEL
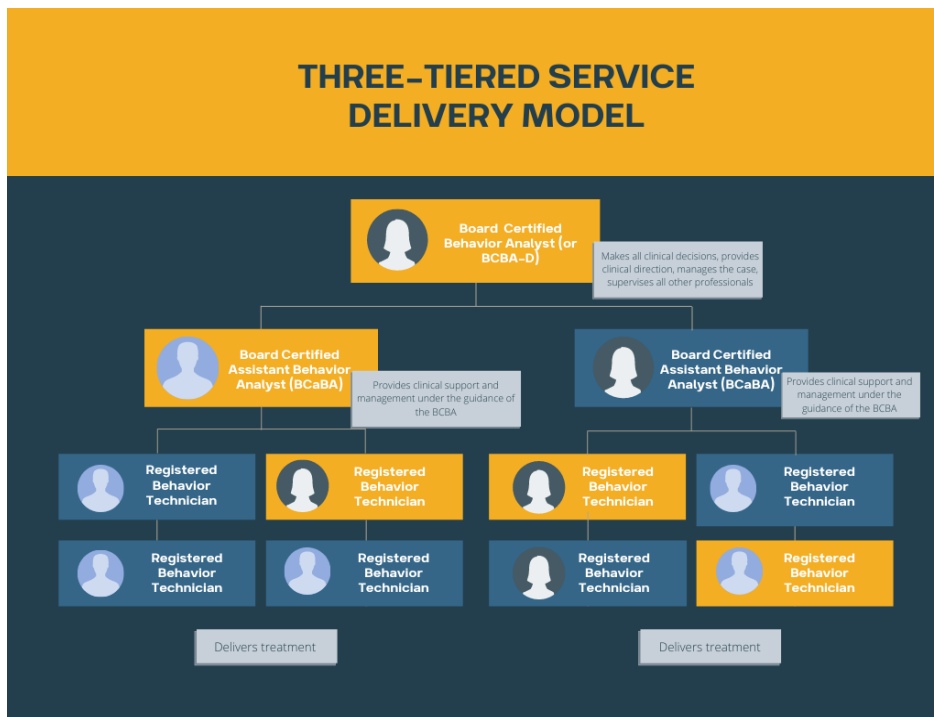
- As with a two-tiered model, the expectation is that the BCBA/D is responsible for all aspects of

  o clinical direction,

  o treatment programming, and

  o case management.

- The mid-tier supervisor (e.g., BCaBA or other qualified clinician authorized by law or funder) works in collaboration with and under the supervision of the BCBA/D to assist with activities that support treatment delivery, including but not limited to:

  o providing training and feedback on program implementation,

  o performing direct assessment of the patient's skills,

  o monitoring patient data, and

  o assisting with communication across the clinical team.

- o developing and implementing protocol modification

- o providing caregiver training and support.

- In the three-tiered model, the primary role of the RBT is to deliver treatment to the patient according to the protocols and intervention plan designed by the BCBA/D.

Engagement in the three-tiered delivery model assumes:

- All decisions occur under the guidance and supervision of the BCBA/D, including

    - o creation and implementation of the treatment plan,

    - o regular review of data, refinements to the treatment plan or intervention procedures, and

    - o delivery of the intervention by the treatment team.

- The BCBA/D must have regular contact with and directly supervise the RBTs and the mid-tier supervisor.

- The clinical support provided by the mid-tier provider is reimbursable. These services are typically billed using current procedural terminology (CPT) code modifiers.

Supervision by BCBA and BCaBA

Provider organizations, funders, regulators and consumers are concerned with access to quality care.
A service model that includes mid-tier supervisors can improve access to care. Still, to ensure quality care, the percentage of services provided by the mid-tier supervisor must be individualized in terms of client needs. This means that the provider organization should not be allocating the same percentage of clinical supervision by the BCBA and BCaBA for each patient.
When determining how to allocate case supervision direction, there are many variables to be considered. These include but are not limited to:

- the complexity of client needs and treatment program

- aspects of case conceptualization, including comorbidity and

- competence and experience of mid-tier supervisors
- patient progress

In other cases, these factors may suggest that the mid-tier clinician can appropriately provide the majority of the clinical supervision. In other cases, these factors may indicate that the BCBA should provide most of the supervision.

Organizations need to provide training, resources, and support for both the BCBA and the mid-tier supervisor to increase the likelihood of success of the mid-tier supervision model. They also need clinical monitoring systems to ensure that programs are being designed and delivered with fidelity and that patient is making satisfactory progress. If the patient is not making adequate progress, the organization should evaluate the appropriateness of the model and reassign and redistribute the responsibilities of the mid-tier supervisor. In addition to case supervision, the professional oversight of the mid-tier supervisor should align with the BACB guidelines. Note, however, that those guidelines apply to direct supervision of the BCaBA for credentialing purposes. These are distinct from clinical supervision of the patient's case.

Benefits of Tiered Models

Tiered models provided under the supervision of a BCBA/D offer several benefits for providers, caregivers, and funders, including:

- Increases cost-effectiveness, as the supervisees are typically paid at a lower rate in comparison to BCBA/Ds, commensurate with their training and education.

- Increases the number of patients served, as compared to a smaller pool limited to only BCBA/Ds as treatment providers.

- Facilitates increased service delivery to people who live in rural and underserved locations.

- Facilitates appropriate service delivery to patients who have high support needs, particularly when telehealth supervision services are authorized.

- Allows flexibility in the amount of BCBA/D expertise allocated to each patient in response to emerging needs.

Carefully crafting a tiered system that involves consistent communication, thoughtful oversight, and effective supervision can enable many people to receive ABA services that produce a meaningful impact on their lives.

PART III: Essential Medical Habilitative and Rehabilitative Services

Clarifying the standards of practice for ABA that are generally accepted by practitioners in the field of autism treatment is a primary goal of these Practice Guidelines. Such standards serve as guidance for funders and practitioners within the context of medical necessity, which is commonly defined with this requirement: that a given service is prescribed and delivered in accordance with the generally accepted standards of practice in the relevant medical field. This section will provide an overview of medical necessity definitions according to regulatory and funding sources, and generally accepted standards of practice related to treatment efficacy, intensity, duration, and maintenance.

SECTION 3.1 DEFINING MEDICAL NECESSITY

The concept of "medical necessity" has become a widely used tool for managing the allocation of healthcare resources, not only by funders (like insurance companies and government programs) but also by healthcare providers, who must allocate their time and expertise fairly among their patients. For funders, medical necessity is often a threshold requirement for funding treatment services, and failure to establish medical necessity can result in denial of payment. For providers, medical necessity considerations can help to develop an appropriate treatment plan that meets the patient's needs in a safe, efficient, and effective manner. It is crucial for ABA practitioners, in coordination with the prescribing physician or psychologist, to:

- Determine patient need based on professional standards of care.

- Clearly communicate to the funder the reasons a given treatment plan is medically necessary for the individual patient.

Professional Associations' Definitions

The American Medical Association ("AMA") has adopted a definition of "medically necessary services," which has been widely accepted in a variety of contexts, as discussed below. According to the AMA, medically-necessary services are:

> Health care services … that a prudent physician would provide to a patient for the purpose of preventing, diagnosing or treating an illness, injury, disease or its symptoms in a manner that is: (a) in accordance with generally accepted standards of medical practice; (b) clinically appropriate in terms of type, frequency, extent, site, and duration; and (c) not primarily for the economic benefit of the health plans and purchasers or for the convenience of the patient, treating physician, or other health care provider.[1]

In 2013, the American Academy of Pediatrics ("AAP") issued a policy statement finding that "more

---

[1] American Medical Association, Policy No. H-320.953 ("Definitions of 'Screening' and 'Medical Necessity'") (last modified 2016).

specific considerations are needed for children because of their unique needs," and adopting the following pediatric definition of medical necessity:

> Health care interventions that are evidence-based, evidence-informed, or based on consensus advisory opinion and that are recommended by recognized health care professionals, such as the AAP, to promote optimal growth and development in a child and to prevent, detect, diagnose, treat, ameliorate, or palliate the effects of physical, genetic, congenital, developmental, behavioral, or mental conditions, injuries, or disabilities.[13]

Definitions Under State Law

Medical necessity requirements appear in state laws in at least two different contexts.

First, some states' insurance laws impose standard definitions of "medical necessity" that apply to health insurance plans issued in the state and governed by state law. In effect, those statutory definitions become implied terms of such insurance policies.

For example, in 2020, California amended its Health and Safety Code and its Insurance Code to expand its mental health parity requirements. Under the amended law, health and disability insurance plans "must" "provide coverage for medically necessary treatment of mental health and substance use disorders, under the same terms and conditions applied to other medical conditions…." [14] As amended, both statutes now also include a standardized definition of "medically necessary treatment" for behavioral health conditions that closely follows the AMA definition.[15]

Second, some states have imposed standard medical necessity definitions that apply specifically to mandated insurance coverage for autism treatment. For example, Illinois and Delaware, in mandating coverage of certain medically necessary treatments for ASD, including ABA, have adopted a specific broad definition of "medically necessary" to be applied to such coverage:

> … any care, treatment, intervention, service, or item which will or is reasonably expected to do any of the following: (i) prevent the onset of an illness, condition, injury, disease, or disability; (ii) reduce or ameliorate the physical, mental or developmental effects of an illness, condition, injury, disease or disability; or (iii) assist to achieve or maintain maximum functional activity in performing daily activities.[16]

State insurance laws do not apply to employer-sponsored health plans that are "self-funded" by the sponsoring employer. Self-funded plans are governed only by federal law, which does not mandate any definition of "medical necessity." As discussed below, however, self-funded plans often include explicit medical necessity requirements—which may or may not mirror state statutory definitions—making it critically important to become aware of the terms of each patient's health plan document. It is further necessary to understand how such definitions are applied to ABA coverage for ASD. Employer-sponsored health plans, including most self-funded plans, are generally prohibited by the federal Mental Health Parity and Addiction Equity Act of 2008 from using medical necessity definitions that, either as written or as applied, are more restrictive with respect to mental health coverage (including treatment for ASD) than medical/surgical coverage.[17]

Medicaid Definitions

State Medicaid agencies are responsible for determining what services are medically necessary for eligible people. As of March 2021, all states have defined medical necessity for their Medicaid programs.[18] Two-thirds of states have incorporated specific language into the definition requiring that services must accord with generally accepted standards of care.[19]

In addition to the general state Medicaid medical necessity definitions, there are special rules under Medicaid for children under 21 years of age. Federal law governing Medicaid requires states to provide Early and Periodic Screening, Diagnostic, and Treatment (EPSTD) services to children and adolescents under age 21. EPSTD is broadly defined to include a comprehensive array of services "necessary… to correct or ameliorate defects and physical and mental illnesses and conditions discovered by the screening services, whether or not such services are covered under the State plan."[20] State Medicaid agencies cannot impose any definition of medical necessity on treatment for children that would limit this standard.

Commercial Insurance

Commercial insurance plans—including employer-sponsored health care plans and individual insurance plans—commonly specify that services are covered only if the plan's administrators conclude the services are "medically necessary" to treat a covered condition, in addition to all other coverage requirements. For these health plans, the medical necessity requirement is defined by the terms of the plan.

As discussed above, any medical necessity definition in a commercial insurance plan must comply with applicable federal and state law. However, within those legal guidelines, definitions of "medically necessary" or "medical necessity" can vary from funder to funder. They typically incorporate a foundational requirement that -- to be covered -- healthcare services must be provided "in accordance with generally accepted standards of care" for the relevant medical specialty.[21]

Other considerations, like the clinical appropriateness of the type, frequency, and duration of services, or the cost-effectiveness of the services compared to equally effective available alternatives, are also common. The medical necessity definition must be disclosed to the plan member and will typically be found in the policy documents. Regardless of the source of the definition, funders must stay true to the definition that they have outlined for their enrollees; both in the materials made available to enrollees and in the policies and procedures that apply to ABA treatment for ASD.

In addition to the generally applicable medical necessity requirement, some insurers have adopted specialized medical necessity policies tailored to specific conditions or treatments, such as ABA treatment for ASD.[22] These separate policies must comply not only with the written terms of the patient's health plan (including any medical necessity requirement) but also with applicable state and federal laws such as state mandates, and federal nondiscrimination and mental health parity laws.

SECTION 3.2 GENERALLY ACCEPTED STANDARDS OF PRACTICE

CASP recognizes that certain overarching standards are generally accepted in the field of ABA treatment for ASD. These standards define how to address the behavioral healthcare needs of autistic people equitably and effectively and should be considered when developing and evaluating treatment plans.

Effective Treatment

- Effective treatment requires treatment of the person's underlying condition and is not limited to the alleviation of the person's current symptoms.

- Intervention must be implemented as early as possible to improve the developmental trajectory of children diagnosed with autism. Effective early intervention focuses on teaching foundational skills, such as attending to the environment, imitation, functional communication, self-management, daily living skills, and the building blocks for social interaction. In addition, this is the optimal period to reduce and mitigate challenging behaviors.

> *While the gaps in development between the young, newly diagnosed child with autism and same-age peers may initially be small, the separation between their developmental trajectories grows quite rapidly. Intensive ABA provided to young children significantly narrows these gaps in the near term and protects against the future development of irreversible, life-long disabling conditions.*
>
> *In general, early detection and treatment across the lifespan of a person diagnosed with autism are needed to obtain favorable outcomes; a "wait and see" approach rarely defines appropriate care*

- Effective treatment requires treatment of co-occurring behavioral health and/or medical conditions in a coordinated manner that considers the interactions of the conditions with each treatment being provided at sufficient level in accordance with professional standards applicable to that treatment.

- Caregiver participation can be additive to treatment, but it is not a substitute for treatment and is not a condition for providing services. There are a variety of modalities and methods to include caregivers in a treatment program, even when direct participation is not possible or advisable. (See Section 5.2 on Family Member and Caregiver Training.)

- Care must be delivered in any setting that is relevant for the patient to achieve treatment goals—whether in the home, at school, or the

community.

Intensity

- The developmental needs of children and adolescents must be considered when making decisions regarding the level of service intensity for their treatment.

- The determination of the appropriate level of service intensity for patients should be made based on a multidimensional assessment that considers a wide variety of information about the patient.

- Patients should be able to receive treatment at the level of intensity that is most effective to achieve treatment goals. Moving to a lower level of intensity is appropriate only when safe and just as effective as treatment at the higher level or service intensity.

- When there is ambiguity regarding the appropriate level of service intensity, the practitioner should err on the side of caution by providing a higher level of service intensity.

Duration and Maintenance

- Effective treatment of ASD includes services needed to maintain functioning. In many cases, a certain level of treatment must be ongoing to maintain or protect the gains achieved by intensive treatment.

> *In healthcare, it is generally accepted that chronic conditions should be treated not only to ameliorate present symptoms but also to prevent and protect against future disability. One example is the treatment and management of diabetes, where an important goal is to avoid the future need for insulin administration, dialysis, or the emergence of conditions such as neuropathy. Effective behavioral healthcare for autistic people must follow a similar approach.*

- Effective treatment of ASD includes services needed to prevent deterioration. Beyond childhood, there are stages of development across the lifespan where it is well recognized that persons with ASD are vulnerable to threats to their health, safety, and independence. ABA treatment must ameliorate deficits and prevent deterioration not only in current functioning, but it should also enhance and prevent deterioration in functioning that is still developing.

The appropriate duration of treatment for ASD is based on the patient's individual needs; there is no specific limit on the duration of such treatment.

As autistic people grow older, moving through adolescence and the various stages of adulthood, treatment may be necessary to address remaining issues as well as ASD-related deficits and behaviors that are more apparent during these periods, such as social skills, self-advocacy, adaptive skills, physical maturation and sexuality issues, and coping skills.

PART IV: Applied Behavior Analysis Clinical Services for ASD

The delivery of quality ABA services requires carefully planning under the direction of the BCBA. The care or treatment plan is based on information gathered during the assessment process and is informed by best practice. This section provides an overview of some of the high level issues that need to be integrated with one another and coordinated under the direction of the BCBA.

SECTION 4.1 TREATMENT MODELS

The goals of treatment may be different at points across a patient's lifespan and across the span of service delivery. However, it is important to be clear about the overarching goal of the current plan as this helps organize other treatment variables, such as intensity, scope, and staffing models. The goal of the treatment plan may be to improve or maintain functioning in select areas or narrow gaps across all domains. An appropriate care plan means that the specific treatment variables are coordinated to achieve the current goal because they reflect best practice and individual patient need.

Comprehensive programs include behavioral targets across all developmental domains (e.g., cognitive, social, language, behavior, self-help, self-management) at a depth appropriate to achieve that outcome. For example, if the primary goal of ABA services is to close developmental gaps, the care plan should be comprehensive in scope to address the pervasive impact of ASD.

However, when the goal of treatment is to maintain or improve functioning in select domains, this is viewed as a focused approach. This scope of treatment encompasses fewer areas of functioning than comprehensive plans. For example, group social skills programs focus on the social domain and address building relationships and navigating social communities, among other life skills.

It is important to understand that comprehensive and focused approaches exist on a continuum and are not dichotomous. In addition, the two approaches may be appropriate for the same individual at different points. For example, an initial treatment model may be comprehensive in scope, but later when progress is made in specific domains, the purpose of treatment may change, and a focused approach may be more appropriate. For other individuals, a comprehensive treatment model may remain the most appropriate course.

Treatment Intensity

Treatment intensity is a variable that must be specified in the care plan. Treatment intensity is defined as the number of direct ABA treatment hours per week, not including case supervision and clinical direction by the Behavior Analyst, caregiver training, and other needed services. The intensity should reflect the complexity, breadth, and depth of treatment targets, the environment, treatment protocols, and the significance of patient needs. Scope of treatment and treatment intensity are generally positively correlated.

Consider the fact that focused interventions, which involve fewer domains, typically require less

intensity and duration than the 25-40 hours per week that is recommended for most comprehensive programs. However, there are exceptions. For example, the treatment of severe or dangerous behaviors, which may address a limited number of domains, may still be complex requiring substantial intensity to achieve an acceptable outcome. Most importantly, intensity must reflect the individual patient's needs and response to treatment as patients who present similarly may require different intensities to achieve the same outcomes.

Progress and Outcome Measures

Progress and outcome measures must be appropriate for the individual patient and aligned with the services provided and the overarching goal of the treatment. For example, if the purpose of treatment is to close gaps compared to same-age peers, outcomes should include results from clinically appropriate, norm-referenced measures at program entry and again at appropriately defined periods (e.g., 12 months after treatment begins). However, these measures are unlikely to be sensitive to change if administered to older patients, at shorter intervals or to those receiving treatment at lower intensity levels. They are also not likely to be appropriate outcome measures for those receiving focused interventions for complex, challenging behavior.

The model for treating severe challenging behavior relies upon assessments based on a functional analysis often conducted in purpose-built environments. The patients served in this model present challenging behaviors that have not responded to other approaches and often constitute a threat to health and safety. Staff in this model should have specialized expertise in complex behavior and safety management. Other examples of ABA treatment models include group social skills training, feeding disorders treatment, comprehensive, intensive early intervention, and focused interventions appropriate for school-age children, adolescents, and adults.

Some ABA services are recognized as distinct models by the professional community. Models are based on the variables previously mentioned, as well as the patient population served, specialized clinical expertise, and the use of specific assessment practices and intervention protocols. Clearly defined assessment and treatment models promote a more consistent level of care and help establish the benchmarks needed to determine, evaluate, and recognize the quality of care.

SECTION 4.2 CARE PLANNING: PATIENT PREFERENCES, VALUES, AND COLLABORATIVE DECISION MAKING

Like other health care professionals, ABA providers must consider various facets in determining a clinically sound and patient-centered care plan. Throughout assessment and treatment, the BCBA/D maps patient characteristics such as age, level of functioning, motor skills, language skills, and treatment goals to the best available research-based and validated methods. As part of this process, the provider should incorporate specific patient and caregiver preferences, priorities, values and cultural, religious, racial, and ethnic identities as appropriate. This process allows the provider to conceptualize the case and design an individual care plan that is also culturally aligned. The social acceptability of the treatment must be assessed throughout the intervention, and results must be monitored and used to improve services as applicable.

Collaborative decision-making begins with communication involving the BCBA/D, the patient, and caregiver. The BCBA/D reviews critical elements of the care plan, anticipated benefits, and possible risks associated with treatment. The patient and caregiver are encouraged to ask questions and discuss with others before finalizing the agreement to participate in treatment. Patient and caregiver adjustments that do not measurably alter the expected benefits or risks should be incorporated whenever possible. This process should be repeated any time there is a significant change to the care plan.

Additionally, there are times when facets of the proposed care plan may not align with the patient or caregiver's expectations, preferences, or cultural values. When there are situations where the patient, caregiver, or provider cannot agree on what is required to achieve clinically meaningful outcomes during the collaborative decision-making process, treatment may need to be transferred to a different provider who can meet the patient and caregiver's needs. When an agreement or acceptable compromise is not possible based on the patient or caregiver's preferences and values,

the provider should discontinue services.

Marco is a 15-year-old male who was diagnosed with autism at 2 ½ years of age. During his initial assessment, the clinical team made efforts to include specific caregiver preferences, priorities, and cultural, religious, racial, and ethnic values as appropriate. Based on the initial assessment outcomes, Marco's first care plan at age 2 1/2 focused on closing performance gaps compared to same-age peers and improving function in specific areas. The care plan included behavioral targets focused on cognitive, social, language, behavior, and self-help skills. Treatment intensity was recommended at 35 hours of intervention at the ABA center, with some treatment occurring in the home.

Marco's caregivers were concerned with the amount of time their son would be in therapy per week and the time away from home and family. Given that both center-based and in-home services were viable options to achieve the overall treatment goal of closing performance gaps and improving functioning, the clinical team employed the share decision model framework. The clinical team met with caregivers to review how the potential risks and benefits to reduced treatment hours, center-based, in-home, or a combination of settings might impact Marco's developmental trajectory.

During the meeting, the providers understood the caregivers' concerns, and the caregivers reviewed the potential risks of decreased treatment hours for Marco. In the end, the caregivers and the clinical team agreed that 35 hours per week was medically necessary, best for Marco and in line with the caregivers' long-term goals for Marco.

An additional adjustment was made to the treatment setting through the shared-decision process: The clinical team recognized and respected the caregivers' desire to have Marco in the home and agreed to begin most of the services there, with a programmed shift to increase center-based overtime hours. Marco began receiving 35 hours a week of intervention at home and at the center.

Collaborative decision making is a value that respects patient preferences within the determination of medically necessary care. Incorporating collaborative decisions in the plan of care facilitates desired outcomes for the patient and the provider.

PART V: Individualizing Care

Individualizing ABA care is critical to achieving best patient outcomes. Behavioral treatment seeks to support the development of skills to enhance patient well-being, independence, and expand opportunities throughout their lifespan. The course of treatment is guided by assessment and a treatment plan tailored to support the needs of the patient. Care planning and implementation should be collaborative, involving family and caregivers. Planning for the generalization and maintenance of skills and providing supervision and case management throughout active treatment are critical to successful patient outcomes. This section will review accepted practices for several aspects of care planning and the treatment approach requiring careful consideration and analysis to optimize treatment for the individual patient throughout the span of ABA services.

SECTION 5.1: ASSESSMENT

Assessment Activities and Components

Behavior analysts, after undertaking the appropriate training and supervision, may implement a variety of assessment activities to:

- determine patient baseline skills,

- develop treatment goals, and

- evaluate treatment progress.

These activities typically include standardized instruments and functional assessments that are used in conjunction with other assessment activities including file review and interviews. Because of the comprehensive nature of the assessment process, these activities may take 20 hours or longer to complete and should be done at regular intervals to ensure the resulting treatment is still effective (e.g., on an annual or semiannual basis).

File Review

Understanding the patient's needs and developing a treatment plan that meets these needs requires a thorough understanding of the of the patient's profile and history. A file review should

include:

- information about the patient's developmental and medical history,

- response to prior interventions,

- current treatment plan, including medication and other interventions,

- cultural and familial considerations, and

- prior assessment results.

Interview

Patients, caregivers, and other relevant stakeholders should be included in the data collection process. They hold valuable and unique information that can help the behavior analyst understand the patient's needs, the desired outcomes of treatment, and the most effective goals and treatment plan to attain these outcomes. Interviews, in this respect, are important.

Standardized Assessments

The results of standardized assessments are used to identify baseline functioning and may be used to monitor progress over time. However, many standardized assessment tools are not sensitive enough to measure progress over short periods of time, and, as such, the time between assessment and reassessment should be considered. Progress should be measured using a variety of instruments.

Norm-referenced

Norm-referenced instruments may be used to:

- assess patients' functioning levels in comparison to age-matched neurotypical peers,

- develop treatment goals, and

- assess developmental gains as functions of intervention.

Appropriate test-retest intervals for norm-referenced measures depend on each instrument's precision and reliability (at both full-scale and sub-domain levels) in measuring

developmental changes.

Criterion-referenced

Criterion-referenced instruments are used to determine whether or not a patient has expected knowledge and skills by measuring their performance compared to predetermined criterion. They may be used to determine patients' specific behavioral challenges, develop treatment goals, and document the acquisition and reduction of specific behaviors as a function of treatment. Like norm-referenced assessments, test-retest intervals for criterion referenced assessments depend on each instrument.

Functional Assessment

Functional assessment refers to any process of identifying aspects in the environment that contribute to the maintenance of challenging behavior that impacts the growth and quality of life of the patient and caregivers.

Functional assessment approaches vary. Some rely on indirect sources of information like caregiver reports and others are based on direct observation of the behavior. In the continuum of functional assessment approaches, analog functional analysis is regarded as the most rigorous. This method involves direct observation of patient behavior under the environmental conditions that are suspected to be related to the behavior (e.g., low attention times, personal care tasks).This type of assessment serves as a diagnostic tool to allow the BCBA/D to tailor intervention directly to the function of the behavior, increasing the likelihood and magnitude of treatment success. Functional analyses can be complex and may require higher staffing ratios, more direction from the Behavior Analyst, and specialized training. Although interventions based on less rigorous functional assessments can be effective, more comprehensive and rigorous methods should be adopted if the results of a less rigorous functional assessment are ambiguous, contradictory, or do not result in a function-based intervention that produces adequate improvements in challenging behavior.

Regardless of the type of functional assessment, the process should include multiple sources of information, such as interviews with caregivers, structured ratings scales, and consideration of potential medical conditions that may impact behavior. Whenever possible, functional assessments should include the collection of patient data based on direct observation. These observations may consist of documenting whether the behavior is correlated with certain naturally occurring events or the presence of certain stimuli in the natural environment. If the patient presents with behavior that is beyond the scope of the Behavior Analyst's training, consultation with another provider with the requisite experience is the best course of action.

Functional assessment is an important and necessary step that guides the development of interventions for challenging behavior. Once the Behavior Analyst identifies the most likely reasons why the behavior occurs, they directly incorporate this information into the treatment plan in the form of a function-based intervention. Here, the situation that maintains the behavior is restructured to

promote the development of replacement over maladaptive behavior.

Function-based interventions should include data collection, visual analysis of collected data, and thorough direct observation of the patient's behavior whenever possible, to measure its impact on the behavior. Assessing the impact of an intervention requires comparing the behavior responding to an intervention with the behavior noted prior to the intervention. Because these data guide treatment development, the more frequently they are collected and evaluated, the more the Behavior Analyst can respond to changes or adapt the intervention. For very serious forms of challenging behavior, it may be necessary to collect many observations per day.

Function-based interventions should include items or activities to reinforce alternative forms of patient behavior. Regularly conducting assessments of patient preferences can ensure that these serve as the most potent reinforcers possible.

Assessments from Other Professionals

Periodic assessments from other professionals may be helpful in guiding treatment or assessing progress. Examples include assessment of general intellectual functioning, speech and language skills, academic performance, specific learning disabilities, dental health, and medical status (including co-occurring conditions).

Consultation with medical and mental health providers on the effects of known co-occurring conditions (e.g., OCD, diabetes, epilepsy, ADHD, anxiety disorders, depressive disorders) may be appropriate when developing treatment goals and behavioral intervention procedures. For example, medical staff for a patient with a seizure disorder can provide information regarding seizure antecedents, patient care and safety during events, and timelines for the cognitive and behavioral after-effects of seizures.

Behavior Analysts refer to professionals from other disciplines when there are patient conditions that are beyond the training and competence of the Behavior Analyst, or where coordination of care with such professionals is appropriate. Examples include, but are not limited to, augmentative and alternative communication, and suspected medical conditions or psychological concerns, such as seizure disorders, anxiety disorders or mood disorders.

Risk Assessment

Many individuals with ASD display behavior that can negatively impact them, their caregivers, or the world around them. These may include self-injury (e.g., biting self, head banging), aggression (e.g., hitting/kicking others, disruption and meltdowns, throwing objects, screaming), and dangerous acts (e.g., climbing, elopement), among others. Collectively, these behaviors are generally subsumed under the broad category of challenging behavior, and their occurrence has been associated with harmful outcomes, including physical deterioration, lack of socialization, isolation, placement in

restrictive settings, emergency room visits, further disability, and even death.

Although there are no systematic guidelines for risk assessment of challenging behavior in ASD, what is known is that ongoing patient monitoring and early intervention are effective measures to prevent the worsening of challenging behavior. Therefore, a risk assessment for challenging behavior should involve regular screening for the emergence and acuity of challenging behavior once a child has been diagnosed with ASD. This type of ongoing screening is similar to medical models of risk assessment in which known risks are associated with closer symptom monitoring. With this type of screening, the patient is monitored at set intervals (e.g., every 6-18 weeks) to assess for the emergence of potential behavior concerns.

If challenging behavior or behaviors are identified, the patient receives a level of care in which functional assessment and function-based treatment are implemented to decrease the occurrence of the behavior and prevent its worsening. Although the patient's physician may be the primary professional to conduct this screening, BCBA/Ds who are involved in the ongoing care of a child with ASD are well positioned to conduct direct observations of child behavior and conduct ongoing data collection to assess for the emergence or worsening of challenging behavior. Other forms of routine assessment can include informal or structured interviews, questionnaires, or rating scales.

If a patient is known to engage in challenging behavior, the assessment process shifts slightly. Ongoing monitoring should continue to ensure the behavior is not worsening and, with function-based treatment, is improving with time. However, there are a number of risk assessment

considerations for a child who is known to experience challenging behavior. For example:

- physical harm to the patient, their caregivers, or environment,

- wandering or other behavior that necessitates interaction with first responders,

- emergency room visits,

- destruction of property,

- negative impact on the development of prosocial, communication, and adaptive skills,

- ability to function independently, and

- significant emotional distress for the patient or their caregivers.

SECTION 5.2 TREATMENT PLANNING

Case Conceptualization

Case conceptualization is the process of gathering and analyzing complex information about the patient's history, presenting symptoms, and environmental variables to inform the selection, focus, and sequence of interventions, as well as to identify potential barriers to treatment. Information necessary for case conceptualization is gathered by:

- assessing the patient's skills and needs,

- interviewing caregivers and other treatment providers, and

- reviewing prior documentation.

This information is synthesized to develop a comprehensive picture of the patient and the patient's needs. The result guides treatment and promotes coordination of care. Because a patient's needs and support systems change over time, case conceptualization is a dynamic and ongoing process.

New information should inform current treatment.

Factors that help develop case conceptualization may include but are not limited to:

- developmental and chronological age,

- co-occurring medical and mental health conditions,

- frequency, intensity, and social significance of maladaptive behaviors,

- previous and concurrent treatment assessments, approaches, services, and evaluations,

- response to current and prior treatments,

- family constellation (e.g., siblings, dual-parent household, single parent),

- family and patient's presenting concerns,

- family/caregiver social support systems,

- cultural, racial, and ethnic, backgrounds as well as religious practices, and

- environmental factors including neighborhood and community resources.

Case conceptualization should consider how these variables interact and how they may impact treatment recommendations. For example, a co-occurring secondary diagnosis of a seizure disorder that requires medication with certain side effects (e.g., increased lethargy) may affect the provider's recommendations for treatment occurring at specific times of the day or the types of skills targeted during treatment (e.g., goals may not involve high motor activity due to side effects of the medication).

Case conceptualization includes consideration of the patient's strengths and those of caregivers as appropriate. The task is the same in both situations; that is, strengths should be leveraged to produce desired treatment outcomes. For example, suppose a patient has well-developed language skills but limited social engagement with siblings. In that case, the clinician may maximize this strength to identify socially directed goals (e.g., teaching conversation skills with siblings). In thorough case conceptualization, the clinician promotes engagement with caregivers, maximizes strengths, and provides the best opportunity for behavior change.

Case conceptualization also includes identifying potential barriers to full participation in treatment and corresponding solutions. For example, suppose a patient lives in a single-parent household, the caregiver works full-time and has limited social support from extended family members. In that case,

the clinician may adapt caregiver training goals and prioritize patient goals related to increasing independence in play and self-care.

The case conceptualization process can also build therapeutic rapport with the patient and caregiver, normalize the challenges the patient and family may experience, and serve as a foundation to describe the purpose of treatment and expected outcomes. The treatment plan should consistently be reviewed with the patient and family to ensuring the caregivers and patient agreement with the course of treatment. Such alignment is likely to facilitate treatment progress. Finally, case conceptualization can aid in quality assurance and oversight of ABA treatment to ensure the patient's treatment plan is appropriate. This kind of review can help core goals remain the focus of treatment and manage the myriad of variables that can impact a patient's response to and engagement in treatment.

Goal and Protocol Selection

Goals are prioritized based on their implications for the patient's health and well-being. ABA treatment goals are identified based on patient and family input as well as the outcomes from previously completed assessments. The individualized treatment goals and plan should consider all forms of diversity, such as the patient's age, ethnicity, language, race, gender expression/identity, sexual orientation, geographical location, national origin, religion, immigration status, and socioeconomic status.

Patient and family preferences should be incorporated to increase patient assent, caregiver treatment adherence, and outcomes. Patient preferences on protocol selection, prompting strategies, teaching procedures, schedules of reinforcement should be evaluated and integrated into the formulation of the treatment plan.

Each goal should be defined in a specific, measurable way to allow frequent evaluation of progress toward specific mastery criteria. The number and complexity of goals should be aligned with the intensity and setting of service provision. The appropriateness of existing and new goals should be continually considered. The measurement system for tracking progress toward goals should be individualized to the patient, the treatment context, the critical features of the behavior, and the available resources of the treatment environment. Specific, observable, and quantifiable measures should be collected for each goal and should be sensitive enough to capture meaningful behavior change relative to ultimate treatment goals.

Formulation of Treatment Goals Based on Medical Necessity

The results of standardized assessments may be used to obtain baseline functioning and monitor progress toward long-term treatment goals. However, IQ scores and other global assessments are not appropriate as sole determiners of an individual's appropriateness, response, or nonresponse to ABA treatment.

Individuals who meet the diagnostic criteria of Autism Spectrum Disorder must demonstrate

significant impairment in social, adaptive, or other important areas of current functioning and may or may not include an accompanying intellectual impairment. Many individuals with ASD have average to high IQs but demonstrate deficits in areas related to their core symptoms of autism that impact their adaptation to their environment (e.g., school, housing, employment). These underlying deficits in social communication and social interactions (e.g., lack of spontaneous speech, or inability to differentiate tone of voice) cause clinically significant impairment and impact functioning across environments. Goal formulation should address the core deficits related to social communication impairments and repetitive patterns of behavior to improve social and adaptive functioning (e.g., effective communication, teamwork, cooperation, conflict resolution, self-advocacy).

Individuals may show substantial progress in important characteristics of the disorder (e.g., language functioning, social functioning, repetitive behavior, adaptive behavior, safety and wellness, and co-occurring mental health conditions) without a substantial change in measures of intellectual functioning. Therefore, scores on standardized assessments must be interpreted with other contextual information to determine how the individual is functioning within their everyday environments (e.g., community, school, vocational, or higher education). Scores on such assessments do not negate medical necessity and should not be used to deny or discontinue ABA treatment.

Treatment Settings

The standard of care allows treatment to be delivered consistently in multiple settings to promote generalization and maintenance of therapeutic benefits. No ABA model is specific to a particular location. ABA may be provided in any medically warranted site, including, but not limited to

- residential treatment facilities,

- inpatient and outpatient programs,

- homes,

- schools,[23]

- transportation, and

- community settings.

- Various community settings may be medically warranted to promote social-emotional reciprocity, nonverbal communicative behaviors, and the development and maintenance of relationships.

Community locations include, but are not limited to:

- childcare settings,

- day habilitation, and

- vocational or other educational classes, recreational and social environments.

Treatment should not be denied or withheld because a caregiver cannot be at the treatment location.

Treatment under a behavior analyst's supervision across settings with multiple adults, siblings, and peers supports generalization and maintenance of treatment gains. When medically necessary ABA is provided in these contexts, it supports the patient's participation in their academic curriculum or other ancillary services. Medically necessary ABA is not intended to supplant these services. Treatment setting(s) are selected based on multiple variables, including challenging behaviors that pose a safety concern, treatment goals, and critical environmental variables required to address the patient's clinical needs.

Safety Concerns

Behavior analysts assess patient safety across all environments where the patient interacts and specifies the settings required to target the patient's goals in the treatment plan. For example, patients may demonstrate low-frequency, high-risk behaviors in a specific location that may pose a safety risk for themselves or others. Adolescents and adults with destructive behavior may be at greater risk of requiring emergency room services, inpatient services, or incarceration, especially if these behaviors occur in public settings. When specific people or environmental stimuli evoke safety concerns, these behaviors should be addressed in those relevant settings. A higher intensity of treatment may be medically necessary to provide sufficient opportunities to generalize critical safety skills (e.g., a patient who resides in a residential setting may attend multiple service settings such as day habilitation and may have multiple staff or caregivers).

Treatment Goals

Behavior Analysts target critical domains (such as safety, adaptive, and language skills) across all settings that the patient interacts with to optimize their independence and quality of life. The patient's clinical needs should determine the location(s) where ABA services are delivered, as not all settings will facilitate achieving desired outcomes.

For example, patients whose goals include social interactions and coping skills in a large group and unstructured settings (e.g., playground, lunch) may require treatment in an environment that facilitates social opportunities and relationship development. Treatment may begin in a controlled or structured setting (e.g., home, clinic) and transition to more natural environments (e.g., school, workplace) as treatment gains are observed. As the patient progresses and meets established

criteria for participation in less structured settings, treatment in those natural settings and the larger community should be provided.

To ensure continuity of care, sufficient ABA treatment and consultation should be delivered in subsequent educational and therapeutic settings (e.g., residence to school, hospital to home) to support the successful transition of individuals. It should be noted that treatment might occur in multiple settings (e.g., home, community, and transportation) on the same day.

Control and Presentation of Critical Environmental Variables

Behavior Analysts consider many variables when considering treatment settings and developing a treatment plan, including, but not limited to:

- developmental domains targeted,

- goal selection, and

- the structure of the environment.

Critical environmental variables may only be present in a specific location (e.g., place of work, recreational or social settings). These variables may not be simulated in a clinic or home setting that promotes socially significant results, and individuals with ASD may not respond to a new stimulus with minor variations.

Many skills taught in a structured environment do not readily transfer to the natural setting and may require in-vivo training (e.g., job-related social skills, safety skills). Certain events may disrupt the patient's quality of life and require updates to the treatment plan and relevant setting(s) due to changing environmental variables. Such events may include:

- movement from a current living situation to a new living situation, thus disrupting daily patterns and introducing new stimuli and routines,

- the addition of services that introduce new treatment environments or new staff disrupts daily living patterns, or

- changes in the family's structure, such as divorce, resulting in the child living across two different homes.

Treatment Modality

ABA treatment may be rendered via traditional in-person service delivery, telehealth, or a hybrid of in-person and telehealth service modalities. The modality selected for delivery of ABA services to

patients is determined based on a variety of factors, including but not limited to:

- patient characteristics,

- treatment plan,

- caregiver participation,

- environmental factors, and

- technological requirements.[24]

In-person

ABA services have traditionally been delivered with both the Registered Behavior Technician and Behavior Analyst providing treatment in-person. However, an in-person service delivery model is not always possible due to provider shortages, significant travel requirements, and the lack of specialty care clinicians with expertise in the patient population. Telehealth modalities are effective for delivering ABA services and offer advantages that address access barriers to traditional in-person services.

Telehealth

Telehealth, defined as the "use of electronic information and telecommunication technologies to support and promote long-distance clinical health care, patient and professional health-related education, public health and health administration," can enhance care by:

- allowing providers at one site to provide consultation on a complex case at another location,

- promoting coordination of care among multiple caregivers,

- facilitating communication between the BCBA/D and technicians or caregivers during a crisis or high-stress situations (e.g., sleep protocols),

- allowing shorter and more frequent clinical oversight of clinical programs, and

- connecting patients with similar skill levels for social interactions.

Telehealth is not a separate or distinct service; it is a means to deliver the same ABA services to patients. The Council of Autism Service Providers (CASP) Organizational Guidelines Telehealth Chapter and Telehealth Practice Parameters provide detailed guidelines for determining patients'

appropriate service delivery model. Additionally, telehealth can be provided using both synchronous and asynchronous modalities.

Synchronous

Synchronous modalities allow for real-time video and audio streaming between a patient and provider. Registered Behavior Technicians and Behavior Analysts can provide face-to-face services to patients and their caregivers using synchronous videoconferencing. For example, synchronous modalities might be used to render care directly to the patient who has the prerequisite skills to benefit from treatment directly (e.g., direct services, social skills groups), caregiver coaching, and/or for the Behavior Analyst to provide oversight and clinical direction of the technician working in-person with the patient.

Asynchronous

Asynchronous modalities include store-and-forward technologies in which the patient's treatment progress is reviewed at a different point in time from which services were rendered. Similar to a radiologist using medical imaging to diagnose and treat a patient, the Behavior Analyst reviews patient behavior via video or other behavior data charted by the technician to determine treatment protocol modifications. Asynchronous modalities offer the ability for the Behavior Analyst to:

- view low-frequency behaviors in the child's natural environment,

- conduct clinical observations when internet access is unavailable, and

- address provider capacity limitations by completing clinical oversight and protocol modifications during times with fewer clinical appointments (e.g., mornings).

Hybrid

A hybrid model incorporates both in-person and telehealth service to deliver ABA treatment. A hybrid model may include a blend of both in-person and telehealth delivery of any combination of direct services, parent coaching, clinical oversight, and social skills training. A hybrid model may be clinically appropriate in a variety of circumstances, including, but not limited to:

- Patient and family preferences: Patient and families may prefer to have the BCBA/D provide supervision via telehealth to restrict the number of treating providers in their home at the same time. Telehealth may be more preferred

for families with multiple children accessing home services.

- Travel restrictions: The BCBA/D may utilize a hybrid model and provide a portion of clinical oversight in-person and via telehealth to minimize travel time and ensure consistent oversight of clinical programs.

- Low-frequency behavior: The BCBA/D may leverage telehealth to provide clinical observations for low-frequency behavior that they cannot reliably observe during in-person sessions.

- Treatment goals: Telehealth clinical oversight may be appropriate to support and coach families with specific treatment goals outside typical session hours and at varying times of day (e.g., bowel movement toileting goals).

- Social skills training: A telehealth model may be appropriate to begin social skills training for a patient who does not have typically developing peers nearby and is more comfortable initially practicing social skills via video-streaming.

Family Members and Caregivers

Caregivers, including parents, guardians, siblings, and extended family, when possible and appropriate, should be included in various capacities and at different points during Focused and Comprehensive ABA treatment programs. Family members can provide important historical and contextual information about the individual with ASD to enhance treatment. Additionally, caregivers, peers, coworkers, instructors and others whose involvement can be helpful to the overall treatment program can receive training and consultation throughout treatment, discharge, and follow-up to ensure the carryover of services in home and community settings.

Contributions and Challenges

The need for caregiver involvement and training is supported by the following circumstances, which includes both contributions and challenges:

- caregivers frequently have unique insight and perspectives about the patient's functioning, preferences, and behavioral history;

- caregivers may be responsible for the provision of care, supervision, and management of challenging behaviors during all hours outside of school or a treatment program. A sizeable percentage of individuals with ASD present atypical sleeping patterns. Therefore, some caregivers may be responsible for ensuring the safety of their children and implementing

procedures at night;

- the behavioral challenges commonly encountered with persons diagnosed with ASD (e.g., stereotypy, aggression, meltdowns) secondary to the social and language deficits associated with ASD often present particular challenges for caregivers. Typical parenting strategies are often insufficient to enable caregivers to improve or manage their child's behavior, which can impede the child's progress towards improved levels of functioning and independence;

- management of challenging behavior at home can enhance the general effectiveness of treatment in treatment settings; and

- parents, guardians, siblings, and other family members may continue to support individuals with ASD throughout the lifespan. For example, practical caregiver training can increase the likelihood that caregivers can support the individual with ASD capably in adulthood.

While caregiver training supports the overall treatment plan, it is not a replacement for professionally directed and implemented treatment nor should it be a requirement for treatment

Caregiver engagement and support

Due to the severity and complexity of behavioral challenges and skill deficits that can accompany a diagnosis of ASD, training is part of both Focused and Comprehensive ABA treatment models. Although parent and caregiver training are sometimes delivered as a stand-alone treatments, there are relatively few patients for whom this would be recommended as the sole form of treatment.

Training parents and other caregivers usually involves systematic, individualized instruction on the basics of ABA. It is common, but not a prerequisite, for treatment plans to include several objective and measurable goals for parents and other caregivers. Training emphasizes skills development and support, so that caregivers become competent in implementing treatment protocols across

critical environments. Training usually involves:

- an individualized behavioral assessment,

- case formulation,

- customized didactic presentations,

- modeling and demonstrations of the skill, and

- practice with in vivo support for each specific skill.

Ongoing activities involve:

- supervision and coaching during implementation,

- problem solving as issues arise, and

- support for the implementation of strategies in new environments to ensure optimal gains and promote generalization and maintenance of therapeutic changes.

Please note that such training is not accomplished by simply having the caregiver or guardian present during treatment implemented by a Registered Behavior Technician.

The following are common areas for which caregivers often seek assistance – and are typically addressed in conjunction with a Focused or Comprehensive ABA treatment program:

- generalization of skills acquired in treatment settings into home and community settings;

- treatment of co-occurring conditions that risk the health and safety of the child or others in the home or community settings, including reduction of self-injurious or aggressive behaviors against siblings, caregivers, or others; establishment of replacement behaviors that are more effective, adaptive, and appropriate;

- teaching adaptive skills such as functional communication and participation in routines that help maintain good health (e.g., involvement in dental and medical exams, feeding, sleep, toileting), including instruction in target settings where they must occur;

- contingency management to reduce stereotypic, ritualistic, or perseverative behaviors and

functional replacement behaviors as previously described; and

- relationships with family members, such as developing appropriate play with siblings.

Involvement

The dynamics of a family, their well-being, and how ASD impacts them should be reflected in how the treatment is implemented. Their ability to support treatment goals outside treatment hours will be partially determined by how well matched the treatment protocols are to the family's culture, values, needs, priorities, and resources.

Well-being

Caring for an individual with ASD can present many joys and challenges to caregivers and families. Studies have documented that parents of children and adults with ASD experience higher levels of stress and mental health concerns than parents with typically developing children or parents of children with other kinds of disabilities. Stress, anxiety, depression, and other mental health challenges, often exacerbated by sleep deprivation, may impact the extent to which caregivers or other family members can implement treatment effectively. Though an autism service provider is often focused on the needs of the individual with ASD, they are positioned to provide needed support to caregivers by demonstrating compassion for the unique stressors of raising a child with ASD. Specifically:

- studies show that parents' stress is related to the severity of their child's ASD symptoms and challenging behavior. Providing effective caregiver training, as described above, may help increase family members' sense of competence and well-being;

- research indicates that social support reduces parent distress. Connecting family members with others who have similar experiences may strengthen their social connections and improve well-being. Common ways to connect family members with others include providing information about parent or sibling social support groups or autism-friendly events or by conducting group parent training; and

- the provider's use of compassionate therapeutic skills to build an effective working relationship with families may increase their engagement in treatment. Examples include checking in on family adaptation to ASD and treatment, sharing positive feedback for family progress, listening to parental concerns nonjudgmentally, and encouraging family input and collaboration.

Treatment match

Best-practice ABA procedures commonly used in treatment settings require careful modifications to fit the home setting and associated limitations on caregiver's time, space, skill, and resources. Considering these contextual factors will help inform treatment, so that family members can

effectively and consistently implement it. When developing a treatment plan for home, providers should consider the number of caregivers in the household who will implement the treatment; their additional household, childcare, or employment responsibilities; their views on common behavioral procedures; household rituals and routines; and family resources, such as finances.

Culture and language

Culture, values, and beliefs about ASD will differ significantly across families and impact goals for treatment. Provider sensitivity to the potential effects of culture and family background on the selection of therapeutic goals, necessary to identify meaningful goals for the patient and family, also may help engage families in treatment. Language barriers can be a significant impediment to effective collaboration with families. Where possible, matching therapists to families based on the language spoken will increase the support families receive. If a therapist who speaks the family's native language is unavailable, providing a translator is imperative to maximize the effects of parent training.

SECTION 5.3 ACTIVE TREATMENT

Ongoing Clinical Supervision and Case Management

Developing appropriate goals and the treatment plan is the starting point for the delivery of quality care, but ongoing clinical supervision and case management is necessary to achieve desired patient outcomes. This section describes specifics of the clinical supervision and case management responsibilities of the supervising Behavior Analyst

The value of different perspectives

The primary purpose of ABA services is to bring about changes in social significant behaviors that lead to improved health status, increased independence, and a higher quality of life. But the clinician also needs to contextualize this goal for each patient. That is, the clinician should always keep in mind the specific purpose of treatment. Is the purpose of treatment to narrow the gaps with peers across all domains? Or is it to bring about meaningful changes in a smaller number of behaviors? Or is it to provide a daily clinical infrastructure that is necessary to maintain a level of functioning to prevent deterioration in health status or daily functioning? Or is there some other purpose at work? This perspective, which includes a review of the value of specific treatment targets in achieving goals, acts also a reminder to continually assess patient progress; particularly in terms of the life cycle of the treatment towards a reduced level of care or discharge.

Another perspective, focused on the present, helps to ensure that treatment is being delivered as prescribed and that specific aspects of treatment promote progress towards treatment goals.

These activities, as noted above, constitute most of the behavior analyst's daily activities. It is also important to note that recurring clinical supervision and case management activities are often differentiated based on the presence of the patient and are respectively identified as Direct or

Indirect. Despite this categorization both direct and indirect activities are vitally important to the delivery of quality care.[25]

Examples of common direct supervision activities include, but are not limited to:

- Directly observing treatment implementation for potential program revision.

- Monitoring treatment integrity to ensure satisfactory implementation of protocols.

- Reviewing progress with the patient and family and revise plan and/or goals.

- Directing staff and/or caregivers in the implementation of new or revised protocols. (patient present)

Examples of common indirect supervision activities include, but are not limited to:

- Developing treatment goals, protocols, and data collection systems.

- Developing treatment fidelity measures.

- Summarizing and analyzing data.

- Reviewing patient data and evaluating patient progress.

- Adjusting protocols based on data.

- Coordinating care with other professionals.

- Directing and guiding implementation of a crisis intervention.

- Reporting progress towards goals.

- Developing and overseeing transition/discharge plan.

- Reviewing patient progress with staff without the patient present to refine treatment protocols.

- Reviewing patient progress with caregiver without the patient present to refine treatment

protocols.

- Directing staff and/or caregivers in the implementation of new or revised protocols (patient absent).

These activities generally fall into four main functions as described below.

Monitoring delivery of medically necessary care: Direct treatment and supervision hours prescribed by the Behavior Analyst reflect what is needed to achieve treatment goals for that patient.

Monitoring these services directly includes treatment sessions. Such activities may be expanded to involve the clinician directly working with the patient. More often it involves observing the patient while treatment is being provided by registered behavior technicians or caregivers and obtaining measures of treatment integrity.[26]

In addition, the Behavior Analyst needs to monitor prescribed, authorized, and delivered hours and consider their alignment with one another in comparison with patient progress.

If authorized services do not align with what is prescribed to meet medical necessity, the Behavior Analyst should identify the barriers and attempt to resolve the discrepancy with the funders, patient, and caregiver, as is appropriate. Resolution also includes communicating the impact on patient needs and achievement of treatment goals as well as the appropriate use of resources. A misalignment in services prescribed, authorized, and delivered can be of several types:

- Authorized services are less than what has been prescribed to address medical necessity.

- Authorized services are more than what has been prescribed to address medical necessity.

- Delivered services are less than what has been authorized by the funder or prescribed by the clinician.

As a general guideline, utilization below 80% of authorized services over a two-week period requires immediate attention.

Monitoring and reporting progress

Data from treatment targets are most often collected by the RBT but are analyzed by **clinical** staff on a regular basis to monitor patient progress toward goals. These analyses determine whether or not current programs and interventions are appropriate. Regular data analyses allow the Behavior

Analyst to quickly intervene if a patient is not making expected progress toward goals and objectives.

Other methods for monitoring progress include, but are not limited to:

- rate of mastered programs,

- rate of mastered targets,

- change scores for outcome measures, and

- change scores for skill assessments.[27]

The frequency with which data are analyzed should be individualized. A comprehensive review of progress may occur weekly, bi-monthly, or monthly depending on patient need and intensity of services. Some patients require more frequent analyses. Examples might include patients in comprehensive, intensive programs, those who are progressing rapidly through treatment targets, and those with severe behavior problems. As a general rule, data should be analyzed and graphed after an average of x to x sessions.

While clinical staff provide regular updates on progress to team members, patients, and caregiver, this also occurs as part of a formal process for funders at the end of authorization periods to determine the need for ongoing services. However, the level of review performed by the behavior analyst for clinical decision-making purposes is generally different and more involved than what funders need to understand about patient status.

Adapting treatment plans and modifying protocols

ABA's effectiveness flows from its literature base of evidence-based practices. But ongoing treatment is equally informed by the direct observation data collected for each patient. Thus, a core responsibility of the BCBA and BCaBA is to continually adapt details of treatment to promote progress as rapidly as possible towards each goal. Modifications are largely based on direct measurement of behavior during treatment sessions, but other sources also contribute.

Regular modifications to treatment protocols happen as progress towards goals occur. These changes to the treatment plan are usually anticipated and are sometimes embedded within the plan itself. For example, the addition of self-management strategies may be planned as soon as specific behavioral criteria are achieved. But changes to treatment approach are also needed when progress is absent, occurring unevenly, or at a lower-than-expected rate. As a general practice, further analyses and problem solving are generally required, when three or more treatment sessions occur without adequate progress. Before

changes are proposed or made, possible causes need to be considered.

This begins by reviewing available data and determining if any additional information is needed to identify and prioritize possible causes. For example, causes of slow progress for a specific behavioral target could reflect multiple variables, including weak prerequisite skills are weak or inadequate reinforcement. Depending on the cause, solutions may involve teaching prerequisite skills, changing the level or type of prompting or reinforcement, or program for more practice, or increasing the number of learning opportunities. Which adaptation will be selected and tested first reflects variables and information unique to the individual patient.

In other cases, more significant changes to the treatment plan also may be needed because there is a sudden threat to the health and well-being of the patient. Appropriate adaptations may lead to the need to change intensity, staffing ratios, types of services, or even behavioral targets.

Finally, on an ongoing basis, the BCBA should continually review the value of specific behavioral targets to prioritize their value in terms of achieving long-term treatment goals.

Leading support and training efforts

Patient treatment goals are achieved by the involvement of different individuals in the delivery of care. These individuals include: members of the clinical and direct line staff; professionals from other disciplines; parents, siblings, caregivers, and teachers; and the patients themselves. Together they form the community where behavior change occurs and is maintained.

Each group is involved in supporting patient care in different ways. As such, the clinician engages each group in different ways. In some cases, the engagement involves collaboration, support, and training. When addressing coordination of care, communication is usually the primary goal to avoid gaps in patient need and duplication of services. See separate sections for more detail.

The following section addresses clinical capacity and caseload (two important aspects of BCBA utilization).

Supervision Dosage

Ratio to direct treatment

ABA treatment is sometimes characterized by the number of direct treatment hours delivered. However, it is equally important to discuss the level and nature of the supervision

("clinical direction") provided by the Behavior Analyst. ABA services generally require relatively high levels of supervision due to (a) the frequent adjustments to the treatment plan based on ongoing data collection and (b) oversight of the direct staff who most commonly deliver services.

Although the supervision provided for must be responsive to individual patient needs, two hours for every ten hours (2:10) of direct treatment is the general standard of care. When direct treatment is ten hours per week or less, a minimum of two hours per week of case supervision is still generally required except when specified as part of a fade plan or step down in service. It should also be noted that a ratio closer to 1:10 may be appropriate if fewer adjustments to protocols are anticipated for a specific patient, as part of planned step down in services, or if the main goal is to maintain current levels.

In contrast, treatment of severe behavior typically requires a richer ratio of clinical supervision to direct treatment, especially during assessment and early stages of treatment

Case supervision may be temporarily or permanently increased to meet the needs of individual patients at specific time periods in treatment (e.g., initial assessment, significant change in response to treatment, change in intensity of interfering behaviors). This lower ratio of case supervision hours to direct treatment hours usually reflects the complexity of the patient's ASD symptoms and the responsive, individualized, data-based, decision-making that characterizes ABA treatment. Several factors increase or decrease case supervision needs on a shorter- or longer-term basis. These include:

- direct treatment hours,

- barriers to progress,

- issues of patient health and safety (e.g.,: certain skill deficits, dangerous or problematic behavior),

- complexity of treatment protocols,

- family dynamics or community environment, generalization probes within new

environments,

- lack of progress or increased rate of progress,

- changes in treatment protocols, and

- transitions with implications for continuity of care.

Proportion of supervision provided by BCBA vs. BCaBA

BCaBAs working under the direct supervision of BCBAs are well positioned to provide clinical supervision. The proportion of supervision provided by the BCBA vs. the BCaBA for a given patient should reflect the patient's progress in treatment, unique needs as well as the training, expertise, and experience of the BCaBA. In some cases the BCBA should be providing the majority of the clinical supervision in other cases, it may be clinically appropriate for BCBAs to provide only 25% of the supervision. BCBA supervision which is less than 25% of the total supervision should occur only in rare cases where there is a compelling rationale related to the nature of protocols being administered, patient history and response to treatment, and phase of treatment, for the exception.

Factors impacting caseload and BCBA utilization

Behavior Analysts should manage a caseload that allows them to provide appropriate case supervision to facilitate effective treatment delivery and ensure consumer protection. Caseload size for the Behavior Analyst typically reflects the following factors:

- complex patient and family factors,

- average weekly direct treatment hours per patient,

- location and modality of supervision and treatment (for example, clinic vs. home/community, individual vs. group, telehealth vs. in vivo),

- funder authorization for mid-tier staff (e.g., BCaBA),

- experience, expertise, and skills of the clinician, and

- percentage of patients who are in active treatment vs. step down in services (supervision: direct treatment ratio).

As described above, the number of direct treatment hours per patient is a factor in determining case load size. As an example, two patients who each receive 20 hours of direct

treatment per week generally require more indirect services (e.g., meetings and reports) than a single patient who is receiving 40 hours of direct treatment during the same period. Other factors, such as level of family support and complexity and behavioral challenges presented by the patient, should be considered.

Indirect services, along with administrative tasks, may average 25% of the clinician's responsibilities. Thus, the degree to which the provider organization has developed systems that support clinical, management, and administrative activities, as well as the percentage of reimbursement for indirect case activities, affect the capacity of BCBAs to provide case supervision.

Given these considerations and the 2:10 supervision and direct treatment ratios, clinicians generally can provide 115-120 direct supervision hours each month, to support 575-600 hours of direct treatment. When clinicians serve patients who are preparing for a step down in services or discharge, the supervision ratio moves closer to 1:10 and the number of direct treatment hours they can support does increase. However, if clinical supervision is consistently provided at one hour for every ten hours of direct care, patient care is likely to be adversely affected and should be evaluated.

There are several factors which generally impact the range for clinical performance expectations. Clinicians who possess expertise in specific patient populations and treatment models and who receive support from an advanced integrated clinical system may be able to regularly operate above this range and support a higher caseload.[28] On the other hand, newly credentialed practitioners, or those with limited experience with a particular patient population, may be assigned a smaller caseload or fewer supervision hours for a period of three to six months.

Generalization and Maintenance of Behavior Change

Effective ABA services bring about changes in socially significant behaviors. This means that the behavior change is valued, leads to more opportunities for patients and their families, greater patient autonomy, and, when appropriate, reduced levels of treatment. Specific practices help ensure that such behavior changes are robust in that they generalize and maintain:

- development of long-term goals that describe the types of generalization desired and the conditions under which behavioral changes are to be maintained,

- systematic variance of stimuli, settings, persons, behavior, or reinforcement contingencies in ways that promote efficient generalization and maintenance of behavior change, and

- use of data to make adaptations needed to support generalization and maintenance of behavior change that is individualized for each patient.

Multiple procedures to achieve stimulus and response generalization or maintain behavior changes

are described elsewhere in seminal papers and articles (e.g., Stokes & Baer, 1977). These include, but are not limited to:

- planned variations in treatment dimensions,

- leveraging of existing contingencies in criterion environments, and

- requiring higher mastery levels for some behaviors.

Behavior analysts individualize the approach for each patient based on the patient's specific circumstances, response to treatment, and established research findings.

In addition, generalization and maintenance plans should be developed after consideration of all relevant ABA approaches and reflect the use of multiple procedures. Generalization and maintenance are not likely to be achieved by relying exclusively upon a specific ABA methodology, treatment setting, or the participation of caregivers and parents.[29] Which methodologies chosen should be based on variables specific to each patient with ongoing monitoring used to adapt plans as needed.

Luna is a 15-year-old girl diagnosed with autism who participates in several community activities with peers. There have been suspected incidents of bullying, which is not surprising in that individuals with ASD are at higher-risk for bullying by peers. Therefore, a goal to address bullying was added to her treatment plan which indicted the range of environments, types of bullying, and aggressors she is likely to encounter. It also referred to critical variations in the response she will learn. Her clinical team introduced examples that efficiently taught her to recognize attempts and respond with appropriate variation to bullying. The treatment plan was implemented in a variety of settings. It also included elements of self-management as Luna most likely will be bullied when she is without a caregiver or parent present.

Finally, in most cases treatment should incorporate procedures that teach and support self-management skills. This may include teaching self-observation, self-recording, and self-reinforcement. These skills aid generalization and

maintenance and simultaneously increase patient autonomy.

SECTION 5.4 CLINICAL OUTCOMES

What Is a Desirable Outcome?

All behavioral treatment has the same desired outcome: developing skills to enhance the patient's physical and psychological well-being, independence, and relationships with others and their environment. Although fewer of the challenging characteristics of ASD may be observed post-treatment, it is not appropriate to assume that complete elimination of all characteristics of ASD is desirable.

The goal of treatment is not to reduce reinforcers, options, or expressions of individuality. The desired outcomes for treatment are always: better health, increased independence, and more opportunities.

Outcome data describe the impact of a health care service or intervention on the health status of patients. The outcomes reported should directly reflect those variables that are most valuable to the patient and others affected by the condition and treatment. While seemingly straightforward, measuring the outcomes of ABA services is a complex undertaking. First, measuring the quality of behavioral health care is generally more complicated than measuring the quality of physical health care. Second, there is an imprecise relationship between treatment and outcomes as there are factors that affect outcomes that may be beyond the control of the individual practitioner. Additionally, selecting the right assessment tools to measure outcomes requires a thoughtful and reasoned approach. For instance, some outcomes can be assessed only after substantial time in treatment or after the patient has been discharged from care. Other commonly used measures may not currently demonstrate their utility in the evaluation of ABA services for autistic individuals. For these and other reasons, outcome measures typically employ a multi-method, multi-informant approach. Nevertheless, measuring outcomes has always been an integral part of ABA treatment. Before selecting specific outcome measures for a patient, consideration should be given to the factors described below.

The Proximal-Distal Continuum

Outcomes may be proximal in that they reflect the immediate or intermediate effects of intervention. They may also be distal and demonstrate the long-term cumulative effects of intervention and the resulting life changes experienced as a function of proximal outcomes. Measures of proximal outcomes are important during treatment as they often guide decisions in treatment. Because measure of proximal outcomes typically have a close relationship to treatment goals, they are commonly used to describe treatment outcomes for the individual patient. Examples of an immediate measure of proximal outcomes would be the direct observation and measurement of behavior in response to the interruption of a preferred activity. An intermediate measure of proximal outcomes might be weekly self-ratings related to interactions with peers.

Distal outcomes are critical to evaluating the overall value of treatment for the individual's long-term well-being. Examples of measures of distal outcomes would be reduced admissions to the

emergency room in the year following treatment for severe and challenging behavior or change scores in cognitive or adaptive functioning across the span of several years following intensive, comprehensive early intervention. However, while measures of distal outcomes may not detect effects of treatment services for several years and are not always viable for the individual behavior analyst to administer, it is nonetheless important to include them whenever possible.

Choosing Appropriate Domains

In addition to considering the proximal-distal relation, the outcome measures chosen should reflect the domains that are the focus of treatment. Example domains include skill areas (e. g., socialization, communication, adaptive skills), quality of life, and challenging or high-risk behaviors. Some domains are relevant to how patients or their caregivers perceive ABA services and the impacts on various aspects of their lives, such as quality of life or satisfaction with treatment. More specifically, they may relate to the patient's perception of the acceptability of treatment, parenting stress, and family wellness.

> Clinicians should consider whether a particular domain is well-supported by research for the specific treatment target or treatment model provided to the individual patient. For example, there is consensus about ways to measure the impact of intensive, early intervention for ASD. These include norm-referenced measures of cognitive functioning, language, social, and adaptive skills. However, these would not be appropriate for other treatment models with different goals, such as focused intervention. Similarly, a broad measure of adaptive skills may be an appropriate outcome measure for younger children who receive comprehensive, intensive treatment programs but unlikely for those in a program focused primarily on establishing social skills with peers.

Replicable Measures

Outcome measures should be operationalized in terms of their criteria for administration and data interpretation. This permits evaluation of the consistency in the presentation of assessment activities and items, their scoring, and interpretation across administrations. In the case of data collected by direct observation of behavior (e. g., patient, procedure, or test administration) these measures should produce satisfactory levels of interobserver agreement; for standardized tests, there should be adequate reliability.

Given demonstration of consistency in administration, scoring, and interpretation, the next step is to evaluate it for evidence of its appropriateness as an outcome measure. This can be approached in various ways. For example, establishing independent toileting has face validity and likely reflects caregiver priorities. Appropriateness can also be determined from a review of peer-reviewed

research, which provides evidence of its role in meeting medical necessity. For example, noncompliance is a concern frequently brought to primary care providers by parents and other caregivers. Research may also underscore the value of specific interventions to address specific treatment targets. For example, improvement in functional communication is an effective intervention for a variety of maladaptive behaviors, including aggression. In the case of standardized tests, the value of specific standardized test scores as an outcome of treatment may come from a literature review of its concurrent or predictive validity.

Different Data Sources

Outcome data for a particular domain may be collected using a variety of sources including:

- direct observation and measurement of behavior,

- standardized assessments, and

- self-report measures by patients and stakeholders.

Each type of measure provides different information about the impact of services. Using multiple data sources, even if all related to the same domain, is often best practice. For example, outcomes from treatment to decrease self-injurious behavior might include direct observation and measurement of behavior, administration of standardized inventories of challenging behavior, reports from caregivers regarding perceptions of treatment impact, and admissions to the emergency room.

Considerations for specific data sources are discussed in the following section.

Direct Observation and Measurement of Behavior

Direct observation and measurement of behavior guide the data-based decision-making that is a hallmark of ABA. Behavior analysts should conduct repeated and frequent direct observation and measurement of each target behavior in a patient's treatment plan from baseline through all phases of intervention. The resulting graphed data are necessary to establish baseline levels of each target behavior, quantify changes in behavior over time, and assess whether changes to the treatment plan are indicated for the individual patient or not. Choices about the procedures used to track behavior over time (i. e., proximal measures) are pivotal because direct observation data impact other important decisions. For example, proper measurement procedures allow one to examine the function of challenging behavior and decide when to implement or change interventions,

Several ABA seminal texts describe various measurement procedures and offer guidance about matching specific measurement procedures with specific applied circumstances. In addition, LeBlanc et al.[30] provide a clinical decision-making model for selecting optimal measurement

procedures given certain features of the behavior of interest (e. g., does it occur publicly) and the constraints of the therapeutic environment (e.g., is it possible to monitor frequently). For example, continuous measurement procedures, such as frequency and duration, more accurately measure what is happening but are often effortful, resulting in missed data or errors in data. Discontinuous measures involve scoring behavior based on intervals of time or sampling behaviors at specific times, but not continuously. These discontinuous measures estimate what occurred but often overestimate or underestimate, particularly if the intervals or sampling times are large as they tend to be in treatment settings. When challenging behavior occurs at very low levels, discontinuous measurement is problematic at any interval, and continuous measures should be used.

Standardized Assessments

Data derived from well-researched, psychometrically sound standardized assessments, whether norm- or criterion-referenced, can be helpful for measuring specific patient outcomes. Practitioners need to ensure that the tool selected has sufficient evidence to demonstrate that it possesses the necessary psychometric properties. Such properties may include:

- the selection of the standardization group,

- reliability criteria, and

- different types of validity.

Collectively, they help determine if the instrument is an appropriate outcome measure to measure individual patient performance against some norm.

In addition, it is also important to examine the research base related to the appropriate interval for administration as well as sensitivity to detect changes in performance for specific patient populations and treatment models. For example, some standardized assessment instruments are not sensitive to changes resulting from comprehensive ABA interventions over less than a year, or those resulting from focused ABA interventions even over longer periods of time. Similarly, criterion-referenced instruments, which document the acquisition and reduction of specific behaviors as a function of treatment against some standard, should also demonstrate basic psychometric properties, such as acceptable level of reliability. Like norm-referenced assessments, test-retest intervals for criterion-referenced assessments depend on each instrument.

Both norm-referenced and criterion-referenced instruments typically measure treatment outcomes based on changes in how the patient responds during the assessment. Other standardized instruments collect information about how patients or their proxies (i. e., parents, and caregivers) perceive ABA services and the impacts on various aspects of their lives. These measures include the consumer's perception of the acceptability of treatment or the likelihood of its continuation, overall satisfaction with services and progress related to treatment goals, and report measures on

important outcomes, such as quality of life, parenting stress, and family wellness.

Measures Reflect Purpose of Treatment

One type of comprehensive intensive intervention is Early Intensive Behavior Intervention (EIBI), which is designed to produce robust changes in the overall developmental trajectory and learning abilities of a young child, enabling them to benefit from future educational and treatment environments. For these types of programs, proximal measures include progress toward or mastery of targeted goals and direct observation of skills and deficits, but these proximal measures are of limited utility without distal measures. Measures of changes in developmental quotient or intelligence quotient represent appropriate standardized measures that could be used to assess outcomes, as could categorization of entry-to-school status. In contrast, focused programs targeting the reduction of severe challenging behavior are more likely to measure changes in areas related to improvements in functional communication, tolerance of delays or denied requests, and decreases in dangerous behaviors, so that the patient and caregivers have greater safety and access to their communities. In addition, decreases in caregiver stress is a potential benefit of ABA treatment and should also be considered as another outcome measure.

Cautions

Funders and other stakeholders are interested in finding one or many metrics they can rely upon to quantify treatment outcomes and to measure quality and effectiveness. While the goal is understandable, the heterogeneity within the ASD patient population, and the different goals and components of the various treatment models, have not resulted in a single set of metrics that measures the progress of all patients. The fact that an instrument is prescribed by a funder does not itself make the instrument appropriate for clinical purposes. The fact that an instrument is broadly used by practitioners for a specific purpose doesn't make it appropriate for all patients or all purposes. It is important for all stakeholders to be knowledgeable about the instrument's appropriate use and take steps to ensure that outcomes are accurately measured and reported.

The most valuable outcomes of behavioral treatment (i.e., distal outcomes, such as Independent successful employment and robust mental health) are generally the cumulative product of cascading effects over time (e.g., new skills and access to new communities facilitates development of even more social and emotional competence over time). However those outcomes are achieved and long after intervention is completed, it is no longer practical for the provider to measure. Thus, most outcome measures should focus on proximal outcomes (e.g., immediate increase in important skills and access to the community, decreased family distress) that produce those cascading positive effects across the lifespan.

The following section describes some further cautions in measuring, reporting, and interpreting

outcomes of treatment.

Percentage goals mastered

Given the heterogeneity of the patient population, variation in treatment intensity and duration, and the impossibility of equating goals, using a required percentage of goals mastered is generally a poor outcome measure. Such an approach is not able to fully reflect treatment outcomes for individual patients. It may also inadvertently create scenarios in which the achievement of easier goals results in higher percentage of mastery but provides for a lesser benefit to the patient.

For these and other reasons, there is currently no consensus or guideline regarding what percentage of goals mastered defines a successful outcome for a patient or group of patients. However, no progress on any goals during an authorization period should result in a careful review of the treatment plan and utilization of authorized services. Similarly, 100% achievement of all goals during a six-month authorization period may indicate that the treatment plan may be less ambitious than what was needed to deliver critical benefits to the patient.

Prescribed batteries

Some funders or provider organizations may require specific assessment tools as part of the authorization of services process. If the funder-required outcome measures are not likely to accurately assess outcomes, the Behavior Analyst should select additional tools that ensure the accurate measurement of outcomes over time for a specific patient and advocate for use of more appropriate tools. Similarly, some provider organizations may be interested in aggregating data using a set of standard measures across the entire patient population. However, the treating Behavior Analyst's focus is on short-term or intermediate high-value outcome indicators or are predictive of desired long-term outcomes for the individual patient.

Interpreting outcomes

There are many variables that may impact patient outcomes and, therefore, impact the

interpretation of outcomes. These variables may be unique to the patient, such as:

- their age at start of treatment,

- severity or topography of symptoms,

- presence of co-occurring conditions, or

- language or other communication skills.

Some variables may be related to the treatment program, such as:

- consistency and length of treatment (especially if discharge from treatment is premature),

- availability and utilization of recommended treatment dosage, and

- availability and utilization of recommended caregiver involvement.

It is important to consider the impact of these variables when outcomes are not achieved as predicted, especially when those variables result in a lack of adherence to treatment recommendations.

Summary

An effective approach to outcomes measurement for an individual with an Autism Spectrum Disorder should include a multi-dimensional mixture of proximal and distal outcomes that are directly tied to the treatment model and services. Measures chosen should have face validity and rely upon those generally accepted as appropriate for the patient population, treatment target, and model. In addition, the practitioner should utilize only those instruments and measures that have been shown to be appropriately calibrated to detect change. Finally, clinicians and other stakeholders should be aware of some cautions in measuring, reporting, and interpreting outcomes of treatment.

SECTION 5.5 COLLABORATION AND COORDINATION OF CARE

Behavior Analysts frequently treat issues (e.g., aggression, tantrums, communication deficits, and social deficits) concurrently being addressed by other healthcare professionals, including medical personnel, speech and language therapists, and occupational therapists. Under these circumstances, cotreatment and coordination of care may be indicated. For example, Behavior

Analysts can teach skills that:

- allow dental and medical assessment and treatment procedures,

- analyze the effects and side effects of medications, and

- distinguish between environmental and non-environmental causes of behaviors.

Common treatment goals are most likely achieved when there is a shared understanding and coordination among all healthcare providers and professionals.

Several studies show that an eclectic model, where ABA is combined with non-evidence-based treatment, is less effective than ABA alone. Therefore, Behavior Analysts cotreat and coordinate care only with healthcare professionals who provide peer-reviewed, scientifically proven forms of treatment. Each intervention should be provided at the level needed to meet their respective standards of care.

SECTION 5.6 DISCHARGE AND TRANSITION PLANNING

Discharge is defined as the end of services between a provider and a patient and can be initiated by the provider or the patient. Transition is a coordinated set of individualized and results-oriented activities designed to move the patient through treatment toward discharge. However, transition and discharge planning is not a single event that occurs at the end of the treatment period. Envisioning outcomes that lead to a successful discharge from service should occur at all points throughout treatment. As a result, the criteria for moving through a transition plan and discharging patients should be detailed and documented at the initiation of services and refined and modified throughout the treatment process, including with initial and ongoing assessments of data. Finally, transition and discharge planning should be conducted in collaboration with the patient, family members, and other professionals involved in the patient's treatment.

Transition Planning

The transition plan should be a written document that specifies the starting point of treatment and

describes to the extent known:

- the patient's symptomatology,

- presence or absence of skills,

- patient strengths and barriers to learning,

- the patient's rate and style of learning,

- the provision of, and response to, previous treatment, and

- the desired outcomes of treatment.

It should also specify details of monitoring and evaluation. Monitoring may entail:

- assessing generalization across environments and people,

- assessing maintenance of treatment gains, and

- maintaining measures.

At the same time, as direct care is lessened and terminated, it is important to determine the need for booster sessions should that need exist. Because of this potential need and the monitoring required, the transition plan should be reviewed often.

The transition plan should outline multiple stages of transition from a more restrictive to a less restrictive level of care. This will differ for every patient based on their baseline and targeted outcomes. Transitioning from a more restrictive to a less restrictive level of care may include moving from a 1:1 model to a small group model, from a comprehensive program to a focused program, or from a center-based program to a community-based program.

Discharge

The ongoing process of transition planning culminates in discharging a patient from services. Discharge should be initiated when:

- the patient has achieved desired outcomes as developed in collaboration between the

provider, the individual, and the family, or

- the patient no longer meets the diagnostic criteria for ASD (as measured by appropriate standardized protocols), or

- the patient's diagnosis no longer impacts overall functioning, or

- the patient is no longer benefiting from services.

There may also be times when a decision is made to end services or temporarily suspend services despite a determination that services are medically necessary (e.g., when the family is interested in discontinuing services, when the family and provider are unable to reconcile essential issues in treatment planning and delivery, with changed family circumstances, or when funding issues arise). In these situations, a distinction is made between the decision to discharge from services and the ongoing clinical recommendation for services. The discharge report should outline why the decision was made to end services, the ongoing recommendation for services, and the criteria for resuming services.

After the decision is made to discharge a patient, the provider should facilitate coordination of care with future service providers, as appropriate and upon receiving consent. The provider, patient, and family members should also discuss variables that may impact the potential need to resume services in the future.

When there are questions about the appropriateness or efficacy of services in an individual case, including pursuant to any internal or external appeal relating to insurance benefits, the reviewing body should include a Behavior Analyst with experience in ABA treatment of ASD.

[1] Throughout this document the term Autism Spectrum Disorder is used to refer to the neurodevelopmental disorder defined in the most recent edition of the Diagnostic and Statistical Manual of Mental Disorders.

[2] American Psychiatric Association. (August 2021). *What is Autism Spectrum Disorder?* https://www.psychiatry.org/patients-families/autism/what-is-autism-spectrum-disorder

[3] Behavior Analyst Certification Board. (No date). *Home page.* https://www.bacb.com/

[4] Behavior Analyst Certification Board. (No date.) *BACB Certificant Registry.* https://www.bacb.com/services/o.php?page=101135

[5] Behavior Analyst Certification Board. (No date.) *Verify BACB Certification.* https://www.bacb.com/verify-certification/

[6] Institute for Credentialing Excellence. (No date.) *NCCA Accreditation.* https://www.credentialingexcellence.org/Accreditation/Earn-Accreditation/NCCA

[7] Behavior Analyst Certification Board. (No date.) *Ethics*. https://www.bacb.com/ethics-information/

[8] Behavior Analyst Certification Board. (No date.) *Board Certified Behavior Analyst.* http://www.bacb.com/bcba

[9] Visit www.bacb.com for current information on the eligibility requirements as these change periodically.

[10] Behavior Analyst Certification Board. (no date.) *Board Certified Behavior Analyst – Doctoral.* *https://www.bacb.com/bcba/#BCBAD*

[11] Behavior Analyst Certification Board. (no date.) *Board Certified Assistant Behavior Analyst.* *https://www.bacb.com/bcaba/*

[12] Behavior Analyst Certification Board. (no date.) *Registered Behavior Technician* https://www.bacb.com/rbt/

[13] American Academy of Pediatrics (AAP) Committee on Child Health Financing, Essential Contractual Language for Medical Necessity in Children. *Pediatrics* (2013) 132(2): 398-401.

[14] Cal. Health & Safety Code § 1374.72(a)(1) (health care service plans); Cal. Ins. Code § 10144.5(a)(1) (disability insurance policies).

[15] *See* Cal. Health & Safety Code § 1374.72(a)(3)(A) (health care service plans); Cal. Ins. Code § 10144.5(a)(1) (disability insurance policies). Both statutes provide that "medically necessary treatment of a mental health or substance use disorder" means:
… a service or product addressing the specific needs of that patient, for the purpose of preventing, diagnosing, or treating an illness, injury, condition, or its symptoms, including minimizing the progression of that illness, injury, condition, or its symptoms, in a manner that is all of the following:
(i) In accordance with the generally accepted standards of mental health and substance use disorder care.
(ii) Clinically appropriate in terms of type, frequency, extent, site, and duration.
(iii) Not primarily for the economic benefit of the health care service plan and subscribers or for the convenience of the patient, treating physician, or other health care provider.
Cal. Health & Safety Code § 1374.72(a)(3)(A) (health care service plans); Cal. Ins. Code § 10144.5(a)(1) (mandating same definition for disability insurance policies).

[16] 215 Ill. Comp. Stat. Ann. 5/356z.14(i); *see also* 18 Del. C. § 3366€(5) (similar).

[17] 29 U.S.C. § 1185a (a)(3)(A)(ii); 29 C.F.R. §2590.712 (c)(4).

[18] https://www.nashp.org/medical-necessity/ (50-state review of medical necessity definitions).

[19] *Id*.

[20] 42 U.S.C. § 1396d®(5).

[21] For example, in 2019, a federal court found that all of the employer-sponsored health plans administered by United Behavioral Health, one of the nation's largest behavioral-health benefits administrators, required, as one condition of coverage, that services must be consistent with generally accepted standards of care. *See* Findings of Fact and Conclusions of Law, ECF No. 418, *Wit v. United Behavioral Health*, No. 14-cv-2346 (N.D. Cal. Mar. 5, 2019) at 25.

[22] *See*, *e.g.*, Aetna, Applied behavior analysis medical necessity guide (June 2021), available at https://www.aetna.com/document-library/healthcare-professionals/documents-forms/applied-behavioral-analysis.pdf; United Behavioral Health, Supplemental Clinical Criteria: Applied Behavior Analysis, Doc. Number BH803ABA032021 (Mar. 15, 2021), available at https://www.providerexpress.com/content/dam/ope-provexpr/us/pdfs/clinResourcesMain/autismABA/abaSCC.pdf. CASP cites these clinical policies as examples only and does not endorse the clinical criteria or express any opinion as to whether they comply with generally accepted standards of care or other legal requirements.

[23] ABA may be delivered in school settings for IDEA/FAPE purposes, but may also be medically necessary in this location similar to other community settings.

[24] Council of Autism Service Providers (2021). Practice Parameters for Telehealth-Implementation of Applied Behavior Analysis: Second Edition. Wakefield, MA: Author.

[25] When funders do not reimburse adequately for indirect services, this creates a situation where some activities that would be best completed outside the patient's presence are sometimes done, as required, in the presence of the patient.

[28] The Behavior Analyst Certification Board (BACB) has outlined the minimum supervision standards for Registered Behavior Technicians (RBTs) to maintain their credential.

[27] Results from selected standardized assessments can be used to monitor progress toward long-term treatment goals. However, the results should be used cautiously if treatment is low in intensity or short in duration, or little time has elapsed since prior administration. No single measure, including measures of cognitive functioning and other global assessments, are appropriate to determine an individual's response or nonresponse to ABA treatment. In addition, individuals may show substantial progress in important characteristics of the disorder (for example, language functioning, social functioning, repetitive behavior, adaptive behavior, safety and wellness, and co-morbid mental health conditions) without a substantial change in global measures of these domains. See also related content in Part V: "Clinical Outcomes."

[28] See "Organizational Support of Clinical Excellence" in *CASP Organization Guidelines.*

[29] Caregiver participation is often additive to treatment gains, including generalization and maintenance, but requiring such participation as a condition of treatment is not appropriate and likely a violation of mental health parity laws.

[30] LeBlanc LA, Raetz PB, Sellers TP, Carr JE. A Proposed Model for Selecting Measurement Procedures for the Assessment and Treatment of Problem Behavior. Behav Anal Pract. 2015 Oct 13;9(1):77-83. doi: 10.1007/s40617-015-0063-2. PMID: 27606232; PMCID: PMC4788644.