Practice Parameters for Telehealth-Implementation of Applied Behavior Analysis, Second Edition

This document should be referenced as follows:
Council of Autism Service Providers (2021). Practice Parameters for Telehealth-Implementation of Applied Behavior Analysis: Second Edition.. Wakefield, MA: Author.

Updated 12/1/2021

ACKNOWLEDGEMENTS

CASP Leadership:

Lorri Unumb, Esq., CEO

Mike Wasmer, DVM, DACIM, Vice President of Government Affairs and Special Projects

Judith Ursitti, Vice President of Community Affairs

Erick Dubuque, Ph.D., BCBA-D, Vice President of Accreditation

The Council of Autism Service Providers thanks the Association of Professional Behavior Analysts for its professional collaboration and valuable contributions to prior versions of this document.

Table of Contents

Preamble

The Council for Autism Service Providers (CASP) is a non-profit, membership-based association of for-profit and not-for-profit agencies serving individuals with autism spectrum disorders. CASP brings a diverse group of stakeholders together from behavioral health care, technology, health care payers, academia, regulatory and other entities to address and advance compliance with ethical, legal, and professional standards in the practice of applied behavior analysis (ABA). CASP has committed to establishing guidelines for the practice of ABA in various clinical applications that define standards and expected outcomes of quality and evidence-based treatment.

These guidelines cover the provision of applied behavior analysis services using telehealth technologies for the assessment and treatment of autism spectrum disorders and are intended to be used as a supplement to the "Applied Behavior Analysis Treatment of Autism Spectrum Disorder: Practice Guidelines for Healthcare Funders and Managers[1]", hereafter referred to as the ABA Practice Guidelines. These guidelines were developed by a panel of experts in their respective fields and are designed to serve as a standard reference and educational tool for Board Certified Behavior Analysts (hereafter referred to as providers) to assist with adherence to ethical standards and legal requirements when rendering ABA treatment via telehealth modalities. These guidelines are also intended to guide health care funders and managers such as insurance companies, government health programs, and employers. Consumers and regulatory bodies may also find these guidelines a valuable resource.

This document is based on the best available scientific evidence, a rigorous peer-review process, and expert clinical opinion regarding the use of telehealth service delivery models to deliver ABA services for individuals with ASD. The clinical guidelines are intended to assist providers in providing safe and effective treatment via telehealth modalities based on current scientific knowledge, technological requirements, and patient needs. As a behavioral health treatment, ABA includes a number of unique clinical and delivery components. Safe and effective practice requires technical training, professional knowledge, and skill. Compliance with these guidelines alone will not guarantee appropriate clinical treatment or successful outcomes.

Purpose

These guidelines are intended to serve as a resource for designing, implementing, and operating ABA services delivered via telehealth in a broad range of clinical settings (e.g., home, clinic, school) and to address a variety of targeted treatment goals (e.g., challenging behavior, sleeping, adaptive living skills). The purpose of this document is to serve as a clinical and technical resource for providers and ABA organizations to ensure safe, effective telehealth delivery of ABA service[2,3]. A secondary purpose is to provide support and guidance to payers to develop their infrastructure and regulations for expanding access to telehealth services.

These guidelines are intended to be consistent with federal regulations and industry best practices at the time of publication. Federal, state, and jurisdictional laws and regulations supersede recommendations outlined in this document. Providers should conduct telehealth treatment consistent with the jurisdictional, regulatory, licensing, credentialing, malpractice, and insurance laws for their profession in both the jurisdiction in which their providers are practicing and the jurisdiction in which the patient is receiving treatment. While these guidelines primarily pertain to patients and providers rendering care in the United States, providers outside the U.S. may find these guidelines useful and use them at their clinical discretion. However, any local policies should take precedence in these situations.

The telehealth options presented here are not intended to supplant in-person service; rather, they are intended to supplement the traditional in-person service delivery model. The guidance herein is provided to assist providers with evaluating appropriate models of care when treating patients with ASD (BACB Ethics Code 2.01), using the most up-to-date research (BACB Ethics Code 1.06 Maintaining Competence), while practicing within one's scope of competence (BACB Ethics code 1.05 Scope of Competence)[4]. Specifically, this document offers providers, payers, and families:

1. Guidance on administering ABA assessment and treatment services via synchronous and asynchronous telehealth modalities to ensure ethical and quality care is maintained.
2. Guidance on the appropriate and ethical use of health insurance billing codes, decision trees, and tools to determine criteria for patient participation in different telehealth service delivery methods.

3. Recommendations to evaluate the risks and benefits of telehealth options to develop an individualized service delivery approach for each patient.

Scope

This guide is informed by both of the preceding sources of evidence and professional standards for the delivery of ABA services and practice parameters and guidelines from the Council of Autism Service Providers, American Telemedicine Association, and American Academy of Child and Adolescent Psychiatry[5,6]. In addition, this guide provides an in-depth description of how providers can deliver ABA services via telehealth.

The recommendations provided herein are designed to aid provider agencies in decision-making consistent with the best currently available scientific evidence and clinical consensus. The ultimate judgment regarding patient care must be made by the provider, taking into consideration the assessed needs, strengths, and preferences of each patient and their caregivers, as well as available resources. Divergence from these guidelines may be appropriate under some circumstances, and when this occurs providers are strongly advised to document their clinical rationale in the patient records. This is the second edition of this resource manual and it will continue to be periodically updated to reflect changes in clinical practice and research findings. Additional references and information can be found in the appendices.

Glossary

97151. Behavior identification assessment, administered by a physician or other qualified health care professional, each 15 minutes of the physician's or other qualified health care professional's time face-to-face with patient and/or guardian(s)/caregiver(s) administering assessments and discussing findings and recommendations, and non-face-to-face analyzing past data, scoring/interpreting the assessment, and preparing the report/treatment plan.

97152. Behavior identification-supporting assessment, administered by one technician under the direction of a physician or other qualified health care professional, face-to-face with the patient, each 15 minutes.

97153. Adaptive behavior treatment by protocol, administered by technician under the direction of a physician or other qualified health care professional, face-to-face with one patient, each 15 minutes.

97154. Group adaptive behavior treatment by protocol, administered by technician under the direction of a physician or other qualified health care professional, face-to-face with two or more patients, each 15 minutes.

97155. Adaptive behavior treatment with protocol modification, administered by physician or other qualified health care professional, which may include simultaneous direction of technician, face-to-face with one patient, each 15 minutes.

97156. Family adaptive behavior treatment guidance, administered by physician or other qualified health care professional (with or without the patient present), face-to-face with guardian(s)/caregiver(s), each 15 minutes.

97157. Multiple-family group adaptive behavior treatment guidance, Administered by physician or other qualified health care professional (without the patient present), face-to-face with multiple sets of guardians/caregivers, each 15 minutes.

97158. Group adaptive behavior treatment with protocol modification, administered by physician or other qualified health care professional, face-to-face with multiple patients, each 15 minutes.

0362T. Behavior identification supporting assessment, each 15 minutes of technicians' time face-to-face with a patient, requiring the following components: administration by the physician or other qualified health care professional who is on-site; with the assistance of two or more technicians; for a patient who exhibits destructive behavior; completion in an environment that is customized to the patient's behavior.

0373T. Adaptive behavior treatment with protocol modification, Each 15 minutes of technicians' time face-to-face with a patient, requiring the following components: administration by the physician or other qualified health care professional who is on-site; with the assistance of two or more technicians; for a patient who exhibits destructive behavior; completion in an environment that is customized to the patient's behavior.

Assent
Vocal or nonvocal verbal behavior that can be taken to indicate willingness to participate in research or behavioral services by individuals who cannot provide informed consent (e.g., because of age or intellectual impairments). Assent may be required by a research review committee or a service organization. In such instances, those entities will provide parameters for assessing assent[4].

Asynchronous (store-and-forward) Telehealth
Refers to a bi-directional exchange of information regarding a patient that does not occur in real time, including the secure collection and transmission of a patient's medical information, clinical data, clinical images, laboratory results, or a self-reported medical history[7]. Asynchronous care allows practitioners to assess, evaluate, consult, or treat conditions using secure digital transmission services, data storage services, and software solutions.

Caregiver-mediated Services
The behavior analyst provides coaching and feedback to a caregiver implementing the treatment protocols directly to the patient.

Clinical Direction
A service in which the qualified health care provider (QHP) directly monitors the delivery of treatment to a patient by a behavior technician[8].

Distant Site
The telehealth site where the provider/ specialist is seeing the patient at a distance or consulting with the patient's provider.

Face-to-face
Real-time patient interactions occurring either in-person or via two-way audio and visual video conferencing. The definition is met when the providers use synchronous real-time audio and/or visual telehealth technology[9].

In-person
Real-time patient/provider interactions occurring with both individuals present in the same room.

In-person Direct Services with Telehealth Clinical Direction
A partial telehealth model in which a technician delivers services in-person to the patient and the behavior analyst provides remote synchronous or asynchronous clinical direction.

On-site
Immediately available and interruptible, which can be met via synchronous telehealth methods.

Originating Site
Where the patient and/or the patient's physician is located during the telehealth encounter or consult.

Protocol Modification
Adaptive behavior service protocol modification involves changes made by a QHP to the procedures for implementing an adaptive behavior service.

Qualified Health care Provider (QHP)
An individual who is qualified by education, training, licensure/regulation (when applicable), and facility privileging (when applicable) who performs a professional service within his/her scope of practice[11].

Real-time Videoconferencing
Consists of face-to-face provider and patient interactions that occur in real-time via two-way video and audio interactions.

Remote Patient Monitoring

Personal health and medical data collection from a patient in one location via electronic communication technologies, which is transmitted to a provider in a different location. Involves continuous evaluation of a patient's clinical status to provide improved chronic disease management, care, and related support. Such monitoring may be either synchronous (real-time) or asynchronous (store-and-forward).

Synchronous Telehealth

Synchronous telehealth methods include interactive audio and/or video connections that transmit information in both directions during the same period of time[7].

Telehealth

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.[10] Telehealth is a **means of delivering health care**, not a separate or distinct health care service.

Telephonic

E-visits consist of real-time voice conversations with the patient or family via a two-way audio interaction.

Telehealth Direct Services

The patient joins the provider (e.g., BCBA, RBT) via synchronous videoconferencing, with real-time audio and visual capabilities.

Introduction

ABA is widely recognized as the gold standard treatment for children with autism spectrum disorder (ASD) and has been endorsed by the United States Surgeon General, Centers for Disease Control (CDC), American Academy of Pediatrics (AAP), and many other national organizations[12,13]) with decades of peer-reviewed published empirical evidence demonstrating that ABA treatments are effective for treating individuals with ASD[14–16]. ABA services may be delivered in various settings (e.g., home, clinic, school, community) and modalities (e.g., in-person, telehealth) to increase adaptive skills and decrease challenging behaviors in individuals with ASD, including behaviors that may be dangerous to themselves and others.

Due to a shortage of providers, individuals with ASD may not be able to access services from a Registered Behavior Technician (RBT®), since best practice requires weekly clinical direction by a Board Certified Behavior Analyst (BCBA®)[1]. Best practice guidelines dictate that an average of 2 hours of clinical direction is required for every 10 hours of direct treatment. Disparities in behavioral health care access are exacerbated for families living in rural communities, as only 10% of BCBA providers practice in rural America[17,18], despite nearly one-fourth of the U.S. population living in rural areas. With an estimated 124 million Americans, or 38% of the population, living in 5,788 mental health professional shortage areas[19], telehealth has been a viable solution to address health access disparities to treat patients with ASD.

Ethical Implementation of ABA via Telehealth

Providers who implement ABA service via telehealth should follow the same professional ethics governing in-person care. As such, providers are expected to adhere to the Behavior Analyst Certification Board's (BACB) Ethics Code for Behavior Analysts[4] when practicing via telehealth.

Autism service providers must also comply with all federal and state rules and regulations, including the Health Insurance Portability & Accountability Act (HIPAA) and the Health Information Technology for Economic and Clinical Health (HITECH) Act. Providers and organizations practicing telehealth should consider the unique methods by which protected health information (PHI) is transmitted through telehealth and should offer training to ensure that providers thoroughly understand their legal and ethical responsibilities. Readers can refer

to the CASP Organizational Telehealth Guidelines for more information on recommended organizational systems and design.

Telehealth Benefits

Telehealth service delivery models of care have been leveraged across the health care industry for decades[20–28] to treat patients in various specialty areas, which include but are not limited to: primary and urgent care, ocular diabetic retinopathy programs, child psychiatry, burn care, speech and language pathology, and occupational therapy[29,30]. Telehealth is a viable solution to address health access disparities in low resource areas, aid in reducing provider burnout, and offers a pathway to enhance patient care through timely access to specialty services, improved care coordination, and continuity of care.

Rural & Underserved Communities. There is a significant health care provider shortage across all health care occupations[31] Additional barriers to accessing high-quality care for individuals diagnosed with ASD commonly include economic factors, cultural, and social differences[32]. The advent of increased telehealth service delivery has effectively addressed some of these challenges by bringing care to patients in their home communities without requiring families or providers to travel. However, disparities in behavioral health care access are exacerbated for families living in rural communities[33]. Rural Americans face a unique combination of factors that create disparities in health care not found in urban areas. Families in rural communities often face barriers that require them to take time off work, find childcare, and travel to access their care[34–38] Due to access barriers, these families often experience a significant delay in accessing services[39–41] or do not access the necessary medical care[38]. Telehealth, therefore, can lower costs for families and the health care system, who might be responsible for costs associated with family's travel for medical care[20,42–44].

Provider Burnout. Telehealth may also aid in addressing provider burnout by reducing the travel time required for a BCBA to provide clinical direction of patient programs and caregiver training. Provider burnout and turnover are significant issues for our health care system, particularly in home-based care models[45]. Reducing travel time may improve provider satisfaction and lower health care costs for organizations that often cover the cost of travel such as fuel, vehicle maintenance, hotel stays, and meals for extended travel[46]. Furthermore, telehealth-based mentoring programs, such as Project ECHO (Extension for Community Healthcare Outcomes), have successfully connected rural providers with non-local health care experts which helps to reduce provider isolation and burnout that rural health care providers often experience.

Continuity of Care. In addition to addressing health access and provider shortages, telehealth service delivery models can offer continuity of care during public health emergencies, inclement weather that inhibits safe travel, or instances when family members are immunocompromised and unable to have multiple providers in their home[35,36,47,48]. For example, a well-established emergency plan that includes telehealth modalities can aid providers in ensuring patient continuity of care during unforeseen events (BACB Ethics Code 3.15 Appropriately Discontinuing Services[4]). Likewise, telehealth may offer continuity for military families who have a permanent change of station or for individuals transitioning from a higher level of care back into their community setting. Through real-time videoconferencing, providers can coordinate care, share patient medical records, and ensure treatment consistency during these times of transition.

Specialty Consultation & Coordination of Care. While telehealth has traditionally been leveraged in rural and underserved communities, families living in urban areas also benefit from telehealth service delivery models[49−51]. Patients with ASD have complex health care needs that often require a multidisciplinary team of specialty providers. Telehealth can enhance the service delivery of ABA services by bringing specialty care knowledge directly to patients and families to treat complex cases related to challenging behaviors[42,52−54], sleep disturbances[55,56], and feeding interventions[57−59]. In addition, given that specialty care providers are often dispersed in different locations, providers can more easily coordinate care with the individual's specialty care team[60].

Cost and Time Effectiveness

Telehealth has the potential to provide efficient, cost-effective services for families and health care systems[42,44,46]. Telehealth may lower health care costs for organizations that absorb the costs of fuel, vehicle maintenance, hotel stays, salary costs for provider travel time, and meals for extended travel[46]. Additional costs may be incurred by families who are required to travel including taking time off work and childcare expenses for siblings. In addition to the immediate cost savings, telehealth may achieve similar outcomes more efficiently than in-person services[42]. In one study, two telehealth parent coaching models (telehealth clinic and telehealth home) were compared with in-person parent coaching home-based services with 107 children with ASD. Researchers found that telehealth and in-person parent coaching were similarly effective in reducing child challenging behavior; however, both telehealth models were almost 50% more efficient in producing the desired reductions in problem behavior. Children in the telehealth model achieved an average of 90% reduction in problem behaviors in 9 weeks, as

opposed to an average of 17 weeks for children in the in-person model[42], which could translate to additional cost savings for health care funders.

Potential Limitations of Telehealth

Providers and organizations should consider the potential limitations of telehealth for each patient. Potential limitations as outlined by the Centers for Disease Control and Prevention (CDC)[61] may include:

- Interstate licensure challenges and other regulatory issues that may vary by state
- Situations in which in-person visits are more appropriate due to urgency, underlying health conditions, or inability to perform an adequate assessment
- The need to address sensitive topics, especially if there is patient discomfort or concern for privacy
- Limited access to technological devices (e.g., smartphone, tablet, computer) needed for a telehealth visit or connectivity issues
- Level of comfort with technology for provider and/or patients
- Cultural acceptance of conducting virtual visits in lieu of in-person visits by provider and/or patients

Telehealth Feeding Consultation

A telehealth provider is supervising ABA treatment for a four-year-old boy diagnosed with ASD in an underserved community. The patient's mother expressed concern regarding her son's eating habits, as his diet consists primarily of milk with an added supplement that his nutritionist recommended. Although the patient was not underweight, and his pediatrician had not expressed concern about his weight or health, this remained his mother's top priority. The patient previously received both speech therapy and feeding therapy, with limited success in introducing foods into his diet.

The primary provider overseeing the case did not have extensive expertise in treating feeding concerns and requested a clinical consultation with a BCBA provider in her organization who had a nutrition certification and specialized knowledge of feeding interventions. The family was already receiving clinical direction from the BCBA via telehealth and was open to a telehealth feeding consultation using **synchronous videoconferencing**. The consulting provider coordinated care with the patient's pediatrician, nutritionist, and previous feeding therapist using **asynchronous store-and-forward methods** to access patient data and videos of mealtimes. Using the information gathered through case collaboration, the telehealth consulting provider developed a feeding intervention plan designed to be implemented by his on-site RBT during his ABA therapy sessions and overseen by his primary telehealth provider. Before initiating the feeding program, the telehealth consulting provider scheduled an appointment to train the primary provider and RBT to implement the treatment procedures. In addition, the telehealth consulting provider scheduled an initial parent meeting to review the plan with the patient's family to obtain consent.

The consulting provider provided telehealth clinical direction via **synchronous videoconferencing** during the program's initial implementation to support the RBT and provider and remotely monitored the patient's progress through on-going evaluation of data submitted by RBTs and family. Through a slow, systematic desensitization procedure implemented by the RBT and supervised by the telehealth provider, the patient began eating new foods within two months of introducing treatment. As the patient started to eat new food independently during the session, the telehealth provider focused on generalization with the patient's parents during and outside therapy sessions. Through ongoing telehealth training and support to the RBT, collaboration with the family, and outside professionals, the patient begins to eat a variety of foods at mealtimes. His family shares that mealtimes are becoming less stressful and their child is no longer crying during the mealtimes, making it a more enjoyable time of their day.

Core symptoms of ASD addressed	Telehealth modalities
Restricted, repetitive patterns of behavior, interests, or activities (e.g., restrictive diet, insistence on eating the same food each day).	1. Asynchronous (store-and-forward) 2. Synchronous videoconferencing 3. Remote patient monitoring

Telehealth in Applied Behavior Analysis

Given the benefits of telehealth, providers and researchers have employed this service delivery model for almost two decades in delivering ABA assessment and treatment to individuals with ASD and training caregivers in the evaluation and delivery of ABA services[42,62–67]. There is extensive scientific evidence for the efficacy of many ABA services delivered in-person[68,69], and over 170 manuscripts documenting the efficacy of ABA services delivered via various telehealth service delivery models for children aged 19 months to adults[6,64,70,71].

Telehealth service delivery rapidly expanded during the COVID-19 pandemic, and high levels of satisfaction reported by patients and providers across all medical disciplines has led health care systems to permanently incorporate telehealth into their services delivery models, including ABA treatment[71–75]. Therefore, ongoing ethical, efficacy, and scope-of-practice considerations are essential to:

1. Identify protocols for clinical appropriateness of telehealth models (i.e., direct service, clinical direction, caregiver consultation);
2. Identify telehealth technology requirements and limitations;
3. Ensure therapeutic benefit for recipients of telehealth ABA services;
4. Ensure competence of providers delivering care via telehealth modalities.

Telehealth Service Delivery Models Overview

The following telehealth service delivery models all provide on-going remote patient monitoring specific to patients receiving ABA treatment. Clinical decisions on the telehealth service delivery model should be selected based on the individual patient's needs, strengths, preference of service modality, caregiver availability and environmental support available. Each model is appropriate for synchronous and/or asynchronous modalities. Guidance on how CPT codes for adaptive behavior services can be used via telehealth are provided in Appendix A.

In-person Direct Services with Telehealth Clinical Direction: A partial telehealth model in which a technician delivers services in-person to the patient and the behavior analyst provides synchronous or asynchronous clinical direction remotely. Synchronous clinical direction might involve real-time protocol modifications or performance feedback by the BCBA using a HIPAA compliant videoconferencing platform. Asynchronous clinical direction might involve the BCBA reviewing video or data from a session with or without the RBT present and providing feedback and clinical direction.

Telehealth Direct Services: Patients with prerequisite skills may benefit from services delivered directly via synchronous modalities. Under this model, the patient joins the provider (e.g., BCBA, RBT) via synchronous videoconferencing, with real-time audio and visual capabilities. In some circumstances, the patient may join the provider via synchronous audio capabilities. Telehealth direct services may be provided in a one-to-one setting or in social skills groups and may be combined with asynchronous modalities for enhanced remote patient monitoring (e.g., patient reported data towards goals).

Caregiver-mediated Services: Under this model, the behavior analyst provides coaching and feedback remotely via synchronous and/or asynchronous modalities to a caregiver. Synchronous modalities (e.g., real-time videoconferencing with the caregiver implementing treatment protocols directly to their child) may be combined with asynchronous modalities (e.g., caregiver reported data toward goal progress, asynchronous store-and-forward video of caregiver/child interactions).

In-person Direct Services and Telehealth Clinical Direction

Research has shown that ABA services can effectively be rendered in person by a technician, teachers, or parents with a behavior analyst's clinical direction via telehealth[44,64,66]. For example, the clinical direction provided via synchronous telehealth by a BCBA is effective in teaching technicians, teachers, and caregivers to implement a variety of assessments, including functional analyses, functional behavior assessments[62,63,76–79], preference assessments[80,81], as well as skill assessments. Under this model, the behavior analyst provides the in-person intervention agent with instructions, feedback, and coaching to implement ABA procedures.

Studies have also established that behavior analytic procedures can effectively be implemented under this model for individuals aged 2-29 years old for functional communication training[72,77], behavior reduction procedures[42,53,82,83], as well as interventions to build language[84–86], imitation[37], social[85], and daily living skills[87,88]. The CASP Organizational Guidelines (Telehealth chapter) describes considerations for providers and organizations regarding effective clinical direction of ABA services using synchronous, real-time video conferencing[89].

Table 1. Service model description of in-person and remote participants

Service Model	RBT	BCBA	Caregiver
In-person Direct Services & Telehealth Clinical Direction	In-person	Remote	NA
Telehealth Direct Services & Telehealth Clinical Direction	Remote	Remote	NA
Caregiver-mediated Services	NA	Remote	In-person
Social Skills Groups	Remote	Remote	NA

Telehealth Direct Services

Direct telehealth research in ABA is emerging; however, related disciplines have successfully implemented direct telehealth services to children, adolescents, and adults with autism and intellectual and developmental disabilities[6]. Direct telehealth service delivery has been successfully leveraged to implement natural environment teaching and discrete trial teaching protocols to teach new skills to individuals with developmental disabilities and autism spectrum disorders. Patients have successfully participated in direct treatment in 1:1 settings as well as dyad arrangements[90]. Individuals ages three years, 11-months to 43 years old have acquired skills across various adaptive, language and social domains via synchronous direct ABA teaching sessions[52,90–92].

Under this model, services are delivered by a technician and/or behavior analyst via synchronous videoconferencing with the provider and client in geographically separate locations. Patients may join the video conferencing session via computer or tablet technology and receive instruction similar to in-person sessions. Using synchronous modalities, the provider may administer all components of the intervention to the patient (i.e., instructions, prompting, and reinforcement). For example, the provider may give a directive to the patient and praise for correct responding or corrective feedback for incorrect responding[93]. Prompting may be delivered vocally via videoconferencing, textually via chat functions, or bluetooth devices (also known as bug-in-ear technology).

Researchers have used bug-in-ear devices to provide synchronous audio-only feedback covertly to patients with autism and other disabilities[94,95]. Synchronous audio technology (also known as telephonic care) can be paired with synchronous videoconferencing to aid in the generalization of skills to social and workplace settings. For example, covert audio coaching has been expanded to provide feedback to individuals with ASD to increase task engagement and workplace skills[95–99] as well as social skills with high school and college students in analog and social settings with peers[100,101]. Refer to the patient characteristics section of the practice guidelines to identify appropriate patients for a direct services model.
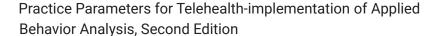
School-based ABA Collaboration

A 16-year-old boy diagnosed with ASD and several other comorbid health issues lives in a small rural community that is designated as a medically underserved area. He travels 1-hour to receive his psychiatric services and does not have access to a local ABA organization. The patient is large in stature and has become physically aggressive with his mother on several occasions. As a result, the patient's mother has become fearful and is overly accommodating of her son's demands. Due to the aggressive nature of these encounters, his size, and age, the patient is also at risk for becoming involved in the criminal justice system and has been admitted to in-patient care on at least two occasions. The patient refuses to attend school, avoids leaving his room, refuses to participate in household chores and does not engage in a hygiene routine.

His mother contacts an ABA agency that provides telehealth services in an attempt to access care. The telehealth provider completes an ABA assessment via **synchronous videoconferencing** and creates a treatment plan that requires additional clinical direction and parent training to ensure the safety of the patient, family, and on-site RBT (to be hired and trained by the organization). Due to the patient being one-hour from the closest provider, a telehealth service delivery model is implemented and to ensure the provider can provide clinical direction, protocol modification, and parent training multiple times per week. In addition, the telehealth provider leverages consults with an additional BCBA with expertise in crisis management and Safety Care Training® to ensure the patient's behavior plan and on-site team receive appropriate training prior to initiating services.

Due to the patient refusing to attend school, the BCBA also coordinates care with the school's behavior specialists**.** The telehealth provider uses a **synchronous videoconference and asynchronous store-and-forward video** to provide on-going **remote monitoring** of the treatment progress which entails a systematic demand fading procedure. He begins to develop rapport with the ABA treatment team, makes progress in his home treatment program, and learns skills to advocate for himself. Through his self-advocacy, he requests a modified school day, which is granted by the school. With the help of his technician, the patient starts a lunchtime social club for peer interactions and begins looking forward to attending school for his social club. He gradually increases his time at school until he is attending the full school day.

The patient's relationship with his mother also improves over the course of the patient's treatment. She no longer fears her son and the interactions she used to have on a regular basis decrease significantly. The patient meets the goals set in place in his treatment plan, which included attending school and reducing challenging behaviors, and he is successfully discharged.

Core symptoms of ASD addressed	Telehealth modalities
1. Deficits in social-emotional reciprocity	1. Asynchronous (store-and-forward)
2. Deficits in nonverbal communicative behaviors used for social interaction	2. Synchronous videoconferencing
3. Deficits in developing, maintaining, and understand relationships	3. Remote patient monitoring

Caregiver-Implemented Services

Long-term maintenance of behavioral treatment outcomes can be greatly enhanced when parents are involved in the treatment process, including implementation. Over the last two decades, research into the use of telehealth to deliver treatment and ensure program integrity has documented beneficial outcomes. Patient behavior change has been demonstrated across different content areas (e.g., parent skills, social behavior, and assessment strategies) and across modalities (e.g., videoconferencing, synchronize/asynchronous). The most prominent application of telehealth delivered coaching can be seen within the parent training literature. Researchers have provided real-time coaching and feedback to caregivers to conduct assessments and skill acquisition across disciplines including speech and language therapy[28,30], occupational therapy[29,102], and psychology[103−108] to implement a range of services including early intervention services, parent child interaction therapy, and cognitive behavior therapy to their children with ASD.

Within the field of behavior analysis, caregivers have been taught via synchronous video conferencing to implement various behavior change procedures with their children for children aged 19 months to adulthood[70]. Using synchronous videoconferencing, the BCBA provides in-vivo coaching and feedback to the parents to implement the relevant treatment procedures. Coaching includes prompting the parent to implement the intervention techniques and providing feedback on the parent's performance, typically through a Bluetooth earpiece to minimize distractions for the child. Research using bug-in-the-ear technology has shown promising results of an increase in caregiver skills, translating to a corresponding change in child behavior[94,95,97,98,109−119]. Caregivers have been trained to implement a variety of teaching methods, including mand training, discrete trial instruction[120], preference assessments, and incidental teaching to teach skills such as joint attention[121], language and communication[53,54,86,121,122], imitation[37,122], play skills.

Research shows that coaching parents to safely and effectively manage their child's challenging behavior is key to maintaining longer-term treatment outcomes. Caregivers have successfully been coached via telehealth to implement complex procedures including functional analyses[16,58,79,83,123−125] and functional communication training[52−54,86,123,126,127] to assess and reduce their child's challenging behaviors, including aggression, self-injurious behaviors, and property destruction[42,52,126].

Early Intensive Behavioral Intervention

A clinic-based provider is providing ABA treatment for children between the ages of 18-months and 5 years old with a diagnosis of ASD. This clinic is based in an urban area but has begun to consider providing home-based services to clients in areas that have limited access to treatment options. A potential patient's family has contacted the clinic but is outside the current clinic catchment area. The patient is a 3-year old female who has previously received both speech therapy and early childhood services, with minimal success in increasing vocalizations, compliance with instruction and basic early learner skills. Prior to offering telehealth services, the provider coordinated care with the patient's speech language pathologist and early learning teacher using **asynchronous store-and-forward methods** to access patient data related to speech/communication goals and videos of the child interacting with other children in the preschool area. The provider then arranges an initial assessment using **synchronous videoconferencing** and provides the family with information about the telehealth service delivery models.

The family consents to participate in a partial telehealth model with a technician rendering care in-person and the BCBA provider providing clinical direction via **synchronous videoconferencing**. The provider developed the initial treatment plan and scheduled a **synchronous videoconference** with the family to review treatment goals. The family is informed that a local technician will need to be hired and trained by the provider, which will take several months to complete the training and credentialing process and the provider recommends starting with a caregiver-implemented model. The family consents to the treatment recommendations and begins with a twice weekly caregiver training that focuses on reduction of challenging behavior and increasing functional communication during their natural family routine.

Once a technician is trained and credentialed with the funder, the provider renders telehealth clinical direction via both **synchronous videoconferencing** and through **asynchronous store-and-forward methods.** **Synchronous videoconferencing** is utilized during treatment sessions to remotely monitor the patient's response to treatment and asynchronous **store-and-forward methods** are utilized for on-going evaluation of data submitted by RBTs and family. Through ongoing telehealth clinical direction to the RBT, collaboration with the family, and outside professionals, the patient began to use functional communication, was able to increase basic social-communication behaviors and increased her ability to demonstrate early learner skills (following directions, basic tacting, and making choices). Her family shares that she is starting to request using basic speech, is more engaged during "down" family time and the RBT's indicate that her engagement with treatment has steadily increased.

Core symptoms of ASD addressed	Telehealth modalities
1. Deficits in social-emotional reciprocity 2. Deficits in nonverbal communicative behaviors used for social interaction 3. Deficits in developing, maintaining, and understand relationships	1. Asynchronous (store-and-forward) 2. Synchronous videoconferencing 3. Remote patient monitoring

Practice Guidelines

ABA services can be rendered using any telehealth service delivery models described above or a combination of synchronous and asynchronous modalities. When considering implementing services via telehealth, ABA providers should evaluate the risks and benefits associated with each telehealth model for ABA service delivery. Providers should use their clinical judgment based on the characteristics of each patient and their caregivers to ensure that the selected model and delivery modalities lead to meaningful patient interactions. Providers must document that the patient and/or their caregiver has the skills required to participate in a meaningful way during telehealth delivered services. As with in-person services, telehealth services and the clinical effects should be documented in the patient's medical record.

The selection of an appropriate service delivery model should entail evaluating the patient's characteristics, conducting a risk assessment and safety planning, and caregiver participation as part of the process of developing the individualized treatment plan. Providers should also ensure that they appropriately obtain informed consent, document location of care and technology requirements, and factor in cultural and socioeconomic considerations when making recommendations of treatment dosage and session duration for telehealth sessions. Finally, providers will need to ensure they are monitoring the effectiveness of the telehealth services and may need to adapt their treatment or communication modalities to meet the needs of the patient's family. It is important to note that not all patients will be appropriate for a telehealth service delivery model.

Risk Assessment & Safety Planning

Providers should conduct a risk assessment and safety planning (Appendix B) to assist with determining if telehealth is safe and appropriate for the patient and family. The presence of challenging behavior does not preclude telehealth services and researchers have demonstrated that telehealth can be a successful service delivery model for older, larger patients with severe problem behavior. Therefore, the provider should conduct a thorough assessment and may determine that telehealth is a viable treatment option for behavior intervention services.

Providers should first assess whether the patient has engaged in or threatened to engage in behaviors that are a risk to the patient or others (e.g., aggression, self-injury, elopement, pica,

property destruction). Next, providers should also assess whether the patient has used, attempted, or threatened to use an object as a weapon to inflict harm on themselves or others (e.g., kitchen knife). Finally, safety planning in these situations should include environmental modifications to ensure those items are removed from the home and/or placed in a location that is inaccessible to the patient. If the caregivers are willing and able to implement the environmental modifications, telehealth may be an appropriate treatment option.

Other characteristics that could impact the severity of challenging behavior or increase the risk is the patient's size. Patients that are older and/or of larger stature may have an increased risk of harm to themselves or others. Providers should determine minimum physical requirements of the technician and caregivers to implement behavior protocols (e.g., ability to stand up quickly from a chair or from kneeling, ability to move promptly in any direction, such as backwards and sideways). Providers should assess all of the above considerations and determine whether on-site technicians and/or the family requires specialized training in crisis prevention and safe physical management of patients' safety concerns. These considerations become even more important when the Provider is considering remote direction via telehealth. As a part of the safety plan, providers should determine that technicians and caregivers display the appropriate characteristics and skills that indicate that telehealth delivered clinical direction is appropriate.

Patient Characteristics

The skills required for each patient to participate in telehealth depend on their treatment goals and the telehealth service delivery model implemented. For example, the prerequisite skills needed will be different for a patient for whom a behavior analyst or technician will deliver services via synchronous, real-time videoconferencing as opposed to a patient for whom services will be delivered in-person by a technician or parent with the BCBA providing clinical direction via telehealth. Therefore, providers must assess whether the patient has the appropriate prerequisite skills to participate in the different telehealth models. The provider should document the evaluation of patient characteristics in the patient's medical record should third-party payors request justification for the use of telehealth.

In-person Direct Services with Telehealth Clinical Direction. Most patients will benefit from a hybrid model with an in-person technician delivering treatment and the BCBA providing clinical direction via telehealth. However, before implementing this model, some considerations include assessing environmental risk related to the patient's safety[2,128] and level of

distractibility during telehealth sessions to optimize outcomes (see section "Risk Assessment and Safety Planning above). If this is a concern, providers should determine solutions, such as providing screen covers or turning off cameras to reduce visual distractions. Providers should also assess whether the patient will lose treatment time during live coaching with the technician. If the patient is distracted by the feedback, the provider should have protocols to provide earphone technology or alternative times to provide clinical direction following the session. Finally, the providers may also need to ensure that the location of the technology allows for the microphone to pick up patient-provider auditory interactions during sessions.

Telehealth Direct Services. Some patients may participate via direct 1:1 services or social skills groups via telehealth. Providers should assess whether the patient has the prerequisite skills to respond to an intervention delivered by the technician via synchronous video conferencing with or without caregiver assistance. Assessment to determine if a patient may participate productively in telehealth service delivery should consider the skills outlined below as a minimum requirement. The minimum prerequisite skills listed have not been empirically determined to be associated with success in direct telehealth services; however, they have been present in patients who have successfully participated in direct telehealth services[129]. While these skills should be present, and other skills may be required, this may vary based on the patient's treatment plan goals.

Table 2. Prerequisite skills for telehealth direct treatment

Minimum Prerequisite Skills	Advanced Skills
☐ Basic joint attention skills[129]	☐ Patient willingly follows instructions and prompts delivered by the technician via synchronous videoconferencing
☐ Basic discrimination skills[129]	
☐ Basic echoic skills[64,92,93,129]	
☐ Basic motor imitation skills[90,92,129]	☐ Tolerates delayed reinforcement
☐ Ability to follow common 1-step instructions[128,129]	☐ Independently join a telehealth session
☐ Participate in session with limited caregiver assistance[90,92,129]	☐ Independently enter/exit 'breakout' rooms for individual or small group instruction[90]
☐ Ability to sit independently at a computer or tablet for 8-10 minutes[129]	☐ Stays within view of the camera
	☐ Controls computer audio and video features
☐ Safety concerns and challenging behavior are low, and/or caregivers can safely and effectively manage any challenging behavior[90,92,93,129]	☐ Independently manipulate a computer mouse and keyboard and/or independently use a tablet or touchscreen device

Thus, if a patient exhibits the minimum prerequisite skills, it may be worthwhile to further assess their ability to interact effectively via telehealth. For example, it is also essential to evaluate the patient's ability to independently follow instructions and prompts delivered by the technician via synchronous videoconferencing and by the caregiver (if needed)[128]. Direct telehealth intervention may be appropriate if the patient is able to independently follow instructions and exhibits minimal escape-related challenging behavior when interacting with the technician and the caregiver. On the other hand, if the patient shows moderate to high levels of challenging behavior, the provider may consider a caregiver-implemented model that focuses on reduction of challenging behavior[128].

Patients who do not exhibit the prerequisite skills outlined above may benefit from pre-teaching skills with preferred games in naturalistic settings to increase the patient's motivation to engage in direct services and increase assent behaviors during treatment. For example, opportunities to establish rapport with the technician may include interactive social games (e.g., Simon says, mother may I, red light/green light) or interactive computer activities. As the patient's ability to successfully participate under these circumstances increases, the provider may begin to introduce demands and alternate high-probability with low-probability tasks.

Individualized Treatment Plan

Providers should evaluate the patient's individualized treatment plan to determine if the patient's goals and objectives are suitable for telehealth. In addition, providers should assess modifications that may be needed to the goals and objectives for each program's reinforcement systems and delivery mechanisms, prompting procedures, and materials (Appendix C: Telehealth Treatment Planning).

Providers should conduct an assessment of their therapeutic materials to determine whether they are appropriate for use during telehealth service delivery. For example, providers should determine if patients require 2-dimensional or 3-dimensional materials and have an appropriate plan for ensuring the RBT and/or caregiver have access to materials in a timely manner. Patients who acquire new skills at a rapid rate may be more appropriate for electronic materials (e.g., emailed or accessed via a software program) to ensure the on-site provider and/or caregiver have access to updated protocols and necessary materials in a timely manner. Providers may also assess whether protocols should be delivered to the patient directly via digital platforms (e.g., interactive software that captures patient responses and

delivers consequences) or other electronic methods mediated by the on-site RBT and/or caregiver (e.g., RBT manages electronic stimuli, delivery of instruction, consequence, as well as data collection).

In-person Direct Services with Telehealth Clinical Direction. Providers should specify the location of materials and caregivers' access to materials required to implement assessment and treatment protocols. A materials inventory may help determine available resources and guide caregiver-provider communication, reducing the potential for service interruption due to inadequate access to materials. Providers should work with caregivers and on-site technicians to determine an appropriate location for materials to prevent loss of therapeutic materials required for protocol implementation.

Telehealth Direct Services. Providers should evaluate each protocol in the patient's current treatment plan to determine if it is suitable for real-time synchronous telehealth delivery. Many protocols may be appropriate with minimal modifications, such as procedures for developing the patient's:

1. Communication skills
2. Social skills
3. Coping and emotion regulation skills
4. Discrimination skills
5. Problem-solving skills
6. Self-monitoring
7. Independent activity schedules

Similar to direct in-person services with telehealth clinical direction, protocols are required to ensure patient access to materials and the availability of a caregiver to provide therapeutic materials, as appropriate.

Caregiver-Implemented Services. Families living in underserved communities with provider shortages and those who are waiting to access treatment may benefit from caregiver training and consultation. This model would allow the patient to receive a reduced level of services until a higher level of services is an option. Goals should prioritize safety concerns, reduction of challenging behavior, development of adaptive skills, daily routines, and communication skills.

Providers should work with families to determine goals, teaching strategies, and location that

can have the greatest impact on the family's routine and quality of life to promote therapeutic rapport and treatment adherence. For example, providers may need to assist families with reducing challenging behavior in the home and antecedent strategies to prevent challenging behavior in the community before generalizing protocols for behavior reduction in a community environment. The community environment may not initially be appropriate for synchronous telehealth modalities because it may be less structured, offer fewer opportunities for the provider to adequately view child behaviors, and limit the provider from coaching the parent in the moment. Asynchronous modalities may be more appropriate to combine with synchronous parent coaching in the home to allow the parent and provider to review video of child behavior, identify precursor behaviors, and develop personalized strategies for the family to implement in the community.

Adult with ASD Self-referral for ABA Services

A 28-year old living in a small, underserved community seeks ABA treatment services after receiving a diagnosis of autism. She lived in a state that recently passed legislation allowing adults with autism to access ABA treatment and contacted an ABA organization to initiate services after she felt that other services she had been receiving did not fully meet her needs. She was currently receiving cognitive behavior therapy following involvement with the justice system due to public outbursts that had occurred when her planned routine was disrupted. Given the patient's age and history with the criminal justice system, the ABA organization decides to leverage a telehealth service delivery model to ensure appropriate BCBA clinical expertise to oversee her treatment.

During the telehealth assessment, which used both **synchronous videoconferencing and telephonic** modalities, the patient expressed her primary goals included obtaining and maintaining full-time employment, increasing her comfort in the community, making friends, and strengthening her social support system. The patient possessed a high IQ and responded positively to a treatment plan that introduced various programs strategically chosen by her telehealth clinical supervisor for their ability to help the patient move closer to her treatment objectives. In addition to the in-person 1:1 ABA services by an RBT, the patient participated in a telehealth social group with two other adults of similar age, meeting via **synchronous videoconferencing** during her session for an hour. The telehealth BCBA provided clinical direction via **synchronous videoconference and remotely monitored** progress via self-reported data over the course of two-years, gradually fading from 20 hours per week to 5 hours per week.

During the course of treatment, the patient increased her social-emotional skills, interpersonal communication skills, flexibility with routines, and had no further interactions with the criminal justice system. With the increased success in her interpersonal and communication skills, she obtained full-time employment and often utilized the materials from the programs she worked through with her RBT to become more confident and comfortable with communicating at her workplace. In time, she received a promotion into a role that fit her strengths well. The patient was successfully discharged when her goals of obtaining and maintaining employment, managing stress in socially appropriate ways, and improving communication skills were successfully met.

Core symptoms of ASD addressed	Telehealth modalities
1. Deficits in social-emotional reciprocity 2. Deficits in nonverbal communicative behaviors used for social interaction 3. Deficits in developing, maintaining, and understand relationships 4. Insistence on sameness and inflexible adherence to routines 5. Highly restricted, fixated interests that are abnormal in intensity or focus	1. Synchronous videoconferencing 2. Synchronous Telephonic 3. Remote patient monitoring 4. Asynchronous store-and-forward

Caregiver Participation

Caregiver presence and/or active participation may be necessary based on the patient's prerequisite skills, treatment goals, and telehealth service delivery model[128–130]. Assessment of caregivers' ability to participate in service delivery should consider the time they can be available, other individuals for whom they may be responsible, and any physical restrictions. Providers should carefully review all requirements for preparation of the session location, technology, materials, and post-session tasks (e.g., charging technology) (See Appendix D: Caregiver Pre-and Post-Session Checklist). Considerations related to caregiver participation for each telehealth service delivery model are described in more detail below.

Telehealth Direct Services. Patients who demonstrate the minimum recommended prerequisite skills described above and demonstrations may be good candidates for direct telehealth services. It is essential for patients who require caregiver assistance and physical prompts to participate in services to consider whether the caregiver can do so. The provider should establish a plan for prompt communication with the on-site caregiver to immediately assist the patient if a caregiver is not required to be physically present in the same room during the treatment session. Although patients may be able to participate independently in the majority of their treatment session, caregivers assistance may be needed for some treatment programs (e.g., adaptive living skills) or delivery of some reinforcers. Factors include:

1. Other individuals in the setting for whom the caregiver is responsible
2. Physical capabilities of the caregiver
3. Caregiver's ability to follow verbal directions via telehealth
4. Caregiver's ability to be immediately interruptible and available during sessions, if needed

Caregiver-Implemented Services. Providers should assess various factors when determining whether a caregiver-implemented model is appropriate for service delivery. The following questions may be asked:

1. What materials are appropriate for patient protocols (e.g., 2-dimensional, 3-dimensional) and how will materials be accessed by the caregiver (e.g., mailed, electronic access)? Can materials be simplified for use by caregivers, if necessary?
2. Are protocols delivered in-person, via digital platforms (e.g., interactive software that captures patient responses) or other electronic methods mediated by the caregiver (e.g., caregiver responsible for capturing patient responses)?
3. If software or digital platforms are incorporated into the treatment plan, is it appropriate to the needs of the patients and treatment goals outlined?
4. Does the caregiver have the ability to monitor the patient's interaction with digital protocols?
5. Are the protocols targeting adaptive behaviors that are likely to enhance the patient's successful, independent functioning in the short and long term?
6. Which protocols might be suitable for caregivers to implement with the patient (e.g., leisure/play skills, social skills, other adaptive skills, following directions, following activity schedules)?
7. Can siblings, other family members, or roommates be included in the protocol as peers or implementers? Are the protocols suitable for implementation by the caregiver and/or siblings?
8. Do the caregivers have the minimum physical requirements to implement the protocols and safely manage their child's challenging behaviors (if applicable)?

Providers should check for caregiver understanding of how to run the safety protocols, session protocols, use of materials, and data collection. Providers should provide caregivers with a pre- and post-session checklist (See Appendix D) and conduct on-going caregiver training to monitor fidelity of implementation.

Informed Consent

Informed consent should be sought for the patient's participation in telehealth services. The consent document should clearly describe the benefits and risks involved and any other information required to enable patients and caregivers to make fully informed decisions on telehealth services. This should include a description of the technology and procedures involved, what to expect from the telehealth encounters, limits to confidentiality in electronic communication, and what is known about each telehealth modality from research. Consent should be sought for each modality and service provided. For example, a caregiver may

provide consent for asynchronous store-and-forward modalities for clinical consultation, but not for the use of video to train organization staff (see Appendix E: Informed Consent for Telehealth Services).

Providers should discuss procedures for coordinating care with other professionals, communication protocols for contact between visits, limitations to confidentiality in electronic communication, conditions under which telehealth services may be terminated and a family referred for in-person care. Providers should establish emergency response protocols that document the patient's location of care, local emergency response numbers, and secondary caregiver emergency contact information. Patients and families should be informed of their rights when receiving treatment via telehealth, including their rights to suspend or discontinue care via telehealth. Patients and families should be informed of their rights when receiving treatment via telehealth, including their rights to suspend or discontinue care via telehealth.

Location of Care

ABA treatment should be generalized across natural environments to maximize treatment effects for the patient. The research literature has demonstrated effective implementation of ABA treatment across a variety of settings, including home[52,54,86], school[63,78,81,131], in-patient[132], and clinic[54,82] settings. The recommendations provided in these guidelines are relevant to all locations of care for medically necessary ABA treatment. Providers are encouraged to utilize the Risk Assessment & Safety Planning (Appendix B) to determine an appropriate telehealth service delivery model and the CASP Organizational Guidelines (Telehealth chapter) for environmental arrangement.

Environmental Assessment

As part of a treatment plan evaluation, providers should assess whether the environment is conducive to the safe and beneficial delivery of services via telehealth. When considering the physical environment, providers should assess environmental conditions that may impact the quality of the encounter, including but not limited to the internet connection, level of privacy, the background noise, and other variables that may distract the patient (Refer to CASP Organizational Guidelines for additional environmental considerations). Notably, a significant portion of the telehealth research literature is specific to assessing and treating severe challenging behavior[42,53,82,83,126,133]. Therefore, the presence of severe challenging behavior should not be an exclusion criterion for telehealth services (Appendix B: Risk Assessment and

Safety Planning). Rather, providers should assess environmental safety risks for the patient and any direct care staff.

Providers should have protocols to address environmental modifications that may be needed to support the safe delivery of telehealth services. Consideration should be given to caregivers' ability to modify the environment, such as removing objects that may pose risk of injury to the patient or caregivers (Appendix D). Caregivers may need protective equipment and/or guidance in using everyday household items to ensure safety (e.g., pillows to block aggression, long sleeves to prevent injury due to pinching or biting)[126]. There may be additional items not readily available in the natural environment that require mailing safety equipment to the caregivers and/or providing them with written, verbal, or model instructions for using protective equipment and clothing.

If the environment cannot be modified to ensure safety and/or caregivers are not willing or able to implement the recommended environmental modifications the provider should evaluate alternative treatment settings (e.g., clinic, residential treatment). If the behaviors are not a significant safety concern, but the environment cannot be modified appropriately, additional options for treatment settings should be assessed (e..g, another family member's home, community setting) to determine if the treatment can be safely implemented in these settings. If treatment is appropriate for an alternative setting, the patient may be appropriate for a telehealth service delivery model.

Technology

Prior to initiating telehealth services, the provider should assess whether the environment will support telehealth service delivery. For example, providers will have to determine if patients and the individuals who will participate in telehealth services have access to a secured internet connection and required technology (both hardware and software). The provider should also document contingency plans for technology failure during treatment sessions and have a policy for these unforeseen events. The CASP Telehealth Guidelines recommends technology requirements for telehealth sessions[89] and provides more detailed information for these considerations.

In addition, space must be arranged where the patient and caregivers are within view of any cameras used for remote observation and clinical direction by the behavior analyst or technician (Appendix B). Additional equipment (e.g., iPad mounts) may be required to optimize

their view. Ideally, the environmental arrangement should allow the patient to move freely within and across areas within the treatment setting. Careful placement of the camera(s) will facilitate remote observation of sessions with minimal interruption. Providers should also include a contingency plan for technology interruption within the treatment plan.

Asynchronous modalities are beneficial for families with inconsistent bandwidth and/or limited wifi coverage. Asynchronous store-and-forward video can be combined with synchronous videoconferencing to supplement clinical direction provided by a behavior analyst. Researchers have demonstrated that video self-monitoring has been a successful intervention to increase treatment fidelity of caregivers[134,135]; therefore, providers should consider incorporating asynchronous modalities into caregiver implemented services when wifi challenges inhibit clinical direction.

Leveraging Telehealth to Coordinate Care for a Young Adult with Comorbid Mental Health Concerns

A young adult who lives in a small rural community with only one BCBA begins ABA treatment with an in-person clinical team. He performs well when motivated and is able to hold a part-time job but struggles in areas including hygiene, cleanliness and health management. He has a history of depression, anxiety, and suicidal ideation and is actively receiving treatment from a licensed mental health counselor that he drives to see in-person. The local BCBA and mental health counselor collaborate to increase his social and interpersonal skills and bolster his social support systems to address risk factors related to his suicidal ideation. During the course of ABA treatment, the local BCBA provider moves and transitions to a new organization. The organization is prepared for possible disruption in care and offers a telehealth service delivery model with a provider who has extensive experience working with adults with suicidal ideation to ensure continuity of care. The BCBA provides clinical direction via **synchronous videoconferencing** and the RBT provides **in-person direct services** to the patient in his home and community.

During the course of ABA treatment, the patient begins to miss his appointments with his mental health counselor and reports a specific suicide plan to his RBT. The RBT immediately reports this concern to the telehealth provider who is able to coordinate with his guardian and mental health provider to ensure the patient's safety. Once the patient is stabilized, the telehealth provider is able to leverage **synchronous videoconferencing** with the patient, guardian, and mental health provider to coordinate care. Based on the feedback from the patient during the meeting, the provider and mental health provider collaborate on enhancing his crisis plan. Specifically, the patient describes the challenges with driving to the mental health provider's office which is 45 minutes away. The ABA team offers to incorporate goals within the patient's ABA treatment plan to teach him the skills to access his mental health services via telehealth. The ABA providers teach him how to add appointments to his calendar, independently join videoconferencing meetings, and how to adjust video/audio features.

The mental health clinician begins to offer telehealth services for the patient to access emergency appointments. Through this process, the patient gained confidence in advocating for himself and an increased understanding of the skills he needed to acquire in order to remain successful. The patient continued with ABA treatment and mental health services, with services gradually fading out naturally as he became more independent and his social support increased.

Core symptoms of ASD addressed	Telehealth modalities
1. Deficits in social-emotional reciprocity 2. Deficits in nonverbal communicative behaviors used for social interaction 3. Deficits in developing, maintaining, and understand relationships	1. Synchronous videoconferencing

Cultural Considerations

Advances in technology and telehealth have afforded families the ability to access care from almost any area in the world[136–140] leading to an increasing need for providers to deliver culturally and linguistically appropriate services for families[47,136]. Providers should deliver culturally responsive treatment for families that considers 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. Providers may implement appropriate cultural adaptations to multiple dimensions of their treatment, including but not limited to: treatment goals, content, methods, language, and communication style, as well as providers delivering treatment[136]. Culturally responsive treatment is also warranted when supporting families in different communities within the United States. For example, it is not uncommon for providers to be primarily located in larger metropolitan cities and support families in small, rural communities. Providers may prioritize safety goals differently for families living in a large metropolitan city or a small rural community within these contexts.

It may also be more challenging for a provider to ensure the family consents to all aspects of treatment, particularly in cultures where families may not openly communicate, when there is a disagreement between a provider's priority for goals and the families focus. Nuanced caregiver behaviors may be more challenging to observe via video, or the distance between the provider and family may exacerbate the communication challenges. Providers should communicate in a comfortable and known language for the family that allows the providers to obtain a clear history from the family. Providers may also consider completing a values inventory with families to understand better the family values and parenting styles to build rapport with families and increase treatment outcomes[136,141]

Socioeconomic Considerations

Providers working with families in rural communities are more likely to encounter barriers related to rural risk factors, including lower socioeconomic status, limited job opportunities, and limited access to health care specialists[32]. Due to these risk factors, providers may experience additional barriers to rendering care via telehealth[136], including limited internet access and/or poor connectivity[37,38,127,142,143], limited access to the technology required for telehealth sessions[2,47], limited availability for family participation due to holding multiple jobs,

difficulties identifying a therapeutic location within the family home due to home size and/or the number of family members residing within the house, and limited therapeutic materials available for treatment. Before initiating treatment, providers should assess these potential barriers and develop a plan to address each barrier to improve treatment outcomes proactively.

Cultural Responsiveness

A BCBA receives a referral to provide services for a young child. The family has immigrated from Tonga and the BCBA has no prior experience working with families from Tonga but knows it's their ethical duty (code 1.07) to engage in professional development to acquire the needed knowledge and skills to be culturally responsive. Before starting services, the BCBA talks with other colleagues to see if they have experience working with families from Tonga. Fortunately, the BCBA is able to identify a colleague who lives in another state who has prior experience working with the family and agrees to consult on the case via telehealth since they do not have the clinical capacity to accept new cases. They recommend that the primary BCBA review available information online about Tongan culture using Cultural Atlas© to familiarize themselves with some basics and make a list of areas they want to seek further knowledge on. In reviewing the intake paperwork, the primary BCBA notes that the child's parents shared their concerns about mealtimes and identified areas where they'll want to seek additional information from the family on their customs, traditions, routines in the home, and specifics important to them for their child's services. The BCBA also determined whether there is a need for an interpreter before setting up the initial meeting with the family.

In taking on this case, the primary BCBA recognizes they will need to consistently collaborate with the family and ensure each protocol is tailored to meet the individual needs of the child and the family's culture. As the primary BCBA learns about etiquette related to eating, they note that food is often eaten with the hands traditionally, but with Western influence, some families may use utensils as well. The telehealth BCBA provides consultation via **asynchronous store-and-forward** on a monthly basis as services begin to help identify additional opportunities to provide culturally responsive services for the family. During a consult meeting between the BCBAs, the primary BCBA notes that the family seems uncomfortable with how the tolerating new foods program is running, but they have not specifically said anything. The telehealth BCBA notes that it is typical in Tongan culture not to criticize and be more indirect in communication and provides some recommendations for the primary BCBA to review the program with the family.

Knowing this, the primary BCBA works with the family to review a session with the technician that was recorded for **asynchronous store-and-forward** and have the family identify specific parts of the program implementation they like and do not like. During this, the primary BCBA discovers the technician was working with the child on tolerating new snack foods and drinks while they were standing and eating or drinking while standing is considered rude in Tongan culture, which made the family uncomfortable. The primary BCBA is able to provide clinical protocol modifications to help increase comfort by ensuring the technician only implements programming related to food and drink when they are sitting.

Core symptoms of ASD addressed	Telehealth modalities
1. Insistence on sameness and inflexible adherence to routines 2. Highly restricted, fixated interests that are abnormal in intensity or focus	1. Asynchronous store-and-forward

Dosage of Treatment & Session Duration

When a patient is initiating telehealth treatment, providers should consider variables that may impact the treatment dosage, duration of sessions, and the structure of the sessions. The child's developmental age, prerequisite skills, and baseline duration of meaningful session participation should be evaluated when determining overall treatment dosage and session duration. Patients may need to begin with a lower dosage of treatment and slowly increase the dosage based on the patient's success. Providers should consider building a session schedule in 15-minute increments that allows the child to build upon their session as they are successful. For example, a patient's baseline participation data may indicate he can meaningfully participate in treatment for 30-minutes. The provider may build a 2-hour schedule in 15-min increments that allows the technician to increase to the next 15-min interval following pre-set criteria for patient success (See Appendix C Telehealth Treatment Planning. A well-designed session schedule can help ensure that rapport building protocols are embedded within the session, assist the technician with slowly establishing instructional control, and ensure generalization and maintenance of new skills are actively programmed in the patient's day.

Providers should also consider whether patients would benefit from a hybrid of telehealth and in-person treatment sessions. For example, some patients may benefit from 1:1 services with a technician to focus on adaptive living skills and also benefit from a telehealth social skills group where they are paired with peers with similar interests and can practice social skills in a safe environment.

Monitoring Effectiveness of Telehealth Treatment

Behavior analysts use direct observation and measurement of patient behaviors and environmental events to make treatment decisions. This section is designed to help providers evaluate the effectiveness of services delivered via telehealth; however, providers should also reference the standards outlined in the Applied Behavior Analysis Treatment of Autism Spectrum Disorder: Practice Guidelines for Healthcare Managers and Funders (2nd)[1] and the Ethics Code for Behavior Analysts[4].

Patient Assent

Before initiating telehealth services, providers should establish a patient assent protocol and consider how assent may differ based on the service delivery model. For example, some assent behaviors may be more nuanced and difficult to observe via a direct telehealth service delivery model, and the provider may need to identify different methods for evaluating assent.

Skill Acquisition

Providers should continually monitor the patient's data to assess improvement or maintenance of skills and target behaviors. If the level, trend, or variability in data indicates that behavior is worsening or not improving over the span of 5-10 data points, modify the protocol or consider discontinuing remote implementation.

Maladaptive Behavior

Providers can capture the effects of the implementation of behavior strategies and behavior intervention plans in the home environment via synchronous telehealth observations and review of patient data. If noncompliance, resistance, and other challenging behavior worsens or emerges, providers should use their clinical judgment to modify or discontinue the protocol. If mild forms of challenging behavior (e.g., stereotypic behavior, mild resistance, distress) improve during or directly following implementation of a protocol, providers should consider increasing service hours slowly until the patient has reached the full recommended treatment dosage or dosage of treatment to which caregivers have consented.

Implementation Quality

Providers are encouraged to evaluate each protocol separately (e.g., environment preparation, presentation of stimuli, prompt sequence and presentation, error correction, consequence delivery, measurement) to facilitate high-quality implementation of behavioral services regardless of whether the implementer is a technician or caregiver. Providers should receive specialized training on telehealth technology and protocols via telehealth (See CASP Organizational Guidelines Telehealth Chapter). Providers should role-play telehealth sessions prior to implementing treatment to ensure they are proficient in technology and treatment administration via telehealth. Providers should incorporate behavioral skills training (BST) with their technicians and use a treatment fidelity checklist to monitor the treatment fidelity via telehealth. If a protocol cannot be implemented with an adequate level of procedural integrity (e.g., 80-100% accurate implementation), providers should use their clinical judgment and simplify the protocol or consider substituting a different protocol.

In addition to procedural fidelity, providers should be trained on use of all technology, including scheduling treatment sessions, logging into the videoconferencing system, managing technology tools (e.g., screenshare), as well as effectively managing electronic session materials. Providers who are not able to fluently navigate across programs and maintain a sufficient pace of programming may experience increased challenging behavior and poor treatment outcomes.

Likewise, for caregivers implementing services, simultaneously implementing a behavioral procedure and collecting data on the patient's behavior can be difficult and might introduce error into implementation. The behavior analyst or technician should observe and record the patient's target behaviors, rather than requiring caregivers to do so while simultaneously implementing protocols. In addition, the provider organization should routinely assess the fidelity of treatment as part of the quality review process.

Effects on Family Context

Providers should assess the effects of telehealth intervention and support on family context and caregiver stress. Parent treatment acceptability and parent stress measures may be used to continually monitor the effects of treatment and inform possible modifications to support the family. Document any beneficial effects related to decreased stress, increased family resilience, capacity to use behavioral procedures and home environment. If the caregiver finds implementation stressful, difficult, or disruptive, modify protocols, increase support, or consider discontinuation.

If siblings or roommates exhibit disruptiveness or challenging behavior during the implementation of programming, modify protocols to include those individuals if possible. Otherwise, providers should use their clinical judgment and consider reducing caregiver involvement and/or placing the program on hold.

Health Care Claims Reimbursement for Telehealth

For claims submission of ABA services, the following considerations may help to safeguard against claims rejections or denials for telehealth service delivery. Providers are advised to complete their due diligence, obtain authorization for services delivered via telehealth, and document the funder guidelines relevant to telehealth prior to implementing and billing for telehealth services.

Provider Due Diligence

It is critical that organizations complete their own due diligence and confirm with each payer whether the health insurance billing codes described in this document are approved for the organization's specific facility and provider type. The contract for telehealth service delivery should be stored in the organization's electronic medical record system or other system as applicable. Prior to delivering care through a telehealth service delivery model, providers will need to verify that the patient's health plan covers telehealth and confirm the modality that is approved for each service (e.g., synchronous videoconferencing, store-and-forward, or telephonic communication). Providers should maintain documentation of payer policies with guidance regarding service delivery and billing for telehealth services for each health plan.

In addition to confirming telehealth approval for each service, providers should inquire about the use of additional procedural codes for synchronous and asynchronous telehealth. Billing codes that have been approved by some payers to report indirect (non-face-to-face with patient) work via telehealth are listed below. Payers may also reimburse a telehealth transmission fee. Providers should inquire with each payer about the use of these codes.

HCPCS	Description	Funder Approved Telehealth
H0032	Mental health service plan development by non-physician	- Telephonic interactions - Synchronous videoconferencing - Asynchronous (store-and-forward) - Remote Monitoring
T1026	Intensive, extended multidisciplinary services provided in a clinic setting to children with complex medical, physical, medical and psychosocial impairments, per hour	- Telephonic interactions - Synchronous videoconferencing - Asynchronous (store-and-forward) - Remote Monitoring
G0175	Scheduled interdisciplinary team conference (minimum of three exclusive of patient care nursing staff) with patient present	Synchronous videoconferencing
G9012	Other specified case management service not elsewhere classified	Remote monitoring
Q3014	Telehealth originating site facility fee	NA
T1014	Telehealth transmission, per minute, professional services bill separately Billed one unit per minute (1-min code).	NA

Authorization for Services Delivered via Telehealth

Once verification of telehealth benefits has been completed and documented, providers should evaluate all procedural codes and request service authorizations for service delivery via telehealth. Providers using practice management software will need to update the systems with appropriate modifiers for service codes and system connections to authorizations for timesheets.

Documentation

Providers should prepare and plan for capturing, tracking, or recording information that may be needed in a routine audit of services. Providers should save all payer policies and copies of communication confirming use of telehealth with details, including revisions and date the policy was revised. In addition, providers should maintain documentation of verification of benefit information related to telehealth as applicable for each patient and any authorization updates. Providers are encouraged to update session note documentation templates to ensure all necessary reporting components are included for delivery via telehealth. For example, per date of service, session documentation may include a checklist of the appropriate environmental conditions that satisfy a session being delivered via telehealth, type of technology, and telehealth modality used.

Claims Submission

Most funders require the use of a telehealth modifier. Providers should confirm this with each payer. Telehealth modifiers include:

95	Current CPT® modifier used to indicate that services were rendered via **synchronous** (real time) telehealth with interactive video telecommunication systems.
GQ	For **asynchronous** (store-and-forward) telehealth, if approved.
GT	Retired and replaced by the Place of Service location 02; however, it is still used by some health plans.
None	There will be cases where a funder does not require a modifier.

Place of Service (POS) specifies where services were rendered and is necessary to pay claims correctly. For Telehealth, POS indicates where the patient is located when services were provided or received, through telecommunication technology. POS is paired with codes billed by the telehealth provider (and would be paired with the telehealth transmission code). It is important to note that some funders may not be set up to recognize POS 02 and POS 10.

POS 02: Telehealth Provided Other than in Patient's Home
The patient is not located in their home when receiving health services through telecommunication technology.

POS 10: Telehealth in Patient's Home

The patient is located in their home when receiving health services through telecommunication technology.

Providers are encouraged to monitor clearinghouse rejections to identify claims rejection issues based on modifiers and place of service to rectify claims submission delays promptly. Monitor claims denials once the submission has been received and claims have been adjudicated and explanation of benefit (EOB) or electronic remittance advice (ERA) is received. Providers may also consider using labels or flags in their practice management software to isolate telehealth billing for reporting purposes and should avoid submitting claims for telehealth services without following all the preparatory guidelines.

It is the hope that this document provides beneficial suggestions, information, examples and guidance to clinicians, organizations, billing agencies, and health care providers with the inclusion of telehealth as a service delivery modality for ABA services. We recognize that there may be examples or circumstances that are not represented in this document. However, we hope the breadth of this document provides the fundamental information that users of this document need to be successful in the implementation of telehealth services and can generalize to individual circumstances.

As a supplement to this document, the following appendices are provided to serve as resources to clinicians and families. They are not meant to be the sole official documents for all providers and organizations. However, each was designed to include the relevant information that is deemed to be important for the successful delivery of telehealth.

Appendices

Appendix A: Guidance for Telehealth Delivery of Adaptive Behavior Services Codes

Guidance on each type of service that may be implemented via telehealth is provided below. Providers are advised to use their clinical judgement and complete due diligence with funders prior to implementing and billing for telehealth services. Each of the case examples in the following descriptions are excerpted from the "Supplemental Guidance on Interpreting and Applying the 2019 CPT Codes for Adaptive Behavior Services" (2019). Each code descriptor is followed by guidance regarding patients for whom telehealth delivery of the service could be appropriate, environment and caregiver requirements, modifications that may be necessary, telehealth modalities, and considerations for telehealth delivery. This is followed by a telehealth case example of that service.

97151 - Behavior identification assessment, administered by a physician or other qualified health care professional, each 15 minutes of the physician's or other qualified health care professional's time face-to-face with patient and/or guardian(s)/caregiver(s) administering assessments and discussing findings and recommendations, and non-face-to-face analyzing past data, scoring/interpreting the assessment, and preparing the report/treatment plan	

Appropriate Patients	● All patients
Environment/ Caregiver Requirements	● Caregivers should be on-site (defined as immediately available and interruptible) during any telehealth assessments in which the provider is assessing the patient using live, synchronous methods. ● Technology assistance may be required for the caregiver ● Confirm or provide technology for the direct observation portion of assessment ● Complete any environmental modifications to ensure patient and caregiver safety ● Develop a contingency plan to reduce or eliminate technology-related distractions
Assessment Modifications	● Gather required materials and use electronic assessment stimuli, when available and appropriate ● Review common items in service delivery setting that may be used for the

	assessment and mail any other needed materials to the caregivers ● Establish criteria for terminating assessment and referring to other service providers
Telehealth Modalities	**Dependent on payer approval:** ● Telephonic interactions (caregiver interview portion only) ● Synchronous videoconferencing ● Asynchronous (store-and-forward)
Considerations	To conduct a 97151 assessment or reassessment via telehealth, the behavior analyst should either be face-to-face interacting with the patient (which is met via **synchronous, real-time videoconferencing)**, OR payer must allow caregiver to serve as an extension of the behavior analyst. In the latter case, caregivers would assess patient behaviors with direction from the behavior analyst via telehealth. In cases where a caregiver is serving as an extension of the behavior analyst, the time spent assessing the patient by the caregiver and behavior analyst is counted towards the face-to-face portion of the service. Non-face-to-face activities (e.g., analyzing past data, scoring/interpreting the assessment, and preparing the report/treatment plan) should be counted and reported as they are when the service is delivered in-person.
Case Example	**Telehealth Assessment Session 1** **Prior** to the appointment, **store-and-forward** technologies are used to transmit the patient's medical records, prior assessments, and records of any previous or current treatments for clinical review by the behavior analyst. Just before the assessment session, the behavior analyst gathers all materials required for that session. For assessments via telehealth, the behavior analyst works with the caregivers to identify resources they have within the treatment setting. **During** the first assessment session, the behavior analyst uses **telephonic interactions** to conduct a structured interview with the caregivers to solicit their observations about the patient's adaptive behaviors (e.g., social, communication, or self-care skills), challenging behaviors, and other concerns. The behavior analyst conducts indirect assessments to identify potential skills to be strengthened and challenging behaviors to be reduced by treatment. Indirect assessments include standardized and non-standardized scales and checklists completed by the caregivers to evaluate the patient's adaptive skills in several domains. The data gathered from

the caregiver interview and indirect assessments are used to determine the appropriate direct assessments.

After the indirect assessments are completed in the first session, the behavior analyst provides the caregiver with a list of items needed for the direct assessment and mails any items that are not available in the treatment setting.

Telehealth Assessment Session 2

Prior to the direct assessment session, the behavior analyst gathers electronic assessment tools needed for face-to-face video interactions directly with the patient. If the caregiver is serving as an extension of the behavior analyst, the provider confirms that the caregiver has all needed materials.

During the session, the behavior analyst uses **synchronous videoconferencing** to conduct direct assessments of adaptive skills, including direct observation and recording of the patient's performance of skills in typical everyday situations, information about the type and amount of assistance (e.g., cues, prompts) the patient requires to perform each skill successfully, and the types of reinforcers for which the patient responds. In cases where the caregiver is serving as an extension of the behavior analyst, the behavior analyst gives real-time instructions to the caregiver to observe the patient's behavior during everyday interactions. **If approved by the funder**, the behavior analyst may also guide the caregiver to record patient behaviors across multiple settings and interactions. The behavior analyst uses **asynchronous store-and-forward video** observations of the patient in those everyday settings to record occurrences of challenging behaviors as well as environmental events that precede and follow those occurrences. Information from the functional behavior assessment is used to design functional analyses of challenging behaviors. Those assessments may be conducted over several days of service.

After: The data from all assessments are used to develop a treatment plan with goals and objectives, including social, communication, play and leisure, self-care, and other adaptive behaviors to be developed and challenging behaviors to be reduced, all defined in observable, measurable terms. The plan also specifies for each treatment target: (a) the current (baseline) level; (b) procedures for direct observation and measurement; (c) conditions under which the behavior is to occur; (d) a written protocol with instructions for implementing procedures (e.g., materials needed, instructions, prompting and prompt-fading, consequences for correct and incorrect

responses, etc.) to change the behavior and promote generalization of behavior changes; and (e) criteria for mastery or attainment of the treatment goal.

Billing Considerations	Bill place of service - 02 (telehealth provided other than in patient's home) Bill place of service - 10 (telehealth in patient's home) Modifier 95 - Telehealth (synchronous)

97152 - Behavior identification-supporting assessment, administered by one technician under the direction of a physician or other qualified health care professional, face-to-face with the patient, each 15 minutes

Appropriate Patients	● All patients
Environment/ Caregiver Requirements	● Caregiver should be immediately available and interruptible during any telehealth assessments in which the technician is assessing the patient using live, synchronous methods. ● If caregiver is serving as a proxy for the technician, caregiver should be available for duration of assessment ● Technology assistance may be required for the patient and/or caregiver ● Confirm or provide technology for direct observation portion of assessment ● Complete any environmental modifications to the treatment setting to ensure patient and caregiver safety ● Develop a contingency plan to reduce/eliminate technology-related distractions
Assessment Modifications	● Gather materials and use electronic assessment stimuli, when available and appropriate ● Review common items in the treatment setting that may be used for the assessment and mail any other needed materials to the caregiver ● Establish criteria for terminating assessment and referring to another provider
Telehealth Modalities	**Dependent on payer approval:** ● Synchronous videoconferencing ● Asynchronous (store-and-forward)
Considerations	To conduct a 97152 assessment via telehealth, the technician should either be face-to-face (in-person or via telehealth) with the patient, OR payer must allow the caregiver to serve as a proxy for the technician. In the latter case, consider whether

payers will waive NPI, online training, and credentialing requirements typically expected of a technician.

Extensive preparation and guidance by the behavior analyst occurs when a technician conducts supplemental assessment activities. The same is true where a caregiver serves as the technician. The behavior analyst could instruct the technician with both parties acting via telehealth in cases where it is clinically appropriate for the patient.

Remember that code descriptors designate the minimum-level service provider to report and bill a service. In cases where a code descriptor states "by technician," behavior analysts may also provide the service. In cases where a higher-level provider renders a "by technician" service, they should add a modifier to indicate that. Note that some payers do not utilize modifiers for this purpose, so it's critical to check each payer's policies and contracts to ensure compliance.

Case Example	**Telehealth Supporting Assessment**

Prior: Once the behavior analyst has determined from the initial assessment that stereotypic behavior is a treatment target and that more information is needed to develop appropriate treatment protocols, the behavior analyst directs the technician or caregiver to directly observe and record occurrences of the behavior in everyday situations. The technician and the behavior analyst review information about the patient's stereotypic behavior from the behavior identification assessment, the definition of that behavior, and procedures for directly observing and measuring occurrences of the behavior and environmental events that precede and follow occurrences. The technician practices observing and recording occurrences of the behavior from a live **synchronous videoconferencing** or recorded **store-and-forward video** sample that is also scored by the behavior analyst. The behavior analyst compares his/her data to the data recorded by the technician and provides feedback to the technician regarding the accuracy and completeness of the technician's data recording until the technician demonstrates proficiency. When a caregiver serves as a proxy for the technician via telehealth, the behavior analyst should work with the caregiver until they demonstrate proficiency. The behavior analyst should document fidelity and interobserver agreement measures in the patient's medical records. Prior to the assessment session the technician gathers all materials required for that session. The technician also reviews the data and session notes from the most recent treatment sessions, if applicable.

During the session, the behavior technician, under the direction of the behavior analyst, uses **synchronous videoconferencing** to observe and record occurrences of

the patient's stereotypic behavior and environmental events that precede and follow those occurrences several times in a variety of situations. If the caregiver is serving as a proxy for the technician, the technician uses **synchronous videoconferencing** to observe the caregiver-patient interactions and records occurrences of the patient's stereotypic behavior and environmental events that precede and follow those occurrences several times in a variety of situations.

After the session, the technician graphs the resulting data, indicating on the graph the date, time, and context for each of the data samples. The behavior analyst reviews and analyzes the graphed data from the technician's observations of the patient's stereotypic behavior and writes a progress note with a plan of action. In cases where a caregiver conducts the follow up assessment under the direction of a behavior analyst, the behavior analyst should observe and take data as a technician typically would.

Billing Considerations	Bill place of service - 02 (telehealth provided other than in patient's home)
	Bill place of service - 10 (telehealth in patient's home)
	Modifier 95 - Telehealth (synchronous)

97153 - Adaptive behavior treatment by protocol, administered by technician under the direction of a physician or other qualified health care professional, face-to-face with one patient, each 15 minutes

| Appropriate Patients | Patients who at a minimum exhibit the following skills and have demonstrated the ability to respond effectively to telehealth direct services delivered via synchronous videoconferencing: |

- Basic joint attention skills
- Basic discrimination skills
- Basic echoic skills
- Basic motor imitation skills
- Ability to follow common 1-step instructions
- Participate in session with limited caregiver support
- Ability to sit independently at a computer for 8-10 minutes period of time
- Safety concerns and challenging behavior are low and/or caregivers are able to safely and effectively manage any challenging behavior

Environment/ Caregiver Requirements	Caregivers should be immediately available and interruptible during any telehealth sessions in which the technician or behavior analyst is delivering treatment using live, synchronous methods. ● If caregiver is serving as a proxy for the technician, caregiver should be available for duration of treatment session or as specified for the provider ● Caregiver instructional control ● Develop a contingency plan to reduce/eliminate technology-related distractions ● Complete risk assessment and safety planning (Appendix B)
Treatment modifications	● Modified session breaks, treatment goals, session termination criteria ● Changes to programs, naturalistic programs, daily schedules ● Possible omission of some protocols while telehealth is occurring (e.g., toilet training)
Telehealth Modalities (dependent on payor approval)	● Synchronous videoconferencing
Considerations	Many patients may be good candidates for ABA services via telehealth. Evaluation of the patient's skills and consideration of needed programming changes as discussed previously are paramount when services are delivered via telehealth. If a behavior analyst runs a telehealth session and they are not doing so to evaluate whether protocol modifications are needed, they should bill 97153 with a modifier. In some cases, prior payer policy directed behavior analysts to use 97155 regardless of whether they were conducting the face-to-face session. In those cases, providers should continue to follow previous payer guidance related to reporting 1:1 sessions with patients. Technician competency: Technicians should conduct 1:1 treatment sessions via telehealth only if the supervising behavior analyst has verified that they are competent to implement the procedures safely and effectively. If caregivers ask questions or make requests, the technician should be instructed to tell the caregiver that they will consult with the behavior analyst.
Case Example	**Telehealth Adaptive Behavior Treatment by Protocol** **(technician delivers directly to the patient)**

Prior to the first implementation of any treatment protocols, the behavior analyst conducts a risk assessment and documents the patient's ability to participate in telehealth adaptive behavior treatment by protocol services**.** The behavior analyst and technician use **synchronous videoconferencing** to review the definitions of treatment targets in the areas of language, social skills, responding to changes in routines, and responding to the unavailability of preferred items in the patient's treatment plan as well as the written protocols for addressing each of those targets. Prior to each treatment session, the technician gathers all materials required for that session. The technician also reviews the data and session notes from the most recent treatment sessions.

During each session, the technician uses face-to-face via synchronous videoconferencing to implement the treatment protocols and data collection procedures with the patient in the treatment setting. Sessions are designed to provide multiple planned opportunities for the patient to practice each target skill. The caregiver is available for periodic support when needed for specific treatment programs; however, the patient is able to participate independently for the majority of the session.

After the session, the technician records notes summarizing what occurred and any aspects of the behavioral definitions or treatment protocols that may need to be scrutinized by the behavior analyst. The behavior analyst reviews technician-recorded graphed data and notes from all treatment sessions weekly to assess the patient's progress and determine if any treatment targets or protocols need to be revised.

Telehealth Adaptive Behavior Treatment by Protocol
(caregiver serving as a proxy for technician)

Prior to the first implementation of any treatment protocols, the behavior analyst conducts a risk assessment and documents the patient's and caregiver's ability to participate in telehealth adaptive behavior treatment by protocol services, with the caregiver as a proxy for the technician. In caregiver training sessions prior to the first session, the behavior analyst and caregiver use **synchronous videoconferencing** to review the definitions of treatment targets in the areas of language, social skills, responding to changes in routines, and responding to the unavailability of preferred items in the patient's treatment plan as well as the written protocols for addressing each of those targets. Prior to each treatment session, the caregiver gathers all materials required for that session.

During each session, the technician uses face-to-face via **synchronous videoconferencing to guide the caregiver to** implement the treatment protocols. Sessions are designed to provide multiple planned opportunities for the patient to practice each target skill. As discussed in the pre-session caregiver training, programs may include the caregiver delivering directives and are specified in the patient's protocol to ensure the treatment programs are socially valid and adhere to technological requirements by providing clear and concise descriptions of procedures. The behavior analyst should record data via telehealth during the session and write a session note.

After the session, the behavior analyst records notes summarizing what occurred and any aspects of the behavioral definitions or treatment protocols that may need to be scrutinized. The behavior analyst reviews graphed data and notes from all treatment sessions weekly to assess the patient's progress and determine if any treatment targets or protocols need to be revised. In cases where caregivers are serving as technicians the behavior analyst should record data via telehealth during the session and write a session note.

Billing Considerations	Bill place of service - 02 (telehealth provided other than in patient's home) Bill place of service - 10 (telehealth in patient's home) Modifier 95 - Telehealth (synchronous)

97154 - Group adaptive behavior treatment by protocol, administered by technician under the direction of a physician or other qualified health care professional, face-to-face with two or more patients, each 15 minutes

97158 - Group adaptive behavior treatment with protocol modification, administered by physician or other qualified health care professional, face-to-face with multiple patients, each 15 minutes
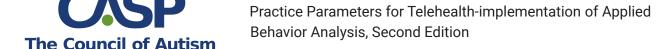
Appropriate Patients	Patients who at a minimum exhibit the following skills and have demonstrated the ability to respond effectively to telehealth direct services delivered via synchronous videoconferencing: ● Joint attention skills

	• Intraverbal skills • Conditional discrimination skills • Advanced motor imitation skills • Ability to follow common 1-2 step instructions • Ability to wait and take turns • Participate in session with limited caregiver support • Ability to sit independently at a computer or tablet for 8-15 minutes • Safety concerns and challenging behavior are low and/or caregivers are able to safely and effectively manage any challenging behavior
Environment/ Caregiver Requirements	• Caregiver should be immediately available and interruptible during any telehealth sessions in which the technician or behavior analyst is delivering treatment using live, synchronous methods. • If caregiver is serving as a proxy for the technician, caregiver should be available for duration of treatment session or as specified • Caregiver should have strong instructional control • Develop a contingency plan to reduce/eliminate technology-related distractions • Complete risk assessment and safety planning (Appendix B)
Treatment modifications	• Modified group session breaks, treatment goals, session termination criteria • Changes to programs, naturalistic programs, daily schedules • Possible omission of some programs while telehealth is occurring (e.g., toilet training)
Telehealth Modalities	**Dependent on payor approval:** • Synchronous videoconferencing
Considerations	These services are appropriate for patients who can engage in group activities, such as social skills groups, via telehealth. If a behavior analyst is providing direction to the technician while they implement a group session, that is reported concurrently using 97154 / 97155. To constitute a group, 2-8 patients must be present. Report 97154 or 97158 per patient attending the group. Documentation of the session content must occur per patient served in the group.
Case Examples	**97154**

Prior to treatment initiation, the behavior analyst conducts a risk assessment and documents the patient's ability to participate in group adaptive behavior treatment by protocol via synchronous video conferencing telehealth. Prior to the session, the behavior analyst and technician use **synchronous telephonic/videoconferencing** to review the data and notes from the most recent treatment session, the treatment protocol, and the data collection procedures. Prior to each treatment session, the technician gathers all materials required for that session. The technician also reviews the data and session notes from the most recent treatment sessions.

During the session, the behavior analyst uses **synchronous videoconferencing** and directs a technician in the implementation of the patient's treatment protocol and data collection procedures in small-group activities via **synchronous videoconferencing** conducted by the technician. The technician implements the treatment protocols and data collection procedures with the patients. Caregivers may serve as a proxy for the technician and provide assistance to the patient, as programmed by the behavior analyst. Sessions are designed to provide multiple planned opportunities for the patients to practice each target skill. Where sessions are conducted via telehealth one technician directs a caregiver for each patient attending the group to implement the protocols in the treatment setting. The technician should record data via telehealth during the session based on their observations.

After the session, the technician writes a session note. The behavior analyst reviews technician-recorded graphed data and session notes to assess the patients' progress and determine if the treatment protocol needs to be adjusted. The behavior analyst writes a progress note with a plan of action.

97158

Prior: The behavior analyst includes participation in group treatment sessions that focus on peer social skills in the patient's treatment plan. Prior to the treatment session, the behavior analyst conducts a risk assessment and documents the patient's ability to participate in group adaptive behavior treatment by protocol via synchronous video conferencing telehealth. The behavior analyst reviews data, notes, and treatment protocols regarding the patient's social and communication skills and modifies the treatment protocol to be implemented in telehealth group treatment sessions. Just before the session, the behavior analyst gathers all materials required for that session.

During the session the behavior analyst uses **synchronous videoconferencing** and begins the group session by asking each patient to briefly describe two of their recent social encounters with peers, one that went well and one that did not. The behavior analyst uses that information to develop a group activity in which the patient has the opportunity to practice the skills she used in the encounters that went well and to problem solve the interactions that did not go well. The behavior analyst helps the patient identify social cues that were interpreted correctly and incorrectly, what she could have done differently and provides prompts and feedback. The behavior analyst also records data on the patient's performance. The behavior analyst ends the session by summarizing the discussion and skills that were practiced, answering questions, and giving the patient an assignment to practice a particular peer social skill and record her own performance of that skill.

After the session, the behavior analyst graphs and reviews data recorded during the session and writes a progress note and plan of action.

Billing Considerations	Bill place of service - 02 (telehealth provided other than in patient's home) Bill place of service - 10 (telehealth in patient's home) Modifier 95 - Telehealth (synchronous)

97155 - Adaptive behavior treatment with protocol modification, administered by physician or other qualified health care professional, which may include simultaneous direction of technician, face-to-face with one patient, each 15 minutes

Appropriate Patients	● Same as 97153
Environment/ Caregiver Requirements	● Same as 97153
Treatment modifications	● Same as 97153
Telehealth Modalities	**Dependent on funder approval:** ● Synchronous videoconferencing ● Telephonic interactions ● Asynchronous (store-and-forward) ● Remote monitoring

Considerations

This code can also be reported when the behavior analyst conducts a 1:1 session with the patient to evaluate the need for protocol modification and the patient is able to participate via telehealth (refer to supplemental coding guidance article for more on protocol modification: www.abacodes.org).

These sessions could also be conducted in the typical scenario where there is a technician providing the direct service either in-person or via telehealth and the behavior analyst directs them via telehealth. In this scenario, report 97153 for the technician's time and 97155 concurrently for the behavior analyst's time.

Case Examples

Telehealth Adaptive Behavior Treatment with Protocol Modification (directing technician)

Prior to the treatment session, the behavior analyst reviews data and notes from previous sessions. To promote generalization of treatment gains across situations, the behavior analyst modifies the written protocols used previously to incorporate procedures designed to build the patient's language and social skills into daily routines (e.g., play, dressing, mealtimes). Just before the session, the behavior analyst gathers all materials required for that session.

During the session, the behavior analyst uses **synchronous videoconferencing** to demonstrate the modified treatment procedures with the patient while the technician observes. The technician then implements the modified treatment protocol with the patient while the behavior analyst observes and provides feedback. The behavior analyst records data on the technician's/caregiver's performance. **If approved by the funder**, the behavior analyst may direct the technician to record video of treatment sessions.

After the session, the behavior analyst modifies the protocols if indicated by the behavior analyst's observations during the session. **If approved by the funder**, the behavior analyst uses the **store-and-forward video** observations of the patient's behavior to determine if the protocol components are functioning effectively for the patient or require adjustments. The behavior analyst writes a progress note with a plan of action.

Telehealth Adaptive Behavior Treatment with Protocol Modification (no technician present, QHP 1:1 with patient)

Prior to session, the behavior analyst reviews data and notes from previous sessions and observes a spike in the patient's challenging behavior. To evaluate the need for modifications to the treatment protocol, the behavior analyst conducts a 1:1 session with the patient. Just before the session, the behavior analyst gathers all materials required for that session.

During the session, the behavior analyst uses **synchronous videoconferencing** to troubleshoot current treatment protocols face-to-face with the patient. The behavior analyst tests adjustments to specific components of the protocol (e.g., reinforcers, reinforcer delivery, prompts, instructions, materials, contextual variables) to determine if changes are needed to improve patient progress.

After the session, the behavior analyst modifies the protocols if indicated by the behavior analyst's observations during the session. The behavior analyst writes a progress note with a plan of action. The behavior analyst schedules a time to join the patient and technician during a treatment session to direct the technician in implementing the modified protocols.

Billing Considerations	Bill place of service - 02 (telehealth provided other than in patient's home) Bill place of service - 10 (telehealth in patient's home) Modifier 95 - Telehealth (synchronous)

97156 -Family adaptive behavior treatment guidance, administered by physician or other qualified health care professional (with or without the patient present), face-to-face with guardian(s)/caregiver(s), each 15 minutes

97157 - Multiple-family group adaptive behavior treatment guidance, administered by physician or other qualified health care professional (without the patient present), face-to-face with multiple sets of guardians/caregivers, each 15 minutes

Appropriate Patients	● All patients
Environment/ Caregiver Requirements	● Caregiver's commitment to participation ● Access to telephone ● Access to technology and secure internet connection ● Confirm or provide technology for direct observation ● Complete any environmental modifications to the treatment settings to ensure

	patient and caregiver safety ● Technology assistance may be required for the caregiver ● Develop a contingency plan to reduce/eliminate technology-related distractions
Treatment modifications	● Changes to programs, naturalistic programs, daily schedules ● Possible omission of some program while telehealth is occurring (e.g., toilet training)
Telehealth Modalities	**Dependent on funder approval:** ● Synchronous videoconferencing ● Telephonic interactions ● Asynchronous (store-and-forward) ● Remote monitoring
Considerations	Family sessions done via telehealth are not simply "check ins" to see how caregivers are doing. They should focus on building caregiver skills to allow them to successfully implement programming. Mobile health applications are gaining in popularity and are often used as a method for caregivers to record generalization and maintenance of skills outside of scheduled treatment sessions. Multi-family caregiver trainings may be particularly useful via telehealth where patients live far apart but are working on similar targets; where family dynamics are similar and impact the patient's programming (for instance, sibling interactions); or where support needs of caregivers are similar and they could learn from one another's experiences. To constitute a group, the caregiver(s) for at least two but no more than eight patients must be present. Report 97157 per patient represented by caregiver(s) attending the group.
Case Examples	**97156: Family Adaptive Behavior Treatment Guidance** **(synchronous videoconferencing)** **Prior** to the first appointment, the behavior analyst reviews data, notes, and treatment protocols regarding the patient's picture communication skills. Just before the session, the behavior analyst gathers all materials required for that session. If needed, supplemental materials are also provided to the caregiver. **During** the session, the behavior analyst uses **synchronous videoconferencing** to review the treatment protocol with the caregivers, which involves the use of prompting

and reinforcement to promote the patient's use of picture cards and gestures to indicate desire to stop an activity and to request help. The behavior analyst demonstrates those procedures, then has each caregiver in turn implement the procedures with the patient while the behavior analyst observes, provides feedback, and records data on the patient's performance. The behavior analyst uses **asynchronous store-and-forward technology** to transmit an electronic copy of the treatment protocol and data sheets with instructions for implementing the protocol during typical routines. The behavior analyst instructs the caregivers to use **asynchronous store-and-forward technology** to transmit the data at the end of the week and schedules a second follow-up appointment.

After the session, the behavior analyst graphs, reviews data recorded during the session and writes a progress note and plan of action.

97156: Family Adaptive Behavior Guidance
(telephonic interactions example, if approved by funder)

Prior to the appointment, the behavior analyst reviews data and parent-reported increases in challenging behavior during the patient's morning routine. Just before the session, the behavior analyst gathers all materials required for that session.

During the session, and **if approved by the funder,** the behavior analyst uses **telephonic interactions** to review the current daily structure and behavior intervention plan with the caregivers. During the telephonic interaction, the behavior analyst identifies antecedent strategies that the caregiver has implemented in prior routines but is not included in the current treatment protocol. The behavior analyst instructs the caregiver to implement the antecedent strategy and record data on the patient's responses for the next three days.

After the session, the behavior analyst graphs and reviews data recorded during the session and writes a progress note and plan of action. The behavior analyst uses **asynchronous store-and-forward technology** to transmit an electronic copy of the updated treatment protocol and data sheets with instructions for implementing the protocol during typical routines. The behavior analyst instructs the caregiver to use **asynchronous store-and-forward technology** to transmit the data at the end of the week and schedules a second follow-up appointment.

97157: Multi-Family Group Adaptive Behavior Treatment Guidance

(synchronous videoconferencing)

Prior: The behavior analyst invites the caregivers to attend a training session with several other sets of caregivers. Prior to the session the behavior analyst reviews data, notes, and treatment protocols regarding the patient's hyperactive and disruptive behavior as well as his play, social, and communication skills.

During the session, the behavior analyst uses **synchronous videoconferencing** to ask each set of caregivers to identify one skill to be increased or one challenging behavior to be decreased in their own child/patient. The behavior analyst describes how behavior-analytic principles and procedures could be applied to the behavior identified by the caregivers of this 3-year-old patient. He demonstrates a procedure (e.g., prompting the child to speak instead of whining when he wants something, and not giving him preferred items when he whines). The caregivers then role-play implementing that procedure. Other group participants and the behavior analyst provide feedback and make constructive suggestions. That process is repeated for skills/behaviors identified by other sets of caregivers. The behavior analyst ends the group session by summarizing the main points, answering questions, and giving each set of caregivers a homework assignment to practice the skills they worked on during the session.

After the session the behavior analyst writes a progress note and plan of action.

Billing Considerations	Bill place of service - 02 (telehealth provided other than in patient's home) Bill place of service - 10 (telehealth in patient's home) Modifier 95 - Telehealth (synchronous)

0362T - Behavior identification supporting assessment, each 15 minutes of technicians' time face-to-face with a patient, requiring the following components: administration by the physician or other qualified health care professional who is on-site; with the assistance of two or more technicians; for a patient who exhibits destructive behavior; completion in an environment that is customized to the patient's behavior.

0373T - Adaptive behavior treatment with protocol modification, each 15 minutes of technicians' time face-to-face with a patient, requiring the following components: administration by the physician or other qualified health care professional who is on-site; with the assistance of two or more technicians; for a

	patient who exhibits destructive behavior; completion in an environment that is customized to the patient's behavior.
Telehealth Modalities	**Dependent on funder approval:** ● Partial Telehealth (In-person and synchronous videoconferencing)
Considerations	These services will most likely continue to be reported in settings where in-person face-to-face services continue due to the four required elements of the code. In some cases, assessments and/or treatment could be done via telehealth. Risk assessments are critical due to the requirement that the patient exhibit destructive behavior (e.g., aggression, elopement, pica). Where a risk assessment indicates that these services are appropriate via telehealth, the "on-site" requirement of the codes would be met by the behavior analyst being immediately available and interruptible via synchronous telehealth modalities.

0362T: Behavior Identification Supporting Assessment
(blended approach of in-person & synchronous videoconferencing)

Prior: The behavior analyst reviews prior records and all prior functional behavior assessments and functional analyses and attempts to treat self-injurious behavior (SIB), including behavioral and pharmacologic interventions. The behavior analyst completes a risk assessment to determine safeguards needed to conduct a functional analysis safely, prepares materials, and briefs the technicians regarding idiosyncratic aspects of the patient's behavior. During the session (face-to-face/telehealth), three technicians work with the patient in a safe environment according to a behavior analyst-designed protocol.

During each of the functional analysis sessions, one technician collects continuous real-time data (in-person or via synchronous videoconferencing telehealth) on the patient's SIB and communication responses, a second technician stands closely behind the patient and gently blocks his attempts at SIB directed toward the eyes, and the third technician carries out the behavior analyst -designed functional analysis procedures. The behavior analyst is on-site (this requirement can be met via synchronous videoconferencing telehealth based on individualized patient risk

assessments) and closely monitors the technicians'/caregivers' implementation of the procedures, providing corrective feedback when needed.

After: Technicians record all results and provide data to the behavior analyst following each session. The behavior analyst analyzes the graphed data on an ongoing basis and, if needed, modifies the assessment protocol appropriately.

0373T: Adaptive Behavior Treatment w/protocol modification
(blended approach of in-person & synchronous videoconferencing)

Prior: The behavior analyst has modified previously developed written protocols for reducing the patient's pica based on a recent medical evaluation and a functional analysis of pica. Just before the session, the behavior analyst gathers all materials required for that session. One technician carefully inspects the treatment room/area before the session to make sure there are no potential pica items on the floor.

During the session, the behavior analyst uses **synchronous videoconferencing** to demonstrate the modified treatment procedures with the patient while the **in-person** technicians observe. The modified procedures involve one technician presenting the patient with one small, preferred food item and one item that resembles a pica item but is not dangerous if ingested on each of a series of trials. On each trial the two items are placed on a table in front of the patient. The second technician is positioned directly behind the patient to provide the patient with a gentle physical prompt to pick up and eat the food item. If the patient tries to pick up the pica item, the second technician gently blocks that response and removes the pica item from the patient's line of sight. The third technician records the patient's appropriate and maladaptive responses on each trial (e.g., consuming the food item and/or attempting to pick up the pica item). When performed via **synchronous videoconferencing telehealth** the third technician records data remotely.

The technicians/caregivers then implement the modified treatment protocol with the patient while the behavior analyst observes and provides feedback. The behavior analyst records data on the technicians'/caregivers' performances.

After the session, the behavior analyst reviews technician-recorded graphed data to assess the patient's progress and determine if the treatment protocol needs to be adjusted further. The behavior analyst writes a progress note with a plan of action.

The Council of Autism Service Providers

Billing Considerations	Bill place of service - 02 (telehealth provided other than in patient's home)
	Bill place of service - 10 (telehealth in patient's home)
	Modifier 95 - Telehealth (synchronous)

Appendix B: Risk Assessment & Safety Planning

Internet Access	Y	N	NA	Notes
Is Wireless internet access available for staff? Password:				

Patient Challenging Behavior				
The patient engaged in or the caregiver reported patient engages in severe challenging behaviors (e.g., aggression, self-injury, property destruction, bolting, pica) that are a risk to him/herself and/or others?				
Has the patient attempted to use a weapon and/or used an object with the intention to inflict harm on another individual?				
Does the patient have a history of suicidal ideation?				
The patient or other inhabitants had bruises, bites, or other signs of injury.				
Is the patient older and/or of larger stature that may result in an increased likelihood of injury to others?				

Caregiver/RBT Physical Requirements				
Be able to stand, sit (with feet on the floor when sitting on a chair), kneel or half-kneel.				
Maintain a balanced, comfortable posture that allows the person to move promptly in any direction (e.g., backwards and sideways)				
Ability to lower him/herself by bending at the knees and hips (instead of bending at the back).				
Ability to stand up quickly from a chair or from kneeling as needed				

Therapeutic Environment
Is the session area clean and clear of debris for the session?
Is the environment appropriate for sessions (i.e., free of distractions, noise level conducive for sessions)?
Is the temperature, ventilation, and lighting adequate?
Can sessions occur in other areas of the home for generalization purposes?
Is there free access to preferred items (e.g., toys, activities)

Potential Safety Hazards
Are there firearms or weapons on-site? If yes, are they locked in a gun safe or similar storage device?
Is the yard fenced-in?
Is there a swimming pool or trampoline?
Is furniture stable/secured to walls?
Are there any fragile or breakable items in session areas?
Are there pets in the home? If yes, please indicate number and breed:
If applicable, does the family agree to refrain from smoking indoors during session and/or near the session area?

Environmental Planning

Session Location:
- ❏ Patient's bedroom
- ❏ Living room
- ❏ Play room
- ❏ Dining room
- ❏ Other:

Session space:
- ❏ Table
- ❏ Floor
- ❏ Couch
- ❏ Other:

Session Initiation:
- ❏ Patient will log in to session independently
- ❏ Caregiver will assist with telehealth session
- ❏ Alarm/patient reminders for session

Caregiver must be immediately available and interruptible during session:
- ❏ Caregiver will remain within earshot of session to provide assistance when needed
- ❏ Caregiver will be immediately available by phone or text

Environmental Safety Modifications

Plan for ensuring patient remains in camera view:

Plan for removing dangerous items:

Plan for restricting access to toys/breakable items:

Camera location

Materials needed by caregiver (including technology):

Appendix C: Telehealth Treatment Planning

Reinforcement Systems

Reinforcement Delivery:
- ❏ Administered via electronic means
- ❏ Caregiver-delivered (i.e., patient requests exchange from caregiver)
- ❏ Other:

Token economy
- ❏ Electronic token economy
- ❏ Administered by technician via video
- ❏ Self-administered by patient

Program Name	Materials	Program Modifications for Telehealth
	Materials Needed: **Material format/location:** ❏ Electronic ❏ Patient's home ❏ Technician location	**Prompting Modifications:** ❏ Assistance of caregiver ❏ Modifications needed (e.g., w/computer screen/mouse) ❏ No modifications needed ❏ Program placed on hold **Notes:**
	Materials Needed: **Material format/location:** ❏ Electronic ❏ Patient's home ❏ Technician location	**Prompting Modifications:** ❏ Assistance of caregiver ❏ Modifications needed (e.g., w/computer screen/mouse) ❏ No modifications needed ❏ Program placed on hold **Notes:**

Sample Telehealth Session Schedule

Below is a sample schedule for learners that are new to telehealth. It is structured such that the programming can start with 15-minute sessions and increase in duration based on the patient's response to treatment. For example, after two consecutive days of low rates of problem behavior and increasing willingness to follow instructions within a session, the provider may increase sessions by 15-min. The schedule below can be used to adjust session duration as the time successively increases.

Time	Activity	Purpose
1:00-1:15pm	Rapport Building	Provide the client with choices of activities for rapport building. This may include electronic interactive activities or interactions with the provider directly via zoom. Please refer to the patient's rapport building protocol for specific activities.
1:15-1:30pm	Instructional Control	Phase 1: following instructions during games
1:30-1:45pm	Child-led rapport building & snack	Provide the client with choices of activities for rapport building. Communicate with the caregiver to prompt manding for snack break.
1:45-2:00pm	Instructional Control	Phase 2: following instructions w ithknown skills and program
2:00 - 2:15pm	Phase 3: Skill acquisition	Conversation skills program Social skills group preparation program Identifying appropriate behaviors
2:15-2:30	Generalization	Provide patient with a choice of activities and target generalization of skills. Please refer to list of appropriate activities and generalization of programs (e.g., following instructions, tolerating losing, sharing with sibling)
2:30-2:45	Self-monitoring program Schedule for the day	Assist client with creating a schedule for the rest of his day to help structure his time and increase contact with reinforcement.

Appendix D: Caregiver Pre- and Post-Session Checklist

Environmental Planning

Location Preparation:

- ❏ Turn off television, video games, and other competing electronics to minimize noise*
- ❏ Remove pets
- ❏ Move siblings, unless their participation is programmed into treatment
- ❏ Close room door or implement other environmental modifications to prevent patient from leaving view of camera
- ❏ Pick up toys and other distracting items
- ❏ Other:

Technology & Materials:

- ❏ Check battery power of tablet or other technology and make sure you are connected to the internet
- ❏ Place tablet technology in pre-designated space for optimal visibility and out of patient's reach
- ❏ Place reinforcers/session materials in location out of patient's reach
- ❏ Other:

Post-Session Checklist:

- ❏ Plug in tablet and/or other technology used for telehealth session
- ❏ Send post-session data to provider for review/consultation

*Note: Providers should individualize this based on challenging behaviors that may occur when preferred items are removed.

Appendix E: Informed Consent for Telehealth Services

Informed consent is a legal status wherein you, (the "Patient") of [AGENCY NAME] (herein referred to as "[AGENCY NAME]", the "Provider"), confirm that you have personally, on behalf of your child, made a voluntary and educated choice to receive services. This document is intended to provide you with important information regarding the practices, policies, and procedures of [AGENCY NAME], and to clarify the terms of the professional therapeutic relationship.

Introduction

Telehealth involves the use of electronic communications to enable health care providers at different locations to share individual Patient health information for the purpose of improving Patient care. Providers of ABA services may include Board Certified Behavior Analysts, Board Certified Assistant Behavior Analysts, Licensed Behavior Analysts, Licensed Assistant Behavior Analysts, Licensed Psychologists if applied behavior analysis is in the scope of practice in the state licensure law and the individual's training and competence, Registered Behavior Technicians (RBT), specialists, and/or subspecialists. The information may be used for diagnosis, therapy, follow-up and/or education, and may include any of the following:

- Patient medical records
- Medical images (e.g., skin abrasions due to self-injurious behavior)
- Live two-way audio and video
- Telephonic communication
- Output data from health applications, sound and video files

Electronic systems used will incorporate network and software security protocols to protect the confidentiality of Patient identification and imaging data and will include measures to safeguard the data and to ensure its integrity against intentional or unintentional corruption.

There may be times that the Provider or Technician may be required to use their personal device to record, store or submit treatment sessions. Should personal devices be used, they will be subject to the same network and software security protocols as company-owned equipment.

Real-time Videoconferencing Telehealth

Real-time videoconferencing consists of face-to-face provider and patient interactions that occur in real-time via a two-way video and audio interactions. Under this model, an RBT will render services directly to your child in your home or community either in-person or via real-time video conference technology. The Behavior Analyst will supervise the RBT implementation of your child's treatment plan on a weekly basis to monitor your child's progress and response to treatment. Clinical direction will occur in real-time, through [AGENCY NAME]'s HIPAA compliant videoconferencing software, in which 2-way audio and video will be available. Parent coaching, team meetings, and treatment review sessions also will occur in this same format, allowing the family to meet virtually with the Behavior Analyst supervisor to discuss their child's progress.

Video Store-and-Forward Telehealth

Video store-and-forward includes transmission of video and audio interactions to a provider at another site. As part of our service model, we may review videos of clinical sessions to evaluate your child's response to treatment. Videos will be stored for [x years] on our HIPAA-compliant server, [PRACTICE MANAGEMENT/CLOUD STORAGE SYSTEM].

Expected Benefits:

- Improved access to behavioral health care care by enabling a Patient to remain in his/her home (or at a community-based site) while the Provider consults at distant sites.
- More efficient behavioral evaluation and clinical management.
- Increased ability to analyze low frequency behaviors.
- Obtaining expertise of a distant specialist.

Possible Risks: As with any medical/behavioral health treatment, there are potential risks associated with the use of telehealth. These risks include, but may not be limited to:

- In rare cases, information transmitted may not be sufficient (e.g., poor resolution of images) to allow for appropriate treatment decision making by the Provider;
- Delays in behavioral evaluation and treatment could occur due to deficiencies or failures of the equipment;
- In very rare instances, security protocols could fail, causing a breach of privacy of personal health information;

Patient Consent To The Use of Telehealth

I have read and understand the information provided above regarding telehealth, have discussed it with my Provider, [AGENCY NAME]'s Care Coordinators, or such assistants as may be designated, and all of my questions have been answered to my satisfaction. I hereby give my informed consent for the use of telehealth in my health care:

❏ Real-time videoconferencing telehealth

❏ Video store-and-forward telehealth

If you selected video store-and-forward Telehealth, please select every purpose you consent to:

❏ Regular/weekly video reviews by a team of professionals in our offices;

❏ Submission to Quality Assurance Advisors for expert feedback;

❏ Internal training seminars for professionals and students;

❏ For the purposes of teaching my child (video modeling);

❏ ALL of the above uses are approved.

❏ None of the above uses are approved.

By signing this form, I understand the following:

1. I understand that an adult (e.g., parent/caregiver or other guardian) who has medical treatment authorization must be present during all telehealth sessions in case of an emergency. Telephone numbers for fire, police, poison control, and the nearest medical facility must be listed in plain sight should they need to be accessed. In the event of any emergency, a 911 call must come from the session site.

2. I understand that the laws that protect privacy and the confidentiality of medical (including behavioral health) information also apply to telehealth, and that no information obtained in the use of telehealth which identifies me will be disclosed to any third party without my consent, except when required under law.

3. I understand that I have the right to withhold or withdraw my consent to the use of telehealth in the course of my care at any time, without affecting my right to future care or treatment.

4. I understand that I have the right to inspect all information obtained and recorded in the

course of a telehealth interaction, and may access much of this information through [AGENCY NAME]'s secure patient records system.

5. I understand that a variety of alternative methods of behavioral health care may be available to me, and that I may choose one or more of these at any time. [AGENCY NAME] has explained the alternatives to my satisfaction.

6. I understand that telehealth may involve electronic communication of my personal health information to other practitioners who may be located in other areas, including out of state.

7. I understand that it is my duty to inform my Provider of electronic interactions regarding my care that I may have with other health care providers.

8. I understand that I may expect the anticipated benefits from the use of telehealth in my care, but that no results can be guaranteed or assured.

I hereby authorize [AGENCY NAME] to use telehealth in the course of my treatment.

_____   _____

Name of Child (please print)   Name of Parent/Guardian (please print)

_____   _____

Parent/Guardian Signature   Date

Appendix F: Funder Resource

The place of service and use of modifiers may differ by funders; therefore, providers will need to confirm accuracy and authorization with each funder.

Modifiers:

95	Current CPT® modifier used to indicate that services were rendered via synchronous (real time) telehealth with interactive video telecommunication systems.
GQ	For asynchronous (store-and-forward) telehealth, if approved.
GT	Retired and replaced by the Place of Service location 02; however, it is still used by some health plans.
None	There will be cases where a funder is not requiring a modifier.

Place of Service (POS) specifies where services were rendered and is necessary to pay claims correctly. For telehealth, POS indicates where the patient is located when services were provided or received, through telecommunication technology. POS is paired with codes billed by the telehealth provider (and would be paired with the telehealth transmission code). It is important to note that some funders may not set up to recognize POS 02 and POS 10.

POS 02: Telehealth Provided Other than in Patient's Home
The patient is not located in their home when receiving health services through telecommunication technology.

POS 10: Telehealth in Patient's Home
The patient is located in their home when receiving health services through telecommunication technology.

CPT	Description	Appropriate Telehealth Uses	Place of Service
97151 **All provider modifiers**	Behavior identification assessment, administered by a physician or other qualified health care professional, each 15 minutes of the physician's or other qualified health care professional's time face-to-face with patient and/or guardian(s)/caregiver(s) administering assessments and discussing findings and recommendations, and non-face-to-face analyzing past data, scoring/ interpreting the assessment, and preparing the report/treatment plan.	● Synchronous videoconferencing (95) ● Telephonic interactions (GQ) ● Asynchronous (store-and-forward (GQ) ● Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home
97152 **All provider modifiers**	Behavior identification-supporting assessment, administered by one technician under the direction of a physician or other qualified health care professional, face-to-face with the patient, each 15 minutes	● Synchronous videoconferencing (95) ● Asynchronous (store-and-forward (GQ)	02 - telehealth other location 10 - telehealth patient's home
97153 **All provider modifiers**	Adaptive behavior treatment by protocol: administered by a technician under the direction of a physician or QHCP, utilizing a treatment protocol designed in advance by the physician or QHCP, who may or may not provide direction during the treatment. Describes face-to-face services with one patient.	● Synchronous videoconferencing (95) ● Telephonic interactions (GQ)	02 - telehealth other location 10 - telehealth patient's home
97154 **All provider modifiers**	Group adaptive behavior treatment by protocol, administered by technician under the direction of a physician or other qualified health care professional, face-to-face with two or more patients, each 15 minutes	● Synchronous videoconferencing (95)	02 - telehealth other location 10 - telehealth patient's home
97155 **All provider modifiers**	Adaptive behavior treatment with protocol modification, administered by physician or other qualified health care professional, which may include simultaneous direction	● Synchronous videoconferencing (95) ● Telephonic interactions (GQ) ● Asynchronous (store-and-forward (GQ) ● Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home

	of technician, face-to-face with one patient, each 15 minutes.		
97156 **All provider modifiers**	Family adaptive behavior treatment guidance, administered by physician or other qualified health care professional (with or without the patient present), face-to-face with guardian(s)/caregiver(s), each 15 minutes	• Synchronous videoconferencing (95) • Telephonic interactions (GQ) • Asynchronous (store-and-forward (GQ) • Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home
97157 **All provider modifiers**	Multiple-family group adaptive behavior treatment guidance, administered by physician or other qualified health care professional (without the patient present), face-to-face with multiple sets of guardians/caregivers, each 15 minutes	• Synchronous videoconferencing (95) • Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home
97158 **All provider modifiers**	Group adaptive behavior treatment with protocol modification, administered by physician or other qualified health care professional, face-to-face with multiple patients, each 15 minutes	• Synchronous videoconferencing (95) • Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home
0362T **All provider modifiers**	Behavior identification supporting assessment, each 15 minutes of technicians' time face-to-face with a patient, requiring the following components: administration by the physician or other qualified health care professional who is on-site; with the assistance of two or more technicians; for a patient who exhibits destructive behavior; completion in an environment that is customized to the patient's behavior.	• Synchronous videoconferencing (95) • Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home
0373T **All provider modifiers**	Adaptive behavior treatment with protocol modification, each 15 minutes of technicians' time face-to-face with a patient, requiring the following components: administration by the physician or other qualified health care	• Synchronous videoconferencing (95) • Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home

	professional who is on-site; with the assistance of two or more technicians; for a patient who exhibits destructive behavior; completion in an environment that is customized to the patient's behavior.		
H0032 **All provider modifiers**	Mental health service plan development by non-physician	• Synchronous videoconferencing (95) • Telephonic interactions (GQ) • Asynchronous (store-and-forward (GQ) • Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home
T1026 **All provider modifiers**	Intensive, extended multidisciplinary services provided in a clinic setting to children with complex medical, physical, medical and psychosocial impairments, per hour	• Synchronous videoconferencing (95) • Telephonic interactions (GQ) • Asynchronous (store-and-forward (GQ) • Remote Monitoring (GQ)	02 - telehealth other location 10 - telehealth patient's home

HCPC	Description	Telehealth Modalities
H0032	Mental health service plan development by non-physician	• Telephonic interactions • Synchronous videoconferencing • Asynchronous (store-and-forward) • Remote Monitoring
T1026	Intensive, extended multidisciplinary services provided in a clinic setting to children with complex medical, physical, medical and psychosocial impairments, per hour	• Telephonic interactions • Synchronous videoconferencing • Asynchronous (store-and-forward) • Remote Monitoring
G0175	Scheduled interdisciplinary team conference (minimum of three exclusive of patient care nursing staff) with patient present.	• Synchronous videoconferencing
G9012	Other specified case management service not elsewhere classified	• Telephonic interactions • Remote monitoring
Q3014	Telehealth originating site facility fee	• NA
T1014	Telehealth transmission, per minute, professional services bill separately Billed one unit per minute (1-min code).	• NA

References

1. Council of Autism Service Providers. Applied Behavior Analysis Treatment of Autism Spectrum Disorder: Practice Guidelines for Healthcare Funders and Managers (2nd edition). Published online 2020. https://casproviders.org/wp-content/uploads/2020/03/ABA-ASD-Practice-Guidelines.pdf

2. Pollard JS, Karimi KA, Ficcaglia MB. Ethical considerations in the design and implementation of a telehealth service delivery model. *Behavior Analysis: Research and Practice*. 2017;17(4):298.

3. Romani PW, Schieltz KM. Ethical considerations when delivering behavior analytic services for problem behavior via telehealth. *Behavior Analysis: Research and Practice*. 2017;17(4):312.

4. Behavior Analyst Certification Board. Ethics code for behavior analysts. Published online 2020.

5. Myers K, Cain S. Practice parameter for telepsychiatry with children and adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*. 2008;47(12):1468-1483.

6. Myers K, Nelson EL, Rabinowitz T, et al. American telemedicine association practice guidelines for telemental health with children and adolescents. *Telemedicine and e-Health*. 2017;23(10):779-804.

7. American Telemedicine Association. *ATA's Standardized Telehealth Terminology and Policy Language for States on Medical Practice.* Published online September 21, 2020. Accessed November 1, 2021. https://www.americantelemed.org/wp-content/uploads/2020/10/ATA-_Medical-Practice-10-5-20.pdf

8. ABA Coding Coalition. Supplemental Guidance on Interpreting and Applying the 2019 CPT Codes for Adaptive Behavior Services. Published online January 2019. https://www.abainternational.org/ABAIUploads/Practice/FINAL_CPT_Supplemental_Guidance_1_9_19.pdf

9. Medicaid Program; Face-to-Face Requirements for Home Health Services; Policy

Changes and Clarifications Related to Home Health. Federal Register. Published July 12, 2011. Accessed November 1, 2021. https://www.federalregister.gov/documents/2011/07/12/2011-16937/medicaid-program-face-to-face-requirements-for-home-health-services-policy-changes-and

10. Health Information Technology. *Telemedicine and Telehealth*. Telemedicine and Telehealth. Published September 24, 2020. Accessed November 1, 2021. https://www.healthit.gov/topic/health-it-health-care-settings/telemedicine-and-telehealth

11. Define a Qualified Healthcare Professional. AAPC Knowledge Center. Published January 1, 2015. Accessed November 22, 2021. https://www.aapc.com/blog/28964-define-a-qualified-healthcare-professional/

12. Myers SM, Johnson CP. Management of children with autism spectrum disorders. *Pediatrics*. 2007;120(5):1162-1182.

13. Larsson EV. Is Applied Behavior Analysis (ABA) and Early Intensive Behavioral Intervention (EIBI) an Effective Treatment for Autism? A Cumulative History of Impartial Independent Reviews. Published online 2013. https://www.behavior.org/resources/649.pdf

14. Carr EG, Durand VM. Reducing behavior problems through functional communication training. *Journal of applied behavior analysis*. 1985;18(2):111-126.

15. National Autism Center. *National standards report*. Published online 2009.

16. Kurtz PF, Boelter EW, Jarmolowicz DP, Chin MD, Hagopian LP. An analysis of functional communication training as an empirically supported treatment for problem behavior displayed by individuals with intellectual disabilities. *Research in Developmental Disabilities*. 2011;32(6):2935-2942.

17. Bolin JN, Bellamy GR, Ferdinand AO, et al. Rural healthy people 2020: New decade, same challenges. *The Journal of Rural Health*. 2015;31(3):326-333.

18. Gamm L, Hutchison L, Bellamy G, Dabney B. Rural healthy people 2010: identifying rural health priorities and models for practice. *Journal of Rural Health*. 2002;18(1):9-14.

19. Bereau of Health Workforce. Designated health professional shortage areas statistics: Fourth quarter of fiscal year 2021 designated HPSA quarterly summary. Published online September 30, 2021. Accessed October 26, 2021.
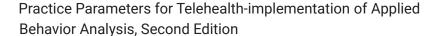
https://data.hrsa.gov/topics/health-workforce/shortage-areas

20. Gros DF, Morland LA, Greene CJ, et al. Delivery of evidence-based psychotherapy via video telehealth. *Journal of Psychopathology and Behavioral Assessment*. 2013;35(4):506-521.

21. Ohinmaa A, Chatterley P, Nguyen T, Jacobs P. *Telehealth in Substance Abuse and Addiction: Review of the Literature on Smoking, Alcohol, Drug Abuse and Gambling.* Institute of Health Economics; 2010. https://www.drugsandalcohol.ie/18246/

22. Paré G, Moqadem K, Pineau G, St-Hilaire C. Clinical effects of home telemonitoring in the context of diabetes, asthma, heart failure and hypertension: a systematic review. *Journal of medical Internet research*. 2010;12(2):e1357.

23. Burke BL, Hall R. Telemedicine: pediatric applications. *Pediatrics*. 2015;136(1):e293-e308.

24. Backhaus A, Agha Z, Maglione ML, et al. Videoconferencing psychotherapy: a systematic review. *Psychological services*. 2012;9(2):111.

25. Swanepoel DW, Hall III JW. A systematic review of telehealth applications in audiology. *Telemedicine and e-Health*. 2010;16(2):181-200.

26. Polisena J, Tran K, Cimon K, et al. Home telehealth for chronic obstructive pulmonary disease: a systematic review and meta-analysis. *Journal of telemedicine and telecare*. 2010;16(3):120-127.

27. Polisena J, Tran K, Cimon K, Hutton B, McGill S, Palmer K. Home telehealth for diabetes management: a systematic review and meta-analysis. *Diabetes, Obesity and Metabolism*. 2009;11(10):913-930.

28. Regina Molini-Avejonas D, Rondon-Melo S, de La Higuera Amato CA, Samelli AG. A systematic review of the use of telehealth in speech, language and hearing sciences. *Journal of telemedicine and telecare*. 2015;21(7):367-376.

29. Priyadharsini H, Chiang JJ. Embracing telehealth: supporting young children and families through occupational therapy in Singapore during COVID-19. *World Federation of Occupational Therapists Bulletin*. 2020;76(2):90-93.

30. Tohidast SA, Mansuri B, Bagheri R, Azimi H. Provision of speech-language pathology services for the treatment of speech and language disorders in children during the
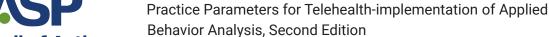
COVID-19 pandemic: Problems, concerns, and solutions. *International journal of pediatric otorhinolaryngology*. 2020;138:110262.

31. Stevenson M. Demand for Healthcare Workers Will Outpace Supply by 2025: An Analysis of the US Healthcare Labor Market. *Mercer Report HPA*. Published online 2018.

32. Hartley D. Rural health disparities, population health, and rural culture. *American journal of public health*. 2004;94(10):1675-1678.

33. Antezana L, Scarpa A, Valdespino A, Albright J, Richey JA. Rural trends in diagnosis and services for autism spectrum disorder. *Frontiers in psychology*. 2017;8:590.

34. Augusterfer EF, O'Neal CR, Martin SW, Sheikh TL, Mollica RF. The Role of Telemental Health, Tele-consultation, and Tele-supervision in Post-disaster and Low-resource Settings. *Current Psychiatry Reports*. 2020;22(12):1-10.

35. Simacek J, Elmquist M, Dimian AF, Reichle J. Current trends in telehealth applications to deliver social communication interventions for young children with or at risk for autism spectrum disorder. *Current Developmental Disorders Reports*. Published online 2020:1-9.

36. Pickard KE, Wainer AL, Bailey KM, Ingersoll BR. A mixed-method evaluation of the feasibility and acceptability of a telehealth-based parent-mediated intervention for children with autism spectrum disorder. *Autism*. 2016;20(7):845-855.

37. Wainer AL, Ingersoll BR. Increasing access to an ASD imitation intervention via a telehealth parent training program. *Journal of autism and developmental disorders*. 2015;45(12):3877-3890.

38. Guðmundsdóttir K, Ala'i-Rosales S, Sigurðardóttir ZG. Extending caregiver training via telecommunication for rural Icelandic children with autism. *Rural Special Education Quarterly*. 2019;38(1):26-42.

39. Hyman S, Levy S, Myers S. Council on Children with Disabilities, Section on Developmental and Behavioral Pediatrics. Identification, evaluation, and management of children with autism spectrum disorder. *Pediatrics*. 2020;145(1):e20193447.

40. Smith-Young J, Chafe R, Audas R. "Managing the wait": parents' experiences in accessing diagnostic and treatment services for children and adolescents diagnosed with autism spectrum disorder. *Health services insights*. 2020;13:1178632920902141.

41. Simacek J, Dimian AF, McComas JJ. Communication intervention for young children with

severe neurodevelopmental disabilities via telehealth. *Journal of autism and developmental disorders*. 2017;47(3):744-767.

42.   Lindgren S, Wacker D, Suess A, et al. Telehealth and autism: Treating challenging behavior at lower cost. *Pediatrics*. 2016;137(Supplement 2):S167-S175.

43.   Little LM, Wallisch A, Pope E, Dunn W. Acceptability and cost comparison of a telehealth intervention for families of children with autism. *Infants & Young Children*. 2018;31(4):275-286.

44.   Heitzman-Powell LS, Buzhardt J, Rusinko LC, Miller TM. Formative evaluation of an ABA outreach training program for parents of children with autism in remote areas. *Focus on Autism and Other Developmental Disabilities*. 2014;29(1):23-38.

45.   Littlejohn L, Domingue H, Bonds J, Moodie M. Improving organizational culture through telehealth team collaboration. In: American Public Health Association 2019 Annual Meeting and Expo (Nov. 2-Nov. 6); 2019.

46.   Hamrick J, Lock RH. Providing Behavior Analytic Supports and Services: A Unique Approach to Rural Service Delivery. *Delta Kappa Gamma Bulletin*. 2020;87(1).

47.   Tsami L, Lerman D, Toper-Korkmaz O. Effectiveness and acceptability of parent training via telehealth among families around the world. *Journal of Applied Behavior Analysis*. 2019;52(4):1113-1129.

48.   Yi Z, Dixon MR. Developing and enhancing adherence to a telehealth ABA parent training curriculum for caregivers of children with autism. *Behavior Analysis in Practice*. 2021;14(1):58-74.

49.   Ballester JMS, Scott MF, Owei L, Neylan C, Hanson CW, Morris JB. Patient preference for time-saving telehealth postoperative visits after routine surgery in an urban setting. *Surgery*. 2018;163(4):672-679.

50.   Nandra K, Koenig G, DelMastro A, Mishler EA, Hollander JE, Yeo CJ. Telehealth provides a comprehensive approach to the surgical patient. *The American Journal of Surgery*. 2019;218(3):476-479.

51.   Agate S. Unlocking the Power of Telehealth: Increasing Access and Services in Underserved, Urban Areas. *Harvard Journal of Hispanic Policy*. 2017;29:85-97.

52.   Hall SS, Monlux KD, Rodriguez AB, Jo B, Pollard JS. Telehealth-enabled behavioral

treatment for problem behaviors in boys with fragile X syndrome: a randomized
controlled trial. *Journal of Neurodevelopmental Disorders*. 2020;12(1):1-15.

53.   Wacker DP, Lee JF, Dalmau YCP, et al. Conducting functional communication training via
telehealth to reduce the problem behavior of young children with autism. *Journal of
developmental and physical disabilities*. 2013;25(1):35-48.

54.   Lindgren S, Wacker D, Schieltz K, et al. A randomized controlled trial of functional
communication training via telehealth for young children with autism spectrum disorder.
Journal of autism and developmental disorders. 2020;50(12):4449-4462.

55.   Donskoy I, Loghmanee D, Fields BG, Troester M, Martin W. Telemedicine-based sleep
services for a complex child: optimizing care during a pandemic and beyond. *Journal of
Clinical Sleep Medicine*. Published online 2021:jcsm-9616.

56.   McLay L, Sutherland D, Machalicek W, Sigafoos J. Systematic review of telehealth
interventions for the treatment of sleep problems in children and adolescents. *Journal of
Behavioral Education*. 2020;29(2):222-245.

57.   Alami A. The Effects of Behavioural Skills Training on a Parent-Implemented Feeding
Treatment via Telehealth. Brock University. Published online 2021.
http://hdl.handle.net/10464/15143

58.   Andersen AS, Hansen BA, Hathaway KL, Elson LA. A Demonstration of
Caregiver-Implemented Functional Analysis of Inappropriate Mealtime Behavior via
Telehealth. *Behavior Analysis in Practice*. 2021;(14vismara):1067-1072.

59.   Peterson KM, Ibañez VF, Volkert VM, Zeleny JR, Engler CW, Piazza CC. Using telehealth to
provide outpatient follow-up to children with avoidant/restrictive food intake disorder.
Journal of applied behavior analysis. 2021;54(1):6-24.

60.   Zhou C, Crawford A, Serhal E, Kurdyak P, Sockalingam S. The impact of project ECHO on
participant and patient outcomes: a systematic review. *Academic Medicine*.
2016;91(10):1439-1461.

61.   CDC. Healthcare Workers. Centers for Disease Control and Prevention. Published
February 11, 2020. Accessed November 21, 2021.
https://www.cdc.gov/coronavirus/2019-ncov/hcp/telehealth.html

62.   Barretto A, Wacker DP, Harding J, Lee J, Berg WK. Using telemedicine to conduct

behavioral assessments. *Journal of applied behavior analysis*. 2006;39(3):333-340.

63. Boisvert M, Lang R, Andrianopoulos M, Boscardin ML. Telepractice in the assessment and treatment of individuals with autism spectrum disorders: A systematic review. *Developmental neurorehabilitation*. 2010;13(6):423-432.

64. Ferguson J, Craig EA, Dounavi K. Telehealth as a model for providing behaviour analytic interventions to individuals with autism spectrum disorder: A systematic review. *Journal of autism and developmental disorders*. 2019;49(2):582-616.

65. Fisher WW, Luczynski KC, Hood SA, Lesser AD, Machado MA, Piazza CC. Preliminary findings of a randomized clinical trial of a virtual training program for applied behavior analysis technicians. *Research in Autism Spectrum Disorders*. 2014;8(9):1044-1054.

66. Tomlinson SR, Gore N, McGill P. Training individuals to implement applied behavior analytic procedures via telehealth: A systematic review of the literature. *Journal of Behavioral Education*. 2018;27(2):172-222.

67. Vismara LA, Young GS, Stahmer AC, Griffith EM, Rogers SJ. Dissemination of evidence-based practice: Can we train therapists from a distance? *Journal of autism and developmental disorders*. 2009;39(12):1636-1651. doi:10.1007/s10803-009-0796-2

68. Reichow B, Wolery M. Comprehensive synthesis of early intensive behavioral interventions for young children with autism based on the UCLA young autism project model. *Journal of autism and developmental disorders*. 2009;39(1):23-41.

69. Wong C, Odom SL, Hume KA, et al. Evidence-Based Practices for Children, Youth, and Young Adults with Autism Spectrum Disorder: A Comprehensive Review. *Journal of Autism and Developmental Disorders*. 2015;45(7):1951-1966. doi:10.1007/s10803-014-2351-z

70. Sutherland R, Trembath D, Roberts J. Telehealth and autism: A systematic search and review of the literature. *International journal of speech-language pathology*. 2018;20(3):324-336.

71. de Nocker YL, Toolan CK. Using Telehealth to Provide Interventions for Children with ASD: a Systematic Review. *Review Journal of Autism and Developmental Disorders*. Published online 2021:1-31.

72. O'Brien MJ, Schieltz KM, Berg WK, McComas JJ, Wacker DP. Delivering Interventions Via

Telehealth: Functional Communication Training with a Child with Autism as a Case Example. *Research and Practice for Persons with Severe Disabilities*. 2021;46(1):53-60.

73. Orlando JF, Beard M, Kumar S. Systematic review of patient and caregivers' satisfaction with telehealth videoconferencing as a mode of service delivery in managing patients' health. *PloS one*. 2019;14(8):e0221848.

74. Koonin LM, Hoots B, Tsang CA, et al. Trends in the use of telehealth during the emergence of the COVID-19 pandemic—United States, January–March 2020. *Morbidity and Mortality Weekly Report*. 2020;69(43):1595.

75. Ramaswamy A, Yu M, Drangsholt S, et al. Patient satisfaction with telemedicine during the COVID-19 pandemic: retrospective cohort study. *Journal of medical Internet research*. 2020;22(9):e20786.

76. Benson S, Dimian A, Elmquist M, Simacek J, McComas J, Symons F. Coaching parents to assess and treat self-injurious behaviour via telehealth. *Journal of Intellectual Disability Research*. 2018;62(12):1114-1123.

77. Shawler LA, Clayborne JC, Nasca B, O'Connor JT. An intensive telehealth assessment and treatment model for an adult with developmental disabilities. *Research in Developmental Disabilities*. 2021;111:103876.

78. Machalicek W, O'Reilly MF, Rispoli M, et al. Training teachers to assess the challenging behaviors of students with autism using video tele-conferencing. *Education and Training in Autism and Developmental Disabilities*. Published online 2010:203-215.

79. Machalicek W, O'Reilly M, Chan JM, et al. Using videoconferencing to conduct functional analysis of challenging behavior and develop classroom behavioral support plans for students with autism. *Education and Training in Developmental Disabilities*. Published online 2009:207-217.

80. Higgins WJ, Luczynski KC, Carroll RA, Fisher WW, Mudford OC. Evaluation of a telehealth training package to remotely train staff to conduct a preference assessment. *Journal of applied behavior analysis*. 2017;50(2):238-251.

81. Machalicek W, O'Reilly M, Chan JM, et al. Using videoconferencing to support teachers to conduct preference assessments with students with autism and developmental disabilities. *Research in Autism spectrum disorders*. 2009;3(1):32-41.

82. Suess AN, Wacker DP, Schwartz JE, Lustig N, Detrick J. Preliminary evidence on the use of telehealth in an outpatient behavior clinic. *Journal of Applied Behavior Analysis*. 2016;49(3):686-692.

83. Wacker DP, Lee JF, Dalmau YCP, et al. Conducting functional analyses of problem behavior via telehealth. *Journal of applied behavior analysis*. 2013;46(1):31-46.

84. Barkaia A, Stokes TF, Mikiashvili T. Intercontinental telehealth coaching of therapists to improve verbalizations by children with autism. *Journal of Applied Behavior Analysis*. 2017;50(3):582-589.

85. Ingersoll B, Wainer AL, Berger NI, Pickard KE, Bonter N. Comparison of a self-directed and therapist-assisted telehealth parent-mediated intervention for children with ASD: A pilot RCT. *Journal of Autism and Developmental Disorders*. 2016;46(7):2275-2284.

86. Suess AN, Romani PW, Wacker DP, et al. Evaluating the treatment fidelity of parents who conduct in-home functional communication training with coaching via telehealth. *Journal of Behavioral Education*. 2014;23(1):34-59.

87. Boutain AR, Sheldon JB, Sherman JA. Evaluation of a telehealth parent training program in teaching self-care skills to children with autism. *Journal of Applied Behavior Analysis*. 2020;53(3):1259-1275.

88. A Craig E, Dounavi K, Ferguson J. Telehealth to train interventionists teaching functional living skills to children with autism spectrum disorder. *Journal of Applied Behavior Analysis*. 2021;54(2):511-529.

89. Council for Autism Service Providers, ed. Organizational Guidelines and Standards: Telehealth Chapter. Published online 2020. https://casproviders.org/wp-content/uploads/2020/03/CASP_ALS_Booklet_v1_1.3.20.pd

90. Ferguson JL, Majeski MJ, McEachin J, Leaf R, Cihon JH, Leaf JB. Evaluating discrete trial teaching with instructive feedback delivered in a dyad arrangement via telehealth. *Journal of Applied Behavior Analysis*. 2020;53(4):1876-1888.

91. Nohelty K, Bradford CB, Hirschfeld L, Miyake C, Novack MN. Effectiveness of Telehealth Direct Therapy for Individuals with Autism Spectrum Disorder. *Behavior Analysis in Practice*. Published online 2021:1-16.

92. Pellegrino AJ, DiGennaro Reed FD. Using telehealth to teach valued skills to adults with

intellectual and developmental disabilities. *Journal of Applied Behavior Analysis*. 2020;53(3):1276-1289.

93.   Cihon JH, Ferguson JL, Lee M, Leaf JB, Leaf R, McEachin J. Evaluating the Cool Versus Not Cool Procedure via Telehealth. *Behavior Analysis in Practice*. Published online 2021:1-9.

94.   Bennett K, Brady MP, Scott J, Dukes C, Frain M. The effects of covert audio coaching on the job performance of supported employees. *Focus on Autism and Other Developmental Disabilities*. 2010;25(3):173-185.

95.   Bennett KD, Ramasamy R, Honsberger T. The effects of covert audio coaching on teaching clerical skills to adolescents with autism spectrum disorder. *Journal of Autism and Developmental Disorders*. 2013;43(3):585-593.

96.   Bennett KD. Improving vocational skills of students with disabilities: Applications of covert audio coaching. *Teaching Exceptional Children*. 2013;46(2):60-67.

97.   Bennett KD, Ramasamy R, Honsberger T. Further examination of covert audio coaching on improving employment skills among secondary students with autism. *Journal of Behavioral Education*. 2013;22(2):103-119.

98.   Allen KD, Burke RV, Howard MR, Wallace DP, Bowen SL. Use of audio cuing to expand employment opportunities for adolescents with autism spectrum disorders and intellectual disabilities. *Journal of autism and developmental disorders*. 2012;42(11):2410-2419.

99.   Gilson CB, Carter EW. Promoting social interactions and job independence for college students with autism or intellectual disability: A pilot study. *Journal of autism and developmental disorders*. 2016;46(11):3583-3596.

100. Joseph B, Kearney KB, Brady MP, Downey A, Torres A. Teaching Small Talk: Increasing On-Topic Conversational Exchanges in College Students with Intellectual and Developmental Disabilities Using Remote Audio Coaching. *Behavior Modification*. 2021;45(2):251-271.

101. Gregori E, Mason R, Wang D, Griffin Z, Iriarte A. Effects of Telecoaching on Conversation Skills for High School and College Students With Autism Spectrum Disorder. *Journal of Special Education Technology*. Published online 2021:01626434211002151.

102. Little LM, Pope E, Wallisch A, Dunn W. Occupation-based coaching by means of telehealth for families of young children with autism spectrum disorder. *American Journal of Occupational Therapy*. 2018;72(2):7202205020p1-7202205020p7.

103. Ingersoll B, Berger NI. Parent engagement with a telehealth-based parent-mediated intervention program for children with autism spectrum disorders: Predictors of program use and parent outcomes. *Journal of Medical Internet Research*. 2015;17(10):e227.

104. Fleming GE, Kimonis ER, Datyner A, Comer JS. Adapting internet-delivered parent-child interaction therapy to treat co-occurring disruptive behavior and callous-unemotional traits: A case study. *Clinical Case Studies*. 2017;16(5):370-387.

105. Fleming GE, Kimonis ER, Furr JM, Comer JS. Internet-delivered parent training for preschoolers with conduct problems: do callous-unemotional traits moderate efficacy and engagement? *Journal of abnormal child psychology*. 2020;48(9):1169-1182.

106. Fleming GE, Kohlhoff J, Morgan S, Turnell A, Maiuolo M, Kimonis ER. An effectiveness open trial of internet-delivered parent training for young children with conduct problems living in regional and rural Australia. *Behavior therapy*. 2021;52(1):110-123.

107. Kohlhoff J, Cibralic S, Horswood D, Turnell A, Maiuolo M, Morgan S. Feasibility and acceptability of internet-delivered parent-child interaction therapy for rural Australian families: a qualitative investigation. *Rural and remote health*. 2020;20(1):5306-5306.

108. Kobak KA, Stone WL, Ousley OY, Swanson A. Web-based training in early autism screening: results from a pilot study. *Telemedicine and e-Health*. 2011;17(8):640-644.

109. Rosenberg N, Huntington RN. Distance Bug-in-Ear Coaching: A Guide for Practitioners. *Behavior Analysis in Practice*. Published online 2021:523-533.

110. Rosenberg NE, Artman-Meeker K, Kelly E, Yang X. The effects of a bug-in-ear coaching package on implementation of incidental teaching by paraprofessionals in a K-12 school. *Journal of Behavioral Education*. 2020;29(2):409-432.

111. Schaefer JM, Ottley JR. Evaluating immediate feedback via bug-in-ear as an evidence-based practice for professional development. *Journal of Special Education Technology*. 2018;33(4):247-258.

112. Scheeler MC, Congdon M, Stansbery S. Providing immediate feedback to co-teachers through bug-in-ear technology: An effective method of peer coaching in inclusion

classrooms. *Teacher Education and Special Education*. 2010;33(1):83-96.

113.   Goodman JI, Brady MP, Duffy ML, Scott J, Pollard NE. The effects of "bug-in-ear" supervision on special education teachers' delivery of learn units. *Focus on autism and other developmental disabilities*. 2008;23(4):207-216.

114.   Grygas Coogle C, Ottley JR, Rahn NL, Storie S. Bug-in-ear eCoaching: Impacts on novice early childhood special education teachers. *Journal of Early Intervention*. 2018;40(1):87-103.

115.   Artman-Meeker K, Rosenberg N, Badgett N, Yang X, Penney A. The effects of bug-in-ear coaching on pre-service behavior analysts' use of functional communication training. *Behavior Analysis in Practice*. 2017;10(3):228-241.

116.   Gallant JP, Thyer BA, Bailey JS. Using bug-in-the-ear feedback in clinical supervision: Preliminary evaluations. *Research on Social Work Practice*. 1991;1(2):175-187.

117.   Ottley JR, Hanline MF. Bug-in-ear coaching: Impacts on early childhood educators' practices and associations with toddlers' expressive communication. *Journal of Early Intervention*. 2014;36(2):90-110.

118.   Ottley JR, Coogle CG, Rahn NL. The social validity of bug-in-ear coaching: Findings from two studies implemented in inclusive early childhood environments. *Journal of Early Childhood Teacher Education*. 2015;36(4):342-361.

119.   Ottley JR, Piasta SB, Coogle CG, Spear CF, Rahn NL. Implementation of bug-in-ear coaching by community-based professional development providers. *Early Education and Development*. 2019;30(3):400-422.

120.   St. Peter CC, Brunson LY, Cook JE, et al. Adherence to discrete-trial instruction procedures by rural parents of children with autism. *Behavioral Interventions*. 2014;29(3):200-212.

121.   Vismara LA, McCormick C, Young GS, Nadhan A, Monlux K. Preliminary findings of a telehealth approach to parent training in autism. *Journal of autism and developmental disorders*. 2013;43(12):2953-2969.

122.   Vismara LA, Young GS, Rogers SJ. Telehealth for expanding the reach of early autism training to parents. *Autism research and treatment*. 2012;2012.

123.   Schieltz KM, Wacker DP. Functional assessment and function-based treatment delivered

via telehealth: A brief summary. *Journal of Applied Behavior Analysis*. 2020;53(3):1242-1258.

124. Kurtz PF, Fodstad JC, Huete JM, Hagopian LP. Caregiver-and staff-conducted functional analysis outcomes: A summary of 52 cases. *Journal of applied behavior analysis*. 2013;46(4):738-749.

125. Kurtz PF, Chin MD, Robinson AN, O'Connor JT, Hagopian LP. Functional analysis and treatment of problem behavior exhibited by children with fragile X syndrome. *Research in developmental disabilities*. 2015;43:150-166.

126. Monlux KD, Pollard JS, Rodriguez AYB, Hall SS. Telehealth delivery of function-based behavioral treatment for problem behaviors exhibited by boys with fragile X syndrome. *Journal of autism and developmental disorders*. 2019;49(6):2461-2475.

127. Lee JF, Schieltz KM, Suess AN, et al. Guidelines for developing telehealth services and troubleshooting problems with telehealth technology when coaching parents to conduct functional analyses and functional communication training in their homes. *Behavior Analysis in Practice*. 2015;8(2):190-200.

128. Rodriguez KA. Maintaining treatment integrity in the face of crisis: A treatment selection model for transitioning direct ABA services to telehealth. *Behavior Analysis in Practice*. 2020;13(2):291-298.

129. Pollard JS, LeBlanc LA, Griffin CA, Baker JM. The effects of transition to technician-delivered telehealth ABA treatment during the COVID-19 crisis: A preliminary analysis. *Journal of applied behavior analysis*. 2021;54(1):87-102.

130. Nohelty K, Bradford CB, Hirschfeld L, Miyake CJ, Novack MN. Effectiveness of Telehealth Direct Therapy for Individuals with Autism Spectrum Disorder. *Behavior Analysis in Practice*. Published online 2021:1-16.

131. Carnett A, Hansen S, Tullis C, Machalicek W. Using behavioural skills training via telehealth to increase teachers use of communication interventions and increase student use of speech-generating devices in a high school functional skills classroom. *Journal of Intellectual Disability Research*. 2021;65(2):133-148.

132. Newcomb ET, Hagopian LP. Treatment of severe problem behaviour in children with autism spectrum disorder and intellectual disabilities. *International Review of Psychiatry*. 2018;30(1):96-109.

133. Suess AN, Schieltz KM, Wacker DP, Detrick J, Podlesnik CA. An evaluation of resurgence following functional communication training conducted in alternative antecedent contexts via telehealth. *Journal of the experimental analysis of behavior*. 2020;113(1):278-301.

134. Nudi-Muldoon A. *Effects of a Video Self-Monitoring Procedure to Increase Treatment Fidelity of Paraprofessionals' Implementation of Discrete Trial Training*. Temple University; 2019.

135. DiGennaro Reed FD, Hirst JM, Howard VJ. Behavior analytic techniques to promote treatment integrity. In: *Treatment Integrity: A Foundation for Evidence-Based Practice in Applied Psychology*. American Psychological Association; 2014:203-226.

136. Sivaraman M, Fahmie TA. A systematic review of cultural adaptations in the global application of ABA-based telehealth services. *Journal of Applied Behavior Analysis*. 2020;53(4):1838-1855.

137. Alkhalifah S, Aldhalaan H. Telehealth services for children with autism spectrum disorders in rural areas of the Kingdom of Saudi Arabia: Overview and recommendations. *JMIR pediatrics and parenting*. 2018;1(2):e11402.

138. Alsubaie B. International, Remote Behavioral-Skills Training of Discrete-Trial Procedures for Teachers in Saudi Arabia. Published online 2020.

139. Parsons D, Cordier R, Lee H, Falkmer T, Vaz S. A randomised controlled trial of an information communication technology delivered intervention for children with autism spectrum disorder living in regional Australia. *Journal of autism and developmental disorders*. 2019;49(2):569-581.

140. Parsons D, Vaz S, Lee H, Robinson C, Cordier R. A twelve-month follow-up of an information communication technology delivered intervention for children with autism spectrum disorder living in regional Australia. *Research in Developmental Disabilities*. 2020;106:103743. doi:https://doi.org/10.1016/j.ridd.2020.103743

141. Hall GCN, Ibaraki AY, Huang ER, Marti CN, Stice E. A meta-analysis of cultural adaptations of psychological interventions. *Behavior therapy*. 2016;47(6):993-1014.

142. Guðmundsdóttir K, Sigurðardóttir ZG, Ala'i-Rosales S. Evaluation of caregiver training via telecommunication for rural Icelandic children with autism. *Behavioral Development*

Bulletin. 2017;22(1):215.

143. Lerman DC, O'Brien MJ, Neely L, et al. Remote coaching of caregivers via telehealth: Challenges and potential solutions. *Journal of Behavioral Education*. 2020;29(2):195-221.