



PRACTICE BRIEF

Telehealth and the practice of Applied Behavior Analysis (ABA)

Overview

Telehealth is defined as the “mode of delivering health care services and public health via information and communication technologies to facilitate the diagnosis, consultation, treatment, education, care management, and self-management of a patient’s health care while the patient is at the originating site and the health care provider is at a distant site. Telehealth facilitates patient self-management and caregiver support for patients and includes synchronous interactions and asynchronous store and forward transfers.”^{1,2} Further, “Telehealth is not a distinct service, but a way that providers deliver health care to their patients that approximates in-person care. The standard of care is the same whether the patient is seen in-person or through telehealth”³

As early as the 1970s telehealth was used by the health care industry to monitor the health of persons not at a clinical site or hospital; starting with the monitoring of astronauts in NASA’s space program.⁴ Since then, telehealth has been successfully used in clinical care, research, education, and program management.⁵ Applications in ABA include, but are not limited to: assessment, treatment plan development, direct treatment (individual and group), direct and indirect supervision, parent and caregiver training, coordination of care, and discharge planning.⁶

More recently, California enacted the Telehealth Advancement Act of 2011 which allows healthcare practitioners to use telehealth as a tool in providing care to “reduce costs, improve quality, change the conditions of practice, and improve access to health care, particularly in rural and other medically underserved areas.” Further, the intent of the legislation is “that the fundamental health care provider-patient relationship cannot only be preserved, but can also be augmented and enhanced, through the use of telehealth as a tool to be integrated into practices.”⁷

1. California Business & Professions Code §2290.5(a)(6)

2. For this brief, telehealth, telementalhealth and telemedicine are the same term, www.americantelemed.org/main/about/telehealth-faqs - July 2017

3. Department of Health Care Services, California. www.dhcs.ca.gov/provgovpart/Pages/Telehealth.aspx retrieved July 2017

4. Kaiser Permanente “KFI to Help Develop NASA-Sponsored Health System” (1972) as cited in ‘Kaiser Permanente and NASA—Taking Telemedicine Out of this World’ (2015) kaiserpermanentehistory.org/tag/telemedicine retrieved July 2017

5. American Telemedicine Association, Delivering Online Video Based Mental Health Services, ATA Online Course Sept. 2016

6. Behavior Analyst Certification Board, Applied Behavior Analysis Treatment of Autism Spectrum Disorder: Practice Guidelines for Healthcare Funders and Managers, 2014, p 22, para 2

7. Telehealth Advancement Act of 2011, Chapter 547 of the Statutes of 2011

Definitions

The following are terms that are relevant to the use of telehealth:

Distance site	A site where a health care provider who provides health care services is located while providing these services via a telecommunications system
Origination site	A site where a patient is located at the time health care services are provided via a telecommunications system or where the asynchronous store and forward service originates
Asynchronous (store and forward)	The transmission of a patient's medical information from an originating site to the health care provider at a distant site without the presence of the patient
Synchronous	A real-time interaction between a patient and a health care provider located at a distant site

Legal Considerations

There are several statutes, court findings, and rulings that are relevant to the practice of telehealth in California and specific to ABA.

Court Finding - Consumer Watchdog vs. Department of Managed Health Care [2nd Dist. 2014] (225 Cal. App. 4th 862, 867-869): The court found that the passage of Health & Safety Code section 1374.73 (the autism insurance statute) effectively granted licensure to Board Certified Behavior Analysts (BCBA) per Business & Professions Code section 23.7 as a 'license by other means'.

Department of Health Care Services (DHCS) finding: In December 2016, DHCS found that the BCBA was effectively a license under Division 2 (Healing Arts) and therefore was covered under the Telehealth Advancement Act and others authorizing telehealth.⁸ As part of this finding, providers and funding agencies were asked to follow the All Plan Letter 15-025.⁹

The use of telehealth cannot be 'prohibited': It was the intent of the legislature that telehealth is a legitimate means of healthcare delivery and to create parity between telehealth and other modes of healthcare delivery.¹⁰ Further, healthcare service plans cannot require in-person visits if the service can be appropriately provided by telehealth.¹¹ However, there may be specific contractual prohibitions between the service plan and provider/patient that address telehealth directly.

8. ABAInfo letter to Learning ARTS inquiry, December 2016

9. DHCS Responsibilities for Behavioral Health Treatment Coverage for Children Diagnosed with Autism Spectrum Disorder, 2015

10. California Health & Safety Code §1374.13(b), Telehealth Advancement Act of 2011

11. California Health & Safety Code §1374.13 (c)

The location of telehealth cannot be restrictive: A provider or a service plan does not have to show a geographical need or other restrictive barriers prior to providing telehealth.¹² However, providers must still comply with Health Insurance Portability and Accountability Act (HIPAA) when providing services.

Eligible providers in ABA service delivery: As of this date, only BCBA's and/or QAS Providers, as defined in statute, may use telehealth to deliver ABA services.

Consent may be verbal or written: Telehealth allows for verbal and written consent by the patient, but the practitioner must still document that permission was given.¹³

Current Uses in the Medical Model: Using Telehealth to Provide ABA Services

Chart for BCBA using Telehealth: Below is a flowchart that generally covers the mechanisms for Synchronous and Asynchronous interventions/supervisions.

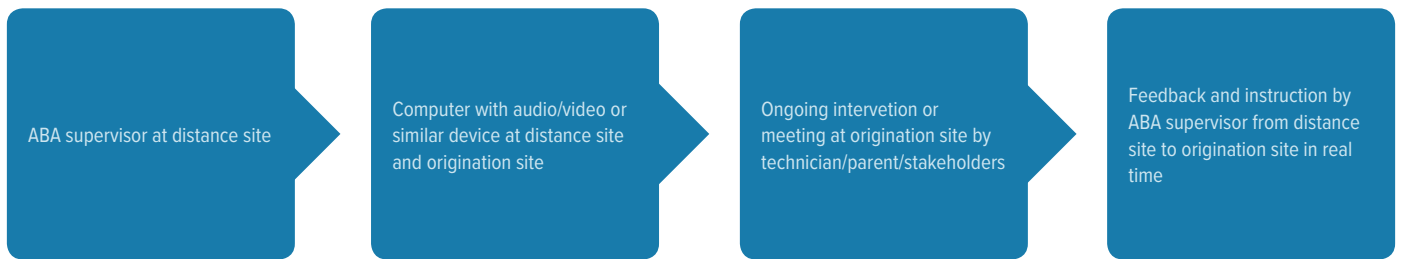


Figure 1. Synchronous intervention

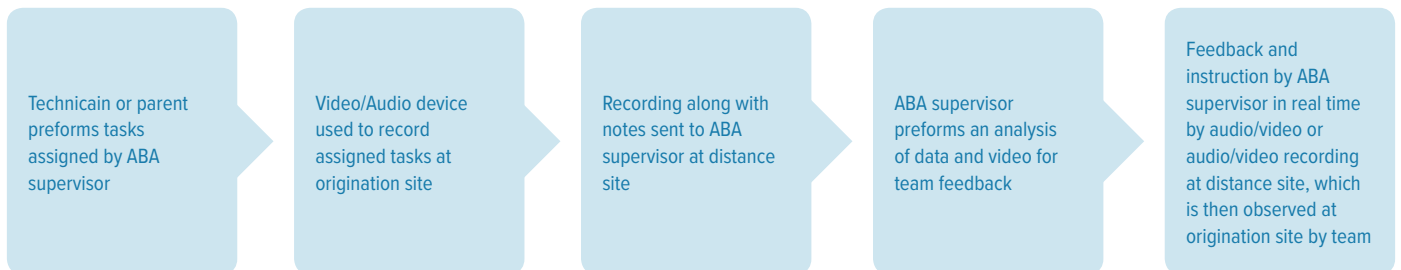


Figure 2. Asynchronous intervention

12. Telehealth Advancement Act of 2011

13. Calif. Bus. & Prof. Code §2290.5(b)

Telehealth is a well-researched tool in mental health¹⁴ that can greatly reduce the cost of ABA intervention while simultaneously increasing access to BCBA supervision. Wacker, et al. (2013) determined that the cost to deliver services such as a Functional Assessment (FA) were approximately 5.7 times less expensive than delivering those services in person.¹⁵ Further, by using a combination of parent participation and telehealth, Wacker found that the time to conduct the FA was reduced by about 55%.¹⁶ Telehealth is also a viable option for those patients/clients whose symptoms may hinder or prohibit travel to a clinic or other setting.¹⁷

Telehealth has been shown to be an effective tool for implementing ABA programs including parent training,¹⁸ standard and functional assessment,¹⁹ video modeling and video conferencing to train staff.²⁰ The BACB published a list of 8 common services that should be considered to maximize service and outcome. Below is a table with those 8 services and examples of how telehealth could potentially be used to implement each service.²¹

14. Google Scholar article keyword search of 'telehealth and applied behavior analysis' produced over 300 results; more generic terms such as 'mental health and telemedicine' produced over 24,000 results

15. Wacker, D. P., Lee, J. F., Dalmau, Y. C. P., Kopelman, T. G., Lindgren, S. D., Kuhle, J., ... & Waldron, D. B. (2013). Conducting functional analyses of problem behavior via telehealth. *Journal of applied behavior analysis*, 46(1), 31-46. Wacker et.al determined the cost using telehealth for an FA was \$57.95 per week, whereas in person visits cost \$335.09

16. *ibid*, conducting the FA via telehealth consisted of 1.5 hours parent time, 1 hour consultant time, and 1.5 hours parent assistant's time (4 total); whereas the FA conducted in person by the consultant took over 8 hours of consultant time and 1 hour of parent time (9 hours total)

17. ATA Practice Guidelines for telemedical health with children and adolescents, ATA 2017

18. Vismara, L. A., McCormick, C., Young, G. S., Nadhan, A., & Monlux, K. (2013). Preliminary findings of a telehealth approach to parent training in autism. *Journal of Autism and Developmental Disorders*, 43(12), 2953-2969.

Wainer, A. L., & Ingersoll, B. R. (2015). Increasing access to an ASD imitation intervention via a telehealth parent training program. *Journal of autism and developmental disorders*, 45(12), 3877-3890.

19. Wacker, D. P., Lee, J. F., Dalmau, Y. C. P., Kopelman, T. G., Lindgren, S. D., Kuhle, J., ... & Waldron, D. B. (2013). Conducting functional analyses of problem behavior via telehealth. *Journal of Applied Behavior Analysis*, 46(1), 31-46.

Schutte, J. L., McCue, M. P., Parmanto, B., McGonigle, J., Handen, B., Lewis, A., ... & Saptono, A. (2015). Usability and reliability of a remotely administered adult autism assessment, the Autism Diagnostic Observation Schedule (ADOS) Module 4. *Telemedicine and e-Health*, 21(3), 176-184.

20. Catania, C. N., Almeida, D., Liu-Constant, B., & Reed, F. D. D. (2009). Video Modeling to Train Staff to Implement Discrete Trial Instruction. *Journal of Applied Behavior Analysis*, 42(2), 387-392.

Fisher, W. W., Luczynski, K. C., Hood, S. A., Lesser, A. D., Machado, M. A., & Piazza, C. C. (2014). Preliminary findings of a randomized clinical trial of a virtual training program for applied behavior analysis technicians. *Research in Autism Spectrum Disorders*, 8(9), 1044-1054.

Hay-Hansson, A. W., & Eldevik, S. (2013). Training discrete trials teaching skills using videoconference. *Research in Autism Spectrum Disorders*, 7(11), 1300-1309.

21. *Supra* endnote 6

BACB list of common services	Synchronous	Asynchronous
<p>Behavior-Analytic Assessment</p>	<ul style="list-style-type: none"> • ABA supervisor at distance site observes child through audio/video conferencing at the origination site and records data in real time • ABA supervisor at distance site interviews and instructs parents at the origination site in real time via audio/video conferencing • ABA supervisor at distance site observes and directs parent/technician at origination site through audio/video conferencing and provides feedback <p><u>Synchronous Example:</u> ABA supervisor would observe BOIs (Behaviors of Interest) via audio/video conferencing to get naturalistic baselines and ongoing data points for FBAs (Functional Behavior Assessments) and BIPs (Behavior Intervention Plans). ABA supervisor interviews parent to affirm veracity of the data and determine baseline developmental points via standard assessment.</p>	<ul style="list-style-type: none"> • Behavior technician at origination site records programs and intervention on medium, then sends the recording and notes to the ABA supervisor at the distance site. ABA supervisor reviews program targets and behaviors and provides a summary to the team • Parent at origination site records programs and intervention on medium, then sends the recording and notes to the ABA supervisor at distance site. ABA supervisor reviews program targets and behaviors and provides a summary to the team <p><u>Asynchronous Example:</u> ABA supervisor has family or staff record BOI (behavior of interest) on audio/video medium at origination site, which is then reviewed and scored by the ABA supervisor at distance site. The ABA supervisor then uses the notes and audio/video to perform the FBA and create a BIP; which are then reviewed by the parents and team.</p>
<p>Treatment Plan Development and Modification</p>	<ul style="list-style-type: none"> • ABA supervisor at distance site observes technician with patient at origination site using audio/video conferencing technology and modifies program based on observed interaction and data • ABA supervisor at distance site observes parent/caregiver/stakeholder at origination site with patient using audio/video conferencing technology and modifies program based on observation • ABA supervisor at distance site observes patient displaying BOI at origination site through audio/video conferencing and modifies BIP based on observed data <p><u>Synchronous Example:</u> ABA supervisor at distance site observes technician at origination site working on a goal and current target(s) for the goal listed in the patient's treatment plan. Through observation, the ABA supervisor gets a current baseline and determines if the program goal should be mastered or continued.</p>	<ul style="list-style-type: none"> • Technician records session with patient working on goals and targets assigned by ABA supervisor at origination site; ABA supervisor reviews recording at distance site and provides feedback to the team • Parent/caregiver records session with patient working on goals and targets assigned by ABA supervisor at origination site; ABA supervisor at distance site reviews recording and provides feedback to the parent/caregiver • Other professional records session and tests for goal and target mastery at origination site; ABA supervisor at distance site reviews recording and provides feedback to the other professional • Team member records BOI at origination site; ABA supervisor at distance site reviews recording and modifies BIP accordingly <p><u>Asynchronous Example:</u> Patient displays BOI at a frequency that is difficult to capture during individual visits. Parent/caregiver/team member can have a recording device ready at origination site to capture BOI without the ABA supervisor present. The ABA supervisor can then review the BOI at the distance site that the supervisor might not otherwise have been able to observe directly and modify the BIP accordingly.</p>

BACB list of common services	Synchronous	Asynchronous
<p>Direct Treatment to Individuals or Groups with Implementation by Behavior Analysts and/or Behavior Technicians.</p>	<ul style="list-style-type: none"> • ABA supervisor at distance site guides technician at origination site in real time through current goal/target using audio/video conferencing. ABA supervisor provides feedback and suggestions for technique and intervention modification • ABA supervisor at distance site provides instruction and intervention to patient via audio/video conferencing at origination site and patient preforms goals/targets at naturalistic levels • ABA supervisor at distance site guides parent/caregiver at origination site in real time through current goal/target. ABA supervisor provides feedback and suggestions for technique and intervention modification • Synchronous Example – Patient is working with a technician on a current target that is on acquisition. As the session progresses, the ABA supervisor suggests levels of prompting and prompt fading on the current target, as well as providing feedback on appropriate reinforcement levels for the current target 	<p>Since this section refers to ‘direct’ intervention, it is assumed that this is also ‘in real time’. However, synchronous scenarios could be recorded and then reviewed with the team at a future date.</p>
<p>Supervision (both direct and indirect) by Behavior Analysts</p>	<ul style="list-style-type: none"> • ABA supervisor at distance site observes technician or intern at origination site preforming intervention with a patient or group. ABA supervisor provides feedback in real time through audio/video conferencing based on supervision requirements per BACB®, funding agency, or other governing entity/document requirements <p><u>Synchronous Example:</u> ABA supervisor instructs technician/intern to use a specific ABA technique, guidance and instruction are provided in real time over computer or similar device to guide the technician/intern through the technique.</p>	<ul style="list-style-type: none"> • Technician performs and records tasks and intervention at origination site using audio/video equipment as assigned by ABA supervisor. ABA supervisor at distance site reviews the recording and provides feedback to the technician <p><u>Asynchronous Example:</u> Technician is asked to perform a target acquisition exercise with the patient using a specific reinforcement strategy. The technician then records the session with the patient and delivers the recording to the ABA supervisor. The ABA supervisor then reviews the recording and provides feedback to the technician face to face, in writing, or via video/audio recording.</p>
<p>Travel to Ensure Equitable Access to Services</p>	<p>This would be reduced/eliminated by telehealth. Driving is a considerable time and expense for ABA agencies. (See Endnote 15 and 16)</p>	

BACB list of common services	Synchronous	Asynchronous
<p>Parent and Community Caregiver Training to Individuals or Groups</p>	<ul style="list-style-type: none"> • Through video conferencing, ABA supervisor at distance site hosts a webinar in real time with stakeholders at other distance sites and origination site to go over ABA techniques that would apply to the patient • ABA supervisor at distance site meets using audio/video conferencing in real time with parent at origination site; assist the parent to develop skills and techniques to assist and materially participate in intervention <p><u>Synchronous Example:</u> Several parents have children/patients that are needing toilet training. ABA supervisor using video conferencing equipment goes over general principles for toilet training. After the meeting, ABA supervisor meets with parent via video conferencing individually to discuss the specifics of their case.</p>	<ul style="list-style-type: none"> • ABA supervisor records at distance site training session on a topic/technique of interest and makes it available to parents/caregivers/stakeholders at origination site • ABA supervisor at distance site reviews a video and provides training instruction that synchronizes with the video. The synchronized video is then made available to the parent/caregiver/stakeholder at the origination site <p><u>Asynchronous Example:</u> Webinar on toilet training is recorded and made available to parents/caregiver/stakeholders that did not attend. Parent/caregiver/stakeholder then practice the techniques and submit video recording to the ABA supervisor, who then provides feedback to the parent/caregiver/stakeholder.</p>
<p>Consultation to Ensure Continuity and/or Coordination of Care</p>	<ul style="list-style-type: none"> • ABA supervisor at distance site hosts a webinar in real time with other professionals at other distance sites and origination site involved on the patient's case • ABA supervisor at distance site coordinates with specific professional at another distance site or origination site and reviews current program/goals/targets with the other professional <p><u>Synchronous Example:</u> A review of current services and targets/goals each professional is working on is needed. Stakeholders log in to webinar and participate in real time, reviewing their specific interventions and goals with the patient. Other professionals and parent/caregiver provide feedback in real time to support goals/intervention.</p>	<ul style="list-style-type: none"> • Other professional records intervention with patient at origination site, the recording is reviewed by the ABA supervisor at distance site and intervention is modified accordingly • ABA team records intervention with patient at origination site, which is then reviewed by ABA supervisor and other professionals at distance site(s) <p><u>Asynchronous Example:</u> The speech pathologist on the case is introducing a new word, the session is recorded and the ABA supervisor reviews the video. The ABA supervisor then incorporates the new word into generalization programs in other settings.</p>

BACB list of common services	Synchronous	Asynchronous
<p>Discharge Planning</p>	<ul style="list-style-type: none"> • ABA supervisor at distance site using audio/video conferencing observes patient in natural settings at origination site and makes determinations regarding mastered skill sets and community access without the technician present • ABA supervisor at distance site using audio/video conferencing conducts family and other professional interviews with stakeholders at origination site to establish if current skill sets require further intervention <p><u>Synchronous Example:</u> ABA supervisor observes the child playing with a peer to determine if any non-typical behaviors are displayed and if those behaviors require further intervention. Later, the ABA supervisor does an informal interview with the parent/caregiver to determine if there are other areas of concern.</p>	<ul style="list-style-type: none"> • Technician at origination site records patient interacting with typical peers. Recording is then delivered to the ABA supervisor at distance site and reviewed by the ABA supervisor • Parent/caregiver at origination site records patient interacting with parent/caregiver. Recording is then delivered to the ABA supervisor at distance site and reviewed by the ABA supervisor <p><u>Asynchronous Example:</u> Parent/caregiver is asked to record a play session with patient in a naturalistic setting at the origination site. Parent/caregiver delivers the recording to the ABA supervisor at a distance site. The ABA supervisor reviews the video at the distance site and makes recommendations to the parent/caregiver based on review.</p>

Determining patient eligibility for Telehealth

According to the American Telemedicine Association, “To date, no studies have identified any patient subgroup that does not benefit from, or is harmed by, mental healthcare provided through remote videoconferencing.”²² Beyond technical requirements and capacity to use telehealth equipment, there are no prerequisites for using telehealth for mental health services.

Clinical scope of practice/competence

While there are currently no formal guidelines for telehealth, practitioners should familiarize themselves with state and federal law regarding telehealth. Continuing education in telehealth that covers telehealth best practices, emergency management, technical considerations and online service delivery should be considered prior to service delivery.²³ ABA providers should ensure their staff are adequately trained on the use of the technology used for telehealth, and steps necessary to protect patient confidentiality.

22. Practice Guidelines for Video-Based Online Mental Health Services, American Telemedicine Association, 2013

23. Ibid., 9

Technological requirements

As telecommunication equipment and software are becoming standard on most phones and computers several issues should be considered when using telecommunication equipment for telehealth: ²⁴

- Equipment should comply with HIPAA requirements including verification, confidentiality, and security. Usually software companies or other 3rd party entities will enter into a Business Associate Agreement (BAA)²⁵ for HIPAA, although this is not specifically required to meet compliance. Ultimately, it is the provider's responsibility to ensure HIPAA compliance
- Social media settings should be set so there is no interruption in the session or turned off completely
- Antivirus software should be up to date
- ATA recommends that “computers or mobile devices that use internet-based videoconferencing software programs should provide such services at a bandwidth of 384 Kbps or higher in each of the downlink and uplink directions. Such services should provide a minimum of 640 X 360 resolution at 30 frames per second” ²⁶
- Stability of connection is important, and wired connection should be used when possible, but is not required. When mobile devices are utilized for telehealth delivery, Wi-Fi is preferred over cellular data plans for connectivity at the originating and distance site for signal integrity and financial reasons. Requests for Wi-Fi access at the originating site with the patient should be made as part of obtaining consent for the use of telehealth as a modality to deliver ABA services
- For devices that may be stolen or are not secured (mobile phones and/or laptop computers), providers should have the ability to remotely wipe the device to protect patient health information

24. Ibid.t

25. See 45 CFR 164.502(e), 164.504(e), 164.532(d) and (e); atwww.hhs.gov/hipaa/for-professionals/privacy/guidance/business-associates/index.html

26. See supra note 22

Clinical Rational for the use of Telehealth

Telehealth as a tool can be a critical component in an intervention programs. In addition to those noted above for common services performed by a BCBA, additional benefits for the use of telehealth are (but not limited to):

- Increased patient, family, and practitioner (e.g., behavior technician) access to Behavior Analysts to meet increasing demand for services
- Improved oversight of treatment when used both in synchronous (e.g. watching the team or parent preform intervention, potentially reduce observer effects, etc.) and asynchronous reviews (e.g. ability to see and review low frequency high intensity behaviors, monitoring fidelity of implementation, etc.)
- Improves coordination of care with the patient, family, other professionals and stakeholders
- Provides means for accessing multiple locations for services easily

Session Requirements

Each provider or agency should develop a protocol for the use of telehealth prior to implementation. Additional guidelines should be considered if there are other requirements for practitioners participating, state and/or federal law, contracts and agreements with the funding sources, and/or the unique needs of patient. At a minimum, these guidelines should include:

- Confirmation and agreement of locations [originating (intervention setting) and distance (alternative setting) sites] and participants ('who is in the room') between patient and provider. Permission may be achieved through written or verbal consent prior to the use of telehealth
- An agreement about how contact may be made between sessions
- Contingency planning for connectivity issues that arise (e.g., test connectivity prior to onset of session, call back phone number to resume contact as needed, follow up supervision visit in the intervention setting)²⁷
- A Patient Support Person (PSP) at the origination site that can assist with interventions and emergencies. Typically this is the parent or caregiver. If the PSP is not the parent/guardian, the PSP should have medical treatment authorization in case of a medical emergency
- A statement that in an emergency, a 911 call must come from the origination site. Further, the provider should ensure that the PSP has a list police, fire, poison control, nearest care facility, and other emergency services as determined by the needs of the patient

27. Lee, J. F., Schieltz, K. M., Suess, A. N., Wacker, D. P., Romani, P. W., Lindgren, S. D., ... & Dalmau, Y. C. P. (2015). 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*, 8(2), 190-200.

Summary

Telehealth as a modality for delivering ABA services has tremendous benefit to both the provider and the patients' they serve. Many states, including California, have made legislative efforts to facilitate the use of telehealth by removing barriers and pre-qualifications. Practitioners should be aware of the laws as they pertain to telehealth as outlined here and in current legislation. Both legislative and research review has demonstrated the telehealth is a cost effective, efficient, and valid delivery model.

The technical requirements for telehealth are relatively low when compared with today's technology, however practitioners should still have an action plan when the technology fails as well as some training in the use of telehealth. Synchronous and asynchronous telehealth delivery compliment the common services that a BCBA would provide. Further, there is no established criteria for the use of telehealth and no identified groups that do not benefit from the use of telehealth.