



# Supporting Families from a Distance: Implementing Routines-Based Home Visits via Telepractice

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## Abstract

Early intervention is a system of services designed to strengthen child outcomes and build family capacity. One approach of service provision is the Routines-Based Model which implements adult-learning practices wherein service providers and caregivers partner to build family-mediated interventions for children. Owing to COVID-19 and the benefits of telepractice, more and more service providers are likely to incorporate a telepractice modality into service provision. Because the Routines-Based Model uses family consultation, these home-visiting practices translate well to telepractice. In addition to consultation techniques, however, service providers must use technology advantageously to ensure effective communication practices. This article discusses technology uses in telepractice that can be incorporated in the Routines-Based Model, Tele-Routines-Based Home Visits, and examples of Tele-Routines-Based Home Visits.

**Keywords** Early intervention · Disability · Families · Routine-based interventions · Telepractice

## Introduction

Early intervention (EI) refers to a system of services delivered to families of children with developmental disabilities, to strengthen parental capacity to meet their children's needs (Individuals with Disabilities Education Act [IDEA], 2004). Thus, IDEA mandates that states must establish and maintain family centered EI programs to meet the needs of children from birth to age three who have or at risk for

having developmental delays. Parents play a pivotal role in the EI services because they know their child better than anyone else and are with their children in all daily routines, activities, and transitions (Akamoglu & Dinnebeil, 2017; Campbell & Coletti, 2013). Because parents are important sources of information about many features, EI services are designed to support parents' capacity so that they can promote their children's skills and minimize the disability or delay's adverse effect on the child's development (Acar & Akamoglu, 2014; Dunst, 2007). Therefore, EI services aim to: (a) involve parents and other family members in supporting the child's development, (b) encourage parent participation during intervention, (c) facilitate parent-child interactions, and (d) increase parents' self-confidence and competence in implementing strategies (McWilliam, 2010; Odom & Wolery, 2003).

## Routines-Based Home Visits (RBHVs)

One approach of EI service provision is Routines-Based Home Visits (RBHVs), a component of the Routines-Based Model of EI (McWilliam, 2010). RBHVs can improve the quality of life for families and lead to positive outcomes for children with disabilities (McWilliam, 2010). The Routines-Based Model implements adult learning practices in which service providers and caregivers

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partner to build family-mediated interventions for children (McWilliam, 2010). Caregivers receive services that set the stage to empower them to implement learning opportunities for children in their everyday lives.

RBHVs encompass collaborative consultation to promote a child's engagement, independence, and social relationships in daily routines, as well as family needs. A routine is a predictable activity or event in a child's or family's day-to-day life, such as meal preparation, bath time, or getting ready for bed. Individualized outcomes (i.e., Individualized Family Service Plan goals) are based on the priorities of the family and emphasize functioning, in which the child's abilities and interests match the demands of the family's routines. Components of RBHVs include: (a) initial greeting, (b) review of progress, (c) review of the interventions, (d) developing strategies, and (e) planning for the next visit. During the initial greeting, the service provider checks in with the family on how things have been going. The family provides updates, and the service provider gives the family the opportunity to determine a focus for the visit. The service provider prompts the family, verbally and visually, using the Next Steps Form (NSF, see Fig. 1), reminding the family of their decision from the previous visit of the focus for the current visit. The family can either choose to keep their previous decision as the focus for the visit or choose to focus on something new. As the visit proceeds, following the family's agenda, the service provider and family review progress on the skill the family chose to discuss. The service provider asks open-ended questions about the child's functioning (e.g., if you place the yogurt in front of Markala what would she do? While you two are playing "chasing" on the floor, how does Markala use her body to follow you?). The family then reports how the child functions in the routines being discussed. The discussion follows one of three paths depending on the child's progress with the skill: no development or the first time the skill is being addressed, some development, or the skill is attained (McWilliam, 2010). Progress review flows naturally into strategy development, if appropriate (i.e., the family wants a strategy). If a strategy had been in place, and the family wants to continue using it, no new strategy development is needed. The flow chart shows that strategy development involves the service provider's asking the family many questions so both parties contribute to the solution (i.e., strategy) the family accepts. After reviewing interventions and developing strategies, the last stage is planning for the next visit. The plan for the next visit involves determining or reviewing what the family wants to work on between now and the next visit (as well as anything the service provider will carry out during this time) and deciding on a focus for the next visit. The service provider asks the family to consult the Outcomes  $\times$  Routines matrix, to remind

them of all the outcomes (see Table 1). It is important to allow the family to make these decisions and provide the family with a copy of the NSF following the visit.

Using a family consultation approach, RBHVs can be practiced fairly seamless both in person and via telepractice. Although it is possible to implement RBHVs via telepractice, challenges emerge as well. This article discusses strategies in the implementation of RBHVs, using telepractice as the manner of delivery.

## Telepractice in EI

"Tele" and "practice" are defined as "at a distance" and "exercise of a profession," respectively (Oxford Languages, n.d.). Telepractice allows therapists and interventionists to provide therapeutic services through internet-based technologies (Akemoglu et al., 2021). Services may include live-time-video coaching, video recordings, online modules, or a combination of service deliveries (Akemoğlu et al., 2022). Unfortunately, EI services are not equally acquirable for all families due to limitations such as scheduling, transportation, and rural residency preventing home health care (Poole et al., 2020). Fortunately, research indicates potential for telepractice to disseminate evidence-based practice for increased service delivery and accessibility (Akemoglu et al., 2021; Wainer, & Ingersoll, 2015).

There is a growing body of research and practice literature that supports the use telepractice as a viable option to reach and support families from a distance (Akemoğlu et al., 2022; Meadan & Daczewitz, 2015). Within this body of literature, researchers have reported that telepractice has been effective across a variety of settings (homes, schools, other community settings) and modes of delivery such as texts, phone calls, emails, online modules/courses, and two-way videoconferencing (Sutherland et al., 2018). Within these modes of telepractice, parents were able to complete self-directed, self-paced learning modules that provide multiple practice opportunities, meet with professionals as part of coaching/consultation with less scheduling conflicts, and access resources provided via their EI systems. Telepractice has the potential to minimize the challenges faced within in-person, face-to-face EI services and help maximize family driven service delivery furthering family driven supports for parents to access evidence-based strategies and services they need for their families (Akemoglu et al., 2021; Sutherland et al., 2018).

Further, implementation of EI services could be complicated due to global crises such as the recent COVID pandemic. In such crisis, telepractice could be the only option available to receive services and thus many families may have the urgency to acquire the necessary resources such as computers, tablets, and other programs. Given the COVID pandemic and the benefits of telepractice, a growing

*Next Steps Form*

Family Name: \_\_\_\_\_ Date: \_\_\_\_\_

<b>What we did today and progress on any goals discussed</b>	<b>What we will do from now until the next visit</b>
<b>Plan for the next visit</b>	

**Figure 1** Next steps form. *Note:* This work is licensed under the Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-ncnd/4.0/>

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number of EI service providers are likely to incorporate a telepractice modality into their services by supporting caregivers remotely via videoconferencing and other means of internet-based technologies (e.g., email, online learning modules, other resources).

### Challenges to Implementation

Although telepractice is a promising tool in service delivery, there are challenges in implementation. First, telepractice relies on technology and internet tools (e.g., electronic devices, internet connection) and not all families have stable and constant access to these tools. The COVID pandemic imposed these technologies as the new reality. Through the pandemic we have learned much about issues

**Table 1** Matrix form

Goals/outcomes	Routines							
	Breakfast	Dressing	Play	Meals	Before dinner	Family time	Bath	Bedtime
1. Use spoon with little spilling	X			X				
2. Put on shirt and pants		X					X	
3. Follow one step directions					X	X		X
4. Request by pointing		X	X			X	X	
5. Take turns with siblings			X			X		
6. Parents time for themselves								
7. Look at books			X		X	X		
8. Feed self with fingers independently	X			X				
9. Stay in bed with protesting								X
10. Parents information about communication milestones								
11. Open mouth to brush teeth		X						X

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of tele-accessibility. Telepractice requires, in many instances access to high-speed internet and a technical skill that some families may not have. Thus, EI programs and agencies must consider opting for accessible tools and technology. Second, most technologies are not rigorously tested before public release and therefore practitioners should adhere to specific standards and choose tools that comply with these standards (Lerman et al., 2020).

Many practitioners were forced to deliver remote services due to the COVID pandemic without having any prior training on telepractice. Practitioner and parent training are important for incorporating telepractice technologies in service delivery (Baxter et al., 2012). However, research in telepractice is limited, there are no set guidelines for best practices in how to conduct tele-visits, and it is important to acknowledge that telepractice should be viewed as one tool among many in a holistic service delivery model. Specifically, service delivery could potentially involve a combination of in person visits, live-video visits, video recordings, and online modules. More research should examine best practices and effective ways of implementing tele-visits. Due to a lack of best practice guidelines in telepractice-based service delivery and the need for professional development, it is important to examine examples of what telepractice service delivery looks like. Below is an overview of how the Routines-Based Model, an evidenced based approach in service delivery, can be implemented through telepractice. In addition, examples of implementation through telepractice are provided to assist professionals in service delivery through telepractice visits.

### Tele-Routines-Based Home Visits (T-RBHV)

Tele-Routines-Based Home Visits (T-RBHV) consist of the stages of RBHV through telecommunication technology, such as text messaging, email, online learning modules, telephone, and live (synchronous), two-way videoconferencing. T-RBHV involve the same consultation techniques as in-person RBHV, whereby the service provider (a) discusses child functioning in the context of the family's routines, (b) asks questions to gain a clear understanding of the routine and child functioning, (c) solicits family input related to the intervention strategies, and (d) inquiries about the feasibility of the family's implementing the intervention between visits (McWilliam, 2010, 2020).

Even though the consultation techniques are the same, T-RBHV are different from traditional RBHV because the service provider and family communicate through technology versus in person. Therefore, in addition to the consultation techniques, service providers must use the technology to ensure effective communication practices. Low-cost technology options service providers can use to optimize communication involve live videoconferencing software with screen sharing options and bug-in-ear devices. Each technology option is described in greater detail below.

### Videoconferencing with Screen Share

Advances in technology allow EI service providers and families to connect via secure videoconferencing technologies. By using videoconferencing technologies, service providers can complete the visit in a virtual

conference room, where they can see and hear the family via audio and video connection. The service provider should follow a few steps for T-RBHV videoconferences. First, the service provider should select and use a secure, encrypted platform compliant with the Health Insurance Portability and Accountability Act of 1996 (HIPAA). Second, the service provider should establish a time that works both for their schedule and the family's schedule. Third, the service provider should provide information about the videoconference and, if needed, orientation to the videoconference platform (e.g., Zoom, Google Hangouts, Microsoft Teams). For example, if the service provider is using Zoom, they should provide the Zoom link and password that gives the family access to the Zoom meeting. If the service provider is using Microsoft Teams, he or she should invite the family into the team and give the family information on how they should join the team. Fourth, during the videoconference, the service provider should share their screen for any materials or resources that would support the conversation. Screen sharing is an effective way to illustrate a point and discuss materials in the absence of an in-person visit. The service provider can present materials used during regular RBHVs, including the NSF, the matrix, the ecomap, and the Measure of Engagement, Independence, and Social Relationships (MEISR; McWilliam & Younggren, 2020) exactly as they see it on their screen, in real-time. The MEISR is a way of monitoring progress of outcomes and services. The ecomap is a depiction of the family's informal, intermediate, and formal supports (McWilliam, 2010). Thus, screen sharing can make family consultation during T-RBHV as visual, interactive, and almost as seamless as an in-person visit.

**Example About Eva:** Maisie, Eva's mother, reported concerns about Eva eating different foods and wants Eva to spend time playing in her bedroom as a steppingstone to sleeping in her own bed. Maisie also mentioned concerns about Eva assisting in dressing herself. In this example, the service provider shares her screen to discuss skills in which Eva is enhancing her skills. The service provider then shares her screen to help prompt discussion with Maisie by showing the matrix.

At the beginning of the meeting, the service provider asks, "How have things been going with Eva's eating?" Maisie, the mother, says, "Good." The service provider smiles and says, "You texted good news. Give me details." Maisie says, "I thought I would go ahead and try some stuff we tried before, like spaghetti and stuff, and I drained it. She ate it all up. I said, 'You want more?' and she said, 'more.' Then I got her more, and it was a big happy celebration." The service provider says, "Yea! What made you decide to try that? Because she likes spaghetti or likes dried spaghetti?" Maisie

says, "Yes, pretty much because she likes dried spaghetti. She is into stars and shapes right now, so we found shapes. I also cut her sandwich into stars and shapes with cookie cutters. She tried the sandwich, which is the first time she has ever done that." The service provider says, "Wow!" Maisie continues, "She didn't eat it, but she tried it. It is a step in the right direction." The service provider affirms Maisie by saying, "Right. She is getting more experience, and that is a good thing." Maisie says, "She also ate a whole banana." The service provider says, "A banana? That is a mushy thing that you wouldn't think... Did she touch it or did she have to eat it with a fork?" Maisie says, "She touched it. I think it is because she likes the word nana. I said, 'You want a nana?' She ran to her highchair and ate the nana." The service provider says, "That's awesome! It's little things, but we will get there."

The service provider affirms Maisie by stating, "That's really big progress." Both the service provider and Maisie chuckle, and the service provider says, "Let me show you the Next Steps Form from last time." The service provider pulls up the form and shares the screen so Maisie can see it. The service provider continues, "Last time we talked about different ways of doing messy play with food and having Eva spend time in her bedroom to prepare her to sleep in her own bed. We talked some about food. We said we would focus on the room. How has that gone?" Maisie says, "We reintroduced old toys and she would run in there and play with them again." The service provider says, "That's great," and asks, "Do you feel that there is anything to do further there, or do you feel you still need to continue introducing her to being in there more?" Maisie says, "I think I need to continue and maybe read a book with her in bed. I think I will do that next week." The service provider says, "Great. You are doing great. I know you say it's little, but it is all very big." Maisie smiles.

The Next Steps Form is still on the screen, and the service provider can refer to the form to facilitate discussion about the focus on the present visit which is to work on dressing. Maisie sees the form with the shared screen, bringing up concerns she has for Eva during dressing. The shared screen acts as a visual prompt that has helped the service provider facilitate the transition from discussing Eva's development in eating different foods, to spending time in her bedroom as a steppingstone to sleeping in her own bed, to the outcome of dressing. Once Maisie discusses her concerns about dressing, the service provider can ask questions that provide details for a solution.

## Real-Time Family Consultation and Demonstration with Bug-in-Ear

Family consultation via telepractice can occur in real time and, depending on the family's preference, includes the use of performance-based feedback. In the Routines-Based Model, the term "coaching" is reserved for training of professionals (Snyder et al., 2015) and *family consultation* is the term used for working with families (McWilliam, 2010). Within family consultation, performance-based feedback has been used to support parents' use of evidence-based practices (McLeod et al., 2021). In-person, feedback delivery can have a positive impact on parents' interactions with children, but it can also distract parents and children from interacting with one another. Bug-in-ear (BIE) is a technological approach to real-time feedback and demonstrations, and it involves parents wearing a small earpiece to receive feedback in a discrete manner as they implement evidence-based strategies with their children. BIE has been used to minimize distractions while the service provider provides in-the-moment feedback to the parent. BIE provides privacy so professionals and parents can learn to use new skills accurately and effectively in natural environments without the children becoming distracted. With minimal distractions, parents can focus on receiving feedback from a service provider, which in turn results in enhanced quality and quantity of parent-child interactions (Coogle et al., 2018). BIE coaching has been effective in providing parents with feedback to support their children's development. For example, researchers taught mothers of children with autism spectrum disorder to use prompts and praise with their children during routines at home (Oliver & Brady, 2014), which, in turn, strengthened children's independence and engagement in routines.

Feedback delivery with BIE offers several advantages. First, it allows for telepractice-based family consultation. The service provider can meet with the family via videoconferencing platforms such as Zoom, Microsoft Teams, or Google Hangouts to conduct observations and use BIE to provide in-the-moment feedback. Hence, the feedback can be delivered immediately (Marturana & Woods, 2012). Second, feedback delivery via BIE is cost-efficient because the materials are relatively affordable, accessible, and easy to use. Possible BIE materials include the following: (a) one- or two-way communication system such as wireless headsets or ear buds with or without microphones, (b) cell phones; and (c) computers and tablets (e.g., iPad) with videoconferencing capabilities (Ottley & Hanline, 2014; Scheeler et al., 2012).

**Example about Jamil:** Jamil's mother, Tonya, would like for Jamil to be able to engage with her during shared reading for longer periods. Each time they sit down to look at a book, Jamil loses interest after about 15 seconds and walks away.

In this example, Danielle, the family's service provider, and Tonya decide to use BIE during their T-RBHV to support in-the-moment feedback during shared reading. After discussing what shared reading typically looks like, Danielle asks Tonya if she'd like to show it to her. Tonya puts on a Bluetooth earpiece, which is connected to the phone she's using for her videoconference with Danielle and props her phone up on the coffee table in the living room, where Tonya and Jamil typically read books. Tonya can hear and speak to Danielle through the Bluetooth earpiece, and Danielle can see and hear Tonya and Jamil's interactions. Jamil, on the other hand, cannot hear Danielle's prompts to Tonya, fostering a more natural, realistic setting for book sharing that he's likely to experience with his mom when Danielle is not present. Danielle reviews the NSF with Tonya. Tonya expresses concern about reading with Jamil.

Danielle asks questions, "What does it look like when you and Jamil read together?" Tonya says, "Jamil looks away and tries to get down from the couch." Danielle asks, "When Jamil looks away how do you respond to him? Tonya replies, "I start reading the page trying to get him interested." Danielle continues, "Once you start reading, how does Jamil respond?" Tonya says, "That's when he tries to get down and walk away. I love to read, and it is something we could do together. I really want to know how I can get Jamil interested in books." Danielle asks, "Would you like to show me storybook reading time? Tonya replies with, "I can", gets a book and requests Jamil to sit next to her on the couch. Tonya opens a book and Jamil looks away. Danielle gives Tonya encouragement and then says, "May I make a suggestion?" Tonya replies, "Please do so." Danielle says, "I can ask questions and give you a little feedback while you read to Jamil. Let's try this and see what he responds to." Tonya says she likes that idea.

Danielle asks, "If you asked him to open the book, what do you think would happen?" Tonya instructs Jamil, "Open the book." Jamil opens front cover of book. Tonya says, "Good job!" and ask Danielle if she should read with him. Danielle suggests, "I would start with what you were doing before – pointing to the objects and telling him what it is." Jamil spontaneously points to an object on the page. Danielle excitedly says, "Right then, when he's touching that, tell him what that is." Tonya says, "Puppy. Can you feel the puppy's fur?" Jamil touches the puppy's fur. Tonya says, "That's soft." Danielle says, "You're telling him it's a puppy and you're describing it to him. That's perfect." Tonya tells Jamil, "Press it." Jamil presses button, which makes a barking sound. Giggles and looks to Tonya. She asks him, "How does the puppy go? Does

he say woof woof?” Jamil vocalizes, “Woof woof.” Danielle encourages Tonya, “Perfect. Is there anything on the page that you think he might recognize?” Tonya asks Jamil to turn the page. Jamil doesn’t respond. Tonya models starting to turn page and asks him to turn the page one more time. Jamil turns the page. Tonya smiles, “Good job!” Danielle acknowledges Tonya’s effort, “When you said turn the page and he didn’t, you started to model for him and then he did it. Good job, that was perfect!”

### Building Fidelity of T-RBHV Implementation

To help ensure service providers implement T-RBHV as designed, it is important to check the fidelity of implementation. One of two tools can be used to gather fidelity for T-RBHV: the Routines-Based Home Visit Checklist (McWilliam, 2016) or the Routines-Based Telepractice Visit Checklist (McWilliam, 2020), both of which are available at [www.eieio.ua.edu/materials](http://www.eieio.ua.edu/materials). The Routines-Based Home Visit Checklist consists of 60 specific practices the service provider should implement during the RBHV. An observer (e.g., supervisor, mentor, coach) can use this checklist to check the service provider’s fidelity of implementation and provide performance-based feedback. Each item receives one of the following scores: (+) if the practice was observed, (+/-) if the practice was partially observed but the service provider missed opportunities, (-) if the practice was absent, or (N/A) if implementation of the practice was not appropriate for the visit. The total number of items with a (+) score are then added up and divided by the total number of items scored (i.e., any item that did not receive a rating of N/A). A total score of 80% is needed to meet fidelity when using the Routines-Based Home Visit Checklist. The Routines-Based Telepractice Visit Checklist follows the same scoring process and was designed specifically for home visits conducted via telepractice.

When conducting fidelity checks in person, the observer attends the home visit with the service provider, observes the visit and scores the checklist in real time, and provides the service provider with written or oral checklist-based feedback, often in person, immediately following the visit, and, sometimes, in writing. Remote fidelity checks can occur either synchronously or asynchronously. When conducting fidelity checks remotely, the observer has the option to join the T-RBHV with the service provider and family, observe in real time (i.e., synchronously), and provide written or oral feedback following the visit. The delivery of feedback can occur over e-mail, the phone, or videoconference. Another option is for the service provider to video record the T-RBHV and upload it to a secure, shared folder (e.g., cloud) for the observer to review when convenient (i.e., asynchronously). After the observer reviews the video and completes a

checklist, the observer provides the feedback to the service provider by e-mail, phone, or videoconference. By using these various remote-technology platforms, observers can check service providers’ fidelity of implementation and provide them with performance-based feedback from a distance to support their overall implementation of T-RBHV.

### Recommendations for T-RBHV

Telepractice technologies offer some exciting new avenues for improving the delivery, monitoring, and coordination of EI home visits. While these technologies are exciting, three further points should be considered regarding their use in T-RBHV. First, most technologies are not rigorously tested before public release. Therefore, service providers should utilize rigorously tested technologies. Second, there are no best practice guidelines for delivering RBHV mediated via telepractice technologies. However, there are guidelines about how to deliver RBHVs and thus service providers must follow those guidelines and checklists. In addition, practitioner, and parent training is important for incorporating telepractice technologies during RBHVs. Third, not all families have access to internet and technology needed for telepractice. Service providers should consider methods to promote equitable access to telepractice technologies that augment rather than replace face-to-face home visits and services.

### Conclusion

Telepractice in EI is one creative solution to reach communities for services. It is possible that telepractice can ameliorate some barriers in service delivery and help service providers (a) facilitate child participation in family and community activities, (b) encourage active family participation in the intervention process, (c) promote caregiver competence and confidence in enhancing their child’s learning, and (d) deliver services within natural environments such as home and childcare settings (Campbell & Coletti, 2013; Dunst, 2007; Odom & Wolery, 2003). This is especially important during a time when complications from the COVID-19 pandemic caused families to have less access to social supports.

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