Clinical Models in Telehealth

Denice Rios, Ph.D., BCBA & Ellie Kazemi, Ph.D., BCBA-D
Telehealth Delivery Models

- Parent Training/Coaching
- Supervisor Mediated Telehealth
- Direct Therapy via Telehealth
Parent Training/Coaching Model

- Clinicians train/coach caregivers via telehealth
  - Research supports the use of telehealth to train/coach parents to deliver various ABA strategies
    - Functional Analyses (Wacker et al., 2013)
    - Functional Communication Training (Suess et al., 2014; Wacker et al., 2013)
• Clinician/Registered Behavior Technician (RBT) is in person and connects with a supervisor via telehealth

• Research supports the use of telehealth to train/coach RBTs to deliver ABA treatment (Ausenhus & Higgins, 2019; Higgins et al., 2017; Fisher et al., 2014)
Direct Therapy via Telehealth

• RBT delivers applied behavior analytic (ABA) treatment via telehealth
• Little to no research to support direct ABA treatment via telehealth
• **BUT**
  • Vast amount of research related to direct therapy via telehealth
    • Cognitive Behavioral Therapy
    • Counseling Services
    • Exposure Therapy
• American Telemedicine Association
  • Published guidelines for telehealth with children and adolescents (Myers, 2017)
Case Study #1: Jacob – Parent Training Model

- **Diagnosis:** Autism Spectrum Disorder
- **Age:** 6 years old
- **Brief History:**
  - Lived at home with Mom
  - Attended 1st grade @ local elementary school
  - Vocal language
- **Reason for Referral**
  - Lost eligibility for clinic-based services
  - Referred to our team for telehealth consultation of his problem behavior
Telehealth Risk Assessment

- South Carolina Association for Behavior Analysis
  - Risk-Benefit Analysis Tools
- Cox, Plavnick, & Brodhead (2020)
  - A Proposed Process for Risk Mitigation During the COVID-19 Pandemic
Telehealth Risk Assessment

- **Question 1: What is/are the behaviors of concern?**
  - Jacob engaged in tantrums which consisted of crying, kicking, property destruction, and hitting
  - Jacob engaged in some pre-cursor behaviors
    - Jacob would scream at Mom prior to engaging in tantrums

- **Question 2: Does the family have adequate resources?**
  - Mom was very motivated to participate
  - Family had reliable internet and laptop at homes
  - Former clinicians were willing to come in for emergency help if needed

Based on this information, we determined Jacob was a good candidate for this model of telehealth
Pre-Intake Process

- Consent for Telehealth Services
  - Consent for video/audio use and recording during assessment and treatment
  - Consent for telehealth consulting services
    - Assessment
    - Treatment
    - Parent Training
Pre-Intake Process

- Sent equipment to Mom
  - Equipment
    - Logitech c903e webcam
    - Plantronics Voyager Legend Bluetooth Headset
  - University Google Hangouts Account
  - Equipment Loan Agreement
Pre-Intake Process

• Once Mom received all the materials, we conducted a phone conference and reviewed consent forms with Mom
• Helped Mom install and test equipment via telephone
  • If In-Person is Needed During Covid-19 Pandemic -
    • Ensure you have safety equipment for entering home
      • Face mask
      • Gloves
      • Disinfecting spray
  • All non-essential individuals asked not to be present during this meeting
  • Choose isolated room ahead of time so you are not walking around the home
Pre-Intake Process

- Trained mom on technology
  - Reviewed Pre-Session Technology Checklist
  - Reviewed Technology Troubleshooting Sheet
Technology Troubleshooting

1. **What to do if connection is interrupted**
   - For Jacob, this was super important!
     - Because of the problem behavior, if connection was weak, Mom was instructed to immediately end session in order to avoid any harm

2. **What to do if problem behavior becomes too intense?**
   - We developed a termination criteria
     - Level 1 – Screaming
     - Level 2 - Crying
     - Level 3 – Throwing Items (not at people)
     - Level 4 - Throwing Items (at people)
     - Level 5 – Hitting
   - If Jacob engaged in 5 or more instances of Level 5 problem behavior, we terminated the session
   - We also always checked with Mom and asked her if she was okay to keep going
Treatment Intake

- Functional Assessment Interview (FAI)
  - Conducted FAI with Mom via telehealth
- Collected ABC Data
  - Based on FAI, we identified hypothesized maintaining antecedent and consequences for problem behavior
  - Scheduled a meeting with Mom to conduct Trigger Analysis via Google Hangouts
    - Decided to conduct trigger analysis in order to increase efficiency of observations via telehealth
Trigger Analysis

• Coached Mom via Bluetooth to deliver various antecedents in order to evoke problem behavior
• Mom did not collect data!
  • Clinician collected data on antecedents
Things We Learned

• Prior to session – ensure equipment is working
• Remind parent of goals of session
• Remind parent of position of camera
  • Unless you purchase a web cam with at least 180 degree zoom, parent must place camera in the corner of the room (preferably up high)
• Before coaching – decrease reactivity by interacting with client
  • Stimulus fading of telehealth
• Based on the trigger analysis, we identified potential maintaining variables
• Designed functional analysis (FA) procedures
  • Trained Mom to conduct FA using remote behavioral skills training
Remote Behavioral Skills Training (BST)

- **Instructions**
  - Read and explained the written description of each condition and answered questions

- **Modeling**
  - Showed video model of each condition through screen-share app
  - Video model was 2 minutes in duration

- **Rehearsal**
  - Practiced each condition with simulated client

- **Feedback**
  - Provided at the end of each condition
  - Corrective and behavior specific
  - Continued until mastery criterion was met (2 consecutive sessions at 90% or above)
Video of Training
Video of Rehearsal
Behavior Plan Development

• Based on Functional Behavior Assessment
  • Jacob’s problem behavior was found to be maintained by access to tangibles
  • Function-based intervention plan:
    • Choice Intervention Plan w/ Tolerance Training (Peck Peterson & Royster, 2001)
  • Began intervention plan training with Mom via telehealth
• Using the same remote BST method, we trained Mom to implement choice intervention

• Before First Training Meeting
  • Created Choice Intervention Instructions and emailed to Mom 1 day prior to meeting
  • Instructed Mom to have the following materials during meeting
    • Potential reinforcers
    • Treatment plan materials
      • 1 green cup, 1 red cup, and 1 yellow cup
      • iPad
      • Moderately preferred materials
Choice Intervention Plan

- **Green Choice (Wait)**
  - 2 minutes

- **Yellow Choice (Ask for Break)**
  - 30 seconds

- **Red Choice (Problem Bx.)**
  - 10 seconds
Choice Intervention Training

• Shared screen with Mom and reviewed instructions
• Showed video model of choice intervention
• Rehearsal and Feedback
  • Mom practiced with BCBA pretending to be client
  • Continued until Mom met mastery criteria
<table>
<thead>
<tr>
<th>Procedure Step</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allows Access to iPad</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Mom prompt Jacob to give back the iPad and immediately provides choices</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>If problem behavior occurs</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Mom provides ignores for 10 seconds</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>If Jacob makes a choice, Mom delivers correct choice</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
Choice Intervention Sessions

- Scheduled sessions 3x a week with Mom
  - Mom did not implement intervention on the other weekdays
- Prior to Treatment Sessions
  - Reminded Mom of pre-session checklist
  - If needed, provided “booster” training session
- During Treatment Sessions
  - Coached Mom via Google Hangouts
  - Collected data on Jacob’s problem Bx. – Mom Did Not Take Data!
Video of Choice Intervention Session
• Began to fade coaching sessions per week to be less intrusive
  • After two weeks of successful treatment, began to fade number of days with telehealth coaching
• Fading Plan
  • Level 1: Mom began to run intervention 5 days a week, 3 days involved direct coaching
    • Mom would email data sheet to clinician
    • Through HIPAA secure cloud storage system, clinician stored data sheets that Mom emailed
Choice Intervention Sessions - Fading

- If there were any issues during the non-coached days
  - Mom and clinician would meet without Jacob to troubleshoot
  - On some occasions, Mom would record session and would scan the video into HIPAA secure cloud storage
    - If more intrusive support needed, clinician would observe more sessions in-vivo
Choice Intervention Sessions - Fading

• Fading Plan
  • Level 2: Mom ran intervention 5 days a week, 2 days involved direct coaching
  • Mom was comfortable at this level and so we decided to stay at Level 2
• After 2 months, faded telehealth services completely
Fading Timeline - Jacob

- November: Started Telehealth Services
- Mid November: Began fading – Level 1
- December: Fading – Level 2
- January: Continued Level 2
- February: Terminated Telehealth Services
Case Study #2 – Erica – Supervisor Mediated Model

• **Diagnosis:** Autism Spectrum Disorder
• **Age:** 4 years old

• **Brief History:**
  • Lived at home with Mom and Dad
  • Attended local pre-school
  • Basic echoic repertoire
  • Point and lead parents for communication

• **Reason for Referral**
  • Not eligible for services through insurance
  • Parents seeking private consultation
  • Referred to our team for telehealth consultation
Telehealth Risk Assessment

- **Question 1: What is/are the behaviors of concern?**
  - Mom wanted to increase Erica’s communication
  - Erica did not engage in any severe problem behavior
    - Minimal crying/tantrums

- **Question 2: Does the family have adequate resources?**
  - RBT was willing to come into home to assist
  - Family had reliable internet and laptop at homes

Based on this information, we determined that Erica would be a good candidate for telehealth
Pre-Intake Process

- Consent for Telehealth Services was sent to both Mom and RBT
  - Mom
    - Received consent for video/audio use and recording AND consent for consulting services
  - RBT
    - Received consent for video-audio use and recording
    - Letter of commitment
    - Reimbursement contract
Pre-Intake Process

• Sent equipment to family
  • Equipment
    • WebCamera (for better view)
    • Bluetooth Device
    • VSee (video conferencing software)
  • Equipment Loan Agreement
Pre-Intake Process

- Established two separate agendas for RBT and Mom
  - RBT
    - Training and supervision relationship
  - Mom
    - Treatment consulting
RBT Training and Supervision

- Developed training goals directly related to treatment with Erica
- Scheduled separate meetings with RBT to work on training goals
RBT Training and Supervision

- Developed telehealth supervision session checklist for clinician

FBA.com Clinical Meeting & Session
Task Analysis for WMU Consultants

To clinical meetings and sessions with clients:
- Prepare your daily goal
- Prepare:
  - Reading materials
  - Graphs from previous session for review
  - Data sheets
  - Protocols
  - Material checklists for upcoming sessions
- Touch base with RBT to make sure everyone is on the same page with to prepare for the next session
- Upload the following materials to Box and/or email your teams
  - A clinical meeting/session agenda (see team “E” folder for exar
  - Any necessary reading materials, protocols, lists of needed stim sheets
Consultation w/ Erica’s Mom

• Once Mom received all the materials, we conducted a phone conference and reviewed consent forms with Mom
• Helped Mom install and test equipment via telephone
• Reviewed pre-session checklist and technology troubleshooting
  1. What to do if connection is interrupted?
     • Given that RBT was implementing sessions for skill acquisition, we determined that RBT would continue session if connection was dropped
  2. What to do if problem behavior becomes too intense?
     • Similar to Jacob, we developed levels of problem behavior for Erica
     • If Erica cried for more than 20 minutes and was not able to be calmed down, RBT ended session
Treatment Intake Process

• Intake Interview
  • Conducted intake interview via telehealth
    • Coached RBT via Bluetooth
    • Both RBT and BCBA took data
Skills Assessment Training

- Identified through interview that Erica needed a skills assessment
- Scheduled meeting with RBT via VSee
  - Trained on one milestone assessment at a time
  - Began with Mand Assessment Training
Mand Assessment Training Via Telehealth

• Before Meeting
  • Created Mand Assessment Instructions and emailed to RBT 1 day prior to meeting
  • Instructed RBT to have the following materials during meeting
    • Potential reinforcers
    • Extra person to act as simulated client
Mand Assessment Training Session

- Shared screen with RBT and reviewed Mand Assessment Instructions
- Showed video model of mand assessment
- Rehearsal and Feedback
  - At this time, we asked RBT to give Bluetooth to rehearsal partner
  - Continued until RBT met mastery criteria
Video of Mand Assessment Training

• NEED TO FILM THIS!
Mand Assessment Session

- Coached RBT via Bluetooth device during Mand assessment with Erica
- RBT and BCBA both collected data
- Things we learned:
  - Prior to session – ensure equipment is working
  - Remind parent of goals of session
  - Remind parent of position of camera
    - Unless you purchase a web cam with at least 180 degree zoom, parent must place camera in the corner of the room (preferably up high)
  - Before coaching – decrease reactivity by interacting with client
    - Stimulus fading of telehealth
- Conducted post-session meeting to go over session for the day
Video of Mand Assessment Session

• NEED TO FILM
Treatment Training

• Developed treatment plan based on assessment results
• Created mand training protocol for RBT
• Followed same steps for Mand Training as we did for Mand Assessment Training
• Once RBT met mastery criteria, began treatment implementation
Treatment Sessions

- Scheduled Mand Training sessions 5x a week with RBT
- Prior to Mand Training Session
  - Reminded RBT of pre-session checklist
  - If needed, provided “booster” training session
- During Mand Training Session
  - Coached RBT via Vsee
  - RBT and BCBA continued to take data
- After Erica mastered her first mand target, began to fade coaching
Video of Treatment Session

Need to film!
Fading Coaching

• During fading, RBT continued to implement mand training 5x a week
  • Created systematic plan to fade out coaching
  • Developed system for sharing data electronically
    • RBT scanned data sheets with her phone and emailed de-identified data to my work email
    • Once received, we uploaded data onto HIPAA compliance cloud storage system and deleted data through email
Fading Coaching

- Adopted asynchronous telehealth model
  - RBT would video record sessions periodically to send to BCBA for supervision
RBT Coaching - Fading

March

Level 1
Coached RBT 80% of session
- 4 session of telehealth coaching
- RBT implemented 1 session independently

April

Level 2
Coached 70% of sessions
- 3 sessions of telehealth coaching
- RBT implemented 2 sessions independently

May

Level 3
Coached 50% of sessions
- 2 session of telehealth coaching
- RBT implemented 3 sessions independently

June

Level 4
Coached 20% of sessions
- 1 session of telehealth coaching
- RBT implemented 4 sessions independently

July –
Continued Level 4
Continued
Case Study #3 – Erica

- **Diagnosis:** Autism Spectrum Disorder
- **Age:** 14 years old
- **Brief History:**
  - Lives at home with Mom, Dad, Brother, Sisster
- **Reason for Referral**
  - Was receiving services at an autism clinic in Iowa, but moved to a rural area in Michigan
  - Looking for a continuation of services for Erica
Pre-Intake Process

• Telehealth Risk Assessment
  • Using the referral files and contacting Mom via telephone, we asked the following questions
    • **Question 1: What is/are the behaviors of concern?**
      • Erica’s Mom wanted to continue ABA services in Michigan
    • **Question 2: Does the family have adequate resources?**
      • Mom has an iPad that Erica can use for herself
      • Mom has reliable internet
Pre-Intake Process – Additional Questions

• Question 3: Does the client have some necessary pre-requisite skills for direct therapy via telehealth
  • Erica has rule-governed behavior and can sit for more than 10 minutes at a time in front of a computer with little help
  • Erica engaged in minor problem behaviors

Based on the information, Erica is a good candidate for direct telehealth
Pre-Intake Process

• Consent for Telehealth Services sent to Mom
• Assent form should was sent to Erica
  • Letter was sent to Erica via Mom
    •Outlined the direct therapy relationship in terms that Erica could understand
• Equipment was not sent to Erica because we decided to use her iPad and University Google Hangouts
Assent Form for Erica
• Conducted Functional Assessment Interview (FAI) with Erica’s Mom via Google Hangouts to identify needs for Erica
• After FAI, we determined that Erica’s direct therapy goals would include
  • Social Skills
    • Conversations
  • Tolerance Training and FCT (Austin et al., 2015; Fisher et al., 2000; Hagopian et al., 2005)
    • Teaching to Wait for Access to Reinforcers
Intake Process

• Met with Erica’s Mom to outline session format
  • Outline programs for direct telehealth services
  • Outline rules for Erica and rules for the rest of the family during sessions
• Identify schedule
Programs for Direct Telehealth Therapy

• Reviewed program for teaching conversations to Erica with Mom
  • Therapist would use remote BST to teach Erica conversational skills
  • Therapist sent laminated instructions on how to have conversations to Mom to give to Erica

• Reviewed tolerance training program
  • Therapist would use remote BST to teach Erica how to wait for access to reinforcers when someone tells her to wait

• For both programs
  • Reinforcement: Token Economy
    • Erica earned stars
    • Once Erica earned 5 stars, she could exchange for 5 minutes of iPad time
  • Reinforcer delivery would be facilitated by Mom and/or brother (only for access to iPad)
Rules for Telehealth Sessions

- Mom was instructed to have Erica sit at the kitchen table with iPad and program materials ready
- Mom was instructed to help Erica get on Google Hangouts and to answer clinicians call
- Mom and/or older brother would need to be available during session
  - Help serve as conversational partners
  - Help deliver iPad time when iPad time was used as a reinforcer
Pre-Session Process

• Met with Erica
  • Tested equipment
  • Decrease reactivity with Erica by having short sessions where we just talked and played games
  • Once reactivity has decreased, we had a short session where we went over the session format
• Using Google Hangouts
  • Asked Erica to take out instructions for how to have a conversation
• Instructions - Reviewed steps for having a conversation
• Model - Shared screen and showed video model of correct conversation skills
• Rehearsal – Therapist asked Erica to find Mom or Older brother to practice conversations
• Feedback - Provided feedback to Erica
  • Delivered praise for correct responses
  • Delivered corrective feedback
    • “You forgot to ask a question. Next time, you can ask How are you, What are you doing, etc.”
  • Showed Erica how many stars she had earned
• Repeat Rehearsal and Feedback until Erica earned 5 stars
How to Talk to Friends

Say Hello

Wait

Ask Questions
Data Sheet
Maintaining Conversations

*Mark a “+” if Anna completes the step correctly and independently. Mark a “-“ if Anna needs help or completes the steps incorrectly.

<table>
<thead>
<tr>
<th>Task</th>
<th>(+) or (-)</th>
<th>(+) or (-)</th>
<th>(+) or (-)</th>
<th>(+) or (-)</th>
<th>(+) or (-)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Make eye contact</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2) Wait before talking</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3) Ask question (who, what when, where, how)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4) Make a comment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Video of Conversations

• NEED TO FILM
1. Contrive a situation in which Erica must wait for a preferred activity and/or item
   • Mom and/or Older Brother asked to facilitate
     • Example: Older Brother asked for Erica’s iPad, Mom ask Erica to wait for a snack
     • Mom and/or Older Brother were instructed to say “You have to wait for ______”
       1. Therapist started timer

2. Continue Steps 1 for 15 minutes
Video of Tolerance Training

• NEED TO FILM
Session Format

1. Say “Hello” and talk about how Erica’s morning was going - 5 minutes
2. Ask Erica to make a choice on which program she wanted to work on first – 2 minutes
3. Began program (either Conversational Skills OR Tolerance Training) - 15 minutes
4. Break – 5 minutes
5. Repeat Step 3 for 2nd program – 15 minutes
6. Break – 5 minutes
7. Therapist choice what program we worked on next – 2 minutes
8. Began program – 15 minutes
9. Break – 5 minutes
10. Began 2nd program – 15 minutes
11. Said goodbye to Erica
12. Go over session with progress with Mom
Video of Session

• NEED TO FILM 15 MINUTES