Autism Telehealth in Crises and Beyond

Ron Oberleitner
CEO – Behavior Imaging
Robby’s Dad

Disclosure -
CEO, Shareholder of Caring Technologies, Inc, dba Behavior Imaging ; PARENT
2005 – Hurricane Katrina

For Families – Every Year, Month & Day

2005

Hurricane Katrina

AutismCare

www.autismcares.org
My Background

1990's: ‘My Day Job’

- Surgery Software
- Image Guided Surgery
- Telemedicine w/ Operation Smile

1996 – 2020: ‘Home Life and Passion’

- Robby diagnosed at 3½ years
- Robby at 24 yr.
- Robby as ‘lobbyist’
Autism Telehealth History

- 2005: Autism Telehealth presented at ATA
- 2007: 1st Autism Telehealth Summit
- 2010: Telehealth for Rural Therapy via Military Project
Realtime Telehealth (aka Videoconference)

St. Luke’s Autism Clinic Launches Telehealth Service

By Chris Langlais, News and Community

April 26, 2019

Dr. J. Timothy Lawall has been aware for some time that Idaho families have had to go to great lengths – literally – to see him at his office.

It began to think, “Feet of all about the people coming from Nampa”, and Dr. Lawall, whose practice is part of the St. Luke’s Children’s Center for Autism and Developmental Disabilities, said, “I would time it: they’d hear a couple minutes and then ‘What?’ And you, plus plus, it’s... It’s a big waste of time.”

So, for some time, Dr. Lawall has been excited about the possibility of bringing telemedicine to his clinics. But last, some legislative hurdles had to be overcome. After legislators made some changes to Idaho’s laws, Dr. Lawall was eager to take the next step with his clinics.

HIPAA-compliant Videoconferencing

Collaborative Care, Integrative with Primary Care

e.g. Primary care provider office
Realtime Telehealth (aka Videoconference)

CASP Telehealth Toolkit (forthcoming) →

HIPAA-compliant Videoconferencing

<table>
<thead>
<tr>
<th>In-person Direct Care with Telehealth Clinical Direction</th>
<th>Whenever possible, direct care services should be delivered in person by either the RBT or BCBA. Clinical decisions on the direct care provider should be based on the needs of the individual patient. Organizations may employ a partial telehealth model in which a direct care provider renders services 1:1 with the patient in their home and the QHP provides clinical oversight via real-time videoconferencing to minimize the number of providers entering patient homes. This model allows for the patient to continue their current focused or comprehensive treatment program at the recommended dosage.</th>
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<tr>
<td>Telehealth Direct Care and Clinical Direction</td>
<td>If the patient has the appropriate pre-requisite skills (see below), direct ABA treatment may be appropriate to deliver directly via real-time videoconferencing. This model would allow the patient to continue their focused treatment program at the recommended dosage.</td>
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<tr>
<td>Caregiver-implemented interventions</td>
<td>Caregiver-implemented treatment may be appropriate if the child or another family member in the household is immunocompromised. This model would allow the caregiver to be coached to implement the treatment programs (or modified treatment programs) at home with their child.</td>
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behaviorimaging.com
Other Telehealth Technologies

Asynchronous Telehealth

- Behavior Imaging
  - Remote 'screeners' / questionnaires

Remote Monitoring

- smart sensors, cameras, devices

Patient-centric apps

- e.g. VB MAPP

CHADIS

Evidence-based, Shared Decisions.

A comprehensive web-based screening, decision support, and patient engagement system.

behaviorimaging.com
Telehealth for Autism Healthcare

Medical

Seizures *
Sleep issues *
GI *
Obesity *
Genetic *
Med Management *

Mental / Behavioral Health

Earlier Diagnosis (waitlists) *
Anxiety *
Behavior Analysis in Natural Environment *
Depression / Suicidality *
OCD
ADHD

* Telehealth Solutions exist

Why???

➢ Conventional care is $$, unsustainable
➢ > 25% (non verbal) can’t communicate their health needs
➢ Distance from helpful Providers
➢ Behaviors don’t always appear at clinic visit
➢ People with ASD needlessly die younger!
HIPAA-conforming video capture

Behavior Capture
A BEHAVIOR IMAGING® SOLUTION

Preceding Event:
Sibling takes the toy

Behavior / Event:
Child has tantrum

Consequence:
Father disciplines child

Research funded by NIH #2R44HD052340-02
1-2-3 to a Functional Behavior Assessment

1. PRESCRIBE VIDEO CAPTURE

2. ANALYZE BEHAVIOR DATA

3. BEHAVIOR PLAN
Studying Asynchronous Telehealth Effectiveness

Assessment of Behavior Imaging (B.I.) Technology in the Classroom

Uwe Reischl, Ron Oberleitner, Conrad Colby, Andrew Chouffline

Background
Behavior Imaging (B.I.) is the capture and/or secure sharing of behavior on video in a natural environment for treatment, training, or assessment. Like wireless-remote-activated TV, the behavior image goes “back in time” to capture antecedents for improved data collection. It is used by educators and health providers for a variety of applications, including Functional Behavior Assessment (FBA).

Geographical Distribution

Objectives
Evaluate 1) acceptance of Behavior Imaging as a standard tool in autism classrooms for FBA decision support, staff & parent training, and assessment; 2) adoption obstacles.

Methods and Procedures
The Behavior Imaging tool used is B.I. Capture™, which allows users to capture video of behavioral events in their natural environment with one click of a remote control. 29 users from 11 clinical sites were given B.I. Capture along with marketing & education materials, and asked to perform specific tasks including installation, capturing antecedents, annotation, online sharing, & assessing prior research. They completed surveys regarding B.I. Capture’s usability, functionality, and applicability to their clinical environments.

Results
Phase I - Functional Behavior Assessment
- 43% lower data collection errors
- Greater awareness of classroom activities
- Assess multiple students simultaneously

Phase II - Technology Adoption
Usability
- 90% of users had no difficulty installing B.I. Capture
- Avg. of 85% of users completed typical tasks without help

Additional Uses
Alternative Proficiency
Staff Training
Remote Consultation

Conclusions
The majority of educators surveyed working with children with autism will support the use of B.I. Capture as a Behavior Imaging tool in the classroom. FBAs and other uses can be generally-accepted applications.

Most educators were able to use B.I. Capture for relevant data collection of behavior events, adoption obstacles are manageable.

Supported by NICHHD SBIR grant #R44HD052340.
Steps to a Telehealth Diagnosis

1. **Pediatrician referral**
2. **Families provide evidence from home or school**
3. **Specialty Clinics assess the child through store-and-forward telehealth**
4. **Provide results to families in office or through videoconferencing**
Disrupting Autism Healthcare “System”

TODAY

Family Concerns → Pediatrician → Clock → Specialty Diagnostic Clinic → Medical Diagnosis

2 years → 3 years → 4 years
Disrupting Autism Healthcare “System”

**Value Propositions ...**
- As good as in person (Smith et al, 2016)
- < Half the time! (Reischl et al, 2019)
- Clinicians see more patients, reduce backlog, **get paid** - Medicaid (AZ), (2019)
A.I. Should Add More Clinical Benefits
Autism Use Cases

What Clients use.....

- Diagnostic Assessments
- Behavior Assessment
- Remote Consultation
- Staff / Parent Training
- Skill Assessment
- Supervise staff
- Medication Management
- Better Clinical Trials

What Clinicians use....

- Analyze per DSM 5
- Enhanced Reports
- Analyze, Annotate
- Behavior changes

Use Case Videos at www.behaviorimaging.com/products
Results vs. Conventional Methods

Diagnostic Assessment ...
• 88% agreement to In Person
• NODA fraction of Clinical wait time (red) vs. In Person Assessment

(Functional) Behavior Assessment
• Response = 1 vs. up to 30 days (t)
• 42% less costly ($)
  • Eg. Saves $12,000 / year per client *
• Save Clinical Time (reduce travel)
• 43% less data collection errors
• Video data invaluable to measure progress
Realtime Telehealth
(Covid 19 induced)

Asynchronous telehealth / remote monitoring / AI

EHR / practice management system

TODAY – Relative Weight of Health IT in Provider’s Practice

St. Luke’s Autism Clinic Launches Telehealth Service

Dr. Timothy Leavell has been aware for some time that Idaho families have had to go to great lengths — literally — to since see him at his office.

“Teller to think, at first all, about the people coming from WGA,” said Dr. Leavell, whose center office is part of the St. Luke’s Children’s Center for Autism and Neurodevelopmental Disabilities. “The would drive two hours for a 30-minute follow-up visit. And you stop and think, ‘That doesn’t make any sense at all. That’s a huge waste of time.’”

So, for some time, Dr. Leavell has been excited about the possibility of bringing telemedicine to his clinic. But first...
Realtime Telehealth

EHR / practice management system

Asynchronous telehealth / remote monitoring / AI

Tomorrow – Relative Weight of Health IT in Provider’s Practice

Best Autism Providers of the future! Partial Telehealth
Telehealth Mindset and Strategies

• Increase Access thru Telehealth
  – *The Patient Will See You Now* – Eric Topol MD
  – Most Ethical Thing You Can Do for Your Clients

• Do What You Do In Person, Only change is Where
  – Screen is a motivator for most clients
  – (Regulatory) Secure Videoconferencing, Elec Health Records, Behavior Imaging (Class I Exempt)

• Let Telehealth Help You Mitigate Risk
  – Document the provision of care
  – Reduce No-shows

• Deploy RT Telehealth; Pilot asynchronous and Remote Monitoring

Best Autism Providers of the future!

*Partial Telehealth*
Other Emerging (Autism) Telehealth Resources

AXR INSTITUTE
VIRTUALLY ANYTHING AND EVERYTHING IS POSSIBLE!
WWW.AUTISMXR.ORG

Idaho Assistive Technology Project
Making Technology the Great Equalizer
Telehealth Call to Action!