

Increasing Accessibility to Behavioral Evaluation and Treatment Through Telehealth

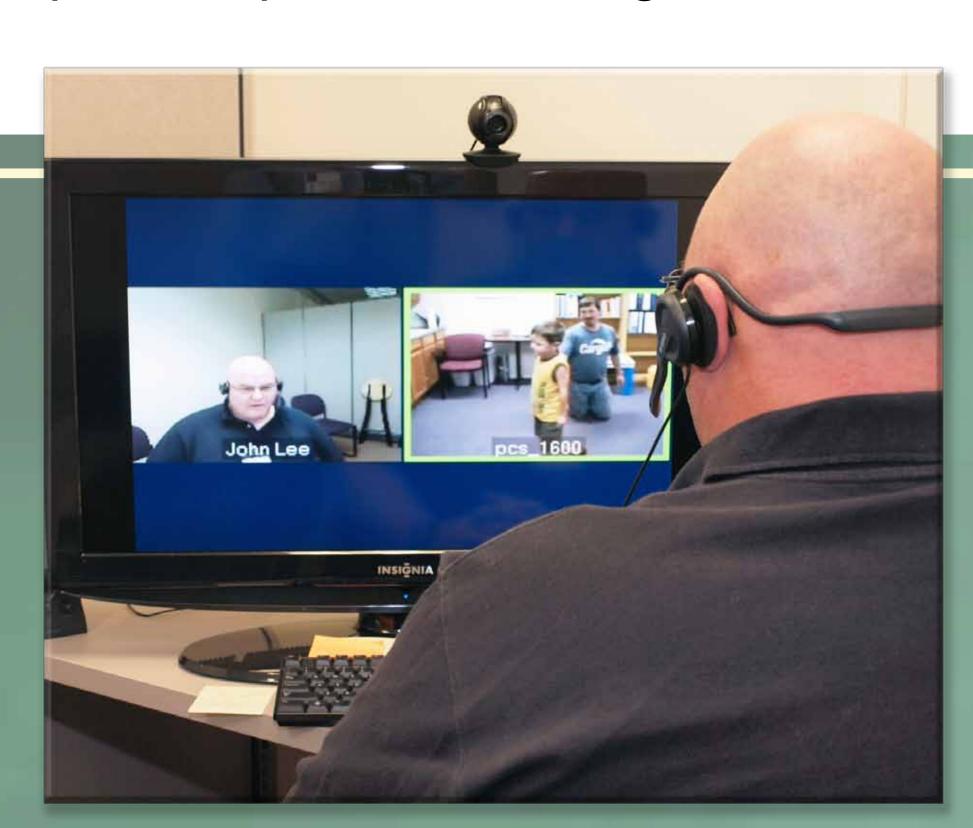


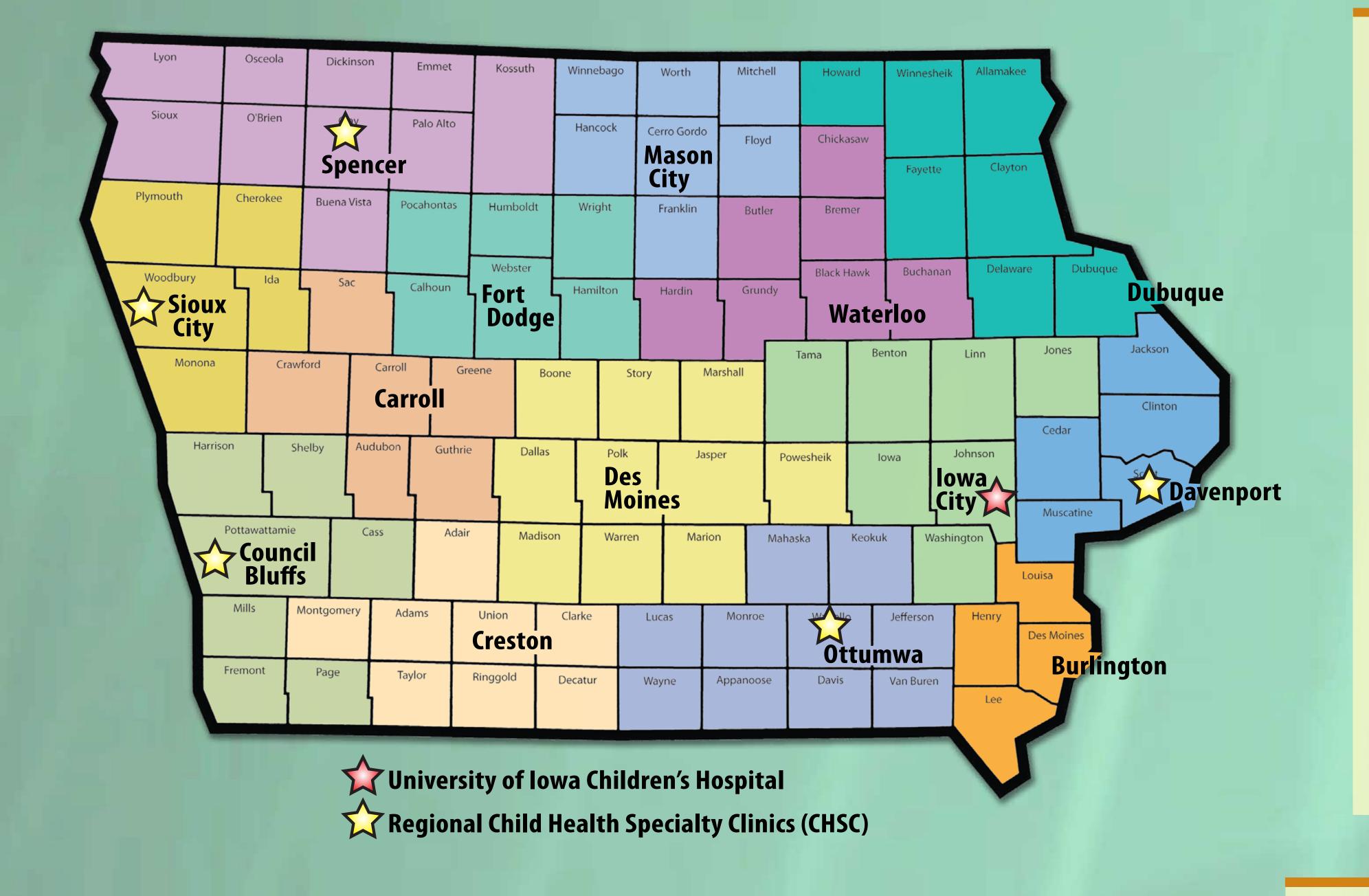
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Abstract

Providing evidence-based behavioral services for children with autism can be challenging in rural areas due to the limited accessibility of trained professionals. Previous research has demonstrated that parents can be successfully trained in their homes to conduct functional analysis (FA) and functional communication training (FCT) to reduce the disruptive behavior of young children with autism and other developmental disabilities (Wacker et al., 2004). This study implements a service delivery model in which telehealth is used to "coach" parents of young children with autism spectrum disorders (ASD) to conduct these behavioral procedures at five regional health centers across a rural state. Preliminary findings indicate that the combination of functional analysis and function-based behavioral interventions (FCT) has been effective in decreasing children's problem behaviors and that parents have been able to implement procedures using remote coaching.





Participants and Setting

- Thus far, 31 children have completed diagnostic and developmental evaluations to determine if they meet the criteria for an ASD. All children were between 1 and 6 years of age (mean age of 56 mos.) and displayed problem behaviors (e.g., severe tantrums, aggression, self-injury). The evaluations occurred at the Center for Disabilities and Development, part of the University of Iowa Children's Hospital (UICH).
- Following diagnosis, functional analysis (FA) and functional communication training (FCT) were conducted. This evaluation occurred using 2-way teleconferencing connections linking behavior specialists at the UICH with a regional Child Health Specialty Clinic (CHSC) near the child's home.
- Five CHSC sites have participated in this project (Council Bluffs, Davenport, Ottumwa, Sioux City, Spencer). Round-trip distances from these sites to UICH range from 110 miles to 600 miles.

Procedures

- Each child was evaluated initially to assess development and confirm diagnosis of ASD (ADI-R, ADOS, DSM-IV criteria, Mullen Scales, and Vineland-II).
- Following an ASD diagnosis, a FA was conducted. The FA occurred in a CHSC clinic room and was based directly on procedures described by Iwata et al. (1982/1994) to identify the environmental variables maintaining the child's problem behaviors. All sessions were 5 min in duration. During the FA, parents were provided with remote coaching on implementation of the procedures from a behavioral specialist located in a telehealth center at UICH. A CHSC coach was present at all FA sessions to provide the parent with support as needed.
- FCT was initiated after completion of the FA. FCT was individualized based upon the results of the FA and the child's communicative repertoire and consisted of reinforcing appropriate commands that were matched to the identified function for problem behavior. During FCT, engagement in problem behavior resulted in planned ignoring (extinction) or mild punishment (e.g., guided compliance). All sessions were 5 min in duration and parents conducted this treatment while receiving remote coaching from the behavior specialist and support from the CHSC coach.
- FA and FCT sessions lasted for 1 hour weekly for up to 6 months for each child.
- Telehealth sessions were conducted using pc-based teleconferencing software (H.323 compatible video conferencing hardware and software, including Emblaze-VCON vPoint HD software running on Windows XP workstations). All sessions were recorded and later coded for both prosocial and disruptive behaviors.

Results

Preliminary data from the group of families participating in the project have shown the following:

- In the current sample, 9 children were diagnosed with autistic disorder and 19 with PDD-NOS. Three children were not diagnosed with an autism spectrum disorder.
- All of the children with autism received a diagnosis of intellectual disability (ID), while 5 of the 19 children with PDD were diagnosed with ID.
- Functional analyses have been completed with 17 participants. On average, the FA's were completed in 4.8 sessions. A clear "social" function (escape and/or gain) was identified for 16 participants.
- Functional Communication Training has been completed with 9 participants. The mean reduction in problem behavior after FCT treatment was 92.9% (SD = .17; see table 1.)
- Transportation costs and staff time are significantly reduced compared to costs to send therapists to clients' homes (\$57 vs. \$331 per child per week if services provided in-home).
- Parent acceptance of treatment has been high (average rating of 6.7 on a 1-7 scale).

Discussion

- Expanding access to behavioral services is an urgent public health need in rural states.
- Preliminary results of this project indicate that parents can be successfully coached using telehealth to conduct functional analysis and functional communication training to reduce the disruptive behaviors of young children with autism.
- Compared to an in-home service delivery model, the use of telehealth has resulted in increased efficiency (i.e., ability to conduct a greater umber of evaluations within a unit of time), cost savings, and comparable treatment acceptability.

Table 1: Summary of Results of NIH-Funded Projects

	Wacker & Berg (1992-1996)	Wacker, Berg, & Harding (1996-2000)	Wacker, Berg, & Harding (2000-2004)	Wacker, Berg, & Harding (2004-2010)	Lindgren & Wacker (2009-present)
Number of children enrolled	28	26	20	30	31
Social function identified by functional analysis	92%	83%	100%	81%	94%
Mean decrease in problem behavior	67 %	78%	90%	90%	93%

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