Figure 2: NCHAM Model of Change for Service Delivery Using Teleintervention for Infants and Toddlers with Hearing Loss

Contextual Factors

- Transportation and scheduling challenges in both urban and rural/remote locations
- · Difficulty accessing early intervention services in natural environments
- Increasing early identification of hearing loss and need for early intervention services
- Improvements in hearing technologies, e.g., hearing aids, cochlear implants
- · Limited access to and shortages of highly-qualified DHH providers, particularly with LSL skills
- · Limited program funding
- Improvements in and decreasing costs of communication technologies, e.g., broadband, Skype- or Facetime-like video calling

Over-arching Listening and Spoken Language Early Intervention Principles

- Communication-focused parent-coaching intervention with skilled early intervention providers
- Natural environments to promote family-centered services incorporating family culture and routines
- · Full-time use of appropriately fit hearing technology
- Ongoing developmental assessments to monitor progress and outcomes

Teleintervention Service Delivery (Treatment)

- Services provided using Skype- or Facetime-like video-based communication
- 2 Tl sessions + 1 F2F visit/ month
- Recorded
 TI sessions

Service Delivery Outcomes

- Decreased travel time & intervention costs
- Fewer cancelled sessions
- More flexible scheduling
- Increased number of program service hours available
- Greater adherence to intervention principles (increased fidelity of implementation)

Provider Skill Outcomes

- Greater use of parent coaching
- Increased use of natural environments, including family culture, routines
- · Services more family-focused instead of provider-directed
- Increased self-assessment, feedback with recorded sessions

Caregiver Outcomes

- Increased caregiver engagement in intervention
- Increased self-efficacy in meeting needs of child who is DHH
- · Increased positive family/child interaction
- Increased use of natural environments to improve child outcomes
- Increased family participation using recorded sessions
- Increased caregiver satisfaction with services / delivery
- · Decreased time and travel costs

Child Outcomes

- Improved child language, cognitive, and social outcomes
- Increased child responsiveness to caregivers, family members