# Innovative and Promising Practices Spotlight



### South Dakota EHDI Creates Tele-Audiology Program

South Dakota (SD) has a near-universal newborn hearing screening rate (98%). However, it is at the 3-month and 6-month benchmarks where the state experiences high lost-to-follow-up (LTF) rates. Reasons for these high LTF rates include:

- 1. *Geographic isolation/rurality*. SD is classified as a frontier state, as more than half of counties have fewer than 6 people per square mile.
- 2. Transportation barriers. Families experience difficulties in accessing transportation to pediatricians and other physicians.
- 3. *Limited pediatric audiology services.* Due to the rurality and lower income levels in the state, much of the state experiences a shortage of healthcare providers. Every county in SD is designated in full, or in part, as a Health Professional Shortage Area as defined by the Health Resources & Services Administration (HRSA, 2021). This all compounds, placing the SD frontier communities in the unfortunate situation where they face an increased cost per capita for the most basic health care services in a population that does not have the financial means to support this cost.

To address these high LTF rates and increase individuals' access to pediatric audiology services in central and western SD, the <u>SD</u> <u>EHDI Collaborative</u> (Collaborative) created a tele-audiology program in 2017. Over the past 4 years, the Collaborative has set up 3 tele-audiology locations across the state.

#### **PROJECT HIGHLIGHTS**

 The program uses a hub-and-spoke model<sup>1</sup> to complete infant diagnostic assessments using a synchronous method of service delivery. This model allows the 3 sites to operate at 180 miles, 260 miles, and 380 miles from a single pediatric audiologist. The model targets infants from birth to 6 months who have been referred for follow-up as a result of their newborn hearing screening(s).

#### Here's how it works:

- From the centralized hub site, the pediatric audiologist uses remote control software applications to conduct the testing, interpret results, and video conference with the family. The pediatric audiologist's test battery includes video otoscopy, tympanometry, and auditory brainstem response (ABR) testing.
- The infant, the infant's family, and a trained test assistant are located at the distant spoke sites. The trained assistant places equipment on the infant to facilitate the assessment.
- The audiologist provides results to the family immediately after testing is completed using software that allows for audiovisual communication.
- Since the creation of the tele-audiology program, SD's EHDI Collaborative has gained attention from many other states who wish to start similar programs. Members of the Collaborative have provided resources and/or information to individuals in Wisconsin, Kansas, and Massachusetts. In addition, their model was referenced in the <u>NCHAM Taskforce on Teleaudiology</u> in supporting infants and families.



#### **PROJECT CHALLENGES**

- One major challenge with starting a tele-audiology program is strengthening the referral process. Increasing awareness
  among pediatricians and other physicians of this local resource and when to refer for further testing has been a challenge
  that must be consistently addressed.
- Although spoke sites are designed to reduce the distance between the audiologist and the family, transportation to the spoke site can still be challenging for some families. SD is a rural state, which creates additional transportation barriers.
- The Collaborative is still in the process of determining how best to serve patients for whom there is a language barrier. The process of organizing interpreter services at the spoke sites is still a work in progress.

#### **PROJECT SOLUTIONS**

- Members of the SD EHDI Collaborative continue to share information and raise awareness of the tele-audiology program. Specifically, they send out flyers/cards to area hospitals and clinics, manage a <u>Facebook page</u>, and annually present to medical students in the Pediatric Interest Group at the Sanford School of Medicine. Recently the program was featured on a local news station, <u>Dakota News Now</u>.
- This model is supported by local EHDI Champions. The EHDI Champions are individuals from the spoke sites who advocate
  for the program, assist with referring patients to the spoke sites, and prepare the patients for a diagnostic hearing test.
  They have been an integral part of making this program a success.
- The tele-audiology program is a collaborative effort that is made possible by a group of physicians, nonphysician clinicians, and audiologists who are passionate about increasing children's access to these services.

#### ACCESSIBILITY IN TELE-AUDIOLOGY PROGRAM<sup>2</sup>

- The video platform allows for closed captioning.
- Spoke sites are in close proximity to SD Native American reservations. For example, one of the spoke sites (in Hot Springs, SD) is approximately 1 hour (or 55 miles) from the Pine Ridge Reservation. Another one of the spoke sites (in Winner, SD) is approximately 50 minutes (or 52 miles) from the Rosebud Indian Reservation.

#### **IMPLEMENTATION STRATEGIES**

- The American Speech-Language-Hearing Association (ASHA) considers telepractice to be an effective medium for the delivery
  of audiological services. ASHA created a *position statement on telepractice, which outlines it as* an appropriate model of
  service delivery.
- The success of this tele-audiology program is largely the result of local EHDI Champions, or individuals at the spoke sites who advocate for these services, know the importance of early hearing detection, and engage the community in this new resource.

#### HOW PEDIATRICIANS CAN SUPPORT THIS WORK

 When a newborn does not pass their hearing screening(s), it is important for pediatricians to refer that child for audiologic diagnostic testing with a pediatric audiologist. If the newborn did pass their newborn hearing screening but risk factors for atypical hearing are present, the infant should be referred for audiologic assessment with a pediatric audiologist. A repeat hearing screening is also recommended for infants who are readmitted to the hospital in the first month of life.

#### How Pediatricians Can Support this Work cont.

- For infants who are diagnosed as deaf or hard of hearing, pediatricians should refer for additional testing to determine etiology of hearing thresholds. Specifically, the pediatrician should make the following referrals: 1) ENT/Otology for medical evaluation, 2) radiologic testing, such as a CT, to determine the anatomical status of the cochlea, 3) genetic testing, 4) ophthalmology to assess vision, and and 5) screening for congenital cytomegalovirus (cCMV) within the first 21 days of life.
- Pediatricians can also encourage families to attend follow-up appointments with the audiologist and to get connected with Birth to Three services.
- In a rural state where pediatric audiology services are limited, working with pediatric audiologists and/or your <u>state</u> <u>EHDI program</u> to create a tele-audiology program at your facility may improve infants' and families' access to these services.

#### QUALITY IMPROVEMENT OPPORTUNITIES QUALITY IMPROVEMENT OPPORTUNITIES

The Collaborative has a graduate research assistant who engages in yearly quality improvement activities, including activities that maintain and improve the tele-audiology infrastructure (e.g., trainings, updating software and hardware at spoke sites, spreading awareness of the program and the services they provide, scheduling appointments, etc.).

Based on ongoing quality improvement work, the Collaborative is working on implementing a system that allows for more consistent follow-up with families after they have been seen for a tele-audiology evaluation. Additionally, minor changes to the spoke site rooms have been made (e.g., adding noiseless fans) to make testing more comfortable for patients and their families.

Unfortunately, due to the COVID-19 pandemic and the small sample size of SD, the LTF rates do not adequately demonstrate the impact of the tele-audiology program. In addition, rates may not accurately reflect advances at this time due to the short duration of the program and disruptions in the program over that short period. Nevertheless, rates have decreased over time, with the lost-to-follow up rate for diagnosis in 2011 being 81.6% and the lost-to-follow up rate for diagnosis in 2021 being 77.4%. The most recent site was created in the summer of 2021, while the program's first site started seeing patients in January 2019. Since January 2019, there have been 27 appointments (25 patients) completed across the 3 spoke sites. There have been several no-shows and cancellations as well, but this may be due to families having unreliable transportation, low fuel funds, and intermittent phone access.

#### **BACKGROUND INFORMATION**

In 2015, a collaborative partnership was established between the University of South Dakota and the South Dakota Department of Health to initiate quality improvement activities within the SD EHDI Program. This became known as the SD EHDI Collaborative. This partnership allowed for the opportunity to obtain funding through the Health Resources and Services Administration (HRSA) grant to continue to grow and evolve the SD EHDI Program. The SD EHDI Collaborative works to improve early identification and promote early intervention services for children and their families across the state of SD.

- Type of Practice: State EHDI Program
- City/State: Vermillion, SD
- Population Served: Children who are Deaf or Hard of Hearing (D/HH)

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#### **CONTACT INFORMATION**

- For more information, contact <u>Hannah Williams</u>, graduate research assistant, The University of South Dakota
- For more information about American Academy of Pediatrics (AAP) EHDI program, visit <u>aap.org/ehdi</u>.

<sup>1</sup> A hub-and-spoke model allows healthcare professionals (located at a centralized hub site) to assess patients located at distant spoke sites via telepractice. <sup>2</sup> The program is still in its pilot phase – these are a few examples of accessibility the Collaborative has encountered.



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