The River School's Inclusive Educational Model for Children With Cochlear Implants: 14 Years of Data
Introduction:

- Although children with CIs have unprecedented access to sound, many face social and academic challenges in the classroom when compared to their hearing peers.

- In an educational model that uses an SLP as a co-teacher, children with cochlear implants (CIs) learn alongside a classroom majority of typically developing hearing peers. Specialists in audiology, occupational therapy, and psychology provide support.
Children are expected to make more than six months gain at each assessment interval in order to close the gap with their hearing peers.
Overview of Longitudinal Data collected over 14 years at The River School

- **Methods:** The Kaplan-Meier survival function was used to estimate the median time to achieve age-appropriate scores separately for each of the three outcomes:
  - Vocabulary
  - Core language
  - Pragmatic language
Demographics
Vocabulary

- Standardized Vocabulary assessments included the:
  - Peabody Picture Vocabulary Test (PPVT)
  - Receptive One-Word Picture Vocabulary Test (ROWPVT)

- Sample size:
  - N=73
  - Average age at implantation = 19.2 months
Kaplan-Meier Estimate of Achieving Age-Appropriate Vocabulary

95% CI: 15.9-25.5 months
Core Language

- Standardized assessments of Core Language included:
  - The Comprehensive Assessment of Spoken Language (CASL)
  - The Clinical Evaluation of Language Fundamentals (CELF-4)

- Sample Size:
  - N=50
  - Average age at implantation = 22.8 months
Kaplan-Meier Estimate of Achieving Age-Appropriate Core Language

95% CI: 26.2-43.7 months
Core Language

- 82%
- 12%
- 6%
Pragmatic Language

• Standardized assessments of Pragmatic language included:
  ✓ The Test of Pragmatic Language (TOPL)
  ✓ The Pragmatic subtest of the CASL.

• Sample Size:
  ✓ N=48
  ✓ Average age at implantation = 22.8 months
Kaplan-Meier Estimate of Achieving Age-Appropriate Pragmatics

95% CI: 28.7-44.8 months
Optimizing Outcomes

- parent education and emotional support
- language and literacy development
- social emotional learning
- teaching strategies and classroom supports
- motor and sensory development
- working memory and other cognitive skills
- classroom acoustics, modifications, and ecological supports
- transdisciplinary support services
Elements of the Model

- Small inclusive classroom; children with hearing loss are educated alongside their hearing peers.
- Faculty; master’s level educator and speech pathologist in each classroom.
- Focus; language & literacy; arts & sciences; theme-based learning; social emotional learning
- Transdisciplinary support teams (OT, audio, psychology)
Faculty:

- Master’s level educator and speech pathologist in each room
Parent Education and Support

- Free Parent Infant Program
- Sound Support
- Parent-Child Interaction Therapy (PCIT)
- Therapeutic Coffees
- Advocacy and Outreach
Language and Literacy Development

- Language & literacy programs (e.g. Mouth Time, Sound Spot)
Curriculum:
Transdisciplinary Supports:

- Outpatient services available to the community:
  - Audiology
  - Speech pathology
  - Auditory Verbal Therapy
  - Psycho-Ed and educational assessment
  - Occupational therapy
  - Psychology
  - Academic tutoring
Conclusion:

- The River School longitudinal data supports the use of this model for many young children with cochlear implants.
- Children's outcomes can be optimized in a least restrictive environment that carefully blends individualized levels of challenge and support.
- Hearing peers can provide a consistent model of age appropriate language and social behavior, thus raising the bar for intervention.
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