

HIPAA-Secure, Cloud-Based Cochlear Implant Database Creates a Framework for Data Sharing among Hearing Professionals

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The ACI Alliance's mission is to "advance access to the gift of hearing provided by cochlear implantation." One of the key components of that mission is the collaboration ACI Alliance pursues with other organizations to develop and disseminate multi-disciplinary clinical practice guidelines. An emerging issue in cochlear implant care is to provide data that supports patient outcomes and can lead to such multi-disciplinary guidelines. The *Auditory Implant Initiative* is on the forefront of this data-gathering effort.

As healthcare fully embraces the Information Age, the ability to leverage clinical data in meaningful ways is critical. Modern healthcare organizations use data to drive clinical decisions, inform policy, and advocate for patients. The nonprofit Auditory Implant Initiative (Aii), formed in 2013, is a national network of cochlear implant centers that are doing just that. The organization currently consists of 30 centers located across the United States and represents over 100 multidisciplinary hearing professionals. These professionals harness the power of data to improve cochlear implant care by focusing on Research, Collaboration, and Outreach.

Central to accomplishing Aii's mission is a web-based software platform called HERMES (HIPAA-Secure, Encrypted, Research, Management and Evaluation Solution). This application consists of three main features: (1) structured tracking of patient outcomes, (2) secure sharing of data among providers, and (3) HIPAA-secure aggregate analytics. Click [HERE](#) for a detailed description of HERMES published in *Cochlear Implants International*.

Tracking Patient Outcomes

A powerful feature of HERMES is the ability to track patient outcomes in a standardized manner longitudinally over time. The system is designed to allow daily or real-time tracking of patients as they progress along the cochlear implant journey. Katrina R. Stidham MD, Chief of Neurotology and Director of CI program at Westchester Medical Center notes "HERMES has allowed our implant team to effectively gather all of our medical/surgical, audiological and speech data in one place and in a format that lets us consistently track a patient's progression through the implant process. Clinical reminders and templates help busy clinicians stay organized. It allows us to prospectively gather data on our implant patients and also alerts us to missed follow-ups."

Care Teams

Cochlear implant care is multidisciplinary and may involve team members who are not located in the same institution or same geographic location. Kristian Ormson AuD of

Ormsen Hearing Health Care in Amarillo, TX works with a surgeon 200 miles away. HERMES allows him to coordinate care and notes the system helps in providing real-time diagnostics to those involved in a patient's care thus allowing better management.

Aggregate Data Analytics

Each member of Aii retains ownership of their facility-level data and can utilize the query feature of HERMES to mine this data at any time. Additionally, members of the network have access to bi-annual reports comparing their center's performance to the national aggregate. "One of the useful aspects of HERMES is our ability to mine the data," notes Margaret Winter, audiologist at the USC Caruso Family Center for Childhood Communication. "We can look at each child's results over time or study the performance of groups of children categorized by age, educational setting, communication mode, home and instructional languages, or insurance coverage."

Summary

As of June 2017, over 1400 patients were in the HERMES database with continued growth expected. The Auditory Implant Initiative will be exhibiting at the upcoming CI2017 Symposium in San Francisco. To learn more, visit their booth and view the organization's website www.aii-hermes.org.