

Frequently Asked Questions (FAQs)

Automated Audiology Content Extraction (AACE) Project

February 2026

Q. What is the main goal of this project?

A. The primary objective of the Automated Audiology Content Extraction project is to ease the reporting burden on audiologists and reduce the LTF and LTD rates for infants and children who are DHH. This is achieved using generative AI, a trained LLM, to interpret clinical audiology notes and test results from the electronic health record, generating the categorical values needed for reporting to jurisdictional EHDI programs. The verified results are formatted to meet the state-specific reporting requirements and sent to the EHDI information system. This saves the audiologist from duplicative data entry processes that are currently in place in most jurisdictions.

Acronyms

Acronym	Definition
AI	Artificial intelligence
AIMS	APHL Informatics Messaging Service
API	Application Programming Interface
APHL	Association of Public Health Laboratories
AWS	Amazon Web Services
CDC	Centers for Disease Control and Prevention
DHH	Deaf or hard of hearing
DxHub	Digital Transformation Hub at Cal Poly
eCR	Electronic case reporting
eLR	Electronic laboratory reporting
EHDI	Early Hearing Detection and Intervention
FHIR	Fast Healthcare Interoperability Resources
HL7	Health Level Seven
HTTP	Hypertext Transfer Protocol
JSON	JavaScript Object Notation
LLM	Large language model
LTD	Lost to documentation
LTF	Lost to follow-up
PHII	Public Health Informatics Institute
POC	Proof of concept
UNHS	Massachusetts Universal Newborn Hearing Screening Program

Q. What is the public health impact of this work?

A. The first 6 months of life are foundational for speech and language development. EHDI programs track the 1-3-6 benchmarks (screening by 1 month, diagnosis by 3 months, and early intervention by 6 months). They rely on reporting from audiology providers to ensure that infants who are DHH are identified and connected to early intervention services. Due to duplicative, manual, and time-consuming data entry requirements for audiology reports, infants are LTF and not receiving services, or LTD, where EHDI programs cannot confirm services have been completed. The use of trained LLMs has the potential to reduce reporting burden and improve timeliness of reporting to EHDI programs.

Q. How does the solution work?

A. The solution takes audiology data, runs it through a configurable logic engine in a trained LLM, and generates outputs that reflect clinical rules and public health requirements specific to the jurisdiction. The solution provides documented reasoning for validation of solution outputs. Further validation would be needed to test the solution for each specific implementation, given the differences in clinical data and public health reporting requirements.

¹ National Institute on Deafness and Other Communication Disorders. “Your Baby’s Hearing Screening and Next Steps,” June 10, 2024, [View source](#) Accessed March 31, 2025.

Q. What is the proposed solution for scaling the project beyond the POC?

A. The solution is open-source and the code is publicly available via GitHub. PHII is exploring the use of a trusted third party, the APHL, to host the solution on a shared service called the AIMS platform. This platform has established connections to healthcare and public health through its existing work with eCR and eLR. Hosting the solution on the AIMS platform would eliminate the need for each clinical partner to install the solution and allow implementation time to be spent validating the clinically specific data inputs and confirming alignment with public health reporting requirements.

Q a. What are the roles and responsibilities for the technical implementation when a third party hosts the solution?

- A a.
- **Clinical partner:** Provides subject matter expertise on audiologist reporting workflows and key sources of data input. Verifies connectivity with the trusted third party. Generates test data and validates the solution accuracy. Receives necessary approvals to input data into the solution.
 - **Public health partner:** Provides subject matter expertise on state EHDI program reporting workflows and required data elements. Verifies connectivity with the trusted third party. Participates in testing to review extract data files and provide feedback on implementation plausibility. Works to consume the solution outputs electronically into the EHDI information system.

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- **Trusted third party:** Hosts the open-source solution on a common platform. Verifies connectivity with clinical and public health partners. Conducts testing and validation.
- **Leadership, IT, and legal at all partner sites:** Secures approval to dedicate staff time, implement the solution, and share data.

Q b.

What are the roles and responsibilities for the technical implementation when the clinical partner hosts the solution?

A b.

- **Clinical partner:** Provides subject matter expertise on audiologist reporting workflows and key sources of data input. Hosts the open-source solution on a common platform. Verifies connectivity with the public health partner. Generates test data and validates the solution accuracy. Receives necessary approvals to input data into the solution.
- **Public health partner:** Provides subject matter expertise on state EHDI program reporting workflows and required data elements. Verifies connectivity with the trusted third party. Participates in testing to review extract data files and provide feedback on implementation plausibility. Works to consume the solution outputs electronically into the EHDI information system.
- **Leadership, IT, and legal at all partner sites:** Secures approval to dedicate staff time, implement the solution, and share data.

Q.

Which organizations were involved in the initial POC solution?

A.

PHII, through funding from CDC, partnered with audiologists from Boston Children's Hospital and Mass Eye and Ear, Massachusetts UNHS Program, and the DxHub at California Polytechnic State University. The DxHub designed a solution to automate the classification of pediatric audiology reports into categorical values required by public health using generative AI LLMs. Four different LLMs were identified to test the solution. Audiologists provided the test data and expertise to review the accuracy of the results. The UNHS program confirmed alignment with public health reporting requirements and worked to electronically receive the reports generated by the solution.

Q.

What data format is required?

A.

- **Input:** The use of a LLM allows for the input to be structure agnostic by design. There are no detailed specifications on how to package the results from the electronic health record. The clinical team will determine the reports and data elements to include based on their processes and the GitHub configuration file. The data can be packaged as a text file in any format, such as a CSV or JSON. Note: PDF formats will need to be converted into a text file.
- **Output:** The solution generates a file in JSON format based on the GitHub configuration file, posted using HTTP to an AWS API. While there is no HL7 interface at this time, JSON could be used as an HL7 2.6 or FHIR resource.

Q. Where can I find more technical details on the project?

A. The following links provide more details:

Using Generative AI to Automate Pediatric Audiology Diagnoses

[Read the article on phii.org](#)

GitHub Resource of the Cal Poly DxHub Audiology API

[View the GitHub repository](#)

Technical Overview of Audiology Classification (video)

[Watch the Technical Overview video \(MP4\)](#)

Audiology Classification Overview (video)

[Watch the Audiology Classification Overview video \(MP4\)](#)