

Considerations for Collecting and Documenting Language Outcomes from 1 to 36 months of Age for Infants Identified as Deaf or Hard of Hearing

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Disclaimer

The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention (CDC).

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ODDACE

OUTCOMES & DEVELOPMENTAL DATA
ASSISTANCE CENTER FOR EHDI PROGRAMS

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Presenter/Authors' Background

- ODDACE – Outcomes and Developmental Data Assistance Center for EHDI Programs
- 17 partnering programs
- Supported programs in collecting and documenting language outcomes
- Current status: No longer adding new partners or collecting outcomes data
- Long-term outcome: Determine factors related to better language outcomes

Today's Topics

- Collecting language outcomes:
 - **Why** is this beneficial?
 - **Which** assessment(s) will you use?
 - **Who** will administer the assessment?
- Establishing partnerships
- Documenting language outcomes:
 - **What** fields will you include?
 - **How** will you represent the data?

Benefits of Collecting and Documenting Language Outcomes

Benefits to Intervention Programs
Benefits to EHDI Programs



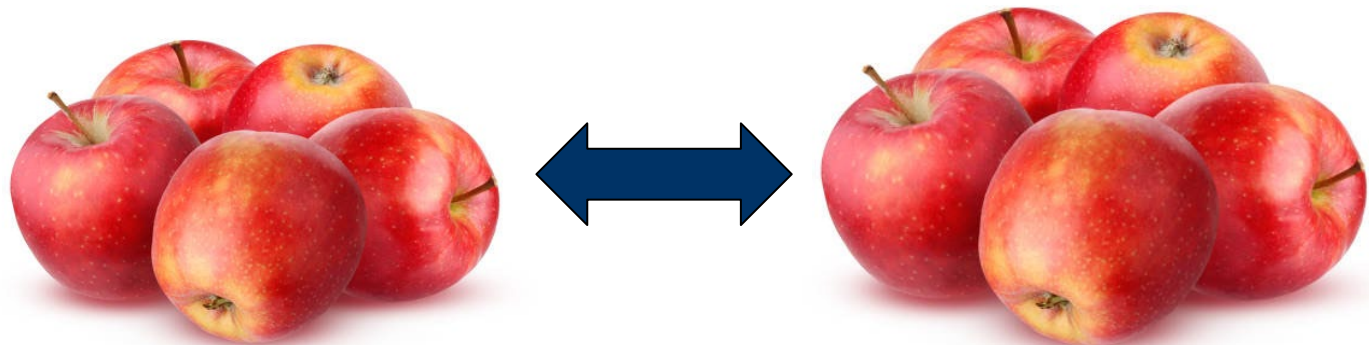
Benefits of Documenting Language Outcomes

- Benefits to children and families:
 - Monitors progress of individual children
 - Provides objective data when making intervention decisions
- Benefits to the program:
 - Identifies program strengths and challenges
 - Provides data that can support funding requests
 - Meets state mandates (e.g., LEAD-K, outcomes-oriented House and Senate bills, etc.)

Documenting Language Outcomes: Benefits to EHDI Programs

- Examine association with various EHDI benchmarks
- Identify associations with socio-demographic disparities
- Respond to funding guidelines
 - Current HRSA supplement focused on language outcomes
 - Next 5-year HRSA funding cycling includes collection of language outcomes at the end of the performance period

Consistency



Consistent Assessments: Why?

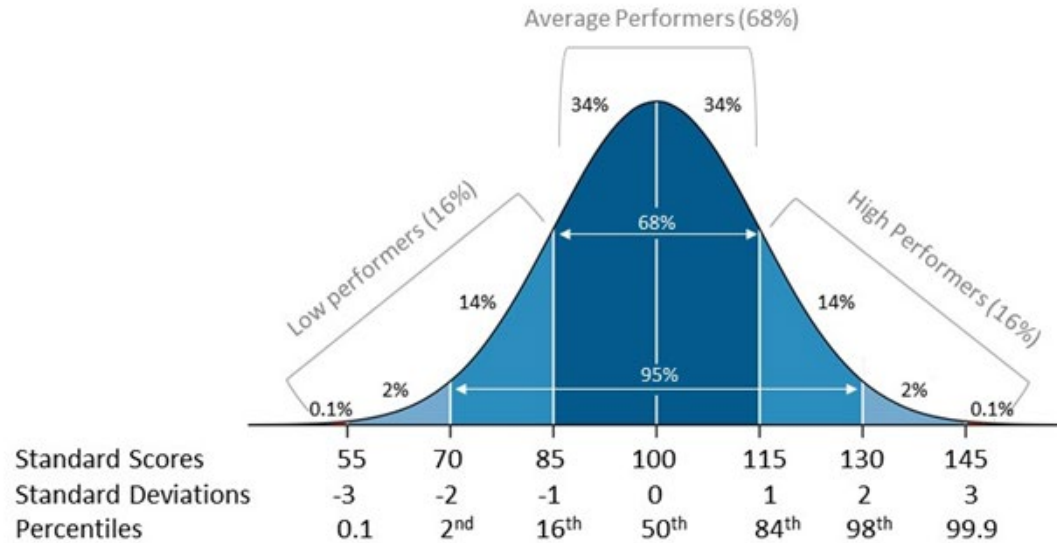
- Combining apples with apples
- Different tests measure different components of language
- Some tests are known to “test high”; others are more likely to identify delays
- If you were looking at % of children who passed an ear-related outcome: Would you combine a “pass” on a tympanogram with a “pass” on a pure tone screen?

Consistent Assessments: Why?

- Multiple assessments = Multiple small samples
- Using a consistent assessment battery allows you to aggregate results across your entire program/state

****Higher numbers of children improve stability and validity of your results****

Norm-Referenced



Norm-Referenced Assessments: Definition

- During test development, norm-referenced assessments were given to hundreds/thousands of children
- Based on this, you know the average range for children at specific ages
- You can see (and report) if a child's performance falls within or outside this average range

Norm-Referenced Assessments: Why?

- If only age scores are provided, difficult to determine if child is in the average range
- How do you decide if an age score below the child's age is concerning?
 - Child may not score exactly at their actual age, but may still be within the average range
 - A 6-month difference may not be problematic if the child is 5 years old but may be concerning if they are 24 months old

Norm-Referenced Assessments: Why?

- Provides standard scores and/or percentile ranks
- Objectively measures if child's skills are within the average range
- Partners may request reports of “percent of children in the average range”

Norm-Referenced Assessments: Why?

- Provides parents with objective information so they know how their child is performing relative to the average range
- Objectively monitors growth/progress
- Adds to factors considered at IEP/IFSP meetings
- May provide evidence for service eligibility as child transitions to Part B

Sensitivity to Language Gaps



Assessments that May Miss Language Gaps

- Assessments that use a basal/ceiling approach
 - Points given for all items below the basal
 - Child may have gaps (have not yet acquired some earlier developing skills)
 - So, they may get credit for many items they can't actually do

Reasons Assessments May Miss Language Delays

- Assessment may include general communication questions
- Level of linguistic complexity of response is often not specified
 - e.g.: “Tells you what he/she is doing”
 - “eat” vs. “I’m eating a turkey sandwich with cheddar cheese”
 - Both get 1 point

Reasons Assessments May Miss Language Delays

- Assessment includes pre-verbal items
 - Shakes head “no”
 - Points at things
- These are typically not delayed in children who are D/HH
- Many points come from pre-verbal skills which may boost child into the average range
- This is true of most 5-domain assessments (since they start at 1 month of age)

Who will complete the assessment?



***Who* will complete the assessment?**

Many benefits associated with:

The parent and the interventionist who works with the family

Parent Input: Why?

Incorporating the parents' deep knowledge of their child's skills...

- Improves accuracy and validity of the assessment (esp. in the Birth to 3 period)
- Provides an opportunity for families to become better observers/reporters of their child's skills

Early Interventionist: Why?

- Efficient (and cost effective) because already meeting with family
- Early interventionists are typically knowledgeable about administering developmental assessments
- Trust relationship already established (increases likelihood of completion)
- Interventionist is knowledgeable about the child's skills

Interventionist and Parent: Why?

- Combination of an evaluator familiar with the child and parent will allow for:
 - Cross-checking (two sets of eyes/ears)
 - More comprehensive and accurate documentation of child's skills
- Reduces test time
 - Parent and/or evaluator can get started independently based on their knowledge

Who will complete the assessment?

Other options

- Evaluator(s) hired by a program/agency
 - Parent Guides
 - Periodic home visitors (e.g., public health nurses, service coordinators, consultants)
 - Grad students (partner with a university)
 - A coordinator is hired/designated and sends assessments via mail, email, or links in a text
- Likely these individuals will want training

Summary: Lessons Learned from ODDACE – One Possible Framework

- Consistent assessment across all children
- Standardized, norm-referenced
- Sensitive to identifying language gaps

- Has a version normed on Spanish-speaking children
- Works well in sign language
- Covers the full age range of interest

Summary: Lessons Learned from ODDACE – One Possible Framework

- Facilitated by someone who knows the child's skills/abilities
- Includes parent input



Summary: Lessons Learned from ODDACE – One Possible Framework

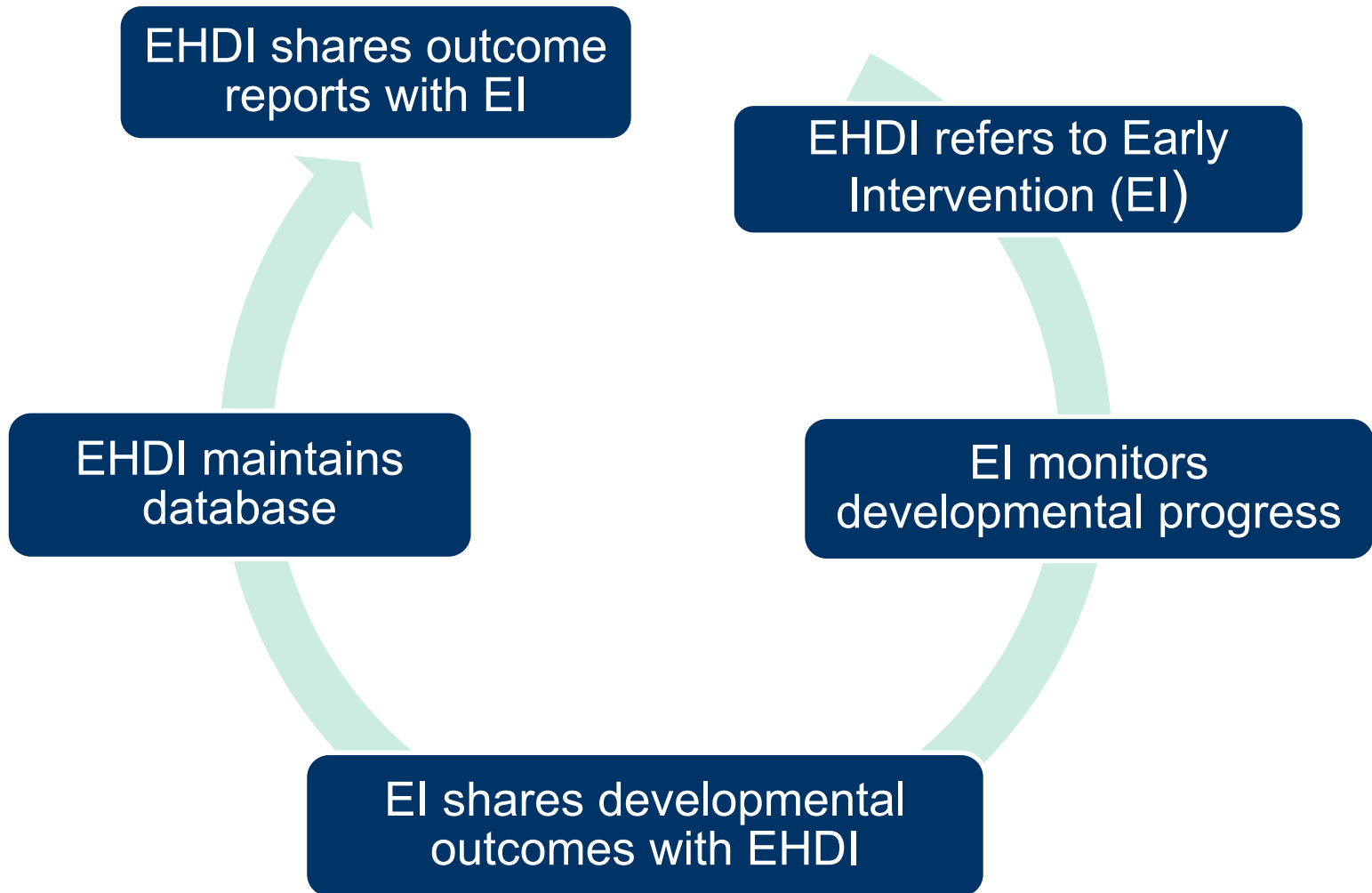
- Ideally, a 5-domain assessment + a specific language assessment
- If just one assessment: A specific language assessment (known to be sensitive to language gaps/delays)

Using only a 5-domain assessment is likely to underestimate language delays

Creating Partnerships



EHDI & EI: One model for collaboration



Benefits of an EHDI-EI Partnership

- **Cost effective**
 - EI providers weave assessment into their visits with a family
 - EHDI programs weave fields into an existing database
- **Capitalizes on existing expertise**
 - EI providers knowledgeable about assessment administration
 - EHDI coordinators knowledgeable about databases and running reports

Role of an Outside Contractor

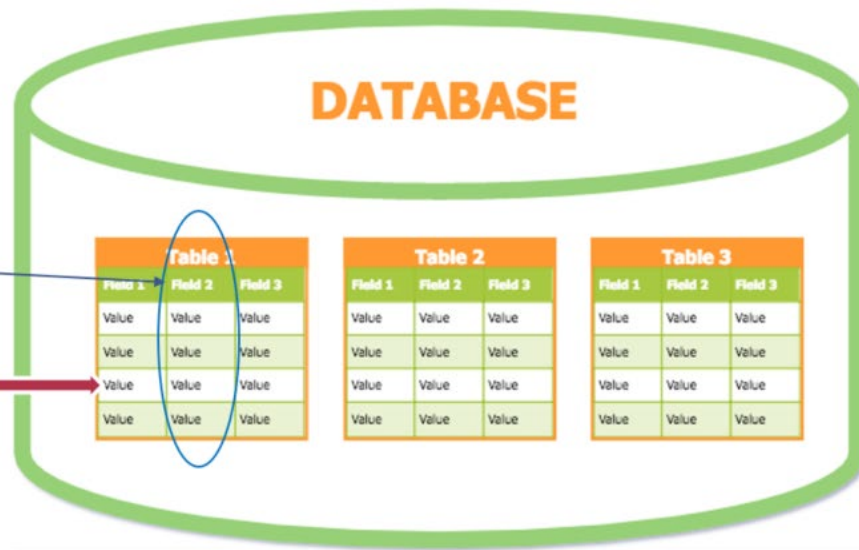
- If an outside contractor supports the EHDI – Early Intervention partnership, they may...
 - Score assessments
 - Send back individual child summary reports
 - Periodically summarize language outcomes program/statewide
 - Create and populate a database that can be uploaded to the EHDI database
 - Include variables beyond the EHDI database increasing the depth of possible analyses

Database Field Considerations

- Tables

- Fields

- Records



Documenting Language Outcomes: Database Considerations

IMPORTANT!

Include one or more fields to document presence of additional disabilities

Database Considerations

- Document if the disabilities are thought to impact language development
- You will likely want to characterize and explore associations with language outcomes separately for these two groups

Database Considerations

- Don't rely on a single "has disabilities" checkbox (if the item is blank you won't know if it means there are no disabilities or the status is unknown or wasn't documented)
- Use radio buttons:

Yes

No

Don't know

Database Considerations

- If results from various tests are included, indicate what assessment was used so sub-samples can be formed for analysis
- If child has results at multiple time points, determine how this will be stored and accessed

Database Considerations

- Include a field for the child's chronological age at the time of the test
- If the language outcome is a "language age score," create a "language quotient" field
 - $\text{language age} \div \text{chronological age}$

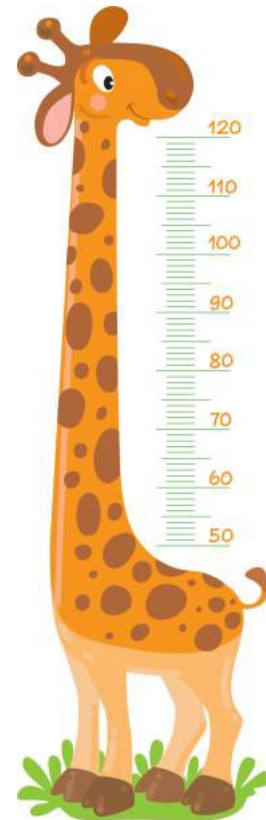
Database Considerations

- If the assessment provides both an age score and percentile rank (or std score)...
 - Include both
 - Then you are set regardless of if you need/want to report on the percentage of children in the average range or the percentage of children performing within a specific percentage of their actual age

Database Considerations

Determine how you will enter scores that are above or below the range of the test...

- $< 5^{\text{th}}$ %ile
- Age score > 36 months



Sample Database Set-Up: Documenting Scores Over Time

Language outcome successfully edited.

Language Outcomes

View	DAYC-2	MacArthur	Date Updated	Updated By
View	6/15/2022	6/1/2022	2/21/2023 2:39:00 PM	allison.sedey@colorado.edu
View	11/23/2022	11/28/2022	2/21/2023 2:46:00 PM	allison.sedey@colorado.edu

[+ Add Language Outcomes](#)

Sample Database Fields

Language Outcomes

Additional disabilities thought to impact speech/language development

Yes No Unknown

Developmental Assessment of Young Children (DAYC-2)

Date Completed:

Chronological Age (months):

Scoring

Category	Cognitive	Communication	Social-Emotional	Physical	Adaptive	Receptive Language	Expressive Language	Gross Motor	Fine Motor	General Development
Age (Months) (Range 0.5 - 72.0)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Percentile (Range 0.05 - 99.95)	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

MacArthur CDI: Words Produced

English Form

Spanish Form

Date Completed:

Chronological Age (months):

= Select MacArthur Type =

Percentile
(Range: 4.0 - 99.5)

NA - child not within test norms

Expressive Vocabulary (Months):
(Range 7.0 - 38.0)

NA - child not within test norms

Notes

Quotient:

Technical Assistance

- Interested in talking more about this topic?
- ODDACE personnel available for technical assistance through August 2024 regarding:
 - Options as you develop systems to collect language outcomes
 - Considerations in documenting language outcomes within an EHDI (or other) database
- Contact: oddace@colorado.edu