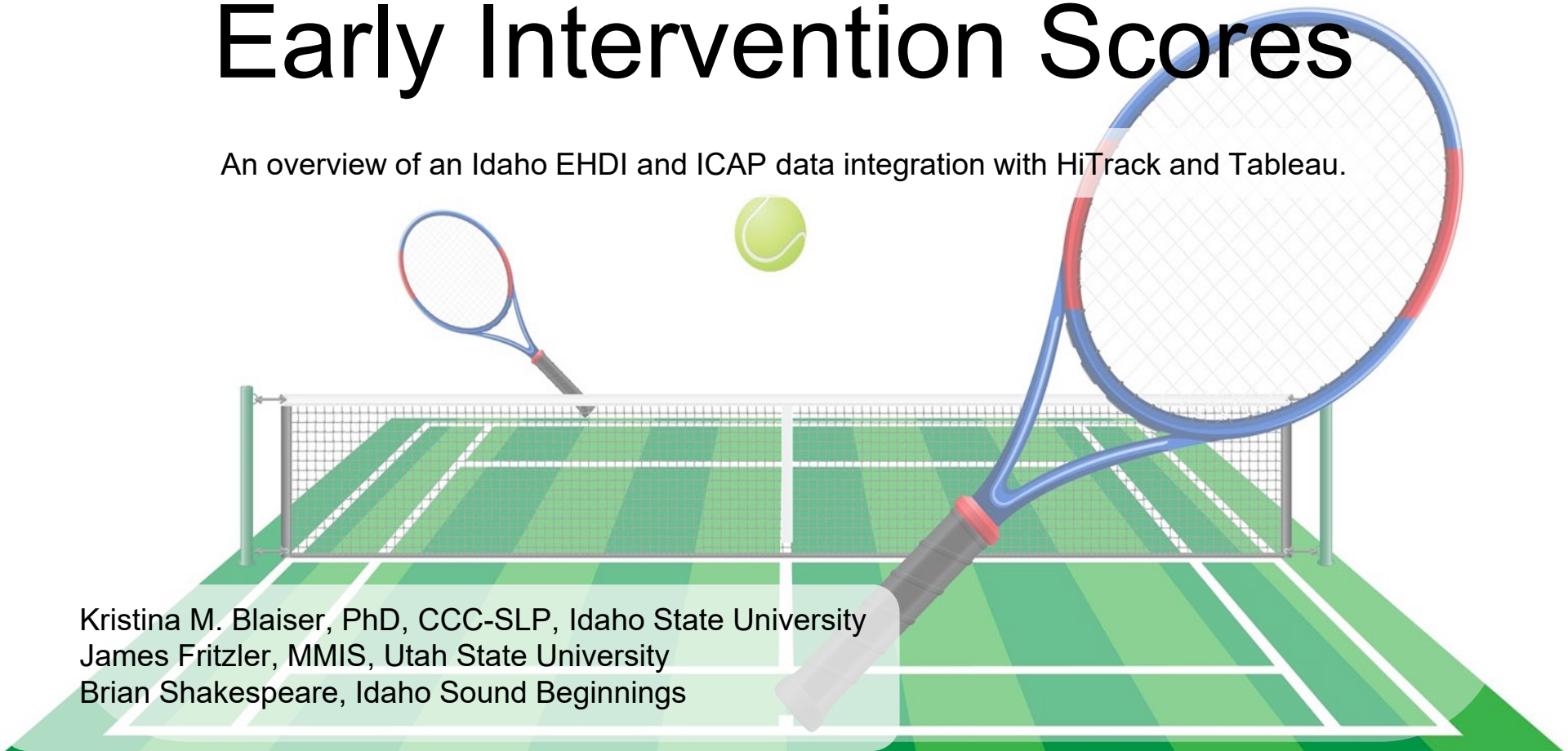
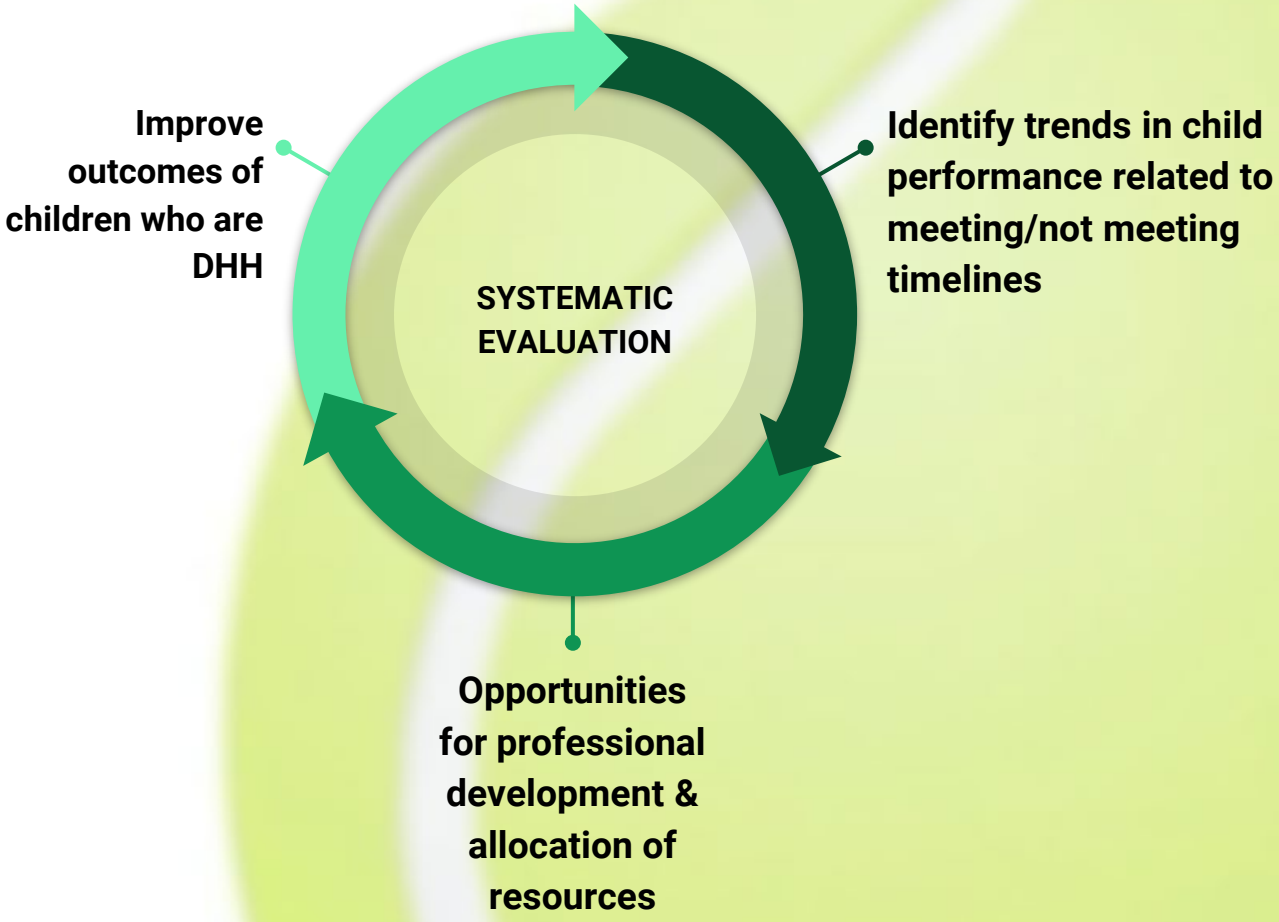
Building a Process to Electronically Import and Track Early Intervention Scores

An overview of an Idaho EHDI and ICAP data integration with HiTrack and Tableau.

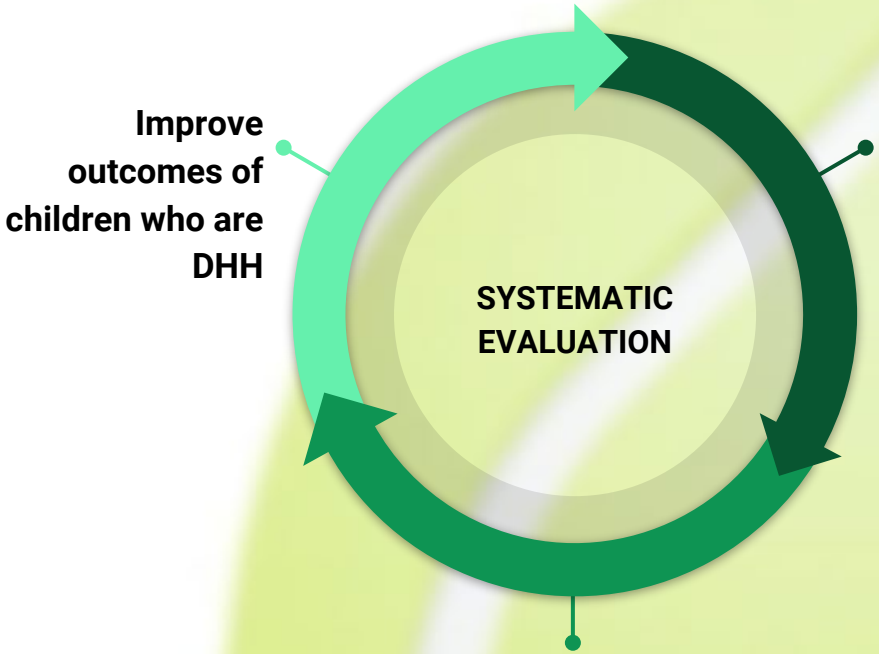


Kristina M. Blaiser, PhD, CCC-SLP, Idaho State University
James Fritzler, MMIS, Utah State University
Brian Shakespeare, Idaho Sound Beginnings

Evaluations are essential to EHDI success



Evaluations are essential to EHDI success



…how do we track over time?

Data Privacy Agreements

Data Privacy Agreements

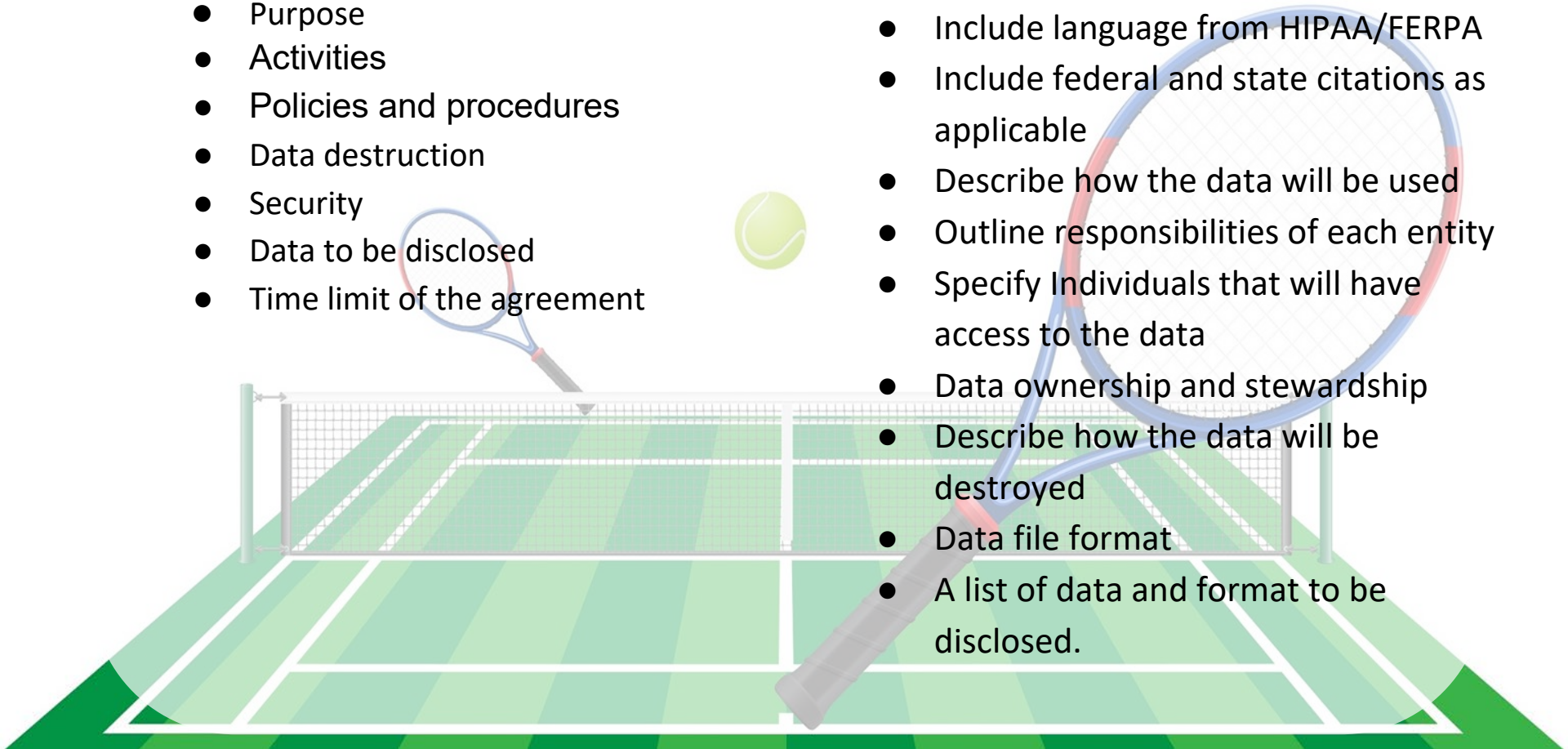
Data Sharing Agreements

Essential Components

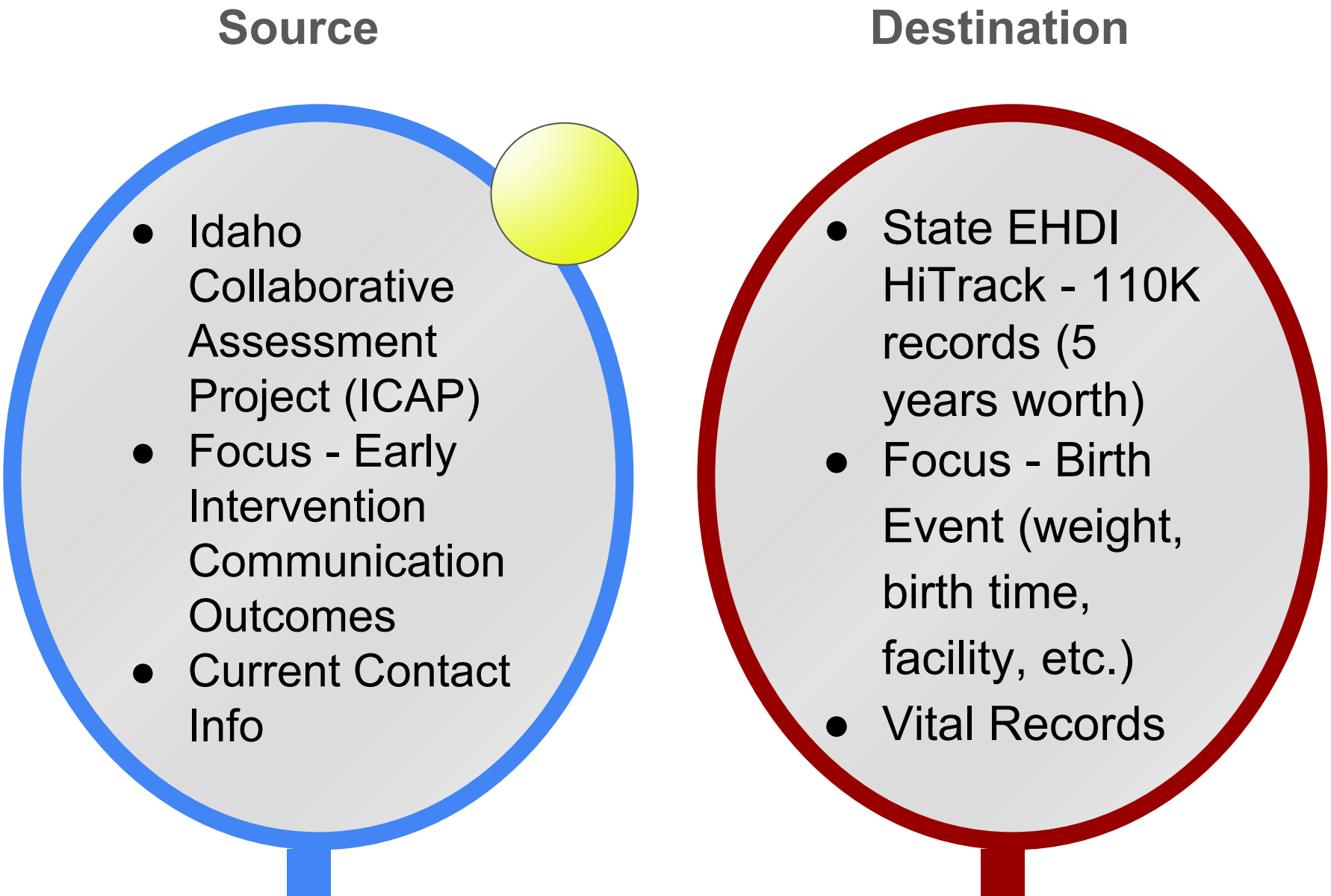
- Authorized representative
- Purpose
- Activities
- Policies and procedures
- Data destruction
- Security
- Data to be disclosed
- Time limit of the agreement

Suggested Additions

- Contact info for each entity
- Include language from HIPAA/FERPA
- Include federal and state citations as applicable
- Describe how the data will be used
- Outline responsibilities of each entity
- Specify Individuals that will have access to the data
- Data ownership and stewardship
- Describe how the data will be destroyed
- Data file format
- A list of data and format to be disclosed.



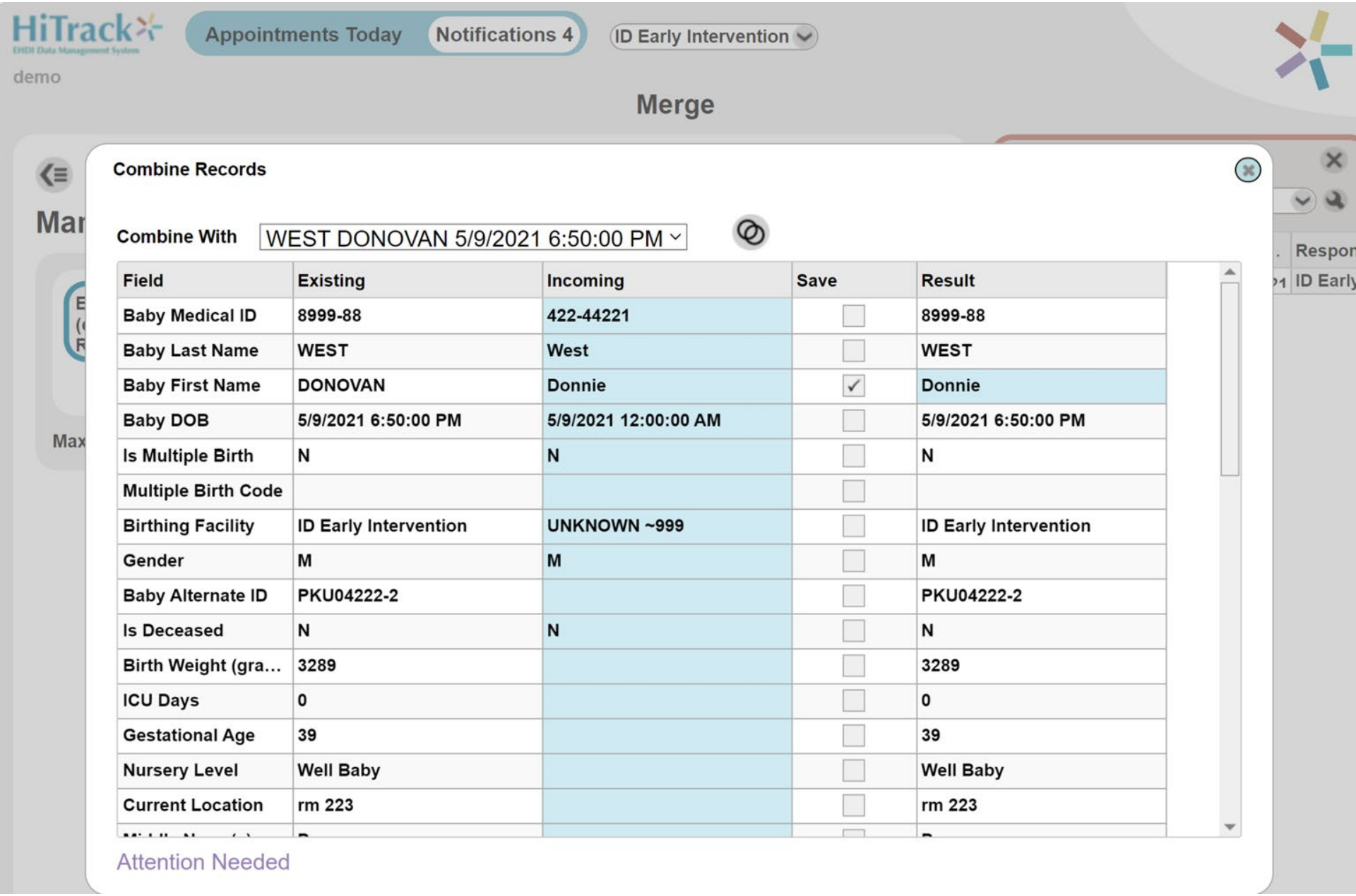
Data Mapping



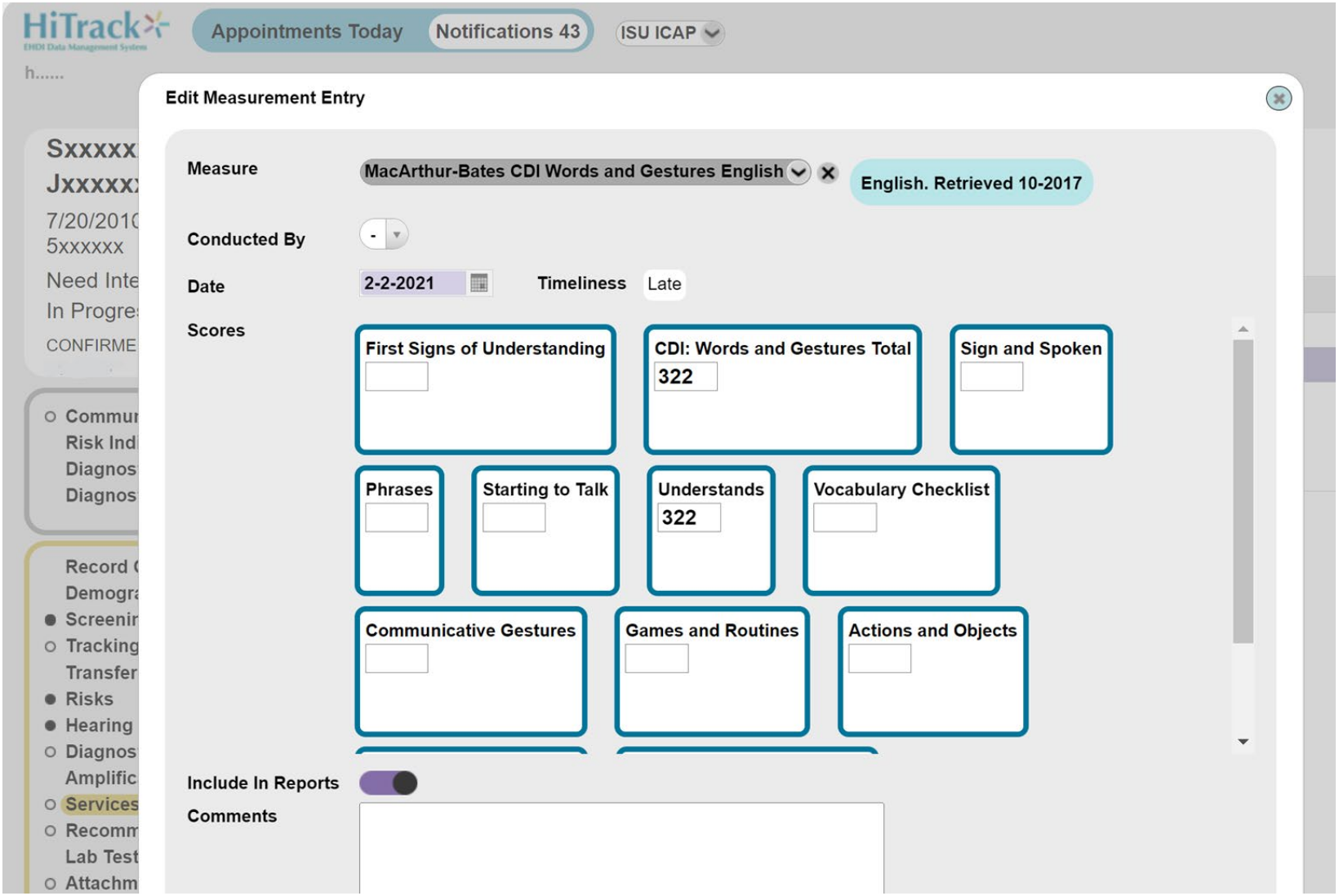
Non Birth-Event Matching Rules

- Only Match Against a Subset of Records:
  - Any Hearing Diagnosis
  - or Some EI Data already collected and documented in EHDI (HiTrack)
- From this subset of records use a two out of three rule:
  - First name, Last name and DOB.
- If only one matches let State EHDI decide if an incoming record really is a match.

Record Resolution Page



Measurement Data in HiTrack



Process Design

Identify meaningful metrics

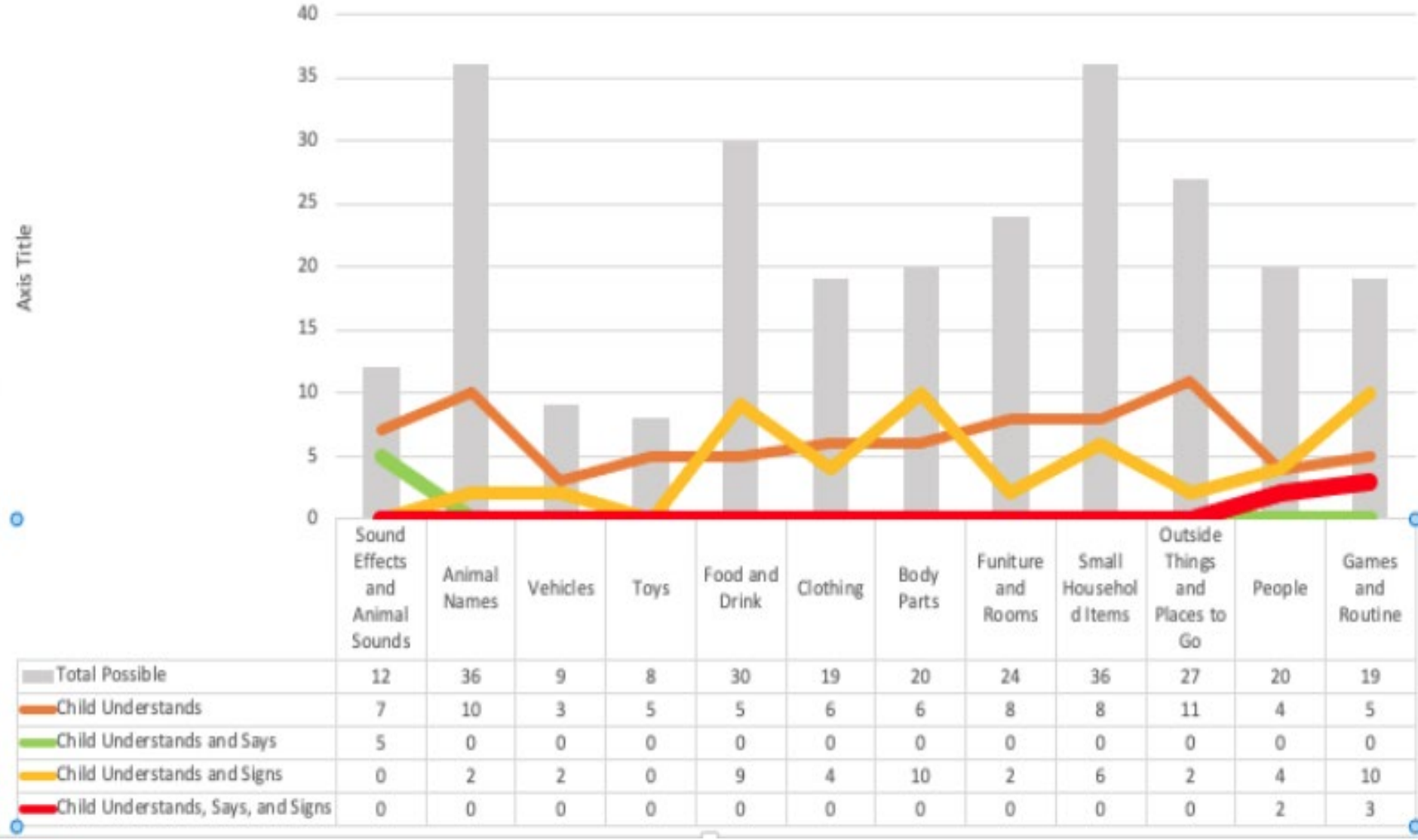
Comprehensive, intentional data points

Easy for end users (visualizations, time, collection)

Incorporation of technology

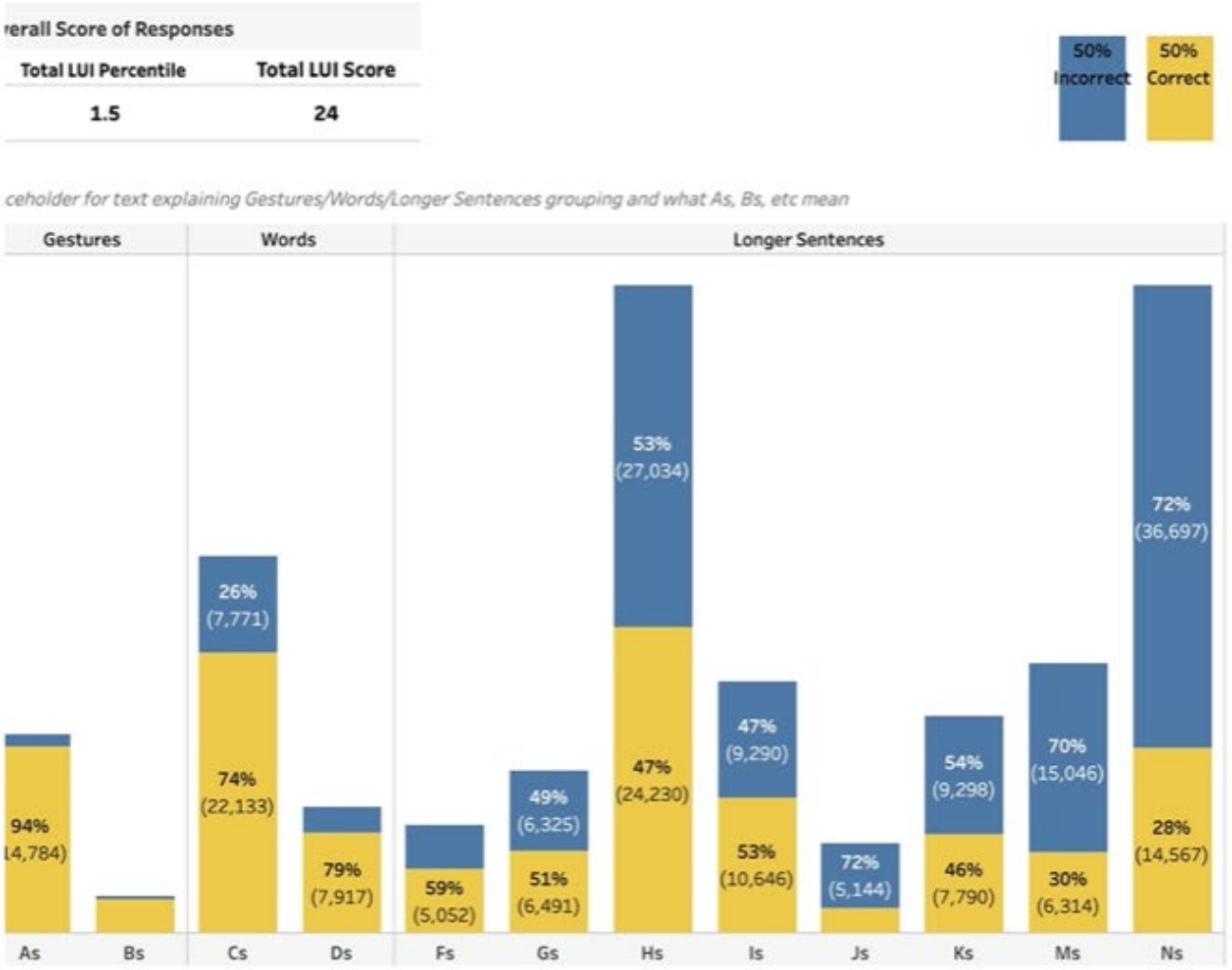
Data sharing (when, how, frequency)

MacArthur-Bates Words and Gesture Results (noun categories) Gray=total possible

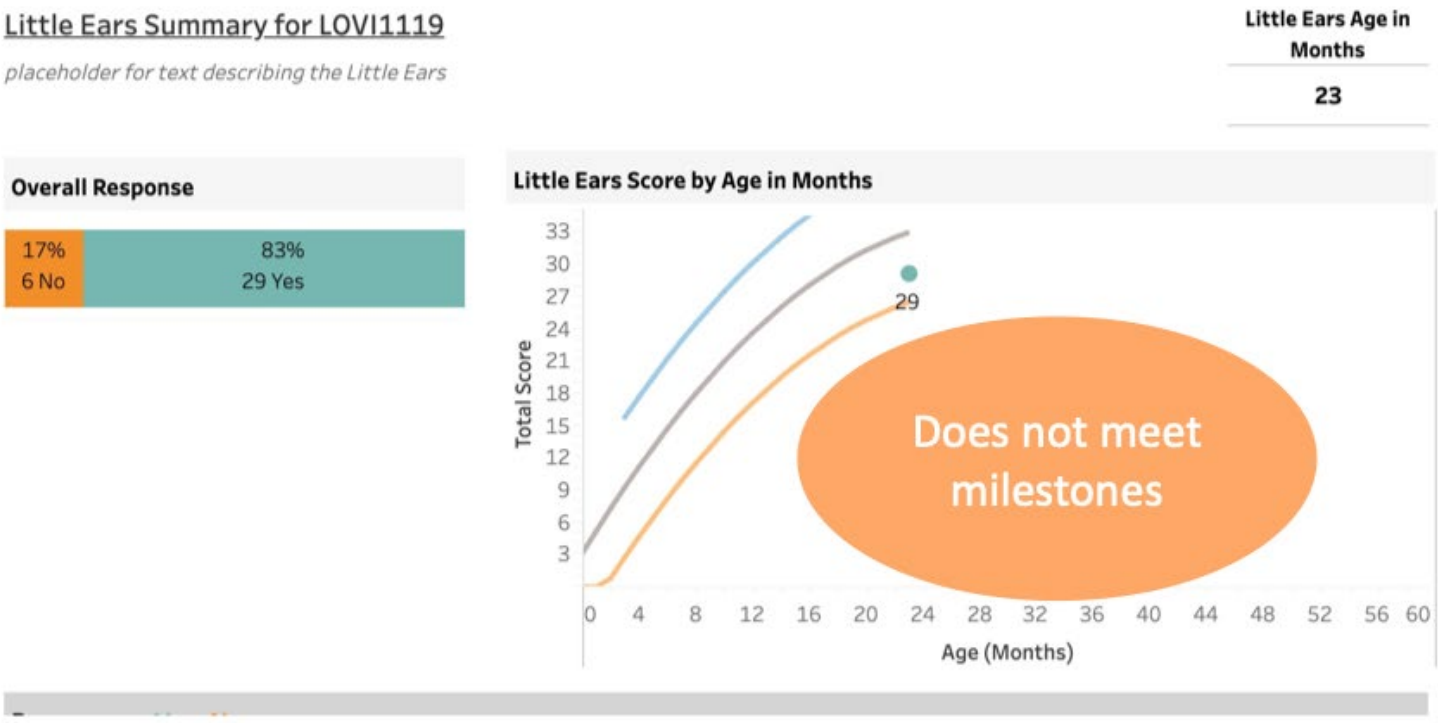


	Sound Effects and Animal Sounds	Animal Names	Vehicles	Toys	Food and Drink	Clothing	Body Parts	Funiture and Rooms	Small Household Items	Outside Things and Places to Go	People	Games and Routine
Total Possible	12	36	9	8	30	19	20	24	36	27	20	19
Child Understands	7	10	3	5	5	6	6	8	8	11	4	5
Child Understands and Says	5	0	0	0	0	0	0	0	0	0	0	0
Child Understands and Signs	0	2	2	0	9	4	10	2	6	2	4	10
Child Understands, Says, and Signs	0	0	0	0	0	0	0	0	0	0	2	3

Individual: Language Use Inventory



Individual: LittlEARS



Individual: Item

25. Does your child imitate sounds or words you say? \n Example "Say: woof woof"; "Say: c-a-r"	26. Does your child produce the right sound to a toy? \n Example: "Vurrm" with car, "moo" with cow.	27. Does your child know that certain sounds go with certain animals? \n Example: Woof woof = dog; meow= cat; cock-a-doo..	28. Does your child imitate environmental sounds? \n Example: Animal sounds, sounds of household appliances, police car siren.	29. Does your child correctly repeat a sequence of short and long syllables you have said? \n Example: "La-la-laaa"	30. Does your child select the right object from a number of objects when asked? Example: You are playing with toy animals and ask for the ..
31. Does your child try to sing along when hearing a song? \n Example: Nursery rhymes	32. Does your child repeat certain words when asked? \n Example: "Say 'Bye-Bye' to grandma"	33. Does your child like being read to? \n Example: From book or picture book	34. Does your child follow complex commands? \n Example: "Take off your shoes and come here."	35. Does your child try to sing along with familiar songs? \n Example: Lullaby	

Teal: Child has the skill

Orange: Child does not yet have the skill

Individual: Family Outcomes Survey

Completely	Extremely helpful	Very helpful	Almost	Somewhat
16	9	7	4	4

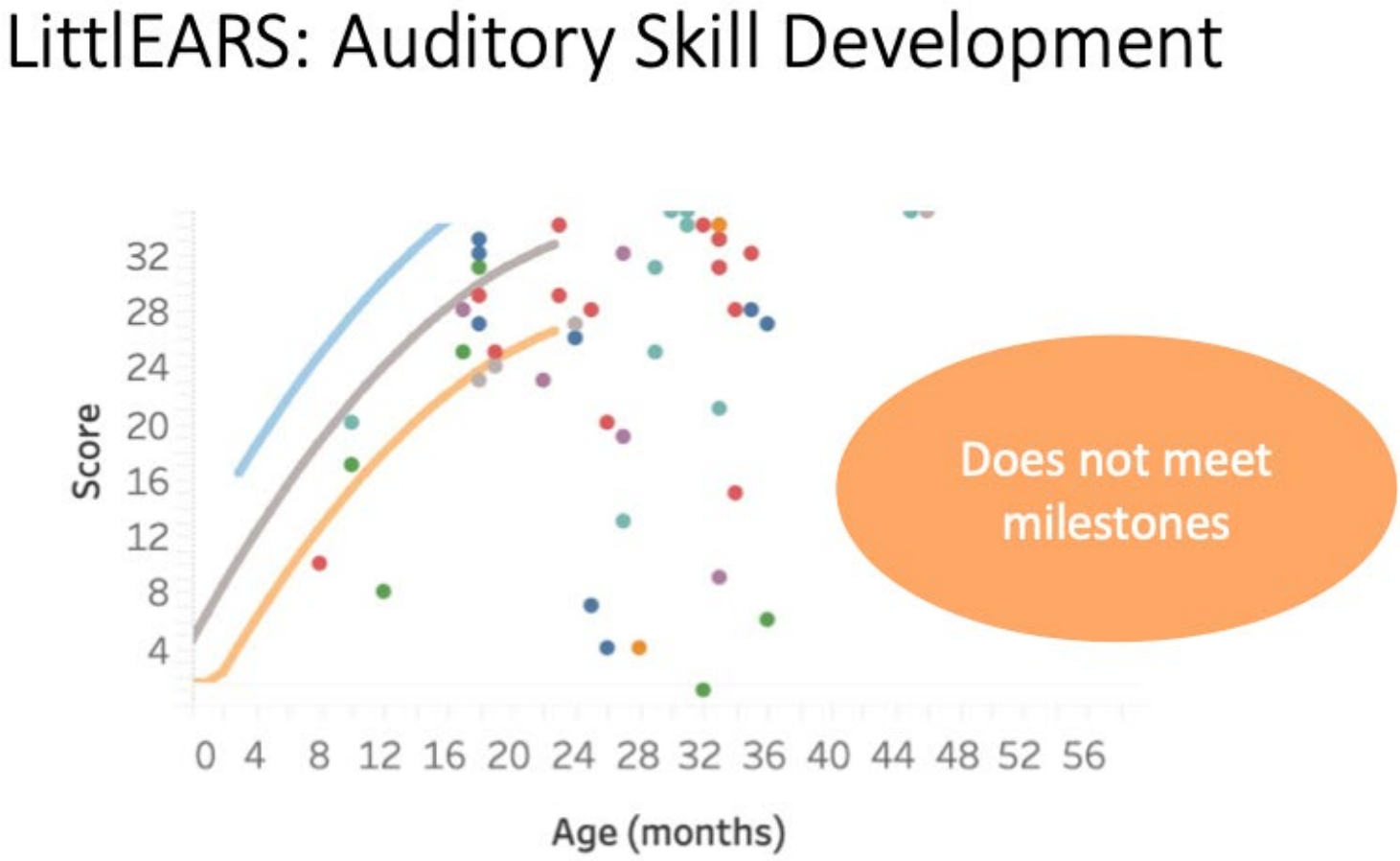
Outcome 1: Understanding your child's strengths, needs, & abilities	
1. We know the next steps for our child's growth and learning.	Q11_1: Somewhat
2. We understand our child's strengths and abilities.	Q11_2: Almost
3. We understand our child's delays and/or needs.	Q11_3: Almost
4. We are able to tell when our child is making progress.	Q11_4: Almost

Outcome 2: Knowing your rights and advocating for your child	
1. We are able to find and use the services and programs available to us.	Q3_1: Completely
2. We know our rights related to our child's special needs.	Q3_2: Somewhat
3. We know who to contact and what to do when we have questions or concerns.	Q3_3: Completely
4. We know what options are available when our child leaves the program.	Q3_4: Somewhat
5. We are comfortable asking for services & supports that our child and family need.	Q3_5: Completely

Outcome 3: Helping your child develop and learn	
1. We are able to help our child get along with others.	Q4_1: Completely
2. We are able to help our child learn new skills.	Q4_2: Completely
3. We are able to help our child take care of his/her needs.	Q4_3: Completely
4. We are able to work on our child's goals during everyday routines.	Q4_4: Completely

Outcome 4: Having support systems	
1. We are comfortable talking to family and friends about our child's needs.	Q5_1: Completely
2. We have friends or family members who listen and care.	Q5_2: Completely
3. We are able to talk with other families who have a child with similar needs.	Q5_3: Almost
4. We have friends or family members we can rely on when we need help.	Q5_4: Completely
5. I am able to take care of my own needs and do things I enjoy.	Q5_5: Completely

Aggregate: LittlEARS



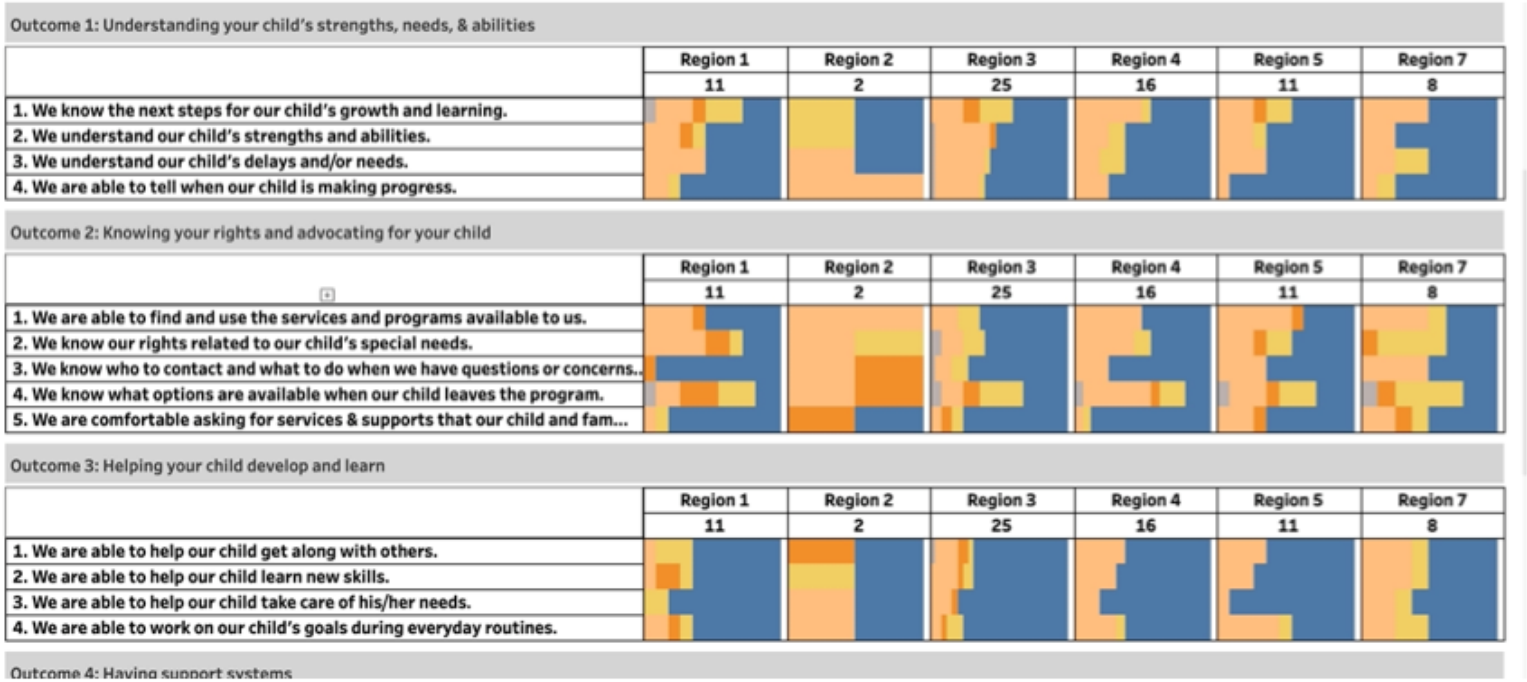
Aggregate: Language Use Inventory

Language Use Inventory: Heat map

			Child age (months) (bins)								
Part (group)	Section (group)	Question/Section	16	20	24	28	32	36	40	44	Total
Part 1: How your child co..	Part 1 Percentile	Part 1 Percentile	99.0	85.0	91.3	63.2	84.7	77.5	65.0	87.0	80.1
Part 2: Your child's communication with words	Part 2 Percentile	Part 2 Percentile	88.0	40.0	33.0	58.0	40.1	73.0	99.0	71.5	53.6
	Section C: Types of words your child u..	C Percentile	97.0	36.0	25.0	58.8	46.7	70.8	99.0	70.5	55.8
	Section D: Your child's requests for he..	D Percentile	42.0	51.5	60.7	48.3	56.7	99.0	99.0	66.3	62.2
Part 3: Your child's longer sentences	Section F: How your child uses words t..	F Percentile	21.0	42.3	31.7	28.7	38.2	68.4	99.0	35.0	43.6
	Section G: Your child's questions and ..	G Percentile	69.0	63.0	19.0	19.3	31.2	64.2	99.0	23.0	41.5
	Section H: Your child's questions and comments about themselves or other people	H Percentile	49.0	24.2	30.5	22.0	14.8	50.8	12.0	11.5	27.2
		H Self Percentile	34.0	27.6	76.0	36.0	21.5	65.0	33.0	15.0	34.2
		H Other Percentile	57.0	32.8	19.7	6.4	9.8	64.5	5.0	13.5	23.3
	Section I: Your child's use of words in ..	I Percentile	25.0	29.0	17.0	52.5	35.3	56.8	56.0	38.5	37.6
	Section J: Teasing and your child's sen..	J Percentile	47.0	32.3	55.7	17.9	26.2	30.4	14.0	32.0	28.2
	Section K: Your child's interest in wor..	K Percentile	60.0	28.3	26.0	37.3	20.3	38.0	5.0	39.0	28.1
	Section M: How your child adapts con..	M Percentile	28.0	21.5	27.0	18.0	17.4	36.5	19.0	2.0	22.3
	Section N: How your child is building l..	N Percentile	43.0	31.2	19.3	6.1	15.7	15.0	24.0	5.0	17.8
	Part 3 Percentile	Part 3 Percentile	36.0	19.2	11.0	19.0	13.0	24.3	16.0	4.0	17.1
Totals	Total LUI Percentile	Total LUI Percentile	45.0	16.2	16.5	21.5	12.1	25.8	19.0	5.0	17.8

Aggregate: Family Outcomes Survey (REF)

Family Outcomes Survey



Outcome 1: Understanding your child's strengths, needs, & abilities

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 7
	11	2	25	16	11	8
1. We know the next steps for our child's growth and learning.						
2. We understand our child's strengths and abilities.						
3. We understand our child's delays and/or needs.						
4. We are able to tell when our child is making progress.						

Outcome 2: Knowing your rights and advocating for your child

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 7
	11	2	25	16	11	8
1. We are able to find and use the services and programs available to us.						
2. We know our rights related to our child's special needs.						
3. We know who to contact and what to do when we have questions or concerns..						
4. We know what options are available when our child leaves the program.						
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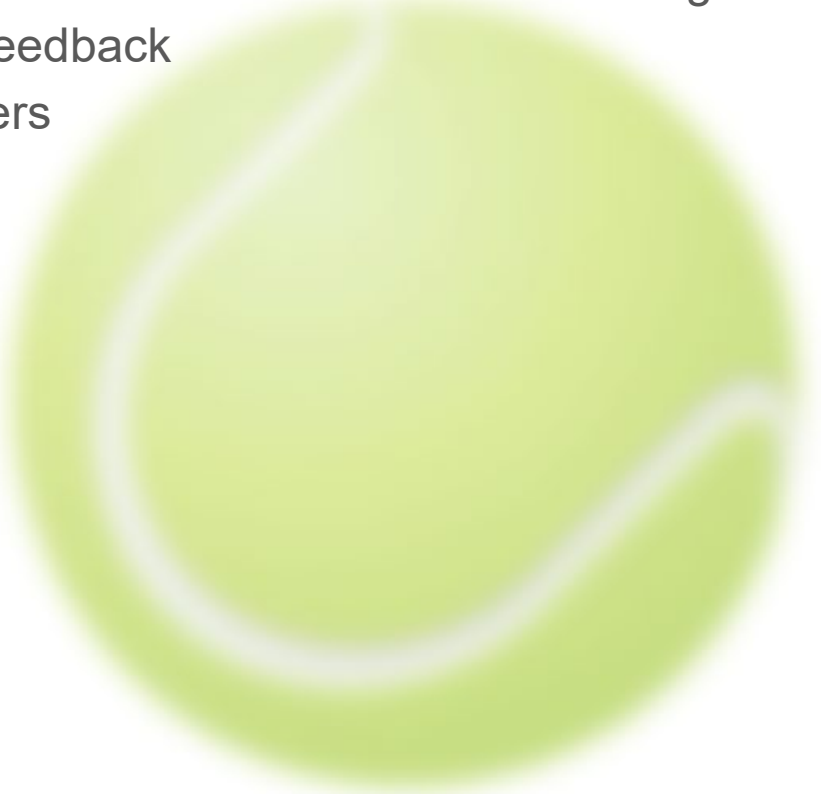
Outcome 3: Helping your child develop and learn

	Region 1	Region 2	Region 3	Region 4	Region 5	Region 7
	11	2	25	16	11	8
1. We are able to help our child get along with others.						
2. We are able to help our child learn new skills.						
3. We are able to help our child take care of his/her needs.						
4. We are able to work on our child's goals during everyday routines.						

Outcome 4: Having support systems

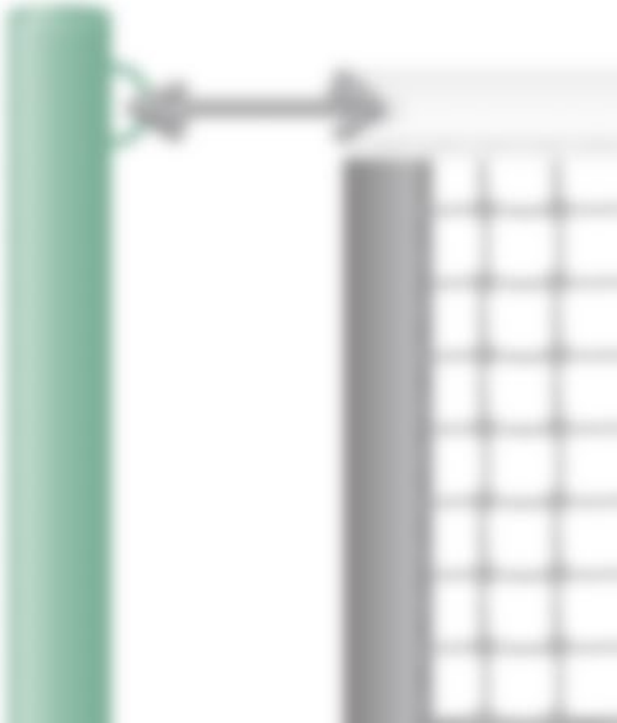
Lessons learned

- Balance between intentional and comprehensive– capturing individual data and systems data
- Small N (just samples of larger population-construct of who is taking it/why)
- Ongoing needs for collaboration, feedback
- Automaticity with increased numbers



Future Plans

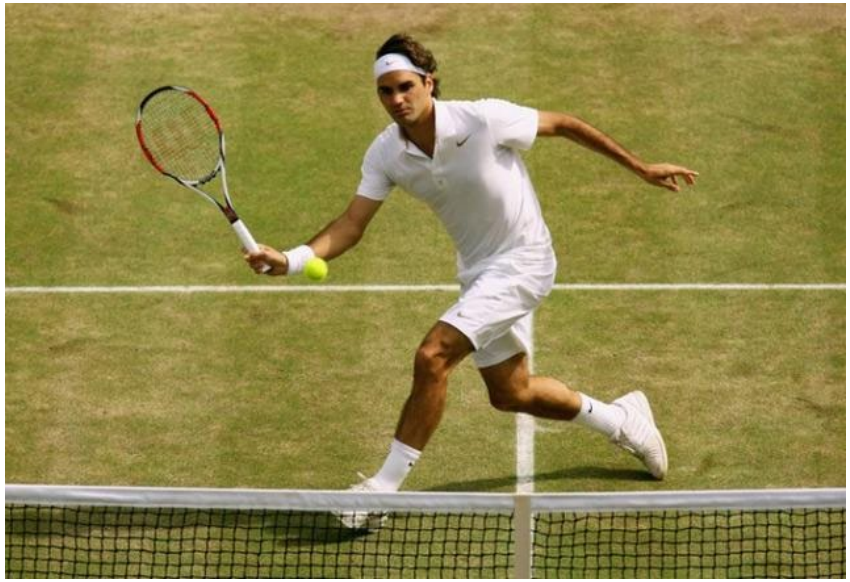
- Increased automation
- Fine-tuning tests/testing protocols
- Direct linking of outcomes to resources and training
- Increasing visibility, numbers of families taking part
- Looking at change across time (longitudinal lens for systems change)



Thank you!

- Paula Mason, IESDB Outreach Director
- Stephanie Henry, Plante Moran
- Gabriel Bargen, ISU
- Joe Cook, Idaho Department of Health and Welfare

Questions



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