

## DATA BASED DECISION MAKING IN THE RTI PROCESS: WEBINAR #4: PRACTICAL SUGGESTIONS FOR USING DATA BASED DECISION MAKING IN YOUR SCHOOL Q & A WITH PARTICIPANTS

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Monday, January 12, 2015  
 NYS RtI TAC

## Agenda

- Seasonal effects and growth on CBM
- Seasonal effects and growth on CAT measures
- Decision making guidelines

## Typical Benchmark Growth: Is There Such a Thing for CBM Reading?

- "...before adding a trend line, it is important to carefully consider whether the overall pattern in the data is consistent and linear across time, or whether another pattern (nonlinear, curvilinear) better explains the data."
- Hixson, Christ, & Bradley-Johnson. (2008) Best Practices in the Analysis of Progress Monitoring Data and Decision Making. Best Practices in School Psychology V. 135 (6) 2133-2146.

## Typical Growth: Is There Such a Thing for CBM Reading?

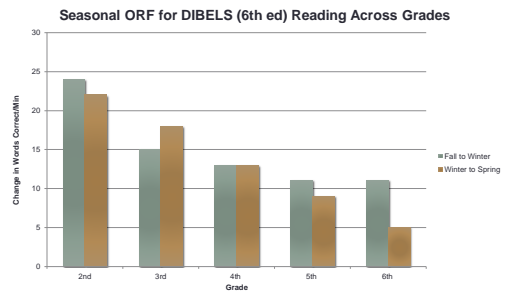
- More growth from fall to winter than winter to spring for benchmarks (3x per year)
  - Christ & Ardoin (2008)
  - Christ, Silberglitt, Yeo, & Cormier (2010)
  - Fien, Park, Smith, & Baker (2010)
- More growth from winter to spring than fall to winter
  - Graney, Missall, & Martinez (2009)

## DIBELS (6<sup>th</sup> Ed.) ORF Norms

	Fall to Winter	Winter to Spring
2 <sup>nd</sup>	<b>24</b>	22
3 <sup>rd</sup>	15	<b>18</b>
4 <sup>th</sup>	13	13
5 <sup>th</sup>	<b>11</b>	9
6 <sup>th</sup>	<b>11</b>	5



## DIBELS (6<sup>th</sup> Ed) Seasonal Effects

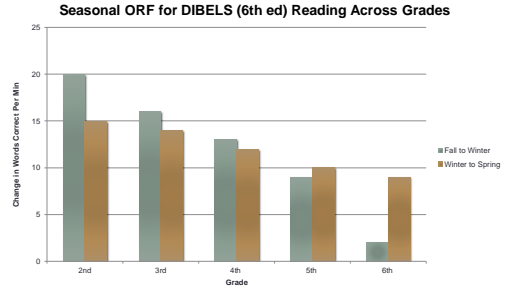


## DIBELS Next ORF Norms (DMG)

	Fall to Winter	Winter to Spring
2 <sup>nd</sup>	<u>20</u>	15
3 <sup>rd</sup>	<u>16</u>	14
4 <sup>th</sup>	<u>13</u>	12
5 <sup>th</sup>	9	<u>10</u>
6 <sup>th</sup>	2	<u>9</u>



## DIBELS Next Seasonal Effects

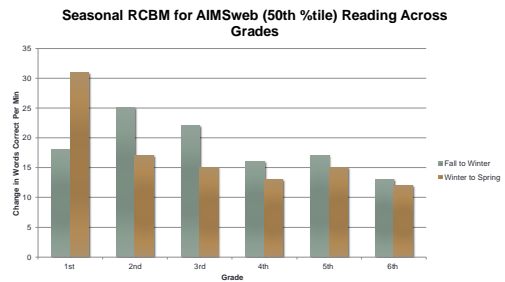


## AIMSweb Norms R-CBM



Based on 50 <sup>th</sup> Percentile	Fall to Winter	Winter to Spring
1 <sup>st</sup>	18	<u>31</u>
2 <sup>nd</sup>	<u>25</u>	17
3 <sup>rd</sup>	<u>22</u>	15
4 <sup>th</sup>	<u>16</u>	13
5 <sup>th</sup>	<u>17</u>	15
6 <sup>th</sup>	<u>13</u>	12

## AIMSweb Seasonal Effects



### Typical Growth:

#### Why the Difference Between Semesters?

- Relax instruction after high stakes testing in March/April.
- Depressed initial benchmark scores due to summer break; a rebound effect
- Instructional variables could explain differences
- Variability within progress monitoring probes

## Seasonal Effects and CAT Measures

- Seasonal effects NOT usually evident in CAT measures
- CAT measures are vertically scaled, CBM somewhat in reading

## What are Computer Adaptive Tests?

- Based on IRT (Item Response Theory) method of test construction
- Adjusts items administered based on student responses and difficult of items
- Tests have huge item banks
- Items are not timed, based on accuracy of response
- Careful calibration, pinpoints skills acquired and in need of teaching in a skill sequence

## CAT Methods and Measures

- Computer administered entirely
- Between 15-25 minutes per administration
- Skills focused within domains
- Not all students take same items, depends on which items are answered correctly and incorrectly
- Scaled Score is the KEY metric

## CAT Methods and Measures

- Provides a student's relative standing to peers in on a national distribution
- Provides student's goals for growth
- Provides indication of group's performance (grade, school, district) relative to what is expected nationally
- Example for today- STAR Assessment (Enterprise) from Renaissance Learning
- Other similar metrics exist, see NCRTI charts
  - Study Island, SRI, MAP

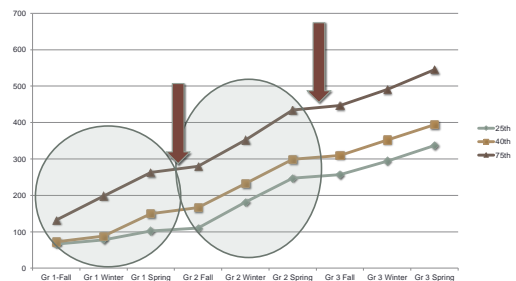
## CAT Scaled Score - Critical

- Metric that places student on a distribution from K through grade 12
- Weight analogy
- STAR Scaled Score
  - Early Literacy (PreK – 3) 300 – 900
  - Reading (K-12) – 0 to 1400
  - Math (1 – 12) – 0 to 1400
- Note important difference in interpretation to CBM (AIMSweb) measures across grades and time

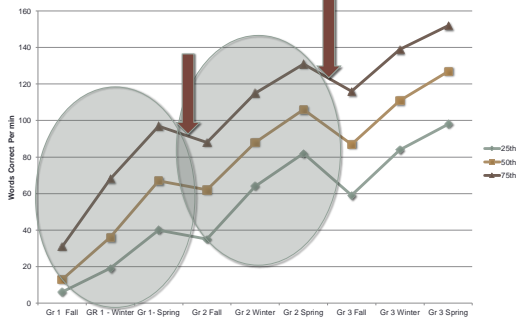
## STAR Reading Scaled Scores

Grade	Percentile	Fall September		Winter January		Spring May		Moderate Growth Rate Scaled Score /Week
		Scaled Score	Est. ORF*	Scaled Score	Est. ORF*	Scaled Score	Est. ORF*	
1	10	59	5	70	14	81	22	2.5
	20	64	9	76	18	82	27	2.8
	25	66	11	78	19	82	30	3.0
	40	72	15	88	25	100	41	3.3
	50	75	19	99	29	101	49	4.0
2	10	132	37	138	54	203	72	3.3
	20	144	46	151	60	214	80	3.4
	25	154	54	161	66	227	88	3.5
	40	166	63	181	77	247	103	3.8
	50	177	71	203	88	274	117	4.0
3	10	200	73	202	92	334	114	3.7
	20	203	75	214	97	344	124	3.8
	25	207	77	224	103	354	134	3.9
	40	210	79	234	109	364	144	4.0
	50	214	81	244	117	374	154	4.1

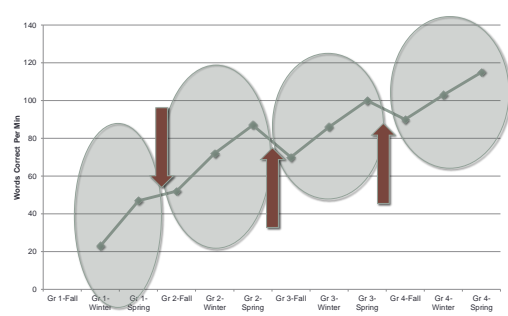
## STAR Reading Scaled Score Across Time and Grades



## AIMSweb RCBM Across Time



## DIBELS Next Across Grades



## Interpreting Data: Making Instructional Decisions

- Summarizing Performance
- Decision-Making



## Guidelines For Summarizing Student Performance

At least three characteristics of graphed data can be used to describe and summarize student performance:

- Level of performance
- Slope of performance
- Variability of performance

## Level of Performance

- What changes occur immediately after a program modification?
- Does the new intervention produce an immediate step (up or down) in behavior?

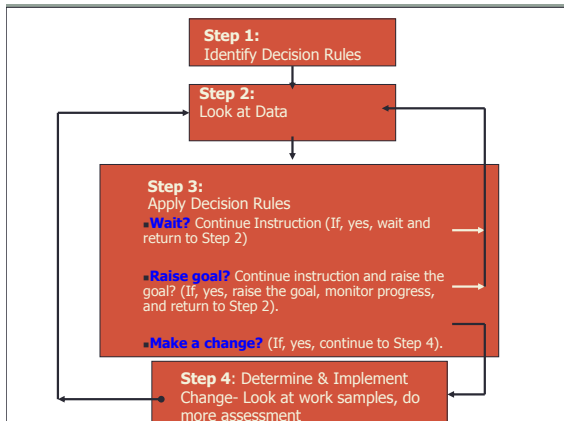


## Slope of Performance (Trend)

- Judge the general direction in which a student's performance is changing
  - increasing
  - decreasing
  - staying the same.
- What is the rate of change? How fast is performance changing over time?

## Variability of Performance

- Up-and-down movement on the graph reveals the stability or consistency present in behavior from day to day.
- Scan the data and make judgement about the degree of variability, ranging from high to low.



## Guidelines for Instructional Decision Making

- Emphasis on attaining a goal
- Program modifications occur only when attainment of the goal is in doubt
- Increasing a goal is a legitimate modification
- Reduction of goals should be the LAST change decision made

## Goal-Oriented Decision Making

- A consistent rule is to make program changes when performance falls below the aimline (for accelerating behaviors) or above the aimline (for decelerating behaviors) for 4 consecutive data points.
- Using aimlines and decision rules takes much of the guess work out of data analysis.

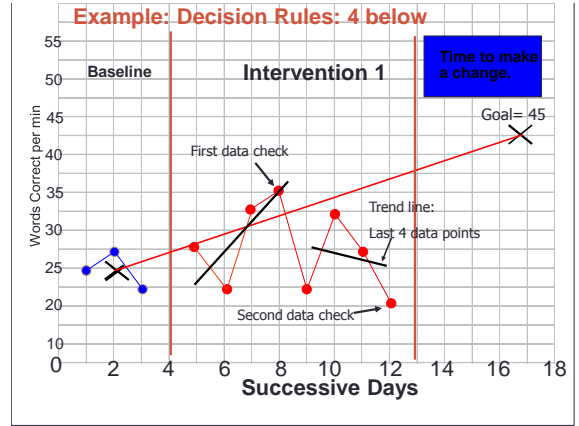
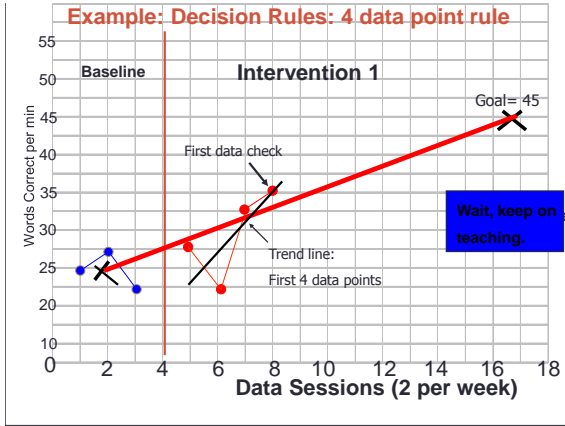


## Decision Rules . . .

- 2 weeks if you are assessing twice per week
- 4 weeks if you are assessing once a week
- 8 weeks if you are assessing every other week
- If scores are hovering about the aimline, continue to do what you have been doing!

## Example Decision Rules are . . .

- Below the aimline on 4 consecutive data points, but is parallel to the aimline, decide to "wait" to see if student performance accelerates in level to reach the original aimline.
- If the student performance continues below the original aimline, implement a different teaching strategy.
- Draw a vertical line of the graph that symbolizes a change in the program.



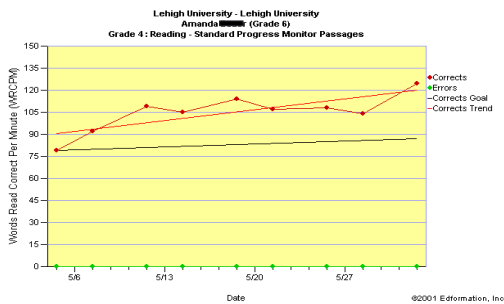
### Decision Rules...

- It doesn't hurt to make the decision to change sooner
  - If data are not extremely variable
  - And consistently below the aimline
  - And your clinical judgment tell you to make an early decision

### Decision Rules...

- If the student's performance is above the aimline after 4/6 data points, it may be appropriate to raise the goal.
- Use the last 3 data points to generate a new baseline data point, and calculate a new aimline.

### Change the Goal



### Some questions to ask yourself when considering an instructional change in reading

- Are the data to be believed?
  - Is the student being monitored at the appropriate instructional level (e.g., is the text too easy or too hard)?
  - Is the student a fluent reader, but a "word caller"?
- Is the problem in decoding?
  - Does the student have specific decoding difficulties?
  - Does the student have proficient decoding skills, but require additional fluency practice?
- Is the problem in comprehension?
  - Does the student pause at appropriate punctuation?
- Do I need more assessment to better determine the skill areas in need of instruction?

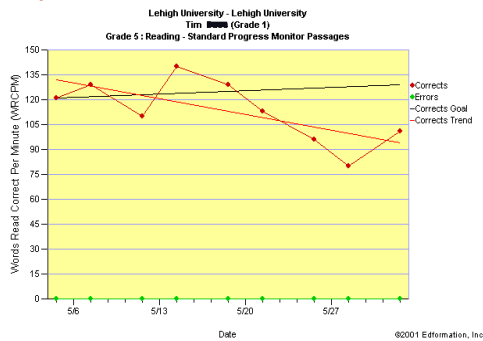
## Reading Case Study: Tim

- *New student in emotional support classroom*
- *Began monitoring reading performance on the first day he arrived in class*
- *Sixth grade student*
- *Monitor performance at the fifth grade level.*

## Step 1: Identify Decision Rules

- **Wait** and continue instruction if a student's performance is below the aimline on 4 consecutive data points, but is parallel to the aimline.
- **Raise the goal** if the student's performance is above the aimline after 4 data points.
- **Make changes** if performance falls below the aimline on 4 consecutive data points.

## Step 2: Look at the data



## Step 3: Apply your decision rules

- **Wait?** Should you wait for more data to make your decision and continue instruction? (If, yes, wait and return to Step 2)
- **Raise the goal?** Should you continue instruction as implemented and raise the goal? (If, yes, raise the goal, monitor progress, and return to Step 2).
- **Change?** Should you make a change? (If, yes, continue to Step 4).

## Step 4: Determine the instructional change required

- *Look at work samples*

It was raining outside, and there was nothing for Norman to do.	12
"I have the most boring life," he moaned, as he plopped down on the couch. Just	28
as he switched on the television, the power went out. Watching a blank television	42
was not something Norman wanted to do. He looked around at the four dismal walls	57
that kept him out of the rain.	64
"Now what am I going to do?"	71
"You could tidy up your room," his mom suggested, "or organize your closet.	84
Your closet is a disaster, Norman. I'm actually frightened of what you might find in	99
there. You haven't cleaned it in a decade."	107
There was nothing Norman could say after his mom had made up her mind. He	122
was going to have to clean out his closet.	131
The only problem was that Norman couldn't even open his closet door. He had it	146
held closed with a large wooden block. There was so much junk in there that it	162
wouldn't stay shut on its own. To push aside the wooden block and open the door	178
would mean doom for Norman. He'd be crushed by falling trash as soon as he	193
turned the knob. He decided that he would only pretend to clean his closet, but his	209
mother came into his bedroom.	214
"Well," she said, placing her hands on her hips, "let's see you get to work."	229
Norman put both hands on the doorknob and lugged. The entire doorframe gave	242
a mighty CREAK. There was a loud rumble as Norman was pushed back by the	257
wave of forgotten junk he'd jammed into his closet. When the loud noise faded,	271
Norman was lying on his back under a mountain of broken toys, dirty socks, and	286
books. With a groan, he lifted himself to his feet.	296
There was an awful smell wafting from somewhere inside. Norman looked into	308
the depths of his closet. It was dark, dreary, and mysterious. Anything—absolutely	321
anything—could be hiding in there. Maybe trolls, ghouls, or gnomes. Norman	333
thought. This job could be an adventure! Pushing up his sleeves, Norman got to	347
work.	348

101  
100

"I cannot fall asleep," Ned said to himself quietly. The stars outside were shining brightly through his window, and the starlight pooled on his bedspread, giving off a silver glare against his shut eyelids. Ned pressed his eyes closed very tightly, but that didn't seem to help. 14  
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Finally Ned sat up and peered out his window. The stars were going as bright. Ned was sure he could see just about every constellation in the universe. He knew from school that a constellation was a group of stars that formed a picture in the sky. Out of all the constellations that were out tonight, the Big Dipper glowed the brightest. It was so bright, its light made Ned squint.

Since Ned was very curious about the night sky and he wasn't sleeping anyway, he crept from his bed. He went outside and stood on his lawn. He was barefoot and in his flannel pajamas, but he didn't care how he looked because everyone else on his block was sleeping.

He tipped back his head and looked up. He watched the stars for a long time. He watched for so long that the stars seemed to move before his very eyes. A cluster of stars that looked like a horse galloped across the sky and hurtled the moon. A man walked along with a sword, swinging it at other stars as if they were baseballs. Then, to Ned's surprise, the Big Dipper dipped down and picked him up. It lifted him high up into the dark sky.

"This is great," Ned hollered, clinging to one of the corner stars. "Yahoo! Let's go to Jupiter!"

The Big Dipper must have heard him because the huge constellation abruptly turned and soared toward Jupiter. Ned was able to study the huge planet up close. He even got to poke his finger in the huge storm that brewed on one side of the planet.

Ned soared around the sky all night. Finally at dawn, the Big Dipper dipped down and dropped Ned off on his front lawn. Then all the stars faded from the sky. What an exciting night of star gazing!

**Qualitative Features Checklist**

Student Name: \_\_\_\_\_

Rater: *Kelly* \_\_\_\_\_

Date: *5/24/02* \_\_\_\_\_

Assessment Material: \_\_\_\_\_

After listening to the student read connected text, judge the degree to which you observe these important features of successful reading. Note that some features may not be observed.

Reads fluently or efficiently (*not always speed*)

Reads very accurately (>95%).

Has an effective strategy for unknown words.

Reading errors preserve rather than distort meaning.

Reads with expression (attention to prosodic features).

Self-corrects errors (comprehension self-monitoring).

Adjusts pace when complexity or "considerateness" of text changes.

Additional Comments:  
*not an motivated behavior despite learning  
will adapt to new school total date due  
1<sup>st</sup> day of this testing*

#### Step 4: Determine the instructional change required

##### • Look at teacher notes

#### Step 4: Look at the data and work samples

- Teacher Notes:
  - Tim reads accurately (>95%).
  - No apparent error patterns, though sometimes takes longer to decode multisyllabic words.
  - Tim reads with expression.
  - Tim uses self-corrections and sounding out strategies to decode more difficult words (e.g., multisyllabic words).
  - Tim's reading seems efficient, but not at highly fluent, "effortless" pace.

#### Step 4: Determine the instructional change required

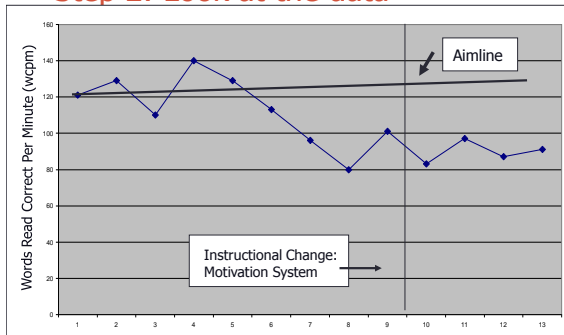
##### • Conduct additional assessment if needed

#### Intervention Selected

- What?- Motivational system
- Why? – Tim seems to have the skills but may not be motivated to perform.
- How?
  - Identify daily goal with Tim
  - Identify effective reward for Tim (homework pass)
  - If goal is met, Tim gets 1 point toward homework pass
  - 2 points = 1 homework pass



## Step 2: Look at the data



## Step 3: Apply your decision rules

- **Wait?** And continue instruction. Should you wait for more data to make your decision? (If, yes, wait and return to Step 2)
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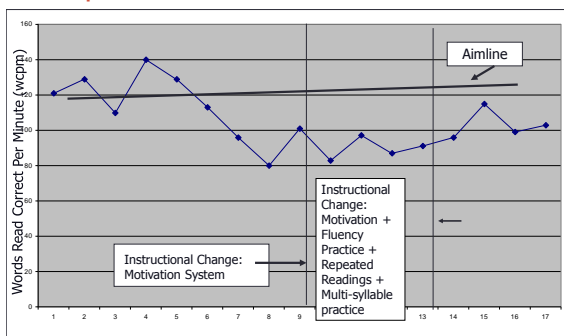
## Step 4: Determine the instructional change required

- *What instructional change would you suggest?*
- *What is the next step in the decision making process?*

## Intervention Selected

- **What?** –
  - Focus on improving fluency
  - Continue motivational system
  - Practice on decoding multisyllabic words
- **Why?** –
  - Reading skills appear not to be problematic
- **How?** –
  - Repeating reading practice with peer (may help with motivation as well as social skills)
  - Mini-lesson to be taught before reading practice
  - Have student reteach lesson to peer who has poorer performance in reading

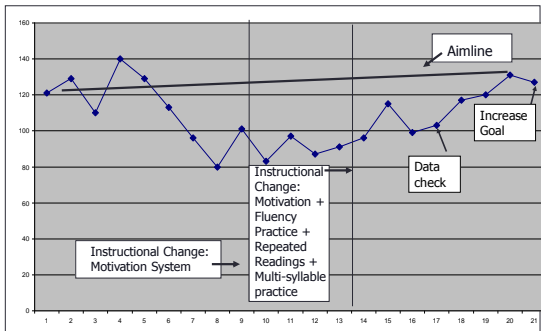
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## Step 2: Look at the data



## Remember, your ultimate goal is...

- **Not** to get better performance on the test,
- But to improve performance through better teaching

## Making Instructional Changes Means

- More of something (and less of something else) in same amount of time
- More of something and more time allotted for reading
- Different grouping
- Different materials
- Different strategy within reading element
- Additional personnel to allow for more guided practice at later time

## Levels of Instructional Change

Simple interventions  
 Moderate interventions  
 Intensive interventions

## Levels of Intervention

- Simple Interventions – No major changes to the instructional process.
  - Increase motivation related to test performance
  - Students graph own data
  - Reminders/cues
  - Self-monitoring cues
  - Location/timing of assessment or instruction

## Simple Levels of Intervention

- Simple interventions are easy to implement
- Interventions may have significant impact
- Makes sense to try these first
- Little things: No significant changes in instructional processes are made

## Levels of Intervention

- Moderate Interventions – **enhancement** of existing instruction
  - Many, many strategies in this area can be used
  - Strategies are designed to **enhance** instruction, not change it
  - Often will involve intensifying instruction
    - more time, less down time,
  - Often will involve focusing on specific skill areas found to be problematic

## Moderate interventions

- Require small amount of additional resources or time
- Try to fit within existing instructional processes
- Maximize opportunity to include others to maximize instructional time

## Levels of Intervention

- Intensive Interventions – typical instruction is altered
  - Change curriculum
  - Change instructional materials
  - Change instructional groupings
  - Add intensive one-to-one instruction

## Intensive interventions

- Require even more resources and time
- Require additional support to put in place
- May need additional consultation or professional development to select and implement these strategies

## Forms for Documenting Data Based Decision Making Process

- Documentation is essential for fidelity of the process
- Many options: two examples
  - SIRF
  - Data Based Decision Making Forms

## Video Walk Through

- [Data decision in action](#)

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Q & A

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Without Data...



It's **ONLY** An Opinion!

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End day 4

Many thanks, hope you found these webinars useful.