

Early Childhood Outcomes Center Data Workshop



Getting the Tools You Need for Data-Informed Program Improvement

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Our time together

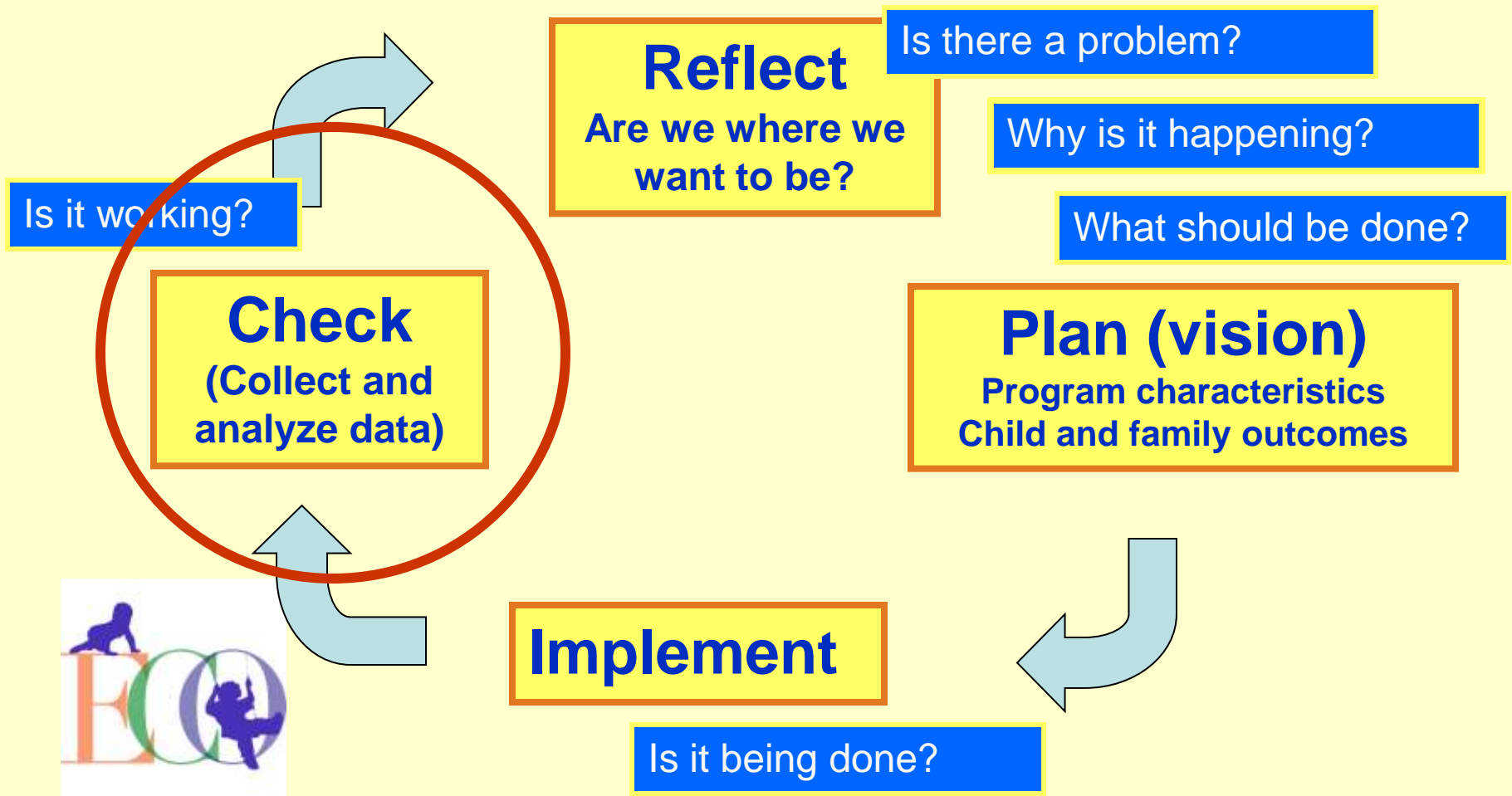
- Give you a sense of how to approach your data to be able to use it for program improvement
 - Multiple step process
 - Each step involves skills
 - Not enough time to skill build at every step
- Give you a sense of the steps, a taste of what is involved, and what else you need to learn.



Finding the Killer Questions



Examining and Tweaking Your Service System



Starting with a question (or two..)

- All analyses are driven by questions
- Several ways to word the same question
- Some ways are more “**precise**” than others
- Questions come from different sources
- Different versions of the same question are necessary and appropriate for different audiences.



Question sources

- Internal – State administrators, staff
- External –
 - The governor, the legislature
 - Advocates
 - Families of children with disabilities
 - General public
 - OSEP
- External sources may not have a clear sense of what they want to know

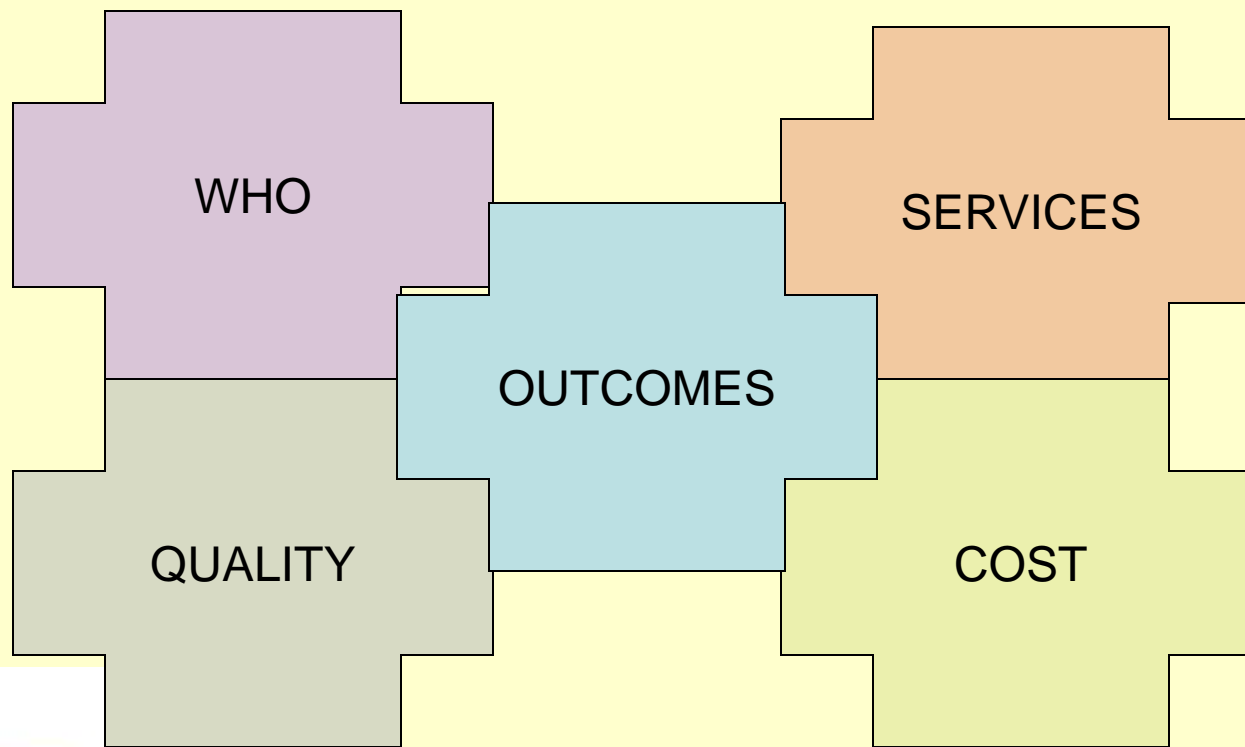


A possible question

Are programs serving young children with disabilities effective?



Areas for Program Improvement



Sample basic questions

- Who is being served?
- What services are provided?
- How much services is provided?
- Which professionals provide services?
- What is the quality of the services provided?
- What outcomes do children achieve?



Sample questions that cut across components

- How do outcomes relate to services?
- Who receives which services?
- Who receives the most services?
- Which services are high quality?
- Which children receive high cost services?



Making comparisons

- How do outcomes for 2008 compare to outcomes for 2009?
- In which districts are children experiencing the best outcomes?
- Which children have the best outcomes?
- How do children who receive speech therapy compare to those who do not?



Making comparisons

- Disability groups
- Region/school district
- Program type
- Household income
- Age
- Length of time in program



**Comparing Group 1 to Group 2
to Group 3, etc.**



Question Clarification

- External sources may not have a clear sense of what they want to know
 - You need to clarify **with** them or **for** them
- More liberty to pursue alternative questions when the questions are completely internal



Activity 1

Imagine you are the state coordinator for EI or ECSE. A major foundation in your state has announced they will be giving your department a very large grant to improve services across the state. What are the 5 top questions you want answered to be able to plan this new program improvement effort?



Talking to Your Analyst





Question precision

- A research question is completely precise when the data elements and the analyses have been specified.

Are programs serving young children with disabilities effective?

(question 1)



Question precision

- Of the children who exited the program between July 1, 2008 and June 30, 2009 and had been in program at least 6 months and were not typically developing in outcome 1, what percentage gained at least one score point between entry and exit score on outcome 1?

(question 2)



Finding the right level of precision

- Who is the audience?
- What is the purpose?
- Different levels of precision for different purposes

**BUT THEY CAN BE VERSIONS OF THE
SAME QUESTION**



Elements

- Who is to be included in the analysis?
 - Exit between July 1, 2008 and June 30, 2009
 - In program at least 6 months (exit date minus entry date)
 - Not typically developing at entry (hmm....)
- What about them?
 - Entry score outcome 1
 - Exit score outcome 1
- Do we need to manipulate the data?
 - $\text{Gain} = \text{Exit score} - \text{entry score}$



Variables/Data Elements



- ID
- Year of Birth
- Date of entry
- Score on Outcome 2 at entry
- Gender



Many options...

- How do exit scores compare to entry scores?
 - Compare average score at entry and exit
 - Compare two frequency distributions of scores
 - Compare % who were rated typical
- Need to decide what you want
- May need to be able to communicate it to someone else.



Variables/Data Elements

- What data elements do you need to answer your questions?
- Do you need to compute variables to answer your question?
 - Time in program?
 - Age at entry?



Activity 2: Do You Have What it Takes? (AKA Specifying the Data)

Look over your questions and select two to answer. List the question and then specify the data elements you need to answer the question. You might want to rewrite the question with additional precision to clarify what is needed.

Bonus: Answer questions Q1 and Q2 when you finish.





Working with Table Shells



Terminology

- Frequency (count, percentage)
 - 16 boys, 62%
 - 10 girls, 38%
- Cross-tabulation (data element by data element)
 - 12 boys with Communication Delays, 4 Other
 - 5 girls with Communication Delays, 5 Other
- Average or Mean
 - Average age at entry = 17 months



Next decisions

- Tables and Graphs - How do you want your data displayed?
- What is the display that will answer your question?



Descriptive:
Analysis:
Filling the
Shell



Describing characteristics that are measured as categories

ID	Program	Progress Category
1	Children's Corner	b
2	Elite Care	c
3	Ms Mary's	a
4	New Horizons	d
5	Oglethorpe	d
6	Elite Care	e
7	Ms Mary's	c
8	New Horizons	e
9	Oglethorpe	e

Program	Progress Categories OSEP 1					
	a	b	c	d	e	Row total
Children's Corner	1	1	3	1	8	14
Elite Care	1	6	2	2	6	17
Ms Mary's	1	3	3	11	13	31
New Horizons	0	1	4	2	3	10
Oglethorpe	0	2	3	2	10	17
Column total	3	13	15	18	40	89

Analyzing categorical data

- **Row percentages** –percentages computed with the Row total as the denominator

Children in Elite Care with a score of “b”

Total number of children in Elite Care

- What does this tell us?



Analyzing categorical data

- **Column percentages** –percentages computed with the Column total as the denominator

Children in Elite Care with a score of “b”

Total number of children with a score of “b”

- What does this tell us?



Quiz

Three years ago, Ms Mary implemented a state of the art social skills intervention for all the classrooms in her program. She wants to see if this intervention was effective. As a preliminary analysis she wants to compare the percent of children in category D for OSEP outcome 1 between her program and other similar programs. **Given the data structure described previously, should she use row or column percents?**



Program	Progress Categories OSEP 1					
	a	b	c	d	e	Row percent totals
Children's Corner	7%	7%	21%	7%	57%	100%
Elite Care	6%	35%	12%	12%	35%	100%
Ms Mary's	3%	10%	10%	35%	42%	100%
New Horizons	0%	10%	40%	20%	30%	100%
Oglethorpe	0%	12%	18%	12%	59%	100%
Column percent totals	3%	15%	17%	20%	45%	100%

Final results

- Using the row percents we know that 35% of children in Ms Mary's programs closed the gap in Outcome 1.
- As a reference, we can compare this to the 20% of children across all programs that closed the gap in Outcome 1.
- Is this an important difference?
 - To answer that question we would need to do a nonparametric statistical test like a chi-square with the appropriate follow up tests.



Activity 3: Building a table shell

Take your question and develop a “table shell” that you would give to an analyst or programmer to show how you want the data analyzed and displayed.



Descriptive data analysis in MS Excel: Demonstration



Activity 4. Descriptive analysis in MS Excel: Filling the table shell

Draw your table shell. Using MS Excel and your state data or the dummy data, do a descriptive analysis and use the results to fill in your table shell.



Wrap Up:



Getting on the Road to Data-Informed Program Improvement

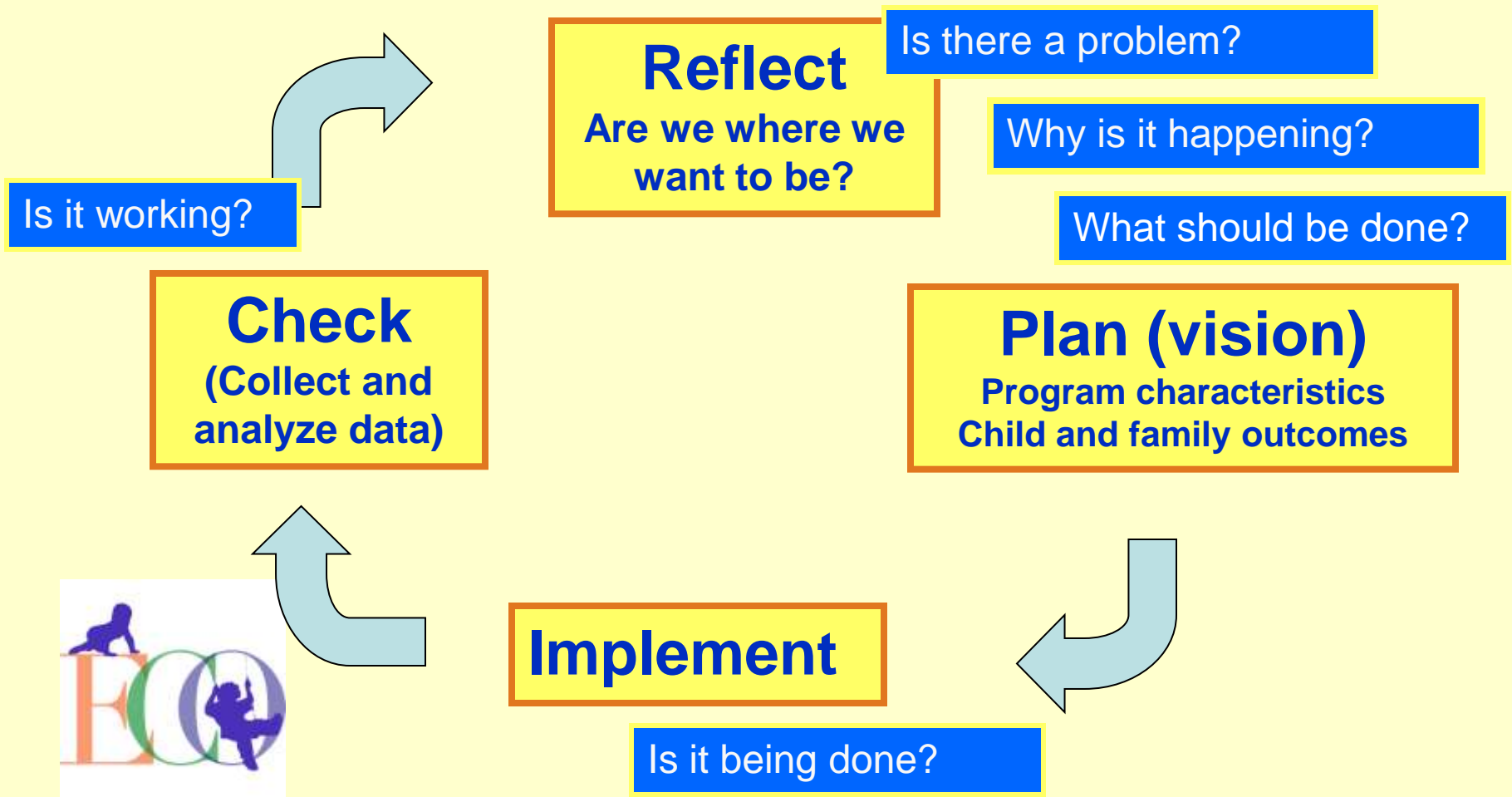


Steps to Program Improvement

1. Have a vision for the service system
2. Implement the services



Examining and Tweaking Your Service System



Steps to Program Improvement

3. Formulate **questions** about the service system
4. Identify the **variables** needed to answer the question (including those that need to be constructed)
5. Determine the **analysis** that will answer the questions (maybe sketch your table shell or graph)
6. Run the analyses



And more steps

Figure out what the numbers are telling you

Take what you learned and act on the message



.....And meanwhile keep improving the quantity and quality of what is in your data system.



Information Infrastructure: Data Needed for Program Improvement

