

# Data Quality Pattern Checking Table

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[https://ectacenter.org/eco/pages/quality\\_assurance.asp](https://ectacenter.org/eco/pages/quality_assurance.asp)

This document describes strategies for using data analysis to improve state [child outcomes](#) data quality by looking for patterns that indicate potential issues. Depending on your state's context, it might be expected that not all patterns show up in the data.

## 1. Children Differ

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### Predicted Patterns

Children will differ from one another in reasonable ways.

- 1a. At entry and exit there will be a few children with very high or very low numbers relative to same-age peers.
- 1b. Few children will have entry numbers at or above age expectations on all three outcomes. Most children will be below age expectations on at least one outcome.
- 1c. Distributions at entry will be centered on a lower number than exit.
- 1d. Children will differ from one another in their [progress categories](#) in reasonable ways.

### Rationale

- Available evidence suggests early intervention (EI) and early childhood special education (ECSE) serve children with a variety of functional levels, although generally serving more mildly than severely impaired children.
- Children with significant challenges tend to have impaired functioning in two or three areas.
- Children with milder delays have a mild delay in one or two areas and might show functioning typical of their chronological age in other areas.

### Analyses

1. Distribution of age-referenced numbers at entry and exit
2. Distribution of progress categories
3. Percentage of children who scored at or above age expectations on all three outcomes at entry

## 2. Functioning Across Outcomes

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### Predicted Patterns

Functioning in one outcome will be related to functioning in the other outcomes.

- 2a. Functioning at entry in one outcome is related to functioning at entry in the other outcomes.
- 2b. Functioning at exit in one outcome is related to functioning at exit in the other outcomes.
- 2c. Progress between entry and exit in one outcome is related to progress in the other outcomes.

### Rationale

- Most children gain skills over their time in early childhood programs. Development tends to progress in predictable stages across outcomes.
- As abilities in one outcome increase, abilities in the other outcomes tend to increase. Progress in functioning in the [three child outcomes](#) proceeds together.

### Analyses

Look at the relationship of entry, exit, and progress category numbers across the three child outcomes.

1. Crosstabulations (for example, *Outcome 1 by Outcome 2*), best for **COS ratings and progress categories**. Expect most cases to be on the diagonal and the others to be clustered on either side of the diagonal.
2. Correlation coefficients (for example, *Correlation between Outcome 1 and Outcome 2*), best for **scores**. Expect correlations to be moderate to strong ( $r = 0.6-0.8$ ).

## 3. Entry and Exit

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### Predicted Patterns

Functioning at entry in one outcome will be related to functioning at exit in the same outcome (for example, comparing Outcome 1 entry and Outcome 1 exit).

- 3a. Most children maintain or improve status relative to same age peers during participation in EI and ECSE.
- 3b. Large changes in status relative to same age peers between entry and exit from the program are possible but rare.

### Rationale

- Most children served in EI and ECSE will maintain or improve their rate of growth in the [three child outcomes](#) over time given participation in intervention activities that promote skill development.

### Analyses

1. Crosstabs between entry and exit ratings for each outcome, best for **COS ratings**. Expect most cases to be on the diagonal or small positive changes.
2. Exit minus entry numbers. For **COS ratings**, expect most cases to increase by no more than 3 points. For **standard scores**, expect most cases to increase by no more than 14 points.

## 4. State and Program Trends

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### Predicted Patterns

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States and programs should have similar results across years.

- 4a. Distributions of [progress categories](#) and [summary statements](#) should be similar across years (assuming the same kinds of children are being served).
- 4b. In states that have undertaken effective program improvement activities, summary statements will increase across years.

### Rationale

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- If child, family, and program factors don't change significantly, expect to see similar levels of child progress between entry and exit across years.

### Analyses

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1. Frequency distributions of progress categories across years
2. Frequency distribution of summary statements across years

## 5. Similar Programs

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### Predicted Patterns

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Similar programs should have similar results.

- 5a. If programs are serving similar kinds of children, distributions of age-referenced entry scores should be similar.
- 5b. If programs are serving similar kinds of children and are similarly effective, distributions of age-referenced exit scores should be similar.
- 5c. If programs are equally effective, progress category and summary statement distributions should be similar.

### Rationale

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- Local areas serving similar kinds of children, should have similar distributions of child ability at entry to the program.
- If programs are equally effective, scores at exit and the OSEP percentages should be similar.

### Analysis

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Analysis should only be done on programs reporting numbers on 30 or more children.

1. Average age-referenced entry scores by program, best for **scores**
2. Median age-referenced entry ratings by program, best for **COS ratings**
3. Progress category distributions by program
4. Summary statement 1 and 2 by program

## 6. Nature of Disability

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Numbers should be related to the nature of the child's disability.

- 6a. Groups of children with more severe disabilities should have lower entry numbers than groups of children with less severe disabilities.
- 6b. Groups of children with more severe disabilities will have distributions with a larger percent in [progress categories](#) a–c; groups of children with less severe disabilities will have distributions with a larger percent in categories d and e.
- 6c. Groups of children with more severe disabilities will have lower percentages on [summary statement](#) 1 and 2 than groups of children with less severe disabilities

- Children with less severe disabilities have more functional skills across the [three child outcomes](#) than children with more severe disabilities.
- These true differences in functional abilities should be reflected in children's ratings or scores on the three child outcomes.

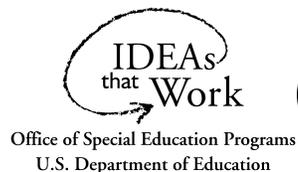
1. Average age-referenced entry scores by disability type, best for **scores**
2. Median entry ratings by disability type, best for **COS ratings**
3. Progress category distribution by disability type
4. Summary statement 1 and 2 percentages by disability type

## Funding Disclaimer

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