



# **DOCUMENTATION OF THE RECOMMENDED ANALYSIS FOR USING CHILD OUTCOMES DATA FOR *IDEA* PART C DETERMINATIONS**

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*Developed by the  
Early Childhood Technical Assistance Center*

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*This document describes the steps used in the recommended process for identifying the states most in need of assistance based on child outcomes.*

## 1. DATA QUALITY: MISSING DATA.

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We computed a proxy for missing data by calculating the percent of exiters who were included in the outcomes data (C3). We used the 618 Exiting data for each state for the number of Part C exiters. We computed a percentage for each state by dividing the number of children reported in C3 by the number of exiters reported for 618.

States were assigned a score of 0, 1, 2 based on the percentage using the criteria in the table below:

Score	Cut Points for Missing Data Score	Number of States Receiving Score: 2013	Number of States Receiving Score: 2014
0	Lower than 34%	8	10
1	34 thru 69%	39	34
2	70% and above	9	12
<b>Total</b>		<b>56</b>	<b>56</b>

Note: No data available for Micronesia, Marshall Islands and Palau.

One state was sampling and was assigned a score of “1” because there were no data available on the expected percentage.

We would recommend using a higher criteria for missing data in future years as more states report data on more children. Reporting data on only 34% of exiters does not reflect high quality but we used this cut score so the process would identify only a small number of states with the lowest quality.

## 2. DATA QUALITY: OUT OF RANGE.

The next step was to compute the percent of states with “out of range” percentages for the a to e progress categories. The first part of this step involved identifying what would be considered out of range values. This was determined by examining the distributions of the state-reported data for each of the categories. The resulting cut points are shown in the table below. The numbers in the chart are the low and high percent for out of range for each category, e.g., if a state’s category ‘a’ percentage was great than 5%, we considered the data as “out of range”; if category ‘b’ was less than 5% or more than 50%, the data was considered out of range, etc. The same cut points were used for all three outcomes.

Category a	Category b	Category c	Category d	Category e
0	<5	<5	<5	<5
>5	>50	>50	>50	>65

These cut points were applied to the state’s 15 reported values for the progress categories, and we computed a total for the state based on the number of progress categories that were within range. A score of 0 meant all values were out of range, and a score of 15 meant all of the values were within range.

States were assigned a score of 0, 1, or 2 based on the number of progress categories within the range using the criteria in the table below:

Score	Cut Points for Assigning Out of Range Score	Number of States Receiving Score 2013	Number of States Receiving Score 2014
0	9 or less	4	3
1	10 thru 12	11	5
2	13 thru 15	41	48
<b>Total</b>		<b>56</b>	<b>56</b>

Note: No data available for Micronesia, Marshall Islands and Palau

As seen in this chart, most states (48 of 56) were within acceptable bounds for at least 13 of the 15 possible progress percentages (5 categories, a-e, for each of the 3 outcome areas).

### 3. TOTAL SCORE FOR DATA QUALITY.

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The next step was to combine the information from the missing data and the out-of-range variables into a total score for data quality. This was done by adding the score for missing data and the score for within range data together, resulting in a data quality score with a range from 0 to 4. Zero indicated that the state did poorly on both missing data and within range data and a 4 indicated that the state did well on both missing data and within range data. The distribution for the total score on data quality is shown below.

Score for Data Quality	Number of States Receiving Score: 2013	Number of States Receiving Score: 2014
0	1	1
1	7	5
2	11	7
3	31	31
4	6	12
<b>Total</b>	<b>56</b>	<b>56</b>

We needed to determine how to combine the data quality score with the child achievement for state's with low data quality. If a state had very low quality data, the state's reported data for the Summary Statement was not credible. For this reason, we decided that **states that scored a 0 or a 1 on data quality would be scored a 0 on child achievement**. This resulted in six states getting a zero on achievement in the final calculations of overall outcomes score and in both of the achievement subscores.

## 4. CHILD ACHIEVEMENT: SUMMARY STATEMENTS COMPARED TO OTHER STATES.

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The next steps in the process involved assigning scores to the state data for the achievement of child outcomes. The first set of scores was assigned based on the values of the Summary Statements. We examined the distribution of the 6 summary statements across the 50 states that met the quality criteria. We identified the 10th and 90th percentile for each of the 6 Summary Statements. The tables below show the 10th and 90th percentiles from both 2013 and 2014. Of note is the stability of these percentiles over the two years.

### Cut off Percentages for the 10th and 90th Percentile for Each Outcome and Summary Statement: 2013

Percentiles	Outcome 1 SS1	Outcome 1 SS2	Outcome 2 SS1	Outcome 2 SS2	Outcome 3 SS1	Outcome 3 SS2
10	42%	41%	52%	33%	55%	40%
90	85%	75%	86%	68%	88%	74%

### Cut off Percentages for the 10th and 90th Percentile for Each Outcome and Summary Statement: 2014

Percentiles	Outcome 1 SS1	Outcome 1 SS2	Outcome 2 SS1	Outcome 2 SS2	Outcome 3 SS1	Outcome 3 SS2
10	39%	39%	50%	34%	53%	35%
90	85%	75%	87%	65%	87%	73%

Next we assigned states 0, 1, or 2 points for each Summary Statement. For a Summary Statement that fell below the 10<sup>th</sup> percentile, that state was assigned a value of 0, for a Summary Statement between the 10th and 90th percentile, the state was assigned a value of 1, and Summary Statements at or above the 90th percentile were given a value of 2. The points were summed across the six Summary Statements. A state could receive a total score of 0 to 12, with a 0 meaning all 6 Summary Statement values were below the 10th percentile and a score of 12 meaning all 6 were above the 90th.

The distribution of states receiving each score for the first Summary Statement analysis is shown below.

Summary Statement Achievement Score	Number of States Receiving Score: 2013	Number of States Receiving Score: 2014
N/A Low Quality Data	8	6
0	0	0
1	0	0
2	0	0
3	3	1
4	3	2
5	2	5
6	26	31
7	5	5
8	5	1
9	3	3
10	0	2
11	1	0
12	0	0
<b>Total Number</b>	<b>56</b>	<b>56</b>

Each state was then assigned an overall comparison Summary Statement score of 0, 1, or 2 based on the total score according to the following criteria:

Score	Cut Points for SS Comparison	Number of States Receiving Score: 2013	Number of States Receiving Score: 2014
N/A	Low quality data	8	6
0	Lowest thru 4	6	3
1	5 thru 8	38	42
2	9 thru highest	4	5
<b>Total Number</b>		<b>56</b>	<b>56</b>

## 5. CHILD ACHIEVEMENT: CHANGE OVER TIME IN SUMMARY STATEMENTS.

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The next step was to compute a score for change over time in the Summary Statements. We computed the difference between the FFY 11–12 values and the FFY 12–13 values for each summary statement. The statistical significance of this difference was then computed using the binomial test of difference and differences that were statistically significant at the .01 level were considered “meaningful” differences. Information about the direction of the change was also included when change was statistically significant. States were assigned a 0 if they had a statistically significant decrease from one year to the next, states were assigned a 1 if they had no significant change, and states were assigned a 2 if there was a statistically significant increase across the years. These points were summed across the 6 Summary Statements for each state, resulting in a variable with a range from 0–12. There were only 46 states included in this analysis because two states were missing child outcomes data for FFY 11–12.

Total Progress Score	Number of States Receiving Score: 2013	Number of States Receiving Score: 2014
Missing Previous Year Data	—	2
N/A Low Quality Data	8	6
1	3	1
2	2	2
3	0	3
4	2	2
5	1	3
6	26	24
7	3	4
8	3	2
9	5	5
10	1	1
11	0	0
12	0	1
<b>Total Number</b>	<b>56</b>	<b>56</b>

This variable was then recoded using the following criteria:

Score	Cut Points for Change Score	Number of states Receiving Score: 2013	Number of states Receiving Score: 2014
N/A	Missing previous year data	—	2
N/A	Low quality data	8	6
0	Lowest thru 3	5	6
1	4 thru 7	32	33
2	8 thru highest	9	9
<b>Total Number</b>		<b>56</b>	<b>56</b>

## 6. TOTAL SCORE FOR CHILD ACHIEVEMENT.

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The next step was to combine the information across the two child outcomes achievement variables (Summary Statement Comparison data and Change over Time data). To do this, we added the two variables together to create a variable with a minimum of 0 and a maximum of 4. In both 2013 and 2014, two states did not have data from the previous year.

Total Child Outcomes Score	Number of States Receiving Score: 2013	Number of States Receiving Score: 2014
N/A Missing Previous Year Data	2	2
N/A Low Quality Data	8	6
0	0	0
1	9	6
2	27	31
3	8	9
4	2	2
Total Number	56	56

## 7. OVERALL TOTAL SCORE AND FINAL GROUPINGS.

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Next we added the Child Achievement score to the Data Quality score to create an overall Total Score with a minimum of 0 and a maximum of 8. States that did not meet the minimum criterion on the Data Quality Score (i.e., >1) or that did not have data from the previous year were assigned a score of 0 on the achievement score.

Total Overall Score	Number of States Receiving Score: 2013	Number of States Receiving Score: 2014
0	1	1
1	7	5
2	2	1
3	1	2
4	12	10
5	21	19
6	11	11
7	1	6
8	0	1
<b>Total Number</b>	<b>56</b>	<b>56</b>

Finally, to divide states in three groups representing the lowest, middle and highest performance on overall child outcomes, we used the following criteria.

Group	Cut Points for Grouping	Number of States Receiving Score: 2013	Number of States Receiving Score: 2014
Lowest	0 thru 2	10	7
Middle	3 thru 5	34	32
Highest	6 thru 8	12	17
<b>Total Number</b>		<b>56</b>	<b>56</b>

Applying the analysis and coding procedures as described to the C3 indicator data for the data reported in 2014 identified 7 states as falling in the lowest category, 32 in the middle category, and 17 states in the highest category.