

Analysis Steps the Early Childhood Outcome Center Used to Generate National Numbers for Categories A–E, the Summary Statements and Results for the 2014-15 data

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**Early Childhood Technical Assistance Center**

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# Introduction

## Method for computing the national estimates

The national estimates were computed using three different methodologies.

1. All states included, weighted by child count
2. All states included, unweighted
3. Only states that met all data quality criteria included, weighted by child count

### Process for computing weighted national estimates for all states

1. The first step was to compute a numerator for each outcome and progress category for each state using the state’s child count from the fall 2012 tables and the state outcome data reported in February 2013.

Numerator = child count \* % reported in an OSEP progress category.   
Note that the numerator is not the actual number of children in a progress category in a state but allows each state to carry a weight proportionate to its child count in the national percentages.

* For example, StateX\_OC1\_a\_weighted numerator = (StateX \_OC1\_a) \* StateX \_child count gives a number of children in category “a” for State X that would be in progress category “a” based on its child count.

1. Then we summed the numerators across states for each outcome and progress category to create the weighted numerator for the national estimate.
2. The child count across all states was summed to create the denominator for the national estimate.
3. Next, we computed the national weighted percentage for each progress category. The weighted numerator (Step 2) was divided by the denominator (Step 3). This was the national percentage for each progress category.
4. Finally, we computed the national weighted Summary Statements based on the nationally weighted progress category values.

### Process for computing the unweighted national estimates for all states

1. The national unweighted estimates for progress categories were computed by taking the average across states within each progress category and outcome.
2. The national unweighted estimates for Summary Statements were computed by taking the average across states within each Summary Statement and outcome.

### Process for computing the weighted national estimates for the reduced set of states with high-quality data

1. The process used to compute the weighted national estimates for all states was repeated with the reduced set.

## Method used to identify states with high-quality data

Three criteria related to data quality were used to identify states with high-quality data. We began with all 50 states and the District of Columbia.

### Missing data

The first quality criterion was that states measured a proportion of their population that was considered a minimal requirement for quality data. We eliminated states that were conducting sampling themselves because we had no metric for estimating the extent of missing data for them. ‘Sampling’ means selecting a sample of children from the population instead of measuring the whole population. We identified states who were sampling through review of the SPP/APR narrative.

For Part C, we established a proxy for missing data by using the number of children the state reported in the 618 Exiting Data Table (Downloaded from <http://www2.ed.gov/programs/osepidea/618-data/state-level-data-files/index.html#ce> 2013-14; Extraction Date: 06/04/2015) as the denominator and the number of children included in the outcomes data as the numerator (as reported in the FFY 2014 State Performance Plan (SPP) and Annual Performance Report (APR) reports). We established a cutoff at **28% for Part C** (i.e., we narrowed the list of states to those that reported outcomes data on at least 28% of children reported as exiting).

For Part B, we established a proxy for missing data by using the number of 3-5 year old children the state reported in the 618 Child Count Data Table (Downloaded from <http://www2.ed.gov/programs/osepidea/618-data/state-level-data-files/index.html#ce> 2014; Extraction Date: 7/2/2015) as the denominator and the number of children included in the outcomes data as the numerator. We established a cutoff at **12% of the child count numbers for Section 619** (i.e., we included states that reported outcomes data on at least 12% of their child count).

### Examination of data patterns

The second criterion for inclusion was that states’ data had “reasonable” data patterns. Because outliers in data patterns are often red flags for questionable data quality, we established criteria for reasonable parameters of the progress category percentages.

Progress category “a” includes children with the most significant delays and degenerative conditions who do not make any progress or actually regress from entry to exit. We established a **cutoff of 10% of children in progress category “a”** as reasonable based on data submitted by states over the last 4 years. We then removed states from the pool that reported more than 10% in progress category “a” on one or more of the child outcomes.

Progress category “e” includes children who enter and exit at age expectations in the outcome area. This category is related to eligibility criteria (this percentage will be lower for states with narrow eligibility categories and higher for states that serve a broader range of children). On the basis of data reported over the last 4 years, we established a **cutoff of 65% of children in progress category “e”** as the limit of reasonable. We removed states from the pool that reported more than 65% of children in progress category “e” on one or more of the child outcomes.

Tables 1 and 2 indicate the numbers of states excluded at each of these steps.

Table 1. Reason Part C state was excluded

|  |  |
| --- | --- |
| Reason Part C state was excluded | Number excluded |
| State is sampling | 2 |
| Missing data  (less than 28% of reported exiters) | 3 |
| Missing 2013-2014 Part C exiting data | 1 |
| ‘a’ and ‘e’ patterning  (Had at least one outcome with category a greater than 10% or category e greater than 65%) | 2 |
| Missing data  AND  Patterning | 1 |
| States included in the analysis | 42 |

Table 2. Reason Part B 619 state was excluded

|  |  |
| --- | --- |
| Reason Part B 619 state was excluded | Number excluded |
| Sampling | 3 |
| Missing Data  (Reported outcomes data on less than 12% of child count) | 0 |
| ‘a’ and ‘e’ patterning  (Had at least one outcome with category a greater than 10% or category e greater than 65%) | 3 |
| Missing Data  AND  ‘a’ and ‘e’ patterning | 0 |
| States included in the analysis | 45 |

Table 3. Part C, all states included, weighted by child count: Percentages for OSEP progress categories (number of states included = 51)

|  |  |
| --- | --- |
| Outcome 1 | Percent |
| a: Children who did not improve functioning | 2.9 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 21.1 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 16.4 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 27.4 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 32.2 |
|  |  |
| Outcome 2 | Percent |
| a: Children who did not improve functioning | 2.1 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 22.1 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 26.3 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 34.1 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 15.3 |
|  |  |
| Outcome 3 | Percent |
| a: Children who did not improve functioning | 2.5 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 19.1 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 20.7 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 33.8 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 23.9 |

Table 4. Part C, all states included, weighted by child count: Percentages for the OSEP Summary Statements (number of states   
included = 51)

|  |  |  |  |
| --- | --- | --- | --- |
| Summary Statements | Outcome 1 | Outcome 2 | Outcome 3 |
| 1. Of those children who entered the program below age expectations in [outcome], the percent that substantially increased their rate of growth in [outcome] by the time they exited. | 65 | 71 | 72 |
| 2. Percent of children who were functioning within age expectations in [outcome], by the time they exited. | 60 | 49 | 58 |

Table 5. Part C, all states included, unweighted: Percentages for OSEP progress categories (number of states included = 51)

|  |  |
| --- | --- |
| Outcome 1 | Percent |
| a: Children who did not improve functioning | 2.7 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 20.6 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 18.6 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 28.3 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 29.8 |
|  |  |
| Outcome 2 | Percent |
| a: Children who did not improve functioning | 2.3 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 21.9 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 26.6 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 33.4 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 15.8 |
|  |  |
| Outcome 3 | Percent |
| a: Children who did not improve functioning | 2.4 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 18.5 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 21.2 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 35.1 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 22.7 |

Table 6. Part C, all states included, unweighted: Percentages for the OSEP Summary Statements (number of states included = 51)

|  |  |  |  |
| --- | --- | --- | --- |
| Summary Statements | Outcome 1 | Outcome 2 | Outcome 3 |
| 1. Of those children who entered the program below age expectations in [outcome], the percent that substantially increased their rate of growth in [outcome] by the time they exited. | 65 | 71 | 72 |
| 2. Percent of children who were functioning within age expectations in [outcome], by the time they exited. | 58 | 49 | 58 |

Table 7. Part C, states with high-quality data, weighted by child count: Percentages for OSEP progress categories (number of states included = 42)

|  |  |
| --- | --- |
| Outcome 1 | Percent |
| a: Children who did not improve functioning | 1.5 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 21.6 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 17.8 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 29.3 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 29.7 |
|  |  |
| Outcome 2 | Percent |
| a: Children who did not improve functioning | 1.2 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 21.1 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 28.1 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 35.3 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 14.3 |
|  |  |
| Outcome 3 | Percent |
| a: Children who did not improve functioning | 1.2 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 18.4 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 22.7 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 37.1 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 20.7 |

Table 8. Part C, states with high-quality data, weighted by child count: Percentages for the OSEP Summary Statements (number of states included = 42)

|  |  |  |  |
| --- | --- | --- | --- |
| Summary Statements | Outcome 1 | Outcome 2 | Outcome 3 |
| 1. Of those children who entered the program below age expectations in [outcome], the percent that substantially increased their rate of growth in [outcome] by the time they exited. | 67 | 74 | 75 |
| 2. Percent of children who were functioning within age expectations in [outcome], by the time they exited. | 59 | 50 | 58 |

Table 9. Part B Preschool, all states included, weighted by child count: Percentages for OSEP progress categories (number of states included = 51)

|  |  |
| --- | --- |
| Outcome 1 | Percent |
| a: Children who did not improve functioning | 2.5 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 13.6 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 27.2 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 31.1 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 25.7 |
|  |  |
| Outcome 2 | Percent |
| a: Children who did not improve functioning | 2.2 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 14.7 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 31.0 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 33.5 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 18.6 |
|  |  |
| Outcome 3 | Percent |
| a: Children who did not improve functioning | 2.7 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 12.9 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 22.5 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 31.7 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 30.2 |

Table 10. Part B Preschool, all states included, weighted by child count: Percentages for the OSEP Summary Statements (number of states included = 51)

|  |  |  |  |
| --- | --- | --- | --- |
| Summary Statements | Outcome 1 | Outcome 2 | Outcome 3 |
| 1. Of those children who entered the program below age expectations in [outcome], the percent that substantially increased their rate of growth in [outcome] by the time they exited. | 78 | 79 | 78 |
| 2. Percent of children who were functioning within age expectations in [outcome], by the time they exited. | 57 | 52 | 62 |

Table 11. Part B Preschool, all states included, unweighted: Percentages for OSEP progress categories (number of states included = 51)

|  |  |
| --- | --- |
| Outcome 1 | Percent |
| a: Children who did not improve functioning | 2.4 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 12.8 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 26.8 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 33.0 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 24.9 |
|  |  |
| Outcome 2 | Percent |
| a: Children who did not improve functioning | 2.1 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 14.5 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 31.9 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 34.9 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 16.5 |
|  |  |
| Outcome 3 | Percent |
| a: Children who did not improve functioning | 2.6 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 12.7 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 21.2 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 33.4 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 30.1 |

Table 12. Part B Preschool, all states included, unweighted: Percentages for the OSEP Summary Statements (number of states included = 51)

|  |  |  |  |
| --- | --- | --- | --- |
| Summary Statements | Outcome 1 | Outcome 2 | Outcome 3 |
| 1. Of those children who entered the program below age expectations in [outcome], the percent that substantially increased their rate of growth in [outcome] by the time they exited. | 79 | 80 | 78 |
| 2. Percent of children who were functioning within age expectations in [outcome], by the time they exited. | 58 | 51 | 64 |

Table 13. Part B Preschool, states with high-quality data, weighted by child count: Percentages for OSEP progress categories (number of states included = 45)

|  |  |
| --- | --- |
| Outcome 1 | Percent |
| a: Children who did not improve functioning | 1.7 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 14.4 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 26.0 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 31.6 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 27.3 |
|  |  |
| Outcome 2 | Percent |
| a: Children who did not improve functioning | 1.5 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 15.4 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 30.1 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 32.9 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 20.2 |
|  |  |
| Outcome 3 | Percent |
| a: Children who did not improve functioning | 2.0 |
| b: Children who improved functioning but not sufficient to move nearer to functioning comparable to same-age peers | 13.5 |
| c: Children who improved functioning to a level nearer to same-aged peers but did not reach it | 21.1 |
| d: Children who improved functioning to reach a level comparable to same-aged peers | 30.8 |
| e: Children who maintained functioning at a level comparable to same-aged peers | 32.7 |

Table 14. Part B Preschool, states with high-quality data, weighted by child count: Percentages for the OSEP Summary Statements (number of states included = 45)

|  |  |  |  |
| --- | --- | --- | --- |
| Summary Statements | Outcome 1 | Outcome 2 | Outcome 3 |
| 1. Of those children who entered the program below age expectations in [outcome], the percent that substantially increased their rate of growth in [outcome] by the time they exited. | 78 | 79 | 77 |
| 2. Percent of children who were functioning within age expectations in [outcome], by the time they exited. | 58 | 53 | 64 |