



Study to Measure the Delivery of Services in Accordance with the Individualized Education Programs of Students with Disabilities: Year 13 (2015-16)

Submitted to:

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Introduction

AIR's report to the Office of the Independent Monitor (OIM) presents the results from the Year 13 (2015-16) study to measure whether the Los Angeles Unified School District (LAUSD) met the goals of Outcome #13 of the Modified Consent Decree (MCD). Established in 2003, the OIM is the oversight agency of LAUSD's special education program and is responsible for determining whether LAUSD meets compliance with the MCD. Outcome #13 of the MCD states that LAUSD must provide evidence that at least 93% of special education services required by students' Individualized Education Programs (IEPs) were delivered. In addition, 85% of the services must meet the frequency and duration specified in the IEPs.

The study addressed the following three questions:

- (1) Was there evidence of at least one incident of provision for each service specified in the student's IEP over an 8-week/2-month period?¹
- (2) Were student services meeting the criterion specified in Question 1 (i.e., the subset of student services for which there was evidence of at least one incident of valid service provision) provided at the frequency (i.e., the number of times) stated on the IEP?
- (3) Were student services meeting the criterion specified in Question 1 provided for the duration (i.e., the amount of time) stated on the IEP?

For the first question, the outcome examines two student groups: all disabilities combined excluding Specific Learning Disability (SLD) and SLD individually.² The second and third questions examine all disabilities combined.

Using an electronic log system, providers in LAUSD document the delivery of special education services, including the date, duration, and status of each session, to individual students. This study compares the requirements recorded on the students' IEPs to information on these provider logs to address the above questions. To answer the first question, AIR estimated the percentage of services for which at least one valid session was documented on the submitted logs during an 8-week/2-month period between January and March 2016.³ For the frequency and duration questions, AIR compared

¹ An 8-week timeline was used for services occurring on a weekly basis. A full 2-month timeline was used for monthly services to ensure enough time to capture the provision of at least two service sessions.

² Starting with Year 2, the MCD required LAUSD to disaggregate the evidence of service delivery results for the population excluding SLD and for SLD only. Because students with SLD comprise the majority of the special education population, the OIM considered it important to consider this population separately.

³ LAUSD's Office of Data and Accountability developed extensive rules for coding the log information, subject to approval by the OIM, to determine if a given service session was considered as valid, thereby constituting evidence of service provision.

the IEP requirements for services (for which there was at least one incident of valid service) to the actual frequency and duration shown on the logs over an 8-week/2-month period.⁴

As noted, this is the 13th year in which this study has been conducted. In the first year of study, AIR entered information from the sampled logs and IEPs into a database and analyzed the data in accordance with an initial set of coding rules. In Years 2-5, LAUSD's Office of Data and Accountability compared the IEP-log information by hand, using coding rules that were modified and supplemented by the Office of Data and Accountability in consultation with the OIM. Because the information needed to conduct the analyses were available in electronic form in Years 6-13, AIR created a computer program to analyze the data, which attempted to follow as closely as possible the rules used for the hand-coding process used in Year 5. Prior to this current year, the coding rules provided credit for service sessions that did not occur for certain reasons (for example, the provider being absent due to illness within a given time period). However, because LAUSD changed the documentation for cancelled sessions that eliminated the description of the reasons for the cancellation, AIR was not able to implement some of the rules that provided credit for this year.

For this year's study (2015-16), the Office of Data and Accountability provided AIR with databases containing IEPs for 4,884 students in special education in the district and their corresponding provider log information, if available. The Office of Data and Accountability staff hand-coded approximately 140 service records because certain school calendars did not align with the track periods selected for the study or had additional holidays not captured by the computer program.⁵ Using these databases and the hand-coded records, the final results for the evidence of service analysis included 6,245 services for 3,783 of the students in this sample.⁶

The results of the current study are described in Section I of this report. To further understand service patterns and help identify areas for possible improvement, AIR also conducted exploratory analyses of selected service records that did not meet the frequency or duration requirements (Section II).

⁴ The specific 8-week/2-month period used in this study for each student was determined by the student's school track calendar. Services reported as weekly in the IEP were analyzed across eight weeks, while two full months were used for monthly services.

⁵ Hand coding was necessary for charter schools, because they set their own calendars and do not consistently have the same standard holidays as non-charter schools.

⁶ The sample of students included in the service estimates (n = 3,783) is substantially smaller than the sample that LAUSD's Office of Data and Accountability provided to AIR (n = 4,884). In accordance with the coding rules, 1,101 students were dropped due to reasons such as the student leaving the district, exiting special education, attending a non-public school, or students whose only service was yearly, or whose only service ended before or during the selected track period, started after the track period, or changed during the track period.

Section I: MCD Study Results

Was there evidence of at least one incident of provision for each service specified in the student's IEP over an 8-week/2-month period?

Based on provider logs for the first group of students included in this analysis (i.e., those with categories of disability other than SLD), we found evidence that 98% of the special education services⁷ required by IEPs district-wide during the 2015-16 school year were provided at least once during an 8-week/2-month period of analysis.⁸ This population estimate represents services for students in all disability categories (except SLD) district-wide whose IEPs required at least one special education service.⁹ For the sample of students with SLD whose IEPs required at least one special education service, we found evidence that 97% of their required services were provided at least once during an 8-week/2-month period. Figure 1 illustrates the percentages of services for which there was evidence of at least one instance of provision by disability category. Figure 2 shows this information by service category across all disability categories combined.

Because these figures are based on a sample of students and not the entire population, we estimated confidence intervals at the 95% level to specify the precision of the service estimates presented above. For the first group of students specified for this outcome (all special education students excluding SLD), these analyses show that with 95% confidence the true service delivery rate for this sub-population falls between 97.1% and 98.2%. For students with SLD, for which the MCD outcome goal is also specified at 93%, we can predict with 95% confidence that the true estimate of provision falls between 96.1% and 98.3%.¹⁰ Therefore, the confidence intervals for both groups of students are above the MCD outcome goal of 93%.

Across the individual disability categories, the estimate of service delivery ranged from 95% for students with Orthopedic Impairment/Traumatic Brain Injury to 99% for students in two disability groups: Deaf/Hard of Hearing (DH) and Speech/Language Impairment (SLI). By service category, the percentages varied from 85% for Non-Public Agency (NPA) services to 100% for Visual Impairment (VI) services.

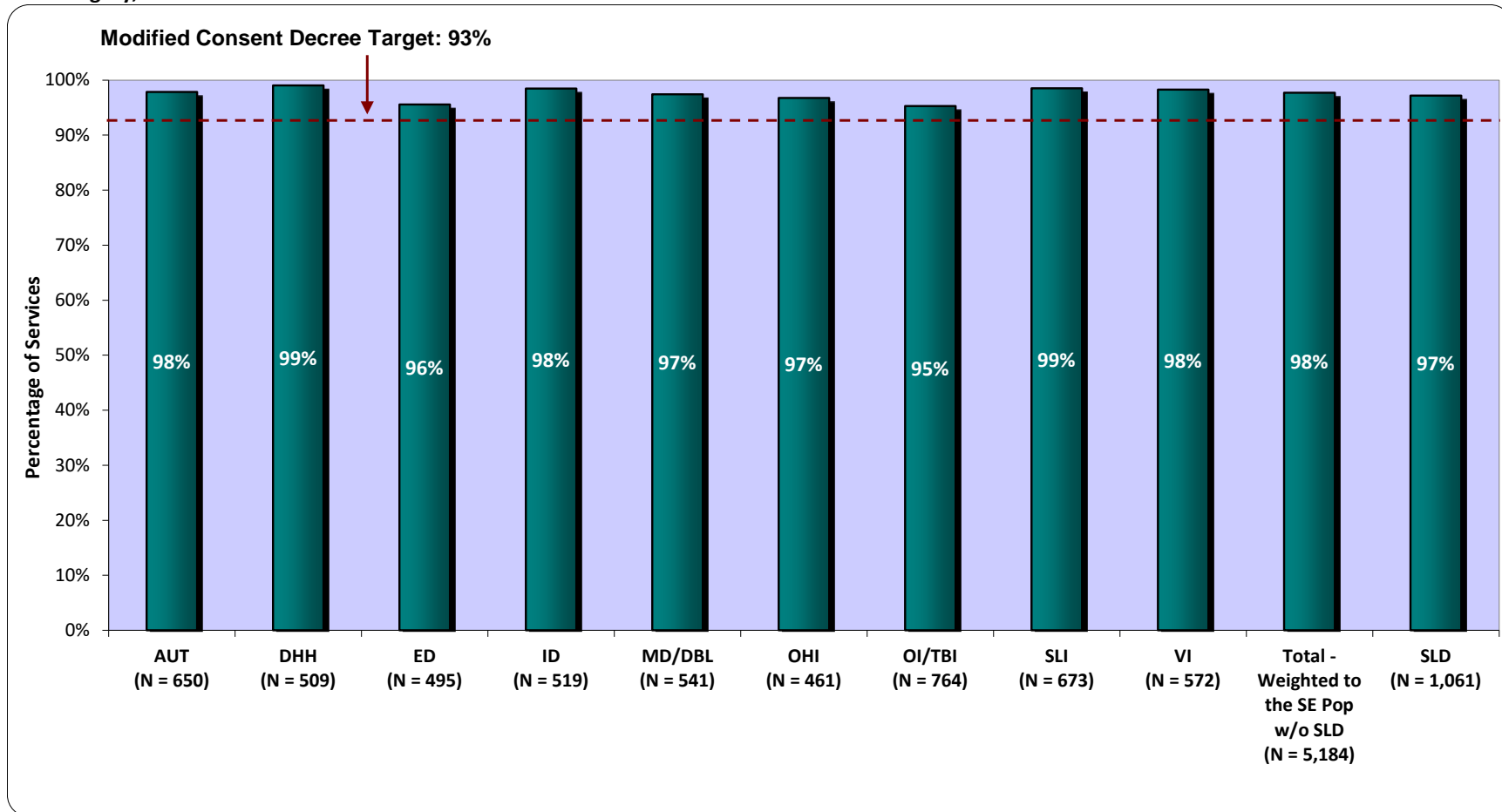
⁷ In prior years, approximately a quarter of all special education students in the LAUSD did not have a service code listed (e.g., children in special day classes with no supplemental services).

⁸ This is a population estimate based on the probability weights for each disability category, excluding SLD. Please see Appendix A for more details. The population estimate represents students whose IEPs required at least one special education service according to data provided by the Information Technology Division.

⁹ The population estimate for evidence of service delivery represents only those students (excluding SLD) who had a service code in the data.

¹⁰ OIM also requested separate service delivery analyses for charter schools based on the students in the sample. For charter schools, we found evidence that 98% of special education services required by IEPs were provided at least once during an 8-week/2-month period, excluding students with SLD (with confidence intervals of 96.8% and 99.2%). For students with SLD in charter schools, we found evidence that 96% of their required services were provided at least once (with confidence intervals of 93.9% and 98.8%).

Figure 1. Percentage of services for which there was evidence of at least one incident of service provision during an 8-week/2-month period, by disability category, 2015-16

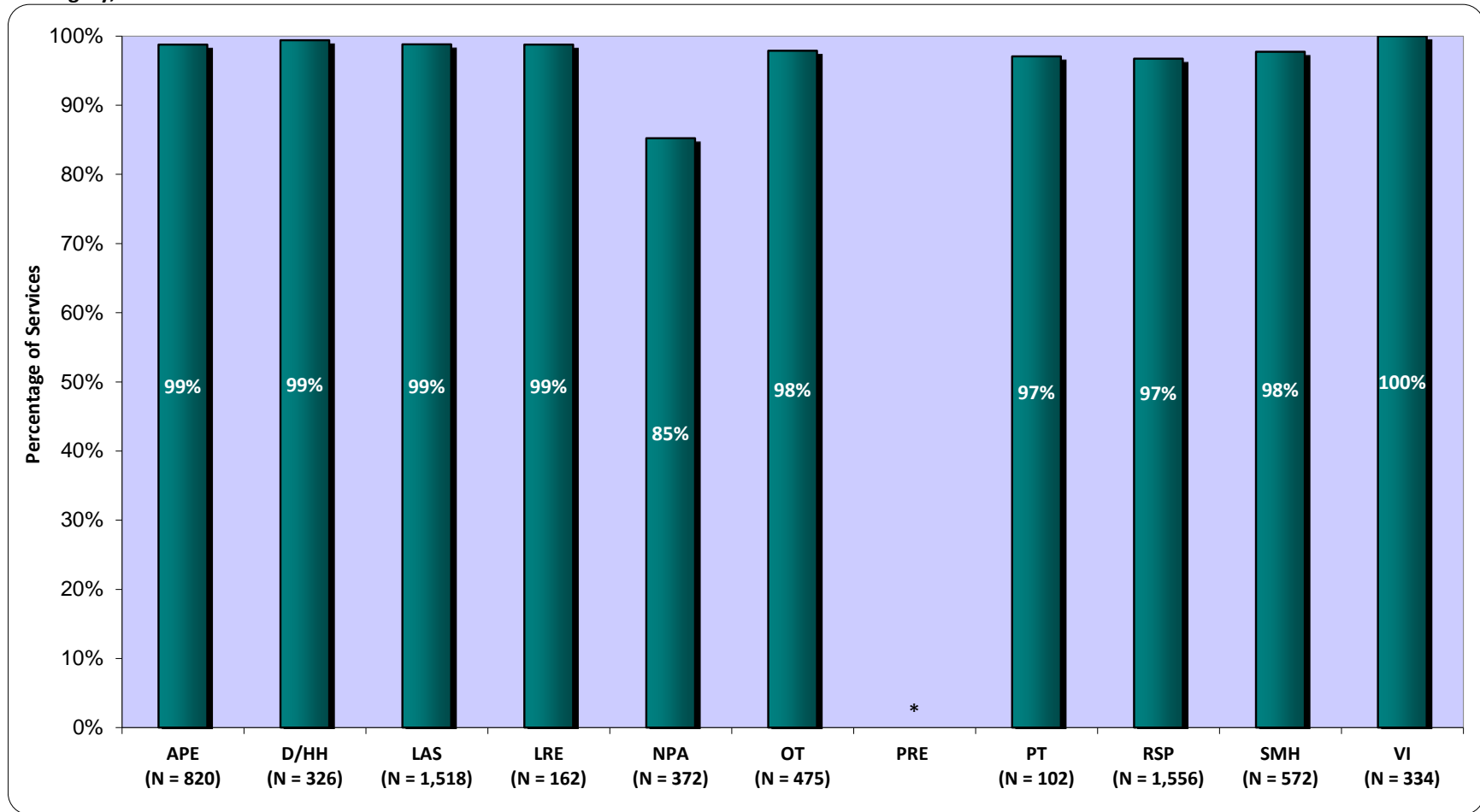


Note 1: The population estimate represents the population of students in special education district-wide (excluding students with Specific Learning Disabilities) whose IEPs required at least one special education service as reported in data provided by the Information Technology Division.

Note 2: The numbers (N) shown underneath the disability categories represent the total number of services analyzed for that category. For example, we found evidence of service provision for 98% of the 650 services required for the sampled students with Autism.

Abbreviations: AUT (Autism); DHH (Deaf/Hard of Hearing); ED (Emotional Disturbance); ID (Intellectual Disability); MD/DBL (Multiple Disabilities/Deaf-Blindness); OHI (Other Health Impairment); OI/TBI (Orthopedic Impairment/Traumatic Brain Injury); SE (Special Education); SLD (Specific Learning Disability); SLI (Speech/Language Impairment); VI (Visual Impairment).

Figure 2. Percentage of services for which there was evidence of at least one incident of service provision during an 8-week/2-month period, by service category, 2015-16



Note 1: These percentages include all disability categories receiving those particular services, including students with Specific Learning Disability.

Note 2: The numbers (N) shown underneath the service categories represent the total number of services analyzed for that category. For example, we found evidence of service provision for 99% of the 820 Adapted Physical Education (APE) services required for the sampled students.

* Information for Pre-school services was suppressed due to low numbers of observations.

Abbreviations: APE (Adapted Physical Education); D/HH (Deaf/Hard of Hearing Itinerant Service); LAS (Language & Speech); LRE (Least Restrictive Environment Itinerant Service); NPA (Non-Public Agency); OT (Occupational Therapy); PRE (Pre-School); PT (Physical Therapy); RSP (Resource Specialist); SMH (School Mental Health); VI (Visual Impairment Itinerant Service).

Were services provided at the frequency and duration required by the IEP?

A second component of this study examined whether the special education services for which there was evidence of at least one incident of provision over the 8-week/2-month period were provided at the frequency (e.g., 2 times a week) and the duration (e.g., 30 minutes per week) documented in the IEPs. As mentioned above, the MCD outcome goal specifies that 85% of services must meet the frequency and duration stated in the IEPs.

For frequency and duration, the outcome examined all disabilities combined, including SLD. Of services with evidence of service (Question 1), AIR estimates that 85% met the frequency requirement stated in the IEP.¹¹ The 95% confidence interval ranged from 83.9% to 86.6%, with the low end falling below the frequency goal of 85%. For duration, 71% of services met the IEP specifications, with the confidence intervals ranging from 68.8% to 72.3%, well below the outcome goal.¹²

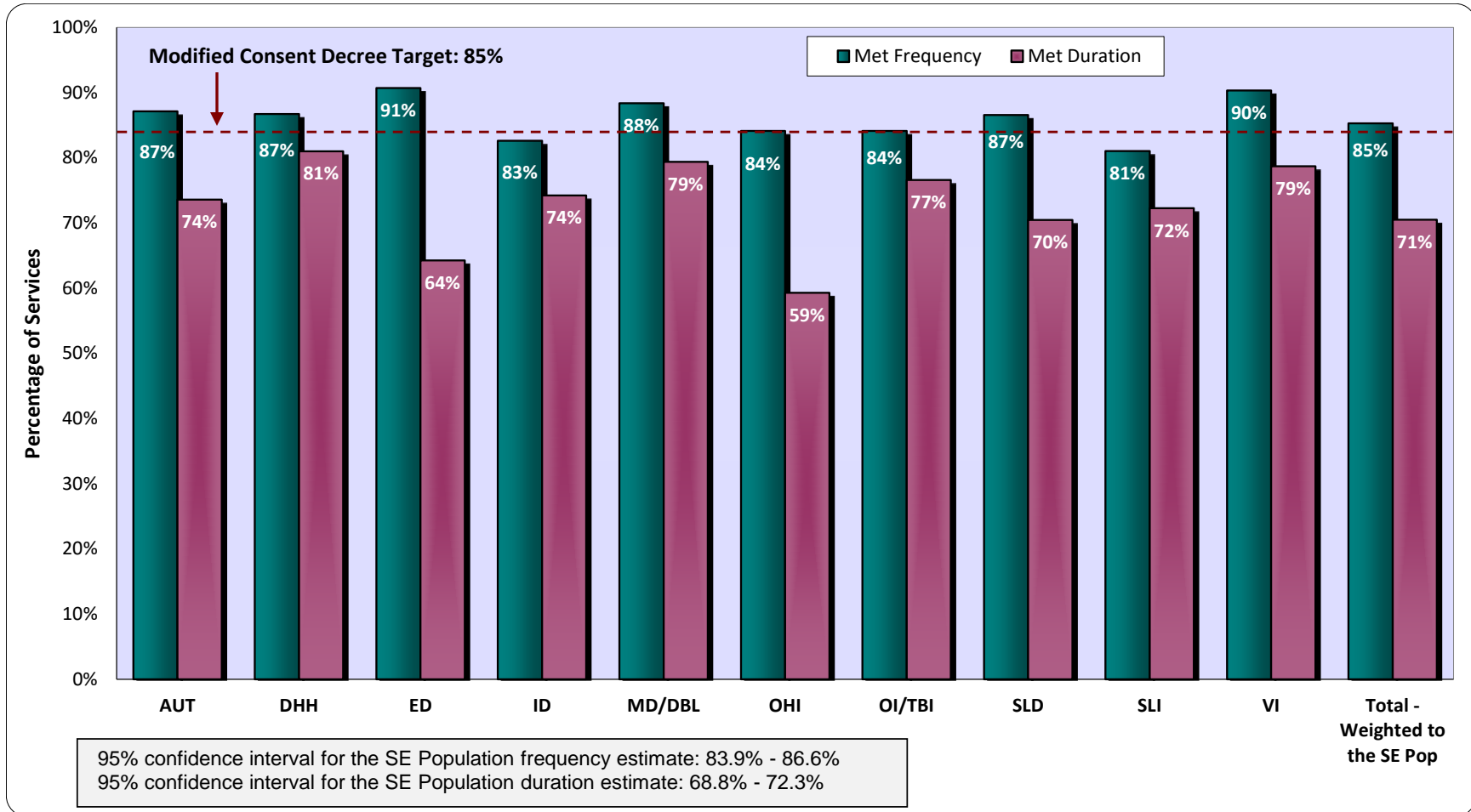
Figure 3 presents this information on frequency and duration by disability category. Figure 4 depicts these data by service type. Estimates for meeting the IEP frequency ranged from 81% for students with SLI to 91% for students with Emotional Disturbance (ED). Duration rates ranged from 59% for students with Other Health Impairment (OHI) to 80% for students who are DHH. By service category, frequency estimates ranged from 81% for Language and Speech (LAS) to 92% for Least Restrictive Environment (LRE) services. Duration estimates ranged from 45% for NPA to 87% for Physical Therapy (PT) services.¹³

¹¹ Note that 65% of services other than RSP in the sample had frequencies of 1-5 or 1-10 in the IEPs. In determining the required frequency for the study period, the coding rules used the lowest number in the ranges. This means that services with frequencies of 1-5 or 1-10 would need only to be provided once during the specified interval (e.g., weekly) in order to meet the frequency.

¹² The frequency and duration population estimates represent students whose IEPs required at least one special education service, according to the data provided by the Information Technology Division, and includes students with SLD. OIM also requested separate service delivery analyses for charter schools, based on students in the sample. For charter schools, we found that 84% of services for which we received logs met the frequency requirements (with confidence intervals of 81.3% and 87.5%), while 69% met the IEP specifications for duration (with confidence intervals of 64.7% and 72.6%).

¹³ NPA services generally have larger duration amounts specified in the IEPs in relation to other services. Half of the sampled NPA services had specified duration amounts of 1,800 or more minutes per week.

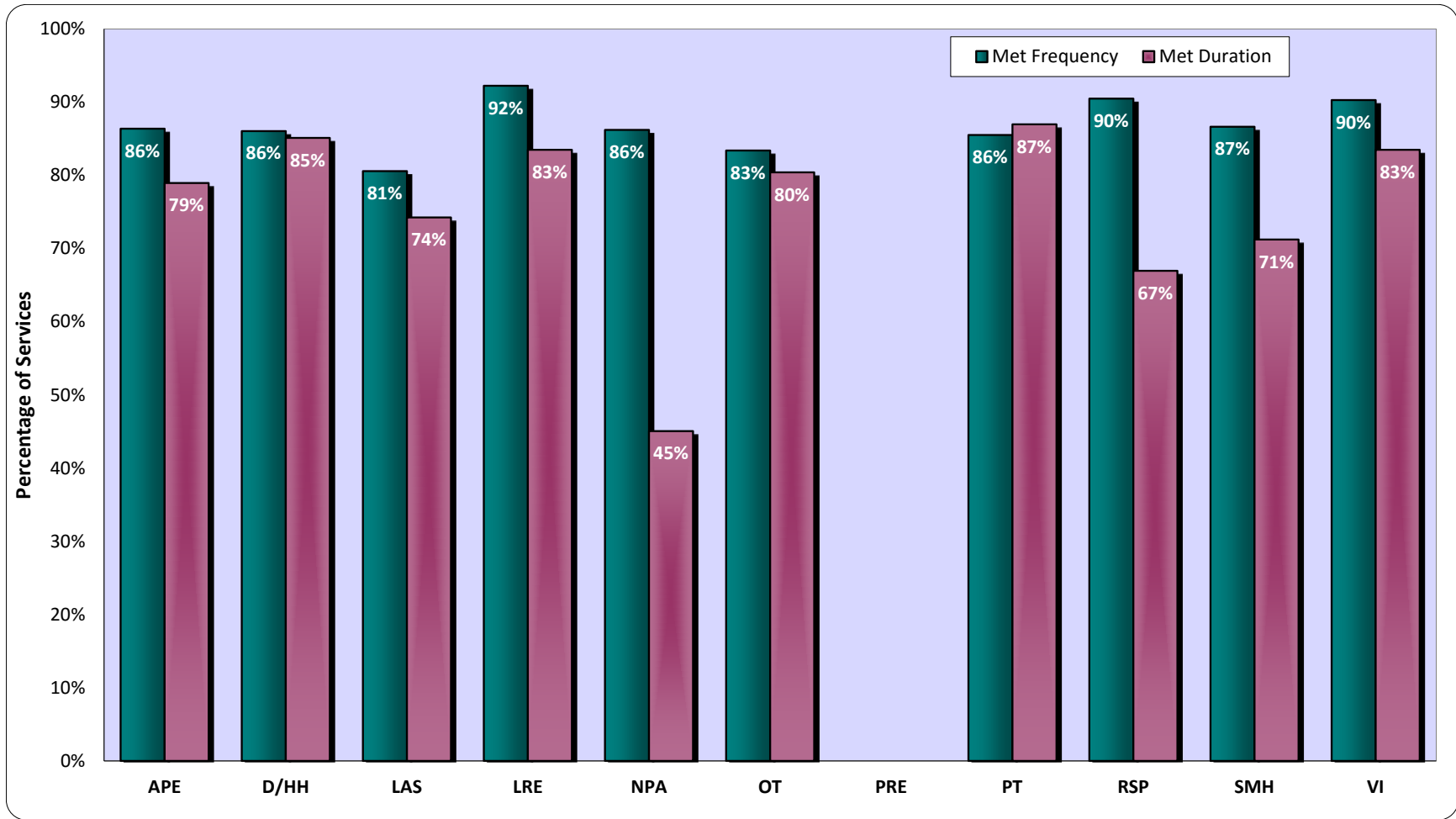
Figure 3. Percentage of services that met frequency/duration as specified by the IEPs during an 8-week/2-month period, by disability category, 2015-16



Note: The population estimate represents the population of students in special education district-wide whose IEPs required at least one special education service, according to data provided by the Information Technology Division, and includes students with Specific Learning Disability.

Please see Appendix B for the number of service observations included in the frequency and duration analyses. Abbreviations: AUT (Autism); DHH (Deaf/Hard of Hearing); ED (Emotional Disturbance); ID (Intellectual Disability); MD/DBL (Multiple Disabilities/Deaf-Blindness); OHI (Other Health Impairment); OI/TBI (Orthopedic Impairment/Traumatic Brain Injury); SE (Special Education); SLD (Specific Learning Disability); SLI (Speech/Language Impairment); VI (Visual Impairment).

Figure 4. Percentage of services that met frequency/duration as specified by the IEPs during an 8-week/2-month period, by service category, 2015-16



Note: These percentages include all disability categories receiving those particular services, including students with Specific Learning Disability.

* Information for Pre-school services was suppressed due to low numbers of observations.

Please see Appendix B for the number of service observations included in the frequency and duration analyses. Abbreviations: APE (Adapted Physical Education); D/HH (Deaf/Hard of Hearing Itinerant Service); LAS (Language & Speech); LRE (Least Restrictive Environment Itinerant Service); NPA (Non-Public Agency); OT (Occupational Therapy); PRE (Pre-School); PT (Physical Therapy); RSP (Resource Specialist); SMH (School Mental Health); VI (Visual Impairment Itinerant Service).

Section II: Exploratory Analyses of Records that Missed Frequency and Duration

There has been a pattern of LAUSD not meeting the frequency outcome set by the MCD in previous years, and in all 13 years of the study, LAUSD has not met the duration outcome. To help inform and improve future service delivery efforts, the OIM was interested in understanding the extent to which services were missing IEP frequency and duration requirements.

Among the 4,285 service records that had evidence of at least one incident of service and for which AIR analyzed for frequency in Year 13, 3,691 met the frequency requirements while 594 did not.¹⁴ Table 1 shows the percentage of services that missed the required frequency by only one session, which varied from 17% for NPA services to 65% for Occupational Therapy. In other words, 83% of the NPA services that missed frequency missed the requirement by more than one session. Overall, nearly half of all services that missed the required frequency (284 of 639) did so by *more than one session*.

For the duration analysis, 3,109 service records met the IEP duration requirements and 1,152 did not. As shown in Table 1, the percentage of services that missed the duration by one session ranged from 20% for RSP to 72% for DHH services.¹⁵ Among services that did not meet duration, 59% (681 of 1,152) missed the required duration by *more than one session*.

To understand the impact of missing the required frequency and duration by only one session, AIR re-calculated the population estimates assuming that an additional session had been provided. If an additional session had been provided for services that missed the required frequency or duration, the population estimate would have improved from 85% to 92% for frequency and from 71% to 81% for duration.

¹⁴ The numbers in this section differ from the student sample size reported earlier because these numbers are the count of services, and not students. A single student could have multiple services.

¹⁵ For each service observation, AIR estimated the most common session duration across the 8-week/2-month period to determine if a service missed the IEP duration requirement by a single session.

Table 1. Number and percentage of services that missed frequency and duration by one session, by service category, 2015-16

Service category	Total N that missed frequency	N that missed frequency by one session	% of services that missed frequency by one session	Total N that missed duration	N that missed duration by one session ¹	% of services that missed duration by one session
Adapted Physical Education	77	45	58%	119	55	46%
Deaf/Hard of Hearing	30	19	63%	32	23	72%
Language and Speech	197	122	62%	261	157	60%
Least Restrictive Environment	*	*	*	17	9	53%
Non-Public Agency	35	6	17%	139	30	22%
Occupational Therapy	57	37	65%	67	37	55%
Resource Specialist Program	102	27	26%	350	70	20%
School Mental Health	57	28	49%	122	63	52%
Visual Impairment	21	13	62%	35	19	54%
Total²	594	310	52%	1152	471	41%
N and % of services that missed by more than one session		284	48%		681	59%

¹ To determine the duration amount of the missing sessions, the analysis used the most frequent duration listed on the log for that particular service.

² The total row includes Least Restrictive Environment, Pre-school, and Physical Therapy; individual information for these services was suppressed due to the low number of observations.

* Suppressed due to low number of observations.

Table 2 provides more detail on the degree by which services missed the required frequency. For this examination, AIR focused on the two most common frequencies across an 8-week/2-month study period: 8 times (n = 358 records) and 16 times (n = 75). Please note that the percentages in Table 2 are based on the number of services that did not meet the IEP requirements for frequency, not the entire number of services analyzed. Of those that missed frequency, the majority (57.5%) of once weekly services (i.e., 8 times across 8 weeks) and nearly a third (32.0%) of twice weekly services (i.e., 16 times across 8 weeks) missed the required frequency by one session. However, a sizeable percentage – 14.5% of once weekly services and 26.7% of twice weekly services – was provided at *half or less* of the required frequency.

Table 2. Distribution of frequency provided for services that missed required frequency of 8 and 16 times across 8-week/2-month period, 2015-16

Services that required 8 sessions across 8-week/2-month period and did not meet frequency			Services that required 16 sessions across 8-week/2-month period and did not meet frequency		
N of sessions provided	N of services	% of services	N of sessions provided	N of services	% of services
1	10	2.8%	1	1	1.3%
2	11	3.1%	2	5	6.7%
3	14	3.9%	3	1	1.3%
4	17	4.7%	4	2	2.7%
5	25	7.0%	5	1	1.3%
6	75	20.9%	6	4	5.3%
7	206	57.5%	7	2	2.7%
			8	4	5.3%
			9	1	1.3%
			10	7	9.3%
			11	4	5.3%
			12	5	6.7%
			13	3	4.0%
			14	11	14.7%
			15	24	32.0%
Total	358	100%	Total	75	100%

Similar patterns were found with the services missing the required duration. Table 3 presents the results for the two most commonly required duration amounts across an 8-week/2-month period among the 1,152 service records that did not meet duration: 240 minutes (n = 279 records) and 480 (n = 204 records). The percentages in Table 3 reflect the percentages of services that did not meet the required duration. More than half (54.5%) of services that missed the required duration of 240 minutes and 27.0% of services that missed the required duration of 480 minutes were provided within 30 minutes of the requirement. However, 12.9% of services requiring 240 minutes and 27.9% of services requiring 480 minutes across eight weeks were under the required amount by two or more hours.

Table 3. Distribution of duration provided for services that missed required duration of 240 and 480 minutes across 8-week/2-month period, 2015-16

For services requiring 240 minutes across 8-week/2-month period			
Minutes provided:	Under by:	N of services	% of services
211 - 239	29 minutes or less	41	14.7%
210	30 minutes	111	39.8%
181 - 209	31 - 59 minutes	16	5.7%
180	60 minutes	44	15.8%
151 - 179	61 - 89 minutes	7	2.5%
150	90 minutes	22	7.9%
121 - 149	91 - 119 minutes	2	0.7%
120	120 minutes	13	4.7%
Less than 120	121 minutes or more	23	8.2%
Total		279	100%
For services requiring 480 minutes across 8-week/2-month period			
Minutes provided:	Under by:	N of services	% of services
451 - 479	29 minutes or less	14	6.9%
450	30 minutes	41	20.1%
421 - 449	31 - 59 minutes	15	7.4%
420	60 minutes	45	22.1%
419 - 391	61 - 89 minutes	12	5.9%
390	90 minutes	8	3.9%
361 - 389	91 - 119 minutes	12	5.9%
360	120 minutes	15	7.4%
Less than 360	121 minutes or more	42	20.6%
Total		204	100%

Summary

In Year 13, the results show that LAUSD met the incident of service outcome of 93% with the provision of 98% of the services specified in the IEPs at least once during an 8-week/2-month period (and 97% for SLD only). The District also met the frequency target of 85%, although the lower 95% confidence interval of this population estimate is just below the target. With 71% of services meeting the required duration in Year 13, the District continues to fall short of the duration target of 85%. While additional analyses show many records are missing frequency and duration by the equivalent of one service session, they also showed that more than half of the services fell short of the IEP requirements by a larger margin.

Appendix A: Population Estimates and Statistical Confidence Intervals

Calculating Population Estimates

To derive estimates representative of the entire population of students in special education in the Los Angeles Unified School District (LAUSD), AIR assigned a weight to the evidence of service delivery, frequency, and duration estimates for each disability category.¹⁶ Table A-1 shows the population (Column A) and analytic sample size (Column B) of each disability category excluding Specific Learning Disability (SLD) for the evidence of service delivery analysis. The analytic sample is the number of students included in the estimates for “evidence of service” (n = 2,924, excluding SLD) – i.e., students for whom we expected a log during the study period. Column C shows the probability that each student with a particular disability had of being sampled. To calculate this probability, we divided the analytic sample size by the population size for each disability category. In the case of students with Intellectual Disability, for instance, each student had a 6% probability (Column C (i.e., 298 / 4,621)) of being included in the analytic sample.

Column D presents the *probability weight*, which we calculated by dividing one by the probability of being included in the analytic sample. This weight reflects the number of students with the same disability category in the overall population represented by each student in the analytic sample. For example, each student with Intellectual Disability in the analytic sample represented approximately 15.5 students with this disability in the population. We then applied the weights to the individual percentages by disability category to derive an overall population estimate of 95%. Because SLD was examined separately for evidence of service delivery, we did not include it in generating the weighted population estimate for that analysis. We conducted similar weighting exercises to estimate population estimates for frequency and duration, which included all disability categories.

¹⁶ The population in this study is comprised of students in special education whose IEPs required at least one special education service and excluded students who did not have a disability code and students who attended non-public schools, who graduated or left LAUSD, or who were not three years old by September 30, 2015.

TABLE A-1

Probability and weights for evidence of service delivery population estimates (excluding SLD)

Disability category	Population ¹	Analytic Sample	Probability	Weight
	A	B	C	D
Autism	10,267	318	0.0310	32.3
Deaf/Hard of Hearing	1,241	283	0.2280	4.4
Emotional Disturbance	725	301	0.4152	2.4
Intellectual Disability	4,621	298	0.0645	15.5
Multiple Disabilities/Deaf-Blindness	1,160	257	0.2216	4.5
Other Health Impairment	7,791	304	0.0390	25.6
Orthopedic Impairment/ Traumatic Brain Injury	759	317	0.4177	2.4
Speech & Language Impairment	8,103	566	0.0699	14.3
Visual Impairment	360	280	0.7778	1.3
Total	35,027	2,924		

¹ The population in this study consists of students who appeared in data provided by the Information Technology Division as having a disability category and as receiving at least one special education service. Students with SLD are excluded from the weights for the evidence of service delivery analysis since they are examined separately.

Statistical Confidence Intervals

The estimated rates of service delivery, frequency, and duration discussed in this report are point estimates of the population rates. These are the best single estimates for summarizing the information contained in the sample. It is also possible to generate intervals around these point estimates. These intervals reflect the probability of containing the true population measure (e.g., the service delivery rate for the full population of students with disabilities in LAUSD). Intervals at the 95% confidence level mean that there is a 95% probability that the true population measure falls between the lower and upper interval.

In order to generate confidence intervals, it is necessary to know the statistical distribution of the variable under analysis. In the case of this study, the unit of analysis is a dichotomous variable. This means that the variable analyzed only takes two possible values (e.g., yes or no), indicating whether a given service was provided or not. The distribution of such dichotomous variables is called a *Bernoulli distribution*. At a level of 95%, the confidence intervals for these distributions are defined as:

$$\left[p - 1.96 \frac{\sqrt{p(1-p)}}{\sqrt{n}}, p + 1.96 \frac{\sqrt{p(1-p)}}{\sqrt{n}} \right]$$

(*p* represents the proportion of cases estimated). This means, that if 100 samples are drawn from the population of students with disabilities in LAUSD, in 95 of the cases, the true population rate will be contained in these confidence intervals. Note that these intervals use the Central Limit Theorem (CLT). CLT holds that the sampling distribution of the mean will approximate a normal distribution in large samples. This allows us to construct confidence intervals without knowing the specific distribution of the variable under analysis in LAUSD, such as the probability of receiving services. As with any inference testing, as the sample size increases, the accuracy of the

estimates improve and confidence intervals get smaller. Conversely, the smaller the sample size, the larger the confidence intervals must be to maintain the 95% confidence level. Table A-2 presents the confidence intervals for individual disability categories and the overall population estimates.

TABLE A-2

Statistical confidence intervals by disability category, 95% confidence level, 2015-16

Disability category	% of Services with Evidence of Log			% of Services that Met Frequency			% of Services that Met Duration		
	Lower Limit	Upper Limit		Lower Limit	Upper Limit		Lower Limit	Upper Limit	
Autism	96.3%	99.4%	97.8%	82.9%	91.4%	87.1%	68.0%	79.2%	73.6%
Deaf/Hard of Hearing	97.9%	100.2%	99.0%	81.9%	91.6%	86.7%	75.4%	86.6%	81.0%
Emotional Disturbance	93.2%	97.9%	95.6%	87.0%	94.5%	90.7%	58.0%	70.5%	64.3%
Intellectual Disability	97.1%	99.9%	98.5%	77.5%	87.7%	82.6%	68.3%	80.1%	74.2%
Multiple Disabilities/ Deaf-Blindness	95.5%	99.4%	97.4%	83.7%	93.0%	88.4%	73.5%	85.3%	79.4%
Other Health Impairment	94.8%	98.7%	96.7%	79.3%	88.9%	84.1%	52.8%	65.8%	59.3%
Orthopedic Impairment/Traumatic Brain Injury	93.0%	97.6%	95.3%	79.4%	88.9%	84.1%	71.1%	82.1%	76.6%
Specific Learning Disability	96.1%	98.3%	97.2%	83.8%	89.4%	86.6%	66.7%	74.2%	70.5%
Speech/Language Impairment	97.5%	99.5%	98.5%	76.9%	85.1%	81.0%	67.6%	77.0%	72.3%
Visual Impairment	96.7%	99.8%	98.3%	86.2%	94.5%	90.3%	72.9%	84.5%	78.7%
Population Estimates (including SLD)	--	--	--	83.9%	86.6%	85.3%	68.8%	72.3%	70.5%
Population Estimates (excluding SLD)	97.1%	98.2%	97.7%	--	--	--	--	--	--

Appendix B: Estimates for Years 2-13¹⁷

TABLE B-1

Percentages of services for which there was evidence of service provision by disability category, 2004-05 to 2015-16

	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7	
Disability	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services
AUT	95%	528	87%	594	89%	704	91%	727	95%	771	95%	817
DHH	95%	546	93%	524	90%	633	97%	622	96%	621	97%	664
ED	81%	306	85%	355	80%	437	90%	400	94%	454	89%	495
ID	96%	385	88%	457	87%	577	92%	564	95%	597	96%	615
MD/DB	98%	432	93%	446	95%	656	95%	690	98%	707	97%	791
OHI	84%	416	84%	424	81%	483	95%	539	93%	511	93%	525
OI/TBI	93%	693	91%	740	89%	841	96%	893	97%	961	95%	981
SLI	95%	338	78%	389	86%	459	91%	432	90%	928	95%	882
VI	98%	630	96%	659	96%	751	98%	743	97%	756	99%	663
Overall Population Estimate (w/o SLD)	93%		85%		87%		92%		94%		95%	
SLD	73%	723	79%	744	74%	1,187	93%	1,251	91%	1,222	93%	1,271

	2010-11		2011-12		2012-13		2013-14		2014-15		2015-16	
	Year 8		Year 9		Year 10		Year 11		Year 12		Year 13	
Disability	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services
AUT	96%	679	95%	632	99%	653	97%	631	98%	681	98%	650
DHH	97%	615	96%	589	98%	541	98%	541	98%	547	99%	509
ED	83%	425	85%	422	97%	427	88%	443	96%	498	96%	495
ID	97%	527	95%	508	98%	483	98%	468	99%	539	98%	519
MD/DB	95%	462	95%	486	98%	542	98%	496	97%	595	97%	541
OHI	90%	478	94%	493	98%	505	94%	419	98%	466	97%	461
OI/TBI	95%	732	95%	749	98%	737	98%	709	98%	803	95%	764
SLI	94%	807	91%	772	98%	715	97%	684	99%	688	99%	673
VI	98%	593	94%	618	99%	561	98%	596	99%	618	98%	572
Overall Population Estimate (w/o SLD)	95%		94%		98%		96%		98%		98%	
SLD	91%	1,152	94%	1,140	98%	1,126	96%	1,085	98%	1,106	97%	1,061

Note: In Years 8 - 13, yearly services were removed from the estimates. In the prior years, yearly services were kept in the analyses only if they met the log requirements.

¹⁷ Due to considerable changes in the study methodology since Year 1, the results for the first year (2003-04) are not presented.

TABLE B-2

Percentages of services with frequency at least equal to the IEP by disability category, 2004-05 to 2015-16

Disability	2004-05 Year 2		2005-06 Year 3		2006-07 Year 4		2007-08 Year 5		2008-09 Year 6		2009-10 Year 7	
	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services
AUT	56%	458	59%	462	66%	581	75%	633	70%	676	74%	753
DHH	58%	486	66%	423	75%	528	77%	577	74%	562	73%	631
ED	49%	206	67%	254	74%	320	69%	345	68%	373	66%	423
ID	54%	348	61%	365	74%	462	76%	487	74%	525	74%	572
MD/DB	60%	363	70%	374	80%	531	82%	551	74%	550	71%	630
OHI	56%	305	58%	298	70%	351	78%	483	72%	442	75%	475
OI/TBI	67%	543	70%	582	78%	612	80%	748	77%	785	74%	798
SLD	52%	442	54%	459	65%	794	77%	1,105	73%	1058	77%	1,168
SLI	49%	289	50%	282	62%	360	71%	367	70%	776	72%	820
VI	60%	571	68%	583	82%	690	85%	686	84%	693	82%	637
Total (unweighted)	57%	4,011	63%	4,082	73%	5,229	78%	5,982	74%	6,440	74%	6,907
Overall Population Estimate	--	--	--	--	--	--	76%		72%		74%	

Disability	2010-11 Year 8		2011-12 Year 9		2012-13 Year 10		2013-14 Year 11		2014-15 Year 12		2015-16 Year 13	
	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services
AUT	81%	652	82%	602	88%	540	83%	456	89%	508	87%	482
DHH	85%	592	82%	563	83%	417	81%	400	85%	389	87%	332
ED	74%	348	73%	352	83%	369	84%	316	85%	380	91%	367
ID	81%	506	83%	482	85%	405	85%	362	84%	402	83%	363
MD/DB	87%	433	87%	460	87%	455	85%	399	89%	451	88%	370
OHI	81%	428	82%	465	86%	391	88%	321	88%	352	84%	340
OI/TBI	85%	687	85%	713	86%	615	84%	564	87%	601	84%	510
SLD	83%	1,040	86%	1,076	86%	874	85%	765	89%	787	87%	716
SLI	81%	751	84%	701	84%	571	80%	462	85%	496	81%	422
VI	86%	570	93%	583	92%	481	91%	437	85%	479	90%	383
Total (unweighted)	83%	6,007	84%	5,997	86%	5,118	84%	4,482	87%	4,845	86%	4,285
Overall Population Estimate	82%		83%		86%		84%		87%		85%	

Note 1: 2007-08 is the first year in which a population estimate was calculated for frequency.

Note 2: In Years 8 - 13, yearly services were removed from the estimates. In the prior years, yearly services were kept in the analyses only if they met the frequency requirements.

TABLE B-3

Percentages of services with duration at least equal to the IEP by disability category, 2004-05 to 2015-16

Disability	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7	
	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services
AUT	58%	458	59%	463	60%	573	69%	627	63%	675	61%	757
DHH	60%	484	68%	419	76%	513	77%	579	75%	559	72%	630
ED	65%	200	69%	255	77%	310	67%	343	70%	380	66%	425
ID	55%	345	64%	365	69%	463	73%	483	70%	516	65%	572
MD/DB	60%	359	74%	373	82%	548	82%	598	74%	618	68%	701
OHI	59%	299	61%	302	65%	338	72%	485	67%	436	69%	473
OI/TBI	68%	542	73%	582	78%	641	80%	806	75%	828	68%	878
SLD	56%	435	59%	467	56%	762	72%	1,094	66%	1,032	69%	1,160
SLI	51%	288	53%	282	62%	354	70%	366	64%	764	64%	819
VI	63%	567	69%	581	81%	685	81%	689	80%	691	75%	641
Total (unweighted)	60%	3,977	65%	4,089	70%	5,187	75%	6,070	70%	6,499	68%	7,056
Overall Population Estimate	--	--	--	--	--	--	72%		67%		67%	

Disability	2010-11		2011-12		2012-13		2013-14		2014-15		2015-16	
	Year 8		Year 9		Year 10		Year 11		Year 12		Year 13	
	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services
AUT	65%	651	69%	601	74%	540	70%	456	72%	505	74%	481
DHH	80%	592	76%	563	79%	417	72%	400	80%	389	81%	332
ED	65%	347	65%	351	68%	365	60%	313	67%	377	64%	361
ID	67%	506	68%	481	69%	405	71%	361	77%	401	74%	361
MD/DB	78%	431	76%	458	76%	455	72%	399	77%	450	79%	369
OHI	69%	428	71%	464	68%	391	65%	321	72%	349	59%	339
OI/TBI	76%	686	73%	711	77%	615	74%	564	73%	601	77%	509
SLD	71%	1,037	70%	1,076	70%	873	64%	765	71%	778	70%	711
SLI	66%	750	70%	701	73%	571	68%	462	71%	494	72%	422
VI	77%	566	78%	583	76%	481	76%	437	72%	476	79%	376
Total (unweighted)	71%	5,994	72%	5,989	73%	5,113	69%	4,478	73%	4,820	73%	4,261
Overall Population Estimate	69%		70%		71%		68%		72%		71%	

Note 1: 2007-08 is the first year in which a population estimate was calculated for duration.

Note 2: In Years 8 - 13, yearly services were removed from the estimates. In the prior years, yearly services were kept in the analyses only if they met the duration requirements.

TABLE B-4

Percentages of services for which there was evidence of service provision by service category, 2004-05 to 2015-16

Service	2004-05 Year 2		2005-06 Year 3		2006-07 Year 4		2007-08 Year 5		2008-09 Year 6		2009-10 Year 7	
	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services
	APE	99%	977	96%	962	98%	1,038	99%	1,010	98%	944	97%
DHH	100%	390	99%	392	96%	448	99%	453	99%	487	98%	484
LAS	96%	1,075	86%	1,147	82%	1,420	86%	1,414	90%	1,759	97%	1,825
LRE	85%	197	95%	198	96%	254	95%	276	100%	249	92%	232
NPA	95%	55	85%	110	92%	155	87%	187	93%	295	90%	372
OT	98%	402	93%	427	92%	537	94%	530	98%	521	97%	557
PRE	100%	75	38%	110	95%	100	100%	102	100%	127	90%	112
PT	100%	131	94%	148	98%	218	98%	247	99%	307	99%	339
RSP	65%	959	77%	1,055	71%	1,592	95%	1,612	91%	1,733	91%	1,789
SMH	88%	409	86%	459	87%	572	94%	641	96%	686	93%	714
VI	99%	327	97%	324	100%	394	100%	389	100%	420	100%	372

Service	2010-11 Year 8		2011-12 Year 9		2012-13 Year 10		2013-14 Year 11		2014-15 Year 12		2015-16 Year 13	
	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services	% of Services for which there was Evidence of Service Provision	N of Services
	APE	98%	736	97%	739	99%	752	100%	734	99%	785	99%
DHH	100%	414	98%	407	98%	383	97%	389	99%	378	99%	326
LAS	96%	1,655	95%	1,627	98%	1,590	98%	1,554	99%	1,593	99%	1,518
LRE	97%	170	93%	180	99%	162	98%	157	97%	210	99%	162
NPA	99%	142	75%	151	93%	169	90%	220	83%	285	85%	372
OT	95%	461	91%	435	99%	433	98%	412	99%	495	98%	475
PRE	100%	75	61%	98	100%	91	100%	22	94%	17	*	*
PT	94%	105	98%	110	98%	121	97%	95	100%	98	97%	102
RSP	87%	1,764	94%	1,719	97%	1,631	97%	1,539	98%	1,662	97%	1,556
SMH	88%	587	90%	574	99%	583	87%	601	99%	629	98%	572
VI	100%	361	99%	369	100%	375	99%	349	98%	389	100%	334

Note 1: In Years 8 - 13, yearly services were removed from the estimates. In the prior years, yearly services were kept in the analyses only if they met the log requirements.

Note 2: The estimate for Pre-school services was suppressed in 2015-16 due to the low number of observations.

TABLE B-5

Percentages of services with frequency at least equal to the IEP by service category, 2004-05 to 2015-16

Service	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7	
	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services
APE	68%	893	70%	865	81%	945	85%	973	81%	879	77%	866
DHH	62%	362	69%	346	81%	397	77%	430	73%	446	73%	459
LAS	42%	965	48%	895	60%	1,085	69%	1,140	65%	1,474	67%	1,753
LRE	80%	145	87%	174	87%	212	91%	246	87%	243	86%	211
NPA	80%	39	70%	77	71%	123	77%	150	71%	245	76%	308
OT	55%	367	67%	365	72%	429	72%	426	66%	423	71%	457
PRE	80%	51	81%	36	76%	87	90%	101	91%	122	89%	99
PT	61%	72	79%	90	71%	114	80%	113	78%	125	71%	134
RSP	60%	498	54%	593	67%	994	81%	1,461	79%	1,507	81%	1,611
SMH	45%	318	65%	352	71%	459	64%	571	61%	574	60%	645
VI	63%	301	71%	289	92%	384	87%	371	89%	402	87%	364

Service	2010-11		2011-12		2012-13		2013-14		2014-15		2015-16	
	Year 8		Year 9		Year 10		Year 11		Year 12		Year 13	
	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services	% of Services with Frequency at least Equal to the IEP	N of Services
APE	87%	718	91%	718	91%	632	89%	562	90%	577	86%	565
DHH	86%	408	84%	397	81%	304	84%	289	88%	269	86%	215
LAS	79%	1,577	82%	1,549	82%	1,303	79%	1,140	84%	1,170	81%	1,014
LRE	90%	162	86%	167	91%	128	95%	120	88%	153	92%	103
NPA	91%	141	88%	114	94%	114	91%	144	89%	198	86%	254
OT	75%	437	72%	395	77%	376	77%	328	83%	377	83%	343
PRE	93%	74	95%	60	95%	80	95%	19	*	*	*	*
PT	77%	99	84%	108	91%	103	71%	77	88%	77	86%	69
RSP	85%	1,529	87%	1,615	91%	1,273	89%	1,132	91%	1,226	90%	1,073
SMH	70%	509	69%	510	78%	484	81%	414	83%	497	87%	427
VI	94%	353	96%	364	96%	321	92%	257	82%	293	90%	216

Note 1: In Years 8 - 13, yearly services were removed from the estimates. In the prior years, yearly services were kept in the analyses only if they met the frequency requirements.

Note 2: The estimate for Pre-school services was suppressed in 2014-15 and 2015-16 due to the low number of observations.

TABLE B-6

Percentages of services with duration at least equal to the IEP by service category, 2004-05 to 2015-16

Service	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7	
	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services
APE	67%	881	73%	869	83%	945	86%	966	79%	868	70%	860
DHH	64%	361	72%	342	84%	383	79%	431	76%	446	76%	458
LAS	44%	959	50%	899	60%	1,064	67%	1,141	61%	1,459	59%	1,754
LRE	80%	144	87%	176	81%	211	81%	248	85%	241	75%	208
NPA	83%	42	68%	77	55%	119	60%	148	52%	243	54%	301
OT	56%	365	66%	369	67%	435	68%	461	62%	452	65%	514
PRE	86%	51	83%	36	69%	86	79%	97	80%	119	79%	99
PT	60%	72	75%	81	80%	173	88%	202	85%	221	83%	253
RSP	61%	487	60%	601	55%	946	75%	1,437	69%	1,457	72%	1,602
SMH	62%	313	67%	355	74%	445	67%	570	68%	589	63%	642
VI	67%	302	72%	284	89%	380	83%	369	85%	404	81%	365

Service	2010-11		2011-12		2012-13		2013-14		2014-15		2015-16	
	Year 8		Year 9		Year 10		Year 11		Year 12		Year 13	
	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services	% of Services with Duration at least Equal to the IEP	N of Services
APE	81%	716	73%	717	77%	632	74%	562	73%	575	79%	565
DHH	86%	408	84%	397	82%	304	78%	289	82%	269	85%	215
LAS	66%	1,575	72%	1,548	72%	1,303	68%	1,140	73%	1,165	74%	1,013
LRE	81%	162	75%	167	81%	128	88%	120	77%	153	83%	103
NPA	51%	140	56%	112	43%	114	48%	144	49%	198	45%	253
OT	68%	436	67%	395	72%	376	70%	328	81%	375	80%	342
PRE	89%	74	75%	60	76%	80	84%	19	*	*	*	*
PT	73%	99	82%	108	85%	103	65%	77	87%	77	87%	69
RSP	69%	1,526	67%	1,612	69%	1,273	65%	1,131	70%	1,217	67%	1,059
SMH	65%	507	67%	509	72%	479	66%	411	68%	490	71%	424
VI	80%	351	85%	364	81%	321	82%	257	78%	293	83%	212

Note 1: In Years 8 - 13, yearly services were removed from the estimates. In the prior years, yearly services were kept in the analyses only if they met the duration requirements.

Note 2: The estimate for Pre-school services was suppressed in 2014-15 and 2015-16 due to the low number of observations.



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