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## **Study to Measure the Delivery of Services in Accordance with the Individualized Education Programs of Students with Disabilities: Year 9 (2011-12)**

**Submitted to:**

Office of the Independent Monitor  
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## Introduction

AIR's report to the Office of the Independent Monitor (OIM) presents the results from the Year 9 (2011-12) 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 service provision for each service specified in the student's IEP over an 8-week/2-month period?<sup>1</sup>
- (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.<sup>2</sup> 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 April 2012.<sup>3</sup> For the frequency and duration questions, AIR compared

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<sup>1</sup> 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.

<sup>2</sup> 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.

<sup>3</sup> 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. For example, in addition to sessions in which the service was provided, instances in which services were not provided due to a field trip, school event, school-wide testing, student no show, student absence, student refusing treatment, provider absence due to jury duty, illness, or personal necessity, or the procedure documented as "not needed" are counted as instances of valid 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.<sup>4</sup>

In Year 1, 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 6-9, 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 in Year 5.

In Year 9, the Office of Data and Accountability provided AIR with databases containing IEPs for 4,922 students in special education in the district and their corresponding provider log information, if available. Using these databases, the final results include 7,712 services for 4,250 of the students in this sample.<sup>5</sup> The OIM and the Office of Data and Accountability staff hand-coded nearly 200 service records because certain school calendars that did not align with the track periods selected for the study. In addition, hand-coding was needed for charter schools, because they set their own calendars and do not consistently have the same standard holidays as non-charter schools.

The results of the MCD 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 MCD service records that did not meet the frequency or duration requirements (Section II).

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<sup>4</sup> 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.

<sup>5</sup> The analytic sample (n = 4,250) is smaller than the sample that LAUSD's Office of Data and Accountability provided to AIR (n = 4,922). In accordance with the coding rules, 672 students were dropped due to reasons such as the student leaving the district, exiting special education, attending a non-public school, parents not accessing the student's service, or students whose only service was yearly, whose only service ended before the study period or started after the study period, or whose only service was not part of the study.

## Section I: MCD Study Results

### ***Was there evidence of at least one incident of service 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 94% of the special education services required by IEPs district-wide<sup>6</sup> during the 2011-12 school year were provided at least once during an 8-week/2-month period of analysis. This population estimate represents services for students in all disability categories (except SLD) district-wide whose IEPs required at least one special education service.<sup>7</sup> For the sample of students with SLD whose IEPs required at least one special education service, we also found evidence that 94% 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 93.3% and 94.9%. For students with SLD, for which the MCD outcome is also specified at 93%, we can predict with 95% confidence that the true estimate of provision falls between 93.0% and 95.9%.<sup>8</sup> Therefore, the confidence intervals for both groups of students are at or above the MCD outcome of 93%.

Across the individual disability categories, the estimate of service delivery varied from 85% for students with Emotional Disturbance (ED) to 96% for students who are Deaf or Hard of Hearing (DHH). By service category, the percentages ranged from 61% for Pre-School services (PRE) to 99% for Visual Impairment Itinerant (VI) services.<sup>9</sup>

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<sup>6</sup> 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 the Special Education Student Information System (SIS) database

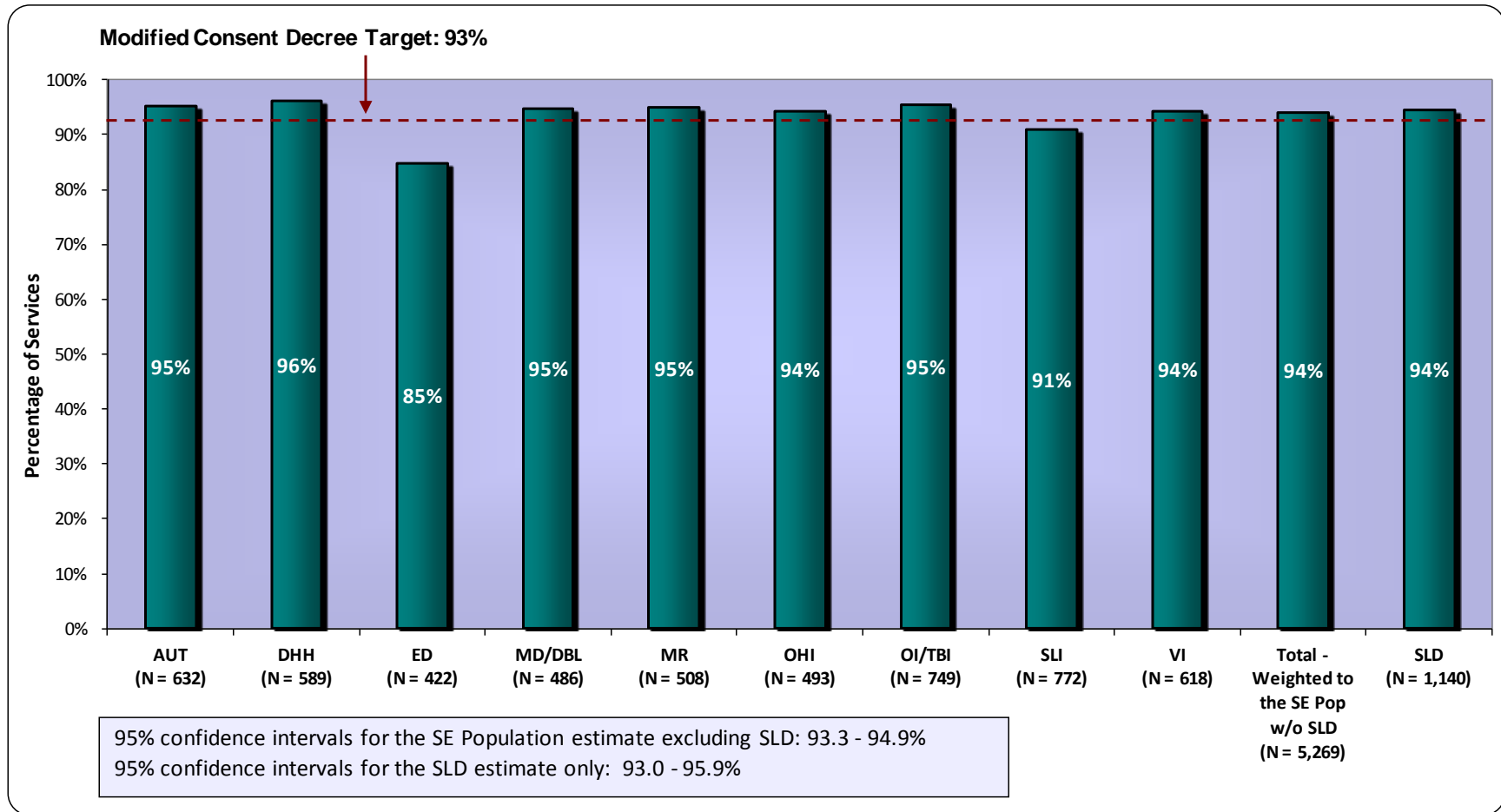
<sup>7</sup> According to the Special Education Student Information System (SIS) database used to draw the study sample, approximately a quarter of all special education students in the LAUSD did not have a service code listed. The population estimate for evidence of service delivery represents only those students (excluding SLD) who had a service code in the SIS database.

<sup>8</sup> OIM also requested separate service delivery analyses for charter schools based on the students in the sample. For charter schools, we found evidence that 95% of special education services required by IEPs were provided at least once during an 8-week/2-month period (with confidence intervals of 92.8% and 97.2%). For students with SLD in charter schools, we found evidence that 94% of their required services were provided (with confidence intervals of 90.0% and 97.7%).

<sup>9</sup> In Year 9, Headstart Language and Speech (LAS) services were included in the analyzed services and were grouped with Pre-School services. Excluding Headstart LAS, the Year 9 estimate would be 97% for Pre-School services. In Year 8, Pre-School services (which did not include Headstart LAS) had a 100% service delivery rate.

**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, 2011-12**



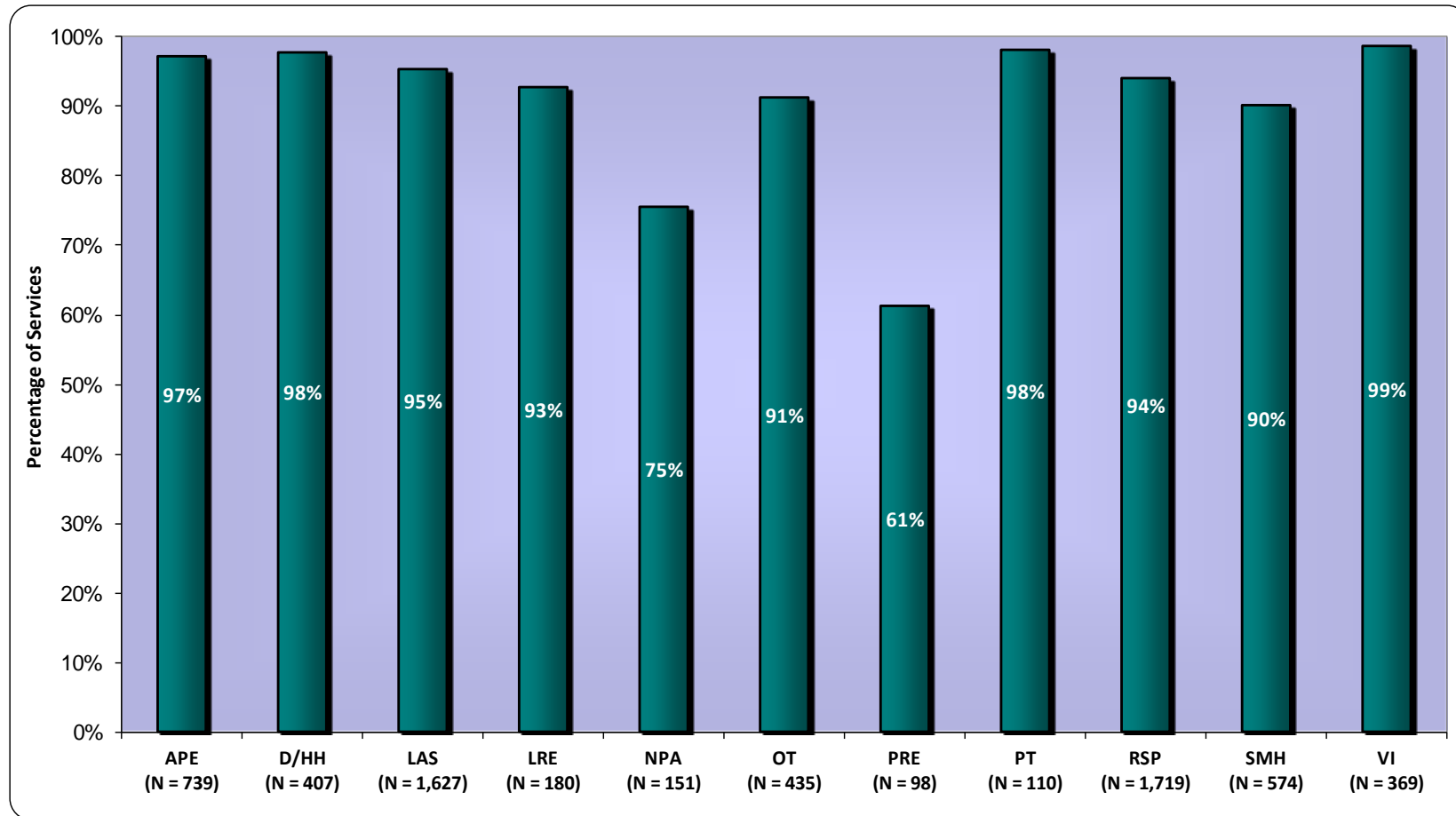
Note 1: The population estimate represents the population of students in special education district-wide (excluding students with Specific Learning Disabilities) whose IEPs required at least one special education service as reported in the Special Education Student Information System (SIS) database.

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 95% of the 632 services required for the sampled students with Autism.

Abbreviations: AUT (Autism); DHH (Deaf/Hard of Hearing); ED (Emotional Disturbance); MD/DBL (Multiple Disabilities/Deaf-Blindness); MR (Mental Retardation); 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, 2011-12



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 97% of the 739 Adapted Physical Education (APE) services required for the sampled students.

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 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 outcome 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. Based on the provider log information, AIR estimates that 83% of services across the population of students in special education with evidence of service (Question 1) met the frequency requirements in 2011-12. For duration, 70% met the IEP specifications.<sup>10</sup> The 95% confidence intervals ranged from 82.4% to 84.6% for frequency, with the upper interval reaching the outcome, and from 68.8% to 71.6% for duration, which is well below the outcome.<sup>11</sup>

It is important to note that these percentages are based on the numbers of students for which at least one valid service during the 8-week/2-month period was documented on the logs.<sup>12</sup> If we include students for whom no log was provided (and for whom service frequency and/or duration was specified in the IEP), these estimates decrease from 83% to 79% for frequency and from 70% to 66% for duration.

Figure 3 presents this information on frequency and duration by disability category. Figure 4 depicts these data by service type. There was considerable variation by individual disability and service categories. Estimates for meeting the IEP frequency ranged from 82% for students with Autism (AUT), who were Deaf/Hard of Hearing (DHH), or with Other Health Impairments (OHI) to 93% for students with Visual Impairments (VI). Duration rates ranged from 65% for students with Emotional Disturbance (ED) to 78% for students with Visual Impairments (VI). By service category, frequency estimates ranged from 69% for School Mental Health (SMH) to 96% for Visual Impairment Itinerant (VI) services. Duration estimates ranged from 56% for Non-Public Agency (NPA) to 85% for Visual Impairment Itinerant services.

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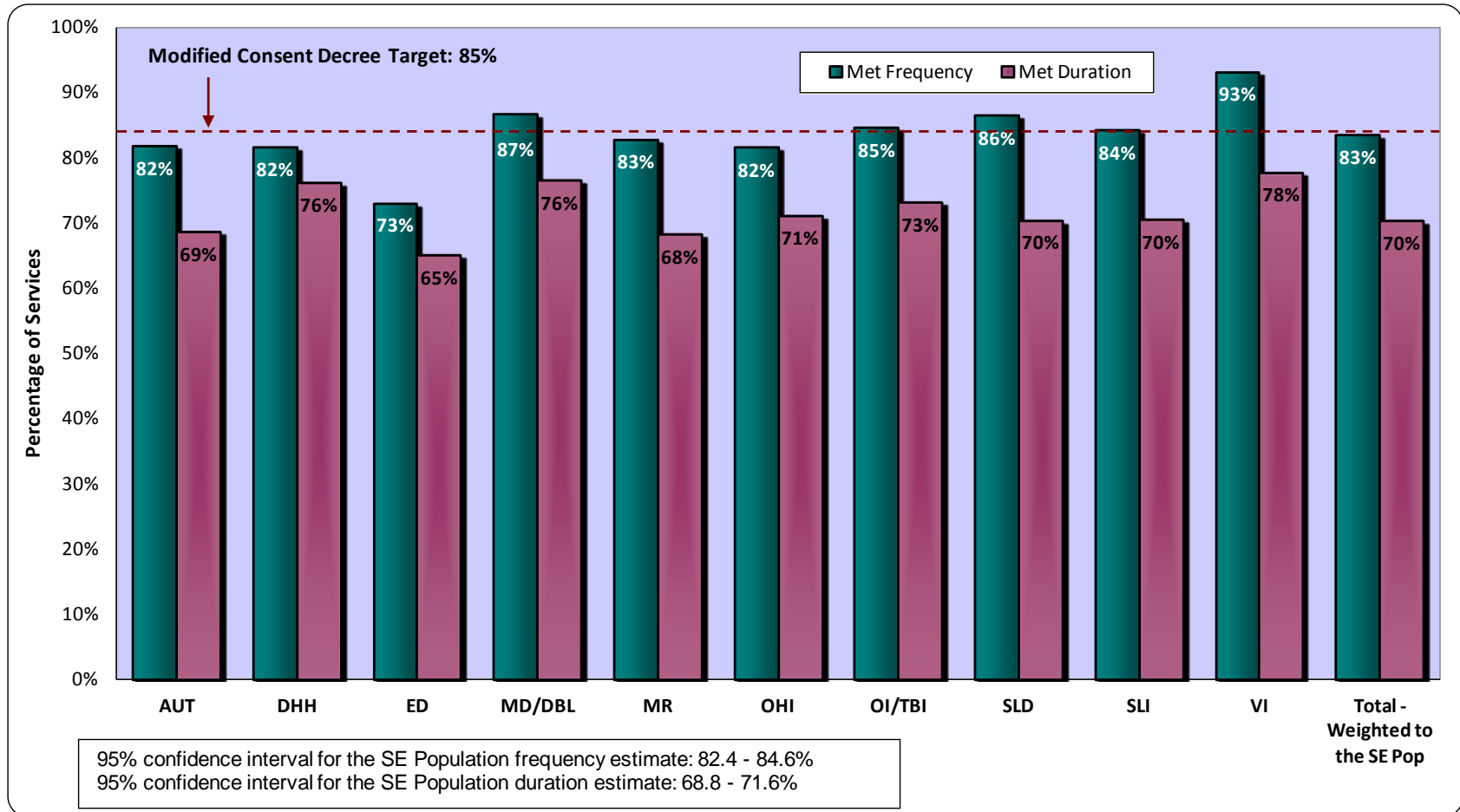
<sup>10</sup> These population estimates represent students whose IEPs required at least one special education service, according to the Special Education Student Information System (SIS) database, and includes students with SLD.

<sup>11</sup> OIM also requested separate service delivery analyses for charter schools, based on students in the sample. For charter schools, we found that 83% of services for which we received logs met the frequency requirements (with confidence intervals of 79.9% and 86.5%), while 67% met the IEP specifications for duration (with confidence intervals of 63.1% and 71.4%).

<sup>12</sup> For example, while we analyzed 422 services for students with Emotional Disturbance in the evidence of service analysis, the frequency and duration percentages are based on a smaller number (352 services for frequency and 351 for duration; see Appendix B). These lower numbers are due to not receiving logs for all 422 services, as well as excluding records from the frequency/duration analyses if the IEP did not specify a frequency and/or duration, or if LAUSD provided information that indicated the provider would be penalized due to circumstances outside his or her control. In the case of the frequency analysis for Emotional Disturbance, we did not receive logs for 64 services; and 6 services were excluded from the results due to circumstances beyond the providers' control (in accordance with the coding rules).

**FIGURE 3**

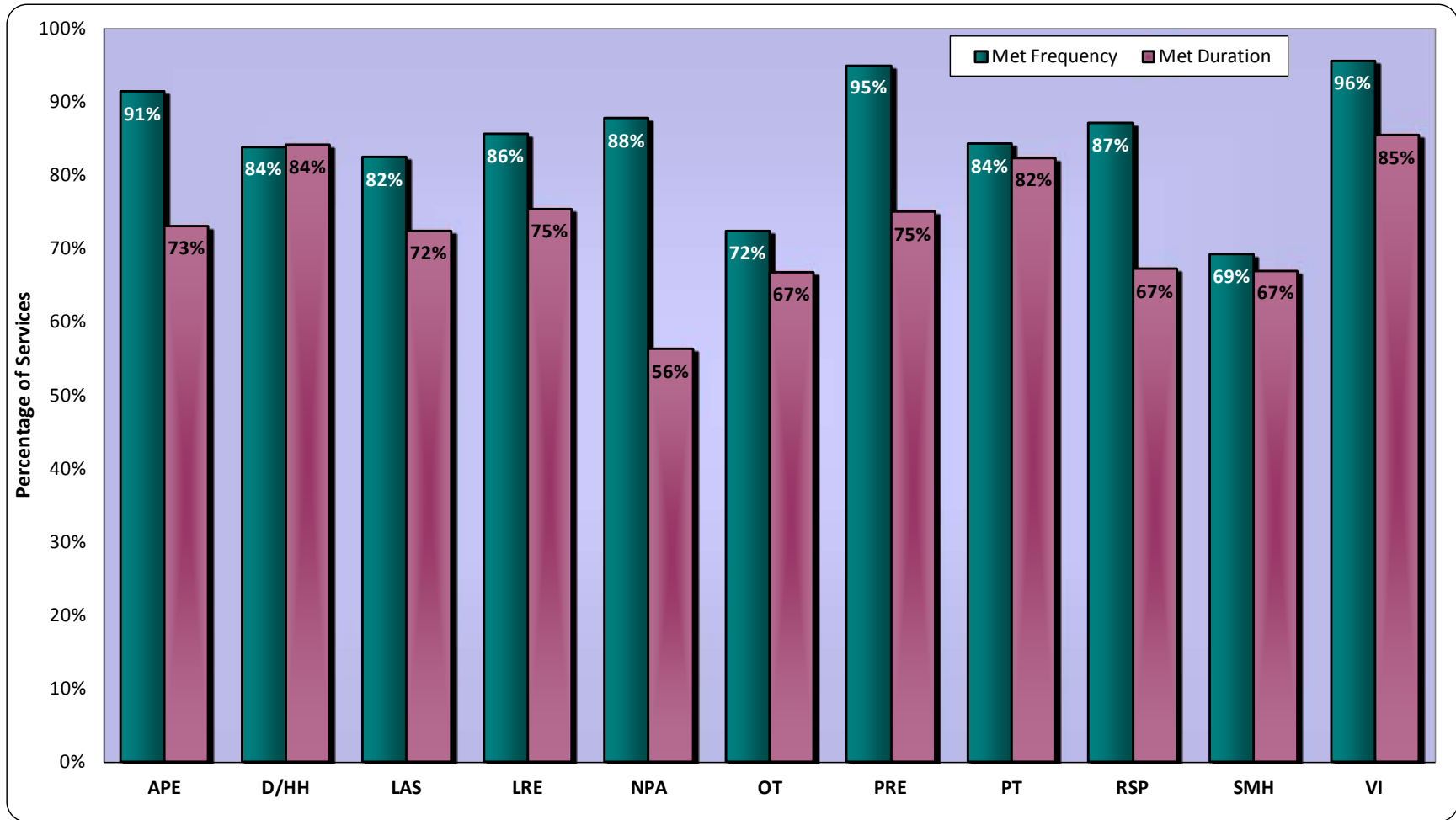
**Percentage of services that met frequency/duration as specified by the IEPs during an 8-week/2-month period, by disability category, 2011-12**



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 the Special Education Student Information System (SIS) database, 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); MD/DBL (Multiple Disabilities/Deaf-Blindness); MR (Mental Retardation); 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, 2011-12**



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

Over the 9 years of the study, there has been a pattern of LAUSD not meeting the frequency and duration outcome set by the MCD. The OIM expressed a particular interest in understanding the extent to which services were missing IEP requirements to help inform and improve future service delivery efforts. Among the 5,997 service records that had evidence of at least one incident of service and for which AIR analyzed for frequency in Year 9, 5,501 met the frequency requirements while 946 did not. Among those that did not meet the frequency, more than half (553 of 946) missed the required frequency by *more than one session*. If an additional session was provided for services that missed the required frequency, the population estimate for frequency would have increased from 83% to 90%. Table 1 shows the percentage of services that missed the required frequency by one session, which varied from 11% for RSP to 96% for Least Restrictive Environment services. In other words, 89% of RSP services missed frequency by more than one session. This high rate may be due to such services often being required daily, making it difficult to provide make-up sessions.

For the duration analysis, 4,301 service records met the IEP requirements, whereas 1,688 did not. Among those that did not meet duration, two-thirds (1,119) missed the required duration by more than one session.<sup>13</sup> If an additional session was provided, the population estimate for duration would have increased from 70% to 80%.<sup>14</sup> As shown in Table 1, the percentage of services that missed the duration by one session ranged from 12% for RSP to 80% for Pre-School services.

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<sup>13</sup> For each service observation, AIR estimated the average session duration across the 8-week/2-month period to determine if a service missed the IEP duration requirement by a single session.

<sup>14</sup> The MCD outcome of 85% would continue to be above the confidence intervals for the duration estimate.

**Table 1. Number and percentage of services that missed frequency and duration by one session, by service category, 2011-12**

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	% of services that missed duration by one session
Adapted Physical Education	62	28	45%	193	73	38%
Deaf/Hard of Hearing	64	37	58%	63	38	60%
Language and Speech	272	128	47%	427	182	43%
Least Restrictive Environment	24	23	96%	41	25	61%
Non-Public Agency	14	2	14%	49	6	12%
Occupational Therapy	109	65	60%	131	74	56%
Pre-School	3	1	33%	15	12	80%
Physical Therapy	17	12	71%	19	13	68%
Resource Specialist Program	208	23	11%	529	63	12%
School Mental Health	157	67	43%	168	61	36%
Visual Impairment	16	7	44%	53	22	42%
<b>Total</b>	<b>946</b>	<b>393</b>	<b>42%</b>	<b>1,688</b>	<b>569</b>	<b>34%</b>

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 = 548 records) and 16 times (n = 142). Please note that the percentages in Table 2 are based on the number of services that did not meet the IEP requirements for frequency. Less than half (44%) of the services required once weekly (i.e., 8 times across 8 weeks) and 23% of services required twice a week (i.e., 16 times across 8 weeks) missed the required frequency by one. However, nearly a quarter (24%) of these services were provided half or less of the required frequency (e.g., 4 times or less for services required 8 times across 8 weeks, or 8 times or less for services required 16 times across 8 weeks).

**Table 2. Distribution of frequency provided for services that missed required frequency of 8 and 16 times across 8-week/2-month period, 2011-12**

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
0	.	.	0	1	0.7%
1	26	4.7%	1	1	0.7%
2	29	5.3%	2	4	2.8%
3	37	6.8%	3	3	2.1%
4	39	7.1%	4	5	3.5%
5	58	10.6%	5	3	2.1%
6	116	21.2%	6	4	2.8%
7	243	44.3%	7	6	4.2%
			8	8	5.6%
			9	6	4.2%
			10	4	2.8%
			11	7	4.9%
			12	15	10.6%
			13	14	9.9%
			14	29	20.4%
			15	32	22.5%
<b>Total</b>	<b>548</b>	<b>100%</b>	<b>Total</b>	<b>142</b>	<b>100%</b>

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 1,688 service records that did not meet duration: 240 minutes (n = 511 records) and 480 (n = 246 records). The percentages in Table 3 reflect the percentages of services that did not meet the required duration. Nearly 24% of services requiring 240 minutes and 38% of services requiring 480 minutes across eight weeks reported some duration, but were still under the required amount by two or more hours. However, a sizeable percentage of services that missed the duration were provided within 30 minutes of the requirement – 40% and 31% of services required at 240 and 480 minutes, respectively.

**Table 3. Distribution of duration provided for services that missed required duration of 240 and 480 minutes across 8-week/2-month period, 2011-12**

<b>For services requiring 240 minutes across 8-week/2-month period</b>			
<b>Minutes provided:</b>	<b>Under by:</b>	<b>N of services</b>	<b>% of services</b>
211 - 239	29 minutes or less	19	3.7%
210	30 minutes	185	36.2%
181 - 209	31 - 59 minutes	17	3.3%
180	60 minutes	110	21.5%
151 - 179	61 - 89 minutes	11	2.2%
150	90 minutes	41	8.0%
121 - 149	91 - 119 minutes	7	1.4%
120	120 minutes	39	7.6%
Less than 120	121 minutes or more	82	16.0%
No minutes (among those with a log)	240 minutes	0	0.0%
<b>Total</b>		<b>511</b>	<b>100.0%</b>
<b>For services requiring 480 minutes across 8-week/2-month period</b>			
<b>Minutes provided:</b>	<b>Under by:</b>	<b>N of services</b>	<b>% of services</b>
451 - 479	29 minutes or less	8	3.3%
450	30 minutes	69	28.0%
421 - 449	31 - 59 minutes	7	2.8%
420	60 minutes	37	15.0%
419 - 391	61 - 89 minutes	6	2.4%
390	90 minutes	20	8.1%
361 - 389	91 - 119 minutes	5	2.0%
360	120 minutes	18	7.3%
Less than 360	121 minutes or more	75	30.5%
No minutes (among those with a log)	480 minutes	1	0.4%
<b>Total</b>		<b>246</b>	<b>100.0%</b>

To understand possible reasons why services were not being provided in accordance with the IEP, AIR also examined the cancelled sessions documented on the log for services that missed the required duration by one session.<sup>15</sup> The electronic log system had a pull-down menu from which providers select reasons (defined by LAUSD) for cancelled sessions. For the purpose of this study, a subset of these cancellations did not count towards the frequency and duration. These cancellations include provider absent (no additional information provided)<sup>16</sup>,

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

<sup>16</sup> Some provider absences counted towards frequency and duration if certain reasons were documented (i.e., jury duty, illness, personal necessity) and if they did not exceed two consecutive weeks. If no reason was provided, the absence did not count.

provider unexcused from IEP meeting, IEP meeting, student IEP meeting, provider off-calendar, waiver, early dismissal, and for certain services, student schedule change.

Table 4 reports these results for all services that missed the duration by one session (n = 569). The most cited reason for a cancelled session was the provider attending an IEP meeting (27%), with an unexcused IEP meeting being the most common subset of that category (see shaded columns in Table 4). The rate was higher for Occupational Therapy services, with 31% of missed services reported as cancelled due to an unexcused IEP meeting. A provider absence (no additional information) was the second most documented reason, reflecting 12% of the services missing the required duration by one session. The results show that more than half of the services that missed duration by one session (53%) did not specify any of the reasons listed above (see "None of the prior reasons reported" column in Table 4). The "none of the prior reasons reported" category represents cases that missed duration and for which no cancelled sessions were documented on the log.



**Table 4. Number and percentages of services by reason for cancelled sessions among services that did not meet required duration by one session, by service category, 2011-12**

Service category	Duration not met	Student schedule change		IEP meeting (all reasons)		Unexcused IEP meeting <1>		IEP meeting <1>		IEP meeting with student <1>	
Adapted Physical Education	73	3	4.1%	13	17.8%	9	12.3%	4	5.5%	0	0.0%
Deaf/Hard of Hearing	38	6	15.8%	7	18.4%	3	7.9%	1	2.6%	4	10.5%
Language and Speech	182	13	7.1%	77	42.3%	45	24.7%	27	14.8%	9	4.9%
Least Restrictive Env.	25	0	0.0%	5	20.0%	0	0.0%	0	0.0%	5	20.0%
Non-Public Agency	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Occupational Therapy	74	9	12.2%	23	31.1%	23	31.1%	7	9.5%	7	9.5%
Physical Therapy	13	0	0.0%	5	38.5%	2	15.4%	2	15.4%	1	7.7%
Pre-School	12	1	8.3%	4	33.3%	0	0.0%	0	0.0%	4	33.3%
Resource Specialist Prg.	63	1	1.6%	3	4.8%	1	1.6%	1	1.6%	1	1.6%
School Mental Health	61	6	9.8%	9	14.8%	4	6.6%	1	1.6%	4	6.6%
Visual Impairment	22	11	50.0%	8	36.4%	0	0.0%	4	18.2%	4	18.2%
<b>Total</b>	<b>569</b>	<b>50</b>	<b>8.8%</b>	<b>154</b>	<b>27.1%</b>	<b>87</b>	<b>15.3%</b>	<b>47</b>	<b>8.3%</b>	<b>39</b>	<b>6.9%</b>

**Table 4 (cont.). Number and percentages of services by reason for cancelled sessions among services that did not meet required duration by one session, by service category, 2011-12**

Service category	Duration not met	Provider absence (no reason provided)		Off calendar		Early out		Waiver		None of the prior reasons reported	
Adapted Physical Education	73	4	5.5%	0	0.0%	0	0.0%	0	0.0%	53	72.6%
Deaf/Hard of Hearing	38	4	10.5%	0	0.0%	1	2.6%	0	0.0%	23	60.5%
Language and Speech	182	27	14.8%	6	3.3%	12	6.6%	0	0.0%	64	35.2%
Least Restrictive Env.	25	0	0.0%	0	0.0%	0	0.0%	0	0.0%	20	80.0%
Non-Public Agency	6	0	0.0%	0	0.0%	0	0.0%	0	0.0%	6	100.0%
Occupational Therapy	74	12	16.2%	3	4.1%	3	4.1%	0	0.0%	26	35.1%
Physical Therapy	13	3	23.1%	1	7.7%	0	0.0%	0	0.0%	7	53.8%
Pre-School	12	1	8.3%	0	0.0%	0	0.0%	0	0.0%	7	58.3%
Resource Specialist Prg.	63	4	6.3%	0	0.0%	0	0.0%	0	0.0%	55	87.3%
School Mental Health	61	10	16.4%	0	0.0%	0	0.0%	2	3.3%	36	59.0%
Visual Impairment	22	2	9.1%	0	0.0%	4	18.2%	0	0.0%	4	18.2%
<b>Total</b>	<b>569</b>	<b>67</b>	<b>11.8%</b>	<b>10</b>	<b>1.8%</b>	<b>20</b>	<b>3.5%</b>	<b>2</b>	<b>0.4%</b>	<b>301</b>	<b>52.9%</b>

<1> The "Unexcused IEP meeting," "IEP meeting," and "IEP meeting with student" are subsets of "IEP meeting" category.

<2> Because a single log could document several cancelled sessions, the categories above are not mutually exclusive. The total across all categories does not add to 100%.

## Summary

In Year 9, the results show that LAUSD met the incident of service outcome of 93%, with the provision of 94% of the services specified in the IEPs. However, frequency and duration continues to be a concern. This year, 83% and 70% of the services with a log were provided at the required frequency and duration, respectively, in comparison to the target of 85%. While additional analyses show many records are missing frequency and duration by the equivalent of one service session, they also suggest that a considerable percentage of 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.<sup>17</sup> 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 calculating the percentages for the evidence of service analysis (n = 3,278, excluding SLD) – students for whom we received a log and students for whom we expected a log but none was provided. 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 Mental Retardation, for instance, each student had a 6% probability (Column C (i.e., 345 / 5,855)) 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 Mental Retardation in the analytic sample represented 17 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.

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<sup>17</sup> 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, 2011, and who had hybrid IEPs.

**TABLE A-1**

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

Disability category	Population <sup>1</sup>	Analytic Sample	Probability	Weight
	A	B	C	D
Autism	7,985	343	0.0430	23.3
Deaf/Hard of Hearing	1,303	357	0.2740	3.6
Emotional Disturbance	593	311	0.5245	1.9
Multiple Disabilities/Deaf-Blindness	1,063	274	0.2578	3.9
Mental Retardation	5,855	345	0.0589	17.0
Other Health Impairment	5,904	341	0.0578	17.3
Orthopedic Impairment/ Traumatic Brain Injury	818	346	0.4230	2.4
Speech & Language Impairment	7,367	622	0.0844	11.8
Visual Impairment	381	339	0.8898	1.1
<b>Total</b>	<b>31,269</b>	<b>3,278</b>		

<sup>1</sup> The population in this study consists of students who appeared in the Special Education Student Information System (SIS) database 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, 2011-12**

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	95.3%	93.0%	97.5%	81.7%	77.6%	85.9%	68.6%	63.6%	73.5%
Deaf/Hard of Hearing	96.1%	94.1%	98.1%	81.5%	77.4%	85.6%	76.2%	71.7%	80.7%
Emotional Disturbance	84.8%	80.8%	88.8%	73.0%	67.7%	78.3%	65.0%	59.3%	70.6%
Multiple Disabilities/ Deaf-Blindness	94.7%	92.0%	97.3%	86.7%	82.6%	90.8%	76.4%	71.3%	81.5%
Mental Retardation	94.9%	92.6%	97.2%	82.8%	78.7%	86.8%	68.2%	63.2%	73.2%
Other Health Impairment	94.3%	91.9%	96.8%	81.5%	77.3%	85.7%	71.1%	66.2%	76.0%
Orthopedic Impairment/Traumatic Brain Injury	95.5%	93.3%	97.7%	84.6%	80.7%	88.4%	73.1%	68.4%	77.9%
Specific Learning Disability	94.5%	93.0%	95.9%	86.4%	84.2%	88.6%	70.4%	67.4%	73.3%
Speech/Language Impairment	90.8%	88.5%	93.1%	84.2%	81.2%	87.1%	70.5%	66.7%	74.2%
Visual Impairment	94.3%	91.9%	96.8%	93.1%	90.4%	95.9%	77.7%	73.2%	82.2%
<b>Population Estimates (including SLD)</b>	--	--	--	<b>83.5%</b>	<b>82.4%</b>	<b>84.6%</b>	<b>70.2%</b>	<b>68.8%</b>	<b>71.6%</b>
<b>Population Estimates (excluding SLD)</b>	<b>94.1%</b>	<b>93.3%</b>	<b>94.9%</b>	--	--	--	--	--	--

## Appendix B: Estimates for Years 2-9<sup>18</sup>

**TABLE B-1**

**Percentages of services for which there was evidence of service provision by disability category, 2004-05 to 2011-12**

Disability	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9	
	% 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	% 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
Autism	95%	528	87%	594	89%	704	91%	727	95%	771	95%	817	96%	679	95%	632
Deaf/Hard of Hearing	95%	546	93%	524	90%	633	97%	622	96%	621	97%	664	97%	615	96%	589
Emotional Disturbance	81%	306	85%	355	80%	437	90%	400	94%	454	89%	495	83%	425	85%	422
Multiple Disabilities/Deaf-Blind	98%	432	93%	446	95%	656	95%	690	98%	707	97%	791	95%	462	95%	486
Mental Retardation	96%	385	88%	457	87%	577	92%	564	95%	597	96%	615	97%	527	95%	508
Other Health Impairment	84%	416	84%	424	81%	483	95%	539	93%	511	93%	525	90%	478	94%	493
Orthopedic Impairment/ Traumatic Brain Injury	93%	693	91%	740	89%	841	96%	893	97%	961	95%	981	95%	732	95%	749
Speech & Lang. Impairment	95%	338	78%	389	86%	459	91%	432	90%	928	95%	882	94%	807	91%	772
Visual Impairment	98%	630	96%	659	96%	751	98%	743	97%	756	99%	663	98%	593	94%	618
<b>Overall Population Estimate (w/o SLD)</b>	<b>93%</b>		<b>85%</b>		<b>87%</b>		<b>92%</b>		<b>94%</b>		<b>95%</b>		<b>95%</b>		<b>94%</b>	
Specific Learning Disability	73%	723	79%	744	74%	1,187	93%	1,251	91%	1,222	93%	1,271	91%	1,152	94%	1,140

Note: In Years 8 and 9, 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.

<sup>18</sup> 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 2011-12**

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		2010-11 Year 8		2011-12 Year 9	
	% 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	% 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
Autism	56%	458	59%	462	66%	581	75%	633	70%	676	74%	753	81%	652	82%	602
Deaf/Hard of Hearing	58%	486	66%	423	75%	528	77%	577	74%	562	73%	631	85%	592	82%	563
Emotional Disturbance	49%	206	67%	254	74%	320	69%	345	68%	373	66%	423	74%	348	73%	352
Multiple Disabilities/Deaf-Blind	60%	363	70%	374	80%	531	82%	551	74%	550	71%	630	87%	433	87%	460
Mental Retardation	54%	348	61%	365	74%	462	76%	487	74%	525	74%	572	81%	506	83%	482
Other Health Impairment	56%	305	58%	298	70%	351	78%	483	72%	442	75%	475	81%	428	82%	465
Orthopedic Impairment/ Traumatic Brain Injury	67%	543	70%	582	78%	612	80%	748	77%	785	74%	798	85%	687	85%	713
Specific Learning Disability	52%	442	54%	459	65%	794	77%	1,105	73%	1,058	77%	1,168	83%	1,040	86%	1,076
Speech & Lang. Impairment	49%	289	50%	282	62%	360	71%	367	70%	776	72%	820	81%	751	84%	701
Visual Impairment	60%	571	68%	583	82%	690	85%	686	84%	693	82%	637	86%	570	93%	583
<b>Total (unweighted)</b>	<b>57%</b>	<b>4,011</b>	<b>63%</b>	<b>4,082</b>	<b>73%</b>	<b>5,229</b>	<b>78%</b>	<b>5,982</b>	<b>74%</b>	<b>6,440</b>	<b>74%</b>	<b>6,907</b>	<b>83%</b>	<b>6,007</b>	<b>84%</b>	<b>5,997</b>
<b>Overall Population Estimate</b>	--	--	--	--	--	--	<b>76%</b>	--	<b>72%</b>	--	<b>74%</b>	--	<b>82%</b>	--	<b>83%</b>	--

Note 1: 2007-08 is the first year in which a population estimate was calculated for frequency. This estimate in 2007-08 through 2009-10 is not comparable to earlier years.

Note 2: In Years 8 and 9, 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 2011-12**

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		2010-11 Year 8		2011-12 Year 9	
	% 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	% 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
	Autism	58%	458	59%	463	60%	573	69%	627	63%	675	61%	757	65%	651	69%
Deaf/Hard of Hearing	60%	484	68%	419	76%	513	77%	579	75%	559	72%	630	80%	592	76%	563
Emotional Disturbance	65%	200	69%	255	77%	310	67%	343	70%	380	66%	425	65%	347	65%	351
Multiple Disabilities/Deaf-Blind	60%	359	74%	373	82%	548	82%	598	74%	618	68%	701	78%	431	76%	458
Mental Retardation	55%	345	64%	365	69%	463	73%	483	70%	516	65%	572	67%	506	68%	481
Other Health Impairment	59%	299	61%	302	65%	338	72%	485	67%	436	69%	473	69%	428	71%	464
Orthopedic Impairment/ Traumatic Brain Injury	68%	542	73%	582	78%	641	80%	806	75%	828	68%	878	76%	686	73%	711
Specific Learning Disability	56%	435	59%	467	56%	762	72%	1,094	66%	1,032	69%	1,160	71%	1,037	70%	1,076
Speech & Lang. Impairment	51%	288	53%	282	62%	354	70%	366	64%	764	64%	819	66%	750	70%	701
Visual Impairment	63%	567	69%	581	81%	685	81%	689	80%	691	75%	641	77%	566	78%	583
<b>Total (unweighted)</b>	<b>60%</b>	<b>3,977</b>	<b>65%</b>	<b>4,089</b>	<b>70%</b>	<b>5,187</b>	<b>75%</b>	<b>6,070</b>	<b>70%</b>	<b>6,499</b>	<b>68%</b>	<b>7,056</b>	<b>71%</b>	<b>5,994</b>	<b>72%</b>	<b>5,989</b>
<b>Overall Population Estimate</b>	--	--	--	--	--	--	<b>72%</b>	--	<b>67%</b>	--	<b>67%</b>	--	<b>69%</b>	--	<b>70%</b>	--

Note 1: 2007-08 is the first year in which a population estimate was calculated for duration. This estimate in 2007-08 through 2009-10 is not comparable to earlier years.

Note 2: In Years 8 and 9, 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 2011-12**

	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9	
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	% 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
	Adapted Physical Education	99%	977	96%	962	98%	1,038	99%	1,010	98%	944	97%	908	98%	736	97%
Deaf/Hard of Hearing	100%	390	99%	392	96%	448	99%	453	99%	487	98%	484	100%	414	98%	407
Language and Speech	96%	1,075	86%	1,147	82%	1,420	86%	1,414	90%	1,759	97%	1,825	96%	1,655	95%	1,627
Least Restrictive Environment	85%	197	95%	198	96%	254	95%	276	100%	249	92%	232	97%	170	93%	180
Non-Public Agency	95%	55	85%	110	92%	155	87%	187	93%	295	90%	372	99%	142	75%	151
Occupational Therapy	98%	402	93%	427	92%	537	94%	530	98%	521	97%	557	95%	461	91%	435
Pre-School	100%	75	38%	110	95%	100	100%	102	100%	127	90%	112	100%	75	61%	98
Physical Therapy	100%	131	94%	148	98%	218	98%	247	99%	307	99%	339	94%	105	98%	110
Resource Specialist Program	65%	959	77%	1,055	71%	1,592	95%	1,612	91%	1,733	91%	1,789	87%	1,764	94%	1,719
School Mental Health	88%	409	86%	459	87%	572	94%	641	96%	686	93%	714	88%	587	90%	574
Visual Impairment	99%	327	97%	324	100%	394	100%	389	100%	420	100%	372	100%	361	99%	369

Note: In Years 8 and 9, 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.

**TABLE B-5**

**Percentages of services with frequency at least equal to the IEP by service category, 2004-05 to 2011-12**

	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9	
Disability	% 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	% 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
Adapted Physical Education	68%	893	70%	865	81%	945	85%	973	81%	879	77%	866	87%	718	91%	718
Deaf/Hard of Hearing	62%	362	69%	346	81%	397	77%	430	73%	446	73%	459	86%	408	84%	397
Language and Speech	42%	965	48%	895	60%	1,085	69%	1,140	65%	1,474	67%	1,753	79%	1,577	82%	1,549
Least Restrictive Environment	80%	145	87%	174	87%	212	91%	246	87%	243	86%	211	90%	162	86%	167
Non-Public Agency	80%	39	70%	77	71%	123	77%	150	71%	245	76%	308	91%	141	88%	114
Occupational Therapy	55%	367	67%	365	72%	429	72%	426	66%	423	71%	457	75%	437	72%	395
Pre-School	80%	51	81%	36	76%	87	90%	101	91%	122	89%	99	93%	74	95%	60
Physical Therapy	61%	72	79%	90	71%	114	80%	113	78%	125	71%	134	77%	99	84%	108
Resource Specialist Program	60%	498	54%	593	67%	994	81%	1,461	79%	1,507	81%	1,611	85%	1,529	87%	1,615
School Mental Health	45%	318	65%	352	71%	459	64%	571	61%	574	60%	645	70%	509	69%	510
Visual Impairment	63%	301	71%	289	92%	384	87%	371	89%	402	87%	364	94%	353	96%	364

Note: In Years 8 and 9, 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-6**

**Percentages of services with duration at least equal to the IEP by service category, 2004-05 to 2011-12**

Disability	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2011-12	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8		Year 9	
	% 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	% 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
Adapted Physical Education	67%	881	73%	869	83%	945	86%	966	79%	868	70%	860	81%	716	73%	717
Deaf/Hard of Hearing	64%	361	72%	342	84%	383	79%	431	76%	446	76%	458	86%	408	84%	397
Language and Speech	44%	959	50%	899	60%	1,064	67%	1,141	61%	1,459	59%	1,754	66%	1,575	72%	1,548
Least Restrictive Environment	80%	144	87%	176	81%	211	81%	248	85%	241	75%	208	81%	162	75%	167
Non-Public Agency	83%	42	68%	77	55%	119	60%	148	52%	243	54%	301	51%	140	56%	112
Occupational Therapy	56%	365	66%	369	67%	435	68%	461	62%	452	65%	514	68%	436	67%	395
Pre-School	86%	51	83%	36	69%	86	79%	97	80%	119	79%	99	89%	74	75%	60
Physical Therapy	60%	72	75%	81	80%	173	88%	202	85%	221	83%	253	73%	99	82%	108
Resource Specialist Program	61%	487	60%	601	55%	946	75%	1,437	69%	1,457	72%	1,602	69%	1,526	67%	1,612
School Mental Health	62%	313	67%	355	74%	445	67%	570	68%	589	63%	642	65%	507	67%	509
Visual Impairment	67%	302	72%	284	89%	380	83%	369	85%	404	81%	365	80%	351	85%	364

Note: In Years 8 and 9, 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.



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