



Study to Measure the Delivery of Services in Accordance with the Individualized Education Programs of Students with Disabilities: Year 8 (2010-11)

Submitted to:

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Introduction

AIR's report to the Office of the Independent Monitor (OIM) presents the results from the Year 8 (2010-11) 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?
- (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.¹ 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, the study 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 2011.² For the frequency and duration questions, the

¹ 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.

² 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.

study compared 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.³

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 6-8, 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 8, the Office of Data and Accountability provided AIR with databases containing IEPs for a sample of 4,591 students in special education in the district and their corresponding provider log information, if available. Using these databases, the final results include 6,470 services for 4,314 of the students in this sample.⁴

Due to school calendars not accommodated by the computer program in Year 8, the OIM and the Office of Data and Accountability staff hand-coded 191 service records. For example, 147 records for charter schools that did not initially meet the IEP frequency or duration requirements as determined by the program were hand-checked to provide proper holiday credit because charter schools set their own calendars and do not consistently have the same standard holidays as non-charter schools. In addition, 14 service records from the 3A e-basis calendar track and 30 service records from the 4C calendar track were hand-coded across seven and six weeks, respectively, instead of eight because those tracks were not in session for a full eight weeks.⁵

The study methodology underwent several changes in Year 8, including the changes to the study period, the eligible population used to draw the sample, and the coding rules. These changes stemmed from the fact that the electronic IEP form was modified on more than one occasion over the course of 2010, resulting in students with the new final format, students with the old format, and students with "hybrid" IEPs (those with interim changes). In prior years, the period analyzed generally encompassed September through February. This was pushed to January through April to allow for more students to be moved to the new format and to allow time for LAUSD to correct issues with the IEP system.

³ 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.

⁴ The analytic sample (n = 4,314) is smaller than the sample that LAUSD's Office of Data and Accountability provided to AIR (n = 4,591). In accordance with the coding rules, 277 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, school schedules that did not coincide with the study period or students whose only service was yearly. In addition, the sample provided to AIR (n = 4,591) was smaller than the original sample drawn for the study (n = 4,882), due to ineligible students (n = 21) and students without IEP information (n = 266). The reasons for sampled students without IEP information are unclear.

⁵ "E-basis" calendars apply to the following services: Adaptive Physical Education, Language and Speech, Occupational Therapy, and Physical Therapy.

Because of the difficulty of establishing and implementing multiple sets of coding rules for the hybrids, students with these IEPs, which made up approximately 8% of the overall special education population, were excluded from the sample.⁶ The resulting sample included students with old and new formats; accordingly, there were two sets of coding rules to accommodate these two IEP types.⁷

Another coding rule change involved excluding all yearly services from the analytic sample. In prior years, yearly cases were retained in the analysis if the particular service met the IEP requirements and were excluded if the service did not. This had the effect of increasing the delivery rates for certain services (primarily, Occupational Therapy and Physical Therapy). In order to provide a more accurate assessment of delivery by service category, the Year 8 coding rules excluded all yearly services from the analysis. Appendix B provides two sets of service delivery rates to demonstrate the impact of the original and revised coding rules. In addition, the Year 8 methodology examined logs for an 8-week/2-month period to determine whether there was evidence of service, as was done in the first five years of the study. However, in Years 6 and 7, the study examined a six-month period for at least one incident of valid provision.

Because of the changes described above, comparison of the Year 8 results to prior years should be interpreted with caution.

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).

⁶ The eligible population came from the Special Education Student Information System (SIS) database. The overall population in this database included 83,596 students with active IEPs as of February 11, 2011. For the purpose of drawing the study sample, LAUSD excluded the following: students who did not have a service code (n = 21,826), students who were not 3-years old by September 30, 2010 (n = 847), students who attended non-public schools (n = 3,947), students who did not have an eligibility/disability code (n = 669), and students who had hybrid IEPs (n = 6,384). The population database used to draw the sample in Year 8 consisted of 51,351 students, in comparison to 58,296 students in Year 7.

⁷ Among students in the analytic sample (n = 4,314), 4,014 (93%) had the new IEP format, and 300 (7%) had the old IEP format. Services documented in the new IEPs were statistically significantly more likely than services in the old IEPs to have evidence of a log (94% versus 84%) and to have met the frequency requirements (83% versus 77%). There was no statistically significant difference in the duration rates.

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 95% of the special education services required by IEPs district-wide⁸ during the 2010-11 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.⁹ For the sample of students with SLD whose IEPs required at least one special education service, we found evidence that 91% 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 93.8% and 95.3%. Therefore, for special education students excluding SLD, the confidence intervals are above the MCD outcome of 93%. 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 89.0% and 92.6%.¹⁰

Across the individual disability categories, the estimate of service delivery varied from 83% for students with Emotional Disturbance to 98% for students with Visual Impairment. By service category, the percentages ranged from 87% for Resource Specialist services to 100% for Deaf/Hard of Hearing Itinerant, Pre-School, and Visual Impairment Itinerant services.

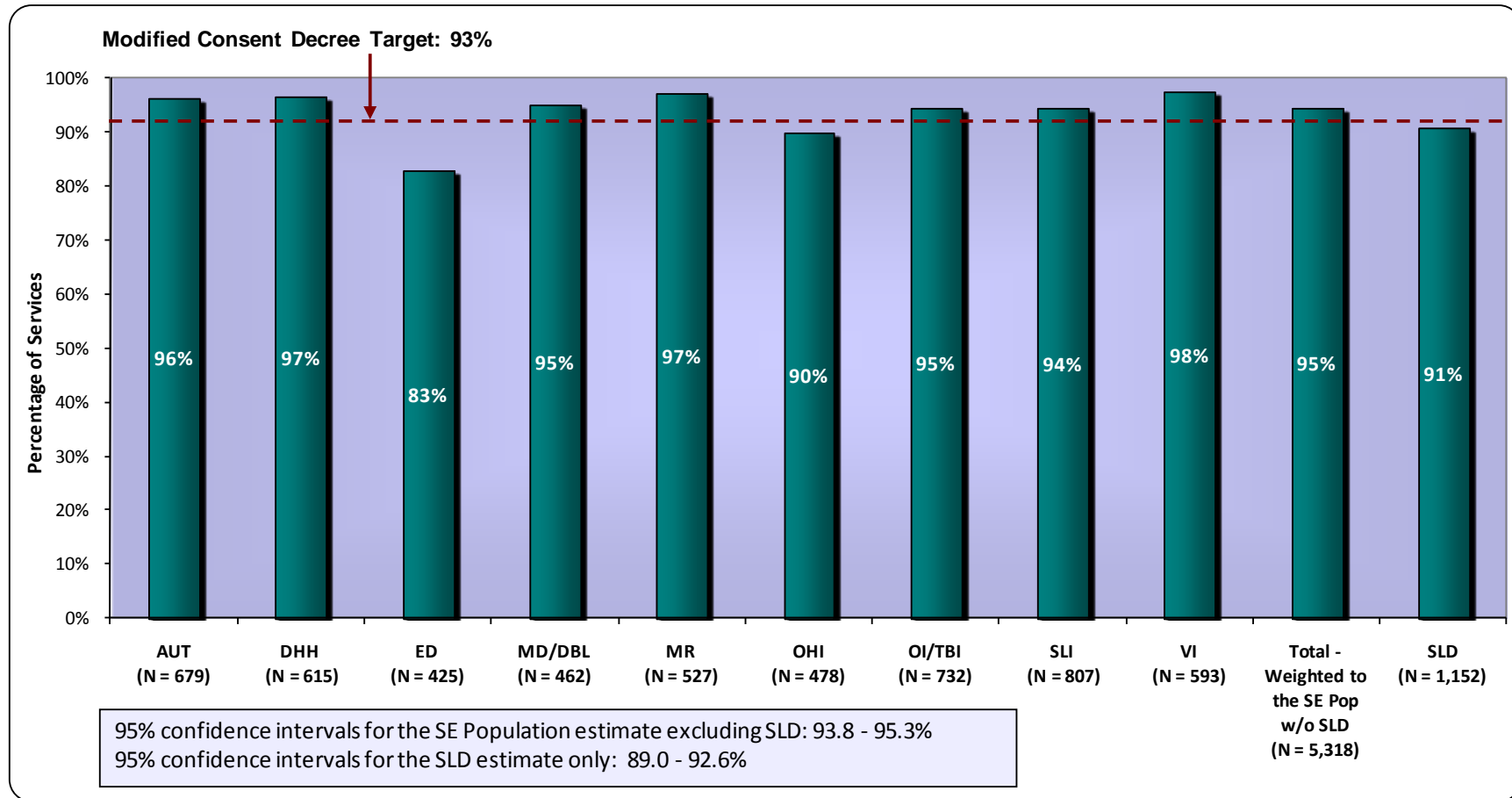
⁸ This is a population estimate based on the probability weights for each disability category, excluding SLD. Please see Appendix A for more details. The population estimate represents students whose IEPs required at least one special education service according to the Special Education Student Information System (SIS) database

⁹ According to the Special Education Student Information System (SIS) database used to draw the study sample, approximately 26% 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.

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 91% of special education services required by IEPs were provided at least once during an 8-week/2-month period (with confidence intervals of 88.2% and 94.7%). For students with SLD in charter schools, we found evidence that 91% of their required services were provided (with confidence intervals of 84.7% and 95.7%).

FIGURE 1

Percentages 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, 2010-11



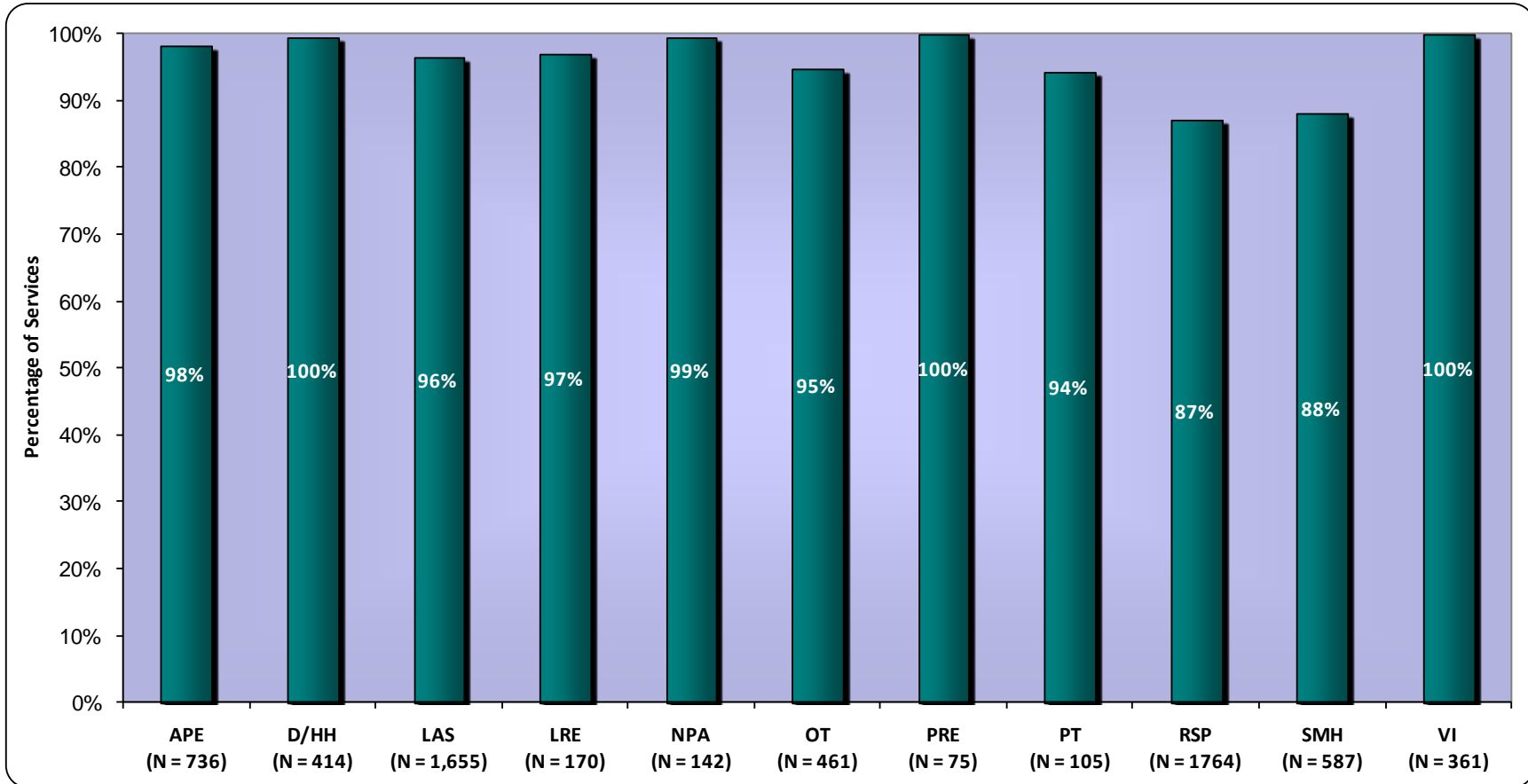
Note 1: The population estimate represents the population of students in special education district-wide (excluding students with Specific Learning Disabilities) whose IEPs required at least one special education service as reported in the Special Education Student Information System (SIS) database.

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 96% of the 679 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

Percentages 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, 2010-11



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 98% of the 736 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 used for the analysis corresponding with Question 1 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 provided to AIR, we estimate that 82% of services across the population of students in special education with evidence of service (i.e., meeting the criterion specified in Question 1) met the frequency requirements in 2010-11, while 69% met the IEP specifications for duration.¹¹ For frequency, the 95% confidence intervals ranged from 80.6% to 83.0%, and from 67.5% to 70.3% for duration.¹²

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.¹³ 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 82% to 76% for frequency and from 69% to 64% for duration.

Figure 3 presents the information initially reported above (i.e., only including services with evidence of service provision as specified in Question 1) 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 74% for students with Emotional Disturbance to 87% for students with Multiple Disabilities/Deaf-blindness. Duration rates ranged from 65% for students with Autism and students with Emotional Disturbance to 80% for students who were Deaf/Hard of Hearing. By service category, frequency estimates ranged from 70% for School Mental Health to 94% for Visual Impairment Itinerant services; duration estimates ranged from 51% for Non-Public Agency to 89% for Pre-School.

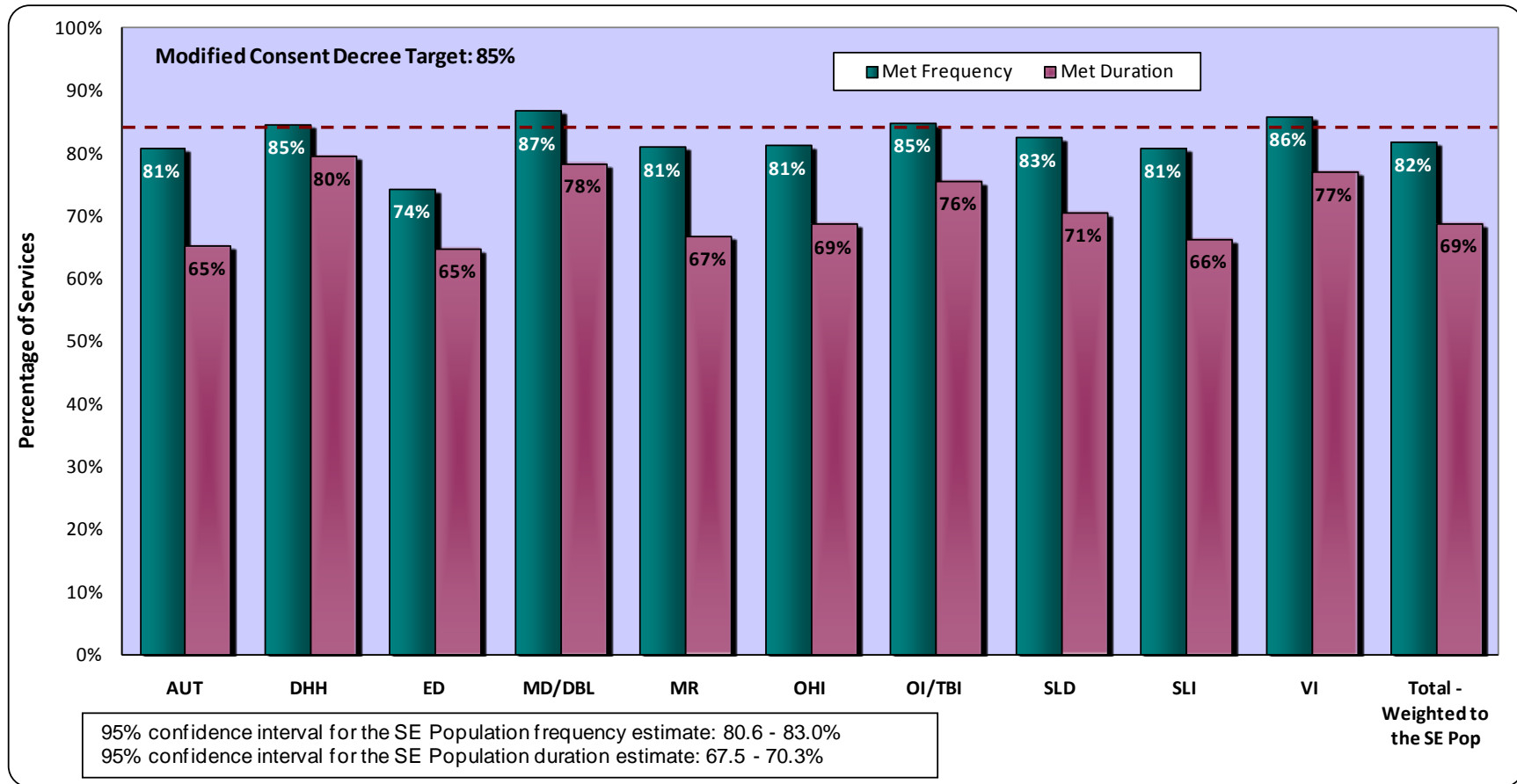
¹¹ These population estimates represent students whose IEPs required at least one special education service, according to the Special Education Student Information System (SIS) database, and includes students with SLD.

¹² OIM also requested separate service delivery analyses for charter schools, based on students in the sample. For charter schools, we found that 74% of services for which we received logs met the frequency requirements (with confidence intervals of 69.1% and 78.1%), while 59% met the IEP specifications for duration (with confidence intervals of 54.2% and 64.3%).

¹³ For example, while we analyzed 425 services for students with Emotional Disturbance in the evidence of service analysis, the frequency and duration percentages are based on a smaller number (348 services for frequency and 347 for duration; see Appendix B). These lower numbers are due to not receiving logs for all 425 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 73 services; the IEPs did not state a frequency for 1 service; and 2 services were excluded from the results due to circumstances beyond the providers' control (in accordance with the coding rules).

FIGURE 3

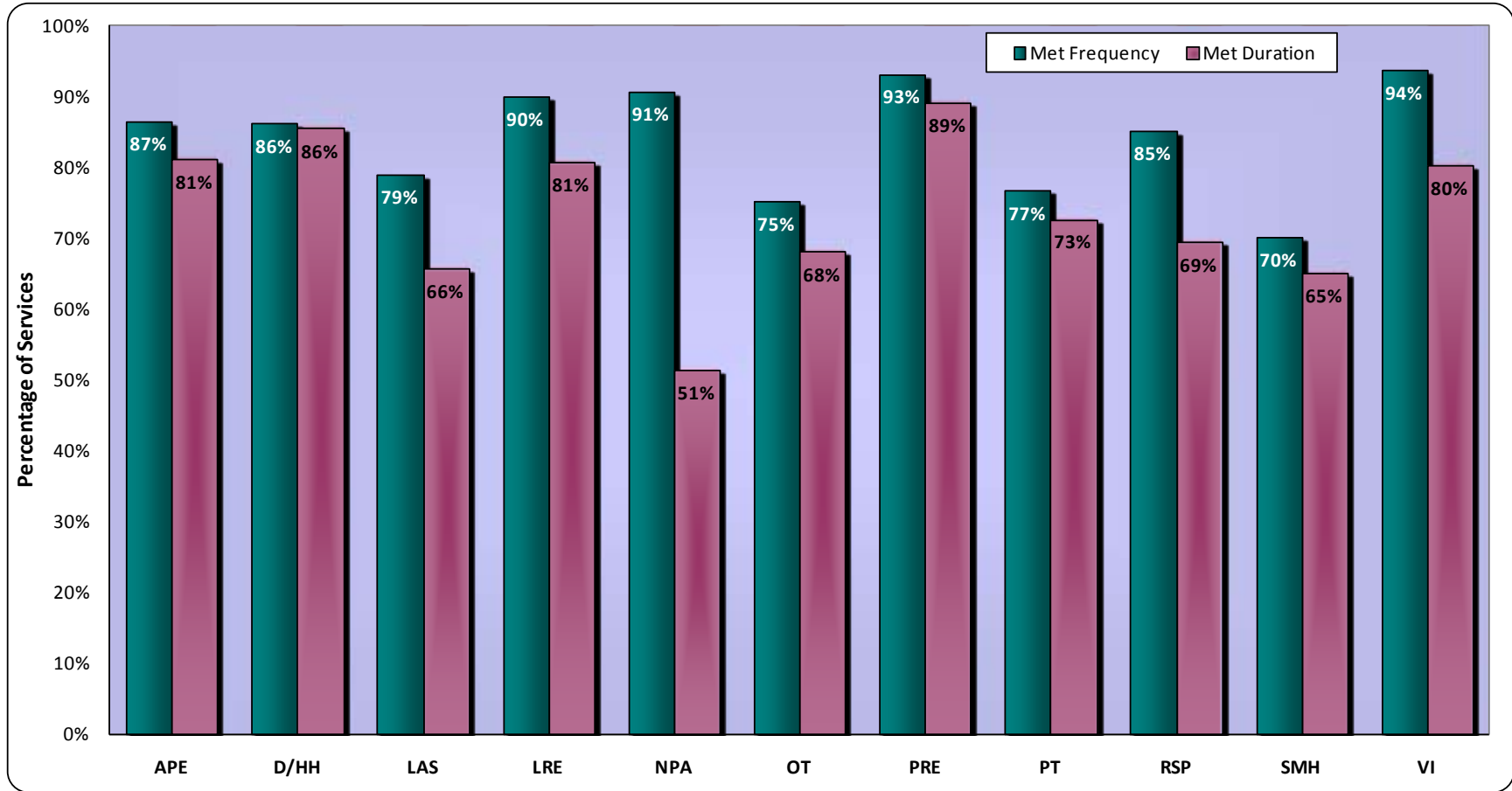
Percentages of services that met frequency/duration as specified by the IEPs during an 8-week/2-month period, by disability category, 2010-11



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

Percentages of services that met frequency/duration as specified by the IEPs during an 8-week/2-month period, by service category, 2010-11



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

In each of the eight years of this study, LAUSD has not met the frequency or duration outcome set by the MCD. The OIM was particularly interested in understanding the extent to which services were missing IEP requirements to help inform and improve future service delivery efforts. Among the 6,007 service records that had evidence of a log and for which AIR analyzed for frequency in Year 8, 4,960 met the frequency requirements while 1,047 did not. Among those that did not meet the frequency, more than half (587 of 1,047) 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 82% to 89%. Table 1 shows the percentage of services that missed the required frequency by one session, which varied from 15% for RSP to 100% for Pre-School services. In other words, 85% 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, 4,276 service records met the IEP requirements, whereas 1,718 did not. Among those that did not meet duration, 64% (1,098) missed the required duration by more than one session.¹⁴ If an additional session was provided, the population estimate for duration would have increased from 69% to 79%.¹⁵ As shown in Table 1, the percentage of services that missed the duration by one session ranged from 11% for RSP to 63% for Pre-School services.

¹⁴ 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.

¹⁵ The MCD outcome 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, 2010-11

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	96	47	49%	135	56	41%
Deaf/Hard of Hearing	56	37	66%	59	35	59%
Language and Speech	330	159	48%	539	251	47%
Least Restrictive Environment	16	14	88%	31	11	35%
Non-Public Agency	13	6	46%	68	13	19%
Occupational Therapy	108	60	56%	139	82	59%
Pre-School	5	5	100%	8	5	63%
Physical Therapy	23	16	70%	27	13	48%
Resource Specialist Program	226	33	15%	466	49	11%
School Mental Health	152	67	44%	177	71	40%
Visual Impairment	22	16	73%	69	34	49%
Total	1,047	460	44%	1,718	620	36%

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 = 640 records) and 16 times (n = 163). Please note that the percentages in Table 2 are based on the number of services that did not meet the IEP requirements. Nearly half of the services required once weekly (i.e., 8 times across 8 weeks) and 29% of services required twice a week (i.e., 16 times across 8 weeks) missed the required frequency by one. However, approximately 23% of the weekly services were provided 1–4 times and 27% of the twice weekly services were provided 1–8 times across the eight weeks, which was 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, 2010-11

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	30	4.7%	1	5	3.1%
2	24	3.8%	2	4	2.5%
3	39	6.1%	3	2	1.2%
4	52	8.1%	4	5	3.1%
5	77	12.0%	5	5	3.1%
6	114	17.8%	6	3	1.8%
7	304	47.5%	7	6	3.7%
			8	14	8.6%
			9	3	1.8%
			10	8	4.9%
			11	8	4.9%
			12	8	4.9%
			13	18	11.0%
			14	27	16.6%
			15	47	28.8%
Total	640	100%	Total	163	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 1,718 service records that did not meet duration: 240 minutes (n = 631 records) and 480 (n = 293 records). The percentages in Table 3 reflect the percentages of services that did not meet the required duration. More than 15% of services requiring 240 minutes and nearly 44% 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 – 50% and 26% 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, 2010-11

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	38	6.0%
210	30 minutes	280	44.4%
181 - 209	31 - 59 minutes	22	3.5%
180	60 minutes	109	17.3%
151 - 179	61 - 89 minutes	8	1.3%
150	90 minutes	68	10.8%
121 - 149	91 - 119 minutes	9	1.4%
120	120 minutes	35	5.5%
Less than 120	121 minutes or more	62	9.8%
Total		631	100.0%
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	6	2.0%
450	30 minutes	71	24.2%
421 - 449	31 - 59 minutes	2	0.7%
420	60 minutes	55	18.8%
419 - 391	61 - 89 minutes	7	2.4%
390	90 minutes	21	7.2%
361 - 389	91 - 119 minutes	3	1.0%
360	120 minutes	27	9.2%
Less than 360	121 minutes or more	101	34.5%
None	480 minutes	0	0.0%
Total		293	100.0%

To understand possible reasons for 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.¹⁶ 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 include provider absent (no additional information provided)¹⁷, provider unexcused from IEP meeting, IEP meeting, student IEP meeting, provider off-calendar, waiver, early dismissal, and for certain services, student schedule change.

¹⁶ 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.

¹⁷ 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.

Table 4 reports these results for all services that missed the duration by one session (n = 620). The results show that more than half of the services that missed duration by one session (52%) did not document any of the cancelled sessions listed above. The most cited reason for a cancelled session was the provider attending an IEP meeting (24%), with an unexcused IEP meeting being the most common subset of that category. The rate was higher for Physical Therapy services, with nearly 38% of missed services reported as cancelled due to an IEP meeting. A provider absence (no additional information) was the second most documented reason, reflecting 13% of the services missing the required duration by one session. The "none of the prior reasons reported" category represents services that missed duration, but for which no cancelled sessions with the above reasons were documented on the log (i.e., the service session(s) needed to meet the duration requirement was missing entirely from 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, 2010-11

Service category	Duration not met	Student schedule change		IEP meeting (all reasons)		Unexcused IEP meeting		IEP meeting		IEP meeting with student	
Adapted Physical Education	56	1	1.8%	15	26.8%	11	19.6%	4	7.1%	0	0.0%
Deaf/Hard of Hearing	35	6	17.1%	12	34.3%	9	25.7%	2	5.7%	1	2.9%
Language and Speech	251	15	6.0%	75	29.9%	56	22.3%	19	7.6%	2	0.8%
Least Restrictive Env.	11	1	9.1%	1	9.1%	0	0.0%	1	9.1%	0	0.0%
Non-Public Agency	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Occupational Therapy	13	0	0.0%	3	23.1%	1	7.7%	2	15.4%	1	7.7%
Physical Therapy	82	3	3.7%	31	37.8%	16	19.5%	10	12.2%	5	6.1%
Pre-School	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Resource Specialist Prg.	49	4	8.2%	2	4.1%	1	2.0%	1	2.0%	0	0.0%
School Mental Health	71	14	19.7%	11	15.5%	4	5.6%	4	5.6%	5	7.0%
Visual Impairment	34	8	23.5%	1	2.9%	0	0.0%	1	2.9%	0	0.0%
Total	620	52	8.4%	151	24.4%	98	15.8%	44	7.1%	14	2.3%

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, 2010-11

Service category	Duration not met	Provider absence (no reason provided)		Off calendar		Early out		Waiver		None of the prior reasons reported	
Adapted Physical Education	56	2	3.6%	1	1.8%	0	0.0%	0	0.0%	37	66.1%
Deaf/Hard of Hearing	35	3	8.6%	1	2.9%	0	0.0%	0	0.0%	13	37.1%
Language and Speech	251	43	17.1%	7	2.8%	5	2.0%	0	0.0%	114	45.4%
Least Restrictive Env.	11	1	9.1%	0	0.0%	0	0.0%	0	0.0%	9	81.8%
Non-Public Agency	13	0	0.0%	0	0.0%	0	0.0%	0	0.0%	13	100.0%
Occupational Therapy	13	2	15.4%	2	15.4%	0	0.0%	1	7.7%	5	38.5%
Physical Therapy	82	12	14.6%	19	23.2%	2	2.4%	0	0.0%	24	29.3%
Pre-School	5	0	0.0%	0	0.0%	0	0.0%	0	0.0%	5	100.0%
Resource Specialist Prg.	49	5	10.2%	0	0.0%	0	0.0%	0	0.0%	41	83.7%
School Mental Health	71	9	12.7%	0	0.0%	1	1.4%	0	0.0%	40	56.3%
Visual Impairment	34	1	2.9%	3	8.8%	1	2.9%	0	0.0%	21	61.8%
Total	620	78	12.6%	33	5.3%	9	1.5%	1	0.2%	322	51.9%

<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%.

In summary, the analyses above attempted to delve more in-depth into the services that did not meet the frequency and duration requirements across an 8-week/2-month period. Although the results show many records missing the requirements by the equivalent of one 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), we assigned a weight to the evidence of service delivery, frequency, and duration estimates for each disability category.¹⁸ 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 ($n = 3,328$, 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 7% probability (Column C (i.e., $357 / 5,150$)) 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 about 14 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.

¹⁸ 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, 2010., and who had hybrid IEPs.

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	6,388	350	0.0548	18.3
Deaf/Hard of Hearing	1,173	358	0.3052	3.3
Emotional Disturbance	560	324	0.5786	1.7
Multiple Disabilities/Deaf-Blindness	954	266	0.2788	3.6
Mental Retardation	5,150	357	0.0693	14.4
Other Health Impairment	4,930	343	0.0696	14.4
Orthopedic Impairment/ Traumatic Brain Injury	724	348	0.4807	2.1
Speech & Language Impairment	6,924	662	0.0956	10.5
Visual Impairment	339	320	0.9440	1.1
Total	27,142	3,328		

¹ 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, 2010-11

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	94.5%	98.4%	96.5%	76.7%	85.0%	80.8%	60.2%	70.3%	65.3%
Deaf/Hard of Hearing	94.7%	98.5%	96.6%	80.9%	88.4%	84.6%	75.3%	83.8%	79.6%
Emotional Disturbance	78.7%	86.9%	82.8%	69.3%	79.6%	74.4%	59.2%	70.5%	64.8%
Multiple Disabilities/ Deaf-Blindness	92.4%	97.6%	95.0%	82.7%	90.9%	86.8%	73.4%	83.4%	78.4%
Mental Retardation	95.7%	99.0%	97.3%	76.9%	85.2%	81.0%	61.8%	71.8%	66.8%
Other Health Impairment	86.8%	93.1%	90.0%	77.0%	85.6%	81.3%	63.5%	73.8%	68.7%
Orthopedic Impairment/Traumatic Brain Injury	92.1%	96.9%	94.5%	81.0%	88.7%	84.9%	71.1%	80.2%	75.7%
Specific Learning Disability	89.0%	92.6%	90.8%	80.1%	85.1%	82.6%	67.6%	73.6%	70.6%
Speech/Language Impairment	92.7%	96.2%	94.4%	77.7%	83.9%	80.8%	62.7%	70.1%	66.4%
Visual Impairment	96.0%	99.3%	97.6%	82.1%	89.8%	86.0%	72.4%	81.7%	77.0%
Population Estimates (including SLD)	--	--	--	80.6%	83.0%	81.8%	67.5%	70.3%	68.9%
Population Estimates (excluding SLD)	93.8%	95.3%	94.5%	--	--	--	--	--	--

Appendix B: Estimates for Years 2-8¹⁹

TABLE B-1

Percentages of services for which there was evidence of service provision by disability category, 2004-05 to 2010-11

	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2010-11	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8*		Year 8	
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
	Autism	95%	528	87%	594	89%	704	91%	727	95%	771	95%	817	97%	685	96%
Deaf/Hard of Hearing	95%	546	93%	524	90%	633	97%	622	96%	621	97%	664	97%	619	97%	615
Emotional Disturbance	81%	306	85%	355	80%	437	90%	400	94%	454	89%	495	83%	427	83%	425
Multiple Disabilities/Deaf-Blind	98%	432	93%	446	95%	656	95%	690	98%	707	97%	791	96%	584	95%	462
Mental Retardation	96%	385	88%	457	87%	577	92%	564	95%	597	96%	615	97%	537	97%	527
Other Health Impairment	84%	416	84%	424	81%	483	95%	539	93%	511	93%	525	90%	483	90%	478
Orthopedic Impairment/ Traumatic Brain Injury	93%	693	91%	740	89%	841	96%	893	97%	961	95%	981	95%	855	95%	732
Speech & Lang. Impairment	95%	338	78%	389	86%	459	91%	432	90%	928	95%	882	94%	814	94%	807
Visual Impairment	98%	630	96%	659	96%	751	98%	743	97%	756	99%	663	98%	603	98%	593
Overall Population Estimate (w/o SLD)	93%		85%		87%		92%		94%		95%				95%	
Specific Learning Disability	73%	723	79%	744	74%	1,187	93%	1,251	91%	1,222	93%	1,271	91%	1,153	91%	1,152

* There are two sets of figures provided for Year 8. The shaded columns reflect rates which use the prior years' coding rule for yearly services (keep in the analysis if the service met the requirement; exclude if it did not meet). The last column shows the official rates based on a revised coding rule in which all yearly services were excluded from the analysis.

¹⁹ 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 2010-11

	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2010-11	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8*		Year 8	
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
Autism	56%	458	59%	462	66%	581	75%	633	70%	676	74%	753	81%	656	81%	652
Deaf/Hard of Hearing	58%	486	66%	423	75%	528	77%	577	74%	562	73%	631	85%	593	85%	592
Emotional Disturbance	49%	206	67%	254	74%	320	69%	345	68%	373	66%	423	75%	350	74%	348
Multiple Disabilities/Deaf-Blind	60%	363	70%	374	80%	531	82%	551	74%	550	71%	630	89%	514	87%	433
Mental Retardation	54%	348	61%	365	74%	462	76%	487	74%	525	74%	572	81%	509	81%	506
Other Health Impairment	56%	305	58%	298	70%	351	78%	483	72%	442	75%	475	81%	432	81%	428
Orthopedic Impairment/ Traumatic Brain Injury	67%	543	70%	582	78%	612	80%	748	77%	785	74%	798	87%	777	85%	687
Specific Learning Disability	52%	442	54%	459	65%	794	77%	1,105	73%	1,058	77%	1,168	83%	1,040	83%	1,040
Speech & Lang. Impairment	49%	289	50%	282	62%	360	71%	367	70%	776	72%	820	81%	756	81%	751
Visual Impairment	60%	571	68%	583	82%	690	85%	686	84%	693	82%	637	86%	579	86%	570
Total (unweighted)	57%	4,011	63%	4,082	73%	5,229	78%	5,982	74%	6,440	74%	6,907			83%	6,007
Overall Population Estimate	--	--	--	--	--	--	76%		72%		74%				82%	

* There are two sets of figures provided for Year 8. The shaded columns reflect rates which use the prior years' coding rule for yearly services (keep in the analysis if the service met the requirement; exclude if it did not meet). The last column shows the official rates based on a revised coding rule in which all yearly services were excluded from the analysis.

Note: 2007-08 is the first year in which a population estimate was calculated. This estimate in 2007-08 through 2010-11 is not comparable to earlier years.

TABLE B-3

Percentages of services with duration at least equal to the IEP by disability category, 2004-05 to 2010-11

	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2010-11	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8*		Year 8	
Disability	% 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	66%	657	65%	651
Deaf/Hard of Hearing	60%	484	68%	419	76%	513	77%	579	75%	559	72%	630	80%	596	80%	592
Emotional Disturbance	65%	200	69%	255	77%	310	67%	343	70%	380	66%	425	65%	349	65%	347
Multiple Disabilities/Deaf-Blind	60%	359	74%	373	82%	548	82%	598	74%	618	68%	701	83%	532	78%	431
Mental Retardation	55%	345	64%	365	69%	463	73%	483	70%	516	65%	572	67%	515	67%	506
Other Health Impairment	59%	299	61%	302	65%	338	72%	485	67%	436	69%	473	69%	433	69%	428
Orthopedic Impairment/ Traumatic Brain Injury	68%	542	73%	582	78%	641	80%	806	75%	828	68%	878	79%	793	76%	686
Specific Learning Disability	56%	435	59%	467	56%	762	72%	1,094	66%	1,032	69%	1,160	71%	1,038	71%	1,037
Speech & Lang. Impairment	51%	288	53%	282	62%	354	70%	366	64%	764	64%	819	67%	757	66%	750
Visual Impairment	63%	567	69%	581	81%	685	81%	689	80%	691	75%	641	77%	575	77%	566
Total (unweighted)	60%	3,977	65%	4,089	70%	5,187	75%	6,070	70%	6,499	68%	7,056			71%	5,994
Overall Population Estimate	--	--	--	--	--	--	72%		67%		67%				69%	

* There are two sets of figures provided for Year 8. The shaded columns reflect rates which use the prior years' coding rule for yearly services (keep in the analysis if the service met the requirement; exclude if it did not meet). The last column shows the official rates based on a revised coding rule in which all yearly services were excluded from the analysis.

Note: 2007-08 is the first year in which a population estimate was calculated. This estimate in 2007-08 through 2010-11 is not comparable to earlier years.

TABLE B-4

Percentages of services for which there was evidence of service provision by service category, 2004-05 to 2010-11

	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2010-11	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8*		Year 8	
	% 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
Disability																
Adapted Physical Education	99%	977	96%	962	98%	1,038	99%	1,010	98%	944	97%	908	98%	736	98%	736
Deaf/Hard of Hearing	100%	390	99%	392	96%	448	99%	453	99%	487	98%	484	100%	419	100%	414
Language and Speech	96%	1,075	86%	1,147	82%	1,420	86%	1,414	90%	1,759	97%	1,825	96%	1,670	96%	1,655
Least Restrictive Environment	85%	197	95%	198	96%	254	95%	276	100%	249	92%	232	97%	170	97%	170
Non-Public Agency	95%	55	85%	110	92%	155	87%	187	93%	295	90%	372	99%	144	99%	142
Occupational Therapy	98%	402	93%	427	92%	537	94%	530	98%	521	97%	557	95%	539	95%	461
Pre-School	100%	75	38%	110	95%	100	100%	102	100%	127	90%	112	100%	75	100%	75
Physical Therapy	100%	131	94%	148	98%	218	98%	247	99%	307	99%	339	97%	288	94%	105
Resource Specialist Program	65%	959	77%	1,055	71%	1,592	95%	1,612	91%	1,733	91%	1,789	87%	1,764	87%	1,764
School Mental Health	88%	409	86%	459	87%	572	94%	641	96%	686	93%	714	88%	589	88%	587
Visual Impairment	99%	327	97%	324	100%	394	100%	389	100%	420	100%	372	100%	366	100%	361

* There are two sets of figures provided for Year 8. The shaded columns reflect rates which use the prior years' coding rule for yearly services (keep in the analysis if the service met the requirement; exclude if it did not meet). The last column shows the official rates based on a revised coding rule in which all yearly services were excluded from the analysis.

TABLE B-5

Percentages of services with frequency at least equal to the IEP by service category, 2004-05 to 2010-11

Disability	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2010-11	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8*		Year 8	
	% 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	87%	718
Deaf/Hard of Hearing	62%	362	69%	346	81%	397	77%	430	73%	446	73%	459	86%	409	86%	408
Language and Speech	42%	965	48%	895	60%	1,085	69%	1,140	65%	1,474	67%	1,753	79%	1,585	79%	1,577
Least Restrictive Environment	80%	145	87%	174	87%	212	91%	246	87%	243	86%	211	90%	162	90%	162
Non-Public Agency	80%	39	70%	77	71%	123	77%	150	71%	245	76%	308	91%	143	91%	141
Occupational Therapy	55%	367	67%	365	72%	429	72%	426	66%	423	71%	457	78%	495	75%	437
Pre-School	80%	51	81%	36	76%	87	90%	101	91%	122	89%	99	93%	74	93%	74
Physical Therapy	61%	72	79%	90	71%	114	80%	113	78%	125	71%	134	90%	224	77%	99
Resource Specialist Program	60%	498	54%	593	67%	994	81%	1,461	79%	1,507	81%	1,611	85%	1,529	85%	1,529
School Mental Health	45%	318	65%	352	71%	459	64%	571	61%	574	60%	645	70%	511	70%	509
Visual Impairment	63%	301	71%	289	92%	384	87%	371	89%	402	87%	364	94%	356	94%	353

* There are two sets of figures provided for Year 8. The shaded columns reflect rates which use the prior years' coding rule for yearly services (keep in the analysis if the service met the requirement; exclude if it did not meet). The last column shows the official rates based on a revised coding rule in which all yearly services were excluded from the analysis.

TABLE B-6

Percentages of services with duration at least equal to the IEP by service category, 2004-05 to 2010-11

	2004-05		2005-06		2006-07		2007-08		2008-09		2009-10		2010-11		2010-11	
	Year 2		Year 3		Year 4		Year 5		Year 6		Year 7		Year 8*		Year 8	
Disability	% 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	81%
Deaf/Hard of Hearing	64%	361	72%	342	84%	383	79%	431	76%	446	76%	458	86%	413	86%	408
Language and Speech	44%	959	50%	899	60%	1,064	67%	1,141	61%	1,459	59%	1,754	66%	1,589	66%	1,575
Least Restrictive Environment	80%	144	87%	176	81%	211	81%	248	85%	241	75%	208	81%	162	81%	162
Non-Public Agency	83%	42	68%	77	55%	119	60%	148	52%	243	54%	301	52%	142	51%	140
Occupational Therapy	56%	365	66%	369	67%	435	68%	461	62%	452	65%	514	72%	505	68%	436
Pre-School	86%	51	83%	36	69%	86	79%	97	80%	119	79%	99	89%	74	89%	74
Physical Therapy	60%	72	75%	81	80%	173	88%	202	85%	221	83%	253	89%	254	73%	99
Resource Specialist Program	61%	487	60%	601	55%	946	75%	1,437	69%	1,457	72%	1,602	69%	1,526	69%	1,526
School Mental Health	62%	313	67%	355	74%	445	67%	570	68%	589	63%	642	65%	509	65%	507
Visual Impairment	67%	302	72%	284	89%	380	83%	369	85%	404	81%	365	81%	355	80%	351

* There are two sets of figures provided for Year 8. The shaded columns reflect rates which use the prior years' coding rule for yearly services (keep in the analysis if the service met the requirement; exclude if it did not meet). The last column shows the official rates based on a revised coding rule in which all yearly services were excluded from the analysis.



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