

High School Outcomes for DSHS-Served Youth

Graduation and Drop-out Rates for Students Who Were 9th Graders in 2005-2006

Liz Coker, PhD • Lijian He, PhD • Barbara Lucenko, PhD • David Mancuso, PhD
 Jim Mayfield, MA • Qinghua Liu, PhD • Barbara E.M. Felver, MES, MPA

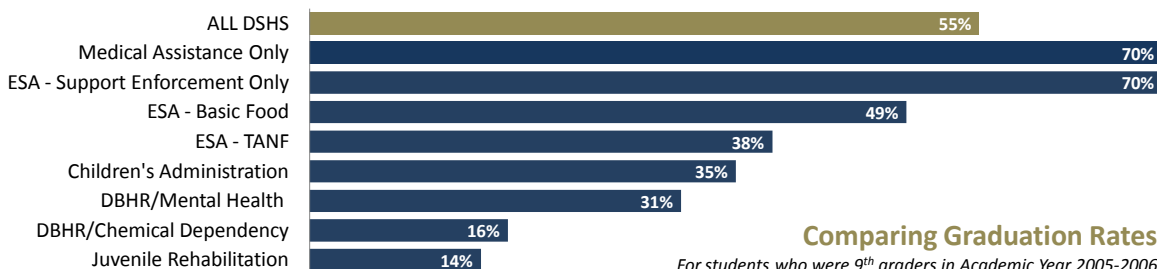
In collaboration with the Education Research and Data Center, Office of Financial Management

This project was funded by a grant for statewide longitudinal data systems under the American Recovery and Reinvestment Act of 2009 (Grant Number R384A100016)

HIGH SCHOOL GRADUATION is a critical indicator of wellbeing for youth served by the Washington State Department of Social and Health Services (DSHS), and an important predictor of future economic independence. Historically, access to longitudinal education data for DSHS clients has been unavailable. In 2012, for the first time, a federally funded cross-agency collaborative initiative¹ provided DSHS with the capacity to track educational progress and outcomes for children served by the agency. The Research and Data Analysis Division of DSHS is collaborating with the Education Research and Data Center in the Washington State Office of Financial Management (OFM) on a three-year, federally funded project to combine DSHS client service records with education records. As the first product of this groundbreaking initiative, this report describes high school progress and outcomes for a statewide cohort of DSHS clients who were first-time 9th graders in the 2005-2006 Academic Year.

Key Findings

- Experiences and risk factors that lead to the need for DSHS services also adversely impact educational outcomes for children and youth.
- 55 percent of 9th graders served by DSHS in 2005/06 had graduated 6 years later, while only 48 percent graduated on-time with their class.
- 9th graders in Juvenile Rehabilitation Administration or substance abuse treatment programs had extremely low graduation rates, with less than 20 percent of youth graduating.
- 9th graders who received TANF cash assistance or services to address child abuse or mental health needs were about half as likely to graduate as children who received medical assistance or child support enforcement services alone.
- DSHS clients at risk for high school drop-out can be identified as early as the 9th grade based on their grade point average or level of unexcused absences.



Comparing Graduation Rates

For students who were 9th graders in Academic Year 2005-2006

¹ The Grant for Statewide Longitudinal Data Systems under the American Recovery and Reinvestment Act (ARRA) of 2009.



DSHS-Served Youth: Outcomes for a 9th Grade Cohort

The population of interest included all individuals in Washington State who: 1) received any DSHS service between July 1, 2005, and June 30, 2006, and 2) were enrolled in the 9th grade in any Washington State Public School for the first time during Academic Year 2005-2006, and 3) were still residing in Washington State at some point during SFY 2009, their expected year of graduation.² A total of 32,615 individuals were included in the final study cohort.

More than 50 percent of the cohort identified as “White only” while 40 percent³ identified as members of a racial or ethnic minority. The age range was restricted to 12 to 17 as of September 2005. Almost 80 percent of the first time freshmen were age 14, while another 16 percent were 15 years of age. There were slightly more females (51 percent) than males (49 percent). High school outcomes for this cohort were analyzed through Academic Year 2010-2011, or two years past their expected graduation date of June 2009.

Children were flagged if they had received any kind of service in one of several broad DSHS service categories during their 9th grade year. Because these services are likely to be associated with different risk factors and needs that also impact educational outcomes, they are each addressed separately. Those services included the Division of Behavioral Health and Recovery’s Mental Health (DBHR/MH) and Alcohol and Substance Abuse services (DBHR/CD); the Juvenile Rehabilitation Administration⁴ (JRA) and the Division of Developmental Disabilities (DDD). Children’s Administration (CA) services were further broken down into Case Management, Child Welfare, Family Reconciliation, Foster Care and “Other”⁵ (see **Tables 1-5** for details).

Almost three-quarters of the cohort had received assistance from the Economic Services Administration (ESA) from which three sub-categories were selected for inclusion: Temporary Assistance for Needy Families (ESA-TANF), Basic Food (ESA-Basic Food), and ESA-Support Enforcement Only. ESA-Support Enforcement Only and a final category, “Medical Assistance Only” (through medical coverage administered by the Health Care Authority, or HCA) were selected as key reference groups because these children are likely to have fewer risk factors and higher overall income than those receiving services indicating family problems, deeper poverty, health problems, or behavioral challenges. **Table 4** includes the numbers and percentages by cohort.

FINDING 1 | 48 percent of 9th graders served by DSHS graduated on-time

The on-time graduation rate for first-time 9th graders in 2005/06 was 48 percent, and an additional 7 percent received their high school diploma one to two years later. As of two years past their expected graduation date, 32 percent of youth who received DSHS services during 9th grade had formally dropped out of high school, and another 11 percent had simply disappeared and never reenrolled, and so were classified as ‘probable drop-outs’.⁶ The remaining individuals in the cohort were either still actively enrolled in school at the end of Academic Year 2010-2011 or were deceased (**Figure 1**).⁷

FIGURE 1.

High school outcomes for 2005-2006 DSHS client cohort as of two years past the expected graduation year of Academic Year 2008-2009



² Refer to Technical notes.

³ All percentages reported in the text are rounded to the nearest whole number.

⁴ The JRA category was a roll-up of Parole, Community Placement, Institutional, and Dispositional Alternative services.

⁵ The “CA Other” category was a roll-up of Family Voluntary, Family Focused, Behavioral Rehabilitation, and “other intensive” services.

⁶ See the Technical notes section for detailed description of each High School outcome category.

⁷ There are several differences in methodology from state reported rates that are necessary to focus on outcomes for a fixed cohort of individuals. For example, we included an outcome category of “deceased,” which is not something reported in state educational data (students who are deceased are removed from the district calculations altogether). *Students with an Individual Education Plan or who were deceased total less than 1 percent (see Table 4).*

DSHS graduation rates and dropout rates compared to statewide averages

The Washington State Office of the Superintendent of Public Instruction (OSPI) reports school, district and statewide averages for on-time graduation, extended graduation (or 5-year graduation), cohort drop-out, and continuing students. Statewide graduation and drop-out rates for 2008-2009,⁸ the expected year of graduation for our cohort, were as follows: the total on-time graduation rate was 73.5 percent, with 7 percent continuing after their 12th grade year. An additional 5.7 percent graduated late (extended graduation) bringing the total graduation rate to 79.2 percent, with a 19 percent cohort drop-out.⁹

While the statewide averages provide an approximate benchmark against which to interpret the present results, the techniques used to calculate graduation rates in the present study and the official statewide rates are sufficiently different to preclude direct comparisons. The graduation rates for DSHS clients reported here reflect outcomes for a fixed cohort of incoming freshmen. In contrast, OSPI rates are based on district level measurement of outcomes for those students who were under their jurisdiction at the time they exited high school.

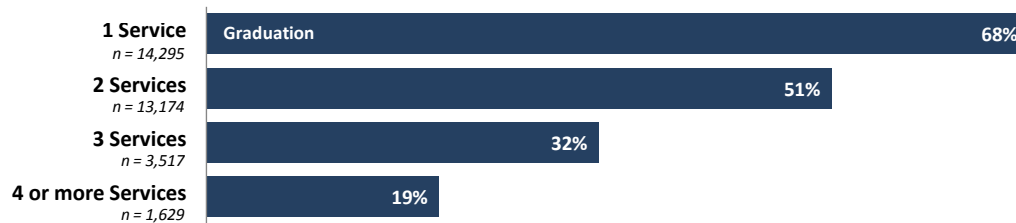
It appears, nonetheless, that DSHS clients graduate at lower rates and drop-out at higher rates than do their peers statewide. As will be shown below, there is a great deal of variability in high school outcomes within the DSHS cohort, particularly between those receiving “safety-net” services such as medical or economic assistance, and those receiving services indicating family problems, deeper poverty, health problems, or behavioral challenges.

FINDING 2 | Multiple service use is negatively associated with academic achievement

While the present cohort was defined by having received DSHS services in SFY 2006, many clients received services in two or more categories over the course of the year. DSHS services respond to needs that have been directly linked in the literature to poor educational performance and outcomes, including poverty (ESA and Medical Assistance), abuse, neglect, and familial dysfunction (CA), mental illness (DBHR-MH), substance abuse (DBHR-CD), criminal behavior (JRA) or developmental disabilities (DDD) (Becker & Luthar, 2002; Rouse & Fantuzzo, 2009).

FIGURE 2.

Multiple service use in SFY 2006 and high school graduation (on-time or extended) during the 6-year post-9th grade follow-up period¹⁰



As **Figure 2** shows, the relationship between multiple service use and high school outcomes is straightforward: The more service categories a client is involved with, the lower his or her chances of graduating. However, as shown in the next section, this type of analysis masks vast differences in the graduation outcomes among children receiving different types of DSHS services.

⁸ <http://reportcard.ospi.k12.wa.us/DataDownload.aspx>; Appendix A, 2008-09 District and statewide statistics.

⁹ The cohort drop-out rate refers to the estimated proportion of a 9th grade cohort who drop out of high school prior to graduation, while the annual drop-out rate refers to the proportion who drop out in a particular academic year.

¹⁰ The number of services was calculated using only the broad categories of: DBHR/MH, DBHR/CD, HCA (Medical Assistance), ESA, JRA, DDD, or CA. If a client received multiple service types within ESA (TANF and Basic Food, for example) this was counted as one category.

FINDING 3 | High school outcomes vary greatly by DSHS service category

Children receiving services from DSHS programs experience a wide variety of risk factors and service needs that are known to differentially impact educational outcomes (see Rouse & Fantuzzo, 2009). To this end, an analysis of high school outcomes by specific service type was conducted that revealed striking differences in graduation and drop-out rates between youth with different types of service needs (see **Figures 3 and 4**). The categories “Medical Assistance Only” and “Support Enforcement Only” were selected as benchmarks because they represent DSHS youth who receive only “safety net services,” and not the services directly indicating family problems, deeper poverty, health problems, or behavioral challenges.

FIGURE 3.

On-time and extended (late) graduation for students who received at least one month of DSHS services while in the 9th grade (Academic Year 2005-2006)

TOTAL = 32,615

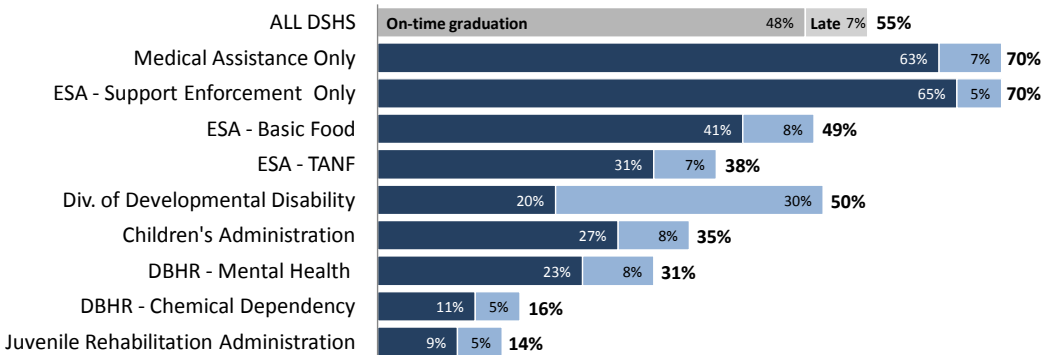
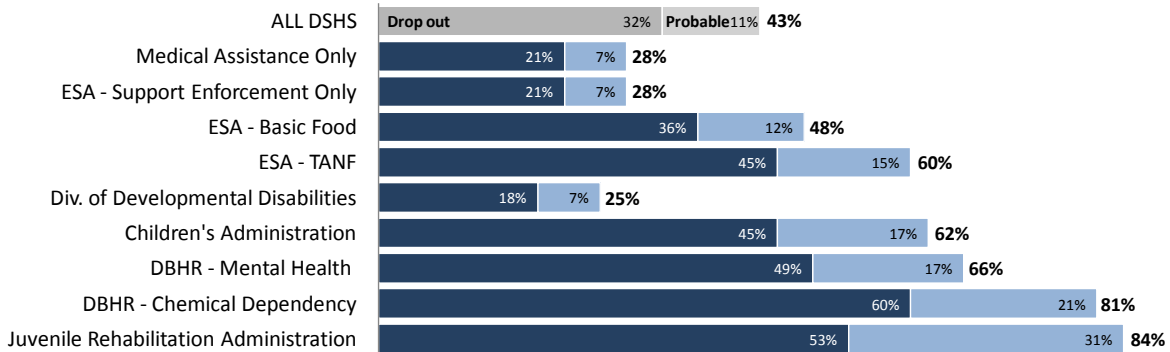


FIGURE 4.

Percentage of drop-outs or probable drop-outs among students who received at least one month of services in the following DSHS categories while in the 9th grade (Academic Year 2005-2006)

TOTAL = 32,615



High-risk service categories are associated with poor high school outcomes

As the above figures show, clients who received services to address family dysfunction (CA), mental health or substance abuse needs (DBHR/MH or DBHR/CD), or criminal behavior (JRA) had much lower rates of graduation and much higher rates of drop-out than clients who received Medical Assistance or Support Enforcement services only. In particular, JRA clients and those in substance abuse treatment showed extremely low graduation rates, while clients of the Mental Health Division and Children’s Administration performed better but still graduated at less than half the rate of children who received Medical Assistance or Support Enforcement services only. Clients of the Division of Developmental Disabilities had higher rates of late graduation than other groups, which likely reflects the extended transition services that are available to eligible students with disabilities. Twenty-five percent of the DDD clients were still enrolled in school at the end of the two-year follow-up period.

Graduation and drop-out rates vary by type of ESA services received

Almost three quarters of the DSHS cohort received some form of assistance from the Economic Services Administration, with 76 percent receiving Child Support Enforcement Services, about 50 percent receiving Basic Food, and 25 percent receiving Temporary Assistance for Needy Families (TANF). Unlike Child Support Enforcement, which is not based on economic need, both Basic Food and TANF have income-based eligibility requirements, with TANF serving children in households with the lowest income.

As **Figures 3 and 4** show, about half of Basic Food clients¹¹ graduated while roughly the same proportion were known or probable drop-outs. The TANF subgroup performed even worse with a 38 percent graduation rate and a 60 percent drop-out rate, similar to children receiving Children’s Administration services or Mental Health services. It appears, therefore, that greater economic need, as reflected by the use of economic support services with lower income eligibility requirements such as TANF, is associated with lower graduation rates.

High school outcomes for all Children’s Administration clients, including those in foster care, are low compared to children receiving only safety net services

Children and families served by the Children’s Administration make up a relatively small but high-risk group of DSHS clients who have high school outcomes that are substantially lower than the comparison categories. Children’s Administration clients have very low average graduation and correspondingly high drop-out rates compared to other DSHS clients (see **Table 5**). Patterns across CA service categories are very similar regardless of whether the child is in foster care, receiving case management, or some other kind of service.¹² While further exploration is needed, it is likely that abuse, neglect, and family disruption figure prominently for the majority of Children’s Administration clients regardless of the type of service they receive, and risk factors like neglect and abuse have been repeatedly shown to negatively impact educational performance (Rouse & Fantuzzo, 2009).

FINDING 4 | Children receiving DSHS services who are at risk for high school drop-out can be identified as early as the 9th grade

High School graduation is the end product of consistent academic progress, which itself is a function of engagement in school. If DSHS clients are failing in school, it is because they are unable, for whatever reason, to participate in and benefit from the schooling they receive. JRA clients, for example, do not simply reach the 12th grade and decide to drop-out; rather, their decision to leave school is just another step in what is usually a long series of academic failures. Progress in the 9th grade has been shown to be a critical indicator of whether or not a student actually graduates (Kennelly & Monrad 2007). We were able to calculate grade point average (GPA) and average number of unexcused absences at the end of the 9th grade year for the present cohort and relate these to their odds of graduating four to six years later.¹³

Grade point averages and unexcused absences in the 9th grade follow patterns that tend to mirror graduation and drop-out rates four years later (see **Figure 5 and Figure 6**, below). Medical Assistance and Support Enforcement Only clients have low rates of unexcused absences and relatively high GPAs at the end of 9th grade, consistent with their relatively higher graduation rates four years later, while students in the “high risk” service categories such as JRA, DBHR (Substance Abuse or Mental Health) or Children’s Administration are clearly struggling as early as the 9th grade.

¹¹ The ESA Basic food category used here did NOT include those who also received TANF, but the TANF group usually did also receive Basic food. Both categories may have overlapped with other ESA or DSHS service categories.

¹² Despite some necessary methodological differences, the graduation rate (34 percent) and drop-out rate (62 percent) for foster children reported here are quite similar to those reported by WSIPP (Burley, 2009), in which the graduation rates ranged from 26 percent to 44 percent, and the cohort drop-out rates ranged from 30 percent to 60 percent.

¹³ Refer to the technical notes for more information on interpreting GPAs and unexcused absences for this cohort. The pattern of unexcused absences for our clients was included here because it showed a highly compelling pattern in relation to the other indicators. Although the pattern has face validity, the actual numbers should be considered rough estimates of actual unexcused absences. New state reporting requirements will result in more reliable and accurate reporting of unexcused absences across districts.

FIGURE 5.

Comparisons of Grade Point Averages (GPAs) at the end of the 9th grade for DSHS clients in different service categories TOTAL = 32,615

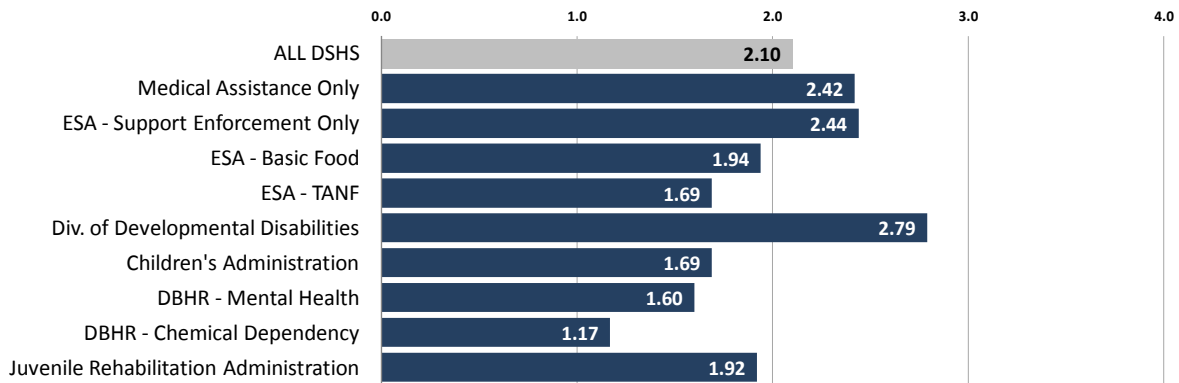
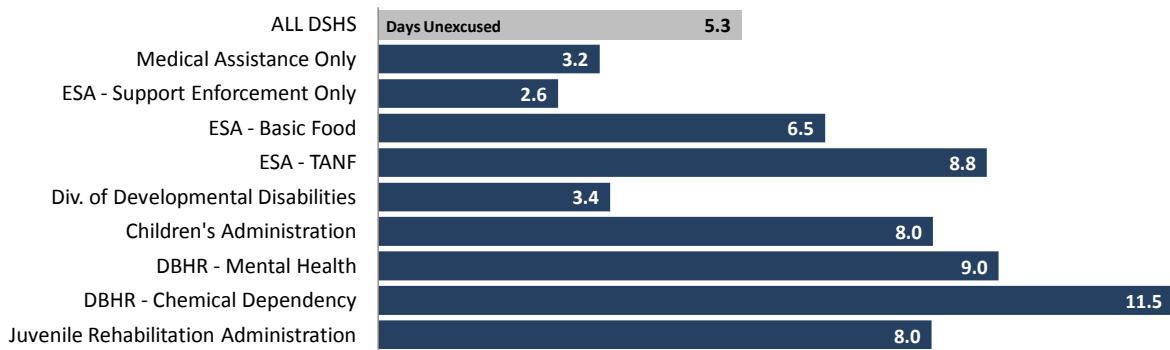


FIGURE 6.

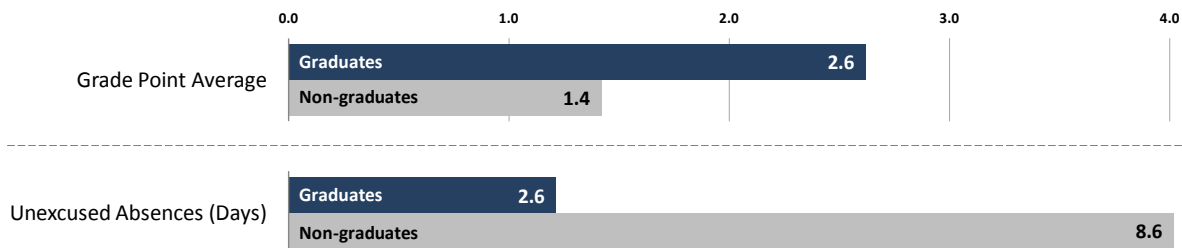
Comparisons of number of unexcused absences at the end of the 9th grade for DSHS clients in different service categories¹⁴ TOTAL = 32,615



A comparison between the 9th grade GPAs and unexcused absences of those who eventually graduate versus those who drop out, regardless of service category, suggests the potential predictive value of tracking progress early on for at-risk DSHS children and youth (see **Figure 7**, below). Many high school drop-outs have already disengaged from school by their 9th grade year, as evidenced by high absence rates and poor academic performance. The available research on high school drop-out clearly links low attendance and other signs of disengagement with school, including but even prior to the 9th grade, with course failure and eventual drop-out (Kennelly & Monrad 2007; Nichols, 2007).

FIGURE 7.

Comparisons of Grade Point Averages (GPAs) and number of unexcused absences at the end of the 9th grade for DSHS clients who go on to graduate compared to those who do not TOTAL = 32,615



¹⁴ These results should be interpreted on the basis of their pattern only, the reported numbers are not considered to be reliable.

Discussion

The present study found large differences in high school outcomes associated with need for social or health service involvement at a certain period in a child's life. In general, children receiving DSHS services indicating family problems, deeper poverty, health problems, or behavioral challenges perform far worse in school than those who receive Medical Assistance or Child Support Enforcement only. Those who fail to graduate high school are more likely to continue to need social services after they transition into adulthood.

The results of this study also indicated, however, that many DSHS-served youth do succeed in school, and that patterns leading to success or failure are evident as early as the 9th grade, highlighting the importance of early identification and intervention. Future studies will further explore the relationship between social services and academic outcomes. Factors that contribute to academic disengagement are rooted in the same complex social, familial and personal factors that result in challenges requiring the intervention of social services (Becker & Luthar, 2002; Lagana-Riordan & Aguilar, 2009). For these high-risk children, it is not that social services cause educational failure, but that the needs for these services are associated with family dysfunction, poverty, unsafe communities, disrupted living conditions and negative educational experiences that, when combined, lead to behavioral health problems and other service needs.

This study points to three important conclusions.

- First, the results indicate that the new cross-agency social services and education data linkage is a powerful tool for measuring educational progress and outcomes for DSHS clients, providing information that has never before been available on this scale.
- Second, the results point to the risk factors that are associated with the greatest risk of academic failure among children with social service needs: criminal activity, substance abuse, experience of child abuse or neglect, mental illness, and financial hardship.
- Finally, the results suggest that educational data provide more than just outcome information and can also be used to identify prospectively those children who are at greater risk of poor outcomes.

In reviewing these findings it is essential to note that youth served by DSHS programs have often experienced a wide variety of risk factors that are also likely to impact their educational outcomes. This study serves as the starting point for a series of analyses aimed toward understanding the educational needs and related risk factors for children served by DSHS.

SUPPORTING TABLES

TABLE 1.

Number and percent of White Non-Hispanic and Minority for the entire Academic Year 2005-2006 cohort and broken down by service category

	TOTAL		White Non-Hispanic		Any Minority	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Entire cohort	32,615	100%	17,813	57%	12,425	40%
Medical Assistance Only	6,559	20%	3,143	50%	2,856	45%
ESA- Support Enforcement Only	5,817	18%	3,408	76%	1,006	22%
ESA – Basic Food	7,153	22%	3,871	55%	3,104	44%
ESA – TANF	5,882	18%	2,776	48%	2,922	50%
Div. of Developmental Disabilities	639	2%	429	67%	209	33%
DBHR – Mental Health	3,134	10%	1,856	59%	1,268	41%
DBHR – Chemical Dependency	1,474	5%	801	54%	670	46%
Juvenile Rehabilitation Administration	483	1%	247	51%	236	49%
Children’s Administration	5,157	16%	2,933	57%	2,207	43%
1 service category	14,295	44%	7,761	61%	4,520	35%
2 service categories	13,174	40%	7,208	55%	5,610	43%
3 service categories	3,517	11%	1,958	56%	1,552	44%
4+ service categories	1,629	5%	886	54%	743	46%

TABLE 2.

Specific race/ethnicity category, by service group

	TOTAL	Hispanic		African American		Native American		Asian Pacific Islander		Other race	
		NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Entire cohort	32,615	5,890	18.1%	3,168	9.7%	2,234	6.8%	2,050	6.3%	5,289	16.2%
Medical Assistance Only	6,559	1,865	28.4%	242	3.7%	205	3.1%	636	9.7%	1,696	25.9%
ESA- Support Enforcement Only	5,817	374	6.4%	317	5.4%	192	3.3%	187	3.2%	246	4.2%
ESA – Basic Food	7,153	1,528	21.4%	780	10.9%	587	8.2%	438	6.1%	1,374	19.2%
ESA – TANF	5,882	1,175	20.0%	1,046	17.8%	594	10.1%	386	6.6%	1,108	18.8%
Division of Developmental Disabilities	639	87	13.6%	67	10.5%	49	7.7%	38	5.9%	78	12.2%
DBHR – Mental Health	3,134	392	12.5%	502	16.0%	386	12.3%	178	5.7%	399	12.7%
DBHR – Chemical Dependency	1,474	270	18.3%	158	10.7%	255	17.3%	95	6.4%	322	21.8%
Juvenile Rehabilitation Administration	483	82	17.0%	83	17.2%	81	16.8%	33	6.8%	100	20.7%
Children’s Administration	5,157	752	14.6%	777	15.1%	719	13.9%	260	5.0%	748	14.5%
1 service category	14,295	2,508	17.5%	752	5.3%	530	3.7%	954	6.7%	2,169	15.2%
2 service categories	13,174	2,582	19.6%	1,601	12.2%	960	7.3%	834	6.3%	2,308	17.5%
3 service categories	3,517	585	16.6%	529	15.0%	445	12.7%	178	5.1%	562	16.0%
4+ service categories	1,629	215	13.2%	286	17.6%	299	18.4%	84	5.2%	250	15.3%

TABLE 3.

Gender breakdown within each service category

	TOTAL	Male		Female	
		NUMBER	PERCENT	NUMBER	PERCENT
Entire Cohort	32,615	15,967	49.0%	16,640	51.0%
Medical Assistance Only	6,559	3,157	48.1%	3,402	51.9%
ESA- Support Enforcement Only	5,817	2,762	47.5%	3,048	52.4%
ESA – Basic Food	7,153	3,628	50.7%	3,525	49.3%
ESA – TANF	5,882	2,848	48.9%	2,974	51.1%
Div. of Developmental Disabilities	639	399	62.4%	240	37.6%
Children’s Administration	5,157	2,421	46.9%	2,735	53.0%
DBHR – Mental Health	3,134	1,469	46.9%	1,665	53.1%
DBHR – Chemical Dependency	1,474	896	60.8%	578	39.2%
Juvenile Rehabilitation Administration	483	397	82.2%	86	17.8%
1 service category	14,295	6,925	48.4%	7,362	51.5%
2 service categories	13,174	6,409	48.6%	6,765	51.4%
3 service categories	3,517	1,792	51.0%	1,725	49.0%
4+ service categories	1,629	841	51.6%	788	48.4%

TABLE 4.

Number and percentage of 2005-2006 9th grade cohort who received services in each DSHS service category, and percentage of those in each service category who fell into each major high school outcome category

	Deceased							
	Continuing Student							
	Probable Drop-out							
	High School Drop-out							
On-time Graduation (subset of the number graduating, prior column) ¹⁵								
Graduation ¹⁶								
TOTAL								
NUMBER	PERCENT							
TOTAL	32,615	—	55%	48%	32%	11%	2%	0.12%
Medical Assistance Only*	6,559	20%	70%	63%	21%	7%	1%	0.1%
ESA- Support Enforcement Only*	5,817	18%	70%	65%	21%	7%	1%	0.1%
ESA – Basic Food	7,153	22%	49%	41%	36%	12%	2%	0.1%
ESA – TANF	5,822	18%	38%	31%	45%	15%	2%	0.1%
Div. of Developmental Disabilities	639	2%	50%	20%	18%	7%	25%	0.9%
Children’s Administration	5,157	16%	35%	27%	45%	17%	3%	0.3%
DBHR – Mental Health	3,134	10%	31%	23%	49%	17%	3%	0.3%
DBHR – Chemical Dependency	1,474	5%	16%	11%	60%	21%	2%	0.3%
Juvenile Rehabilitation Administration	483	2%	14%	9%	53%	31%	2%	0.2%

* Medical Assistance ONLY and ESA-Child Support Enforcement Only are exclusive categories. Children who received multiple service types are counted in each relevant category. Thus, row and column totals will exceed 100 percent.

TABLE 5.

Number and percentage of 2005-2006 9th grade cohort who received services in each Children’s Administration service category, and percentage of those in each service category who fell into each major high school outcome category

	Deceased							
	Continuing Student							
	Probable Drop-out							
	High School Drop-out							
On-time Graduation (subset of the number graduating, prior column) ¹⁷								
Graduation								
TOTAL								
NUMBER	PERCENT							
Children’s Admin TOTAL	5,157	—	35%	27%	45%	17%	3%	0.3%
Case Management	2,345	45%	34%	26%	46%	17%	3%	0.3%
Child Welfare	1,172	23%	33%	25%	46%	18%	3%	0.3%
Family Reconciliation	1,792	35%	25%	19%	54%	19%	2%	0.3%
Foster Care	816	16%	34%	25%	45%	18%	3%	0.4%
Other	542	11%	23%	14%	50%	24%	3%	0.6%

¹⁵ On-time graduation is a subset of the larger “graduation” category, so is not included as one of the 6 mutually exclusive outcomes.

¹⁶ Refers to the percent who graduated from high school by the end of AY2010/11, or two years past their expected date of graduation.

¹⁷ On-time graduation is a subset of the larger “graduation” category, so is not included as one of the 6 mutually exclusive outcomes.

LIMITED DATASET

The larger study population from which the present cohort was drawn included all individuals who received any kind of DSHS service in State Fiscal Year (SFY) 2006, SFY 2007 and SFY 2008 and were age 25 or younger on January 1 of the first of these 3 years in which they received any DSHS service. The Education Research and Data Center was able to link K-12 data for 892,034 (60.59 percent) of these individuals, and provided education data, including graduation information, progress indicators, and other information, for the Academic Years 2004-2005 up to and including 2010-2011. The result was a limited dataset that includes K-12 data for the time spans indicated, and DSHS data from a variety of agencies and sources for the SFY 2004 through 2009, linked at the individual level, but including no direct identifiers.

SAMPLE

A subsample of 32,615 individual records were selected from the dataset described above for the purposes of the present study, using the following criteria:

- Were in the 9th grade for the first time in Academic Year 2005-2006,
- Were between the ages of 12 and 17 on September 1, 2005,
- Received at least one month of any DSHS services in Academic Year 2005-2006,
- AND were flagged as “Still in State” SFY 2009, per the following criteria: Received at least one month of any DSHS service other than Child Support enforcement¹⁸ in SFY 2009, their expected year of graduation and the last year for which we have DSHS data; OR had employment data (Employment Security Department), an arrest record (Washington State Patrol), Administrative Office of the Courts data, or any higher education data at any point in SFY 2009.

DECISIONS RULES FOR DETERMINING HIGH SCHOOL OUTCOMES

The P210¹⁹ enrollment codes were used to determine the high school outcomes through 2009-2010, while the CEDARS withdrawal code was used to determine outcomes in 2010-2011. The decision rules for creating the categories were as follows:

1. **Deceased.** ZZ code any time in the 6 year follow up period. If this code appeared it took precedence over all other codes.
2. **Graduated.** A code of “GO”, “GA²⁰”, or C3²¹. Following OSPI standards, students who completed with a certificate of completion of an Individualized Education Plan (IEP), coded as C2, were also included in the category of graduates. If a student was coded as graduated then they could not be included in any of the following categories.
3. **Drop-out.** Any D code; any U code, or T1 code, AND the student did not reappear afterwards in the P210 or CEDARS database. In addition, following standards set by OSPI, those who received a GED (Code C1 - General Education Development) degree in lieu of a high school diploma were counted as high school drop outs. However, this outcome category is important in its own right and will be the focus of future analyses.
4. **Probable drop-out.** A code of TO, and the student did not reappear afterwards in the P210 or CEDARS database.
5. **Continuing.** The student was still enrolled with no exit code at the end of the last year for which data was available, 2010-2011.

ISSUES IN DETERMINING THE DROP-OUT RATE FOR OUR COHORT

The Research and Data Analysis Division worked directly with OSPI to construct a measure of “drop-out” consistent with the measure used at the district and state level. Therefore, a person was coded as a drop-out if his or her final enrollment or withdrawal code indicated a definite drop-out, was listed as “unknown” or no-show, or transferred out of the school within a district but never reappeared. In addition, like OSPI, we counted those who received GEDs as drop-outs, in keeping with the national regulations based on the No Child Left Behind (NCLB) Act of 1996. In all cases, a student could only be counted in the drop-out category if they never again appeared in the public school database by the end of Academic Year 2011. Because our calculations were based on a state-wide cohort rather than district cohort, we had no way of knowing for sure if a student who was coded as a transfer out of district but never reappeared in the Washington State database was a drop-out, or had moved out of state (these students would be removed from district drop-out calculations and so would not be an issue. To avoid inadvertently counting as drop-outs students who had actually moved out of state we restricted our cohort to those who showed up in any available public database in Washington State in SFY 2009, their expected year of graduation, thus eliminating a good portion of the clients who might have moved out of state prior to that years. This resulted in a 12.2 percent reduction in the study cohort.

¹⁸ Child support enforcement can be provided for children who live out-of-state as well as in-state, therefore it is not a good indicator of whether a child is still residing in the State.

¹⁹ The P210 database contains certain records from the CSRS (2008-2009 and earlier) and the CEDARS (2009-11) databases that are relevant to school and district performance measures and that are vetted by the schools themselves and returned to OSPI in the Fall following the academic year for which they are reported. Because of this, the P210 is considered to contain more accurate outcome data than either CSRS or CEDARS, because schools will have had a chance to confirm cases of transfer or drop-out, for example.

²⁰ Graduated with an Associate’s degree, a code that first appeared in CEDARS and appeared rarely in our cohort

²¹ Confirmed receipt of adult high school diploma, a code that was not used after 2009 and that was relatively rare in our cohort.

GUIDELINES FOR DETERMINING GRADUATION AND DROPOUT RATES AT THE DISTRICT AND STATE LEVEL

Expected year of graduation

Districts in Washington State are required to assign an expected year of graduation to students no later than when they first enter grade 9, or age 16 for students receiving special education services. The expected year of graduation is a standard four years for the majority of students, with exceptions allowed for students identified as special education, bilingual or migrant. Students identified as special education or bilingual can be assigned an expected year of graduation up to seven years past when they first enter grade 9, or age 16 for students receiving special education services. Migrant students can be provided an expected year of graduation up to five years past when they first enter grade 9, or age 16 for students receiving special education services. No student can be assigned an expected year of graduation that is beyond the year in which they obtain age 21.

For students who enter their district for the first time in their high school years, districts have the option of assigning an expected year of graduation based upon an evaluation of a student transcript (credit attainment) at the time of enrollment. With the exception of those students entering the district who are identified as special education, bilingual or migrant, the expected year of graduation for these students may not be greater than four years.

Estimated on-time and extended graduation rates

The expected year of graduation was used in determining which students were included in the estimated on-time extended graduation rate, dropout and continuing student calculations which were published through the 2010-11 school year. Detailed information regarding the methodologies utilized in these calculations can be found at <http://www.k12.wa.us/DataAdmin/pubdocs/GradDropout/GradRateCalculationsinWASStateSchYrsMarch2012.pdf>.

Adjusted cohort year

The U.S. Department of Education issued guidance regarding the required implementation of Title I graduation rate calculations on October 29, 2008. The guidance, which can be found at <http://www2.ed.gov/policy/elsec/guid/hsrguidance.pdf>, established uniform methodologies for all states to follow in determining an adjusted cohort graduation rate for schools and district. Based upon business rules outlined in the guidance, students identified as entering the 9th grade for the first time in a specified school year are identified as expected to graduate as the 'Class of' four years later. In addition, students who enter Washington State public schools after the 9th grade are placed in the appropriate 'Class of' cohort based upon when they initially entered 9th grade anywhere. For example, students identified as first entering grade nine during the 2007-08 school year are identified as belonging to the Class of 2011 would be included in the cohort results for this group of students.

4-year adjusted cohort graduation rate

The method for calculating the 4-Year adjusted cohort graduation rates (outlined in *34 C.F.R. §200.19(b)(1)(i)-(iv)*) is the total number of students identified as entering 9th grade for the first time in the base year of the cohort who are reported as graduates within four years, divided by the net total number of students belonging to the 'Class of' cohort being reviewed. This cohort group is "adjusted" by adding any students who transfer into the cohort later during the 9th grade and the next three years and subtracting any students who transfer out, emigrate to another country, or die during that same period" (U.S. Dept of Education, 2008, p 2). For example, students identified as first entering grade nine during the 2007-08 school year, identified as belonging to the Class of 2011, would be included in the 4-Year adjusted cohort results for the 2010-11 school year.

5-year adjusted cohort graduation rate

The method for calculating the 5-Year adjusted cohort graduation rates (outlined in *34 C.F.R. §200.19(b)(1)(i)-(iv)*) is the total number of students identified as entering 9th grade for the first time in the base year of the cohort who are reported as graduates within five years divided by the net total number of students belonging to the 'Class of' cohort being reviewed. The 5-year cohort is similar to the 4-year, but students are included in the numerator if they graduate in five years. For example, students identified as first entering grade nine during the 2007-08 school year, identified as belonging to the Class of 2011, would be included in the 5-Year adjusted cohort results for the 2011-12 school year.

OUTCOMES IN THE PRESENT STUDY COMPARED TO OSPI-REPORTED OUTCOMES

The present study looked at absolute outcomes for discrete cohort of individuals who were followed over time. Therefore, while the state and district graduation rates provide a basis for interpreting our DSHS client graduation rates, they are not directly comparable. Statewide averages were only available for on-time graduation, drop-outs, and "continuing" with the latter referring to continuing 1 year past the expected year of graduation, whereas our reference point was two years past the expected graduation date. The statewide averages are meant to be used as a general benchmark with which to understand the outcomes for DSHS clients, but direct comparisons are not possible.

First of all, regardless of whether graduation rates are calculated by the "traditional" method or newer "adjusted cohort method" they are estimates for a group of people, and furthermore, are based on the presence or absence of a student in a given district at a given time. Our method, in contrast, followed the progress of a single, discrete group of individuals through high school, regardless of moves within or between districts. Therefore, while both methods of calculating graduation and drop-out rates were rigorous and as coordinated as possible, there a certain degree of error inherent in both sets of calculations and any discussion of differences between them should allow for the existence of unknown error.

In addition, the category of “continuing” student is used by districts and by OSPI to refer to students who are continuing in school past their expected year of graduation. In our study this number referred to those continuing in school 2 full years past their expected year of graduation; therefore it is not surprising that the DSHS number is considerably smaller than statewide averages.

GPA AND UNEXCUSED ABSENCES IN THE 9TH GRADE

Grade Point Average (GPA) at the end of the 9th grade, as well as the reported number of unexcused absences were taken from the CSRS database and included as indicators of 9th grade progress. The GPA used was the last reported GPA in the 2005-2006 Academic Year for each student in that academic year, unexcused absences were reported by month in CSRS, so these numbers were added to get a yearly total for each individual. Neither unexcused absences nor GPA were uniformly reported by all districts in 2005-2006, therefore the results should be interpreted in terms of general trends and patterns instead of absolute numbers. However, the following observations suggested that these fields were sufficiently meaningful to include in the present analysis:

- For this specific cohort, all reported GPAs but one fell in the 0-4.0 range, which follows the pattern of GPA reporting. The negative number was re-coded as zero per instructions from OSPI.
- Only 5.3 percent of the cohort had missing values for GPA, and 12.34 had missing values for unexcused absences.
- Of the 257 districts reporting the data fields included in this analysis,²² 4 were completely missing GPA data. Twenty-seven districts were missing between 10 and 30 percent of their GPA data, and 10 were missing more than 30 percent of their GPA data. Of those missing GPA data, however, the majority were districts that reported fewer than 50 individuals.
- Twelve districts were missing unexcused absences data, all of which were small districts. Ten districts were missing more than 60 percent of their data, most of which were medium to large districts.
- The mean GPAs and unexcused absences did not differ much by reporting district size, and the district means for both variables were distributed as would be expected²³.
- DSHS client categories that carried the highest risk also had the highest percentage of missing data, suggesting that missing-ness was not distributed entirely randomly, but was also a product of the unavailability of the data. Similarly, of the clients of the Division of Developmental Disabilities (DDD), who are sometimes graded according to different criteria from other students, 21 percent were missing GPA data, which suggests again that missing data is due in part to non-availability.

Given the consistency and face validity of these fields, they were judged by DSHS and OSPI to be adequate estimates of the real values for GPA and unexcused absences.

REFERENCES

1. Becker, B.E. & Luthar, S.S. (2002). Social-emotional factors affecting achievement outcomes among disadvantaged students: Closing the achievement gap. *Educational Psychologist*, 37(4): 197-214.
2. Burley, M. (2009). Graduation and drop-out outcomes for children in State care (2005-2008). Washington State Institute of Public Policy.
3. Came, Deb (2012). Graduation and Drop-out Statistics Annual Report 2010-2011. Report to the Legislature. Office of the Superintendent of Public Instruction; U.S. Dept of Education, (2008).
4. Came, Deb (2012). Graduation Rate Calculations in Washington State. Office of the Superintendent of Public Instruction.
5. Kennelly, L. & Monrad, M. (2007). Approaches to Drop-out Prevention: Heeding early warning signs with appropriate interventions. National High School Center. Betterhighschools.org
6. Lagana-Riordan, C. & Aguilar, J.P. (2009). What’s missing from No Child Left Behind? A policy analysis from a social work perspective. *Children and Schools*, 31(3) 135-144.
7. Nichols, J.D. (2003) Prediction indicators for students failing the State of Indiana High School Graduation Exam. *Preventing School Failure*, 47(3): 112-120.
8. Rouse, H.L. & Fantuzzo, J.W. (2009). Multiple risks and educational well being: A population-based investigation of threats to early school success. *Early Childhood Research Quarterly*, 24: 1-14.
9. Weiss, J.D. (2004). Public Schools and Economic Development: What the research shows. KnowledgeWorks Foundation.
10. United States Dept. of Education (2008). High School Graduation Rate: Non-Regulatory Guidance. No Child Left Behind. December 22, 2008.

RDA CONTACT: Liz Coker, PhD • 360.902.0782 • elizabeth.coker@dshs.wa.gov

Copies of this paper may be obtained at www.dshs.wa.gov/rda/ or by calling DSHS’ Research and Data Analysis Division at 360.902.0701.

Please request REPORT NUMBER 11.181

²² Reporting district was the district that reported the last GPA used therein.

²³ A normal curve for GPA means, a positive skew for unexcused absences.