POLICY STUDIES ASSOCIATES, INC.

Longitudinal Analyses of the DYCD Transition To High School Program: Cohorts 1 And 2

Jeanine Hildreth
Julie Meredith
Christina A. Russell

September 2015

Prepared by:
Policy Studies Associates, Inc.
1718 Connecticut Avenue NW
Suite 400
Washington, DC 20009
(202) 939-9780
www.policystudies.com

Prepared for:
Department of Youth and Community Development
New York, NY

Executive Summary

In 2009-10 the New York City Department of Youth and Community Development (DYCD) launched its *Transition to High School* initiative. Transition to High School (THS) programs, operated by nonprofit organizations in partnerships with schools, target selected students entering the ninth grade for a one-year intervention to help them navigate the transition into high school by addressing the educational, personal, or social challenges they face in achieving on-time promotion to the tenth grade. Students were recruited for participation using multiple strategies, including presenting the program to new students, identifying students based on low levels of performance on state eighth grade mathematics and English language arts assessments, and using recommendations of school personnel. The program addresses an important transition point in a student's academic career: prior research has identified ninth grade completion as an important factor in influencing on-time high school graduation (Allensworth & Easton, 2005, 2007; Bottoms & Timberlake, 2007; Somers & Piliawsky, 2004). Students who fail to earn enough credits to be promoted to the tenth grade immediately after the first year of ninth grade are significantly more likely to drop out of high school compared with students who have on-time grade promotion.

Previously, DYCD contracted with Policy Studies Associates (PSA) to conduct evaluations of the implementation and early outcomes of the THS initiative for Cohort 1 of the initiative during the 2009-10 school year (Russell, Mielke, Palmiter, & Turner, 2011) and for Cohort 2 during the 2010-11 school year (Russell, Mielke, Palmiter, Turner, & Vaden, 2012). The current report extends the analyses of student outcomes for these two cohorts, including an analysis of the high school completion status for THS participants compared to demographically similar nonparticipants enrolled in the same schools. The evaluation team worked closely with staff from DYCD and the New York Department of Education (DOE) to gain access to de-identified data on student academic progress and performance. The evaluation team used the data provided to identify both THS participants and a statistically similar group of nonparticipating students enrolled in the same school.

The success of the matching process is largely dependent on the quality of data provided to DOE.[1] It appears that data quality significantly improved between Cohort 1 (entered high school in 2009-10) and Cohort 2 (entered high school in 2010-11), resulting in greater number of matched records for Cohort 1 compared with Cohort 2. DOE returned to PSA a total of 379 matched records for Cohort 1 (out of an estimated 1,999 Cohort 1 participants) and 2,045 matched records for Cohort 2 (out of an estimated 2,104 Cohort 2 participants). The low DYCD/DOE match rate for Cohort 1 participants likely limits the extent to which students included in the analyses are sufficiently representative of all Cohort 1 participants. The comparatively larger number of students included in the Cohort 2 analyses significantly increases the likelihood that students included in the analyses are representative of all participants. We report all of the key outcomes by cohort but recommend caution when drawing conclusions about Cohort 1 outcomes.

[1] DOE currently conducts all data linking internally. The approach used by the DOE is dependent on the quality of the data provided for the match (e.g., accuracy of the OSIS unique student identifier number and of student birth date, and consistent spelling of student name with the DOE records).

Data analyses and reporting focused on comparative analyses of: (1) annual credit accrual; (2) passing Regents examinations; and (3) high school graduation, dropout, or continued enrollment. The evaluation team analyzed all data as of the end of the 2013-14 school year, five years after high school entrance for Cohort 1 students and four years after the beginning of high school for Cohort 2 students. Data analyses included both the comparison of means (credit accrual and Regents) and the proportion of students in each high school completion category as well as multivariate regression analyses, which incorporated both gender and prior academic performance as factors potentially affecting student outcomes. We used both linear regression (credits and Regents) and logistic regression (graduation, dropout, and continued enrollment) to estimate student outcomes. Each regression equation included gender, eighth-grade English language arts (ELA) scale score, and THS participation status to explore factors related to each of the outcomes. Regression allows for the identification of the unique effect that a predictor variable such as THS participation has on the outcome while controlling for the effects of the other variables (gender and ELA scores).

To supplement the quantitative outcome analyses, evaluation team members also reviewed the two prior THS evaluation reports for context about program implementation. Key context from the earlier evaluations included:

- Significant variation in program design and delivery across participating sites
- A need for a more individually-focused approach to supporting students and more one-on-one meetings between counselor advocates and participating students
- A need for improved collaboration between THS and school staff to improve consistency and coordination of services to students

PSA also conducted a telephone interview with a DYCD staff person in spring 2015. The focus of this conversation was on program design and goals and changes to the THS model or implementation guidance provided to partner organizations. Although DYCD did not make significant changes to program design or expectation in the first two years of program operation included in this report, the agency did more clearly define expectations for the type of supports to be provided by counselor advocates and increased the emphasis on providing supports in regular one-on-one conversations. Additionally, in the third year of operation, DYCD assigned all aspects of program management to a single staff person to increase the level of consistency of program expectations and in messaging to participating schools and partner organizations.

Data analyses indicate that for most of the outcome measures included in this evaluation, THS participants did not generally perform better than their matched peers. However, cross-cohort data indicate that Cohort 2 participant had improved outcomes compared with those of Cohort 1.

Cohort 1 Findings

- Cohort 1 participants earned fewer credits than comparison students for each year included in the analyses.

- Cohort 1 participants passed slightly fewer Regents examinations than comparison students

- Cohort 1 participants were less likely to graduate within five years, were more likely to drop out of high school, and were more likely to remain enrolled in school as of the end of the 2013-14 school year than were comparison students.

Cohort 2 Findings

- Cohort 2 participants earned fewer credits during their first year of high school but earned more credits for each of the following three years than comparison students.

- Cohort 2 participants passed slightly more Regents examinations than comparison students.

- Cohort 2 participants were slightly more likely both to graduate from high school and to drop out from high school, and were less likely to remain enrolled in school as of the end of the 2013-14 school year than were comparison students.

Regression analyses indicate that gender was not consistently related to the outcome variables, but performance on the New York State eighth-grade ELA assessment was a consistent predictor of outcomes. For each outcome measure, male students evidenced lower levels of performance than female students; the differences were not, however, consistently statistically significant. Increased scale scores on the state eighth-grade ELA assessment were related to higher credit accrual in high school, an increase in the number of Regents completed, an increased likelihood in graduation, and a decrease in the likelihood of dropping out or remaining enrolled in high school for longer than four years.

Improving high school graduation rates is a complicated task which for all students, especially at-risk students, requires on-going monitoring of student performance and frequent, supportive contact from both adults and peers (Allensworth & Easton, 2005; Davis, Herzog, & Letgers, 2013; Montecel, Cortez, & Cortez, 2004). The THS initiative is designed to provide these types of supports for students enrolled in partner schools. Early data on the initiative from the first two cohorts of students served indicate both the challenges and the potential successes of the initiative. Cohort 1 students did not exhibit better outcomes than their matched peers. Cohort 2 students also did not significantly outperform their matched peers. The data for Cohort 2, however, are generally more positive than those for Cohort 1 and may indicate the potential impact of the initiative as it matures over time. Changes DYCD staff made to program organization and expectations may improve student outcomes in later cohorts of participants. Extending similar analyses to these later cohorts may help highlight the extent to which these changes result in improved student outcomes.

Contents

Overview of the Transition to High School Initiative

In 2009-10 the New York City Department of Youth and Community Development (DYCD) launched its *Transition to High School* initiative. Transition to High School (THS) programs, operated by nonprofit organizations in partnerships with schools, target selected students entering the ninth grade for a one-year intervention to help them navigate the transition into high school by addressing the educational, personal, or social challenges they face in achieving on-time promotion to the tenth grade. Students were recruited for participation using multiple strategies, including presenting the program to new students, identifying students based on low levels of performance on eighth grade assessments, and using recommendations of school personnel. The program addresses an important transition point in a student's academic career: prior research has identified ninth grade completion as an important factor in influencing on-time high school graduation (Allensworth & Easton, 2005, 2007; Bottoms & Timberlake, 2007; Somers & Piliawsky, 2004). Students who fail to earn enough credits to be promoted to the tenth grade immediately after the first year of ninth grade are significantly more likely to drop out of high school compared with students who have on-time grade promotion.

To address the issues students face in the transition to high school, researchers have proposed a number of intervention strategies, including: establishing special academies for ninth-grade students (Bottoms & Timberlake, 2007); ensuring that all students receive needed support services (Wheelock & Miao, 2005); and implementing school-wide instructional reform strategies (Mac Iver, Balfanz, & Byrnes, 2009). Prior research on small high schools in New York City found positive impacts on the transition to high school for ninth-grade students who enrolled in schools that were organized around small, personalized groups of teachers and students, in which teachers provided individualized socio-emotional and academic supports (Bloom, Thompson, & Unterman, 2010). In these schools, ninth-grade students were more likely to earn 10 or more credits, less likely to fail a core subject, and more likely to be on-track for on-time graduation than were comparable students.

DYCD's Transition to High School initiative is designed to provide these types of personalized supports for youth through out-of-school time services that are designed to foster the development of a cohort of ninth-grade peers and a culture of learning among participating students. There are four main components to the THS model:

- The development of a cohort model to promote a culture of peer support and learning
- The use of counselor-advocates to provide students with personalized guidance and support and to help them identify and access resources needed to succeed in the ninth grade
- The implementation of supportive activities and services
- The recognition of the critical role that families play in the transition to high school

Although programs were expected to implement each component, program staff had significant latitude in how they would implement them.

As part of the FY 2015 evaluation plan, DYCD contracted with Policy Studies Associates (PSA) to design and conduct a longitudinal analysis of the relationship between participation in the THS initiative and remaining on track for graduation in the latter years of high school. PSA previously conducted implementation and single year outcomes evaluations of THS programs during the 2009-10 school year (Russell, Mielke, Palmiter & Turner, 2011) and the 2010-11 school year (Russell, Mielke, Palmiter, Turner, & Vaden, 2012). Each of the prior evaluations focused on ninth-grade credit accumulation and chronic absence (e.g., missing 20 or more days of school). The current analysis extends these prior evaluations to assess the longer term effects of participation in the THS program on students through the end of the 2013-14 school year, when both the Cohort 1 and Cohort 2 THS participants (students who entered high school in 2009-10 and 2010-11) would be expected to have graduated high school.

The first section of this report provides an overview of the evaluation design and methods. The following section provides a summary of key findings on program implementation from the earlier two reports. The third section provides a discussion of the demographic and prior academic performance characteristics of Cohort 1 and Cohort 2 participants and comparison students included these analyses. The fourth section focuses on comparative analyses of the key markers of progress toward high school completion, and the final section summarizes and discusses the findings about the impact of THS participation on student high school outcomes.

Evaluation Questions and Methods

This evaluation serves as an extension of PSA's prior two reports on the THS initiative that explored single-year outcomes for program participants in the 2009-10 (Cohort 1) and 2010-11 (Cohort 2) school years. The goal of this report is to explore the extent to which student participation in the THS initiative is related to four key measures of success throughout a student's high school career: (1) credit accrual; (2) dropout; (3) performance on Regents' examinations; and (4) high school graduation. Additionally, the report explores the data to identify potential links between participation in DYCD programming in the elementary and middle grades and high school outcomes. Since 2005, DYCD has funded programs that serve students throughout the elementary and middle grades, and the evaluation team explored the data to identify which THS participants may have also participated in DYCD-sponsored programming in the earlier grades.

The following research questions[1] guided this report:

[1] A fifth question was to explore the extent to which high school outcomes for THS participants differed from those of other high school students who participated in prior DYCD OST program models for serving high school students. The evaluation team was only able to identify DOE data for 149 ninth-grade students who entered high school in the two years prior to the introduction of the THS program in the provided data set. PSA did not pursue this phase of the planned analyses due to the small number of identified students.

1. What were the demographic and prior academic performance characteristics of Cohort 1 and Cohort 2 THS participants? To what extent did participant characteristics vary by cohort and school?

2. To what extent did THS participants' progress towards graduation in terms of credit accrual and Regents' exam pass rates throughout high school?

3. What were high school dropout rates for THS participants and to what extent do they vary by school characteristics, and cohort?

4. What were the overall graduation rates for Cohort 1 and 2 as of the end of the 2013-14 school year?

Data Sources and Limitations

Linking DYCD and DOE data. The evaluation team worked closely with staff from both DYCD and the New York Department of Education (DOE) to gain access to data on student participation in the THS program, prior participation in DYCD out-of-school time programming, and student academic progress and performance. Because this was a retrospective analysis, active consent for evaluation was not feasible; therefore, to ensure data confidentiality, participation records from DYCD Online (the agency's management information system) were sent directly to the DOE to be matched with administrative records so that evaluators would not have access to identifying student information. The DYCD file included historical records of student participation in DYCD Out-of-School Time (OST) programming, including THS, the participant's name and date of birth, and student identification numbers (OSIS) as available. Staff from DOE used this identifying information to link with student-level administrative records maintained in district files.[2] The success of the matching process is dependent on the quality of data provided to DOE. It appears that data quality significantly improved between Cohort 1 (entered high school in 2009-10) and Cohort 2 (entered high school in 2010-11), resulting in greater number of matched records for Cohort 1 compared with Cohort 2. DOE returned to PSA a total of 379 matched records for Cohort 1 (out of an estimated 1,999 participants, for an approximately 20 percent match rate) and 2,045 matched records for Cohort 2 (out of an estimated 2,104 participants, for an approximately 97 percent match rate).

Upon completing the DYCD/DOE matching process, DOE provided a series of de-identified data extracts which PSA staff merged to create analytic files. The PSA team reviewed the data files and deleted any records that appeared to be incorrectly matched (e.g., listed as graduating one year and returned the following year in a lower grade). In addition to the matched records for THS participants, DOE provided data on non-participating ninth-grade students enrolled in the same schools attended by THS participants; these students served as the pool of potential comparison students. The low DYCD/DOE match rate for Cohort 1

[2] DOE currently conducts all data linking internally. The approach used by the DOE is dependent on the quality of the data provided for the match (e.g., accuracy of the OSIS unique student identifier number and of student birth date, and consistent spelling of student name with the DOE records).

participants likely limits the extent to which students included in the analyses are sufficiently representative of all Cohort 1 participants. The comparatively larger number of students included in the Cohort 2 analyses significantly increases the likelihood that students included in the analyses are representative of all participants. We report all of the key outcomes by cohort but recommend caution when drawing conclusions about Cohort 1 outcomes.

The evaluation team also supplemented the quantitative data on THS participation and high school progress and performance with information gathered during interviews with knowledgeable DYCD staff. PSA staff regularly engaged in conversations with staff from DYCD regarding decisions made about program design and implementation. Additionally, an evaluation team member formally interviewed a DYCD staff member about the evolution of the THS program over time in spring 2015. We use insights from these discussions and interviews, as well as knowledge about implementation from our previous evaluations of the THS initiative, to help explain or understand our findings in this analysis.

Identifying the comparison group. We employed a quasi-experimental research design to estimate the potential relationship between participation in the THS initiative and progress toward high school completion. Using data provided by DYCD and the DOE, we created both a treatment group of program participants and a comparison group of similar students enrolled in the same school via propensity matching. Propensity matching is a statistical technique in which potential comparison cases are selected one-by-one from a pool of eligible comparison cases in order to minimize the "distance" between program cases and the selected comparison cases. "Distance" refers to the overall difference in group means on the matching variables. Matching characteristics used for this analysis included school, grade, gender, and eighth-grade New York State ELA and mathematics assessment scale scores. The procedure is an automated iterative process with possible replacement of potential matches if a different set of matches is identified in later iterations that will produce an overall reduced "distance" between the two groups. The propensity score method reduces all observed student prior academic and demographic characteristics into one indicator—the propensity score of being a THS participant—for all students enrolled in participating schools.

Program participants were matched with non-participants who had similar propensity scores. Matching characteristics included school, grade, gender, ethnicity, free lunch status, and eighth-grade assessment scale scores. On average, we identified two comparison students for each THS student and weighted records appropriately if the same student was identified as a comparison for more than one THS participant, resulting in a total population of 901 students (379 participants, 522 comparison) included in Cohort 1 and 4,052 students (2,045 participants, 2,077 comparison) in Cohort 2.

Although we matched students on measurable characteristics such as prior academic performance, it is likely that additional characteristics such as student motivation may have led staff to recruit students for THS participation. These characteristics have the potential of exerting a significant influence on high school progress, performance, and completion. Additionally, discussions with program staff revealed challenges in accurately capturing the level of student involvement in THS activities, especially during the early years of the initiative. For this reason, we have not included a measure of the level of participation in THS activities in any

data analyses. It is possible that more participants with more exposure to THS activities experience better outcomes. Available data do not, however, allow us to explore this potential relationship. Despite these barriers, these data do provide a window into the potential impact on THS participation on high school progress and performance.

Data analysis. The following analyses employ both descriptive and inferential techniques that estimate the extent to which differences in outcomes vary by student demographic and prior academic performance characteristics. Due to the types of outcome data included in these analyses, we employed two methods of regression: linear and logistic. Regression allowed us to explore whether THS participation had a unique impact on estimates of student outcomes, while controlling for other variables. Linear regression is valid for continuous outcome variables and generates regression coefficients which can be interpreted as the amount of change in the outcome variable estimated to result from an increase in the predictor variable. We used this method for the analyses of credit and Regents data. For example, throughout these analyses the THS participant variable can be interpreted as the change in the number of credits completed or Regents examinations passed for participants compared with nonparticipants.

We used logistic regression for the high school status categorical variables (whether the student graduated, dropped out, and continued enrollment). Logistic regression provides odds ratios which indicate that relative likelihood that a participant will achieve a certain status (e.g., graduated) compared with the comparison population. An odds ratio of less than one indicates that a change in the predictor variable results in a lower likelihood of achieving a status, and a ratio greater than one indicates that a change in the predictor variable increases the likelihood of achieving a status. That is, an odds ratio of .55 for the THS variable indicates that THS participants are 45 percent less likely to achieve the outcome, and a ratio of 1.5 indicates that THS participants are 50 percent more likely to achieve the outcome.

We included the following student-level variables when estimating each of the key outcome variables:

- THS participation status
- Gender
- Eighth-grade scale score on the New York State ELA test

We included these variables in all regression analyses as control variables to allow for an examination of the relative impact of a variable while controlling for the others. For example, any regression analyses which identified the extent to which THS participation status was related to student outcomes controlled for gender and eighth-grade ELA score.

Prior Findings on Program Implementation

The evaluation team did not gather additional data on program implementation for this round of data analyses and reporting. However, each of the prior two evaluation reports included extensive examination of school and partner organization to support students via the THS model. Additionally, we conducted a telephone interview with a DYCD staff person familiar with program implementation and changes to the THS model that DYCD has implemented over time. As noted above, the THS model was composed of several components: cohort-based peer support, counselor-advocates to provide support and individualized services, implementation of supportive activities and services, and an emphasis on family involvement. Approximately 1,999 participants in 33 programs were Cohort 1 of the THS program (entered ninth grade in 2009-10) and approximately 2,104 participants in 35 programs were in Cohort 2 (entered ninth grade in 2010-11).

Key findings on program implementation from the earlier evaluations include:

- There was significant variation in the types, nature, and frequency of THS activities provided to participating students. Information gathered from program staff indicated some level of confusion about DYCD expectations for program design and delivery which potentially limited program impact, especially during the program's first year. Data indicated that program staff focused primarily on the delivery of service hours rather than delivering the level and quality of services individual students may have needed to be successful.

- Programs often hired counselor-advocates (see page 1 for description) who could play many roles in program implementation and who were frequently not licensed social workers or counselors. However, the level of case management and support required by some students indicated a need for programs to hire staff who are trained to identify student needs and tailor services and supports appropriately.

- Success of the THS program is likely very dependent on the extent to which program staff are able to coordinate service design and delivery with school staff. Early implementation data indicate that program staff struggled to coordinate THS activities with other services and supports provided by school counselors or staff from other partner organizations.

Each of these findings was expected in the early years of the implementation of a new initiative, as program staff and DYCD worked to identify strengths and weakness of the THS model and make corrections to the model design and implementation as needed.

DYCD noted that significant changes were not made to the THS model until the third year of program operation as DYCD increased its focus on program quality. Starting with the third cohort of students—who are not included in this analysis—DYCD worked with program staff to maximize program impact by requiring regular one-on-one meetings between THS participants and counselor-advocates and providing guidance on what these sessions should include. DYCD also consolidated program operations under one program manager and provided

more consistent messages about program expectations than had been the case in the early years of program operation. Each of these changes has the potential of increasing program impact. However, the analyses in this report focus solely on the first two cohorts of students who participated in THS prior to the introduction of these changes and therefore do not assess the extent to which these programmatic changes affected student outcomes

Demographic and Prior Academic Performance of Participants

DYCD designed its Transition to High School model to serve New York City public school students who were at greater risk of not completing high school compared with students whose prior academic performance indicated a better level of preparation for the rigors of high school. Consequently, DYCD targeted high schools with low student promotion rates for inclusion in the initiative. Available data on student demographics and prior academic performance indicate that the initiative succeeded in targeting at-risk students in these high schools.

Exhibit 1 displays demographic characteristics of the THS students and comparison students included in analysis and reveals a high level of similarity in population characteristics across both cohorts. Approximately 48 percent of THS students in each cohort were male, and similar proportions of students were Hispanic. Approximately 35-40 percent of participants and comparison group members were African American.[3] Nearly all participants and comparison group members were eligible for free or reduced-price lunch. As eighth-grade students, most THS participants and comparison students scored level 2 (below proficient) or level 3 (proficient) on state ELA and mathematics assessments (Exhibit 2).

As noted above, PSA matched students based on ELA and mathematics assessment scale scores rather than proficiency levels. Matching by scale score provides a more accurate picture of student performance than proficiency levels, which can include a broad range of performance especially along the cut scores. A single scale score point can determine whether a student performs at level 2 or level 3. Although this single point is sufficient to push a student into a higher or lower proficiency grouping, the actual academic performance of students performing around the cut score is likely more similar than proficiency levels indicate (see Appendix A for scale score ranges for each proficiency level). Analyses of the distribution of scale scores indicate the mean scores for participant and comparisons differed by between 4 and 10 scale score points, a fraction of the overall assessment and the range within proficiency levels. The clustering effect is most visible for Cohort 2, where the ELA cut score between level 2 and level 3 is 657 scale score points. Both participants (mean score of 650) and comparison students (mean score of 654) cluster very closely to this score contributing to the seemingly large differences in proficiency rates.

[3] Although the proportion of Asian-Pacific Islander students varies across participants and comparison students, it is unlikely that these differences will have a significant impact on overall outcomes, especially given the overall similarities in eighth-grade performance and that most students are African-American and Hispanic.

Approximately 7 percent of Cohort 1 participants and 8 percent of Cohort 2 participants had participated in DYCD OST programming prior to high school, and approximately 4 percent of comparison group students in both cohorts had prior DYCD OST experience.

Exhibit 1
Demographic characteristics of participants, by cohort

	Percent of Students											
Cohort	**Male**		**Hispanic/Latino**		**African-American**		**Asian or Pacific Islander**		**English language learner**		**Eligible for free or reduced-priced lunch**	
	P	**C**	**P**	**C**	**P**	**C**	**P**	**C**	**P**	**C**	**P**	**C**
1 (n=901)	48	44	48	44	40	38	6	11	40	37	100	100
2 (n=4,052)	48	49	45	42	38	35	11	16	41	36	100	100

Exhibit reads: Forty-eight percent of Cohort 1 participants and 44 percent of Cohort 1 comparison students included in analysis were male.

Exhibit 2
Performance on eighth-grade state assessments, by cohort

Proficiency Level and Scale Scores	**Percent of Students**							
	Cohort 1 (n=901)				**Cohort 2** (n=4,052)			
	Mathematics		**English Language Arts**		**Mathematics**		**English Language Arts**	
	P	**C**	**P**	**C**	**P**	**C**	**P**	**C**
1 Well below proficient	2	1	1	1	12	7	16	8
2 Below proficient	17	15	31	21	46	44	58	46
3 Proficient	72	72	68	77	33	34	25	42
4 Excelling	9	12	1	2	9	16	2	4
Mean Scale Score	**667**	**673**	**657**	**664**	**665**	**675**	**650**	**654**

Exhibit reads: Two percent of Cohort 1 participants and 1 percent of Cohort 1 comparison students performed at level 1 on the eighth-grade state mathematics assessment.

Credit Accrual

There are two key measure of progress toward graduation in New York: credit accrual and completion of Regents examinations. Cohort 1 and 2 students were required to complete a total of 44 credits throughout high school in seven content areas and electives to obtain a Regents or Advanced Regents high school diploma. Students on average must earn approximately 11 credits each year across the required subject areas to graduate within four years. Exhibit 3 displays the mean number of credits accrued by THS and comparison group students each school year, and Exhibit 4 displays outcomes of regression analyses which incorporated THS participation status, gender, and eighth-grade ELA scale scores in analyses.

Despite concerns about the data match for Cohort 1 discussed above, data analyses reveal similar patterns in credit accrual across both student cohorts. Students for both cohorts earned fewer credits than comparison cohorts in the first year of high school, and failed to earn the 10 to 11 credits needed to be on-track for graduation. Cohort 1 participants did not earn more credits than comparison students in any school year included in these analyses. Cohort 2 THS participants, however, did on average earn more credits than comparison students in the remaining three school years. For example, in 2011-12 as tenth-grade students, Cohort 2 THS participants earned nearly two more credits than comparison students and approximately one more credit in the eleventh and twelfth grade.

Subgroup analyses which focused solely on male students and low-performing students (performed at levels 1 and 2 on the eighth-grade assessment ELA assessment) revealed no significant differences in the performance of THS participants and their matched comparisons in credit accrual.

Exhibit 3
Mean credit accrual by cohort and school year

Cohort	School Year									
	2009-10		2010-11		2011-12		2012-13		2013-14	
	P	C	P	C	P	C	P	C	P	C
1 (n=901)	5.8	13.2	12.5	13.1	11.7	12.6	11.2	11.2		
2 (n=4,052)	--	--	8.7	10.9	12.6	10.4	11.8	10.4	11.3	10.0

Exhibit reads: In 2009-10, as ninth grade students, THS participants earned an average of 5.8 credits and comparison students earned an average of 13.1 credits.

Regression analyses further help to highlight some of the factors related to credit accrual (Exhibits 4 and 5). For both cohorts of THS participants, eighth-grade ELA scores were consistently related to credit accrual. Students who had exhibited better performance on the assessment earned more credits compared with students who scored lower on the assessment. On average, an additional 25 scale score points in eight grade is estimated to result in the completion of approximately one additional credit for most years included in these analyses. For Cohort 2, THS participation was positively related to credit accrual, controlling for gender and

ELA scores, in the 2011-12 through 2013-14 school years. For example, in 2010-11 THS participation was estimated to result in earning approximately three fewer credits for Cohort 2 students but was estimated to result in earning approximately one more credit in each of the following three school years.

Although gender was not consistently significantly related to credit accrual, data suggest that males earned fewer credits, on average, than female students. For Cohort 1 students, controlling for THS participation status and eighth-grade ELA score, being male was estimated to result in earning between .4 and 1 fewer credits across all five school years included in the evaluation. For Cohort 2 students, being male was estimated to result in .1 to .5 fewer credits.

Exhibit 4
Cohort 1 regression analyses credit accrual coefficients (S.E.)

Participant characteristics	School year				
	2009-10 (n=845)	2010-11 (n=874)	2011-12 (n=862)	2012-13 (n=850)	2013-14 (n=424)
THS participation status	-7.162* (.257)	-.174 (.280)	-.207 (.301)	.278 (.265)	3.681* (.564)
Gender	-.368 (.243)	-.600** (.280)	-.791 (.293)	-.377 (.259)	-1.021*** (.433)
8th grade ELA scale score	.010* (.007)	.043** (.007)	.046 (.008)	.030** (.007)	.019 (.013)

Exhibit reads: In 2009-10, THS participation was related to earning approximately seven fewer credits controlling for gender and eighth-grade ELA scores among Cohort 1 students.

*=significant at .000 level; **=significant at .05 level; ***=significant at .01 level

Exhibit 5
Cohort 2 regression analyses credit accrual coefficients (S.E.)

Participant characteristics	Regression Coefficient (Standard Error)				
	2009-10	2010-11 (n=3,371)	2011-12 (n=3,460)	2012-13 (n=3,426)	2013-14 (n=3,392)
THS participation status		-3.147* (.163)	1.44* (.152)	1.18* (.152)	1.25* (.153)
Gender		-.161 (.163)	-.095 (.149)	-.259*** (.152)	-.459** (.153)
8th grade ELA scale score		.005 (.004)	.034* (.003)	.037 (.003)	.032* (.003)

Exhibit reads: In 2009-11, THS participation was related to earning approximately three fewer credits controlling for gender and eighth-grade ELA scores among Cohort 2 students.

*=significant at .000 level; **=significant at .05 level; ***=significant at .10 level

Performance on Regents Examinations

In addition to completing 44 credits in required subject areas, New York high school graduates entering high school in fall 2010 or 2011 were also required to pass at least five Regents examinations in mathematics, global history and geography, U.S. history or government, and science with a score of 65 or higher. Students seeking an advanced Regents diploma were required to pass additional examinations in the areas of mathematics, science, and foreign language for a total of seven or eight successful examinations. Exhibit 6 displays the mean number of Regents examinations across all subject areas completed by THS participants and comparison students.

Exhibit 6
Average number of Regents examinations passed, by cohort and participation status as of 2013-14

Cohort	Average Number of Passed Regents Examinations	
	Participant	Comparison
1 (n=892)	5.1	5.7
2 (n=4,026)	5.1	4.2

Exhibit reads: Cohort 1 participants completed an average of 5.1 Regents examinations compared with 5.7 for comparison students.

Data analyses reveal that Cohort 1 students included in the analyses on average passed slightly fewer examinations than comparison group members by the end of the 2013-14 school year. This finding holds both in comparison of mean scores and in regression analyses (Exhibit 7), which control for gender and achievement on the eighth grade ELA assessment. THS participation was estimated to result in passing approximately .3 fewer Regents examinations, and each scale score point was estimated to result in the completion of approximately .05 Regents examinations (e.g., each 20 additional scale score points is estimated to result in the completion of one additional Regents examination).

This relationship between THS participation on Regents completion reverses for Cohort 2 participants with THS participants completing slightly more examinations than their matched comparisons in both the basic comparison of means and in regression analyses (Exhibit 8). THS participation is estimated to result in the passing of approximately .3 more Regents examinations controlling for gender and eighth-grade ELA. As with credit accrual, performance on the eighth-grade assessment continued to be a significant predictor of the number of completed Regents examinations; 20 additional scale score points is estimated to result in approximately 1 more completed Regents examination.

As with credit accrual, subgroup analyses which focused solely on male students and low-performing students revealed no significant differences in the performance of THS participants and their matched comparisons in number of Regents passed.

Exhibit 7
Cohort 1 regression analyses
number of Regents examinations passed as of 2013-14
(n=863)

Participant Characteristic	Regression Coefficient (Standard Error)
THS participation status	-.358** (.166)
Gender	.146 (.162)
8th grade ELA scale score	.047* (.004)

Exhibit reads: THS participation status is estimated to result in the completion of approximately .4 fewer Regents examinations for Cohort 1 students.

*=significant at .000 level; **=significant at .05 level; ***=significant at .01 level

Exhibit 8
Cohort 2 regression analyses
number of Regents examinations completed as of 2013-14
(n=3,452)

Participant Characteristic	Regression Coefficient (Standard Error)
THS participation status	.291** (.097)
Gender	-.026 (.097)
8th grade ELA scale score	.050* (.002)

Exhibit reads: THS participation status is estimated to result in the completion of approximately .3 more Regents examinations for Cohort 2 students.

*=significant at .000 level; **=significant at .05 level; ***=significant at .01 level

High School Completion

The evaluation team explored student high school completion status as of the end of the 2013-14 school year and grouped students into three categories: **graduated, dropped out, and continued enrollment**.[4] Outside of graduation, high school completion status can be fluid in nature and relies heavily on coding and classification of students by staff at each school.

[4] Due to missing data, evaluation team members recoded available data on student outcomes and completion status to classify students as of the end of the 2013-14 school year. Students who were recorded as accumulating 44 or more credits and passing 5 or more Regents examinations were classified as graduates. Students with a final completion status of: *over 21 discharge*, *voluntary withdrawal or discharge after 20 consecutive days absent*, or for whom the last status recorded was *discharge* were recorded as dropouts. Transfer students, students transferring to or completing HSE programs, students enlisting in the military, and other statuses comprise a small proportion of all students and were excluded from these analyses.

Students who are recorded as dropping out as of the end of one school year may return to school the following school year and resume studies. Similarly, students who remain as active students on a school's roster may later become high school graduates or dropouts in subsequent school years. Additionally, students recorded as dropouts may actually have transferred to other schools or districts and may actually have completed high school in another location. The following analyses thus serve as a snapshot of student status as recorded in district records as of the end of the 2013-14 school year and may not accurately reflect the final high school completion status of THS participants and comparison group members.

Exhibit 9
Graduation and dropout status of participants and nonparticipants as 2013-14

	Percent of Students					
Cohort	Graduated		Dropped out		Still enrolled	
	T	C	T	C	T	C
1 (n=882)	70	86*	15	6*	12	4*
2 (n=3,492)	60	57**	30	17*	8	21*

Exhibit reads: Seventy percent of Cohort 1 THS participants were high school graduates as of the end of the 2013-14 school year compared with 86 percent of comparison students.

*=significant at .000 level; ***=significant at .01 level

Regression analyses for these outcomes are based on binary logistic regression, which estimates the likelihood that a study participant will fall into one of two groups (e.g., graduated or not graduated). We include the odds ratio for each outcome and variable included in the analyses. Odds ratios which are greater than 1 indicate an increased likelihood of achieving an outcome, and odds ratios which are less than 1 indicate a decreased likelihood of achieving an outcome. To interpret odds ratios of less than 1, we subtract the odds ratio from 1 to indicate relative likelihood of achieving an outcome.

Exhibit 10
Cohort 1 regression analyses of high school completion odds ratio (S.E.) (n=883)

	Graduated	Dropped Out	Still Enrolled
THS participation status	.456* (.179)	2.411* (.251)	2.758* (.280)
Gender	.764 (.178)	.946 (.245)	1.382 (.267)
8th grade ELA scale score	1.04* (.006)	.955 (.007)	.972 (.007)

Exhibit reads: Cohort 1 THS participants were approximately 55 percent (1.00 -.456) less likely to graduate from high school controlling for gender and ELA score as comparison students. They were approximately twice as likely to have dropped out (2.411*1) and almost three times as likely to still be enrolled in high school (2.758*1).

*=significant at .000 level

Exhibit 11
Cohort 2 regression analyses of high school completion coefficients (S.E.)
(n=3,492)

	Graduated	Dropped Out	Still Enrolled
THS participation status	.902 (.073)	3.054* (.109)	.308 (.109)
Gender	.931 (.073)	.979 (.087)	1.208 (.104)
8th grade ELA scale score	1.030 (.002)	.988* (.002)	.971* (.003)

Exhibit reads: THS participants were 90 percent as likely (about equally likely) to graduate from high school as comparison students. They were approximately three times as likely to have dropped out (3.054*1) and were 70 percent less likely (1-.308) to be still enrolled in high school.

*=significant at .000 level

Graduation

Analyses of these three measures indicate that Cohort 1 students were less likely to have graduated from high school by 2013-14 (e.g., within five years) than were comparison students. As of the end of the 2013-14 school year, 70 and 86 percent of Cohort 1 participants and comparison students, respectively, had graduated from high school (Exhibit 9). Cohort 2 students were slightly more likely than their matched comparisons to have completed high school within four years; 60 percent of participants graduated compared with 57 percent comparison students (Exhibit 9). The difference in graduation rates among Cohort 1 and Cohort 2 students overall is a reflection of five versus four-year graduation rates. At-risk students may need additional time to complete all graduation requirements.

Regression analyses (Exhibits 10 and 11) indicate that THS participation was negatively related to the likelihood of high school graduation (e.g., THS participants were less likely to graduate, odds ratio of .456 results in 55 percent (1-.45) as likely to graduate) for Cohort 1 students and unrelated (e.g., no significant difference in graduation rates) to high school graduation for Cohort 2 students, controlling for gender and eighth-grade ELA scores. Cohort 1 THS participants were approximately 55 percent less likely to graduate from high school by 2013-14 than were comparison students, controlling for gender and ELA score, and Cohort 2 participants were equally as likely to graduate as comparison students.

Dropout

THS participants in both cohorts were more likely to have been labeled as dropouts than comparison students. Approximately 15 percent and 6 percent of Cohort 1 participants and comparison students, respectively, were coded as dropouts. For Cohort 2 the respective proportions were 30 percent and 17 percent. Regression analyses indicate that controlling for gender and ELA scale score students across both cohorts were more than twice as likely to drop out as comparison students. Cohort 1 students were approximate twice as likely to drop out (2.411*1) as comparison students, and Cohort 2 students were approximately three times as likely to drop out (3.054*1).

Available data do not allow us to understand the different factors contributing to the differences in dropout rates for participants and comparison students. As noted earlier in this section, some of these categorizations may be reflective of differences in data entry, and students, especially those in Cohort 2, may have returned to school in 2014-15 and subsequently graduated. It is possible that the five-year graduation rate for Cohort 2 students will increase and the dropout rate will decrease to mirror Cohort 1 outcomes more closely.

Continued Enrollment

Cohort 1 students were more likely to still be enrolled in high school at the end of 2013-14 (five years of high school enrollment) than comparison students. Approximately 12 percent of students were still enrolled in school, compared with 4 percent of comparison students. These students, if under 21, still have the possibility of earning a high school diploma. Reflecting the higher proportion of dropouts among Cohort 2 participants, Cohort 2 THS students were less likely to remain actively enrolled in school as of the end of 2013-14 (8 percent vs. 21 percent). Regression analyses also indicate that Cohort 1 THS participants were more likely to be actively enrolled (more than twice as likely, 2.758*1), and Cohort 2 students were approximately 30 percent as likely (70 percent less likely 1-.3) to be actively enrolled as comparison students.

Conclusion and Recommendations

Improving high school graduation rates is a complicated task which—for all students, especially at-risk students—requires on-going monitoring of student performance and frequent, supportive contact from both adults and peers. The THS initiative is designed to provide these types of supports for students enrolled in partner schools. Early data on the initiative from the first two cohorts of students served indicate both the challenges and the potential successes of the initiative. Cohort 1 students did not exhibit better outcomes than their matched peers. Cohort 2 students also did not significantly outperform their matched peers. The data, however, are generally more positive than those for Cohort 1 and may indicate the potential impact of the initiative as it matures over time. Changes DYCD staff made to program organization and expectations potentially bode well for improved student outcomes in later cohorts of participants. Extending similar analyses to these later cohorts may help highlight the extent to which these changes result in improved student outcomes.

When assessing the impact of participation in an initiative such as THS, it is important to have clear policies and expectations on the type of participation data captured for each student. The analyses included in this report treated all THS participants the same with no clear way to distinguish between frequency of participation in different program supports. It is possible that students who have greater one-on-one contact with counselor-advocates evidence different outcomes than students who participate in only group activities or attend activities less frequently. Moreover, participation data may help improve program implementation if analyses reveal differing levels of participation for different types of students (e.g., males vs females; English proficiency level, etc.). However, collection of data must be balanced with excessive burdens on program staff. We would encourage DYCD staff to continue to work with program staff to collect

as much relevant information on participation in THS activities as possible as these data may be useful highlighting which program components are related to student outcomes.

References

Allensworth, E., & Easton, J. (2005). *The on-track indicator as a predictor of high school graduation*. Chicago, IL: Consortium on Chicago School Research.

Allensworth, E., & Easton, J. (2007). *What matters for staying on-track and graduating in Chicago public schools: A close look at course grades, failures, and attendance in freshman year*: Chicago, IL: Consortium on Chicago School Research.

Bloom, H., Thompson, S., & Unterman, R. (2010). *Transforming the high school experience: How New York City's new small schools are boosting student achievement and graduation rates.* New York: MDRC.

Bottoms, G., & Timberlake, A. (2007). *Giving students a chance to achieve: Getting off to a fast and successful start to grade nine*. Retrieved from sreb.org.

Davis, M., Herzog, L., & Legters, N. (2013). Organizing schools to address early warning indicators (EWIs): Common practices and challenges. *Journal of Education for Students Placed at Risk (JESPAR)*, *18*(1), 84-100.

Mac Iver, M., Balfanz, R., & Byrnes, V. (2009). *Advancing the "Colorado Graduate" agenda: Understanding the dropout problem and mobilizing to meet the graduation challenge*. Baltimore: Johns Hopkins University Center for Social Organization of Schools.

Montecel, M.R., Cortez, J.D., & Cortez, A. (2004). Dropout-prevention programs: Right intent, wrong focus, and some suggestions on where to go from here. *Education and urban Society*, *36*(2), 169-188.

Russell, C.A., Mielke, M.B., Palmiter, A., & Turner, T.T. (2011). Evaluation Findings from the First Year of the *Transition to High School* Initiative. Retrieved from http://www.nyc.gov/html/dycd/downloads/pdf/2012/Final_Year1_Transition_to_High_School_report-June2011.pdf.

Russell, C.A., Mielke, M.B., Palmiter, A., Turner, T.T., Vaden, Y. (2012). Evaluation Findings from the New York City *Transition to High School* Initiative. Retrieved from http://www.policystudies.com/_policystudies.com/files/OST_Transition_to_High_School_Evaluation_Report-_May_2012.pdf.

Wheelock, A., & Miao, J. (2005). The ninth-grade bottleneck. Retrieved from www.aasa.org.

Appendix A

Exhibit A-1
NY State eighth-grade ELA and math assessment proficiency levels and scale score ranges

Proficiency Level	Scale Score Ranges			
	Cohort 1 (2008-09 school year)		Cohort 2 (2009-10 school year)	
	ELA	Math	ELA	Math
1 Well below proficient	430-601	480-615	430-626	480-638
2 Below proficient	602-649	616-649	627-657	639-672
3 Proficient	650-714	650-700	658-698	673-701
4 Excelling	715-790	701-775	699-790	702-775

Exhibit reads: In 2008-09 the scale score range for level 1 proficiency on the state ELA assessment was 430 to 601.

Source: http://www.p12.nysed.gov/irs/ela-math/