Tackling Multiple Barriers to a College Degree: The Impact of Hope Chicago on Postsecondary Attainment*

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Abstract

Differences in postsecondary access and success shape socioeconomic gaps between different population groups. We study Hope Chicago, a two-generation college pipeline program that provides advising and financial support to high school students and their parents at five low-performing Chicago Public Schools. We estimate causal effects using a difference-in-differences design that compares outcomes of students in these schools belonging to eligible vs. ineligible cohorts with cross-cohort differences in outcomes for students who attended high schools that were shortlisted for the program. Eligibility for the program led to a 15 percentage point (40 percent) increase in college enrollment immediately following high school, with larger increases in four-year college enrollment and enrollment in moderately to more selective institutions. We find similar percentage point increases in college going for men and women, Black and Hispanic students, and students across the distribution of baseline achievement. Eligibility for the program had negligible effects on students' pre-college outcomes, including attendance, grades, or graduation. However, we find suggestive evidence of within family spillovers with younger siblings experiencing increases in their grades when their older siblings become eligible for the program.

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1 Introduction

College completion can promote economic mobility through higher income and lifetime earnings while also providing benefits to society as a whole (Barrow and Malamud, 2015; Oreopoulos and Salvanes, 2011). Yet these benefits are not shared equally due to persistent disparities in college access and success by race/ethnicity and socioeconomic status (Bailey and Dynarski, 2011). For example, 9 out of 10 American high school students from the highest-income families enroll in college compared to 50 percent of low-income students (Reber and Smith, 2023), and among college enrollees, less than 40 percent first-generation students earn a degree within 10 years (Redford and Hoyer, 2017). Prospective students may face multiple barriers to postsecondary attainment, including a lack of information about the costs and/or benefits of college, reduced aspirations and inadequate pre-college academic investment, and limited financial resources. In this paper, we study the effects of a two-generation college pipeline program operating in five Chicago Public Schools (CPS) high schools that offers students benefits and services intended to address such barriers. Launched in the 2021-22 academic year, Hope Chicago provides students with advising in high school and college, sufficient funding to cover the full cost of attendance at in-network colleges, and financial support for their parents to pursue postsecondary education and training.

We use a difference-in-differences design to identify the causal effect of Hope Chicago on eligible students' postsecondary enrollment and persistence. The five high schools that were ultimately chosen for the program were selected from a shortlist of 15 schools with similar student characteristics and pre-trends in college enrollment. Our main approach compares the outcomes of students in eligible cohorts versus ineligible cohorts in Hope schools versus the 10 schools not chosen for the program.[1] The program led to statistically significant 15 percentage point (pp) increase in immediate college enrollment, representing a 40 percent gain relative to the college-going rate of the last untreated cohort. [2] Notably, increases in college going are similar in magnitude across a variety of subgroups defined by gender, race/ethnicity, and baseline achievement.[3] Effects are slightly larger for students predicted to have enrolled in college in the absence of the program (18-19pp) but still substantial for students whose predicted counterfactual is not enrolling in college (14pp).

We next turn to examine how Hope Chicago affected postsecondary persistence. Effects on the probability of postsecondary enrollment in 2 out of the 2 years following high school graduation

[1] To address the possibility that students could endogenously respond to the program by switching high schools, we attribute students to schools and expected high school graduation cohorts based on their 9th-grade enrollment, which occurred before the start of the program for all of the students in our analysis sample.

[2] Immediate college enrollment is enrollment in any postsecondary institution within 1 year of expected high school graduation. This is one of the two pre-specified primary outcomes for the study; a detailed description of the empirical approach and secondary outcomes is available in the pre-analysis plan posted at https://osf.io/4w7nr. The second pre-specified primary outcome – college degree receipt within 6 years of expected high school graduation – is not yet observed for students who were eligible for Hope Chicago.

[3] Due to differences in baseline college enrollment rates, increases in *percentage* terms are larger for Hispanic students (49 percent increase), men (48 percent increase) and students with the lowest baseline achievement (e.g., a 66 percent increase for students in the bottom national quartile of 8th grade math test scores).

– our measure of short-run persistence – are similar to the estimated effect on immediate college enrollment, albeit slightly smaller in magnitude (13pp or 55 percent increase).[4]

We also examine whether Hope Chicago affected college quality by estimating effects on enrollment in different types of postsecondary institutions. Estimates indicate that eligibility for Hope Chicago had larger impacts on four-year college enrollment, resulting in a 16pp (62 percent, relative to baseline) increase. The program led to smaller increases in two-year college enrollment (5.5pp or 44 percent).[5] We next test for effects on college selectivity and find that the program led to the largest percentage point gains in enrollment in moderately selective four-year institutions (8pp or 70 percent) and largest percentage increase in enrollment in more selective institutions (5pp, representing a greater than 150 percent gain relative to baseline).[6] Finally, we look at effects on students' predicted probability of earning a bachelor's degree within 6 years based on graduation rates of past students at an institution and find an 11pp (70 percent) increase.[7]

There are several channels through which Hope Chicago could have produced these gains in college enrollment and quality. Students, especially those who are first-generation, may face information barriers if their families lack knowledge about financial aid available to support college enrollment, their likelihood of being admitted to a more selective school, the college application process, or which schools best match their interests (Dynarski et al., 2023a). The additional advising in high school provided by Hope Chicago could increase students' knowledge along all of these dimensions. Later cohorts of students in Hope high schools had more years of potential exposure to the program – up to three for the last cohort in our analysis sample – thus, we test for differences in treatment effects on college enrollment by cohort using event study models. If improvements in information were increasing in exposure to the program, we would expect to see larger treatment effects for later cohorts, but estimates are quite similar across cohorts.

Second, Hope Chicago may have reduced academic barriers to college enrollment. Students who think that college is unattainable (e.g., due to perceived costs or available options), may have lower postsecondary aspirations and, as a result, put less effort into their high school courses (e.g., Page and Scott-Clayton, 2016). Past research has found improvements in K-12 educational outcomes in response to place-based free college programs (e.g, Bartik and Lachowska, 2013; Carruthers and Fox, 2016; Ash et al., 2021). We test for effects of Hope Chicago on students' high school outcomes, including grades, attendance, and on-time graduation, and find no evidence

[4]We observe enrollment in 3 out of 3 years following high school graduation for 2 out of the 3 Hope Chicago eligible cohorts in our analysis sample, and estimate that eligibility for the program increased 3-year persistence by 8.2pp (48 percent). We also test whether Hope Chicago led to increases in graduation from a 2-year college for the single cohort for which we observe this outcome. Not surprisingly, given the baseline 2-year college graduation rate of 3 percent, estimated effects are small and statistically insignificant.

[5]Students can enroll in multiple institutions within an academic year, so the estimated effect of four-year and two-year institution enrollment need not sum to the estimated effect on overall in any postsecondary institution.

[6]Institutional selectivity is based the Carnegie undergraduate profile classification. Open access institutions - the third category we construct - are public or nonprofit four-year institutions in the bottom 40 percent of selectivity, for-profit institutions, and two-year institutions. See Section 3 for additional details.

[7]This outcome is set to 0 for students who enrolled in a two-year institution or did not enroll in college.

of statistically significant or economically meaningful effects along any of these dimensions. For instance, estimated 95 percent confidence intervals rule out effects larger than a 3pp (5 percent) increase in high school graduation and 0.09 (3 percent) increase in senior year GPA.

Third, financial barriers may be especially important for low-income students (Dynarski et al., 2023b). Although most students eligible for Hope Chicago likely would qualify for sizable federal and state grants – over 95 percent were eligible for free/reduced price lunch in high school – information barriers may compound the perceived unaffordability of college. Even if these students could cover college costs in the absence of Hope Chicago through a combination of grants and loans, the explicit guarantee of debt-free college may still increase perceived affordability if debt aversion reduces their willingness to finance their postsecondary education through loans (Boatman et al., 2017). The reduction in uncertainty over future expenses and simple message of free college has also been shown to affect postsecondary choices (Burland et al., 2023). Our finding of similar treatment effects on college enrollment across the first three cohorts of eligible students suggests that the financial component of Hope Chicago – which did not vary in generosity or the process for gaining benefits – may have played an important role in the program's effectiveness.

Finally, prospective students who would be the first in their family to go to college may face stigma or be concerned that such a choice would create a divide with their family and/or community (Walton and Cohen, 2007). The two-generation aspect of Hope Chicago and the benefits available for parents to pursue postsecondary education and training could serve to alleviate such concerns. Although we cannot test for such effects directly, we look at whether there are whole-family benefits from the program. Specifically, we test for within-family spillovers by estimating treatment effects of Hope eligibility on the outcomes of younger siblings. Past research finds evidence of spillovers to younger siblings' college choice and college coursework (e.g., Joensen and Nielsen, 2018; Altmejd et al., 2021), whereas we test for effects on grades and attendance prior to high school. We find some evidence suggesting within-family spillovers exist: younger siblings earn significantly higher grades when their older siblings become eligible for Hope Chicago.

Our study builds upon a large body of research examining the effectiveness of interventions intended to increase college enrollment. The 15pp increase in college enrollment we find is similar in magnitude to some of the largest effects found in this literature. For example, several papers find that intensive counseling in high school increases college enrollment by around 5pp (e.g., Hoxby and Turner, 2013; Carrell and Sacerdote, 2017; Oreopoulos and Ford, 2019), but lower-touch interventions having small to null effects (e.g., Hyman, 2020; Bird et al., 2021; Gurantz et al., 2021). Likewise, the estimated effects of place-based free college programs range from 3 to 6pp gains in college-going (e.g., Carruthers and Fox, 2016; Page et al., 2019; Bartik et al., 2021). More generally, research finds that more generous financial aid increases college enrollment, with estimates typically falling between 2 and 3pp per $1000 (Gurantz, 2026). That said, financial aid programs with complex application processes and uncertainty over eligibility have smaller or no effect on postsecondary matriculation, especially among low-income students (e.g., Bettinger et al., 2012;

Burland et al., 2023). Scaling the estimated effect on college enrollment by average financial aid provided by Hope to students in their first year of college suggests an approximately 3pp increase per $1000, suggesting that interventions that address multiple barriers simultaneously may have larger effects than those programs addressing only some of those barriers.

We also contribute to research examining the causes and consequences of college choice. Our finding that Hope Chicago led to relatively larger increases in enrollment in moderately and more selective institutions is consistent with evidence of prospective students "upgrading" to more selective institutions in response to (actual or perceived) financial aid generosity (e.g., Bettinger et al., 2019; Dynarski et al., 2021; Angrist et al., 2022). Although we are not yet able to observe college completion, past work generally finds that when policies or shocks that shift students to better resourced postsecondary institutions with higher overall graduation rates, affected students also see increases in degree completion (e.g., Zimmerman, 2014; Goodman et al., 2017; Black et al., 2023). To the extent that an institution's completion rates based on past students is predictive of completion for future students, our finding that Hope eligibility led to a 10.5pp increase in the bachelor's degree completion rate of a student's first higher education institution suggests there may be substantial increases in degree receipt over the longer-run.

The remainder of this paper proceeds as follows: Section 2 describes the setting of Chicago Public Schools and the Hope Chicago Program. We describe data sources and the analysis sample in Section 3 and research design in Section 4. Section 5 describes our findings on the effect of Hope Chicago on postsecondary attainment and Section 6 presents results pertaining to the mechanisms through which the program had these effects. In Section 7, we conclude and discuss future work.

2 Background

Similar other large, urban school districts, CPS students' college enrollment and completion rates lag behind national averages. For instance, Usher et al. (2023) estimate that only 30 percent of Chicago Public Schools 9th-graders complete a college credential within 10 years.

2.1 The Hope Chicago program

Hope Chicago is a philanthropically funded nonprofit that began providing services in five CPS high schools located on the city's South and West sides beginning in the 2021-22 academic year (hereafter, 2022). The program has three main components:

1. *High school and college advising*. Embedded at each high school, Hope Chicago "success coaches" work with CPS counselors to provide students with mentoring, information about scholarships, help organize campus visits, and hold family information sessions twice a year. Most of the services target students in their senior year but the information sessions also include juniors. Students who attend an in-network college also receive academic

and financial advising, career exploration assistance, mentoring, tutoring, workshops, and a consistent number of touchpoints from designated support staff associated with the program.[8]

2. *Debt-free college*. Students who enroll full-time in an in-network college within one year of high school graduation receive sufficient financial aid from Hope Chicago to cover the full cost of attendance (i.e., tuition and fees, books and supplies, and living expenses), eliminating the need to use student loans to finance college. Students also receive a laptop, stipends for living expenses, and can access emergency funds.[9]

3. *Two-generation model*. Hope Chicago also provides funding for parents and guardians of eligible students who do not have a bachelor's degree to pursue postsecondary education and training through a set of local and online providers.

All students attending Hope Chicago high schools have access to high school advising and other services offered in high school. Eligibility for college funding depends on whether a student has been enrolled in one of the selected high schools since at least 11th grade but otherwise is not dependent on grades, family income, or other measures of achievement or SES. Students are also required to complete the federal student aid application (FAFSA) if they are eligible. Appendix Appendix B contains additional details on the services and benefits provided by Hope Chicago.

2.2 Participating schools and student population

Table 1 describes 9th grade students in the 2021 expected high school graduation cohort who enrolled in the five schools served by Hope Chicago, the 10 schools shortlisted but not selected to be served ("Control"), and all other CPS high schools.[10] Compared to the rest of the district, students entering the 15 shortlisted high schools were more likely to be Black or Hispanic, eligible for special education services, free and reduced price lunch recipients, and scored lower on the state math and reading tests in 8th grade. Students in schools considered for Hope were also 15 to 16pp less likely to enroll in college in the year after their expected high school graduation compared

[8]Hope's network includes Illinois public four-year colleges, the two-year City Colleges of Chicago system, and some private colleges and vocational/professional schools.

[9]Hope Chicago is last dollar in that it covers the remaining cost of attendance after grant aid from other sources has been applied.

[10]Short-listed schools were chosen from a longer list of 47 high schools. Hope Chicago first identified "underserved" neighborhoods where their supports and services would have the greatest potential to increase postsecondary success. These communities have high shares of Black and/or Hispanic and low-income populations. Contiguous communities were grouped into 8 neighborhood clusters in Chicago's South and West sides. Schools in these communities that enrolled a "critical mass" of students who resided in the neighborhood cluster made it to the next stage of consideration. From this longer list, a short list of 15 schools were chosen based on factors representing a "need for improved postsecondary attainment and capacity to improve," specifically low postsecondary enrollment, relatively more enrollment in 2-year vs. 4-year colleges among college-goers, low college persistence and completion rates, and high 5Essentials ratings (proxy for capacity to improve). The short list included at least one school from each of the 8 neighborhood clusters.

to students in other CPS high schools (37-38 vs. 54 percent, respectively).[11]

3 Data and Analysis Sample

Our analysis relies on three main data sources: Hope Chicago administrative data, CPS administrative data, and National Student Clearinghouse (NSC) data. Data from the Hope Chicago program include measures of student engagement with the program from high school to college (including interactions with staff and other Hope students through an app); detailed demographic, academic, and financial information collected by the program to determine eligibility and administer benefits; internal data collected through various forms and surveys that track student progress; and information on parents' use of Hope Chicago benefits. We use these data to describe how eligible students interact with the Hope Chicago program, the use of parental education benefits, and quantify the amount of financial aid provided to eligible students. Only students in eligible cohorts who attended Hope schools will be represented in these data.

The CPS administrative data include student-level records for all students in the district. We observe demographic characteristics, academic performance (e.g., grades, performance on state assessments), transcripts, attendance, and high school graduation. We supplement these data with school-by-year level aggregated measures of postsecondary aspirations and expectations from an annual survey of students and teachers.[12] CPS has matched student records to the NSC, which captures postsecondary enrollment and degree receipt for essentially every student enrolled in an accredited higher education institution in the United States. We have received data covering enrollment through the end of the April 2026, which means we will observe college enrollment through close to the end of the spring term in the 2 years following expected high school graduation for all cohorts and degree completion within 3 (2) years of high school graduation for 1 (2) cohort(s).

3.1 Analysis sample

We focus our main analyses on students who first enrolled as freshmen in one of the 15 CPS high schools on the shortlist for Hope Chicago who belonged to the four cohorts expected to graduate high school before the program started (2018-2021) or the three expected high school graduation cohorts potentially exposed to treatment (2022-2024). Selection into the analysis sample and assignment to high schools and expected high school graduation cohorts is based on the year and school in which a student a student first attended as a freshman.[13]

[11] CPS and Hope Chicago generally report college enrollment rates for students who graduated high school, thus the rates we report – which are based on 9th grade enrollment – will be lower if high school drop-out rates exceed 0. Schools shortlisted for Hope lagged behind the rest of CPS using this alternative measure of college enrollment as well: 51 percent of high school graduates matriculated versus 57 percent of CPS high school graduates overall.

[12] We have requested but not yet received access to student- and item-leve data.

[13] Eligibility for Hope Chicago is limited to students who attended a Hope high school since at least 11th grade. Thus, students in the first two cohorts of the program (2022 and 2023) could not have gained access to Hope Chicago services by selecting into one of these high schools. Students in the third cohort could have strategically switched to a Hope Chicago high school in 2022 or 2023 as a freshman or sophomore. However, by basing treatment assignment on 9th-

Appendix Table A.1 shows the sample breakdown by cohort and school attended. The total sample size is 22,061 students, with a little over one third attending a Hope school. Freshman enrollment in both Hope and control schools declined in the years leading up to the start of the program. Table 2 compares demographics and baseline achievement for students who enrolled in Hope versus control schools in treated versus untreated cohorts. In the next section, we present estimates from formal tests for differential changes in student characteristics following the creation of the Hope program.

3.2 Outcomes

We pre-specify two primary outcomes. The first is immediate postsecondary enrollment, defined as enrollment in any college within one year of expected high school graduation. Figure 1 shows that the five schools selected by Hope Chicago had similar levels and trends in immediate postsecondary enrollment rates compared to the 10 control schools that were shortlisted but ultimately not selected. Consistent with a positive impact of Hope Chicago, the immediate college enrollment rate for the two groups of schools started diverging with the 2022 cohort.[14]

The second primary outcome is college graduation within six years of expected high school graduation. Because the first cohort of students served by Hope Chicago graduated from high school in 2022, this outcome will only be realized for at least one cohort in 2028. We observe college completion within 3 (2) years of high school graduation for a single (two) cohorts, which could capture completion for full-time two-year college entrants. Future iterations of this work may include college graduation outcomes measured at four or five years from expected high school graduation. We look at early measures of college persistence including the probability of enrolling 2 out of 2 years following expected high school graduation and the probability of enrolling 3 out of 3 years (2022 and 2023 cohorts only).

We also examine several categories of secondary outcomes. First, we test for effects on different measures of college quality, including level (four- vs. two-year), selectivity (open access vs. moderately selective vs. more selective), and the graduation rate of past students.[15] We use the Carnegie undergraduate profile classification to measure selectivity. More selective institutions are public and nonprofit four-year schools in the 80th percentile of selectivity or higher. Moderately selective institutions are public and nonprofit four-years in the 40th to 80th percentiles of selectivity. Open access institutions are for-profit institutions, two-year institutions, and four-year

grade enrollment, which occurred before the start of the program for all three treated cohorts, our approach overcomes concerns of endogenous school switching and subsequent contamination of the treatment group in response to the program.

[14] Because not all students graduate from high school, and not all graduating students do so in the expected year based on their 9th-grade enrollment, this definition produces lower rates than calculating postsecondary enrollment among 12th-graders.

[15] Institutional level comes from NSC data. Measures of selectivity and student outcomes come from the U.S. Department of Education's College Scorecard.

public/nonprofit institutions in the bottom 40 percent of selectivity.[16] Our graduation rate measure is equal to the 6-year bachelor's degree completion rate (set to 0 for students who enrolled in two-year institutions or did not enroll in college).[17] This can be thought of as a predicted probability that a student in the analysis sample will earn a bachelor's degree in 6-years. Appendix Table A.3 shows average postsecondary outcomes by treatment (Hope versus control high school) and cohort (pre-Hope versus post-Hope).

The next category of secondary outcomes are measures of high school achievement and effort. These include the probability of remaining at the same school as freshmen year in a student's senior year, high school graduation (on-time, within 5 years, ever), grades, SAT test taking and performance, and attendance.[18] All high school outcomes are measured in the year a student is expected to be a high school senior except those related to the SAT test, which is taken in 11th grade. Average high school outcomes by treatment status and cohort are shown in Appendix Table A.4.

4 Empirical Approach

We use a difference-in-differences research design that compares changes in outcomes for students in cohorts who were eligible for Hope Chicago relative to students in earlier cohorts at the five Hope-eligible schools, with the same change in outcomes for corresponding cohorts at control schools. Our primary control group consists of 10 schools considered for Hope Chicago but ultimately not chosen.

Our main estimating equation will take the following form:

$$Y_{isc} = \beta \left(Post_c \times Treat_s \right) + \mathbf{X_i}\boldsymbol{\gamma} + \delta_s + \delta_c + \varepsilon_{isc} \tag{1}$$

Where Y_{isc} is the outcome for student i, who entered high school s as a freshman, with expected high school cohort c, $Post_c$ indicates whether the student's cohort followed the start of Hope Chicago (2022-2024), $Treat_s$ indicates whether school s was one of the five chosen for the Hope program, $\mathbf{X_i}$ a vector of student baseline characteristics, δ_s and δ_c are high school and cohort fixed effects, respectively, and ε is an error term. Under the key identifying assumption that outcomes for students in treatment and control schools would have followed parallel trends in the counterfactual condition (no Hope Chicago), estimates of β represent the causal effect of treatment. This identifying assumption has testable implications, namely that outcomes should follow parallel trends for pre-Hope Chicago cohorts and that predetermined student characteristics should not change differentially for treated versus untreated cohorts in Hope versus control schools.

[16] Appendix Table A.2 lists postsecondary institutions that are in-network for Hope Chicago and their Carnegie undergraduate profile classification.

[17] The 6-year graduation rate is measured for students who first enrolled in 2013-14, which is the most up-to-date information available in the College Scorecard.

[18] Very few students ($< 5\%$) in the 2021 and 2022 expected high school graduation cohorts took the SAT due to the COVID-19 pandemic.

We estimate cluster-robust standard errors at the high school by cohort level and also report p-values from the wild cluster bootstrap-t, where clusters are defined at the high school level (Cameron et al., 2008).[19] The vector $\mathbf{X_i}$ includes indicators for students' race/ethnicity, gender, whether the language spoken at home is English, a continuous measure of baseline achievement (8th grade math and reading test score percentile rank based on the national distribution), and indicators for whether each of these measures has missing values. For missing values in any of the baseline student characteristic control variables, we code the measure as 0 and include a missingness indicator.

We also estimate event study models in which $Post_c$ is replaced with a set of cohort indicators, with 2021 (the last untreated cohort) serving as the omitted category:

$$Y_{isc} = \sum_{c \neq 2021} \alpha^c \left(\mathbf{1}[Cohort = c] \times \text{Treat}_s\right) + \mathbf{X_i}\boldsymbol{\eta} + \mu_s + \mu_c + \epsilon_{isc} \tag{2}$$

Estimates from event study models allow for a test of parallel trends in outcomes for pre-period cohorts, i.e., a test of the hypothesis $\alpha_{2018} = \alpha_{2019} = \alpha_{2020} = 0$. Estimates from event study models also can shed light on whether the effect of Hope Chicago varied across the three treated cohorts through, i.e., a test of the hypothesis $\alpha_{2022} = \alpha_{2023} = \alpha_{2024}$.

Because we assign students to high schools and graduation cohorts based on their freshman enrollment – which ensures that our measure of treatment is based on choices made by students and their families prior to the start of Hope Chicago – our estimates can be interpreted as intent-to-treat (ITT) effects. Some students classified as Hope Chicago eligible based on their freshman enrollment may eventually drop out or transfer to untreated high schools after 9th grade, and, similarly, students assigned to the control group based on their freshman enrollment could later transfer to a Hope Chicago high school. However, this approach addresses concerns that the choice of high school or year of high school graduation may be influenced by treatment.

4.1 Placebo estimates

We test for differential changes in student demographics and baseline test scores in Hope schools compared to control schools following the start of the program by estimating a version of equation (1) that excludes the vector of control variables with each baseline characteristic as the dependent variable. Estimates are shown as Table 3. We find some evidence of differential changes in the racial/ethnic composition of entering 9th graders: Hope students are 2.4pp less likely to be Black following the start of the program compared to earlier cohorts, although this estimate is not statistically significant at conventional levels when inference is conducted using the wild bootstrap

[19] Our analysis sample only includes 15 schools. When the number of clusters is small, inference based on conventional cluster-robust standard errors can over-reject the null (Bertrand et al., 2004).

procedure ($p = 0.166$).[20] We do not find evidence of differential changes in gender, English as the language spoken at home, or baseline test scores. In future work, we will test for the joint significance of these estimates to account for multiple hypothesis testing.

5 Effects on Postsecondary Enrollment

In this section, we first provide estimates of the effect of Hope Chicago on immediate college enrollment and short-run postsecondary persistence. We then examine effects on the characteristics of colleges in which students enroll, including level, selectivity, and success of previous students. Finally, we provide evidence on the extent to which Hope Chicago has heterogeneous effects for different student groups, defined by gender, race/ethnicity, and baseline achievement.

5.1 Hope Chicago significantly increased college enrollment

We first present estimates from event study models. Figure 2 displays point estimates and 95 percent confidence intervals from equation (2). Consistent with the descriptive results shown in Figure 1, we find no evidence of statistically significant pre-trends in this pre-specified primary outcome. Estimates for pre-Hope Chicago cohorts are statistically insignificant and we can reject a test of the joint significance of treatment effects for these cohorts ($p = 0.713$). In contrast, estimated effects on Hope Chicago-eligible cohorts are large, positive, and statistically significant, suggesting that the program increased postsecondary enrollment within one year of expected high school graduation by around 15 percentage points, with similar increases across all three treated cohorts.

Estimates from difference-in-differences models, shown in the first two columns of Table 4, suggest that Hope Chicago increased immediate postsecondary enrollment by 15pp. Relative to the college-going rate of students who attended Hope-eligible high schools in the year prior to the start of the program (0.378), this represents a 40 percent increase. Estimated effects are robust to the exclusion of baseline controls (column (1)), albeit slightly more precise when controls are included (column (2)).

The remaining columns of Table 4 display estimated effects of Hope Chicago on immediate enrollment disaggregated by postsecondary institution level.[21] Estimates indicate that eligibility for Hope Chicago had larger impacts on four-year college enrollment, increasing eligible students' enrollment by 16pp (62 percent relative to the 2021 average) compared to an approximately 5.5pp (44 percent) increase in two-year college enrollment. Similar to the patterns shown in Figure 2, estimates from event study models show increases in four-year college enrollment that are similar in magnitude across all three treated cohorts (Figure 3).[22]

[20] We also find a significant increase in the share of students who are White but this is to be expected given that essentially no students in the analysis sample belong to racial groups outside of Black, Hispanic, or White.

[21] Note that students can enroll in multiple institutions within an academic year, so these point estimates need not sum to the estimates shown for overall enrollment.

[22] We continue to find estimates that are similar in models with and without baseline controls. For the remainder of

We next look at effects on postsecondary persistence. Due to data availability and the limited amount of time that has past since the start of Hope Chicago, we only can observe college enrollment in the two years following expected high school graduation for the full sample and 3-year persistence for the 2022 and 2023 cohorts. Our main measure of short-run persistence is the probability of enrolling in 2 out of the 2 years following expected high school graduation. As shown in Panel A of Table 5, Hope Chicago led to an 13pp increase in the likelihood of enrolling in any postsecondary institution in both years. Although smaller in magnitude than effects on immediate postsecondary enrollment (15pp), this represents a 55 percent increase in postsecondary persistence relative to baseline persistence rate. Under the assumption that all of the increase in postsecondary persistence accrued to students who were induced to enroll in college due to Hope Chicago, the implied persistence rate conditional on initial enrollment (84 percent) substantially exceeds the baseline conditional persistence rate (60 percent).[23]

Estimated effects on enrolling three out of the three years since high school graduation are shown in Panel B of Table 5. For students in the first two Hope-eligible cohorts, estimates suggest that the program increased the probability of 3 years of consecutive enrollment by 8.2pp (48 percent relative to the baseline mean). We do not find evidence that Hope Chicago led to increases in 3 years of consecutive enrollment in a two-year institution but did increase the probability of 3 years of enrollment in a four-year institution by 6pp (57 percent).[24]

5.2 Effects on college quality

Results thus far suggest that Hope Chicago had larger impacts on four-year college enrollment than on two-year enrollment. Four-year institutions, while more selective and better resourced than two-year institutions on average vary substantially in inputs and student outcomes. We focus on two broad proxy measures of college quality that have been shown to correlate with positive student outcomes: institutional selectivity and bachelor's degree graduation rates of past students.

The first three columns of Table 6 show estimated effects on three mutually exclusive measures of selectivity: the probability of enrolling in an open access institution, enrolling in a moderately selective four-year institution, and enrolling in a more selective four-year institution. In the last

the paper, we focus on estimates from models that include baseline controls, but results from models that exclude these controls remain quite similar and less precise (available upon request).

[23]We also estimate effects on the probability of enrolling in a four-year institution and in a two-year institution for both years following high school graduation. These measures will not capture students who transferred between 2- and four-year institutions between their first and second years of college enrollment. Again, estimates are smaller in magnitude than those shown in Table 4 but similar or larger in percentage terms compared to baseline persistence rates.

[24]Given that Hope Chicago required full-time college enrollment for continued receipt of financial aid, students who initially enrolled in a two-year institution could have graduated by the end of their second year. In Appendix Tables A.5 and A.6, we show estimates of treatment effects on degree receipt within 2 and 3 years of expected high school completion, respectively. At baseline, only 1.5 (3) percent of students had earned a degree from a two-year institution within 2 (3) years. This implies that only 12 percent of students who initially enrolled in a two-year institution graduated on time and only 26 percent finished within 150 percent of expected time-to-degree. Given these low baseline completion rates, it is not surprising that we find null effects of Hope Chicago on eligible students' degree receipt over this time horizon.

pre-treatment cohort, the most common type of college attended was an open access institution (24 percent), followed by moderately selective (12 percent) institutions. Only 3 percent of students enrolled in more selective postsecondary institutions at baseline. In percentage-point terms, Hope Chicago had the largest impacts on attending a moderately selective institution (8pp), followed by open access schools (6.9pp) and more selective institutions (5pp). In percentage terms, however, Hope Chicago led to the largest increases in enrollment in more selective institutions (161 percent).

The last two columns of Table 6 show estimates of the effect of Hope Chicago on our second category of institutional quality measures – six-year bachelor's degree graduation rates of prior cohorts of students who enrolled in the college. This measure is set to 0 for students who do not enroll in college or enrolled in a two-year institution. We first look at effects on a binary measure – the probability of enrolling in a school with a bachelor's degree graduation rate exceeding 75 percent (approximately the 90th percentile of bachelor's degree completion rates among four-year institutions). Only 2.8 percent of students enrolled in such institutions at baseline and Hope Chicago led to an approximately 1pp (39 percent) increase. We also find significant increases in the 6-year bachelor's degree completion rate of the initial institution a student attends. To the extent that the outcomes of past students are predictive of the causal effect of attending a school on a student's own outcomes, the 10.5pp increase represents a substantial gain (70 percent) over baseline.

5.3 Heterogeneity

We next examine whether the effects of Hope Chicago on immediate postsecondary enrollment differ across demographic subgroups, levels of prior academic preparation, and predicted counterfactual postsecondary choices. Table 7 presents estimates separately by gender and race/ethnicity. Effects are positive and statistically significant for all subgroups. The point estimate for female students (17pp) is modestly larger than for male students (14pp), though the difference is small relative to gaps in baseline enrollment (49 vs. 29 percent, respectively). Among racial and ethnic subgroups, estimated effects are largest for Hispanic students (18pp, 49 percent relative to baseline) and somewhat smaller for Black students (11pp or 29 percent), who together comprise the large majority of the analysis sample. The estimate for White students is larger in magnitude (23pp) but imprecisely estimated, owing to the small number of White students enrolled in Hope-eligible schools, and should be interpreted with caution.[25] Overall, the results suggest that the enrollment effects of Hope Chicago are broadly shared across gender and racial and ethnic groups. Additionally, given the larger share of students who were Black in control vs. Hope-eligible high schools at baseline (Table 2) and some evidence of differential changes in racial composition for eligible cohorts in Hope schools (3), these results suggest that the main estimates are not driven by differences (or differential changes) in student race/ethnic composition.

Tables 8 and 9 stratify students by quartile of their 8th grade reading and math test scores in the

[25]There are only 293 White students in the analysis sample, across 55 school by cohort clusters.

national distribution. As expected, baseline enrollment rates rise steeply with prior achievement: among Hope school students in the 2021 cohort, postsecondary enrollment rates range from 22 percent in the bottom reading quartile to 56 percent in the top quartile, with a similar gradient for math. Despite this variation in baseline college-going, estimated treatment effects are quite similar across the achievement distribution. For reading scores, estimates range from 14pp (Q3) to 20pp (Q1), suggesting larger effects at the lower end of the distribution in relative terms. For math scores, estimates range from 13pp (Q2) to 18pp (Q3), again indicating larger increase in percentage terms for students with lower baseline math achievement. All estimates are statistically significant at the 1 percent level. The consistency of effects across the achievement distribution indicates that Hope Chicago raised immediate postsecondary enrollment among both lower- and higher-achieving students, and did not simply accelerate enrollment among students already on a college-going trajectory.

We further explore the extent to which Hope Chicago affected students who were more or less likely to enroll in college in the absence of the program. Our main estimates show larger effects on four-year college enrollment compared to two-year enrollment (Table 4) but this could be due to a combination of students who would have otherwise attended a two-year college "upgrading" to a four-year institution and students who would have otherwise not attended college in the absence of the program pursuing a bachelor's degree. We leverage historical CPS and NSC data to train a machine learning model to predict counterfactual college enrollment for students in the analysis sample.[26] These estimates are shown in Appendix Table A.7.[27] We split the sample based on predicted counterfactual outcome: no college enrollment, two-year enrollment, and 4-year enrollment.

We find relatively similar treatment effects on immediate postsecondary enrollment in any institution across the predicted counterfactual distribution (Appendix Table A.7, Panel A), ranging from 14pp for students predicted to not enroll in college in the absence of Hope Chicago to 0.19 for students predicted to otherwise enroll in a four-year institution. We find significant increases in two-year enrollment among both students predicted to not go to college and those predicted to enroll in a two-year institution (Panel B). Finally, estimates in Panel C suggest that Hope Chicago increased four-year enrollment among students whose predicted counterfactual was not going to college (13pp) and two-year college enrollment (20pp), although treatment effects are largest for students predicted to enroll in a four-year institution in the absence of the program (25pp).

[26] The model is trained on students who enrolled in one of the high schools on the long list for Hope Chicago (excluding the 15 schools that made the short list) in the same cohorts as our main analysis sample, resulting in a sample of approximately 57,000 students, which is split into training and test sets at a 4 to 1 ratio. We estimate an ordinal logit model with elastic net penalty.

[27] These estimates should be viewed as preliminary as we are still tuning the underlying ML model.

6 Mechanisms

Hope Chicago likely affected student outcomes through multiple channels. Postsecondary enrollment decisions may be influenced by improved information about college and college access, by reducing the cost of attending college, and by increasing postsecondary aspirations. All of these channels could lead students to change their behavior while in high school. For example, students who anticipate they will enroll in college could exert more effort to improve their chances of admission (in case of application to more selective colleges) and increase their preparedness.

In this preliminary draft we examine how Hope Chicago affects students' behavior before college enrollment.

6.1 High school outcomes

Using the same empirical approach of our main analysis, we examine treatment effects on high school persistence, achievement and attendance, SAT taking and performance, and high school graduation. Estimates are reported in Tables 10, 11, and 12. We do not observe statistically significant changes in behavior and performance for the students who were enrolled in Hope schools in eligible cohorts. In most cases, 95 percent confidence intervals exclude economically meaningful impacts as well.

We use publicly available school-by-year level data from the annual 5Essentials *My Voice, My School* survey of students and teachers to look at whether Hope Chicago led to changes in the expectations and effort of students, student and teachers' views of parental involvement, and teachers' expectations for students' postsecondary outcomes. These estimates can be found in Appendix Tables A.8 and A.9. We test for whether Hope Chicago led to increases in the share of students or teachers providing a positive response to survey questions. We do not find evidence of treatment effects on students' responses. In contrast, after the start of the program, teachers in Hope Chicago schools were significantly more likely to report expecting their students to go to college and that their students were planning on going to college.

6.2 Within-family spillovers

The previous suggest that the changes in returns from college and information available for students enrolled at Hope Chicago schools did not affect their high school outcomes. However, it is possible that their behavior changed but did not produce measurable impacts due to the timing of the intervention. Azmat and Kaufmann (2024) finds that perceived educational returns and risk adapt quickly, but longer time frames are required for education plans to adjust.

To observe whether students adjust their behavior and improve their pre-college outcomes in response to increases in college access, we study whether Hope Chicago had impacts on the younger siblings of students eligible for the intervention. We do this by identifying any younger siblings

enrolled in Chicago Public Schools during the 2018-2024 period for each of the students in the main sample. This produces a panel dataset with longitudinal information on several outcomes.

We use the sibling panel dataset and estimate a fixed effects model, with estimating equation:

$$Y_{ijy} = \beta Treatment_{jy} + \delta_i + \delta_y + \varepsilon_{ijy}$$

where for each student i with an older sibling in the main sample j we observe the outcome of interest Y in each year y for which it is available. We control for younger-sibling-level and year fixed effects and define *Treatment* as either:

- Information treatment, a binary variable taking value of 1 if the outcome is observed in the 2022 academic year or later and the older sibling j was enrolled in a Hope high school in an eligible cohort;
- Service treatment, a binary variable taking value of 1 if the outcoem is observed in an academic year y in which the older sibling is expected to be a senior or have graduated and the older sibling j is enrolled in a Hope high school in an eligible cohort.

Table 13 shows estimated effects on younger siblings' standardized GPAs.[28] We find similar effects of the information and service treatments, with Hope Chicago leading to an approximately 0.11 to 0.12 standard deviation increase in younger siblings overall grades and a 0.10 to 0.12 increase in math grades. Only effects on overall grades are significant at conventional levels when we use the wild bootstrap-t for inference. Effects on reading grades are much smaller and statistically insignificant.

We also look at effects on younger siblings' attendance and behavior; estimates can be found in Table 14. In contrast to the positive effects on grades, estimates suggest that Hope Chicago led to a 2-3 day increase in absences for younger siblings, an approximately 15 percent increase relative to average absences among younger siblings of students too old to be eligible for Hope. We do not find evidence of statistically significant changes in suspensions.

These results indicate that, with more time to make changes in educational investments, younger siblings may respond in ways that increase course performance even if they are more likely to be absent. Given the lack of response among Hope-eligible older siblings, these findings suggest that learning about the benefits provided by Hope Chicago as a sophomore in high school may be too late for students' to change their behavior in ways that translate into better high school outcomes.

[28] We standardize GPAs based on the distribution in the control group because grades vary substantially across grade levels. Appendix Table A.10 shows estimated effects on raw GPAs, which are of a similar magnitude in percentage terms but less precise.

7 Conclusions

Our early findings of the effect of Hope Chicago is that the program significantly increased immediate postsecondary enrollment among students who typically face significant informational, financial, and academic barriers. Many previously studied interventions only address some of these barriers, most often providing either information or financial support to high school students. This has often proved insufficient for overcoming the complex barriers faced by students from less advantaged backgrounds. The Hope Chicago intervention is designed to address multiple barriers simultaneously, and our findings suggest that the program led to larger increases in students' postsecondary enrollment than programs addressing only some of those barriers.

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Tables and Figures

Table 1: Demographic Characteristics of Students in 2021 Expected High School Graduation Cohort

Demographics	**Hope**	**Control**	**Rest of CPS**
Number of students	1,199	1,858	23,133
Gender = male	0.55	0.52	0.50
Race			
Black	0.48	0.60	0.34
Hispanic	0.51	0.38	0.49
English language learner	0.13	0.08	0.09
Special education	0.20	0.22	0.16
Free/Reduced price lunch	0.96	0.95	0.84
Home language = English	0.54	0.67	0.53
National percentile rank math score	49	47	58
National percentile rank reading score	54	53	61
Immediate postsecondary enrollment	0.38	0.37	0.54

Notes: This table shows the demographic characteristics of the 9th graders expected to graduate high school in 2021 at Hope schools, control schools, and rest of CPS. It reports average percentiles and shares for all other covariates.

Table 2: Baseline Characteristics

	Control schools		Hope schools		All students
	Pre	Post	Pre	Post	
Gender = male	0.514	0.526	0.516	0.512	0.517
Race					
Black	0.570	0.564	0.526	0.457	0.542
Hispanic	0.399	0.413	0.462	0.522	0.435
White	0.020	0.014	0.005	0.011	0.013
Home language = English	0.639	0.628	0.574	0.525	0.604
Baseline math score ($\mu = 0, \sigma = 1$)	-0.313	-0.401	-0.256	-0.320	-0.322
Baseline reading score ($\mu = 0, \sigma = 1$)	-0.307	-0.375	-0.249	-0.278	-0.305

Notes: This table shows the baseline characteristic for the analysis sample by cohort and type of high school. **Pre** = students in 2018 through 2021 expected high school graduation cohorts; **Post** = students in 2022 through 2024 expected high school graduation cohorts. Students in control schools are those who enrolled in one of the 10 schools not chosen for Hope Chicago in their freshman year. Students in Hope schools are those who enrolled in one of the 5 schools chosen for Hope Chicago. Baseline math and reading scores are scores on state tests in 8th grade, standardized to have mean = 0, standard deviation = 1 for all CPS students within a given academic year.

Table 3: Covariates Measured at Baseline

	(1) Male	(2) Black	(3) Hispanic	(4) English	(5) Math score	(6) Reading score
1[Hope school]×**1**[Eligible cohort]	-0.011	-0.024	0.009	0.002	-0.002	0.005
	(0.013)	(0.008)***	(0.009)	(0.011)	(0.043)	(0.043)
	{0.483}	{0.166}	{0.650}	{0.921}	{0.976}	{0.945}
Observations	22061	22061	22061	20322	18310	18583
Pre-trend WBS *p*-val	0.129	0.406	0.585	0.988	0.816	0.788
Mean (Hope schools, 2021 cohort)	0.545	0.483	0.507	0.541	-0.290	-0.265

Notes: The sample includes students who entered a Hope or control high school as freshmen in the 2018 through 2024 expected high school graduation cohorts. Estimates from regressions of the baseline characteristic denoted in the column heading on an indicator for treatment (interaction between an indicator for enrolling in a Hope Chicago high school as a freshman and an indicator for belonging to the 2022-2024 expected high school graduation cohort). All regressions include high school and cohort fixed effects. Baseline math and reading scores are 8th grade test scores on the state test, standardized to have mean = 0, standard deviation = 1 across all CPS students within the academic year. Robust standard errors, clustered at the high school by entry cohort, in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; *p*-values from wild cluster bootstrap-*t*, clustered at high school level, in brackets.

Table 4: Effect of Hope Chicago on Immediate College Enrollment

	Any College		2-Year College		4-Year College	
	(1)	(2)	(3)	(4)	(5)	(6)
1[Hope school]×**1**[Eligible cohort]	0.150	0.150	0.057	0.055	0.160	0.163
	(0.019)***	(0.017)***	(0.015)***	(0.016)***	(0.024)***	(0.021)***
	{0.001}	{0.002}	{0.051}	{0.099}	{0.004}	{0.001}
Observations	22061	22061	22061	22061	22061	22061
Controls Included		X		X		X
Pre-trend WBS *p*-val	0.578	0.713	0.518	0.454	0.228	0.278
Mean (Hope schools, 2021 cohort)	0.378	0.378	0.125	0.125	0.265	0.265

Notes: The sample includes students who entered a Hope or control high school as freshmen in the 2018 through 2024 expected high school graduation cohorts. Estimates from regressions of the outcome on an indicator for treatment (interaction between an indicator for enrolling in a Hope Chicago high school as a freshman and an indicator for belonging to the 2022-2024 expected high school graduation cohort). All regressions include high school and cohort fixed effects. Regressions with covariate controls also include: indicators for gender (male), student race/ethnicity (Black, White, Hispanic), home language (English), and percentile rank on the state math and reading exams. The outcome is a binary variable indicating any postsecondary enrollment (columns (1) and (2)), any enrollment in a 2-year institution (columns (3) and (4), or any enrollment in a 4-year institution (columns (5) and (6)) within 1 year of expected high school graduation. Robust standard errors, clustered at the school by cohort level, in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; *p*-values from wild cluster bootstrap-*t*, clustered at high school level, in brackets. Pre-trend WBS *p*-values are *p*-values from an F-test of the joint significance of treatment effects for the 2018-2021 cohorts in an event study specification (see event study figure notes for additional details).

Table 5: Effects of Hope Chicago on Postsecondary Persistence

	(1) Any	(2) 2-Year	(3) 4-Year
A. 2 out of 3 years			
1[Hope school]×**1**[Eligible cohort]	0.126	0.032	0.084
	$(0.021)^{***}$	$(0.009)^{***}$	$(0.020)^{***}$
	{0.002}	{0.020}	{0.093}
Observations	22061	22061	22061
Pre-trend WBS *p*-val	0.441	0.806	0.633
Mean (Hope schools, 2021 cohort)	0.228	0.059	0.148
B. 3 out of 3 years			
1[Hope school]×**1**[Eligible cohort]	0.082	0.010	0.061
	$(0.021)^{***}$	(0.007)	$(0.019)^{***}$
	{0.073}	{0.393}	{0.184}
Observations	19221	19221	19221
Pre-trend WBS *p*-val	0.846	0.660	0.778
Mean (Hope schools, 2021 cohort)	0.170	0.034	0.107

Notes: The sample includes students who entered a Hope or control high school as freshmen in the 2018 through 2024 expected high school graduation cohorts (Panel A) or in the 2018 through 2023 cohorts (Panel B). Estimates from regressions of the outcome on an indicator for treatment (interaction between an indicator for enrolling in a Hope Chicago high school as a freshman and an indicator for belonging to the 2022-2024 expected high school graduation cohort). All regressions include high school and cohort fixed effects, indicators for gender (male), student race/ethnicity (Black, White, Hispanic), home language (English), and percentile rank on the state math and reading exams. In Panel A, the outcome is a binary variable indicating enrollment in any postsecondary institution for at least 2 years out of 2 years of expected high school graduation in any institution (column (1)), in a 2-year institution (column (2)), and in a 4-year institution (column (3)). In Panel B, the outcome is a binary variable indicating enrollment for 3 out of the 3 years since high school graduation. Robust standard errors, clustered at the school by cohort level, in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; *p*-values from wild cluster bootstrap-*t*, clustered at high school level, in brackets. Pre-trend WBS *p*-values are *p*-values from an F-test of the joint significance of treatment effects for the 2018-2021 cohorts in an event study specification (see event study figure notes for additional details).

Table 6: Effects of Hope Chicago on College Selectivity

	(1) Open Access	(2) Moderately Selective 4-Year	(3) More Selective 4-Year	(4) >75% BA Grad Rate	(5) BA Grad Rate
1[Hope school]×**1**[Eligible cohort]	0.069	0.080	0.050	0.011	0.105
	(0.018)***	(0.014)***	(0.014)***	(0.005)**	(0.011)***
	{0.010}	{0.002}	{0.052}	{0.149}	{0.002}
Observations	22061	22061	22061	22061	22061
Pre-trend WBS p-val	0.935	0.323	0.026	0.256	0.084
Mean (Hope schools, 2021 cohort)	0.240	0.115	0.031	0.028	0.150

Notes: See Table 4 notes for description of sample. Estimates from regressions of the outcome on an indicator for treatment (interaction between an indicator for enrolling in a Hope Chicago high school as a freshman and an indicator for belonging to the 2022-2024 expected high school graduation cohort). All regressions include high school and cohort fixed effects, and indicators for gender (male), student race/ethnicity (Black, White, Hispanic), home language (English), and percentile rank on the state math and reading exams. The outcome is the probability of enrolling in an open access institution (column (1)), the probability of enrolling in a moderately selective 4-year institution (column (2)), the probability of enrolling in a more selective 4-year institution (column (3)), the probability of enrolling in an institution with >75% graduation rate (column (4)), or the bachelor's degree graduation rate of the initial post-secondary institution (column (5)), all measured within 1 year of expected high school graduation. Open access institution = 2-year institution, for-profit institution, or public/nonprofit institution classified as "inclusive" in the Carnegie undergraduate profile classification. Moderately selective 4-year institution = public/nonprofit institution classified as "selective" in the Carnegie undergraduate profile classification (40-80th percentile of selectivity among all 4-year institutions). More selective 4-year institution = public/nonprofit institution classified as "more selective" in the Carnegie undergraduate profile classification (80-100th percentile of selectivity among all 4-year institutions). Institution with $>$ 75% graduation rate = 4-year institution with at least 75% of students earning a bachelor's degree within 6 years. BA graduation rate of initial post-secondary institution = 0 if a student did not enroll in any institution or enrolled in a 2-year institution in the year of expected high school graduation. Robust standard errors, clustered at the school by cohort level, in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; p-values from wild cluster bootstrap-t, clustered at high school level, in brackets. Pre-trend WBS p-values are p-values from an F-test of the joint significance of treatment effects for the 2018-2021 cohorts in an event study specification (see event study figure notes for additional details).

Table 7: Heterogeneous Effects of Hope Chicago on Immediate Postsecondary Enrollment by Gender and Race/Ethnicity

	(1) Female	(2) Male	(3) Hispanic	(4) Black	(5) White
1[Hope school]×**1**[Eligible cohort]	0.166	0.138	0.179	0.114	0.229
	(0.021)***	(0.020)***	(0.020)***	(0.021)***	(0.135)*
	{<0.001}	{0.002}	{0.010}	{0.007}	{0.403}
Observations	10650	11408	9606	11948	293
Pre-trend WBS p-val	0.887	0.177	0.288	0.398	0.549
Mean (Hope schools, 2021 cohort)	0.488	0.286	0.367	0.392	0.286

Notes: See Table 4 for description of sample and specification. The outcome is a binary variable indicating any postsecondary enrollment. Each column contains results from separate regressions in which the analysis sample is limited to the indicated subgroup.

Table 8: Heterogeneous Effects of Hope Chicago on Immediate Postsecondary Enrollment by Quartile of Baseline Reading Test Performance

	(1) Q1	(2) Q2	(3) Q3	(4) Q4
1[Hope school]×**1**[Eligible cohort]	0.200	0.161	0.137	0.152
	(0.030)***	(0.032)***	(0.024)***	(0.029)***
	{0.001}	{0.030}	{0.001}	{0.007}
Observations	3555	5529	6983	3328
Pre-trend WBS p-val	0.875	0.239	0.474	0.505
Mean (Hope schools, 2021 cohort)	0.216	0.279	0.440	0.559

Notes: See Table 4 for description of sample and specification. The outcome is a binary variable indicating any postsecondary enrollment. Each column contains results from separate regressions in which the analysis sample is limited to students with 8th grade reading test scores in the indicated quartile in the national distribution of test scores.

Table 9: Heterogeneous Effects of Hope Chicago on Immediate Postsecondary Enrollment by Quartile of Baseline Math Test Performance

	(1) Q1	(2) Q2	(3) Q3	(4) Q4
1[Hope school]×**1**[Eligible cohort]	0.131	0.145	0.182	0.152
	(0.032)***	(0.031)***	(0.027)***	(0.032)***
	{0.002}	{0.003}	{<0.001}	{0.011}
Observations	5003	6330	5532	2592
Pre-trend WBS p-val	0.773	0.298	0.979	0.342
Mean (Hope schools, 2021 cohort)	0.198	0.374	0.480	0.500

Notes: See Table 4 for description of sample and specification. The outcome is a binary variable indicating any postsecondary enrollment. Each column contains results from separate regressions in which the analysis sample is limited to students with 8th grade math test scores in the indicated quartile in the national distribution of test scores.

Table 10: Effects of Hope Chicago on High School Persistence, Achievement, & Attendance

	Persistence	GPA	Absence Rate	Days Absent
	(1)	(2)	(3)	(4)
1[Hope school]×**1**[Eligible cohort]	0.029	-0.024	-0.003	-0.863
	(0.018)	(0.056)	(0.014)	(2.425)
	{0.368}	{0.723}	{0.889}	{0.815}
Observations	22061	13759	18826	18826
Pre-trend WBS p-val	0.805	0.639	0.827	0.613
Mean (Hope schools, 2021 cohort)	0.703	2.727	0.292	49.54

Notes: See Table 4 notes for description of sample and specification. Students with missing values for the dependent variable are excluded from the respective analyses. The outcome is a binary variable indicating enrollment in the same school as freshman year in expected year of graduation (column (1)), GPA in expected year of graduation (column (2)), absence rate in expected year of high school graduation (column (3)), or total absent days in expected year of high school graduation (columns (4)). All columns include the full set of controls described in Section 4.

Table 11: Effects of Hope Chicago on SAT Taking and Performance

	Took SAT	Scaled Score	National %tile
	(1)	(2)	(3)
1[Hope school]×**1**[Eligible cohort]	-0.009	-6.00	-1.11
	(0.019)	(6.89)	(0.95)
	{0.665}	{0.654}	{0.537}
Observations	15858	12275	12215
Pre-trend WBS p-val	0.907	0.459	0.294
Mean (Hope schools, 2020 cohort)	0.786	850	24.00

Notes: See Table 4 notes for description of sample and specification. Students in the 2021 and 2022 expected high school graduation cohorts are excluded from all three analyses due to very low SAT-taking rates for these cohorts during the COVID-19 pandemic. Reference means are for the 2020 expected high school graduation cohort, the most recent pre-treatment cohort the exclusion leaves. Students with missing values for the dependent variable are also excluded from the respective analyses. The outcome is a binary variable indicating SAT test-taking in 11th grade (column (1)), SAT scaled score (column (2)), or SAT national percentile (column (3)). All columns include the full set of controls described in Section 4.

Table 12: Effects of Hope Chicago on High School Completion

	On-Time	Within 5 Years	Ever Graduated
	(1)	(2)	(3)
1[Hope school]×**1**[Eligible cohort]	0.008	-0.000	-0.004
	(0.013)	(0.012)	(0.012)
	{0.539}	{0.975}	{0.818}
Observations	22061	22061	22061
Pre-trend WBS *p*-val	0.536	0.305	0.276
Mean (Hope schools, 2021 cohort)	0.717	0.752	0.773

Notes: See Table 4 notes for description of sample and specification. The outcome is a binary variable indicating high school graduation during expected year (column (1)), high school graduation within 5 years of high school entry (column (2)), ever graduated high school (column (3)). All columns include the full set of controls described in Section 4.

Table 13: Effects of Hope Chicago on Younger Siblings' Standarized GPA

	Overall		Math		Reading	
	(1)	(2)	(3)	(4)	(5)	(6)
Information Treatment	0.117		0.100		0.030	
	(0.030)***		(0.046)**		(0.032)	
	{0.058}		{0.420}		{0.526}	
Service Treatment		0.107		0.118		0.017
		(0.030)***		(0.033)***		(0.031)
		{0.095}		{0.157}		{0.658}
Observations	18375	18375	17431	17431	17718	17718
Pre-trend WBS *p*-val	0.524	0.459	0.781	0.802	0.260	0.567
Mean (2021, Older Sibling Treated)	-0.626	-0.626	-0.257	-0.257	-0.392	-0.392

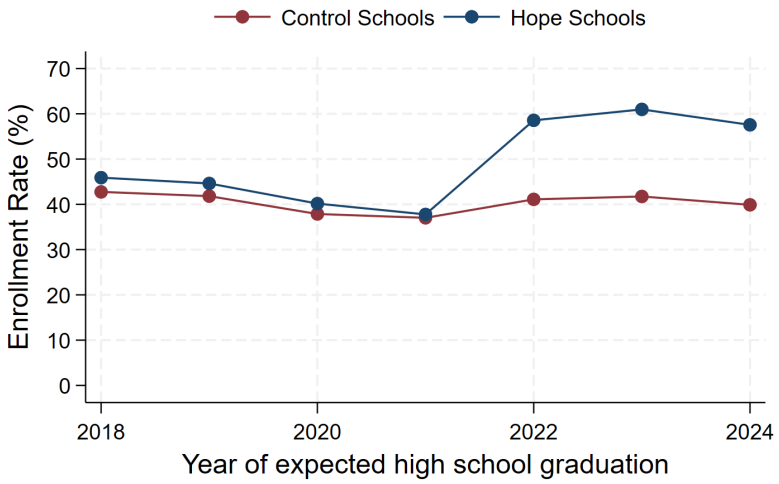
Notes: The sample includes younger siblings to the students in the main analysis sample (see Table 4 for details on main analysis sample). Younger siblings may be observed in multiple academic years, so that each observation represents a unique combination of student and academic year, limited to the 2018-2024 academic years. Estimates from regressions of the outcome on an indicator for treatment. **Information treatment** = the student's older sibling was expected too attend a Hope-eligible school in 2022 or later (based on the older sibling's 9th grade enrollment) and the observation is from the 2022 academic year or later. **Service treatment** = the student's older sibling enrolled in a Hope-eligible high school in 9th grade, belonged to an expected high school graduation cohort that was eligible for Hope Chicago, and the observation is from the same or later academic year in which the older sibling would be a senior. All regressions control for younger sibling fixed effects, older sibling high school and cohort fixed effects, and and academic year fixed effects. The individual-level fixed effects subsume all younger sibling baseline covariates such as gender, race/ethnicity, and baseline achievement. The outcome is the standardized GPA (overall in columns (1) and (2), math only in (3) and (4), reading only in (5) and (6)), such that the outcome has mean = 0, standard deviation = 1 relative to students in the control group attending the same grade. Robust standard errors, clustered at the (older sibling's) school by cohort level, in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. WBS *p*-values are *p*-values from wild cluster bootstrap-*t*, clustered at older sibling high school level (15 clusters). Pre-trend WBS *p*-values are *p*-values from an F-test of the joint significance of treatment effects for the 2018-2021 cohorts in an event study specification (see event study figure notes for additional details).

Table 14: Effects of Hope Chicago on Younger Siblings' Attendance and Behavior

	Days Absent		Days Suspended	
	(1)	(2)	(3)	(4)
Information Treatment	2.360		-0.025	
	(0.714)***		(0.057)	
	{0.068}		{0.810}	
Service Treatment		2.647		-0.042
		(0.701)***		(0.046)
		{0.075}		{0.765}
Observations	19963	19963	19963	19963
Pre-trend WBS *p*-val	0.464	0.955	0.219	0.374
Mean (2021, Older Sibling Treated)	15.48	15.48	0.00	0.00

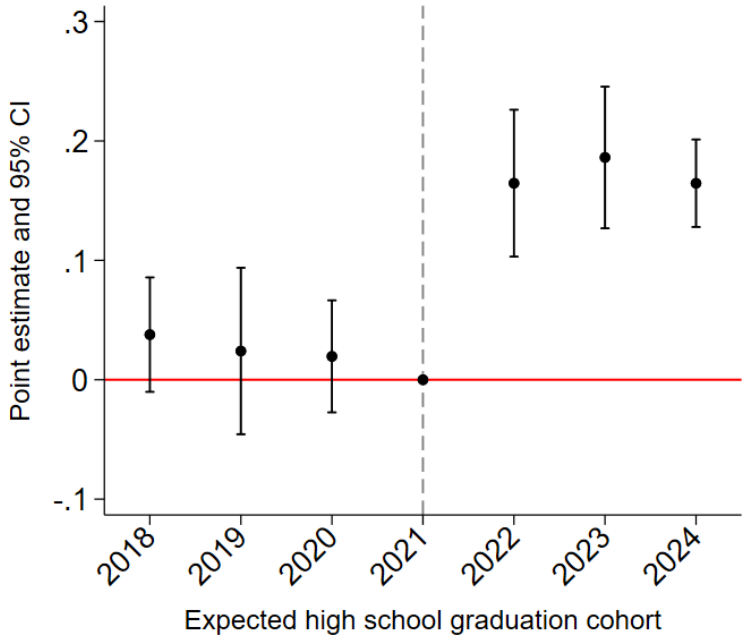
Notes: See Table 13 for description of sample, treatment definition, and specification. The outcomes are the total number of days absent from school (columns (1) and (2)) and the total numbers of suspensions (in school and out of school (columns (3) and (4)).

Figure 1: Immediate Postsecondary Enrollment by Expected High School Graduation Cohort



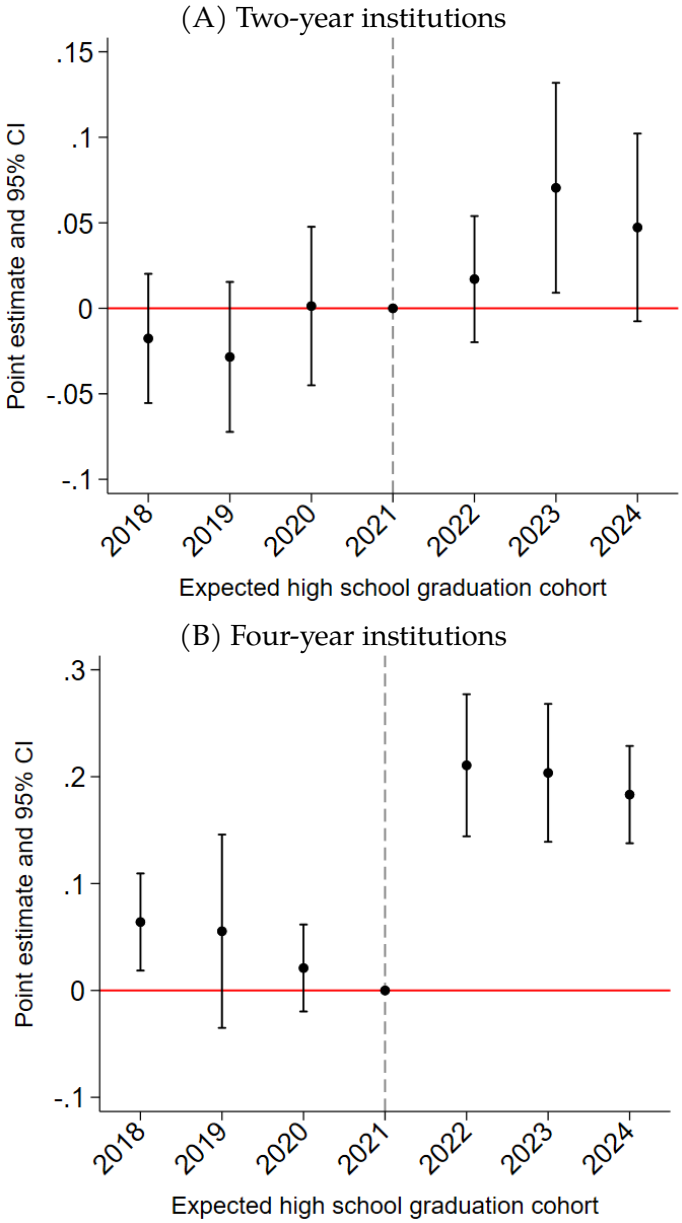
Notes: This figure plots the percentage of students who enrolled in any postsecondary institution in the year following their expected high school graduation. The sample includes students who enrolled in a Hope Chicago high school or control high school as ninth graders.

Figure 2: Event Study Estimates of Effects on Immediate Postsecondary Enrollment



Notes: See Table 4 notes for sample definition. This figure displays coefficients and 95% confidence intervals from regressions of the outcome on interactions between expected high school graduation cohort and indicators for treatment (interaction between an indicator for enrolling in a Hope Chicago high school as a freshman and an indicator for belonging to the 2022-2024 expected high school graduation cohort). Regression also includes high school and cohort fixed effects, indicators for gender (male), student race/ethnicity (Black, White, Hispanic), home language (English), and percentile rank on the state math and reading exams. Confidence intervals based on robust standard errors, clustered at the high school by cohort level. The outcome is a binary variable indicating any postsecondary enrollment within 1 year of expected high school graduation.

Figure 3: Event study Estimates of Effects on Immediate Enrollment by Level



Notes: See Table 4 notes for sample definition. This figure displays coefficients and 95% confidence intervals from regressions of the outcome on interactions between expected high school graduation cohort and indicators for treatment (interaction between an indicator for enrolling in a Hope Chicago high school as a freshman and an indicator for belonging to the 2022-2024 expected high school graduation cohort). Regression also includes high school and cohort fixed effects, indicators for gender (male), student race/ethnicity (Black, White, Hispanic), home language (English), and percentile rank on the state math and reading exams. Confidence intervals based on robust standard errors, clustered at the high school by cohort level. The outcome is a binary variable indicating postsecondary enrollment in a two-year institution (Panel A) or a four-year institution (Panel B) within 1 year of expected high school graduation. Note that the two panels do not share a vertical scale.

Appendix A Additional Figures and Tables

Table A.1: Ninth Grade Enrollment

Cohort	Hope	Control
2018	1,429	2,161
2019	1,450	2,042
2020	1,287	1,938
2021	1,199	1,858
2022	1,161	1,985
2023	1,015	1,696
2024	978	1,862
Total	**8,519**	**13,542**

Notes: This table shows 9th grade enrollment in the 5 schools chosen for the Hope Chicago program and the 10 schools considered but not chosen ("Control schools") by expected high school graduation cohort (e.g., students expected to graduate in 2018 started 9th grade in 2015).

Table A.2: In-Network Colleges: Selectivity and Bachelor's Completion Rate

College	Level	Selectivity	BA grad rt
Chicago State University	4-year	Open	0.27
City Colleges of Chicago-Harold Washington College	2-year	Open	0
City Colleges of Chicago-Harry S Truman College	2-year	Open	0
City Colleges of Chicago-Kennedy-King College	2-year	Open	0
City Colleges of Chicago-Malcolm X College	2-year	Open	0
City Colleges of Chicago-Olive-Harvey College	2-year	Open	0
City Colleges of Chicago-Richard J Daley College	2-year	Open	0
City Colleges of Chicago-Wilbur Wright College	2-year	Open	0
Dominican University	4-year	Open	0.62
Eastern Illinois University	4-year	Open	0.56
Elmhurst University	4-year	Moderately selective	0.69
Governors State University	4-year	Open	0.56
Illinois Institute of Technology	4-year	More selective	0.68
Illinois State University	4-year	Moderately selective	0.7
Lake Forest College	4-year	Moderately selective	0.77
Lewis University	4-year	Moderately selective	0.34
Arrupe College at Loyola	2-year	Open	0
Loyola University Chicago [former]	4-year	More selective	0.7
National Louis University	4-year	Open	0.47
Northeastern Illinois University	4-year	Open	0.48
Northern Illinois University	4-year	Moderately selective	0.56
Roosevelt University	4-year	Open	0.42
Southern Illinois University Edwardsville	4-year	Moderately selective	0.52
Southern Illinois University-Carbondale	4-year	Open	0.51
Trinity Christian College [former]	4-year	Moderately selective	0.59
University of Illinois Chicago	4-year	Moderately selective	0.67
University of Illinois Springfield	4-year	Open	0.52
University of Illinois Urbana-Champaign	4-year	More selective	0.82
Western Illinois University	4-year	Open	0.57

***Notes*:** This table shows the selectivity and 6-year bachelor's degree completion rates for colleges that are in Hope Chicago's network. Open = open access (2-year institution, for-profit institution, or public/nonprofit institution classified as "inclusive" in the Carnegie undergraduate profile classification). Moderately selective = public/nonprofit 4-year institution classified as "selective" in the Carnegie undergraduate profile classification (40-80th percentile of selectivity among all 4-year institutions). More selective institution = public/nonprofit 4-year institution classified as "more selective" in the Carnegie undergraduate profile classification (80-100th percentile of selectivity among all 4-year institutions). BA grad rate = 0 for 2-year institutions.

Table A.3: Postsecondary Outcomes

	Control schools		Hope schools		All students
	Pre	Post	Pre	Post	
Immediate enrollment in any institution	0.400	0.409	0.424	0.590	0.435
Enrollment in any institution w/in 2 years	0.425	0.436	0.447	0.609	0.459
Enrollment in any institution w/in 3 years	0.436	0.457	0.459	0.624	0.468
Immediate enrollment in 2-year institution	0.175	0.172	0.149	0.205	0.173
Enrollment in 2-year institution w/in 2 years	0.220	0.220	0.194	0.286	0.223
Enrollment in 2-year institution w/in 3 years	0.242	0.252	0.217	0.318	0.246
Immediate enrollment in 4-year institution	0.239	0.257	0.293	0.478	0.291
Enrollment in 4-year institution w/in 2 years	0.251	0.266	0.302	0.487	0.301
Enrollment in 4-year institution w/in 3 years	0.264	0.280	0.311	0.503	0.307
Enrolled in any institution 2/2 years	0.250	0.262	0.268	0.417	0.281
Enrolled in 2-year institution 2/2 years	0.090	0.094	0.076	0.116	0.091
Enrolled in 4-year institution 2/2 years	0.141	0.152	0.178	0.277	0.172
Enrolled in any institution at least 2/3 years	0.274	0.287	0.293	0.417	0.298
Enrolled in any institution 3/3 years	0.180	0.195	0.193	0.300	0.200
Years of enrollment w/in 2 years	0.675	0.698	0.715	1.026	0.741
Years of enrollment w/in 3 years	0.877	0.922	0.932	1.330	0.953
Immediate enrollment in open access institution	0.297	0.304	0.294	0.370	0.309
Immediate enrollment in moderately selective 4-year institution	0.087	0.094	0.109	0.202	0.111
Immediate enrollment in more selective 4-year institution	0.017	0.024	0.025	0.085	0.030
Immediate enrollment in 4-year institution with $>$ 75% grad rate	0.017	0.016	0.023	0.034	0.021
BA graduation rate of initial postsecondary institution	0.127	0.148	0.157	0.287	0.162

***Notes*:** This table shows postsecondary outcomes for the analysis sample by cohort and type of high school. **Pre** = students in 2018 through 2021 expected high school graduation cohorts; **Post** = students in 2022 through 2024 expected high school graduation cohorts. Students in control schools are those who enrolled in one of the 10 schools not chosen for Hope Chicago in their freshman year. Immediate post-secondary enrollment = enrollment in a post-secondary institution within 1 year of expected high school graduation. Enrollment w/in 2 (3) years = any enrollment in a post-secondary institution within 2 (3) years of expected high school graduation. Open access institution = 2-year institution, for-profit institution, or public/nonprofit institution classified as "inclusive" in the Carnegie undergraduate profile classification. Moderately selective 4-year institution = public/nonprofit institution classified as "selective" in the Carnegie undergraduate profile classification (40-80th percentile of selectivity among all 4-year institutions). More selective 4-year institution = public/nonprofit institution classified as "more selective" in the Carnegie undergraduate profile classification (80-100th percentile of selectivity among all 4-year institutions). Institution with $>$ 75% graduation rate = 4-year institution with at least 75% of students earning a bachelor's degree within 6 years. BA graduation rate of initial post-secondary institution = 0 if a student did not enroll in any institution or enrolled in a 2-year institution in the year of expected high school graduation. Students in Hope schools are those who enrolled in one of the 5 schools chosen for Hope Chicago. Post-secondary enrollment outcomes are not fully observed for the full 2024-25 academic year, and some students who enroll in the spring 2025 term only will not be reflected in these averages. Outcomes reflecting enrollment within 2 (3) years of expected high school graduation only available for 2018-2024 (2018-2023) cohorts.

Table A.4: High School Outcomes

	Control schools		Hope schools		All students
	Pre	Post	Pre	Post	
Enrolled in same high school freshman & senior year	0.632	0.655	0.673	0.735	0.663
Graduated high school on-time	0.706	0.717	0.720	0.744	0.718
Graduated high school w/in 5 years	0.736	0.742	0.753	0.764	0.746
GPA in expected year of graduation	2.619	2.617	2.763	2.779	2.681
Missing GPA in expected year of graduation	0.408	0.395	0.351	0.307	0.376
Took SAT in 11th grade	0.595	0.495	0.626	0.503	0.564
SAT scaled score	858	810	868	819	845
SAT national percentile rank	25.2	18.4	26.5	19.3	23.3
Absence rate in expected year of high school graduation	0.179	0.270	0.205	0.289	0.224
Days absent in expected year of high school graduation	28	43	32	46	35
Absence rate in 9th grade - expected year of high school graduation	0.139	0.210	0.161	0.228	0.175
Days absent in 9th grade - expected year of high school graduation	78	125	93	137	102

***Notes*:** This table shows high school outcomes for the analysis sample by cohort and type of high school. **Pre** = students in 2018 through 2021 expected high school graduation cohorts; **Post** = students in 2022 through 2024 expected high school graduation cohorts. Students in control schools are those who enrolled in one of the 10 schools not chosen for Hope Chicago in their freshman year. Students in Hope schools are those who enrolled in one of the 5 schools chosen for Hope Chicago. Only students with a non-missing senior year GPA are included in calculation of senior year GPA mean. SAT outcomes include 2021 and 2022 expected high school graduation cohorts, in which very few students (<5%) took the SAT due to the COVID-19 pandemic. Only students who took the SAT are included in SAT scaled score and national percentile rank means.

Table A.5: Effects of Hope Chicago on College Graduation Within Two Years of Expected High School Graduation

	Any College	2-Year College	4-Year College
	(1)	(2)	(3)
1[Hope school]×**1**[Eligible cohort]	0.003	0.002	0.001
	(0.006)	(0.006)	(0.001)
	{0.374}	{0.606}	{0.132}
Observations	19221	19221	19221
Pre-trend WBS p-val	0.343	0.370	0.814
Mean (Hope schools, 2021 cohort)	0.016	0.015	0.001

Notes: The sample includes students who entered a Hope or control high school as freshmen in the 2018 through 2023 expected high school graduation cohorts. See Table 4 notes for description of the specification. All columns include the full set of controls described in Section 4. The outcome is a binary variable indicating that the student earned a postsecondary credential within 2 years of expected high school graduation, from any institution (column (1)), a 2-year institution (column (2)), or a 4-year institution (column (3)). The two institution types are mutually exclusive and sum to the any-institution outcome. Robust standard errors, clustered at the school by cohort level, in parentheses; *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; p-values from wild cluster bootstrap-t, clustered at high school level, in braces.

Table A.6: Effects of Hope Chicago on College Graduation Within Three Years of Expected High School Graduation

	Any College	2-Year College	4-Year College
	(1)	(2)	(3)
1[Hope school]×**1**[Eligible cohort]	-0.006	-0.006	-0.000
	(0.007)	(0.006)	(0.002)
	{0.467}	{0.403}	{0.949}
Observations	16510	16510	16510
Pre-trend WBS *p*-val	0.724	0.666	0.979
Mean (Hope schools, 2021 cohort)	0.036	0.033	0.003

Notes: The sample includes students who entered a Hope or control high school as freshmen in the 2018 through 2022 expected high school graduation cohorts. See Table A.5 notes for description of the specification and the outcome, measured here within 3 years of expected high school graduation.

Table A.7: Heterogeneous Effects of Hope Chicago on Immediate Postsecondary Enrollment by Predicted Enrollment

	Predicted Enrollment		
	(1) None	(2) 2-Year	(3) 4-Year
A. Any postsecondary institution			
1[Hope school]×**1**[Eligible cohort]	0.139	0.181	0.185
	(0.019)***	(0.029)***	(0.025)***
	{<0.001}	{<0.001}	{<0.001}
Pre-trend WBS *p*-val	0.336	0.679	0.446
Mean (Hope schools, 2021 cohort)	0.237	0.473	0.710
B. 2-year institution			
1[Hope school]×**1**[Eligible cohort]	0.058	0.086	0.013
	(0.014)***	(0.025)***	(0.036)
	{0.004}	{0.083}	{0.776}
Pre-trend WBS *p*-val	0.555	0.547	0.682
Mean (Hope schools, 2021 cohort)	0.097	0.165	0.160
C. 4-year institution			
1[Hope school]×**1**[Eligible cohort]	0.125	0.198	0.254
	(0.019)***	(0.037)***	(0.026)***
	{0.001}	{0.013}	{0.001}
Pre-trend WBS *p*-val	0.743	0.559	0.101
Mean (Hope schools, 2021 cohort)	0.151	0.311	0.585
Observations	12342	5967	3752

Notes: See Table 4 for description of sample and specification. The outcome is a binary variable indicating any postsecondary enrollment (Panel A), enrollment in a 2-year postsecondary institution (Panel B), or enrollment in a 4-year postsecondary institution (Panel C), each measured within 1 year of expected high school graduation. Students are assigned to one of three groups by their predicted postsecondary enrollment – no enrollment, enrollment in a 2-year institution, or enrollment in a 4-year institution – and the three groups partition the analysis sample. Each column contains results from separate regressions in which the analysis sample is limited to the indicated group. The predictions are obtained using an ordered logit model, based on baseline features. Sample sizes are the same in all three panels and are reported once at the foot of the table.

Table A.8: Effects of Hope Chicago on Student and Teacher Survey Responses

	Student survey					Teacher survey			
	(1) Rigorous study habits	(2) Grit	(3) Parent supportiveness	(4) School-wide future orientation	(5) Importance of HS for the future	(6) Post-secondary expectations	(7) Student responsibility	(8) Parent involvement in school	(9) Quality of student discussion
Treatment	0.035	0.030	0.028	0.046	0.031	0.112***	0.032	0.003	0.049
	(0.056)	(0.059)	(0.051)	(0.049)	(0.058)	(0.036)	(0.037)	(0.038)	(0.032)
Pre-period mean	0.528	0.571	0.672	0.691	0.677	0.800	0.680	0.216	0.793
Observations	360	300	390	540	360	450	540	360	450

Notes: Estimates from school-level regressions of the outcome on an indicator for treatment (interaction between an indicator for whether a school was Hope-eligible and an indicator for post-2021). Regressions also include school and year fixed effects. The outcome for each measure is the share of respondents selecting one of the top two (most positive) response options for a question, pooled across the questions that make up the measure. Survey data is publicly reported Chicago 5Essentials *My Voice, My School* survey, 2018–2024, covering 5 Hope Chicago high schools (treatment) and 10 comparison high schools (control). Columns are numbered and grouped by respondent: student-survey measures and teacher-survey measures. Heteroskedasticity-robust (HC1) standard errors in parentheses; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Observations are school $\times$ year $\times$ question cells. "Pre-period mean" is the mean of the outcome among Hope schools in the pre-period.

Table A.9: Table 4: Effects of Hope Chicago on individual survey questions (share of positive responses)

	Importance of high school for the future (FUTR)				Expectations for post-secondary education (UEXP)					School-wide future orientation (SLAP)					
	Class learning aids future	HS effort aids workforce	HS teaches valuable skills	Classes prepare for life	Teachers expect college	Teachers help plan college	Curriculum: college-ready	Students plan for college	Teachers' job: college prep	Ensure post-grad planning	Ensure all students learn	HS = future preparation	All encouraged to college	Attention to all students	Keep students in school
Treatment	0.033	0.032	0.030	0.028	0.152**	0.044	0.064	0.206**	0.091	0.041	0.042	0.043	0.063	0.037	0.048
	(0.116)	(0.123)	(0.120)	(0.114)	(0.074)	(0.070)	(0.075)	(0.087)	(0.067)	(0.121)	(0.125)	(0.122)	(0.120)	(0.119)	(0.121)
Pre-period mean	0.660	0.708	0.692	0.649	0.803	0.822	0.775	0.701	0.898	0.688	0.713	0.703	0.689	0.671	0.681
Observations	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90

Notes: Estimates from school-level regressions of the outcome on an indicator for treatment (interaction between an indicator for whether a school was Hope-eligible and an indicator for post-2021). Regressions also include school and year fixed effects. The outcome is the share of respondents selecting one of the top two (most positive) response options for the question. Columns are the individual questions making up three survey measures — Importance of high school for the future (FUTR) and School-wide future orientation (SLAP), both student surveys, and Expectations for post-secondary education (UEXP), a teacher survey. Survey data is publicly reported Chicago 5Essentials *My Voice, My School* survey, 2018–2024, covering 5 Hope Chicago high schools (treatment) and 10 comparison high schools (control). Columns are numbered and grouped by respondent: student-survey measures and teacher-survey measures. Heteroskedasticity-robust (HC1) standard errors in parentheses; $^{*}\ p < 0.10$, $^{**}\ p < 0.05$, $^{***}\ p < 0.01$. Observations are school $\times$ year $\times$ question cells. "Pre-period mean" is the mean of the outcome among Hope schools in the pre-period.

Question wording: (1) What we learn in class is necessary for success in the future; (2) Working hard in high school matters for success in the workforce; (3) High school teaches me valuable skills; (4) My classes give me useful preparation for what I plan to do in life; (5) Teachers expect most students in this school to go to college; (6) Teachers at this school help students plan for college outside of class time; (7) The curriculum at this school is focused on helping students get ready for college; (8) Most of the students in this school are planning to go to college; (9) Teachers in this school feel that it is a part of their job to prepare students to succeed in college; (10) Teachers make sure that all students are planning for life after graduation; (11) Teachers work hard to make sure that all students are learning; (12) High school is seen as preparation for the future; (13) All students are encouraged to go to college; (14) Teachers pay attention to all students, not just the top students; (15) Teachers work hard to make sure that students stay in school.

Table A.10: Effects of Hope Chicago on Younger Siblings' GPA

	Overall		Math		Reading	
	(1)	(2)	(3)	(4)	(5)	(6)
Information Treatment	0.063		0.105		0.007	
	(0.027)**		(0.051)**		(0.033)	
	{0.405}		{0.483}		{0.835}	
Service Treatment		0.052		0.117		-0.014
		(0.026)**		(0.037)***		(0.033)
		{0.359}		{0.232}		{0.669}
Observations	18375	18375	17431	17431	17718	17718
Pre-trend WBS p-val	0.598	0.924	0.852	0.748	0.075	0.637
Mean (2021, Older Sibling Treated)	2.627	2.627	2.400	2.400	2.490	2.490

***Notes*:** See Table 13 for description of sample, treatment definition, and specification. The outcome is the raw GPA (overall in columns (1) and (2), math only in (3) and (4), reading only in (5) and (6)).

Appendix B Description of Hope Chicago Program

Hope Chicago is a scholarship-centered economic mobility initiative supporting two generations of Chicago families—students and their parents or guardians—with comprehensive financial and developmental resources to access, persist in, and complete postsecondary programs.

B.1 Program Differentiators

Hope Chicago provides substantial, renewable scholarships to every scholar. Coverage includes tuition, room and board, books, fees, and surcharges each academic year. Scholars also receive a laptop and a small annual stipend for additional necessities; emergency funding is available if unexpected hardship arises.

The program operates a two-generation model. One parent or guardian of each graduating senior from partner schools is eligible for scholarship assistance and resources to pursue postsecondary training or degrees if they do not already have a bachelor's degree.

Hope Chicago departs from typical forms of financial aid in which students qualify based on income and/or grades, offering its scholarships to all eligible students regardless of high school academic performance.

Eligibility covers a broad range of postsecondary pathways. Students may pursue 4-year or 2-year colleges and universities, vocational programs, professional certifications, and apprenticeships, as long as these are not provided by for-profit institutions.

The program is grounded in research on college access and persistence, drawing on lessons from promise programs nationwide.

B.2 Program Costs and Financial Aid

Stipends and scholarship structure are differentiated by college affiliation:

- In-network colleges: Hope Chicago's scholars enrolled at in-network colleges are guaranteed financial support to cover their full cost of attendance (tuition, books, room and board), and provided annual stipends and with a laptop ($700-750 usd worth). Stipends are $1,000 for first-year scholars and $750 annually in each subsequent year. Students typically receive multiple payments per semester. For most schools, cost data are available disaggregated by category (books, meal plans, board, financial aid), though detailed reporting is inconsistent. Hope Chicago's financial support supplements any federal, state, and other financial aid the student is entitled to, providing a consistent level of support for all its scholars.
- Out-of-network colleges: $1,000 subsidy per academic term, with no other financial or wraparound support.

All stipends require scholars to meet requirements such as registration, FAFSA completion, check-ins, and surveys, with specifics varying by campus/program manager.

Providing the in-network level of support for some students, particularly those who do not qualify for federal aid, requires a larger disbursement, which has been historically covered by Hope Chicago. Beginning with Cohort 5 (2026 high school graduates), a $12,000 disbursement cap per student per year was set, covering tuition, board, health insurance, and stipend.

B.3 Wraparound Support and Intervention Model

Hope Chicago's wraparound model – available only for scholars enrolled at in-network institutions – includes academic and financial advising, mentoring, tutoring, career exploration, workshops, and frequent touchpoints provided by Hope staff and Hope-connected staff at in-network institutions.

Eligibility letters (now issued every term) warn students if they are not on track with credit attainment, and outline consequences for repeated non-compliance. Expectations in terms of performance (i.e., credits obtained) depend on the chosen post-secondary path and enrollment year. Students who do not meet the expected benchmarks may be encouraged to transfer to the City Colleges of Chicago to maintain their eligibility. Students are allowed to stop out for 1 semester and defer their scholarship for documented reasons, with longer absences prompting scholarship revocation (appeal is possible for reinstatement). Tracking and monitoring is conducted through real-time data sharing with campus partners, but the completeness and fidelity of these trackers varies greatly.

The support structure for scholars enrolled in post-secondary institutions has evolved over time. New levels of support were applied to all current and subsequent Hope Chicago scholars. Here is a timeline of the intervention's evolution relative to the year of introduction:

- Year 1 (cohort of Hope Chicago scholars graduating high school in 2022): Basic intervention with tracking of several metrics but limited to no intervention as scholars proceed through their first year of college. Eligibility letters were first sent out in Summer 2023 (1 year after high school graduation), and academic benchmarks/interventions were not previously defined.
- Year 2 (2023 cohort): Enrolled in college before implementation of formal accountability measures; eligibility notifications began in Summer 2023 and applied to all Hope Chicago scholars.
- Year 3 (2024 cohort): Pulse surveys were launched to identify students at academic or engagement risk for immediate intervention. Introduced a tiered support system, classifying scholars into three tiers (based on high school GPA and survey responses). Tier 3 receives the most intensive support which includes in-person check-ins every three weeks by program

managers.

- Year 4 (2025 cohort): Delegated pulse survey administration and follow-up to campus contacts.
- Year 5 (2026 cohort): Implemented stricter requirements (including FAFSA, forms, and minimum attendance standards), updated eligibility formula, and enhanced academic accountability.[1]

B.4 Agreements with In-Network and Out-of-Network Institutions

In-network colleges have formal memoranda of understanding with Hope Chicago, provide a campus contact, share academic and financial data, bill Hope Chicago directly, and often offer negotiated tuition rates.[2] Examples of negotiated tuition reductions include a $3700 reduction per student per year for FAFSA completers at University of Illinois-Chicago and a $2500 reduction at Southern Illinois University.

Out-of-network scholars, who frequently attend historically Black colleges and universities (HBCUs), receive only the $1,000 per term subsidy and remain Hope Chicago Scholars while in receipt of funds. No additional support is provided for attendance at for-profit institutions.

B.5 Mentoring and Community Building

All Hope scholars are highly encouraged to engage with the Hope Chicago app, which offers community features and facilitates mentoring opportunities—sometimes pairing upper class scholars with incoming cohorts.[3] Additional community-building activities include a summer conference for freshmen. Informal, non-directed support is also present, such as scholars rooming together.

B.6 Current Eligibility Criteria

Hope Chicago partners with select high schools in communities where increased postsecondary success is projected to have significant impact. Eligibility criteria as of early 2026 are:

[1] Starting with Cohort 5, high schoolers now have to have a parent register with Hope Chicago, complete all required Hope Chicago forms/events, and not exceed 14 unexcused absences in order to remain eligible. Pre-cohort 5 students only need to attend a partner high school in junior year, graduate, and enroll in college within 1 year.

[2] 4-Year in-network institutions include: Chicago State University, Dominican University, Eastern Illinois University, Elmhurst University , Governors State University, Illinois Institute of Technology, Illinois State University, Lake Forest College, Lewis University, National Louis University, Northeastern Illinois University, Northern Illinois University, Roosevelt, Southern Illinois University - Carbondale, Southern Illinois University - Edwardsville, University of Illinois Chicago, University of Illinois Springfield, University of Illinois at Urbana Champaign, and Western Illinois University. 2-Year in-network institutions include: Arrupe College at Loyola, Harold Washington College, Harry S Truman College, Kennedy-King College, Malcolm X College, Olive-Harvey College, Richard J. Daley College, and Wilbur Wright College. Loyola and Trinity were previous partners who are no longer in network.

[3] For more recent cohorts, interaction with the app is required for some stipends, but not for maintaining eligibility with the scholarship.

- Students must attend one of five partner schools (Benito Juárez Community Academy, Al Raby School for Community and Environment, Morgan Park High School, Noble Johnson College Prep, Farragut Career Academy) for both 11th and 12th grade.
- Class of 2026 seniors must be enrolled in an eligible high school before the 20th day of junior year.
- All scholars must fill out Hope Chicago forms to opt into the program, graduate from a partner high school, complete the FAFSA or the Illinois Alternative Application (if ineligible for federal student aid), and enroll in an approved postsecondary pathway in the Fall after their high school graduation (unless they request a deferral, which gives them 1 year to enroll in a postsecondary institution before they lose eligibility).
- Students must attend two family sessions. One takes place in the Winter and one takes place in the Spring. These family sessions are where families receive information about the scholarship and eligibility requirements. They are also a time to discuss student interests and school choice.
- Students must have fewer than 14 unexcused absences during senior year.

Appendix C Analysis of Hope Chicago Financial Data

Having established Hope Chicago's impacts on enrollment and persistence, we turn to a complementary analysis of the costs associated with delivering the program. We draw on two distinct data sources to construct cost-per-student estimates. The first is a program cost dataset provided directly by Hope Chicago, which records costs at the student level by cohort and school year. In this dataset, Hope's total costs are defined as the sum of direct costs and paycard disbursements, where direct costs equal college bills minus total financial aid.[1] The second is Hope Chicago's Form 990 tax filings, which report the organization's operating and program costs at the aggregate level for each fiscal year, including a breakdown of employee expenses into wages, pension, benefits, and payroll taxes.

C.1 Analysis of Hope-provided Data

In the first dataset, students' college bills comprise tuition, room and board, meal plans, health insurance, orientation fees, course and lab fees, housing deposits, books, and other mandatory fees. Financial aid netted against these bills includes federal need-based aid (Pell, SEOG, and other federal sources), state need-based aid (MAP and other state aid), Hope Chicago's own institutional grant, institutional loans, merit scholarships independent of Hope Chicago, and other institutional or external scholarships. Paycard disbursements are recorded separately and cover stipends, books, meals, emergency funds, and education-related subsidies and reimbursements.

We restrict the analysis of this dataset to cohorts 1 through 3 and to costs incurred beginning in students' first year of college fall term, excluding any costs recorded in earlier terms. Total program costs during students' first year of college were roughly stable across the first two cohorts, at approximately $6 million each, and declined to approximately $5 million for cohort 3 (Table C.2). We also observe a marked decline in the number of students receiving Hope funds in the years following their first year of college. Whether this pattern reflects attrition from postsecondary enrollment or discontinuation of scholarship receipt for other reasons is a question we are not able to resolve with the current data, and we flag it as a priority for future analysis.

We also compute the average cost per student using two alternative denominators (see Table C.3). The first is the number of unique students appearing in the dataset, that is, students who actually received a Hope Chicago scholarship in college. The second, larger denominator is the number of treatment students in our analysis sample: all students who enrolled as ninth-graders at a Hope school, irrespective of whether they subsequently received Hope Chicago funding in college.[2] Both measures produce a similar pattern across all three cohorts, with cost per student somewhat higher

[1] Although they are similar, direct costs provided by Hope don't exactly match the costs calculated using the formula (Direct costs = College Bills - Financial Aid).

[2] Because the analysis sample includes all ninth-grade enrollees at Hope schools, it is necessarily larger than the set of students observed in Hope's program cost data, which reflects only those who ultimately enrolled in college and received Hope Chicago scholarship funds.

for cohort 2 than for cohorts 1 and 3. Using the analysis sample denominator, first-year cost per student ranges from approximately $5,000 to $6,000 across cohorts; using the smaller denominator of students who actually received scholarships, the corresponding range rises to approximately $8,500 to $9,500.

Table C.1: Cumulative Hope Chicago Program Cost Breakdown per Cohort

Cohort	Total program costs (1)	Direct costs (2)	College bills (3)	Financial aid (4)	Pay cards (5)
1 (2022)	$13,700,834	$10,910,221	$29,821,659	$17,937,771	$2,790,613
2 (2023)	$11,991,504	$9,868,041	$28,145,731	$16,601,878	$2,123,463
3 (2024)	$7,272,778	$5,702,418	$17,698,097	$10,875,312	$1,570,361

Notes: Source: Hope Chicago program cost data. Costs are cumulative over all school years observed for each cohort, beginning with the fall term of students' first year of college; costs recorded in earlier terms are excluded. Cohorts are labeled by expected high school graduation year. Total program costs = direct costs + pay cards. Direct costs = college bills − financial aid. College bills include tuition, room and board, meal plans, health insurance, orientation fees, course and lab fees, housing deposits, books, and other mandatory fees. Financial aid includes federal and state need-based aid, Hope Chicago's institutional grant, institutional loans, merit scholarships independent of Hope Chicago, and other institutional or external scholarships. Pay cards include stipends, books, meals, emergency funds, and education-related subsidies and reimbursements.

Table C.2: Hope Chicago Program Costs per Student, by Cohort and School Year

Cohort	School year	Total program costs (1)	Cost per student	
			Hope's dataset (2)	Analysis sample (3)
1 (2022)	2022–23	$6,028,157	$8,526	$5,192
	2023–24	$3,469,331	$7,592	$2,988
	2024–25	$2,870,275	$9,170	$2,472
	2025–26	$1,333,071	$4,919	$1,148
2 (2023)	2023–24	$5,967,430	$9,427	$5,879
	2024–25	$4,169,318	$9,998	$4,108
	2025–26	$1,854,755	$5,672	$1,827
3 (2024)	2024–25	$5,101,436	$8,720	$5,216
	2025–26	$2,171,342	$4,680	$2,220

Notes: See Table C.1 notes for data source and cost definitions. Column (2) divides total program costs by the number of unique students observed in Hope's program cost data in that school year (i.e., students who received a Hope Chicago scholarship in college). Column (3) divides total program costs by the number of treatment students in the analysis sample (students who enrolled in a Hope school as ninth graders in the indicated cohort). Denominators are reported in Table C.3.

Table C.3: Number of Students, by Cohort and School Year

Cohort	School year	Students in Hope's dataset (1)	Treatment students in analysis sample (2)
1 (2022)	2022–23	707	1,161
	2023–24	457	1,161
	2024–25	313	1,161
	2025–26	271	1,161
2 (2023)	2023–24	633	1,015
	2024–25	417	1,015
	2025–26	327	1,015
3 (2024)	2024–25	585	978
	2025–26	464	978

Notes: Column (1) reports the number of unique students observed in Hope Chicago's program cost data in the indicated school year. Column (2) reports the number of students in the analysis sample who enrolled in a Hope school as ninth graders in the indicated expected high school graduation cohort (see Appendix Table A.1), irrespective of whether they subsequently received Hope Chicago funding in college.

C.2 Analysis of Tax Filing Data

Finally, we compare these cohort-level estimates to the second source of financial data: Hope Chicago's tax returns. We find some broad similarities in total costs and cost per student across the two sources, though the estimates are not directly comparable for at least two reasons. First, our analysis of Hope's program cost data is restricted to cohorts 1 through 3 and excludes any costs incurred prior to the fall term of students' first year of college, while the tax returns capture program costs for all cohorts served in a given fiscal year. Second, the tax returns provide no cohort-level breakdown, so costs cannot be disaggregated by cohort as they can in the Hope costs dataset.

With these caveats in mind, total grant costs reported in the Form 990 for fiscal year 2024 (FY24), which corresponds roughly to the 2024–25 school year (SY25), were approximately $13.7 million (Table C.4), compared to approximately $12 million in total costs for SY25 summed across our three cohorts of interest in the first dataset. To calculate cost per student, we divide total FY24 grant costs from the tax returns by the total number of unique students enrolled in the program in SY25 in Hope's dataset (N=1,315), which implies a cost per student of approximately $10,400. By comparison, when using Hope's data and dividing total costs by the number of enrolled students in the cohorts of interest for SY25 (N=1,315), we get an average cost per student of approximately $9,200. Finally, dividing total costs by the number of treatment students in the analysis sample (N=3,154) lowers this figure to approximately $3,800 per student.

Table C.4: Hope Chicago Program Expenses by Category and Fiscal Year (Form 990)

	FY22	FY23	FY24
	(1)	(2)	(3)
Grants and assistance to individuals	$7,182,645	$12,055,981	$13,738,504
Compensation of officers and key employees	$639,689	$454,233†	$595,240
Other salaries and wages	$671,800	$1,161,933†	$1,274,304
Pension plan contributions	$21,735	$11,515	$45,221
Other employee benefits	$142,735	$213,952	$182,763
Payroll taxes	$134,268	$199,204†	$204,824

Notes: Source: Hope Chicago Form 990 filings, Part IX (Statement of Functional Expenses), program service expenses column. Amounts in U.S. dollars. Rows correspond to Form 990 variables s9_grants_indiv_prog, s9_officer_comp_prog, s9_other_wages_prog, s9_pension_prog, s9_emp_benefits_prog, and s9_payroll_tax_prog, respectively. † Estimated value for FY23.