

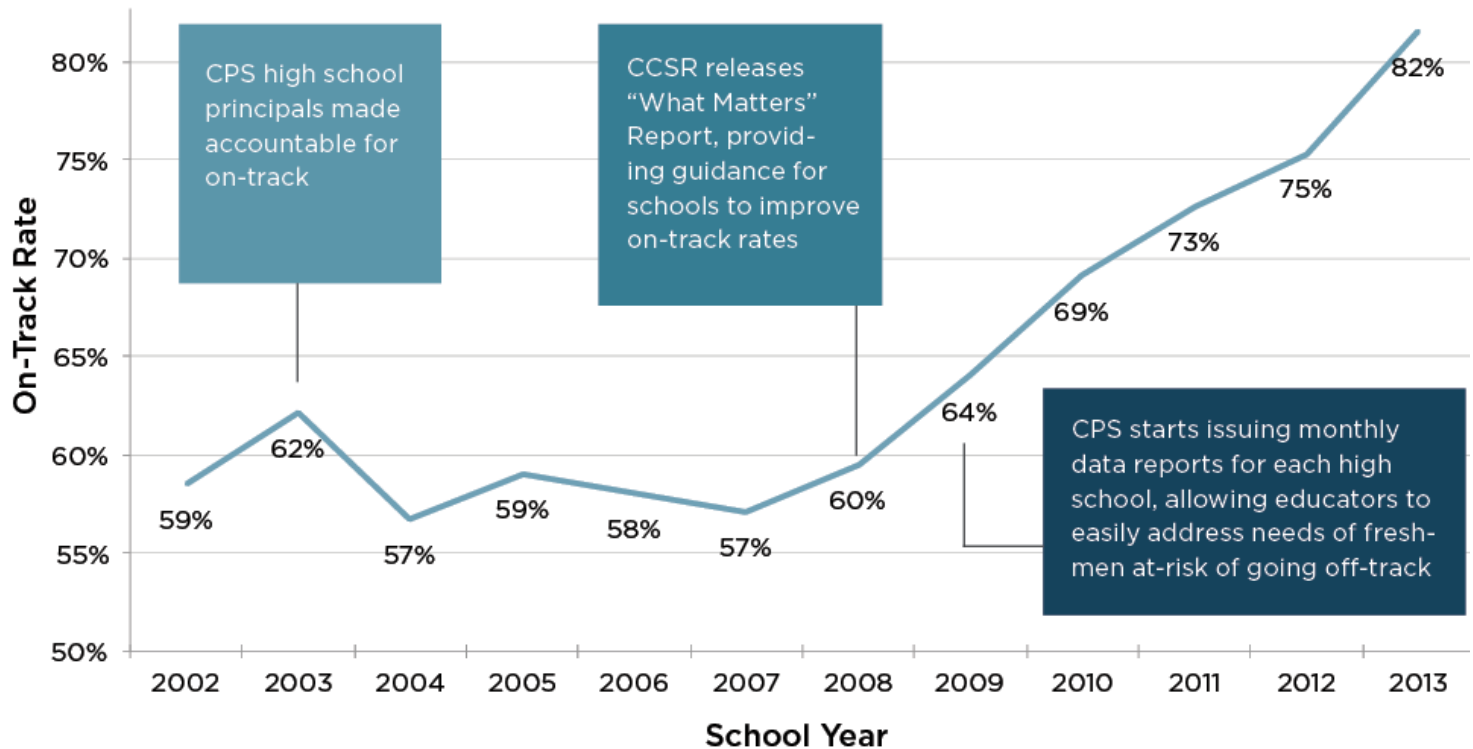
RESEARCH SUMMARY APRIL 2014

# Preventable Failure

## Improvements in Long-Term Outcomes when High Schools Focused on the Ninth Grade Year

**FIGURE 1**

Ninth grade on-track rates improved most when schools acted on real time data about student absences and course performance.



**Note:** This figure represents first-time freshmen who are not receiving special education services and are not enrolled in a charter or alternative school.

## PREVENTABLE FAILURE: IMPROVEMENTS IN LONG-TERM OUTCOMES WHEN HIGH SCHOOLS FOCUSED ON THE NINTH GRADE YEAR

# Research Summary

In 2007, spurred by University of Chicago Consortium on Chicago School Research (UChicago CCSR) research reports, leadership at the Chicago Public Schools (CPS) began a new targeted approach to reducing course failure in the ninth grade. The research suggested that the transition between eight and ninth grade played a critical role in shaping students' long-term outcomes, and demonstrated that students' attendance and course performance in the ninth grade year were highly predictive of high school dropout. Schools across Chicago initiated new strategies to improve that transition, making use of new data reports for monitoring and supporting students in real time, as well as ninth grade coordinators, and summer transition programs. On its face this does not seem like an approach that would produce a system shift in performance, redefine approaches to school dropout, and call into question the conventional wisdom that urban neighborhood high schools could not make radical improvements. And yet CPS's focus on on-track achieved all of this. It moved an entire system, including many traditional neighborhood high schools that had been condemned as dropout factories. This is a summary of an upcoming UChicago CCSR research report that examines the dramatic improvements in the number of CPS ninth-graders who were on-track to graduation and the impact these improvements had on students' long-term outcomes.

Developing effective approaches to reducing dropout rates is one of the highest priorities in education today. Despite weak economic prospects for young adults without high school diplomas,<sup>1</sup> one-fourth of adolescents in the United States still do not make it to graduation.<sup>2</sup> Graduation rates in urban districts are particularly low.<sup>3</sup> Furthermore, gaps in educational attainment by income have actually grown in recent decades.<sup>4</sup> A focus on high school graduation could help reverse this trend. In fact, a recent report by RAND on the minority attainment gap concluded that among the available policy options for increasing educational attainment, equalizing high school graduation rates between white and Hispanic and white and African American students would have the

highest cost-benefit ratio of any strategy.<sup>5</sup>

Urban educators are under increasing pressure to increase high school graduation rates, while simultaneously raising student achievement for all students. However, educators are seldom provided with concrete guidance on what they could do that would make an immediate difference in the success of their students. For example, principals reading the Institute for Education Science's (IES) What Works Clearinghouse (WWC) report on dropout prevention—intended to summarize best practices and identify programs with strong evidence of effects—would find that most of the dropout prevention programs provide little guidance of how to systematically improve their school practices.

The majority of the seven interventions with evidence of positive effects are alternative schools, whole school change models, or after school programs. None of these approaches provides a principal with any strategies that they could use in the management of schools or with their teachers, short of buying a special program. One practice that the WWC report recommends, but for which there was yet little evidence when it was written, is that schools use data systems to accurately diagnose their dropout rates and identify students at risk of dropping out. This practice was adopted by Chicago schools; in 2008 schools started using data reports to identify students at risk of dropping out in ninth grade.

## Dropout Prevention and the On-Track Indicator

Over the past several years, CPS has developed a targeted approach to dropout prevention focused on improving students' ninth grade course performance. The approach stems largely from a series of studies published by UChicago CCSR researchers that narrowed down the myriad factors contributing to dropout to a single, manageable intervention point: the ninth grade transition. These studies found that as students transition to high school, their grades, attendance and engagement in school decline markedly. Course failure becomes common, even among students with strong grades and test scores in eighth grade. These studies have strongly suggested that if adolescents can make the transition to high school effectively, they will be more likely to progress in subsequent grades and ultimately graduate from high school on time.

In Chicago, much of the work on ninth grade coalesced around the "on-track" indicator, developed by UChicago CCSR in the late 1990s. The on-track indicator provides a simple quantitative measure of whether ninth-graders are making adequate progress to graduation based on their credit completion and course failures. Specifically, a student is considered "on-track" if she has enough credits to be promoted to tenth grade and had earned no more than one semester F in a core course. Students who end their ninth grade year on track are almost four times more likely to graduate from high school than those who are off-track. In fact, a student's on-track status is more predictive of high school graduation than their race/ethnicity, level of

### DEFINITION OF ON-TRACK:

A student is considered "on-track" if he or she earns at least five full-year course credits (ten semester credits) and no more than one semester F in a core course (English, math, science, or social science) in their first year of high school.

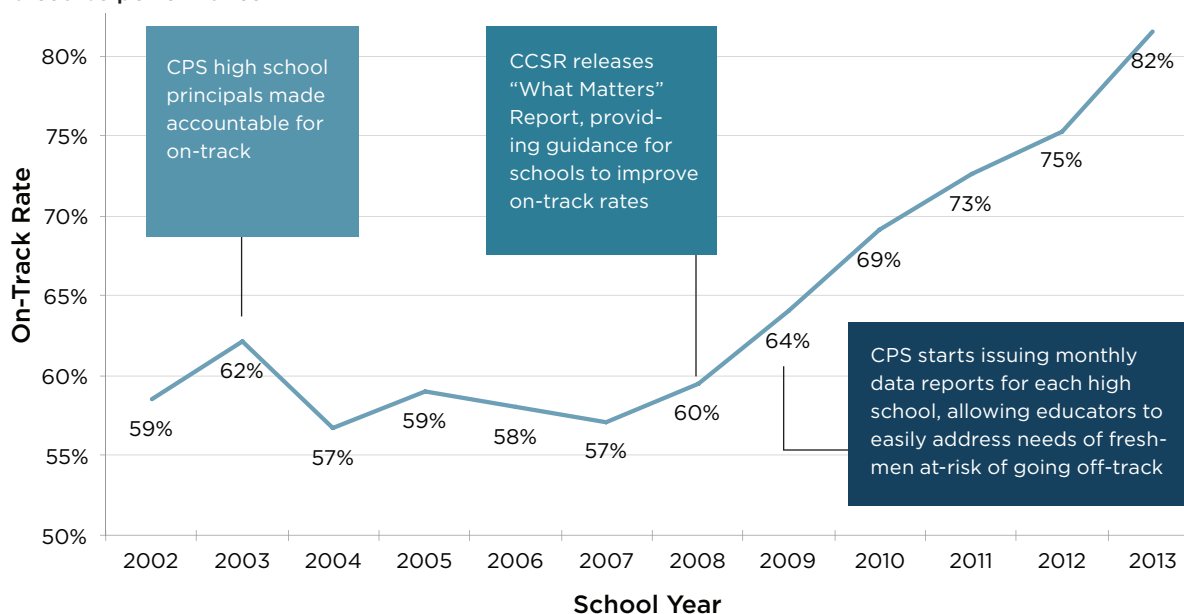
poverty, or test scores. The on-track indicator focused attention on a key developmental transition with a quantitative measure that could be easily calculated, monitored, and ultimately acted and improved upon.

In 2007, following the release of a key report by UChicago CCSR on strategies affecting on-track rates, the district began a major initiative that promoted the use of data to identify students' level of dropout risk in high school and intervene before students fell too far behind. One of the key features of this initiative was the development of data reports that allowed high school administrators and teachers to monitor student performance in real time and identify students at risk. High schools were given substantial flexibility in how they used these data. The range of strategies and approaches developed around these data at both the district and high school levels is one of the most distinctive features of the effort.

The effort appears to have paid substantial dividends: between 2007 and 2013, the CPS on-track rate rose 25 percentage points, from 57 to 82 percent (Figure 1). This represents an estimated 6,900 additional students who finish ninth grade each year without significant course failures and with sufficient credits to earn sophomore standing. Importantly, these improvements occurred across all racial/ethnic groups, among both males and females, and across all levels of incoming achievement. And yet, when these efforts were initiated, it was not known whether improvements in on-track rates would, in fact, pay dividends in terms of graduation rates and improved performance in subsequent years.

**FIGURE 1**

**Ninth grade on-track rates improved most when schools acted on real time data about student absences and course performance.**



**Note:** This figure represents first-time freshmen who are not receiving special education services and are not enrolled in a charter or alternative school.

## On-track rates are up, but did efforts to improve ninth grade on-track rates actually lead to higher graduation rates?

Chicago's efforts to improve student performance in ninth grade convincingly demonstrate that high schools can affect whether students fail ninth grade courses and are on- or off-track. What educators could not know when they started their work was whether getting more ninth graders on track would subsequently improve those students' likelihood of graduating high school on time or their performance in subsequent grades. If, for example, the on-track indicator simply identified those students who enter ninth grade disengaged or with very low skills – the students who are most likely to struggle throughout high school-- then we would not expect rising ninth grade on-track rates to carry over into improved performance in later grades since those problems would still plague students in later years.

There was good reason to believe that reducing course failure in ninth grade would improve students' chances

of graduating from high schools, given the strength of the relationship between ninth grade performance and eventual graduation. But there were also reasonable concerns that these efforts to reduce course failures in ninth grade might be misguided – that raising on-track rates may only be kicking the can down the road by delaying the onset of academic problems until later in students' high school careers, and ultimately creating incentives for high schools to simply promote unqualified students. There have also been questions raised about whether the inclusion of on-track in CPS's accountability system has led teachers to game the system, turning F's into D's or focusing on preventing students with only one F from failing additional courses.

In addition, policymakers and educators often raise the concern that there may be unintended consequences of these efforts. One concern is that schools may pay a price for increasing on-track rates in the form of lower test scores caused by keeping lower-performing or academically vulnerable students in school longer. Second, at a time when districts across the country are emphasizing the importance of college readiness,

there has been concern that efforts aimed explicitly at mitigating course failure in ninth grade may send the wrong message to students and teachers alike that just passing classes is enough, thus undermining a focus on college readiness. Finally, there have been doubts about whether these fairly low-cost efforts could do much to change outcomes in schools where so few students graduated that the schools were called “dropout factories,” or among African American and Latino males whose graduation rates were under 50 percent.

Much of the debate rests on legitimate concerns that can be formulated as testable propositions. By comparing consecutive cohorts as they move from ninth grade into subsequent grades, we can test these concerns empirically. For example, if an increase in a high school’s on-track rate means that more of its students have been set on a path towards graduation, then we would expect to observe increases in that ninth grade cohort’s performance in tenth, eleventh, and twelfth grade, culminating in a higher graduation rate among those students. If, however, off-track status is simply a marker of students who enter ninth grade disengaged or with very low skills, then we would expect students to fail in later grades, once they are no longer getting the additional attention aimed at ninth-graders. We can use the same approach to ask whether there is evidence that efforts to raise on-track rates in ninth grade led teachers to turn Fs into Ds, simply passing along failing students to the next grade.

## Key Findings

### Improvements in ninth grade on-track rates led to higher graduation rates and better academic outcomes for students

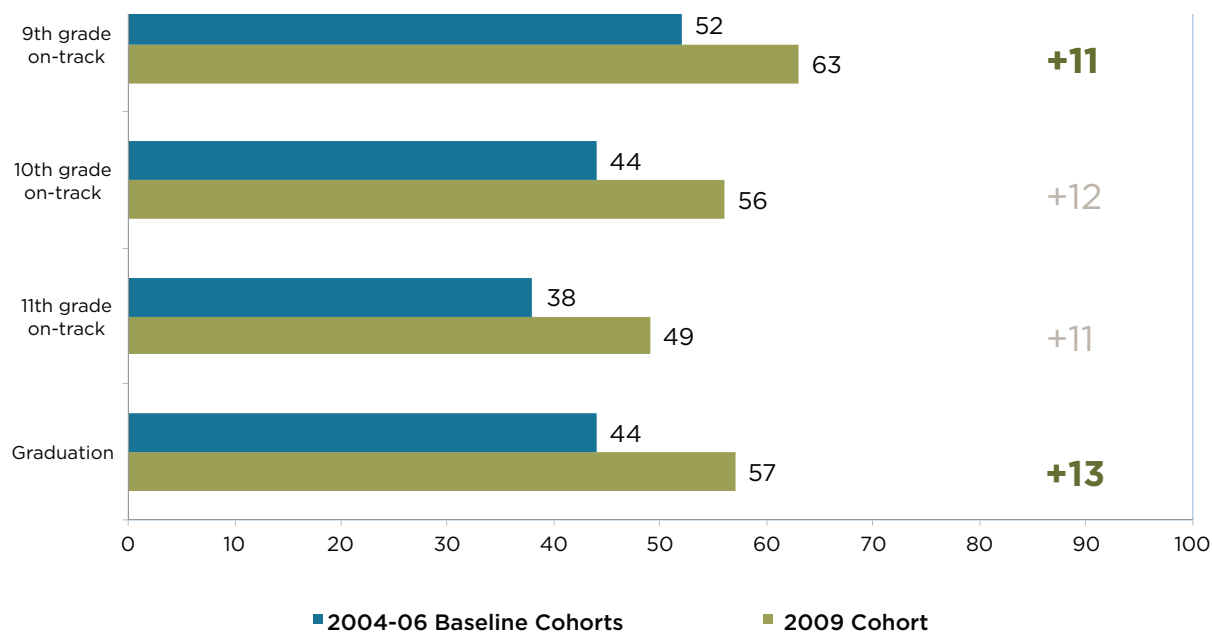
The dramatic improvements in on-track rates in Chicago provide an opportunity to answer these questions. A subset of 20 high schools showed substantial improvements in on-track rates as early as 2008 and 2009, so that sufficient time has elapsed to allow us to explore whether increases in ninth grade on-track rates have produced increases in high school graduation rates downstream. The report separately examines two groups of schools: 1) primary movers, three schools (Juarez, Kenwood, and Steinmetz) that showed large improvements in on-track rates in 2008; and secondary movers, 17 additional schools that showed improvements in 2009. Other high schools showed improvements in subsequent years, but the 20 schools are the focus of the study since they improved ninth grade on-track rates early enough to examine changes in four-year graduation rates as of 2013.

### Improvements in ninth grade on-track at early-mover schools were sustained in tenth and eleventh grade and followed by a large increase in graduation rates.

All three primary mover schools increased their on-track rates by at least 10 percentage points in 2008, compared with the prior three years. The following year, the relationship between ninth grade on track and tenth grade performance remained the same for those students as in prior years, even though many more freshman were now ending the year on track. In 2011, after those students were in school for four years, graduation rates jumped at all three schools, with increases that ranged from 8 to 20 percentage points. Among secondary movers, on-track rates increased, on average, by 11 percentage points in 2009, compared with the baseline cohorts; in 2012, on average, graduation rates at these schools jumped by 13 percentage points (see Figure 2). These graduation rate improvements among the early movers cannot be attributed to changes in the incoming characteristics of students; incoming achievement levels (e.g., eighth grade test scores) were not significantly better than in prior

**FIGURE 2**

In secondary mover schools, increases in 9th grade on-track rates persisted as that cohort progressed through high school.



Note: This figure represents first time freshmen at secondary mover schools without a special education status. Years refer to the spring of the school year.

cohorts. Rather, there is a strong relationship between the initial increase in ninth grade on-track rates and improved outcomes four years later.

Between 2005 and 2013, improvements in ninth grade on-track rates across the district were dramatic, sustained, and observed across a wide range of high schools and among critical subgroups—by race, by gender and across achievement levels. The benefits of getting on-track were greatest for students with the lowest incoming skills (see Table 1). Students with incoming EXPLORE scores less than 12—the bottom quartile of CPS students-- had a 24.5 percentage point increase in their on-track rates. On-track rates improved more among African American males than among any other racial/ethnic gender subgroup, rising from 43 percent in 2005 to 71 percent in 2013.

Furthermore, in all but one early mover schools, the improvements in ninth grade on-track rates continued to improve among subsequent cohorts (see Figure 3). In later years, more schools showed improvements in ninth grade on-track rates and citywide on-track rates

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have continued to improve. In 2005, on-track rates varied widely across high schools; by 2013 only a handful of schools had on-track rates under 70 percent (see Figure 4). System shifts – large, consistent improvements that create lasting change across subgroups and considerably reduce variation in outcomes across schools – are rare in education. This is a one of those rare cases.

**TABLE 1**

On-track rates improved for all groups of CPS students, but African-American males improved the most.

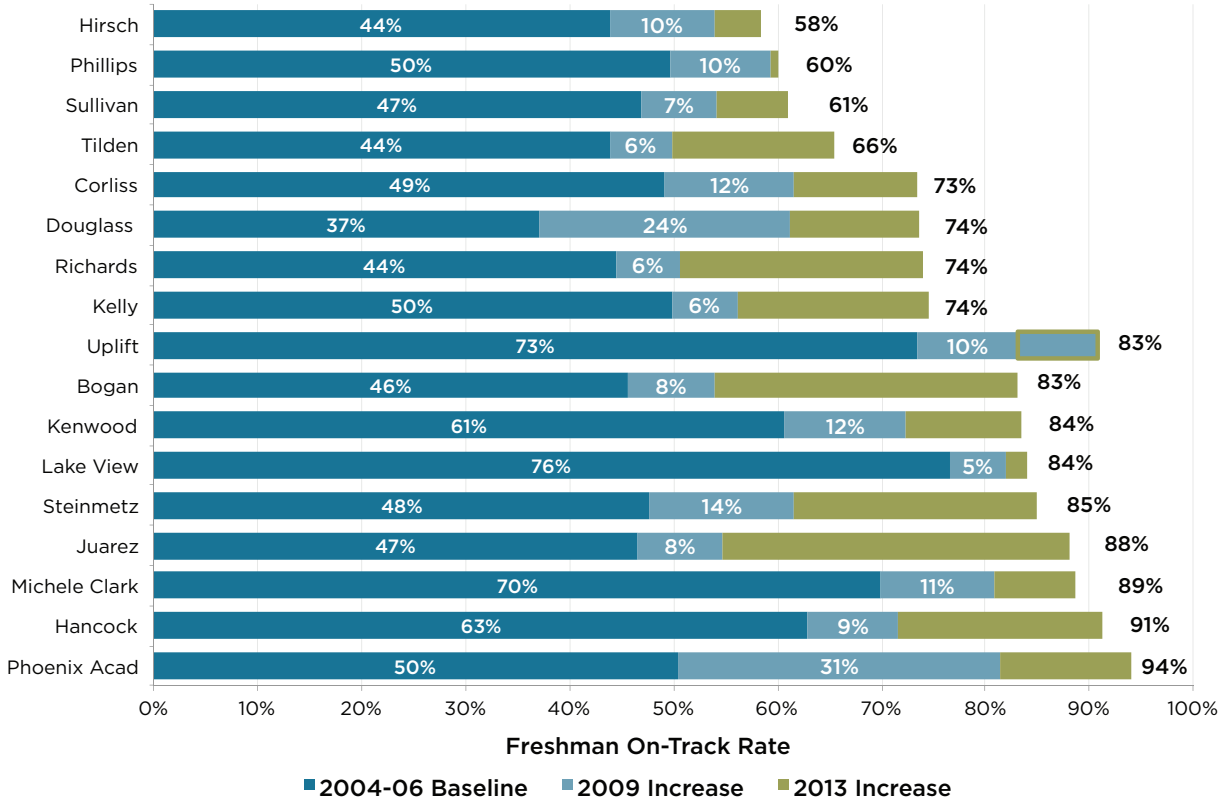
	Percent of entering class	2005 On-Track Rate	2013 On-Track Rate	Change
<b>On-Track Rates by Race/Ethnicity and Gender</b>				
African American Males	19%	43.1%	71.4%	+28.3
African American Females	21%	61.2%	82.3%	+21.1
Latino Males	25%	52.1%	77.4%	+25.3
Latina Females	24%	66.4%	85.6%	+19.2
White Males	5%	66.8%	87.2%	+20.4
White Females	5%	79.6%	93.1%	+13.5
<b>On-Track Rates by EXPLORE Categories</b>				
<12	12%	41.6%	66.1%	+24.5
12-13	20%	52.8%	71.2%	+18.4
14-16	32%	68.8%	86.3%	+17.5
17+	30%	84.6%	94.9%	+10.3

Note: This figure represents first time freshmen not in charter or alternative schools without a special education status. Years refer to the spring of the school year. Entering class compositions are of the 2013 class. Approximately 7% of freshmen are missing EXPLORE scores and are not included in EXPLORE sub-groups.

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**FIGURE 3**

Almost all primary and secondary mover schools continued to improve through 2013



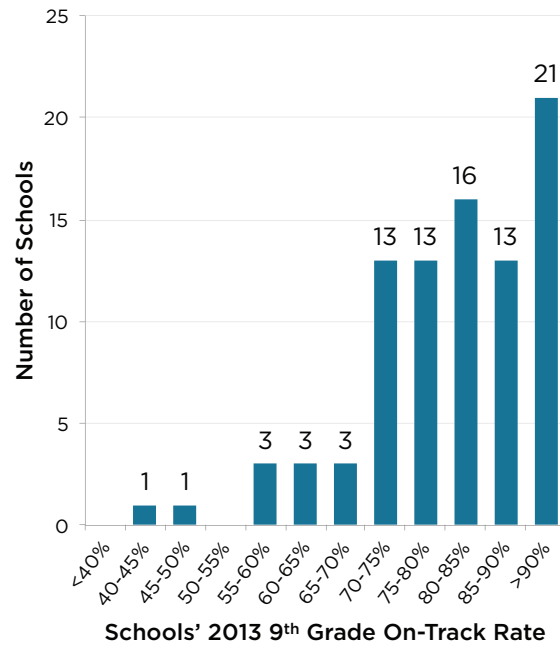
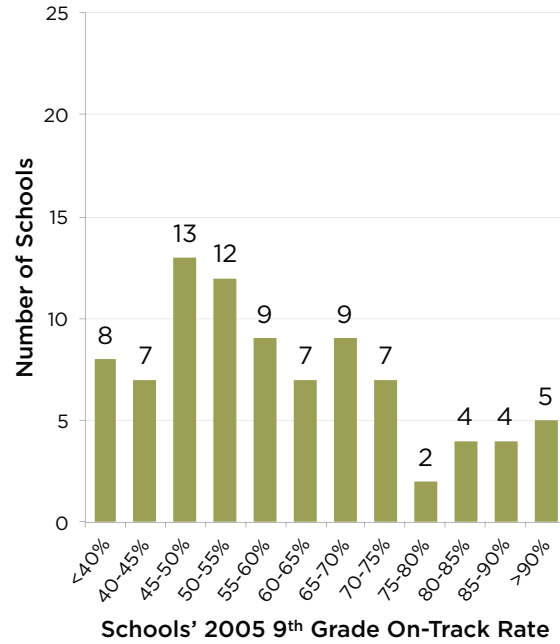
Note: This figure represents first-time freshmen who are not receiving special education services and are not enrolled in a charter or alternative school. Years refer to the spring of the school year. Three secondary mover schools, Chicago Discovery, School of Entrepreneurship, and School of the Arts closed after 2009 and are not shown.

**Improvements in on-track were accompanied by across-the-board improvements in grades.** On-track improvement was not just a result of teachers giving students a grade of “D” instead of an “F.” Grades improved at all ends of the achievement spectrum. In the 17 secondary-mover schools, there was a 10 percentage point increase in the proportion of freshmen with B’s or better and a 12 percentage point increase in the percentage of students with no F’s. The portion of students with D’s or F’s declined significantly, from 33 to 22 percent while the percentage of students with B’s or better increase from 28 to 37 percent. Thus, there is little evidence, on average, that the increase in on-track rates in these schools was driven by simply focusing on turning F’s into D’s or on trying to move students at the margins.

**Improvements in on-track were accompanied by across-the-board improvements in grades.** ACT scores remained very close to what they were before on-track rates improved, which means that the average growth from EXPLORE to ACT remained the same or increased, even though more students—including many students with weaker incoming skills—were taking the ACT.

**FIGURE 4**

While only 22 high schools had on-track rates above 70% in 2005, by 2013, nearly 90% of high schools had on-track rates that high.



**Note:** This figure represents first-time freshmen who are not receiving special education services and are enrolled in schools that were open in both spring 2005 and spring 2013, respectively.



## Interpretive Summary

There is good reason for skepticism about educational reforms. Practitioners have seen reforms come and go and are naturally dubious about the potential of “the next new thing” to take root and make real change. Researchers are also very skeptical of findings with big effects. And yet, CPS’s focus on on-track moved an entire system. The evidence in this brief shows that the improvements in ninth grade on-track rates can result in dramatic improvements in graduation rates three years later. It is hard to overstate the significance of these findings.

**The on-track initiative reframed the problem of school dropout from an outcome that is outside the control of educators to one that can be managed through effective school-based strategies.** What is striking is how substantial improvements in performance can result from a targeted approach that also allows schools latitude in their strategy. In contrast to the common assumption that school dropout is an intractable problem in urban schools, the improvements in on-track and graduation rates in the primary- and secondary-mover schools suggest that students’ performance is actually highly malleable.

**Ninth grade is a pivotal year that provides a unique intervention point to prevent school dropout.** What is clear is that no matter how a school increases on-track rates in ninth grade, graduation rates improve three years later. When schools concentrate their efforts on helping students make a successful transition to ninth grade, it results in dramatic increases in graduation.

**Chicago’s focus on on-track provides an important case study of the use of data to build the capacity of high school educators to manage complex problems and create systems of continuous improvement.** The success of this initiative raises unanswered questions about how data use changed educators’ behaviors, why some schools continued to improve and others did not, and in particular why this particular approach was so effective in generating improvements in the system’s lower performing schools. All of these questions would be important subjects for further research.

In contrast to the common assumption that school dropout is an intractable problem in urban schools, the **improvements in on-track and graduation rates** in the primary- and secondary-mover schools **suggest that students’ performance** is actually highly malleable.



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