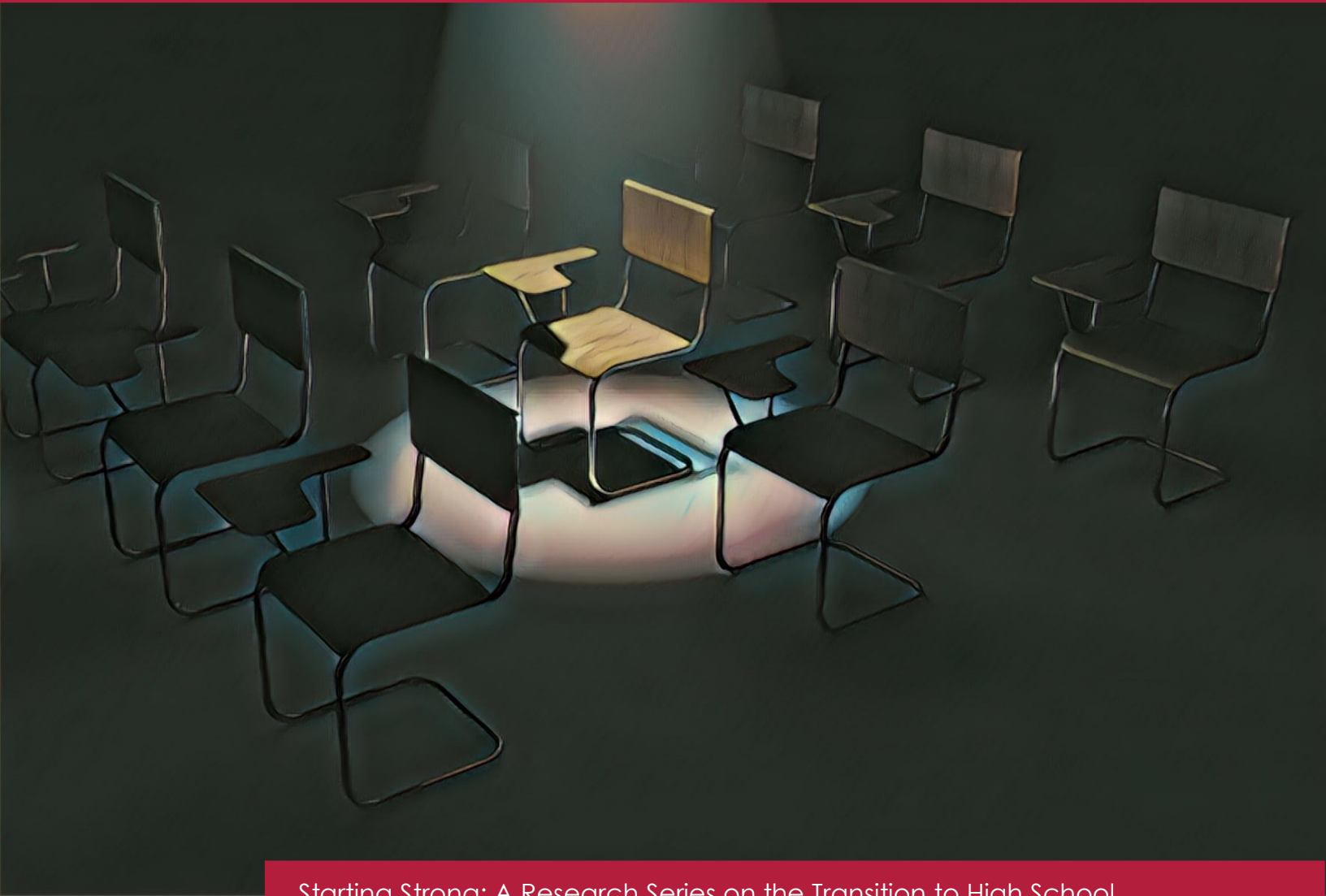


# Present from the Start: Ninth Grade Attendance Patterns in Philadelphia, 2015-2017



Starting Strong: A Research Series on the Transition to High School

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## How this report was produced

This report is the result of a collaboration between the Philadelphia Education Research Consortium (PERC) and researchers from the School District of Philadelphia (SDP). The first author, Theodore Wills, is a Senior Research Associate at the SDP Office of Research and Evaluation. He holds a PhD in Cognitive Psychology.

## About PERC

The mission of the Philadelphia Education Research Consortium is to provide timely, actionable, rigorous, and non-partisan research on the most pressing issues facing Philadelphia public education. To do this, PERC seeks to engage the region's colleges and universities, nonprofits, and the Philadelphia public education sector in respectful, mutually beneficial research-practice partnerships. By providing Philadelphia's leaders and citizenry with high-quality information about progress, challenges, and effective strategies in education, PERC aims to increase education opportunities and achievement for all Philadelphia students.

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## Present from the Start:

### Ninth Grade Attendance Patterns in Philadelphia, 2015-2017

Ted Wills, Ruth Curran Neild, Molly Pileggi • April 2019

#### Summary

**School learning starts with school attendance.** Students need to be in school to receive instruction and learn from their teachers and peers. When schools have high rates of poor attendance, their academic achievement levels suffer.

**Ninth grade is a critical juncture that comes with increased student autonomy – and new pitfalls, including the potential for disengagement.** Students are often held to increasing academic expectations that put more of the responsibility in their own hands. If students react by disengaging from school, their academic futures could be in danger. The School District of Philadelphia (SDP) found that the stronger a student’s ninth grade attendance, the more likely that he or she will graduate on time.<sup>1</sup>

**But in a long school year, when should schools start paying attention to student attendance?** In this report, we study attendance patterns of first-time SDP ninth graders during the 2015-16 and 2016-17 school years. We examine the spread of overall attendance rates in these two student cohorts, patterns over the course of their ninth grade year, and how those patterns differ for students with different levels of academic achievement.

#### Key Findings

- **The mean attendance rate for first-time SDP ninth graders was 86 percent. This means that a typical ninth grader missed about one out of every six instructional days.** This average is skewed somewhat by students with many absences, but it is still the case that more than 40 percent of first-time ninth graders miss more than one in every 10 instructional days.
- **Attendance drops from eighth to ninth grade, for all levels of eighth grade attendance.** While eighth grade attendance is a good predictor of ninth grade attendance, even students with the strongest attendance profiles show a decline in attendance rates from eighth to ninth grade.
- **Ninth grade attendance slowly but steadily declines as the year goes on, with a sharp drop off in the last two weeks of the year.** This gradual decline is true of students at all levels of attendance, though students with the lowest attendance rates decline at a faster rate as the year goes on.
- **Students with lower attendance rates are absent more often and for more days per absence than students with higher attendance rates.** Students with attendance rates below 80 percent averaged almost 20 absences and 2.7 days out per absence.

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<sup>1</sup> Wills, Theodore. 2017. *How Much Does 9<sup>th</sup> Grade Attendance Matter?* Philadelphia: School District of Philadelphia. Retrieved from <https://www.philasd.org/research/wp-content/uploads/sites/90/2017/09/9th-Grade-Attendance-and-Grad-Rates-Focus-Brief-September-2017.pdf>.



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- **Poor report card grades do not typically lead to sharp changes in attendance.** From the first two weeks of school, attendance tends to be lower for students that receive poor report card grades, but their attendance rates don't change after receiving their first report card.
  - **Students that end ninth grade on track to graduate have higher attendance than those that do not.** Students that end ninth grade off track begin the year with lower attendance than those that end up on track. The attendance difference between these two groups gets larger as the year progresses.

### Implications for policy and practice

- **Schools can identify and begin to intervene with students at risk of having poor year-end attendance from the first weeks of school.** On average, a student who ends the year with poor overall attendance also started the year with poorer attendance than their peers.
- **Attendance matters and is associated with achievement.** Students who have poor attendance also tend to have lower achievement in their core courses and more often end up off track at the end of their first year of high school. Sharing this with teachers, parents, and students could help motivate a change in attendance behavior.

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## Why this study

**School attendance is a basic condition for learning.** For students to acquire the skills and knowledge that schooling offers, they must be in class to experience instruction on a regular basis. Although the vast majority of U.S. students in kindergarten through grade 12 are present each school day, some students miss large amounts of instructional time. During the 2015-16 school year, for example, 8 million U.S. students (15.5 percent of students in public schools) were absent for 15 days or more.<sup>2</sup> Nationally, among high school students, 21 percent missed at least 15 days.

**School absences are associated with lower academic achievement and engagement with school.**<sup>3</sup> Evidence from Philadelphia and other large school districts indicates that school absences, even in middle school, are among the best predictors of whether a student will leave high school without earning a diploma.<sup>4</sup> Chronically absent students also have a negative effect on the achievement of their classmates, most likely because teachers re-teach material missed by absent students instead of moving on to new topics.<sup>5</sup>

**Since 2015, many states have incorporated measures of student absenteeism into their K-12 education accountability systems, with a particular focus on the percentage of students who are “chronically absent.”**<sup>6</sup> Most of the states that use this accountability indicator, including Pennsylvania, define chronic absenteeism as missing 10 percent or more of the days enrolled in school—in other words, for students enrolled for a 180-day school year, 18 days or more.<sup>7</sup> While there are student, family, school, and community factors associated with absenteeism, the logic behind holding schools accountable for student attendance is that school organization and climate affect whether students want to come to school.<sup>8</sup>

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<sup>2</sup> U.S. Department of Education, 2015-16 (Civil Rights Data Collection). Hamilton Project interface.

<sup>3</sup> Gottfried, Michael A. 2010. "Evaluating the Relationship Between Student Attendance and Achievement in Urban Elementary and Middle Schools: An Instrumental Variables Approach." *American Educational Research Journal* 47: 434-65; Ehrlich, Stacy B., Gwynne, Julia A., Pareja, Amber Stitzel, and Elaine M. Allensworth. 2014. *Preschool Attendance in Chicago Public Schools Relationships with Learning Outcomes and Reasons for Absences* Chicago: Consortium on Chicago School Research; Gottfried, Michael A. 2014. "Chronic Absenteeism and Its Effects on Students' Academic and Socioemotional Outcomes." *Journal of Education for Students Placed at Risk* 19:53-75; Goodman, Joshua. 2014. "Flaking Out: Student Absences and Snow Days as Disruptions of Instructional Time." NBER Working Paper 20221, National Bureau of Economic Research, Cambridge, MA.

<sup>4</sup> Allensworth, Elaine M., and John Q. Easton. 2005. *The On-Track Indicator as a Predictor of High School Graduation*. Chicago: Consortium on Chicago School Research.; Neild, Ruth Curran and Robert Balfanz. 2006. *Unfulfilled Promise: The Dimensions and Characteristics of Philadelphia's Dropout Crisis, 2000-2005*. Philadelphia: Philadelphia Youth Network; Stuit, D., O'Cummings, M., Norbury, H., Heppen, J., Dhillon, S., Lindsay, J., & Zhu, B. (2016). *Identifying early warning indicators in three Ohio school districts* (REL 2016-118). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Midwest.; Mac Iver, Martha Abele and Matthew Messel. 2012. *Predicting High School Outcomes in the Baltimore City Public Schools*. Washington, DC: Council of the Great City Schools.; Burke, Arthur. 2015. *Early Identification of High School Graduation Outcomes in Oregon Leadership Network Schools* (REL 2015-079). Washington, DC: U.S. Department of Education, Institute of Education Sciences, National Center for Education Evaluation and Regional Assistance, Regional Educational Laboratory Northwest. Retrieved from <http://ies.ed.gov/ncee/edlabs>.

<sup>5</sup> Gottfried, Michael A. 2011. "Absent Peers in Elementary Years: The Negative Classroom Effects of Unexcused Absences on Standardized Testing Outcomes." *Teachers College Record*, 113: 1597-1632.

<sup>6</sup> The Every Student Succeeds Act of 2015 required that states include test-based measures of academic achievement and graduation rates in their accountability systems, as well as at least one measure of "school quality or student success." Many states chose student absenteeism for this measure.

<sup>7</sup> Bauer, Lauren, Liu, Patrick, Schanzenbach, Diane Whitmore, and Jay Shambaugh. 2018. *Reducing Chronic Absenteeism under the Every Student Succeeds Act*. Washington, DC: Brookings Institution.

<sup>8</sup> Research supporting this perspective includes evidence that schools where students report more positive climates have less chronic absenteeism (Van Eck, Kathryn, Johnson, Stacy R., Bettencourt, Amie, and Sarah Lindstrom Johnson. 2017. "How School Climate Relates to Chronic Absence: A Multi-level Latent Profile Analysis." *Journal of School Psychology* 61: 89-102); evidence that individual teachers affect student attendance (Liu, Jing and Susanna Loeb. 2017. "Engaging Teachers: Measuring the Impact of Teachers on Student



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**To plan their responses to absenteeism, states and school districts across the country are looking at their data.** They are examining:

- *Where* absences are most common—for example, which schools have the highest absence rates;
- *When* students are most often absent—for example, whether there are times of the year or days of the week when absences are higher than usual;
- *Which* students have too many absences—for example, students in certain grades or with special needs; and
- *Why* students are absent—for example, disengagement with schooling, bullying, or home responsibilities.

With this information, schools can more effectively target solutions to students in greatest need of support.

**To support data-informed decision-making in Philadelphia, this report takes an in-depth look at attendance for first-time ninth graders in the School District of Philadelphia (SDP), with a special focus on times during the school year when students are most likely to be absent.** In other words, this report focuses on the “when” question, described above. The goal of this study is to understand whether there are particular points during the school year when absences increase and perhaps signal the start of a downward slide in attendance. If there are such times, schools could use this information to plan responses to keep attendance high. Alternatively, if it is more common for students settle into their attendance patterns early in the school year, that also provides important information to schools about intervening with absent students in the first months of school.

**We focus on ninth grade for three reasons.** First, it is a critical year on the road to graduation: students who make a good transition and earn required course credits are much more likely to graduate on time. Second, student absenteeism increases between eighth and ninth grades, with absences almost doubling, on average, for Philadelphia ninth graders.<sup>9</sup> Finally, ninth grade attendance is closely associated with staying on track in ninth grade<sup>10</sup> and graduating from high school.<sup>11</sup>

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Attendance in Secondary School.” CEPA Working Paper No.17-01, Stanford Center for Education Policy Analysis, Palo Alto, CA. Retrieved from <http://cepa.stanford.edu/wp17-01>); and evidence that schools can implement interventions that reduce absenteeism (Maynard, Brandy R., McCrea, Katherine Tyson, Pigott, Terri D., and Michael S Kelly. 2012. “Indicated Truancy Interventions for Chronic Truant Students: A Campbell Systematic Review.” *Research on Social Work Practice* 23: 5–21).

<sup>9</sup> Wills, Theodore. 2017. *How Much Does 9<sup>th</sup> Grade Attendance Matter?* Philadelphia: School District of Philadelphia. Retrieved from <https://www.philasd.org/research/wp-content/uploads/sites/90/2017/09/9th-Grade-Attendance-and-Grad-Rates-Focus-Brief-September-2017.pdf>; Balfanz, Robert, and Vaughan Byrnes. 2012. *Chronic Absenteeism: Summarizing What We Know From Nationally Available Data*. Baltimore: Johns Hopkins University Center for Social Organization of Schools.

<sup>10</sup> Allensworth, Elaine M., and John Q. Easton. 2005. *The On-Track Indicator as a Predictor of High School Graduation*. Chicago: Consortium on Chicago School Research.; Neild, Ruth Curran and Robert Balfanz. 2006. *Unfulfilled Promise: The Dimensions and Characteristics of Philadelphia’s Dropout Crisis, 2000–2005*. Philadelphia: Philadelphia Youth Network

<sup>11</sup> Wills, Theodore. 2017. *How Much Does 9<sup>th</sup> Grade Attendance Matter?* Philadelphia: School District of Philadelphia. Retrieved from <https://www.philasd.org/research/wp-content/uploads/sites/90/2017/09/9th-Grade-Attendance-and-Grad-Rates-Focus-Brief-September-2017.pdf>.



## What the study examined

**This study examines detailed patterns of attendance for first-time SDP ninth graders.** We explore ninth grade attendance overall and at different times across the year. We examine how these ninth grade attendance patterns differ according to academic performance and eighth grade attendance.

**The report uses de-identified daily attendance data for two cohorts of SDP ninth graders.** The students in the study were all first-time ninth graders during the 2015-16 or 2016-17 school years. Data from 18,890 students are included, though not all students appear in all analyses, depending on whether other data points were also available (e.g., eighth grade attendance or grades in ninth grade core courses).

**The research questions are:**

- How does attendance in ninth grade compare to attendance in other grades?
- Does attendance of SDP first-time ninth graders vary across the school year, and, if so, how?
- Does the pattern differ for students based on their course grades? If so, are there early-year attendance patterns that might indicate that students that are in danger of ending the year off track?

### Box 1

## Defining and Taking Attendance

A student absence may seem conceptually straightforward, but the *record* of a student absence depends on a complex set of interacting factors. The records used in this report were the result of:

### District Policies and Data Systems

- During 2015-16 and 2016-17, SDP policy specified that a student was considered tardy until 10:00 AM. Arrival after 10:00 (or departure before 1:00 PM) would result in a half-day absence.
- Each day, a student's status defaulted to absent unless and until an adult at the school marked them as present.
- Multiple systems were involved in capturing attendance data. School personnel used school-level systems to record their students' attendance, and these systems would then feed this data into District-level systems.

### Human Decision-Making

- No policy can anticipate all contingencies. For example, a student who was present for a very brief portion of the day might be coded differently at different schools.
- While half-day absences were possible, they were extremely rare in the data. Across the two cohorts, only 0.3% of all absences were half-day. Further, only about one-third of SDP high schools recorded at least one half-day absence during 2015-16, rising to about half of SDP high schools in 2016-17.





## Box 2

# Data and Variables

This study uses student-level data for first-time ninth graders in the School District of Philadelphia (SDP) during the 2015-16 and 2016-17 school years. To be included in the study, students had to be accumulate 10 enrolled days in SDP schools during their cohort year. The data include no personally identifying information, and no individual student could be identified.

### Key variables are:

**First-time ninth grader:** A student who is in their first year of high school in SDP. Ninth graders who are *not* first-time ninth graders are in their second or later year of high school and have not earned enough credits for promotion to tenth grade.

**Cohort:** A group of students who are first-time ninth graders during the same school year. This report includes the 2015-16 cohort and the 2016-17 cohort.

**On track in ninth grade:** In SDP, a first-time ninth grader is considered *on track* if he or she earns at least one credit in each of four core areas (English, math, science, and social studies), plus one additional credit from any source. SDP adopted this definition in 2018.

**Percentage of school days attended:** The percentage of school days that a student attends while he or she is enrolled in SDP. The formula is (Number of Days Enrolled minus Number of Days Absent) divided by Number of Days Enrolled. With this formula, students who were enrolled for less than a full school year have valid attendance percentages that reflect only their time enrolled.

**Chronically absent:** As defined by the Pennsylvania Department of Education (PDE), a chronically absent student is one who has missed more than 10 percent of school days. PDE defines an absent student as one who has missed at least half of the school day.<sup>12</sup>

**Absence episode:** Any set of consecutive school days missed. An episode might be a single missed day or more than one day, up to a maximum of the remaining number of days in the school year. If an episode spans multiple periods (e.g., ten-day blocks; see below), it is attributed to the first such period.

**Absence episode days:** The number of school days missed in an absence episode.

**Ten-day block:** A block of 10 consecutive scheduled school days; there are 18 ten-day blocks per school year. Ten-day blocks span more than 10 calendar days; the exact number of calendar days depends on the number of scheduled days off (e.g., weekends and holidays) that are interspersed with the scheduled school days. Unplanned school closures (e.g., snow days) are treated as scheduled school days for the purpose of creating ten-day blocks, but they are excluded from calculations of attendance.

<sup>12</sup> Absenteeism and truancy are related terms, but not identical. Truancy refers to unauthorized or unexcused absences, and that may carry regulatory consequences. For example, the SDP Truancy Process specifies that a student's 10th unexcused absence results in a Student Attendance Improvement Plan referral. For more information about SDP definitions and policies related to attendance and truancy, see <https://www.philasd.org/schoolboard/wp-content/uploads/sites/884/2017/06/204.pdf>.

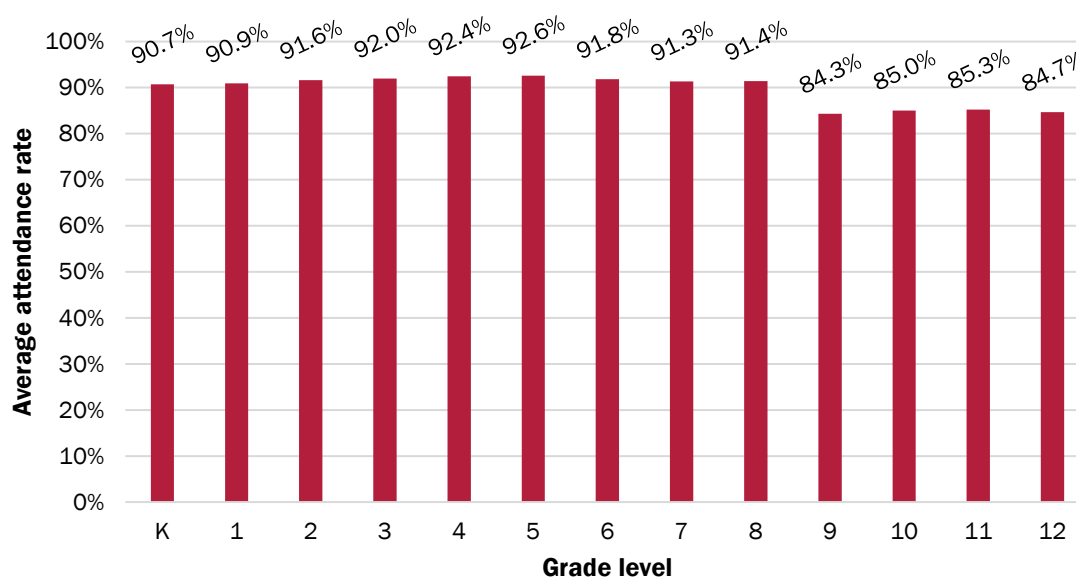


## What the study found

Attendance declines from eighth grade to ninth grade.

Ninth grade is the year when students, on average, have the lowest attendance rates compared to any other grade (Figure 1). Students' average attendance rates in the elementary and middle school grades remain consistently in the low-90 percent range. Then, in the first year of high school, the average attendance rate drops from 91.4 percent to 84.3 percent. Over the course of an entire year, that 7 percent change is equivalent to missing an *additional* 12 days in ninth grade, compared to eighth grade.

**Figure 1. Average attendance rates in the 2015-16 and 2016-17 school years, by grade**



**Source:** Authors' calculations based on student data from the School District of Philadelphia (2015-16 and 2016-17).

Focusing on first-time ninth graders, students at all levels of eighth grade attendance showed a decline in attendance in ninth grade.

Eighth graders with high attendance tend to become ninth graders with high attendance. However, attendance in ninth grade drops at a rate of 5 to 10 percentage points for all eighth grade attendance levels (Table 1).



**Table 1. Changes in average attendance rate from eighth to ninth grade, by eighth grade attendance**

<b>Eighth Grade Attendance Rate Group</b>	<b>Average Eighth Grade Attendance Rate</b>	<b>Average Ninth Grade Attendance Rate</b>
<80%	67.8%	63.3%
80-84.9%	82.7	72.8
85-89.5%	87.7	78.0
90-94.5%	92.8	85.5
95+%	97.9	92.9

**Source:** Authors' calculations based on student data from the School District of Philadelphia.

On average, SDP first-time ninth graders had an attendance rate of 86 percent. This means that a typical ninth grader missed about one out of every six instructional days.

Average attendance rates are an important metric for schools and districts to track. For first-time SDP ninth graders during 2015-16 and 2016-17, the average attendance rate was 86 percent.<sup>13</sup> The average attendance rates for the two cohorts were similar: attendance for the 2015-16 ninth graders was 86 percent, and attendance for the 2016-17 students was 85 percent.

More than one-third of first-time ninth graders attended at least 95 percent of school days, but more than two-fifths were chronically absent.

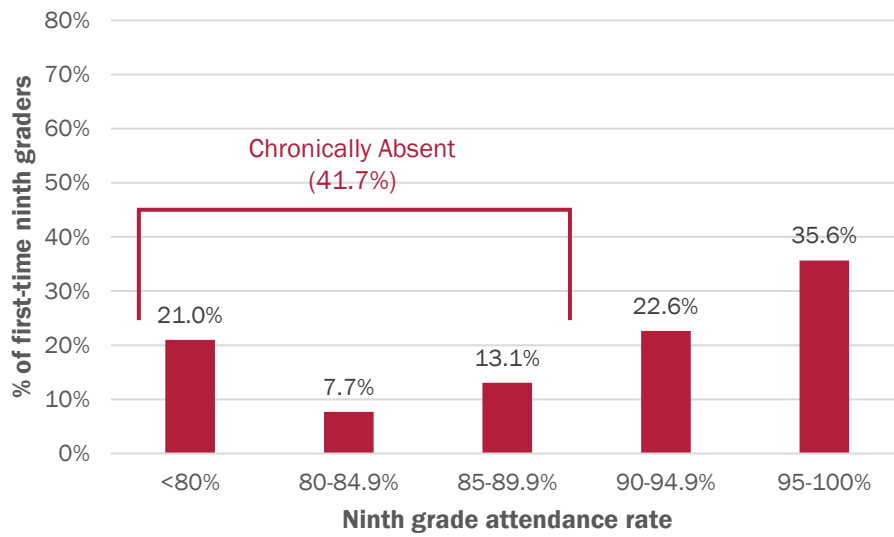
Thirty-six percent of first-time ninth graders attended school at least 95 percent of enrolled days (Figure 2). However, the majority of students fall below this threshold, meaning they are absent at a rate that corresponds to one missed day every four weeks, or *at least* 10 absences (or two weeks) for a student enrolled for an entire 180-day school year.

More than 40 percent of first-time ninth graders met Pennsylvania's definition of chronic absenteeism: attending less than 90 percent of school days. This is the equivalent of missing at least one day every two weeks, or 18 days over a full school year. More concerning, 21 percent of first-time ninth graders had attendance rates below 80 percent, which is equivalent to missing at least one day each week, or seven weeks of school over the course of the entire year.

<sup>13</sup> This rate was computed by first calculating the attendance rate of each student that was enrolled for at least 10 days, then computing the average of these individual scores. This means that a student with 10 enrolled days was weighted the same as a student enrolled all year. This is preferable to weighting the average by enrolled days, because students with the highest attendance are also the most likely to remain in school through the entire year.



**Figure 2. Percentage of first-time ninth graders by school attendance rates**



**Note:** n=18,889

**Source:** Authors' calculations based on student data from the School District of Philadelphia (2015-16 and 2016-17).

Students with lower attendance rates had more absence episodes and were absent for more consecutive days per episode.

It's easy to wonder how students come to have poor attendance rates. Are they absent for many discrete episodes, frequently missing a day here and a day there? Or are they absent in stretches, missing multiple days in a row? From the two years analyzed here, the answer is both. Students with poorer attendance rates tend to have more absence incidences and are absent for a longer period of time each episode.

As shown in Table 2, below, students in the lowest attendance group were absent an average of 19.8 times, compared to 3.1 episodes for students in the highest attendance group. Students in the lowest attendance group were also absent more days at a time, averaging 2.7 days per episode compared to 1.2 days per episode for students in the highest attendance group. More details on these attendance patterns over the course of the year can be found in Appendix B.

**Table 2. Average number of absence incidences and days per episode, by ninth grade attendance rate**

Ninth Grade Attendance Rate Groups	Average Number of Absence Episodes	Average Days Absent per Episode
<80%	19.8 episodes	2.7 days
80-84.9%	18.2	1.6
85-89.5%	14.5	1.5
90-94.5%	9.3	1.4
95+%	3.1	1.2



**Box  
3**

## **The SEPTA Strike of 2016**

**Beginning November 1, 2016, the Southeastern Pennsylvania Transportation Authority (SEPTA) suspended services for approximately one week.** Philadelphia's public transportation was unavailable until a settlement was negotiated with the Transit Workers Union Local 234. Limited service resumed on Monday, November 7, and all services were running by Tuesday, November 8.

Many of SDP's students rely on SEPTA to travel to and from school, and schools remained in session during the outage. In total, the strike was in full effect for four school days, with partial service on one additional day. During these days, student attendance was significantly affected.

This event impacted ninth grade attendance for the 2016-2017 cohort, but not for the 2015-2016 cohort. For this reason, we looked for differences between the two cohorts that are attributable to the strike and report them when appropriate.

**Ninth grade attendance slowly but steadily dropped throughout the school year, with a significant drop in the last two weeks of school.**

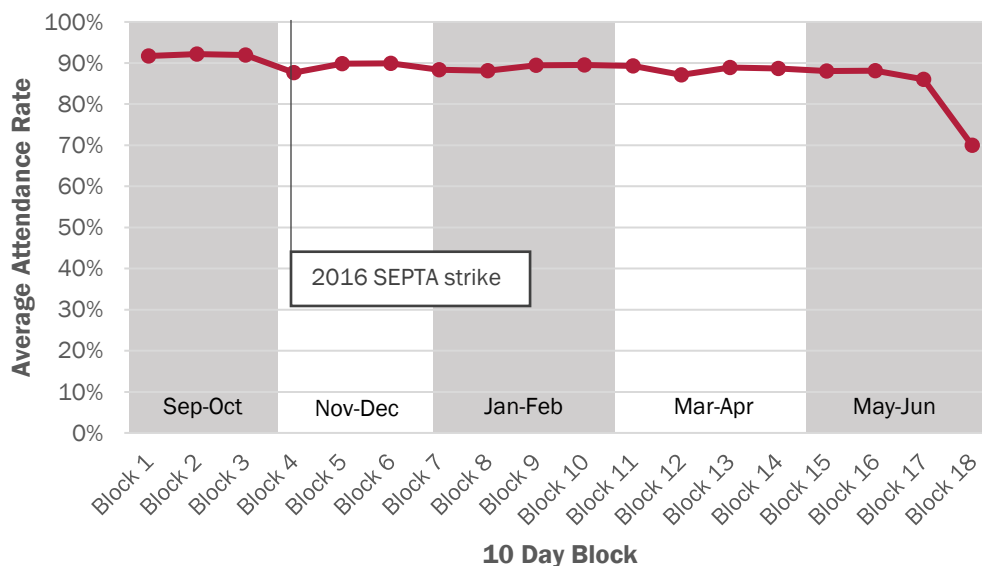
Individual ninth graders, of course, display a variety of attendance trajectories. In general, however, attendance is highest at the very beginning of the year. Attendance then gradually but smoothly declines throughout the school year, then drops very sharply during the last two weeks of the school year.<sup>14</sup> Figure 3, below, shows this trend by displaying the average attendance rate of first-time ninth graders in "blocks" covering 10-day periods. Block 1 covers the first day through the tenth day of school, and the graph shows the average attendance rate for students enrolled in those first two weeks of school.

Figure 3 shows a slight dip in the average attendance rate during Block 4; however, we found that this trend was only true for the 2016-17 year (See Appendix A for more information). Since that block coincides with the SEPTA strike (see Box 3), it was likely what drove that drop in attendance and does not indicate a pattern that would hold in other years.

<sup>14</sup> SDP grades are finalized with several days left on the schedule. Not surprisingly, school days that fall after grades have been set, but before summer dismissal, feature very low attendance rates. In 2015-16 there were five such days, and in 2016-17 there were four.



**Figure 3. Average attendance rate of first-time ninth graders in 2015-16 and 2016-17, by 10-day block**

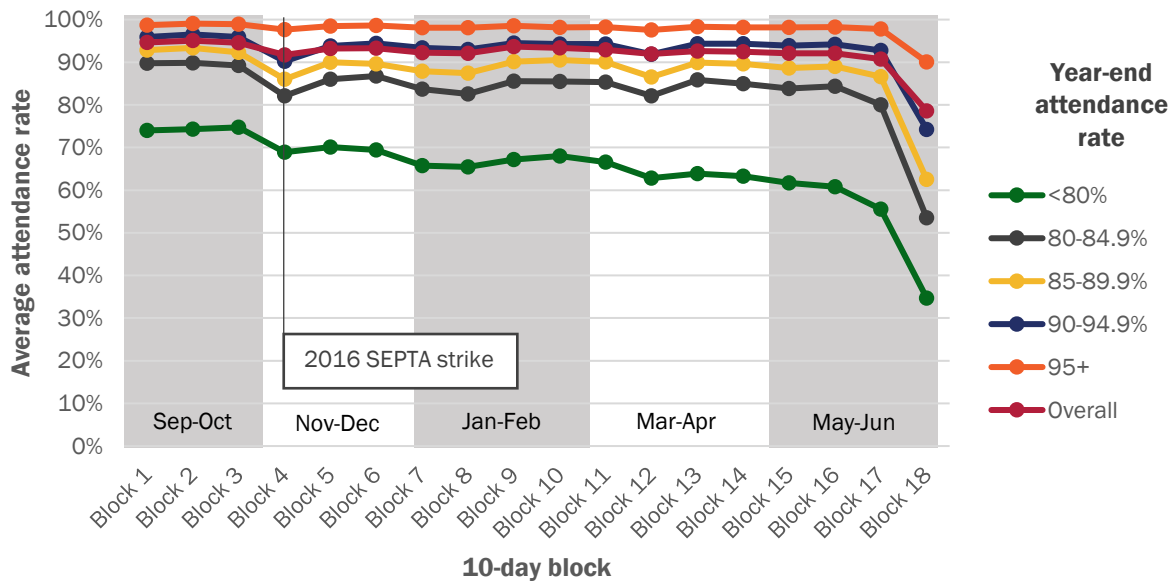


**Source:** Authors' calculations based on student data from the School District of Philadelphia (2015-16 and 2016-17).

On its face, this overall downward trend in attendance over the school year is not dramatic. However, this masks some important variation among students with different attendance outcomes. Figure 4 separates students into groups based on their attendance rate at the end of the school year. Mathematically, students that end the year in the highest group (with an attendance rate of 95 percent or higher) must maintain consistent attendance across the entire year; this is exactly what the graph below shows. Students in the lowest group (less than 80 percent) have drastically lower attendance immediately at the start of the year, and then decline at a steeper rate than their peers. Students in each of the remaining attendance groups show similar patterns to one another, with the lower groups maintaining lower attendance throughout the year.



**Figure 4. Average attendance rate of first-time ninth graders in 2015-16 and 2016-17, by 10-day block and year-end attendance rate**



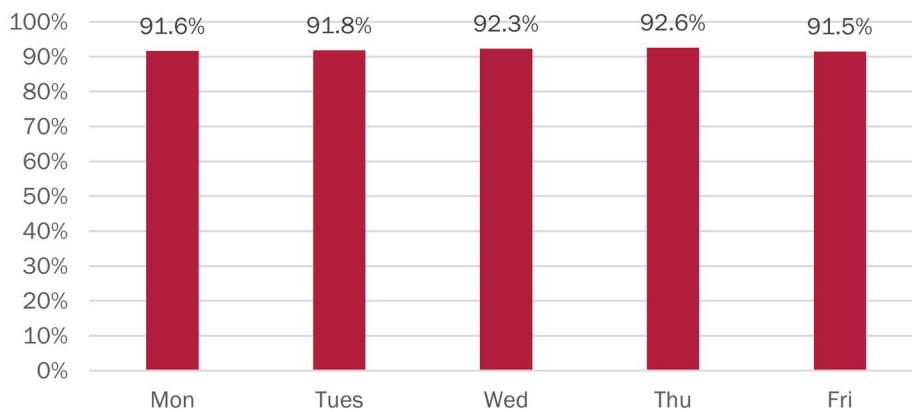
Source: Authors' calculations based on student data from the School District of Philadelphia (2015-16 and 2016-17).

## Box 4

### Attendance by Day of the Week

Across the year, we see very small differences in attendance associated with the day of the week. Student attendance is slightly lower on Fridays and Mondays, compared to days in the middle of the week. The differences, however, are less than 1 percent.

**Figure 5. Average attendance rate, by day of the week**



Note: n=18,889

Source: Authors' calculations based on student data from the School District of Philadelphia (2015-16 and 2016-17).

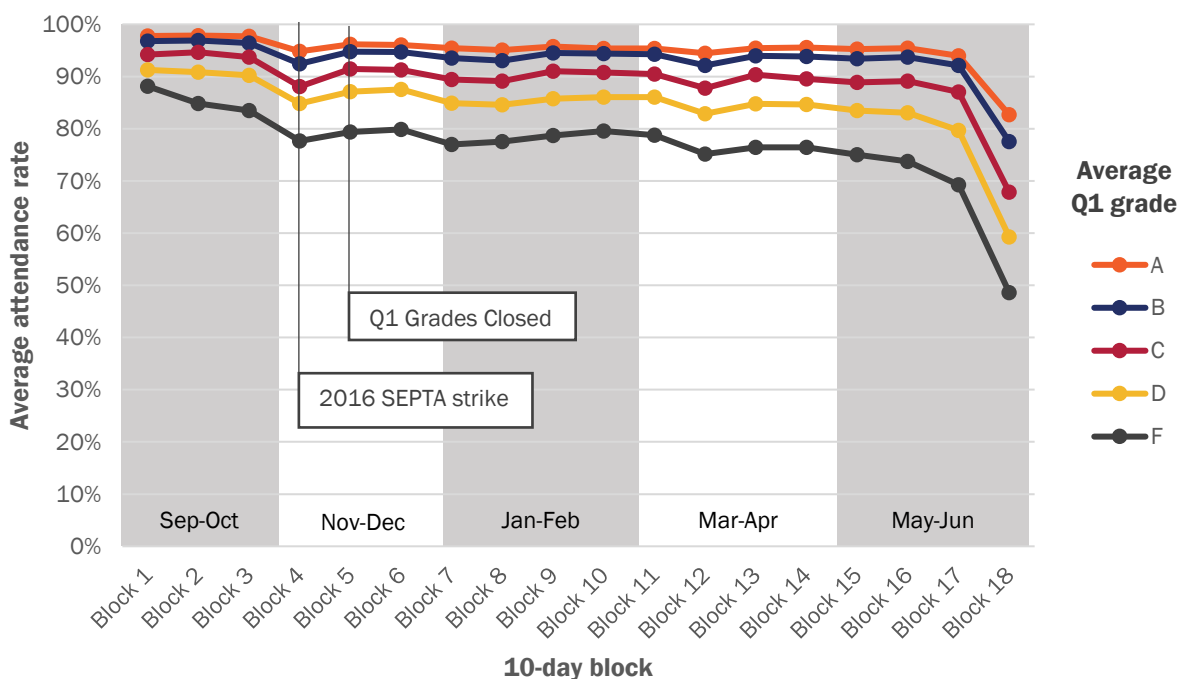


Poor report card grades were not typically followed by sharp declines in attendance.

An early, unfavorable report card might de-motivate a ninth grade student, initiating an abrupt disengagement from school. If this phenomenon were common, then we would expect to see a sharp decline in attendance for students that get poor grades during Quarter 1. However, this is not what the data show. While better attendance is associated with better grades, we do not see a drop in attendance immediately following the end of Quarters 1 or 2, even for students with very poor core grades (Figure 6).

In both years, first quarter grades closed a few days into Block 5. For students that post Q1 core averages of D or F, there is a clear decline in attendance *prior* to this point, but attendance *after* this point shows little change from the overall trend.

**Figure 6. Average attendance rate of first-time ninth graders, by average core course grades in Q1**



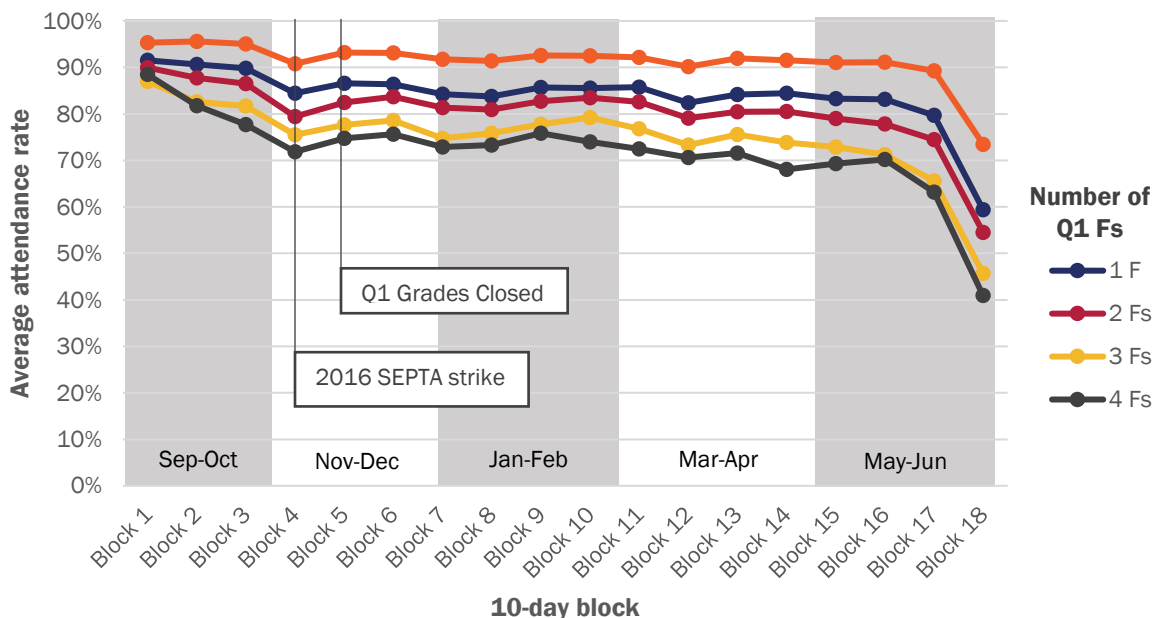
**Source:** Authors' calculations based on student data from the School District of Philadelphia (2015-16 and 2016-17).

It is possible that failing one or more core courses would produce a de-motivating effect more consistently than a poor overall average. However, the attendance pattern is unchanged when students are grouped by Q1 Fs (Figure 7). The more failing grades a student has, the lower their attendance is likely to be; but this pattern is established before the grades are finalized rather than after.





Figure 7. Average attendance rate of first-time ninth graders, by number of Q1 Fs received in core courses

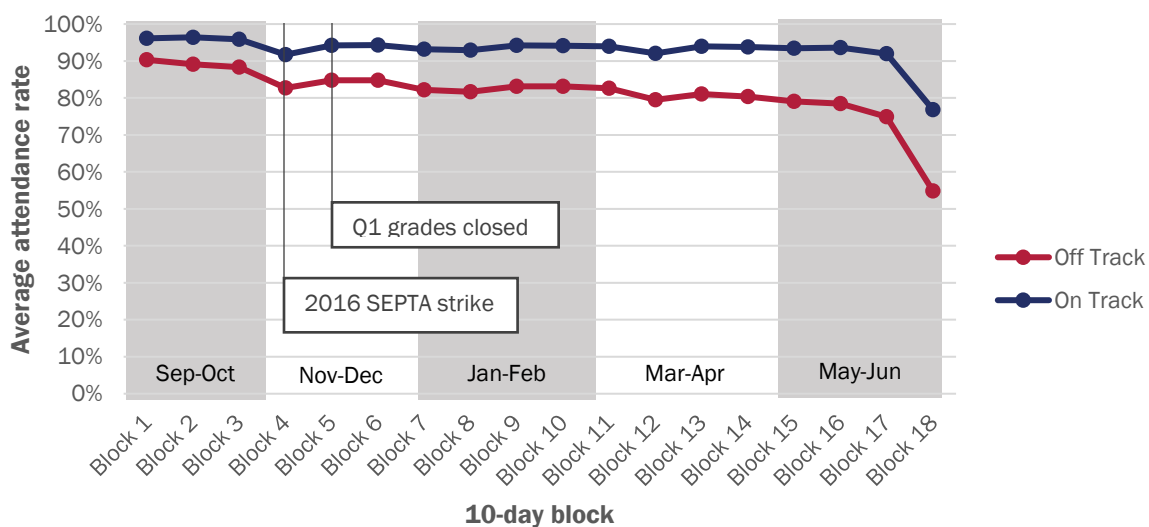


Source: Authors' calculations based on student data from the School District of Philadelphia (2015-16 and 2016-17).

Students who ended ninth grade on track to graduate had higher attendance than those who did not.

Starting from the first two weeks of school, students who ended the year on track had a higher attendance rate than those who ended the year off track (Figure 8). While both groups follow the overall trend of a gradual decline in attendance over the course of the year, students in the off track group decline faster than those who end the year on track. Thus, the attendance difference between these two groups grows as the year progresses.

Figure 8. Average attendance rate of first-time ninth graders, by on track status



Source: Authors' calculations based on student data from the School District of Philadelphia (2015-16 and 2016-17).



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## Implications for policy and practice

Schools don't need to wait long to intervene with students who have poor attendance.

On average, a student who ends the year with poor attendance started the year with poorer attendance than their peers. In the first two weeks or month of school, schools can identify students with poor attendance and begin interventions to try to correct that behavior.

Attendance matters and is associated with achievement.

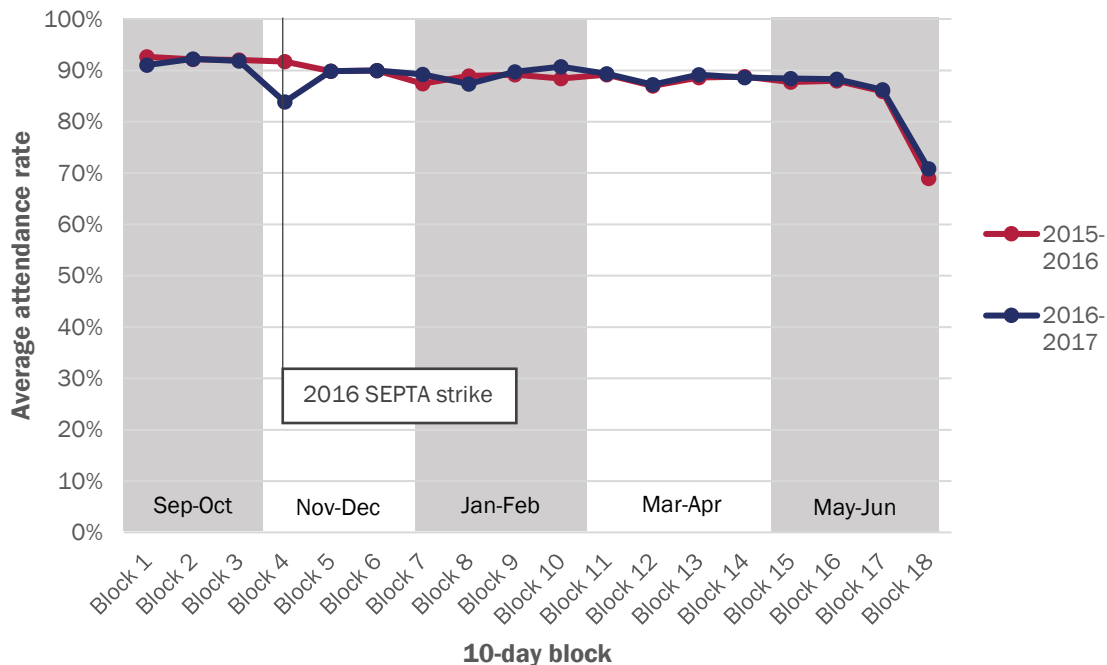
It's not a surprise to say that attendance matters, but this report provides more evidence to the association between attendance and academic achievement. Students who have poor attendance also tend to have lower achievement in their core courses and more often end up off track at the end of their first year of high school. Sharing this with teachers, parents, and students could help motivate a change in attendance behavior.



## Appendix A. Attendance Over the School Year, by Cohort

Overall, attendance rates for the first-time ninth graders in this study dropped steadily and smoothly throughout the course of the school year. Figure A-1, however, highlights one point in time that is an exception to this overall trend. For the 2016-17 cohort of first-time ninth graders, there was a dip in attendance during Block 4 of their ninth grade year. This corresponds to the SEPTA strike that year (see Box 3). Based on this evidence, we attribute that dip in attendance to the strike activity.

**Figure A-1. Average attendance rate of first-time ninth graders in 10-day blocks, by cohort**



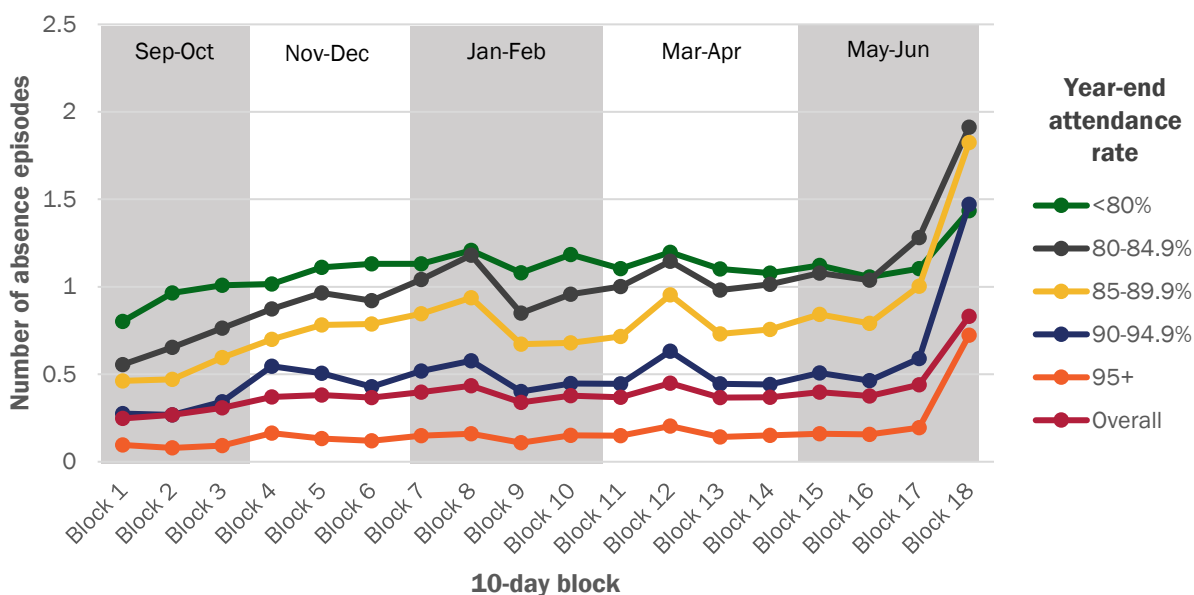


## Appendix B. Attendance Episodes Over the Course of the School Year

On average, students with lower attendance rates at the end of the year were absent more times and for more days each time. Figures B-1 and B-2, below, show that these trends remain fairly consistent over the course of the school year.

Figure B-1 shows the average number of times students were absent, separated by their year-end attendance rate. As could be expected, this figure shows that students in the lowest attendance rate group (less than 80 percent) have the highest average number of absence episodes in every 10-day block, until the last two. Each other attendance group has a lower number of absence episodes, with relatively consistent spacing between the groups.

**Figure B-1. Number of absence episodes, by 10-day block and ninth grade attendance group**



In addition to having the highest average number of absence episodes, the lowest attendance group also has the highest average number of consecutive days absent per episode. This trend is consistent across the school year (Figure B-2). Interestingly, there is difference of at least a day per episode between this lowest attendance group and all other attendance groups throughout the school year. All other student groups average a day to a day and a half out per absence episode, for almost the entire school year. In contrast, the lowest attendance group has between 2.25 and 3 days out per absence episode, and that amount increases gradually in the second half of the year.



Figure B-2. Number of days absent per episode, by 10-day block and ninth grade attendance group

