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B·E·R·C

OUR MISSION

BERC'S mission is to develop and support long- and short-term research-practice partnership projects that address questions of critical importance through the conduct and dissemination of rigorous strategic data analysis and research for the benefit of the children and families of Baltimore City.

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ACKNOWLEDGMENTS

Preface and Context

This report overviews trends in ninth grade success and graduation for first-time high school students in Baltimore City Public Schools. Our focus on ninth grade derives from the abundance of research which indicates that the ninth grade year relates highly to successful high school graduation (e.g., Allensworth, 2013; Mac Iver & Messel, 2013).

DEFINING NINTH GRADE SUCCESS

In 2016, researchers from the Baltimore Education Research Consortium (BERC) began examining early warning indicator (EWI) systems in partnership with Baltimore City Public School System's (BCPSS) Office of Achievement and Accountability-Knowledge Management (KM). The work initially focused on examining EWIs in the high school context and later extended to middle school. Since EWIs serve as early signals of long-term outcomes, the question was quickly raised about what outcome to use for middle school. While the outcome for high school is commonly on-time graduation, there is no broad consensus on the specific outcome of middle school.

Working from the notion that the goal of middle school is to prepare students to successfully transition to high school, BERC researchers investigated a range of outcomes consistent with this aim, such as performance in ninth grade, promotion to tenth grade, and course grades or test scores in middle school. In 2023, BERC recommended on-time promotion to tenth grade without course failures in ninth grade as the outcome for a middle grades EWI system. BERC recommended this outcome for several reasons. First, it was strongly predictive of on-time high school graduation. About 90% of students promoted to tenth without any failures graduated high school within four years. Second, there was relative balance in attainment of the outcome since most students in the district attained promotion to tenth grade without course failures and those students were distributed across schools in the district. While other outcomes were predictive of graduation, they had the drawback that students who achieved those outcomes were clustered in a small number of schools. And finally, the outcome was easy to understand and could be implemented with readily available administrative data.

The resulting outcome—on-time promotion to tenth grade without course failures—captured an important way to define a successful ninth grade year. Students attaining this outcome had not only earned all the required credits for promotion to tenth grade but were also not hindered by any course failures that might require credit recovery later to graduate on time. It was clear to BERC and KM that this measure of ninth grade success was important to examine beyond the scope of an EWI system. Through continued work, BERC and KM further tiered this measure into three categories: i) on-time promotion to tenth grade without any course failures in ninth grade, ii) on-time promotion to tenth grade with one or more course failures in ninth grade, and iii) not promoted to tenth grade on time.

CURRENT REPORT

The material in this report supports a compelling case for the need to continually examine trends of ninth grade success in BCPSS. Part I of the report uses historical data from several cohorts of students to establish the relationship between ninth grade success and on-time high school graduation. Part II applies the ninth grade success categories to the most recent cohort of ninth grade students available to examine key measures for these students. We conclude the report with a discussion of the findings, how they can contribute to research on early warning indicators and detail the efforts BCPSS is taking to target ninth grade success. This report is meant to be the foundation for a series of yearly reports that capture trends in ninth grade success moving forward. Information on the data and analytic sample used in the report can be found in Appendix A. Highlights from the findings are listed below.

Highlights from Part I (First-Time Ninth Grade Cohorts from 2011-12 through 2018-19)

- Students promoted on time to tenth grade without course failures in ninth grade had the highest graduation rates (9 of every 10 students graduated on time), while graduation rates were lower for students promoted with at least one course failure (7 of every 10 students) and for those not promoted (only 2 of every 10 students).

- Students in high schools with entrance criteria had the highest on-time graduation rates across all three success categories, while students in traditional high schools had the lowest on-time graduation rates across all three groups.

- A majority (between 55% and 59%) of ninth grade students in Baltimore City Schools have consistently earned promotion to tenth grade without any course failures.

- Students who missed 18 or more days had less than a 50% chance of being promoted to tenth grade with no failures, and students who missed 60 or more days had only a 2.6% chance of being promoted with no failures.

- Students who were promoted to tenth grade on time with no course failures had an average attendance above 90% across cohorts.

- The average GPA for students promoted to tenth grade on time with no course failures ranged between 2.4 and 2.6 across cohorts.

Highlights from Part II (First-Time Ninth Grade Cohort of 2021-22)

- Slightly over half of the 2022 cohort of students were promoted on time to tenth grade without course failures.

- The two largest demographic groups, Black and Latinx students, were promoted to tenth grade on time more than twice as often as they were not promoted.

- Special education students were promoted, with and without any course failures, at about 87% of the rate of their peers in the cohort and were 15% more likely to be promoted with at least one course failure.

- English learners were 95% as likely as their peers to promote on time to tenth grade.

- Close to half of the students who were promoted to tenth grade with a course failure had only 1 failed course, whereas over 70% of those not promoted to tenth grade on time had four or more course failures.

- While course failure rates were higher for students not promoted to tenth grade on time compared to those promoted with at least one course failure, the failure rates within each group were very similar across all core subjects.

- About 4 of every 5 students not promoted on time to tenth grade had a GPA less than 1.0 and typically missed 60 or more days of school.

PART 1

**NINTH GRADE SUCCESS AND
HIGH SCHOOL GRADUATION**

Figure 1 contains trends in on-time graduation rates for first-time, ninth grade (FTNG) cohorts broken out by success status: (i) on-time promotion to tenth grade without any course failures in ninth grade, ii) on-time promotion to tenth grade with one or more course failures in ninth grade, and iii) not promoted to tenth grade on time. The outcome is based on whether students graduated within four years of starting ninth grade. Students not attaining this outcome may have graduated late or dropped out after ninth grade. Success in ninth grade is strongly associated with on-time high school graduation. Students promoted on time to tenth grade without course failures in ninth grade had the highest graduation rates, with 9 out of every 10 students consistently attaining this outcome. In comparison, graduation rates were lower for students who reached tenth grade on time but had at least one course failure (7 out of every 10 students). Notably, for students not promoted to tenth grade on time, only 2 out of every 10 students completed high school on time.

FIGURE 1. On-Time Graduation Rate by First-Time, Ninth Grade (FTNG) Cohort and Success Status
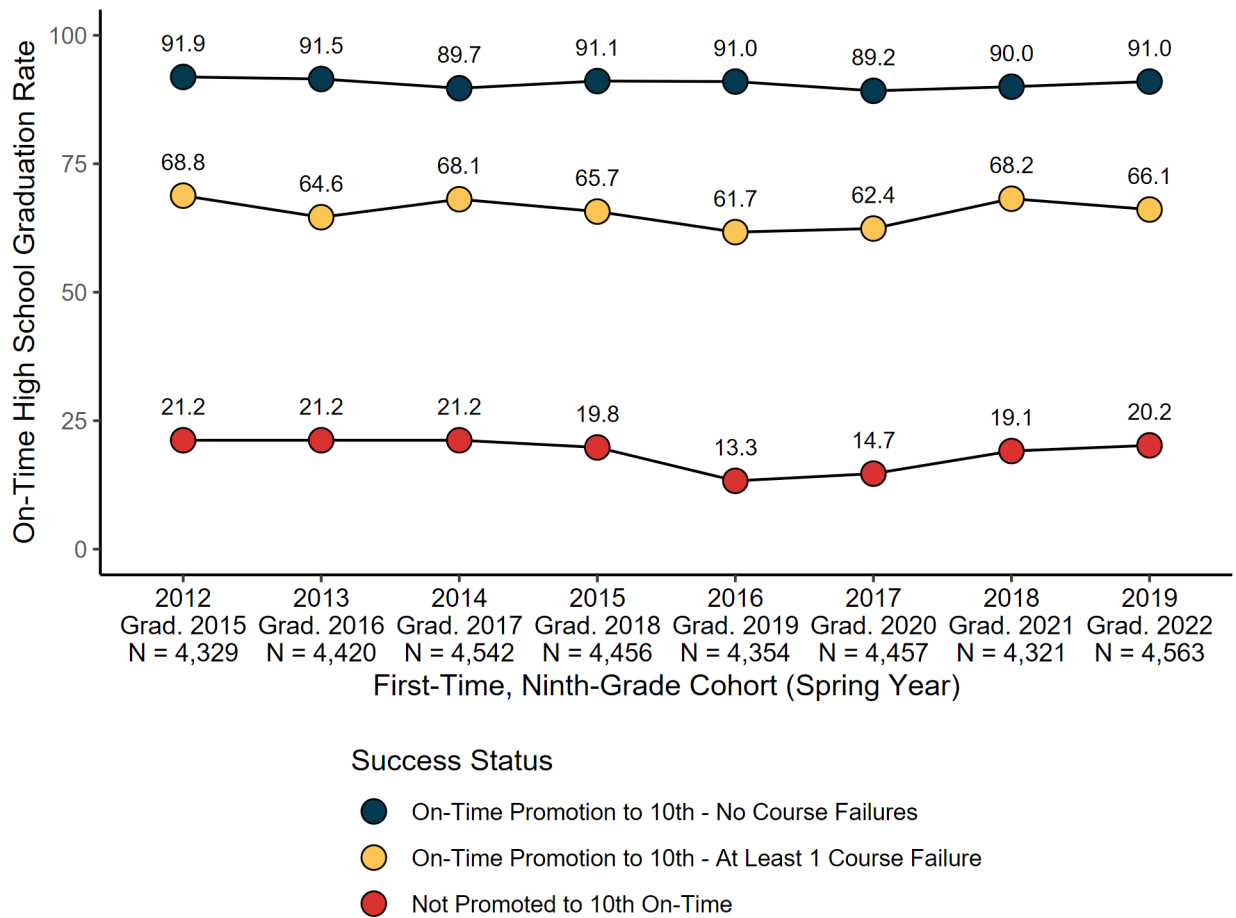
The trend lines in Figure 1 suggest that exiting ninth grade without any course failures offers the best opportunity for students to graduate high school on time. In comparison, promoting to tenth grade with some course failures is associated with lower chances of on-time graduation, likely reflecting the need to spend time recovering credits. Finally, failing multiple courses in ninth grade prevents students from being promoted to tenth grade on time, and it substantially lowers students' chances of graduating within the expected timeframe. We note that the trend lines represent students who experienced periods of significant policy change (e.g., increased high school graduation requirements, changes to promotion policies) and the COVID-19 pandemic. To the extent that these influenced outcomes for students, the largest fluctuations in on-time graduation rates over this period occurred for students who did not promote to tenth grade on time.

FIGURE 2. On-Time Graduation Rate by Success Status and High School Type
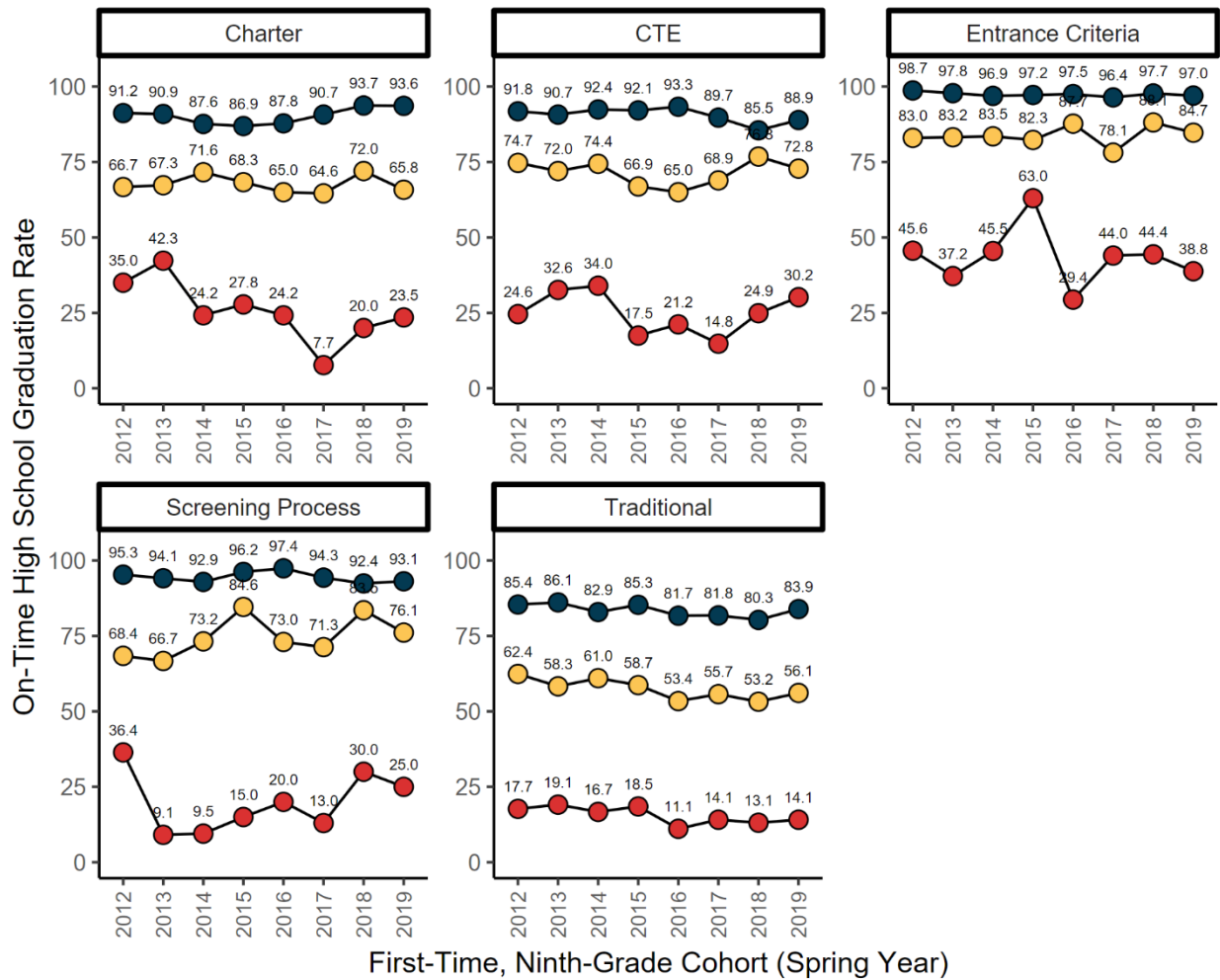
Figure 2 contains trends in graduation rates and success status broken out for students in different types of high schools (refer to Appendix B showing how high schools were categorized). Overall, the general patterns from Figure 1 are consistent across school types. On-time promotion to tenth without course failures is still associated with the highest rates of graduation. That said, graduation rates do vary across school types. Students in schools with entrance criteria had the highest on-time graduation rates across each success status category, while students in traditional schools had the lowest on-time graduation rates.

Prior work examining the relationship between middle grades performance and ninth grade success indicates a strong correlation between middle school academic performance and attendance and the type of high school in which a student later enrolls. Figure 2 suggests that the distribution of students who arrive in ninth grade and will need support to stay on track for high school graduation is more concentrated in some school types. While every student needs and deserves support and resources during high school, different school types may be able to use this research to tailor the resources they offer.

Variation by school type also suggests research questions that are beyond the scope of the current study, including on-time graduation rates for ninth graders of color, students with disabilities, and multilingual learners within these distinct school categories.

FIGURE 3. Success Status by FTNG Cohort
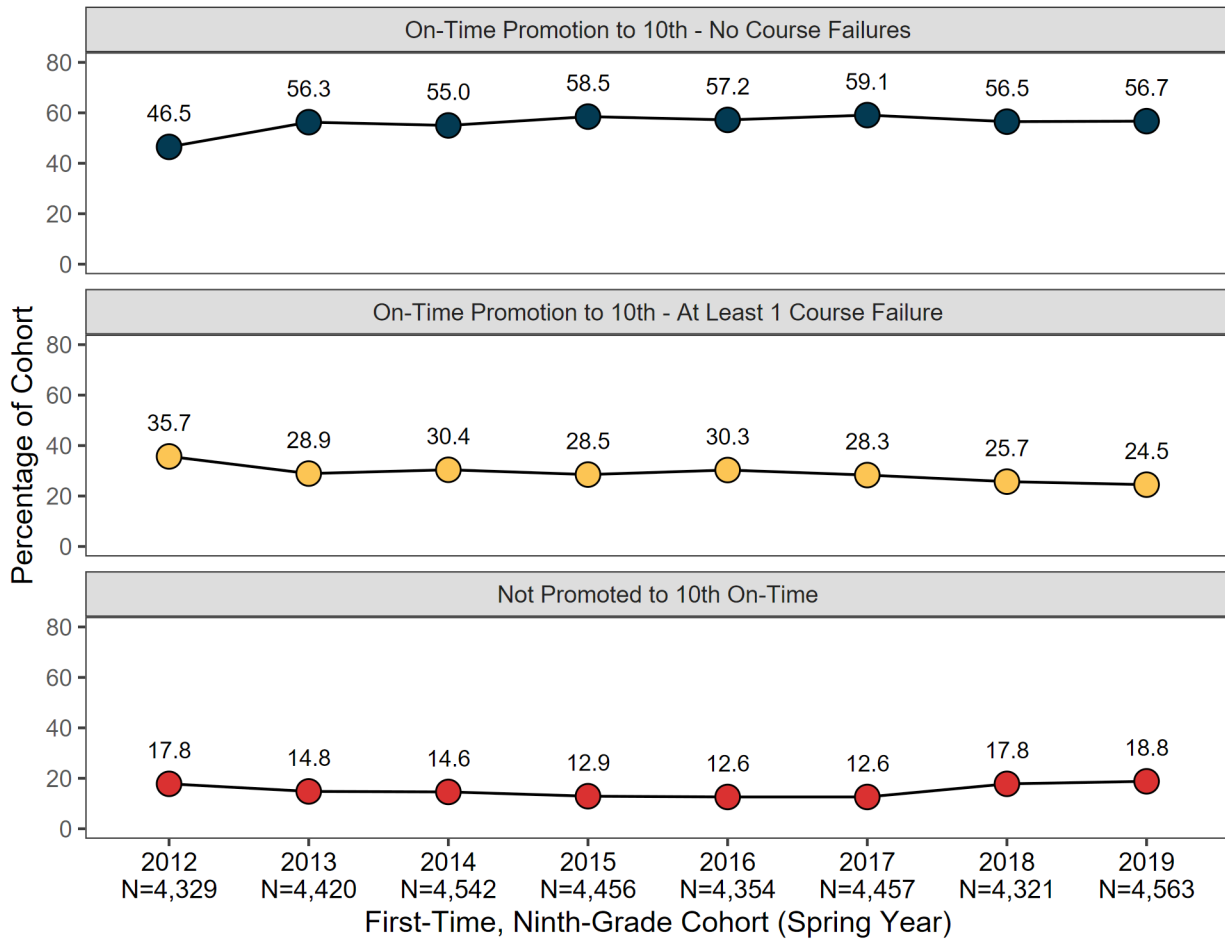
Figure 3 shows the percentages of students in each of the ninth grade success categories across student cohorts. The percentage of students earning on time promotion without any course failures ranged between about 47% and 59% and was generally above 55%. The percentage of students promoted to tenth grade with at least one course failure decreased from 36% to 25% over time. Finally, the percentage of students not promoted to tenth grade on time ranged between 13% to 19%.

An important finding from this figure is that a majority of ninth grade students in Baltimore City Schools have consistently earned promotion to tenth grade without any course failures. About 6 of every 10 students attain success in ninth grade and are ready to tackle tenth grade. Equally important to note is the trend for students not promoted to tenth grade on time. While this trend decreased between 2012 and 2017, the share of students in this group has more recently increased to represent roughly 1 out of every 5 students. This increase coincides with a change in the promotion criteria from 4 credits to requiring 5 credits including English I or Algebra I to promote to tenth grade beginning in the 2017-18 school year.

FIGURE 4. Days Absent in Ninth Grade and On-Time Promotion to Tenth Grade Without Course Failures (FTNG Cohorts 2011-12 through 2018-19)
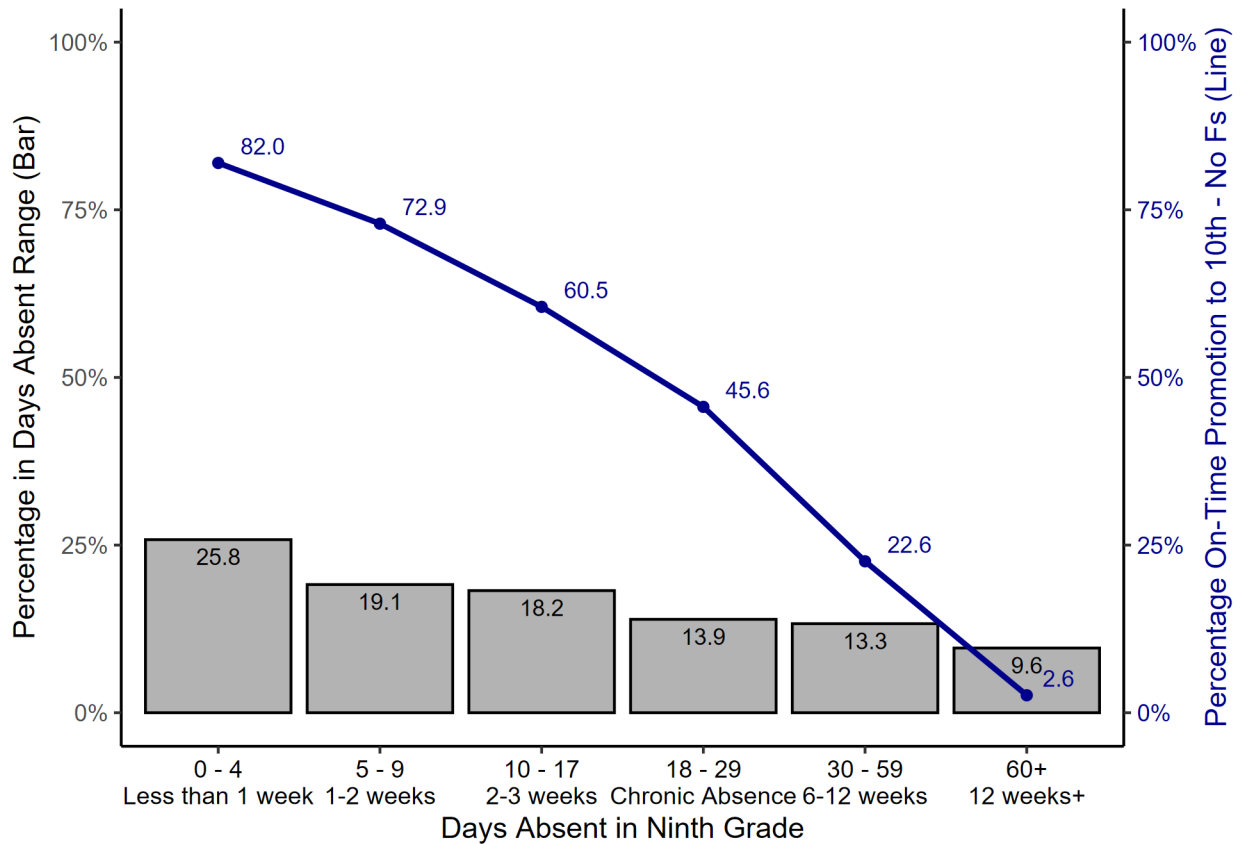
Figure 4 illustrates the clear relationship between students' attendance in ninth grade and successful completion of ninth grade (i.e., with no course failures). The gray bars show the percentage across cohorts in each absence category during ninth grade. The largest group of students (25.8%) missed less than one week of school. Student groups that missed more days of school were progressively smaller, with those missing 60 or more days representing nearly 10% of students across cohorts. The dark blue line shows a direct, inverse relationship between number of absences and ninth grade success. Eighty-two percent of students who missed less than a week of school in ninth grade were promoted to tenth grade with no course failures; however, 50% students who missed 18 or more days (i.e. chronic absence) promoted on time to tenth grade with no course failures. Only 2.6% of students with the most extreme level of absence (i.e., missing 60 or more days of school) completed ninth grade on time with no course failures.

FIGURE 5. Attendance Rates in Ninth Grade by FTNG Cohort and Success Status

Success Status

- ⬤ On-Time Promotion to 10th - No Course Failures
- ⬤ On-Time Promotion to 10th - At Least 1 Course Failure
- ⬤ Not Promoted to 10th On-Time

Attendance in ninth grade is associated with a successful on time promotion to tenth grade. Figure 5 contains the trend in average ninth grade attendance rates by FTNG cohort and success status. Students who were promoted to tenth grade on time without course failures had the highest average attendance rates, consistently above 90%. Students promoted on time with at least one course failure had slightly lower average attendance rates, ranging between 81% and 89%. In contrast, attendance rates were much lower for students not promoted to tenth grade on time, ranging between 54% and 70%.

This figure highlights how coming to school regularly provides the best opportunity for students to make a successful transition to tenth grade. Missing some school days occasionally may not completely prevent students from earning the necessary credits to promote to the next grade level, but it can contribute to course failures which may ultimately be required for graduation, thus placing an additional burden on students to recover those credits. Most notably, being frequently absent from school is associated with not promoting to the next grade level on time. Low levels of attendance not only prevent students from consistently engaging in the learning process but also limit educators' opportunities to intervene and provide support to students who are struggling.

FIGURE 6. Grade Point Average (GPA) in Ninth Grade and On-Time Promotion to Tenth Grade without Course Failures (FTNG Cohorts 2011-12 through 2018-19)

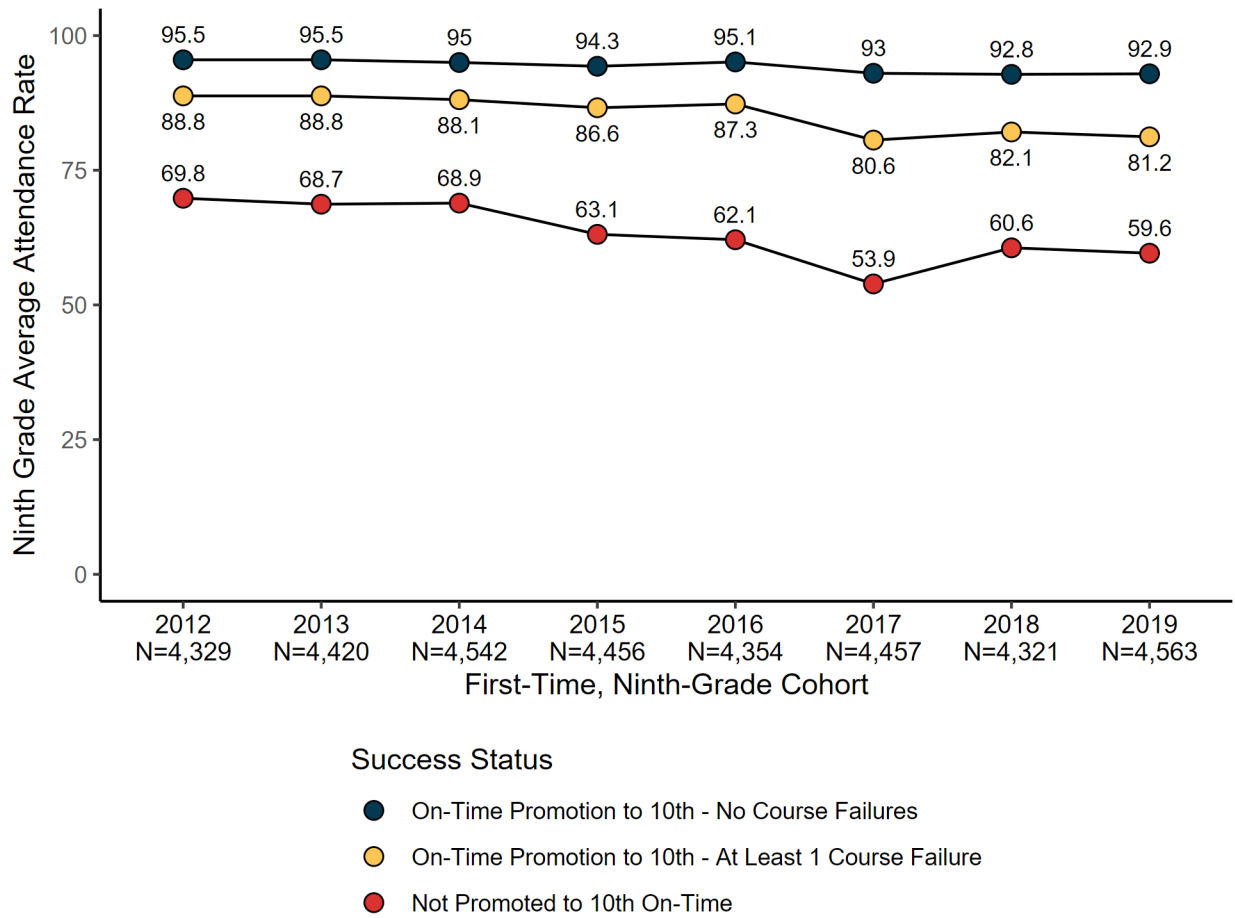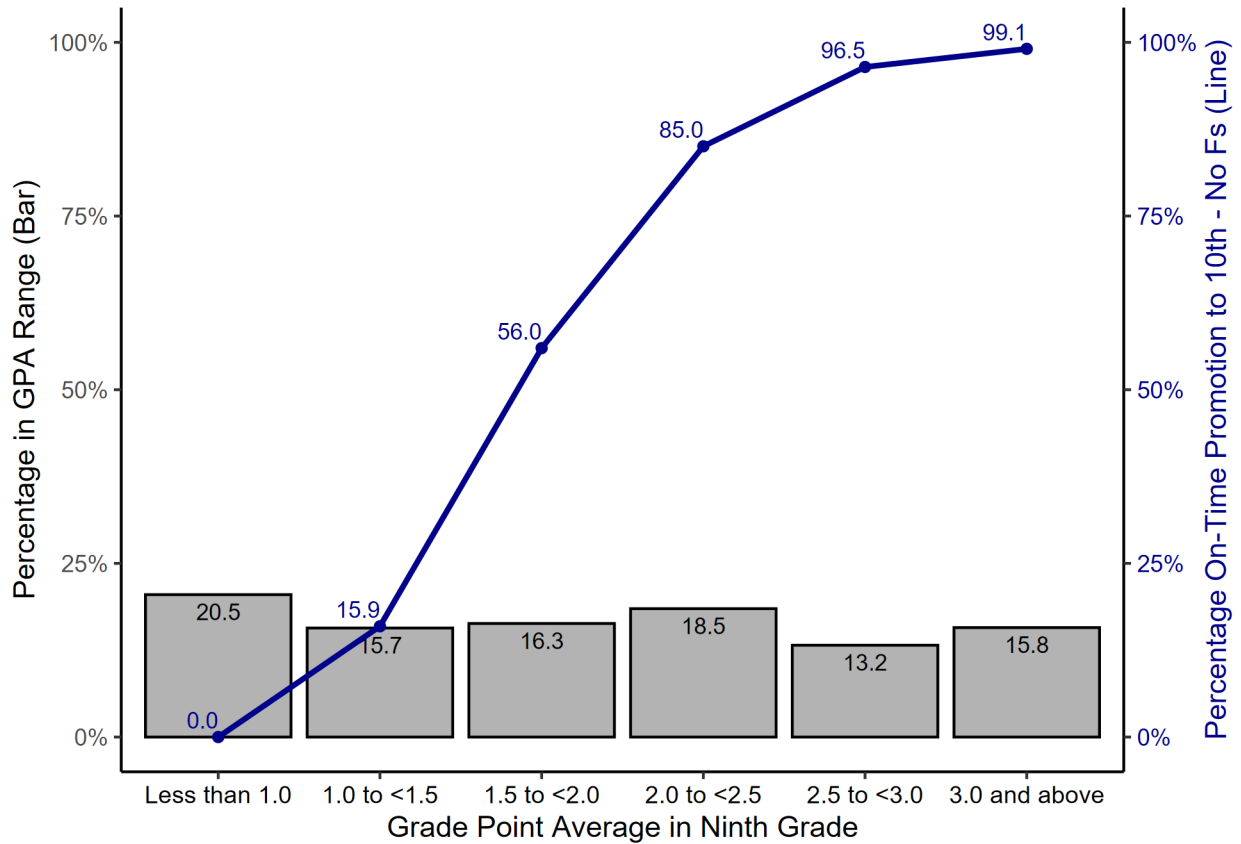Figure 6 illustrates how ninth-grade GPA is related to on-time promotion to tenth grade without course failures. The gray bars show the percentage of students from all cohorts in each ninth grade GPA range. The blue line shows the percentage of students who achieved the outcome of interest for each GPA range. Overall, a higher GPA in ninth grade is associated with higher chances of on-time promotion to tenth grade without course failures. Notably, the figure shows how dramatically the percentage of students meeting the outcome increases with a higher GPA. Compared to students with a GPA of 2.0 or above, students whose GPAs range between 1.5 and 2.0 achieve the outcome at moderate levels, while students with a GPA below 1.5 rarely achieve on-time promotion without course failures.

FIGURE 7. Average GPA in Ninth Grade by FTNG Cohort and Success Status
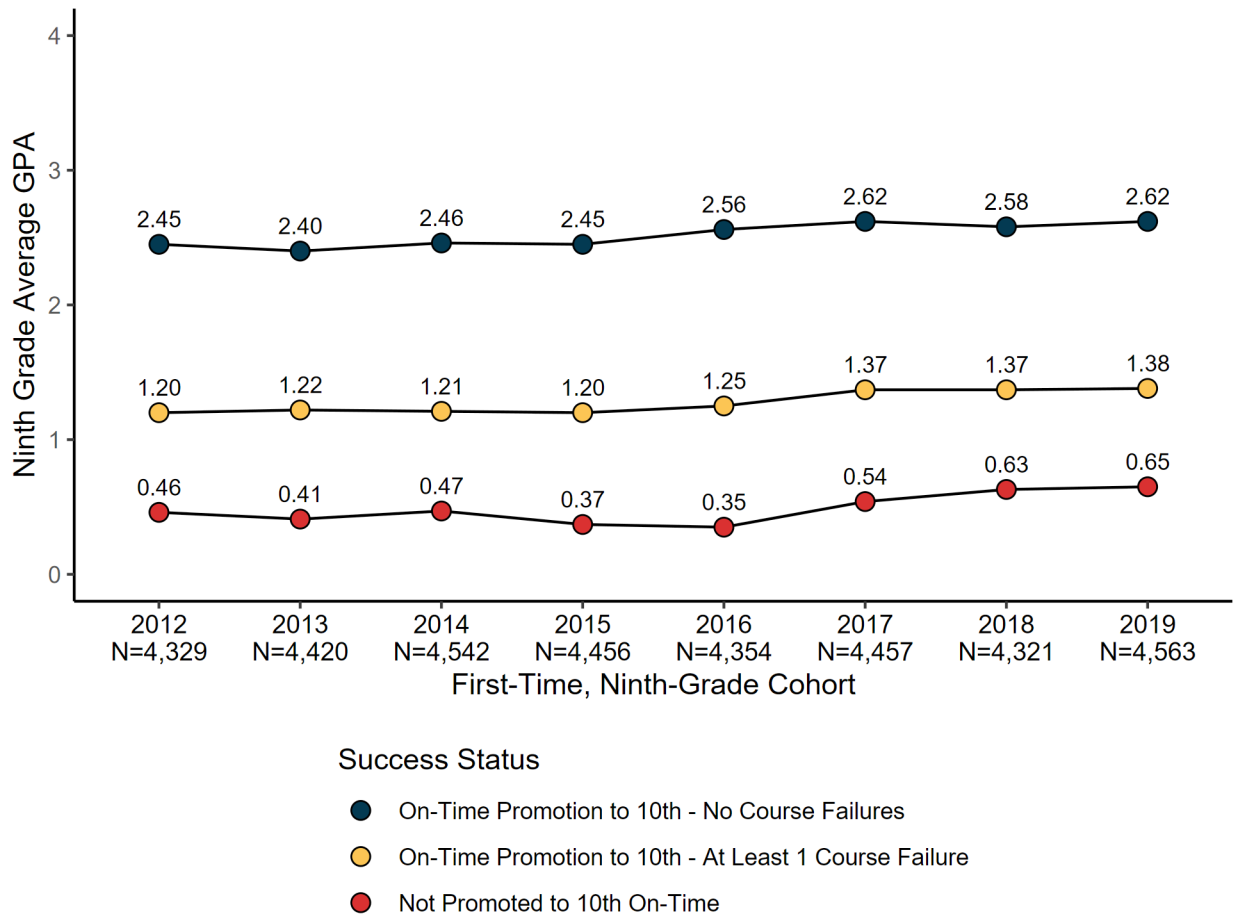
Figure 7 highlights the relationship between ninth grade GPA and success status. The average GPA for those promoted to tenth grade on time with no course failures ranged between 2.4 and 2.6 across cohorts. Among those who were promoted to tenth grade on time but who failed at least one course, ninth grade GPA ranged between 1.2 and 1.4. Finally, among students not promoted to tenth grade on-time, the average GPA was well below 1.0, ranging between about 0.4 and 0.7.

PART 2

EXAMINING THE FIRST-TIME, NINTH GRADE COHORT OF 2021-22

FIGURE 8. Success Status Breakout, 2021-22 FTNG Cohort

Success Status
- On-Time Promotion to 10th - No Course Failures
- On-Time Promotion to 10th - At Least 1 Course Failure
- Not Promoted to 10th On-Time

N = 5,255
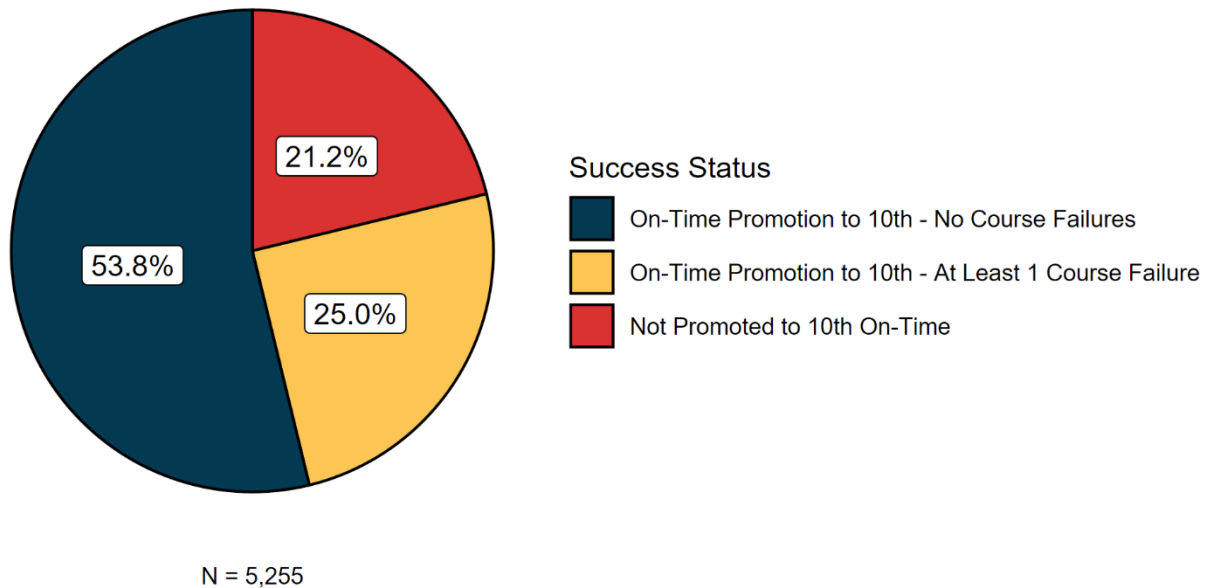
As reflected in Figure 8, slightly over half of the 2022 cohort of students were promoted on time to tenth grade with no course failures. Overall, the figures are generally consistent with the trends that we observed in Part I of this report. Among the 2022 cohort, a slightly lower percentage of students were promoted on time to tenth grade without any course failures, and a slightly higher percentage of students were not promoted on time to tenth grade.

FIGURE 9. Success Status by Race/Ethnicity, 2021-22 FTNG Cohort
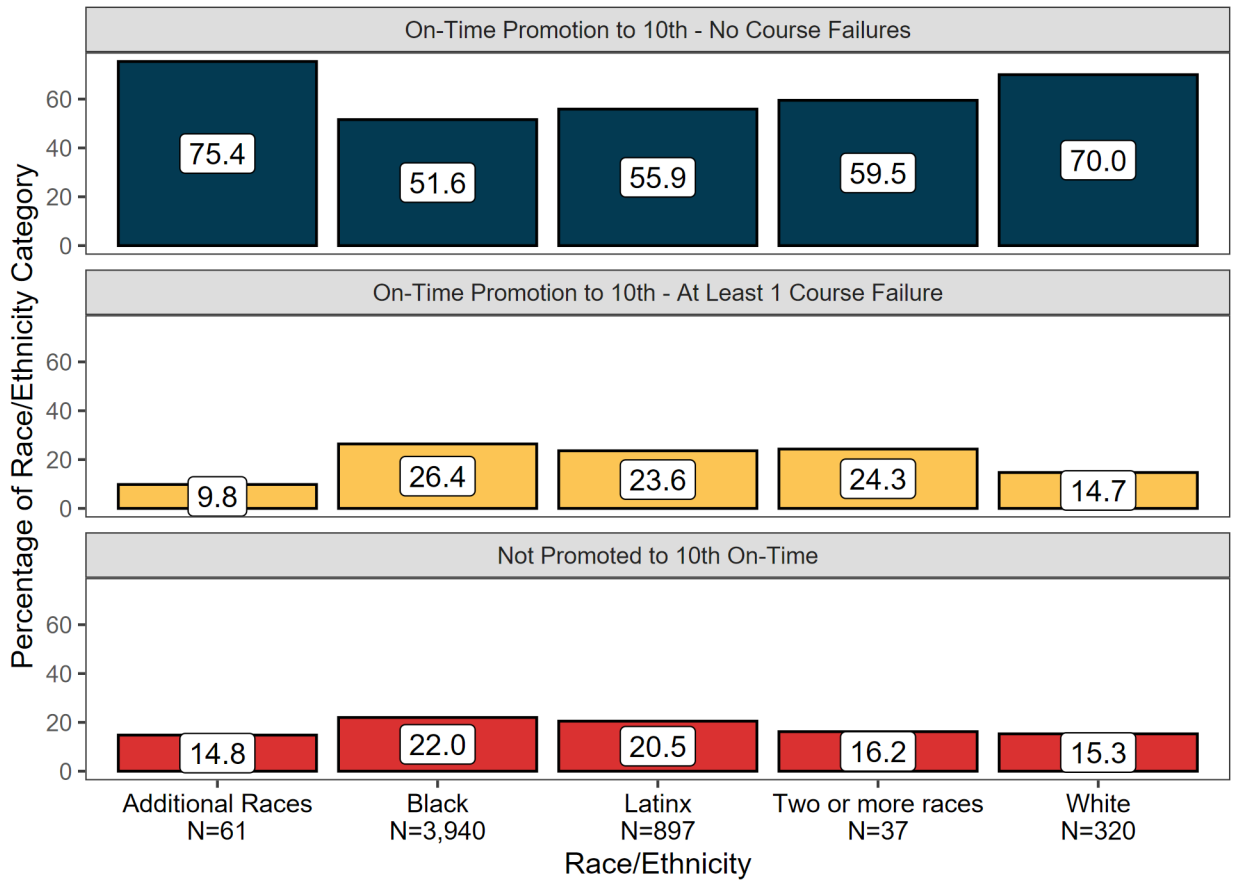
NOTE: The category 'Additional Races' includes: American Indian or Alaska Native, Asian, and Native Hawaiian or Other Pacific Islander.

Figure 9 further examines the data presented in Figure 8, which shows that the majority of first-time ninth graders in Baltimore City Public Schools in 2022 promoted on time to tenth grade without any course failures. This finding holds when the cohort is disaggregated by students' race or ethnicity. The two largest demographic groups, Black and Latinx students, were promoted to tenth grade on time more than twice as often as they were not promoted. Although rates of on-time promotion were higher for students identifying as white, two or more races, or additional races relative to the rest of the cohort, it is important to note the comparatively small size of these groups, because a small number of students can influence the overall trend; combined, they compose approximately 8% of all first-time ninth graders in 2022. These demographic groups are also not differentiated internally by socioeconomic status or school type, an observation that invites further study. That most (though not all) ninth graders across racial and/or ethnic groups are promoting on time to tenth grade suggests further inquiry into the school-level supports that are responsible for this outcome, and how they can be accentuated for future success.

FIGURE 10. Success Status by Special Education and English Learner Status, 2021-22 FTNG Cohort
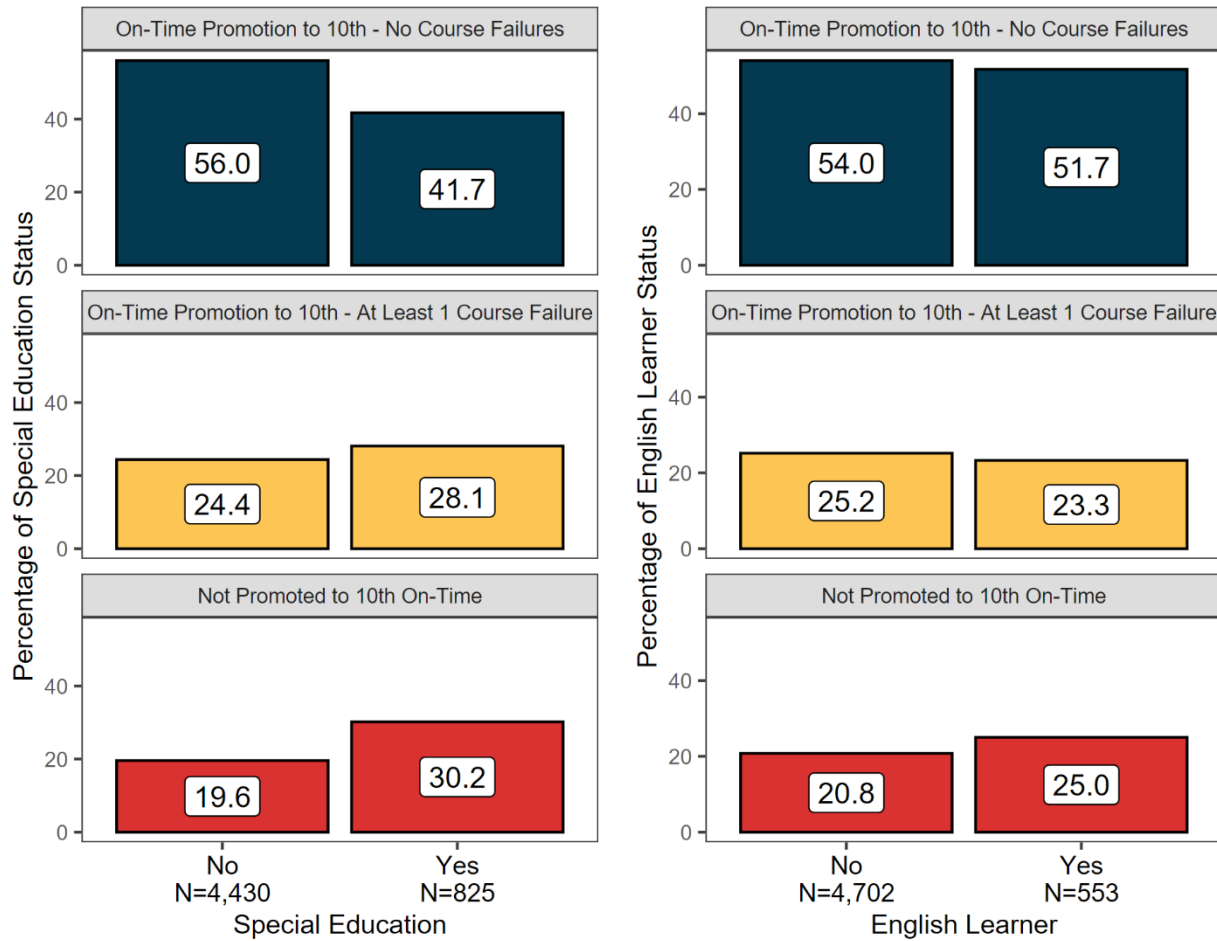
Figure 10 breaks out success status for special education students as well as English learners in the first-time ninth grade cohort of 2022. The figure shows that special education students, who comprised 16% of the cohort, were promoted to tenth grade on time more often than not. They were promoted, with and without any course failures, at about 87% of the rate of their peers in the cohort; they were about 15% more likely to promote with at least one course failure. However, the rate at which they did not promote on time to tenth grade was significantly higher by about 50% compared to their peers in the cohort. This raises questions for further study, specifically about courses that do not exclude students with disabilities from promotion, but where more support is needed for credit recovery.

The district's English learners, who made up approximately 11% of this cohort, were 95% as likely as their peers to promote on time to tenth grade. The proportion of English learner students promoting to tenth grade with at least one course failure was about equal to the proportion in the cohort overall, but they were roughly 20% more likely not to promote on time to tenth grade. That English learners are promoting at near parity with their peers reflects their diligence and linguistic capital (Yosso, 2005). It also suggests additional exploration. Promotion to tenth grade requires passing either English I or Algebra I, and it would be instructive to know if English learners are passing these courses at equivalent or disproportionate rates and what supports have yielded the most successful results.

FIGURE 11. Number of Course Failures by Success Status, 2021-22 FTNG Cohort
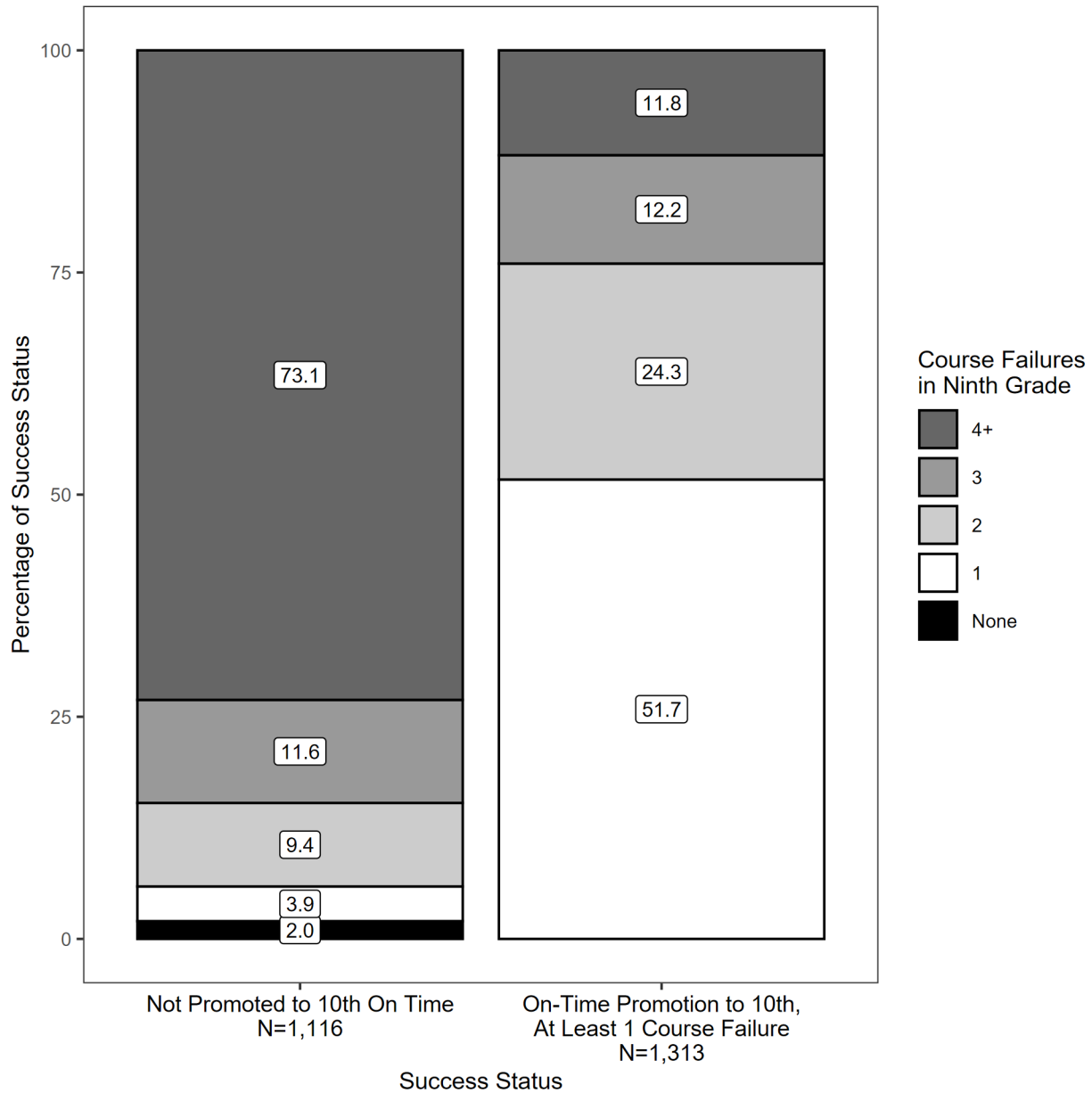
Figure 11 focuses on course failures in ninth grade by success status. The figure contains two stacked bars with the percentage of students failing different numbers of courses. The bar on the left represents students not promoted on time to tenth grade. For this group, the most common experience was failing 4 or more courses in ninth grade, likely contributing to not earning the requisite credits to promote to tenth grade. This group also contained a small percentage of students (2%) who failed no courses but who did not earn on-time promotion to tenth grade. These are likely students who were missing a required class in ninth grade and were unable to meet promotion criteria despite not failing any courses. The bar on the right represents students promoted with at least one course failure. In contrast to the first group, the most common experience in this second group was only failing one course, although about a quarter of this group also failed two courses in ninth grade.

FIGURE 12. Course Failure Rates by Subject and Success Status, 2021-22 FTNG Cohort
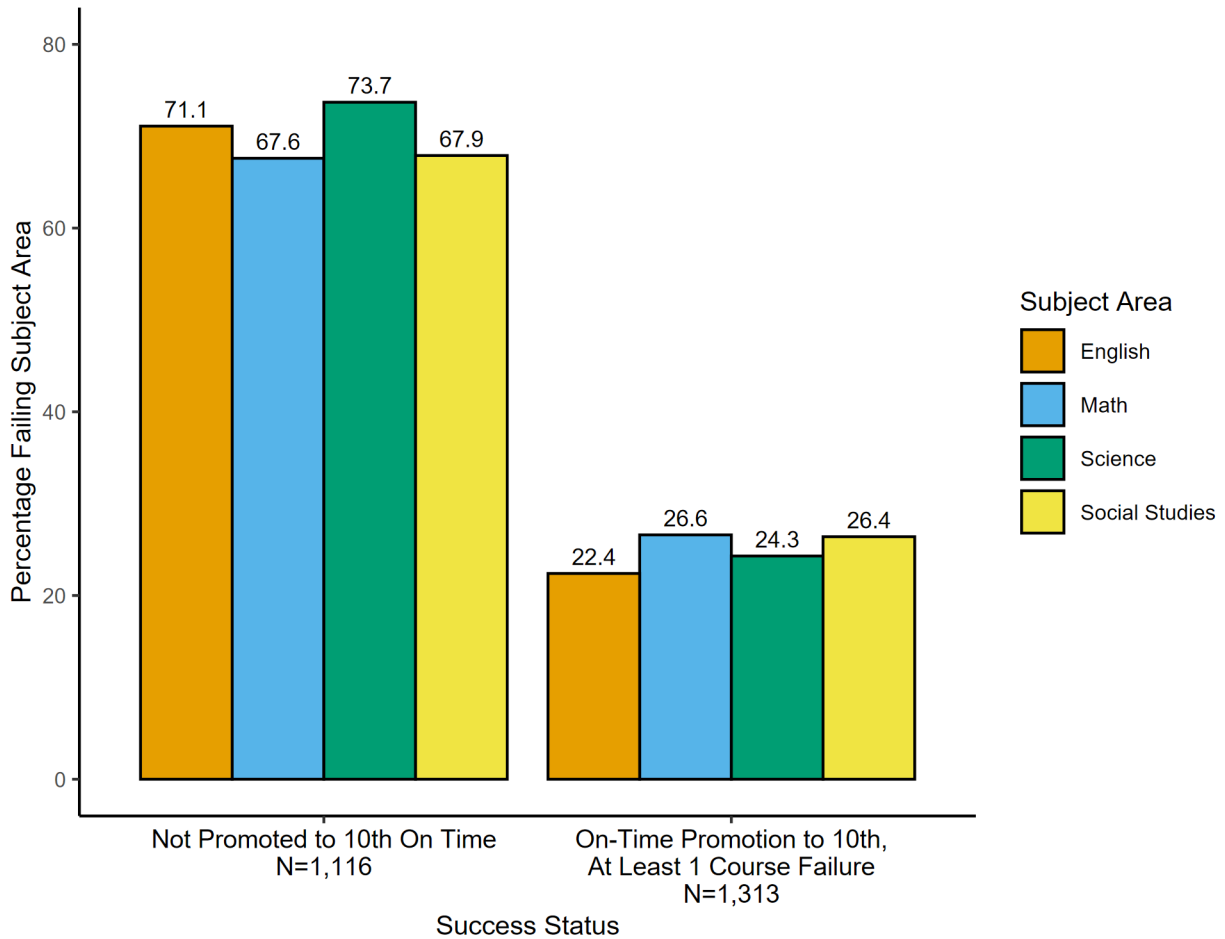
Figure 12 presents the percentage of courses failed in ninth grade by subject area and success status. Among students who were not promoted on time to tenth grade, there were similarly high levels of course failures across subject areas. The highest rates of course failures were in science (73.7%), followed by English/language arts (71.1%), social studies (67.9%), and math (67.6%). Among students who were promoted to tenth grade on time but who had failed at least one ninth grade course, course failure rates were highest both for math (26.6%) and social studies (26.4%), followed by science (24.3%), and English/language arts (22.4%). Overall, it seems that ninth grade course failures are not dependent upon course subject.

FIGURE 13. GPA by Success Status, 2021-22 FTNG Cohort
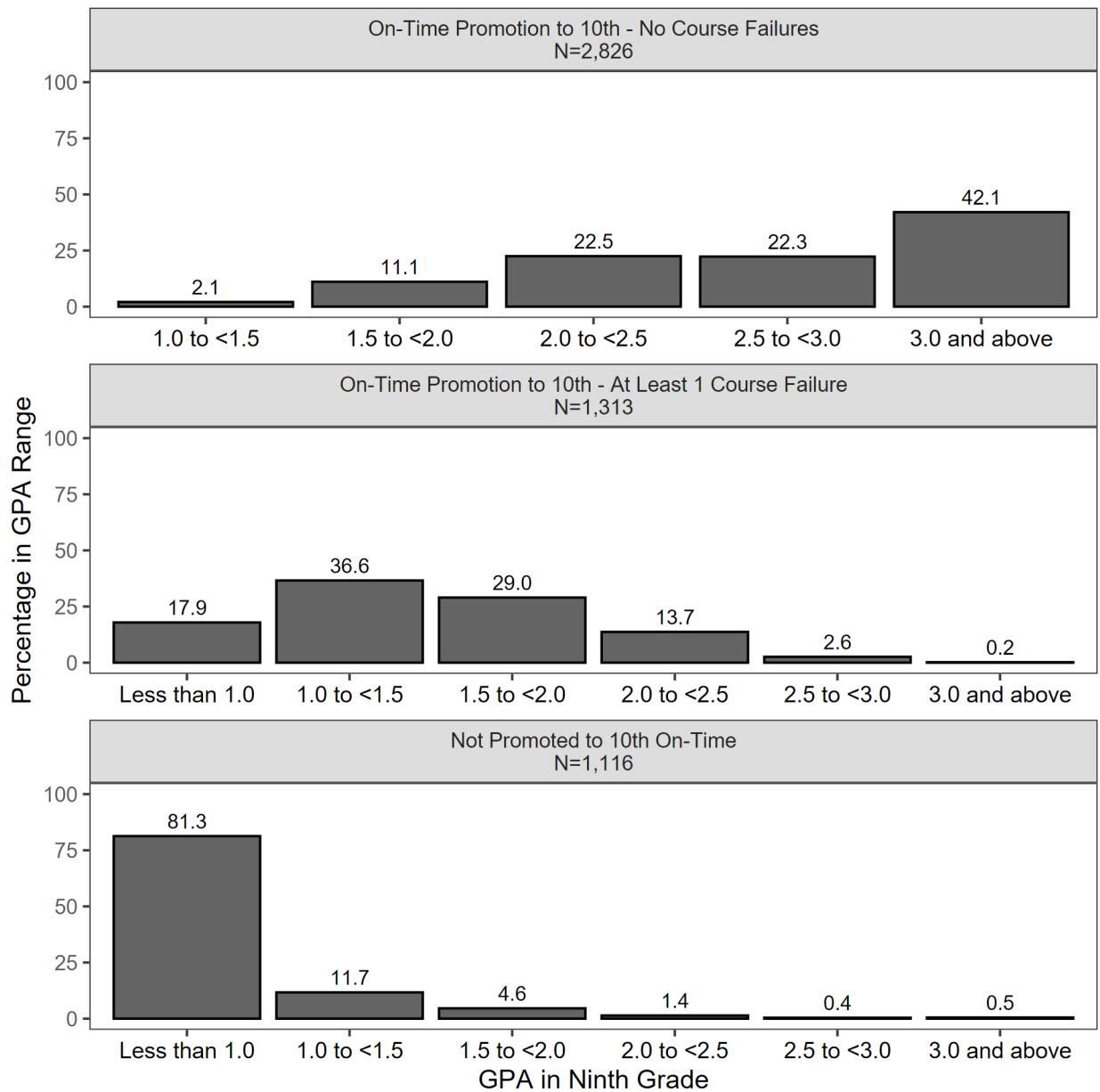
Figure 13 captures the percentage of students in each success status category within different ninth grade GPA ranges. Not surprisingly, among students promoted on time to tenth grade without course failures, the largest group (42.1%) had a GPA of at least 3.0. However, a majority (65.6%) of ninth grade students promoted on time to tenth grade with at least one course failure had a GPA that fell between 1.0 and 2.0. About 4 of every 5 students with a ninth grade GPA less than 1.0 were not promoted on time to tenth grade.

FIGURE 14. Days Absent by Success Status, 2021-22 FTNG Cohort
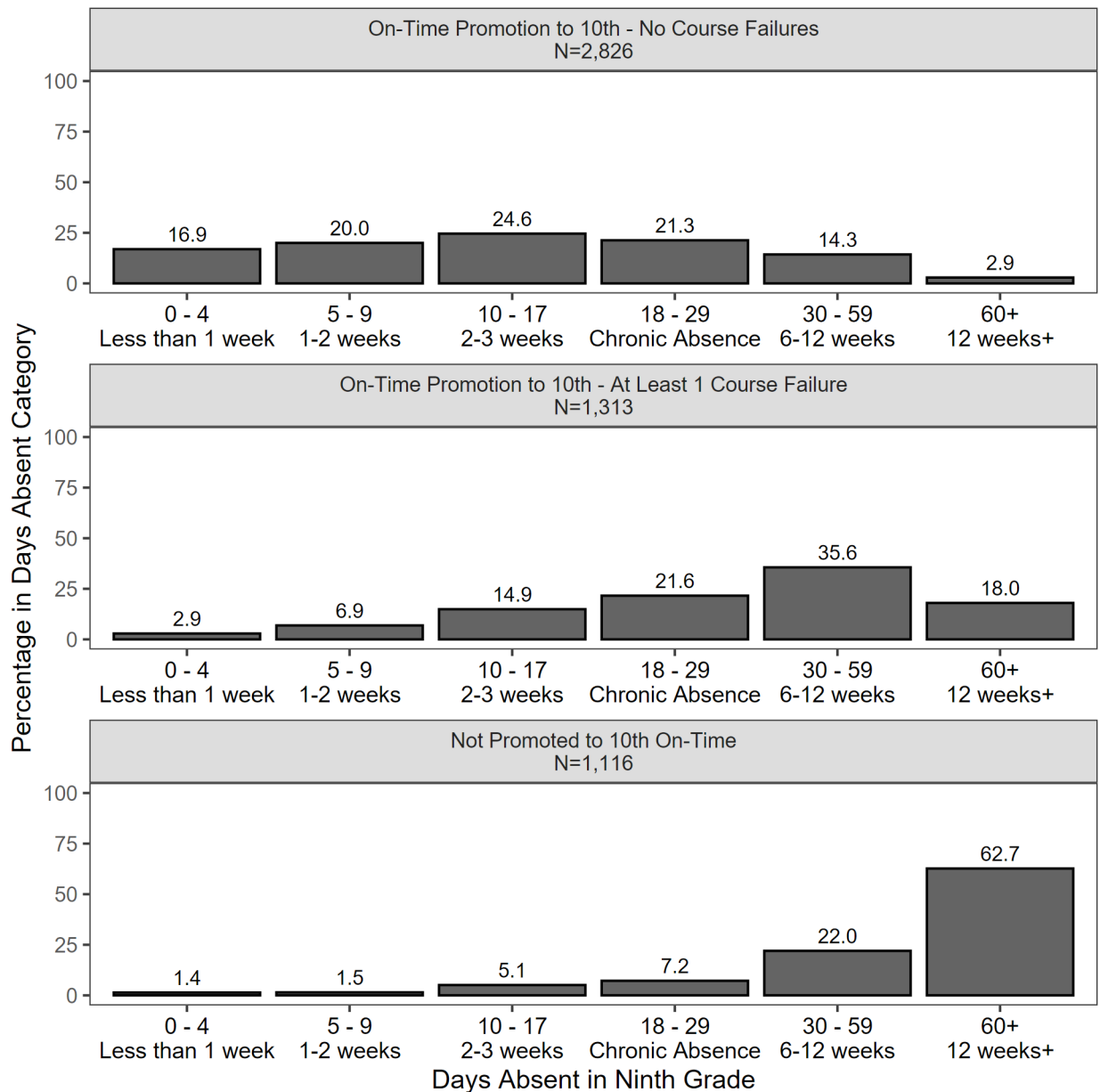
Figure 14 shows the percentage of students who fell within different ranges for days absent in ninth grade. For students promoted on-time to tenth grade without any course failures, the most common range of absences was 10-17 days (24.6%). However, students in this success status group were somewhat evenly distributed between many of the absence ranges. In contrast, most students promoted on time with at least one course failure were chronically absent clustered around 30-59 days absent (35.6%). Notably, students not promoted on time to tenth grade had typically missed 60 or more days of school (62.7%). This figure shows how high levels of absence negatively effects on-time promotion to tenth grade.

Conclusion and Next Steps

Through the continued partnership between Baltimore City Public Schools (BCPSS) and the Baltimore Education Research Consortium (BERC) focused on early warning indicator systems, this report draws attention to a critical outcome: **ninth grade success**. We define this as students earning the requisite credits for on-time promotion to tenth grade without having any course failures in ninth grade. Not only does a successful ninth grade year matter for timely graduation from high school as highlighted in other research, but it provides a link that allows examination of earlier student trajectories in middle school and how those relate to students' chances of experiencing a successful ninth grade year.

This report provides an overview of the extent that BCPSS high school students meet ninth grade success levels as well as its association with attendance and GPA, which are highly related to ninth grade success. There are several important takeaways from this report. First and foremost, **a majority of ninth grade students in BCPSS have consistently earned promotion to tenth grade without any course failures.** This was the case for the two largest demographic groups, Black and Latinx students, who were promoted to tenth grade on time in 2022 more than twice as often as they were not promoted. Special education students were promoted at about 85% of the rate of their peers and English learners were promoted at 95% of the rate of their peers. Although efforts to support students who are failing classes and not being promoted are critical, it is encouraging that a majority of high school students in Baltimore have successful ninth grade years.

Second, **attendance is a strong predictor of ninth grade success**. Whereas a large proportion of students across the cohorts who missed less than a week of school were promoted to ninth grade with no failures, only about half of students who missed 18 or more days, and less than 3% of students who missed 60 or more days, were successful. Students who were promoted to tenth grade with no failures had an average attendance rate above 90%, those promoted with one or more failures had an average attendance around 80%, and those not promoted to tenth grade had an average attendance between 54% and 70%. The habit of attending school is important for ninth grade success and on-time graduation and should be instilled even before students enter high school. Therefore, we suggest that middle and elementary school teachers and administrators amplify or improve current efforts to encourage consistent school attendance among both students and caregivers to establish this healthy habit early.

Finally, it is no surprise that **GPA is a strong predictor of ninth grade success** and that a higher GPA in the ninth grade is associated with higher likelihood of on-time promotion to tenth grade without any course failures. However, it is important to note that course failures among ninth grade students were almost equally likely in all subjects. Due to the strong relationship between GPA and promotion to tenth grade, it is essential that schools have a way to track progress of students early in the school year to identify those who need support to prevent them from failing any classes. Failing just one course confers a significant risk.

TARGETING NINTH GRADE SUCCESS IN BALTIMORE CITY

BCPSS has started initial implementation of an early warning tracking system (EWS). The district implemented a "Ninth Grade On-Track" initiative across traditional high schools in the 2023-24 school year. This is a continuous improvement effort to increase the share of first-time ninth graders who promote to tenth grade and are on track for on-time graduation. This involved creating a new role of an "On Track to Graduate" (OTG) Coordinator for the school to support identifying students based on attendance and course grades and intervening to get them back on track. This role stemmed from learnings focused on identifying students who come to school 80% of the time but are still failing at least one core course. The OTG Coordinator works with ninth grade faculty and staff to coordinate student supports and interventions. The theory behind the OTG program was that having trusted adults to complete structured check-ins with ninth grade students each week would increase their sense of belonging in school and increase their class attendance, grades, and their chances of promotion to tenth grade. The district also invested in full-time manager positions to support a network of schools working as a community of practice that focuses on program implementation and using continuous improvement and plan-do-study-act (PDSA) cycles to test and refine interventions and systems for ninth graders. The managers created a Learning Network to facilitate sharing out best practices.

The district is now focused on building an early warning system for middle schools. Four pilot schools began working with Knowledge Management and BERC to successfully develop and test an early warning system tracker in the 2023-24 school year. What we learned from the pilot year emphasized the importance of: 1) finding the right amount of data necessary to identify students and select interventions, 2) listing adult roles and knowing who does what currently at each school so that the EWS system fits into systems already in place, and 3) helping school teams move away from just discussing student data and toward organizing adult actions to support students. Another 20 schools have been invited to partner in the development of early warning system protocols in the 2024-25 school year.

EARLY WARNING SYSTEM RESEARCH

Schools need a reliable system to monitor data on early warning indicators (particularly attendance, behavior, and course performance) to identify students who, without effective responses, are at high risk of failing to earn course credits in ninth grade, which is the primary predictor of dropping out of high school (e.g., Allensworth, 2013; Mac Iver & Messel, 2013). This is especially important for schools in Baltimore City where around 30% of ninth grade students are new to the district; their previous grades and attendance information may be missing. Schools then need an effective system for strategically targeting and allocating interventions and supports to those students at risk, monitoring their impact, and adjusting as needed (Davis et al., 2018, 2022; Faria et al., 2017; Mac Iver et al., 2019).

Ensuring that schools create systems involving effective organizational routines for adults to attend to the needs of struggling students requires specific human capital development. There is strong evidence that early warning/on-track systems can increase educational attainment (Faria et al., 2017; Mac Iver et al., 2019). Much less is known about how a district can: 1) effectively spread their use across all its schools; 2) learn how to adapt a system-wide approach to schools of different sizes, organizational structures, and school cultures; 3) balance fidelity to core components with school level customization; and 4) differentiate district supports based on the needs of its schools.

BCPSS wants to focus on middle school students because performance in middle school is a strong predictor of ninth grade success, which is "make or break" for high school graduation (e.g., Allensworth et al., 2014; Mac Iver & Messel, 2013). In addition, to do well in challenging courses in the upper grades — the key driver of postsecondary success — students need to have mastered foundational skills in earlier grades. In school districts most impacted by the pandemic, students will need tailored interventions to guarantee a successful transition into high school and towards postsecondary success.

The findings from this report indicate that for students in BCPSS, ninth grade attendance and GPA is a strong predictor of success in ninth grade, as indicated by promotion to tenth grade without failures. Also, this report indicates that many students do have a successful ninth grade year, so attention needs to be directed towards those who are slipping off the path early enough to intervene.

NEXT STEPS

BERC leaders set out to gather advice from BCPSS high school students in the process of writing this report. In these conversations, the students provided feedback on some of the findings in the report, as well as the visual and narrative presentation of findings. They also suggested ways that schools can improve their students' on-time completion of ninth grade. These suggestions include peer mentoring from older students during the transition to high school; frequent messaging about course passage and credit requirements for promotion (not just in the last quarter of the school year); early and frequent messaging about credit recovery options; and caring adults like teachers and counselors whom students are comfortable approaching for help.

Finally, we offer the following questions below for different stakeholder groups to consider as they read through this report.

SCHOOL LEADERS AND ADMINISTRATORS

- In your school, or in schools you support, what proportion of ninth graders are in each of these three categories?
    - On-time promotion to tenth grade without any course failures in ninth grade
    - On-time promotion to tenth grade with one or more course failures in ninth grade
    - Not promoted to tenth grade on-time
- Are rising ninth graders scheduled for the courses/credits they need for on-time promotion?
- What are the root causes of particular students' chronic absenteeism and/or struggling GPAs in the ninth grade, and how can your school address them?
- What school-based interventions best support on-time course completion for ninth graders?
- How can your school support students who have a later start to tenth grade toward on-time graduation?

STUDENTS AND FAMILIES

- Which of these ninth grade success categories best describes you, or your ninth-grade student?

- What resources does your school offer for ninth graders and their families? Do you know how to access them if you need to?

- For older high school students and their families, what do you think helped you make a successful start to high school?

RESEARCHERS AND POLICYMAKERS

- What school-based interventions best support on-time course completion for ninth graders? What makes them most successful?

- What are the root causes that lead to chronic absenteeism and/or struggling GPAs in the ninth grade? Are there policy-based ways to address some of these root causes?

- What policies would allow best practices for ninth grade success to be replicated across schools? Across school systems?

- How are ninth grade success rates for students of color, students with disabilities, and multilingual learners further impacted by students' socioeconomic status or school contextual factors?

Appendix A. Data Sources and Analytic Sample

DATA SOURCES

The data used in this report come from three sources within BERC's data warehouse repository: i) first-time, ninth grade (FTNG) cohort records, ii) administrative enrollment records, and iii) student course records. The cohort records contain information on the groups of students that started ninth grade for the first time in a given academic year. They also contain whether students completed high school within the expected four-year timeframe. The administrative enrollment records contain information on which students were enrolled in a given academic year along with the school enrolled, the number of days enrolled (both present and absent days), student demographic information (i.e., race/ethnicity), and support service information (i.e., special education status, English learner status). The student course records contain information on the specific courses that students took in a given school year, including course name, subject area, and the grade earned in the course.

ANALYTIC SAMPLE

We constructed our analytic sample for Part I of this report by first selecting cohorts of students who were first-time, ninth graders in school years 2011-12 through 2018-19. As a convention, when we used a single year (e.g., in charts), we listed the year from the spring semester to refer to an academic year (e.g., 2012 refers to the 2011-2012 school year). We chose these cohorts of students since we could observe graduation outcomes at their expected graduation years (i.e., four years after starting ninth grade).

We then associated enrollment information for these students from the administrative enrollment records. These records allowed us to associate demographic and support service information, and to calculate attendance rates for each student as well as whether students promoted to tenth grade on time (i.e., whether a student started tenth grade in the year following first-time entry into ninth grade). For the course record data, we calculated a grade point average (GPA) for each student and identified the number of courses and subjects that students failed. We then associated this data to the student cohort records.

We restricted the sample to students enrolled in BCPSS during ninth grade who had course performance data, were enrolled at the start of the year following entry into ninth grade, and who remained in the adjusted ninth grade cohort for BCPSS during their expected graduation year (i.e., four years after entry into ninth grade). Students transferring to another school system were not included in these figures. Thus, by the expected graduation year, students had either graduated on time, remained enrolled (and may have graduated late), or dropped out of school. This yielded an analytic sample comprised of 35,442 students across eight cohorts.

We constructed the analytic sample for Part II of this report in a similar fashion. This allowed us to examine data for the most recent cohort of first-time, ninth grade students available in the BERC data warehouse repository. The analytic sample was comprised of 5,255 students who were first-time, ninth graders in school year 2021-22.

Appendix B. Middle School Performance and Ninth Grade Success

The figure below shows how middle school course performance and attendance are related to the high school outcome of on-time promotion to tenth grade without any course failures in ninth grade. Each cell in the matrix shows the percentage of students that met the ninth grade success outcome and what percentage fell into that category. The table following the matrix shows how results varied by entering high school type.

Students entering any high school
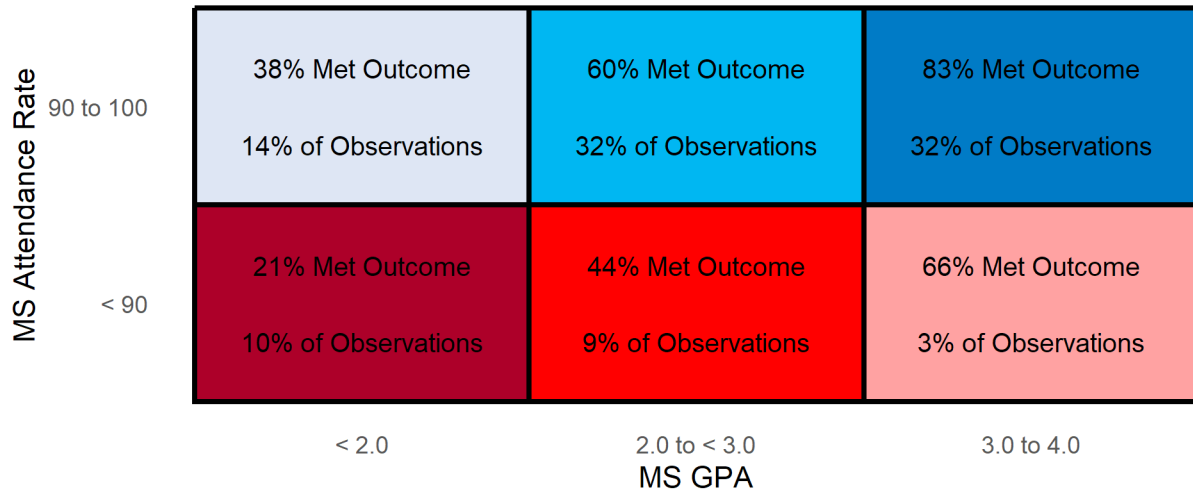
	MS Attendance < 90%			MS Attendance 90-100%		
	MS GPA			**MS GPA**		
High School Type	**< 2**	**2 to <3**	**3 to 4**	**< 2**	**2 to <3**	**3 to 4**
All schools (Obs. = 38,955)						
% Met Outcome	21	44	66	38	60	83
% of Observations	10	9	3	14	32	32
Traditional (Obs. = 12,975)						
% Met Outcome	17	38	56	33	54	75
% of Observations	21	13	2	24	32	8
Entrance Criteria (Obs. = 11,031)						
% Met Outcome	29	54	71	48	66	86
% of Observations	1	4	5	1	18	70
CTE (Obs. = 7,806)						
% Met Outcome	22	37	55	33	52	68
% of Observations	5	10	3	11	46	24
Charter (Obs. = 4,578)						
% Met Outcome	40	66	83	59	80	94
% of Observations	9	9	2	21	42	17
Screening Process (Obs. = 2,526)						
% Met Outcome	24	61	83	40	58	85
% of Observations	6	7	3	10	33	41

The data for the figure and table above were based on four cohorts of middle school students who were 8th graders in school years 2015-16 through 2018-19 (N = 12,985). For each student, their categorization in the matrix above was obtained at each middle school grade level (6, 7, and 8). The categorizations for these students were then pooled across the three grade levels, yielding a total of 38,955 observations.

The table below lists which high schools were included in the different school types that students entered when they started high school.

High School Type	Name of Schools
Traditional	Academy for College and Career Exploration Augusta Fells Savage Institute of Visual Arts Benjamin Franklin High at Masonville Cove Bluford Drew Jemison STEM Academy West Digital Harbor High School Forest Park High School Frederick Douglass High School Friendship Academy of Engineering and Technology KASA (Knowledge and Success Academy) NACA Freedom and Democracy Academy II New Era Academy Northwestern High Patterson High School Reginald F. Lewis High School Renaissance Academy The Reach! Partnership School Vivien T. Thomas Medical Arts Academy
Entrance Criteria	Baltimore City College Baltimore Polytechnic Institute Paul Laurence Dunbar High School Western High School
CTE	Carver Vocational-Technical High School Edmondson-Westside High School Mergenthaler Vocational-Technical High School
Charter	Baltimore Leadership School for Young Women City Neighbors High School ConneXions: A Community Based Arts School Coppin Academy Green Street Academy Independence School Local I High School
Screening Process	Baltimore Design School Baltimore School for the Arts Bard High School Early College National Academy Foundation

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