

ADDRESSING DISPROPORTIONATE DROPOUT RATES AMONG HISPANIC STUDENTS IN MCPS

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Schools

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I would first and foremost like to thank Montgomery County Public Schools for providing me with such a strong base for my education and for fueling my passion to improve public education in the United States. I attended MCPS from kindergarten through 12th grade. Special shoutout to Sherwood Elementary, Drew Elementary, Loiederman Middle, and Blake High and my incredible classmates and teachers who supported me along the way. I attribute my love for and desire to improve public education to my time in MCPS both living and learning alongside a diverse student population. I have a vested interest in helping current and future MCPS students as not only an alumna, but also as someone with younger Asian, Black and Hispanic cousins attending MCPS elementary schools right now. I want to dedicate this project to my little cousins: Taiyo Nelson, Nikko Nelson, and Joshua Ortiz - I did this to improve MCPS for you and other kids like you. I love you and I am so proud of you.

Secondly, I would like to thank my extensive support network for encouraging me to keep going. Finally, I would like to thank Professor Kirsten Gelsdorf and Professor Craig Volden for providing me with extensive guidance and feedback on this project. They provided me with personal and professional advice that I will carry with me for the rest of my life.



MANDATORY DISCLAIMER

The author conducted this study as part of the program of professional education at the Frank Batten School of Leadership and Public Policy, University of Virginia. This paper is submitted in partial fulfillment of the course requirements for the Master of Public Policy degree. The judgments and conclusions are solely those of the author, and are not necessarily endorsed by the Batten School, by the University of Virginia, or by any other agency.

Honor Pledge

On my honor as a student, I have neither given nor received unauthorized aid on this assignment

Victoria L. Nelson

TABLE OF CONTENTS

Executive Summary	04
Introduction and Problem Statement	05
Client Overview	06
Problem Background	07
Consequences	11
Evidence on Potential Solutions	13
Evaluative Criteria	20
Alternatives	22
Outcomes Matrix	31
Recommendation and Implementation	32
Conclusion	37
Appendix	38
References	44

EXECUTIVE SUMMARY

Too many Hispanic students in Montgomery County Public Schools (MCPS) drop out of high school. 15.7% of Hispanic students in the Class of 2018 dropped out before graduating. In contrast, 6.7% of all MCPS students and less than 5% of white students dropped out (Smith, 2019). Approximately 3 in 5 students who dropped out between 2015-2019 were Hispanic (Shahzad, 2019). This is a shocking and devastating statistic given the economic and social consequences of dropping out of high school.

Students who drop out of school incur individual and societal costs through lower potential earnings, reliance on public assistance, worse health outcomes, and higher probability of being incarcerated (Levin, 2007). This is a persistent and difficult problem to address because students drop out of school for a variety of reasons, but most students in MCPS dropped out because of a “lack of interest” in school (Peetz, 2019).

MCPS is working off of limited resources, so I evaluate policies based on cost-effectiveness. I also assess the policy’s ability to target Hispanic students specifically and the administrative feasibility of implementing the policy. I assess three policy alternatives to address the problem:

- (1) Implementing an Early Warning System using the Check and Connect Model to identify and intervene with students at risk of dropping out
- (2) Creating a Career Academies program at MCPS high schools
- (3) Assigning social workers to students at risk of dropping out

I recommend that the Office of Shared Accountability works alongside the Board to implement an Early Warning System using the Check and Connect model. This alternative is cost-effective and can effectively target Hispanic students. While there are administrative hurdles in rolling out this program, the hurdles are worth it for the ability to address this problem successfully. By my estimates, this alternative has the potential to prevent up to 625 Hispanic students from dropping out over the next 8 years.

Author's Note on Terminology

For the purposes of this report, the author uses the term “Hispanic” to describe the Hispanic/Latinx population. The Maryland State Department of Education reports data using the term Hispanic and this refers to anyone who has self identified as Hispanic or Latino (of any race).

INTRODUCTION

The United States economy is shifting towards jobs that require higher education, so it is more important than ever that students obtain at least a high school degree to obtain competitive wages. Montgomery County Public Schools is the largest school district in Maryland, serving a diverse student population. They have a responsibility to ensure that all students, regardless of race/ethnicity are graduating from high school prepared for higher education or the job market.

This report aims to provide MCPS with a comprehensive understanding of the problem and a potential policy solution to address the problem. Keeping students in school is critical for their short-term and long-term outcomes. MCPS faces disproportionate dropout rates for Hispanic students. This report defines the problem and why this is something MCPS leadership can and should address. I examine the scale and scope of the problem both nationally and at the MCPS level, and why students tend to drop out of school. The report then covers the costs and consequences of dropping out for dropouts and the government. Next, I cover existing literature on dropout prevention methods, and an analysis of what all these takeaways mean in the context of this project. Next, I evaluate three policy alternatives based on criteria jointly determined by the Office of Shared Accountability and myself. I then recommend a policy alternative and provide details for how MCPS should go about implementing this policy.

PROBLEM STATEMENT

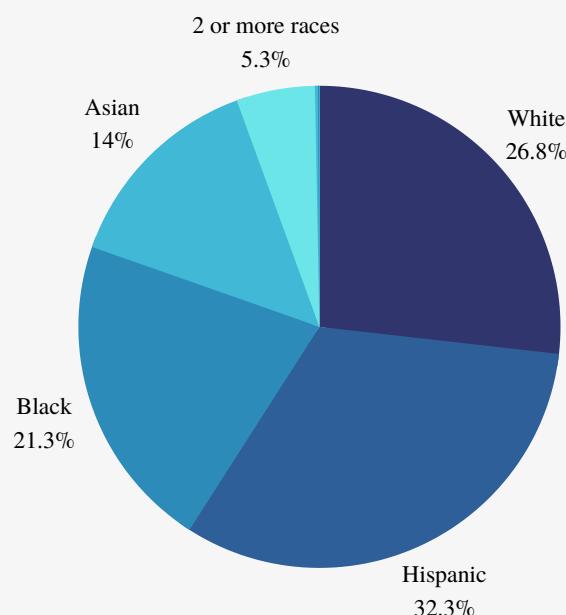
Too many Hispanic students in Montgomery County Public Schools (MCPS) drop out of high school. 15.7% (3,507) of Hispanic students in the Class of 2018 dropped out before graduating. In contrast, 6.7% of all MCPS students and less than 5% of white students dropped out (Smith, 2019). Dropping out of high school has severe economic and social consequences, including higher unemployment rates, lower earning potential, increased incarceration rates, and greater likelihood of relying on public assistance (Bearden et al, 1989). Hispanic students have the second highest dropout rates in the district, second only to those with limited English proficiency (Smith, 2019). MCPS has a responsibility to decrease the number of students who dropout, and specifically address the high dropout rates among Hispanic students.

CLIENT OVERVIEW

MCPS is the largest school district in the state of Maryland, serving 160,564 students (MCPS, 2020). MCPS leadership has made it clear that they want their students to graduate and succeed. In 2020, the 4-year graduation rate in MCPS grew to 89.3%, but was only 77.1% for Hispanic students (Pollak, 2021). While MCPS is improving graduation rates, they are leaving Hispanic students behind. From 2015-2019, 2,151 MCPS students stopped attending school and 1,335 of them were Latino (Shahzad, 2019). Approximately 3 in 5 students who dropped out were Hispanic. This is a shocking and devastating statistic given the economic and social consequences of dropping out of high school.

The Office of Shared Accountability “provides information and analyses to support continuous improvement in the academic and operational services” in MCPS, and they provide data and analysis to support evidence-based decision making for the Board of Education (Office of Shared Accountability, n.d.). The Board of Education serves as the policy-making body for the district, and their mission is that “every student will have the academic, creative problem solving, and social-emotional skills to be successful in college and career” (Board of Education: Mission, n.d.). The core purpose of MCPS and the Board of Education is to “prepare all students to thrive in their future” (“Guiding Tenets”, n.d.). I see this project as a dual partnership with the Board of Education and the Office of Shared Accountability in that the Office of Shared Accountability can provide data and additional research in the future, while the Board of Education can implement policy to address the problem.

Figure 1: MCPS Demographics



PROBLEM BACKGROUND

How Dropout Rates are Measured

The proportion of high school dropouts in the population is referred to as the status dropout rate. Status dropout rates in the United States declined starting in the 1970s, reaching a low of 3% in 2010, but status dropout rates began to climb again to 5.9% as of 2015 (Rumberger, 2020). This is an important indicator for understanding what share of the population does not have a high school diploma. More recently, federal and state governments have shifted to measuring the ninth-grade cohort graduation rate. The Adjusted Cohort Graduation Rate is a cohort graduation rate based on longitudinal data at the individual level. This indicator measures a four-year “on-time” graduation rate based on the number of entering 9th grade students who earn a regular diploma within four years” (Rumberger, 2020). MCPS reports dropout rates based on the number of first-time ninth grade students who complete their degree within four years (Smith, 2019).

Scale and Scope of the Problem in MCPS

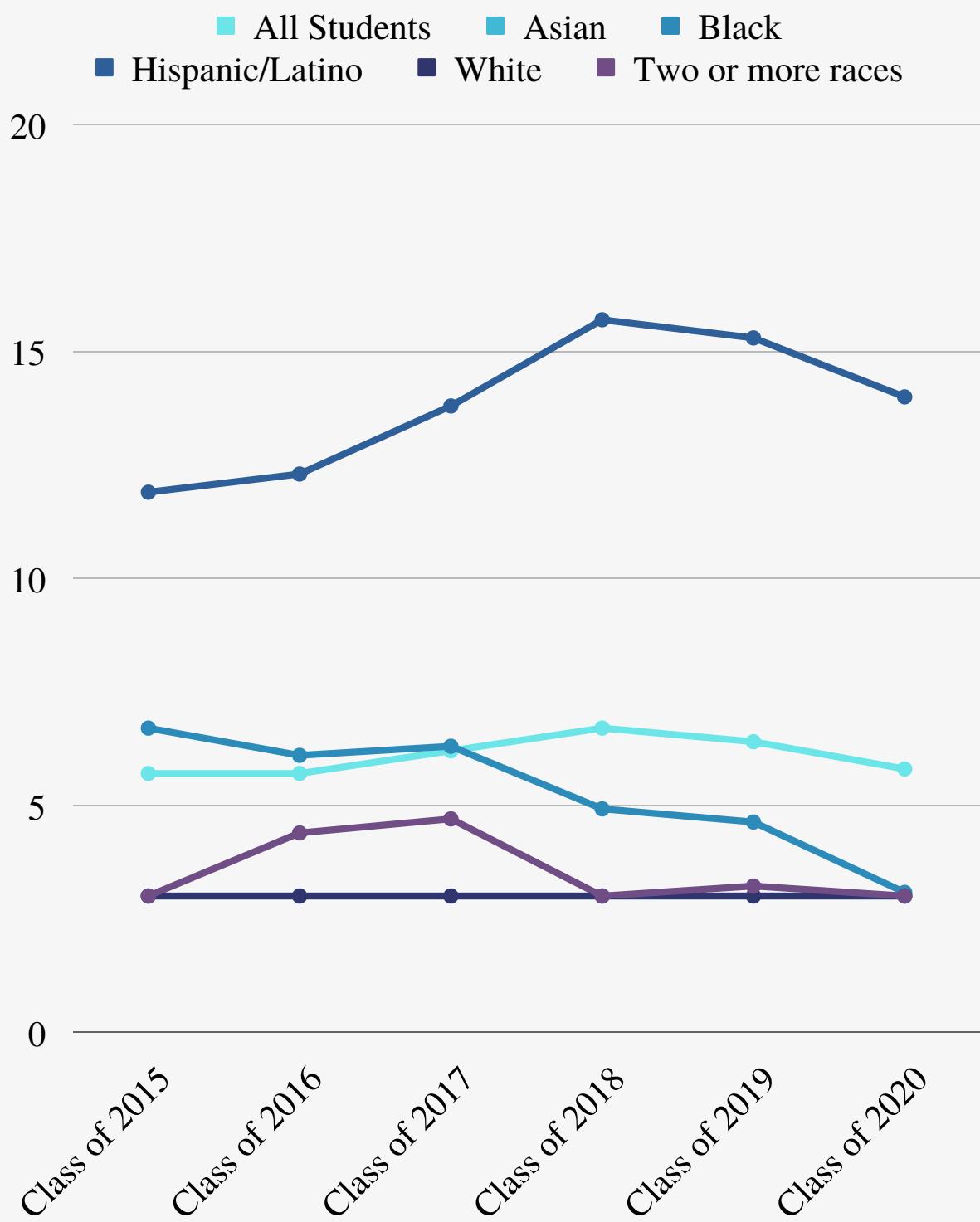
In 2020, the Maryland state dropout rate was 8.25%. MCPS’ dropout rate is lower than the state average at 5.8%, but the dropout rate for Hispanic students is 14% (MDSE, 2021). Hispanic students account for the largest racial/ethnic share of MCPS students at 32.4% (see Figure 1). MCPS is failing a large share of their students by maintaining an environment with such disparate dropout rates. Both Asian and white students have maintained dropout rates below 5% for the past 5 years, but Hispanic students maintain double, if not triple the dropout rates (Peetz, 2019). See Figure 2 for more details.

Maryland’s Largest School District

MONTGOMERY COUNTY PUBLIC SCHOOLS

Expanding Opportunity and Unleashing Potential

Figure 2: Dropout Rates in MCPS by Race/Ethnicity 2015-2020



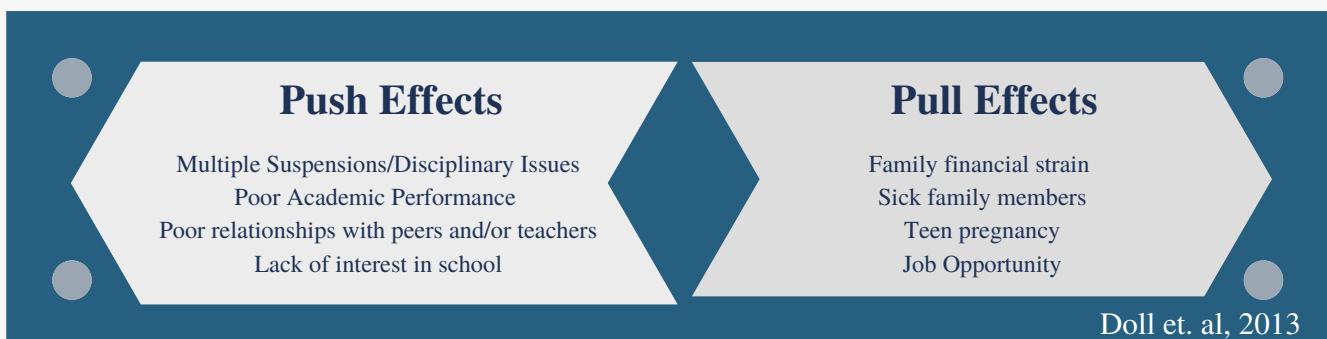
Source: MSDE, 2022

Causes of Dropping Out

Scholars recognize that there are two general categories of reasons why students decide to drop out of high school (Doll et al, 2013, Jordan et al 1996). The first category is “push effects,” which are factors within the school environment itself that can push a student to drop out. The school environment can push a student to drop out of school if students begin to see themselves as incapable of succeeding in school (Jordan et. al, 1996). This can happen for a variety of reasons. If a student becomes disengaged from their studies, they could engage in disruptive behavior, frequent absenteeism, or perform poorly in school. If these behaviors are met with suspension or failure, the student may feel as though they are too far behind academically and make the decision to drop out of school altogether. Among all racial groups, push factors are the most important for a student’s decision to drop out. When given the opportunity to self-report reasons for dropping out, students cited “could not keep up with school work” (33%), “failing in school” (44%), and “couldn’t get along with teachers” (34%) (Jordan et al, 1996). In MCPS, most students credited their decision to a “lack of interest” in school. In 2017-18, only 6% of students who dropped out credited their decision to employment opportunities (Peetz, 2019). This is an indication that much of the reason students drop out in MCPS is due to push effects rather than external pull factors.

The second category is “pull effects,” which are factors located outside of the school that may lead a student to drop out of school. Students exist in a world beyond the school setting, and scholars identified reasons students may drop out of school due to family or personal reasons. External stress factors like family financial strain, sick family members, or pregnancy may affect a student’s decision to drop out (Jordan et al, 1996). Students may also need to find a job to support their family, care for family members, or support their own child, and may value these things over attending school. While “push” factors were much more prevalent among respondents in a nationally representative survey, students still reported “pull” factors such as “had to get a job” (17%), “need to support family” (7%), and “parenthood” (12%) (Jordan et al, 1996). These reasons are visualized in Figure 3.

Figure 3: Reasons Students Drop Out of School

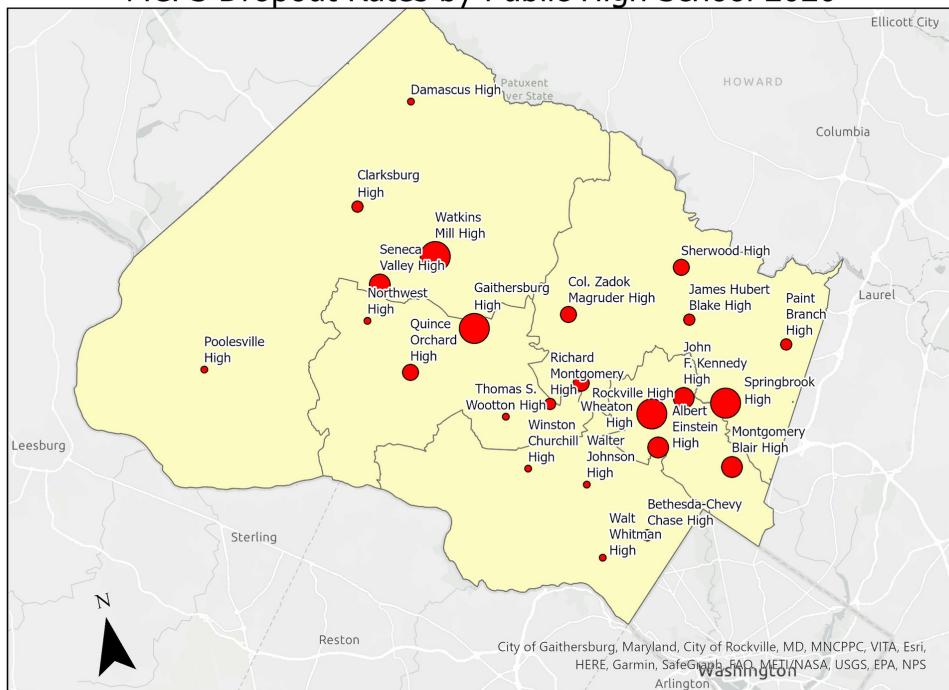


National Trends

National trends in why students drop out of high school have changed over time. Many early studies from the 1950s-1980s indicated that students were mostly dropping out of school due to “pull effects” - things happening outside of school that might encourage students to drop out. But the reasons students dropped out of school began to shift after the National Educational Longitudinal Survey in 1988 when students more frequently cited “push effects” for why they dropped out. These trends continued in the Educational Longitudinal Survey of 2002 (Doll et al, 2013).

A shift towards the “push factors” means that the agent in this problem is the school and the school district, rather than familial and/or personal constraints on the student. While it is still consequential for the students who do drop out of school, as described in my next section, this means that MCPS and other school districts have the agency to reduce dropout rates in a meaningful way.

MCPS Dropout Rates by Public High School 2020



MCPS Context

Overall dropout rates varied in the district. Wheaton High had the highest dropout rate in the county at 13.25%, followed by Watkins Mill High with 12.87%, and Gaithersburg High with 11.3%.

MCPS Public High Schools

0 3 6 12 Miles

Dropout Rate

- <=3%
- 3-3.61%
- 3.61-6.59%
- 6.59-8.93%
- 8.93-13.25%

Board of Education Districts

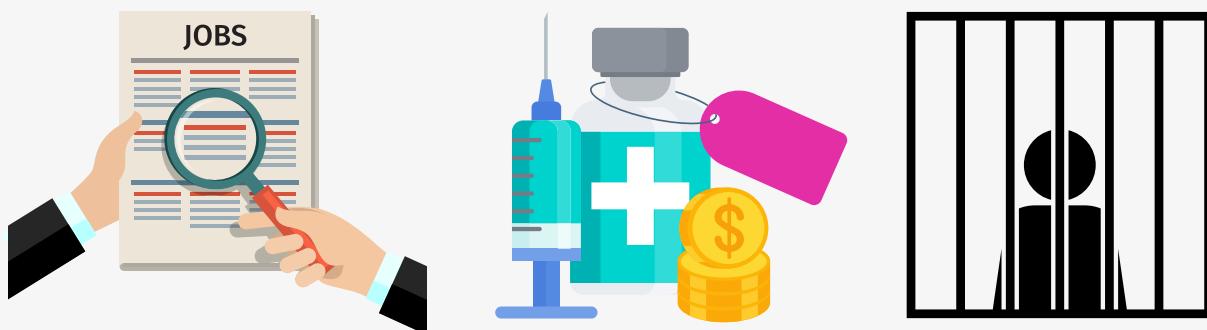
Dropout data obtained from the Maryland State Department of Education for the Class of 2020

CONSEQUENCES

Dropping out of high school has severe economic and social consequences for individuals as well as costs for state and federal governments. As of 2020, the national unemployment rate for high school graduates aged 25 and over was 9%, whereas the unemployment rate for high school dropouts was 11.7% (Torpey, n.d.). Not only can dropping out have an effect on finding jobs, it can also affect median wages. By Census Bureau estimates, the lifetime loss of earnings is upwards of \$200,000 for workers who do not complete high school (Rumberger 2020). Some scholars estimate that male HS graduates earn \$117,000-\$322,000 more than dropouts, and female HS graduates earn \$120,000-\$244,000 more (Levin, 2007).

High unemployment rates are an issue for individual earning potential, but also for federal programs in place to support individuals in poverty. Programs such as Temporary Assistance for Needy Families (TANF), housing assistance, food stamps, and state-level programs all support those in financial need but incur significant costs to taxpayers. By Levin's estimates, each Hispanic male high school dropout incurs \$1,200 in welfare costs, and each Hispanic female high school dropout incurs \$3,100 in welfare costs (Levin, 2007).

In addition, high school dropouts incur higher health care costs. High school dropouts are more likely to suffer from cancer, lung disease, diabetes, and cardiovascular disease, and their average life expectancy is 9 years shorter than high school graduates (Romero, 2014). The costs associated with these health issues largely fall on health insurers, and many high school dropouts qualify for federal health insurance under Medicaid. Hispanic male dropouts incur approximately \$37,800 in public health costs, and Hispanic female dropouts incur approximately \$46,500 in costs (Levin, 2007). These poorer health outcomes have severe physical consequences for individuals and economic consequences for the government.



Lastly, high school dropouts face a greater risk of incarceration. Approximately 41% of all incarcerated individuals have no high school credentials at all. In addition, approximately 80% of all prisoners are either HS dropouts or recipients of a GED (Romero, 2014). It is unclear whether high school dropouts are more likely to commit crime, or more likely to be policed and prosecuted, though there is some evidence that high school graduation reduces overall crime rates by 10-20%. The government bears costs in the legal system through policing and trials/sentencing, incarceration costs, state-funded victim costs, and government crime prevention agencies. On average, each Hispanic male high school dropout costs the government \$38,300 in criminal justice costs, and each Hispanic female dropout costs the government \$8,300 (Levin, 2007). Incarcerated individuals face difficulties finding employment after incarceration and social stigmas associated with incarceration. There are significant economic and social consequences of dropping out of high school for both dropouts and the federal and state government.

Figure 4: Consequences of Dropping Out of School



Source: Levin, 2007

EVIDENCE ON POTENTIAL SOLUTIONS

Next, I will conduct a literature review of research on policy interventions tried in the past to discourage students from dropping out of high school. I identify five general policy approaches to dropout prevention and summarize what we know about the evidence within each policy approach including the rigor of the studies, and what the evidence means for my APP and addressing the problem within MCPS.

Most dropouts in MCPS attributed their decision to a “lack of interest” in school, which falls within the “push” factors. Given the specific context of MCPS and my client, I have decided to focus on preventative measures to address school factors contributing to students’ decisions to drop out. I explored the existing literature surrounding high school dropout prevention. I decided to focus on dropout prevention policies as a whole rather than specifically for Hispanic students because I wanted to capture as many preventative measures as possible. Most experimental and quasi-experimental studies did indicate the demographics of their sample, so I will take these into consideration when determining which policies will not only be effective in reducing dropout rates as a whole, but specifically effective in reducing dropout rates for Hispanic students. I have identified five policy approaches to dropout prevention at the district and school level including:

- Assigning social workers/facilitators to students at-risk of dropping out
- Implementing Career and Technical Education in School
- Comprehensive programs with a specific focus on 9th graders
- Early warning systems to identify students at-risk of dropping out
- School-wide changes to address school climate issues

There is another subset of the literature that focuses on supporting teen parents through academic and health support (Levy et al, 1992; Harris et al, 2001). I have decided to focus on these other categories as teen pregnancy does not seem to be the primary concern for dropouts in MCPS specifically and this is considered a “pull factor.” Additionally, other scholars have looked into the ways state graduation requirements have an effect on dropout rates (Jacob, 2000; Schiller and Muller, 2000; Merchant and Paulson, 2005; Landis and Reschly, 2011). I chose not to include research on state policy because MCPS has little to no control over Maryland state graduation requirements and the research had conflicting results in terms of effectiveness.

Assigning Social Workers to Students At-Risk of Dropping Out

Some school districts use social workers and/or facilitators to work with students who are at high risk for dropping out. In the literature I reviewed, their roles varied from monthly meetings, home visits, and parent conferences (Mac Iver, 2011), to words of encouragement while connecting to social services (Webber, 2018), individualized interventions for students (Sinclair et al, 2005), and academic tutoring and social support (Somers and Piliawsky, 2004). While their roles differed, the results were consistent. Students who engaged with facilitators and/or social workers were less likely to drop out of school. Social workers can support student attendance, provide intensive support for at-risk students, and encourage dropouts to return to a diploma-granting program (Webber et al, 2015). In one study, students who were assigned a facilitator were less likely to drop out than control students. 39% of treated students dropped out, whereas 58% of control students dropped out (Sinclair et al, 2005). Similar results were found in MacIver's 2011 study. Students enrolled in a comprehensive program with adult facilitators who engaged in home visits, conferences, and meetings with teachers/parents were less likely to drop out and more likely to graduate than the control group (MacIver, 2011).

The consistent results make it seem more likely that social workers and facilitators truly do have an impact on the likelihood of dropping out, specifically if they target students most at risk and students early in their high school career. The literature, however, is not as clear about what level of involvement is necessary to see these results. The levels of involvement varied across the studies, and while they all saw positive outcomes, the intervention is not simply assigning a student a facilitator to reduce their risk of dropping out. I will need to consider what level of engagement will achieve the best results for the specific MCPS population.

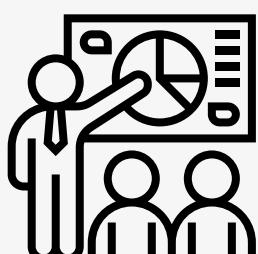


Including Career and Technical Education in School

There is another body of research that has looked into the impact of career and technical education (formerly referred to as “vocational training”) on dropout rates (Longstreth et al, 1964, Stem et al 1989; Agodini & Deke, 2004; White, 2015; Gottfried & Plasman, 2017; Shumer et al, 2017). Early research on vocational education is somewhat mixed. One study focused on academies within schools where students took most classes together and each academy focused on a different career path. The program included partnerships with local employers who provided 1:1 mentoring for students. 6 of the 8 academies had lower dropout rates than the comparison groups, and the researchers estimated that the program saved approximately 29 dropouts compared to the 60 dropouts traditional models predicted (Stem et al, 1989). Other studies found no effect of vocational training on dropout rates (Longstreth et al, 1964; Agodini & Deke, 2004).

In recent years, vocational training was transformed into Career and Technical Education (CTE). CTE now connects academic learning with hands-on learning and provides pathways for certification or allows students to complete postsecondary credits (Shumer et al, 2017). The United States has shifted towards jobs that require more education but this new approach ensures students are set up for success after graduation. CTE has tangible benefits for students including: increasing student motivation and academic achievement, increased work competence, understanding an occupation or industry, career exploration, and knowledge related to employment in certain industries (ACTE, 2007).

Recent evidence is more strongly in favor of CTE effectiveness in reducing dropout rates. In Ohio, the graduation rate for CTE students for fiscal year 2013 was 98.7% (Shumer et al, 2017). In Virginia, the mean graduation rate for CTE completers was higher than the mean graduation rate for non-CTE completers for the graduating cohorts of the Class of 2011, Class of 2012, and Class of 2013 (White, 2015). Another study found that taking CTE courses in high school was linked to lower chances of dropping out, especially when courses were taken later in high school (Gottfried & Plasman, 2017). There are limitations to these studies, however. In most cases, students were not randomly assigned participation in these programs (Rosen et al, 2018). Students opted in to participate which raises concerns that those who opt in to this program are systematically different and more likely to graduate anyway. While the studies are in favor of CTE effectiveness, future researchers and policymakers must consider applying more rigorous research methods to extract the true effect of enrollment in CTE on graduation and dropout rates.



Administering Comprehensive Programs - 9th Grader Focus

Another common intervention is enrolling students at risk of dropping out in a comprehensive program that includes academic support, career skills, and sometimes social worker support (Lever et al , 2004; Somers and Pilowsky, 2004; Allensworth and Easton, 2007; Furstenberg and Neumark, 2007; Vera et al, 2016). Some programs were administered in the summer, others during the school year, but all focused on supporting students most at risk for dropping out. All programs were found to be successful in reducing student dropout rates, though the degree to which the program reduced dropout rates varied. One example of this program is the FUTUREs program in Baltimore, which targeted 9th graders who repeated a grade, had poor attendance, and had academic scores at least one grade level below in reading or math. This 5-year program began the summer before freshman year. In the 1999 cohort, the participants had a 6.28% dropout rate in comparison to a 8.14% dropout rate in the district as a whole. The 2000 cohort also reported lower dropout rates with 5.12% in comparison to 8.14% in the district (Lever et al. 2004). While this program seemed to produce lower dropout rates, it should be noted that there was no statistical test conducted to determine whether this difference was statistically significant.

Scholars have identified that 9th grade is a key year to determine dropout risk and intervene (Lever et al, 2004; Allensworth and Easton, 2007; Vera et al, 2016). One group of scholars identified that “students on track at the end of their freshman year are about 4 times more likely to graduate than off-track students” (Allensworth and Easton, 2007). The literature is pretty clearly in favor of comprehensive programming for at-risk students, specifically if targeted in early high school. The research is missing tests of statistical significance, and this is likely due to small sample sizes used in the studies. Moving forward, I will need to identify more convincing evidence that these comprehensive programs work in other contexts beyond the samples used in these studies.



Implementing School-Wide Changes to Address School Climate

There is another body of research that has evaluated the effectiveness of school-wide changes to improve school climate (Allensworth and Easton, 2007; Ramirez et al, 2009; Freeman et al, 2015; Marchbanks et al, 2015; Wells et al, 2015). One reason a student may drop out is because they do not feel connected to their school and/or teachers. If schools implement reforms to improve student-teacher relationships using rigor, relevance, and relationships, there is evidence to support that schools can improve their overall school climate (Allensworth and Easton, 2007).

An example of this type of intervention would be implementing school-wide positive behavior interventions and supports (SWPBIS). A recent study found that high schools that implement SWPBIS with fidelity can improve attendance rates, but there is no statistically significant effect on dropout rates (Freeman et al, 2015). Improving school climate might also include implementing academic programming that is both representative and relevant to students who are at risk of dropping out. One study found that students enrolled in a K-3 bilingual and multicultural program were more likely to graduate from high school (Ramirez et al, 2009).

There is some evidence to suggest that authoritative culture and the number of suspensions in a school can impact whether or not a student drops out of high school (Lee et al, 2011; Jia et al, 2016). Teacher and student perceptions of disciplinary measures and support for students are correlated with dropout rates. Using a sample of 315 high schools, researchers found that controlling for demographic measures, when students perceive their teachers to be supportive, high academic expectations are associated with lower dropout rates (Jia et al, 2016). This suggests that the school climate and expectations of students have an impact on students and their likelihood of staying in school.

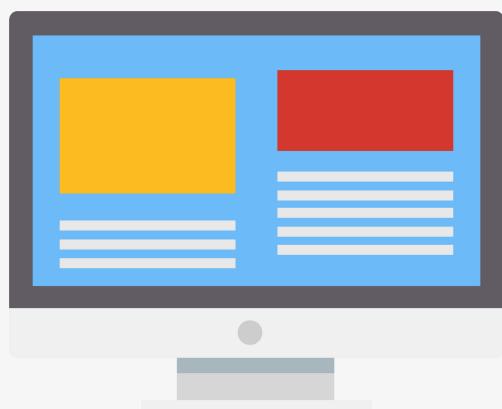
School climate is multifaceted, and includes the relationship between students and teachers, students and other students, and students with their academics. The evidence is sparse and not abundantly clear on the direct link between improving school climate and dropout rates, but policy initiatives could be effective if done in conjunction with other interventions.



Developing Early Warning Systems to Identify Students At-Risk of Dropping Out

Scholars have also explored the effectiveness of “early warning systems” that would help school officials identify students who may be at risk of dropping out of school before they make that decision (U.S. Department of Education, 2016). Schools receive a massive influx of data about their students as required for reporting to district, state, and federal agencies. Early warning systems enable administrators to focus on the most important indicators and develop a “Focus List” of students that may need interventions (Frazelle & Nagel, 2015).

There is a strong body of research to support common indicators of students who may be more likely to drop out of high school. The literature centers around the “ABCs” – Attendance, Behavior incidents, and Coursework (Herzog et al, 2012; MacIver & Messel, 2013; Frazelle & Nagel, 2015). Students who miss class regularly tend to fall behind on their coursework and subsequently their grades may suffer. Poor attendance can also serve as a warning sign for students dealing with personal or familial issues such as sickness, family health issues, or family financial strain keeping them from school (Frazelle & Nagel, 2015). Behavior can also be an early indicator of potential dropout status. Traditionally, the literature has focused on disciplinary issues including suspensions which can often cause students to fall further behind in their studies or become less engaged with their school environment (Frazelle & Nagel, 2015). Recently, there has been a push to consider other behavioral factors including social-emotional and mental health crisis indicators as another way of capturing behavioral indicators. Finally, students who fail courses and have chronically low grades are at higher risk for dropping out of school. Typically, the student must make up the class credit outside of school time to stay on track to graduate, which can make students feel as if they cannot ever catch up (Frazelle & Nagel, 2015). While there are many indicators of a student at risk of dropping out, the literature is clear that these are core indicators that all schools should consider tracking.



Developing Early Warning Systems to Identify Students At-Risk of Dropping Out

There is limited evidence on the effectiveness of implementing an early warning system alone. The early warning system does nothing to curb dropout rates, it just observes and reports current trends. The important step comes with how school districts respond to the data. The Check and Connect model is designed to help school teams identify and then intervene with students at risk of dropping out of school. The “check” refers to analyzing data from early warning systems while the “connect” refers to the ways in which the school officials and social workers plan interventions (University of Minnesota Institute on Community Integration, 2022). A randomized control trial conducted in a large urban school district with a diverse student population revealed that students assigned a facilitator using the check and connect model were less likely (39%) to drop out of school than students in the control group (58%) (Sinclair et. al, 2005). This evidence suggests that collecting data and implementing interventions in response to the data is an effective tool for reducing dropout rates.

Takeaways: Existing Literature

High school dropout rates are a persistent and significant problem in the United States and there have been many different strategies to try and reduce those dropout rates. I am feeling confident about the effectiveness of assigning social workers/facilitators to at-risk students, the Check and Connect model, and comprehensive programs focused on students in the 9th grade. The results also seem favorable for providing career and technical education in school. The evidence is sparse and not abundantly clear on implementing school-wide changes to address school climate, so I will not be considering this intervention. In the next session, I will identify policy alternatives based on the existing literature and evaluate them in the MCPS context using a set of evaluative criteria.



EVALUATIVE CRITERIA



Cost-Effectiveness

Cost-effectiveness measures how much the policy costs per unit of effectiveness. In this project, cost will measure how much it would cost to implement the program. This policy analysis is focused on reducing dropout rates among Hispanic students in MCPS, so one unit of effectiveness will be measured as one additional Hispanic student prevented from dropping out. I will pull data from existing research studies that have measured the effectiveness of similar programs in other school districts.

Equity

Equity is at the core of this analysis. This will be measured based on the extent to which the program targets Hispanic students specifically - based on existing research from the program applied in other school districts. This will be measured on the scale of low, moderate, and high. An evaluation of “high” indicates that the alternative will effectively target Hispanic students.

Administrative Feasibility

Administrative feasibility will be measured by the number of staff that will need additional responsibilities to oversee this program, as well as the length of time needed to roll out the policy. This criterion will also be measured on the scale of low, moderate, and high. High administrative feasibility indicates a low number of additional staff responsibilities. I will identify this information by reviewing implementation reports and program websites to understand logistical details of implementing the programs.

BASELINE PROJECTIONS

Fiscal Year	Total Grade 12 Enrollment	Grade 12 Hispanic Enrollment	Dropout Rate for Hispanic Students	# of Hispanic Dropouts
2023	11,935	3,867	14.22%	550
2024	11,987	3,884	14.22%	552
2025	12,020	3,894	14.22%	554
2026	12,007	3,890	14.22%	553
2027	12,081	3,914	14.22%	557
2028	12,155	3,938	14.22%	560
2029	12,229	3,962	14.22%	563
2030	12,303	3,986	14.22%	567
Total				4,456

MCPS published expected total enrollment through 2026 (MCPS, 2021). I assume that students in Grade 12 remain constant at 7% of total enrollment to calculate Grade 12 enrollment. I then calculated the average growth rate over those projected years to be approximately 0.6 percent from 2023-2026. I apply that growth rate to project the remaining enrollment to the year 2030 to remain consistent with the 8 year cost and effectiveness projections. To determine the number of Hispanic students in Grade 12, I assumed that the Hispanic population in the district would remain constant at 32.4%. I also assumed that the Hispanic population was evenly distributed among all grade levels so the number of Hispanic Grade 12 students was calculated by taking 32.4% of the Grade 12 enrollment projection. To predict the number of expected Hispanic students dropping out, I calculated the average dropout rate over the past 5 years for Hispanic students to be approximately 14.22%. I projected the number of potential dropouts by taking 14.22% of the Hispanic Grade 12 students. Under these conditions, if MCPS does nothing to intervene, there would be an expected 4,456 Hispanic students dropping out over the next 8 years.

ALTERNATIVE ONE

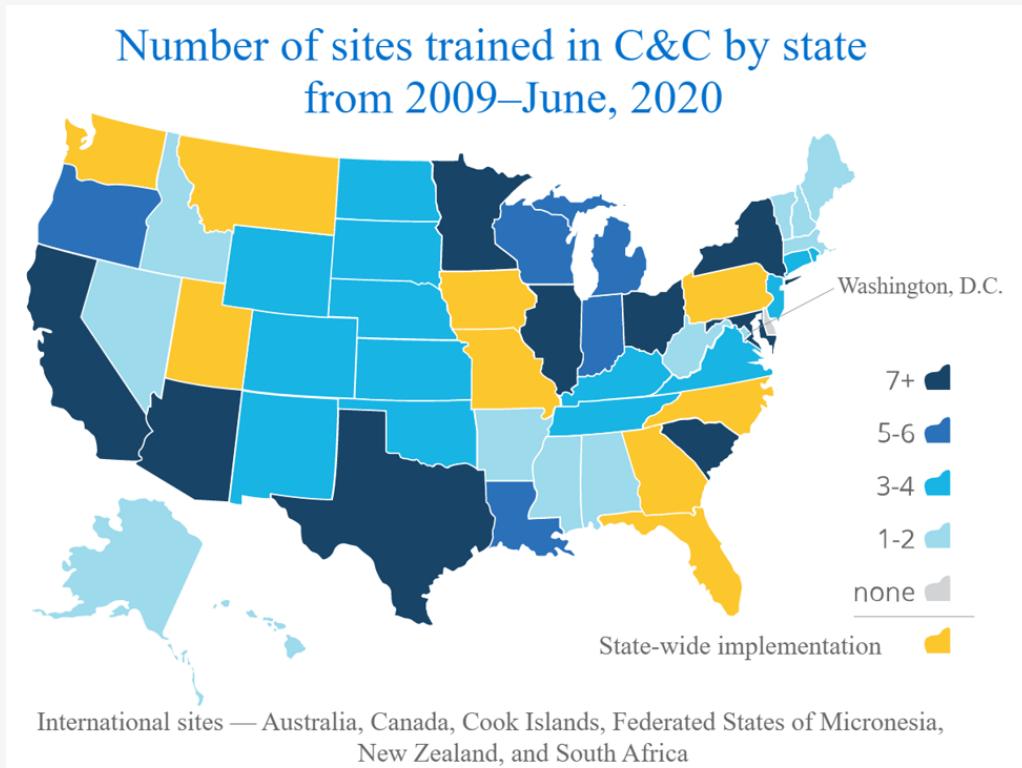


Implement a District-Wide Early Warning System with the Check and Connect Model

MCPS could invest in an early warning indicator monitoring tool that is monitored district and school-wide. MCPS-specific indicators can alert the necessary administrators to take action when necessary. We have strong research supporting common signs of students dropping out of school (Herzog et al, 2012; MacIver & Messel, 2013; Frazelle & Nagel, 2015). The early warning indicator system will serve as a tool for targeting students who are at the highest risk of dropping out of school. This policy includes not only purchasing and using student data tracking software, but also organizing a team of school and district team members who would regularly monitor student data and set a Check & Connect model intervention in motion when a student is identified as at-risk for dropping out of school.

The Check & Connect model has been implemented across the United States as a way of identifying and implementing interventions for students at risk of dropping out of school. See Figure 5 for more information about where Check & Connect has been implemented.

Figure 5: Number of Sites Trained in Check and Connect



Source: University of Minnesota Institute on Community Integration, 2022

Nelson | Page 22

Implement a District-Wide Early Warning System with the Check and Connect Model



Costs: \$5.5 million

The biggest cost of this alternative is from hiring a data consultant to design and implement an early warning system. I calculated the cost of hiring a data consultant for two years, paying \$94,000 per year, using the average cost of a big data consultant (WebFX, 2022). The additional costs for this program were divided into two components: the school-level costs and the district-level costs. School-level costs included the hours that each staff member would need to work towards accomplishing this policy alternative with social workers bearing the highest share of the number of hours worked. I assumed that the school-level team would meet monthly, the district-level team would meet quarterly, and data analysts would analyze the data biweekly. As for salaries, I used the MCPS Operating Budget for Fiscal Year 22. These estimates are limited in that they assume that all staff members with the same title are paid the same when we know that some positions pay more or less based on education and teaching experience. For teachers, I used the average salary for a teacher with a Bachelor's degree. At the district level, there were 5 employees paid under Curriculum Services so I estimated their salaries by dividing the salaries budget by 5 to estimate how much each Curriculum Services employee made. I projected costs 8 years into the future using a 2% growth rate and I estimated the net present value using a 3% discount rate. Given these assumptions, I estimate that this policy alternative would cost approximately \$5.5 million in net present value over the next 8 years.

Effectiveness: 625 Hispanic Students

A randomized control trial conducted in a large urban school district with a diverse student population revealed that students assigned a facilitator using the check and connect model were less likely (39%) to drop out of school than students in the control group (58%) (Sinclair et. al, 2005). This 19 percentage point difference in the dropout rate was significant at the 5% level but I will adjust the effectiveness estimate for the MCPS context. First of all, this study was done during the late 1990s, and the dropout rates of the control group (58%) are significantly higher than the starting dropout rates for Hispanic students in MCPS (15%). Given these restrictions, I will focus on the percentage decrease in the dropout rate rather than the raw percentage point difference. In this study, the Check and Connect model reduced the dropout rate by approximately 32.76%. If I apply this to the starting rate of 14.22% for Hispanic students in MCPS, this would translate to a 4.66 percentage point decrease in the dropout rate. I assume it would take 3-4 years to see the effects of this policy intervention. When I apply this reduction in dropout rates to the projected number of Hispanic students in Grade 12 over the next 8 years, this intervention would prevent approximately 625 Hispanic students from dropping out. See the Appendix for more details.

Implement a District-Wide Early Warning System with the Check and Connect Model

Cost-Effectiveness Ratio: \$8,839/Potential Hispanic Dropout

Equity: High

If implemented well, this alternative ranks high on equity because of the ability to specifically target students most at risk of dropping out of high school. The early warning system alone can allow data analysts to target specific subsets of students based on certain risk factors. While race alone is not a risk factor, the data from the early warning system can be used alongside demographic data to specifically target Hispanic students who are most at risk. In addition, the Check and Connect model allows for school-based teams to implement personalized intervention plans based on the student's specific situation. If done effectively, the school team can reach the student before the student has the chance to drop out.

Administrative Feasibility: Low

This alternative ranks low on administrative feasibility because it requires a large number of staff to adjust their duties beyond their normal responsibilities. This intervention requires hiring a tech consultant to design and implement the data tracking system. It also involves teams at both the school and district level - which would not necessarily require hiring any additional personnel, but would add additional responsibilities to team members. School teams include: a teacher, the principal, a counselor, a social worker, and an IT systems analyst. The district-level team would include two members of the curriculum services staff, along with representatives from each high school. Since there are 25 traditional high schools in MCPS, this would require adding responsibilities to at least 125 staff members at the school level (25 high schools * 5 school team members) and 3 staff members at the district level to implement this alternative.



ALTERNATIVE TWO



Introduce a Career Academies Program for Students At-Risk of Dropping Out

Another intervention is enrolling students at risk for not graduating in a comprehensive program that includes academic support, skill-building, and social worker support (Lever et al, 2004; Somers and Pilowsky, 2004; Allensworth and Easton, 2007; Furstenberg and Neumark, 2007; Vera et al, 2016). Upon reviewing exemplary programs researched throughout the country (Hammond et. al, 2007), I have identified the Career Academies program as one that would fit within the MCPS context.

Career Academies prepare students for postsecondary education and careers through a small learning community, a postsecondary-prep curriculum with a career theme, and an advisory board that develops partnerships with corporations, postsecondary institutions, and the community (National Career Academy Coalition, 2021). Career Academies are a “school within a school” comprising 50 to 75 students who stay with the same group of 3-5 teachers over the duration of high school. Students in the Career Academy take courses together but also take regular classes with the rest of their peers to supplement their learning. Courses within the Career Academy are organized into a cohort model, in which students pursue a specific career theme. In addition to coursework, the advisory board would identify partnerships in the community to offer experiential learning including shadowing, community service, mentoring, and internships that align with the career themes students are studying in the Career Academy (National Career Academy Coalition, 2021).

Career Academies would be run at the school level with a district-level advisory board that coordinates community partnerships across the county. Academy participation is voluntary and accessible, but schools could send targeted communication materials to students at risk of dropping out. Each school would have a lead teacher and administrator who would serve as Academy Coordinators, working with district Advisory Board members and reporting progress to school and district administrators. Academy teachers would be committed to the Career Academy’s mission and teach a majority of their classes in the academy (National Career Academy Coalition, 2021). This program is designed to improve student engagement in school and prepare students for life after high school.

Introduce a Career Academies Program for Students At-Risk of Dropping Out

Costs: \$42.4 million



This alternative involves hiring new teacher positions for teachers trained in specific career field areas. If this program followed national standards, it would serve 60 students within the high school. I assumed that this program would be introduced at all 25 high schools in the district and that each Career Academy would be staffed with 3 teachers, 2 counselors, and a principal. The district-level team would include 2 Curriculum Services administrators and a representative from each high school. Similar to the calculations in Alternative 1, I calculated the costs associated with each position based on the number of hours the staff member would need to dedicate to this program. I assumed that each school would hire 3 teachers for the Career Academy program and that counselors would put in approximately 100 hours per year on connecting students to job and postsecondary education opportunities. I assumed that the district level team would meet quarterly for 2 hours each time. I assumed a 2% growth rate and 3% discount rate. Given these assumptions, the net present value of the cost of this program over 8 years is approximately \$42.4 million dollars.

Effectiveness: 1,576 Hispanic Students

In a large, multi-site, randomized control trial in nine urban school districts, researchers found no effect of the Career Academies program on dropout rates, which is likely because both program and control participants had graduation rates above 90%, creating a “ceiling effect.” To estimate the effectiveness of this program, I estimate the number of students per school in the program (~60 students), and estimate that approximately 30% (18 students) of the program participants would be Hispanic. If 90% of Hispanic students in the program graduate, that would mean approximately 16 Hispanic students would graduate at each school that implemented the program. I use these estimates in relation to the expected growth rate of the number of Hispanic students in MCPS to estimate the number of dropouts this program could save. This intervention has the potential of preventing 1,576 Hispanic students from dropping out over the next 8 years. See the Appendix for more details.

Cost-Effectiveness Ratio: \$26,924/Potential Hispanic Dropout

Introduce a Career Academies Program for Students At-Risk of Dropping Out

Equity: Moderate

This alternative scores moderate on equity because one of the core tenets of this program is that it is voluntary. While MCPS could target Hispanic students through communication materials, school teams cannot force participation in this program. Therefore, students who are more likely to be interested in advancing their education and their careers would be more likely to self-select into this type of program. Most students in MCPS dropped out of high school due to a lack of interest in school. This alternative could potentially target Hispanic students who are not as interested in the curriculum by allowing them to explore potential career paths and build community within their cohort. But because admission into this program is voluntary, this program gets a moderate equity score.

Administrative Feasibility: Low

This alternative scores low on administrative feasibility because, similarly to Alternative 1, it requires many staff members to go beyond their normal tasks and duties associated with their position. Following the National Standards of Practice, this alternative requires school team leaders including a teacher and an administrator, a staff of teachers trained to teach within their fields, and counselors to support connecting students to career and college opportunities. If we assume each school has 3 Career Academy teachers, an administrator, and two counselors, that would mean that each school would need to add responsibilities to at least 6 staff members. This could be ranked higher if it were piloted in 1-2 high schools rather than all 25. But if we assume the Career Academies would be implemented in all 25 high schools, that would mean that at least 150 staff members would need to go beyond their job descriptions and take on these additional responsibilities.



National Career
Academy Coalition
COLLEGE CAREER LIFE

ALTERNATIVE THREE



Assign Social Workers to Students At-Risk of Dropping Out

MCPS can address the problem of high dropout rates for Hispanic students by assigning social workers to students who display signs of dropping out of school. In the literature I reviewed, their roles varied from monthly meetings, home visits, and parent conferences (Mac Iver, 2011), to words of encouragement while connecting to social services (Webber, 2018), individualized interventions for students (Sinclair et al, 2005), and academic tutoring and social support (Somers and Piliawsky, 2004). While their roles differed, the results were consistent. Students who engaged with facilitators and/or social workers were less likely to drop out of school. Social workers can support student attendance, provide intensive support for at-risk students, and encourage dropouts to return to a diploma-granting program (Webber, 2018). MCPS announced it would be using federal relief funds to add 50 new social workers to staff (Lewis, 2021). This policy would assign those social workers to students at-risk of dropping out of high school.

Costs: \$6.3 million

MCPS announced that they will be adding 50 social workers to the district using federal relief funds. Given this, they would not need to pay the social workers any additional funds, but I calculated the cost per social worker based on the assumption that they would spend 100 hours per year in training and intervention strategies for working with students at risk of dropping out of school. I assumed that the 50 social workers would be divided equally among the 25 traditional high schools in the district (2 per school). I also included 100 hours of work from 2 teachers, the principal, and 2 counselors as part of the school team implementing this alternative. I assumed a 3% discount rate and 2% growth rate and estimated that assigning social workers to students at risk of dropping out over 8 years has a net present value of approximately \$6.3 million dollars.

Assign Social Workers to Students At-Risk of Dropping Out

Effectiveness: 531 Hispanic Students

The literature is generally in favor of dropout prevention programs that incorporate social workers and/or adult facilitators to work directly with students at risk of dropping out of high school (Somers and Piliawsky, 2004; Sinclair et al, 2005; Mac Iver, 2011; Webber, 2018;). To estimate the effect of assigning students to social workers, I am using the estimates from the Mac Iver 2011 article. I chose this paper because it provided longitudinal data on student outcomes focusing on a large urban school district in Maryland. While the demographics are different (the school district in the study is majority Black), the results can be translated to the MCPS context. In this study, adult facilitators met with students monthly and discussed student progress. While the results were not statistically significant, students assigned facilitators were less likely to drop out (35%) than the students in the control group (45.4%) (Mac Iver, 2011). The dropout rates in MCPS are not nearly as high for Hispanic students. If we convert this effectiveness to the percentage decrease in the dropout rate instead of the percentage point decrease, the program would be effective in reducing the dropout rate by 22.91%. If we assume the starting dropout rate of 14.22% for Hispanic students in MCPS, that would translate to a 3.26 percentage point decrease in the dropout rate. I assume that it takes 3-4 years to see the effects of the program and that the reduction in dropout rate would happen gradually. When I apply this change in dropout rate against the projected number of Hispanic students in Grade 12 over the next 8 years, this intervention would prevent approximately 531 Hispanic students from dropping out. See the Appendix for more details.

Cost-Effectiveness Ratio: \$11,879/Potential Hispanic Dropout



Assign Social Workers to Students At-Risk of Dropping Out



Equity: Moderate

This alternative ranks moderate for equity because it does not explicitly target Hispanic students. While social workers may be matched with Hispanic students who are more likely to drop out of high school, there is no analytical way to ensure that social workers target Hispanic students. In the absence of an early warning system, the social workers would be assigned to students based on traditional “red flags” for social workers

Administrative Feasibility: High

This alternative ranks high for administrative feasibility because it does not involve any staff members going beyond their normal responsibilities. In the job description, social workers in MCPS are expected to “[collaborate] with program staff and other school system personnel in implementing strategies to promote student learning and/or ameliorate interfering behaviors” (Montgomery County Public Schools, n.d.). Assigning social workers to students deemed most at risk for dropping out of school is well within the job description for social workers in MCPS, therefore there would be limited to no changes in what staff need to do.



OUTCOMES MATRIX

	Alternative #1: Implement a District-Wide Early Warning System with the Check & Connect Model
	Alternative #2: Introduce a Career Academies Program
	Alternative #3: Assign Social Workers to Students At Risk of Dropping Out of School

	Cost-Effectiveness	Equity	Administrative Feasibility
Alternative 1	\$8,839/Hispanic student	High	Low
Alternative 2	\$26,924/Hispanic student	Moderate	Low
Alternative 3	\$11,879/Hispanic student	Moderate	High

RECOMMENDATION

Implement a District-Wide Early Warning System with the Check & Connect Model

After evaluating each policy alternative, I recommend the school district implements Alternative 1: Early Warning System and the Check & Connect model. This recommendation requires some tradeoffs. I chose this alternative because it scores the best in terms of cost-effectiveness and equity. The biggest tradeoff is in terms of administrative feasibility. This alternative requires training many MCPS employees on the new early warning system and training social workers and counselors in the Check and Connect intervention model. However, this option does not require hiring additional staff members beyond a consultant to build out the technology for the early warning system. While Alternative 3 scored high on administrative feasibility, it fell short in equity and cost-effectiveness. Assigning facilitators to students at risk of dropping out of school can be effective, but it is much more effective when there is the infrastructure to identify students most at risk of dropping out. The administrative hurdles during early implementation stages are worth it for the larger gains in effectiveness and the ability to target Hispanic students specifically using the Early Warning System.

IMPLEMENTATION

1

Develop the Early
Warning System

2

Train Intervention Teams
in Check & Connect

IMPLEMENTATION

(1) Developing the Early Warning System



First, MCPS will need to identify what indicators the data system should track. This will be important in negotiating contracts with the data consulting company and important for making sure the data system is collecting the right information. Most of the literature recommends that districts at least start with the “ABCs” – Attendance, Behavior incidents, and Coursework (Frazelle & Nagel, 2015). In addition to these core indicators, the literature recommends conducting analysis at the district level to determine the strongest predictors of dropping out of school in MCPS. This type of analysis has been done in MCPS before but the methods should be replicated to reflect current trends. For example, West found that students absent from a class 3 or more times in Grade 9 marking period 1 are 3 times as likely to drop out of high school (West, 2013). This is an example of an Attendance indicator. If, once replicated, the results indicate similar indicators for attendance, behavior, and coursework, these could provide baseline predictors.

Next, the Office of Shared Accountability will need to obtain approval from the Board for additional funding to hire the data consultants and train MCPS staff in the new technology. The Office of Shared Accountability should first present the results of this report to the Board highlighting the stark differences in dropout rates by race/ethnicity in the district. These findings should be presented alongside effectiveness estimates and projections for the next 8 years if the Early Warning System were implemented. The evidence should be compelling to Board members, and coupled with the relatively low cost of hiring a data consultant, it should be an easy sell to the Board. This data can be supported with Thomas West’s 2013 report on early warning indicators in which he also recommended that MCPS develop an early warning system (West, 2013). After presenting the evidence and projections, the Office of Shared Accountability should submit a budget request for funding this early warning system during Board debates over the fiscal year 2024 budget beginning in early 2023. If the Board approves this budget request in June 2023, the Office of Shared Accountability can then begin negotiations with a data consultant as outlined in the next step.

(1) Developing the Early Warning System



Next, MCPS will need to hire a data consultant to design the technical infrastructure for collecting data. On average, data consultants will cost approximately \$200-350 per hour, but the district may be able to negotiate lower prices since it is for a public school district, not a for-profit company (WebFX, 2022). “Bright Bytes” is a consulting company that MCPS could consider. I suggest this company because they provide specific education-related data infrastructure including predictive analytics models and personalized analytics (Bright Bytes, 2022). The district can continuously evaluate and test different predictors of dropping out so that the district can more accurately identify students at risk of dropping out. A representative from MCPS’ Office of Shared Accountability should reach out to BrightBytes to inquire about a rate that both the data firm and MCPS leadership can agree upon.

Next, MCPS Office of Shared Accountability and the Board should work together to develop district and school level teams. Each school team should include a social worker, a data analyst, a counselor, a teacher, and a principal. School-level teams should meet biweekly to discuss student progress and school analytics. The district-level team should consist of two curriculum services advisors and representatives from each school team. District-level teams should meet quarterly to share strategies that are working at schools along with working together to address tough cases (Frazelle & Nagel, 2015). Principals should be in charge of forming school-level teams, and team participation should be voluntary. If staff members are forced into these positions, they may be less likely to buy-in to the program.

Finally, MCPS should work with representatives from BrightBytes to train school leaders and data analysts in the mechanics of the program. In an ideal world, the data infrastructure would be completed by late July/early August. This would give consultants time to train school leaders and data analysts before the school year starts at the end of August. As an example, the Sioux Falls School District early warning system committee established action initiatives to teach staff how to use and interpret the early warning system (Frazelle & Nagel, 2015). The Office of Shared Accountability should coordinate training with BrightBytes consultants during their contract. To conserve time and resources, BrightBytes could train all principals and all IT analysts so the school level leaders could translate that training to their teachers, counselors, and social workers.

(2) Train Intervention Teams in Check and Connect

First, members of the Office of Shared Accountability should familiarize themselves with the core implementation strategies of the Check & Connect model. The University of Minnesota Institute on Community Integration offers a manual for the Check & Connect model including detailed information on how to implement Check & Connect with fidelity in school districts (University of Minnesota Institute on Community Integration, 2022).

After Office of Shared Accountability members are familiar with the core concepts, the Office should work alongside BrightBytes to include comprehensive training to social workers, school counselors, and school team leaders. Training should include potential interventions for students that reach specific thresholds outlined with the identifiers the district and BrightBytes identifies. Experts in early warning systems have identified potential interventions for students based on what indicator they are flagged for (Frazelle & Nagel, 2015). These examples are shown below:

Type of intervention	Attendance	Behavior	Course performance
Schoolwide (all students)	Data tracking by school team Positive social incentives for good attendance Every absence brings a response	Data tracking by school team Positive social incentives and recognition for good behavior Teach, model, and expect good behavior Advisory	Data tracking by school team In-classroom support to enable active and engaging pedagogies
Targeted (15-20% of students)	Two or more unexcused absences in a month = brief daily check by adult Attendance team investigates and problem solves	Two or more office referrals brings involvement of behavior team Mentor assigned	Targeted, reduced class size for students whose failure is rooted in social or emotional issues Elective extra help courses tightly linked to core curriculum
Intensive (5-10% of students)	Sustained one-on-one attention and problem solving Appropriate social service or community supports	In-depth behavioral assessment Behavior contracts with family involvement Appropriate social service or community supports	One-on-one tutoring

Adapted from: Frazelle & Nagel, 2015

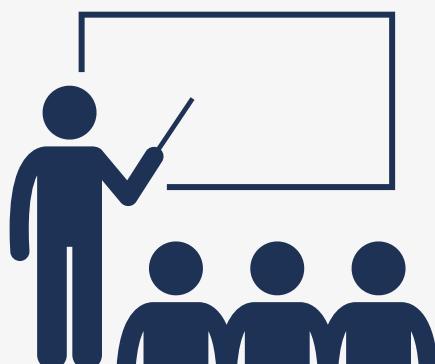
(2) Train Intervention Teams in Check and Connect

Finally, the district should work with BrightBytes to develop a standardized training for new employees. One year after first introducing the early warning system, the Office of Shared Accountability should meet with the district-level team to identify what has been working and what has not been working. They should also identify any gaps in knowledge among school and/or district staff with how intervention plans should be implemented.

Communicating to Stakeholders

Stakeholders include district and school-level leaders, administrative staff, counselors, teachers, data and IT specialists, district-wide planning personnel, students, parents, and community organizations (Frazelle & Nagel, 2015). This policy requires buy-in from most stakeholders, especially those involved in identifying and working with students directly. As discussed early in implementation, this will also need the support of the Board financially but also the Board needs to believe and understand that this intervention can work. The literature urges open communication with all stakeholders to achieve buy-in (Frazelle & Nagel, 2015).

This policy intervention, while effective, will require a great deal of administrative oversight, especially in the first couple years of implementation. It will take a while for staff to understand and learn the new tracking software and it will take social workers and counselors some time to learn how to implement effective intervention strategies. These initial changes will likely be met with frustration and confusion – you can counter this frustration with intentional training and frequent data review to improve the early warning indicators. It will also be important to communicate the results of the program every few years to reassure all stakeholders of the positive outcomes associated with the program.



CONCLUSION

High dropout rates are a persistent problem in the United States but also in MCPS. As the district becomes more diverse, MCPS has an increasing responsibility to address high dropout rates among Hispanic students or the problem will continue and/or worsen over the years. Given the three policy alternatives I evaluated, I suggest the Office of Shared Accountability work alongside the Board to hire a data consultant to develop and implement an Early Warning System that flags students who are at risk of dropping out of school. School-based intervention teams should then work with flagged students using the Check and Connect model, which has a proven track record of reducing dropout rates. There will be high initial costs for training and hiring the consultant, but the policy will have lasting benefits and assist school leadership teams in identifying potential dropouts before they drop out of school. This policy has the potential to prevent 625 Hispanic students from dropping out over the next 8 years and address the disproportionate dropout rates among Hispanic students in MCPS.



APPENDIX

Table 1: Alternative 1 Cost Calculations Per High School

Per High School	Hours/Year on Alternative	Hourly Pay (Salary/Total Hours)	Cost (Hours * Hourly Pay)	Total Hours	Salary
Teacher	10	\$40.89	\$408.90	1,712	\$70,000
Social Worker	420	\$50.51	\$21,214.20	1,712	\$86,000
Data Analyst	55	\$52.68	\$2,897.40	2,088	\$110,000
Counselor	52	\$43.10	\$2,241.20	2,088	\$90,000
Principal	14	\$57.47	\$804.58	2,088	\$120,000

Table 2: Alternative 1 Cost Calculations District Level

District Level	Hours/Year on Alternative	Hourly Pay (Salary/Total Hours)	Cost (Hours * Hourly Pay)	Total Hours	Salary
Curriculum Services	8	\$55.91	\$447.28	2,088	\$116,748
Curriculum Services	8	\$55.91	\$447.28	2,088	\$116,748
Consultant	313	\$300	\$93,900	313	\$94,000

APPENDIX

Table 3: Alternative 1 Effectiveness Calculations

Fiscal Year	Grade 12 Hispanic Enrollment	Dropout Rate for Hispanic Students	# of Hispanic Dropouts
2023	3,867	14.22%	550
2024	3,884	14%	544
2025	3,894	13.5%	526
2026	3,890	13.22%	514
2027	3,914	12.22%	478
2028	3,938	11.22%	442
2029	3,962	10%	396
2030	3,986	9.56%	381
Total			3,831

APPENDIX

Table 4: Alternative 2 Cost Calculations Per High School

Per High School	Hours/Year on Alternative	Hourly Pay (Salary/Total Hours)	Cost (Hours * Hourly Pay)	Total Hours	Salary
Teacher	1,712	\$40.89	\$70,000	1,712	\$70,000
Teacher	1,712	\$40.89	\$70,000	1,712	\$70,000
Teacher	1,712	\$40.89	\$70,000	1,712	\$70,000
Counselor	100	\$43.10	\$4,310	2,088	\$90,000
Counselor	100	\$43.10	\$4,310	2,088	\$90,000
Principal	14	\$57.47	\$804.58	2,088	\$120,000

Table 5: Alternative 2 Cost Calculations District Level

District Level	Hours/Year on Alternative	Hourly Pay (Salary/Total Hours)	Cost (Hours * Hourly Pay)	Total Hours	Salary
Curriculum Services	8	\$55.91	\$447.28	2,088	\$116,748
Curriculum Services	8	\$55.91	\$447.28	2,088	\$116,748

APPENDIX

Table 6: Alternative 2 Effectiveness Calculations

Fiscal Year	# Hispanic Students in the Program	# Hispanic Students Graduating from Program	# of Hispanic Dropouts Saved
2023	400	360	190
2024	400	360	192
2025	400	360	194
2026	400	360	193
2027	400	360	197
2028	400	360	200
2029	400	360	203
2030	400	360	207
Total			1,576

Note: # of Hispanic dropouts saved is calculated by subtracting the # of Hispanic Students graduating from the program from the # of Hispanic Dropouts from the Baseline Projections (see page 21)

APPENDIX

Table 7: Alternative 3 Cost Calculations Per High School

Per High School	Hours/Year on Alternative	Hourly Pay (Salary/Total Hours)	Cost (Hours * Hourly Pay)	Total Hours	Salary
Social Worker	100	\$50.51	\$5,051	1,712	\$86,000
Social Worker	100	\$50.51	\$5,051	1,712	\$86,000
Counselor	100	\$43.10	\$4,310	2,088	\$90,000
Counselor	100	\$43.10	\$4,310	2,088	\$90,000
Teacher	100	\$40.89	\$4,089	1,712	\$70,000
Teacher	100	\$40.89	\$4,089	1,712	\$70,000
Principal	100	\$57.47	\$5,747	2,088	\$120,000

APPENDIX

Table 8: Alternative 3 Effectiveness Calculations

Fiscal Year	Grade 12 Hispanic Enrollment	Dropout Rate for Hispanic Students	# of Hispanic Dropouts
2023	3,867	14.22%	550
2024	3,884	14.22%	552
2025	3,894	13.22%	515
2026	3,890	12.22%	475
2027	3,914	12.22%	478
2028	3,938	12.22%	481
2029	3,962	11%	436
2030	3,986	10.96%	437
Total			3,925

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