Evaluation of the Kennedy Cluster Watkins Mill Cluster Project: Follow-up of Participants in the Multi-Agency Team Process from 2014 through 2017

Office of Shared Accountability

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Julie Wade, M.S.

Montgomery County Public Schools

OFFICE OF SHARED ACCOUNTABILITY

850 Hungerford Drive
Rockville, Maryland 20850

Dr. Jack R. Smith
Superintendent of Schools

Dr. Janet S. Wilson
Associate Superintendent

Highlights: Evaluation of the Kennedy Cluster Watkins Mill Cluster Project Follow-Up of Participants in the Multi-Agency Team Process from 2014 through 2017

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Purpose of Study

The goal of the KCWMC Project is to remove the barriers to student success so that children come to school ready to learn. The multiyear evaluation addressed the following questions: 1) How was the Multi-Agency Team in KCWMC Project implemented? 2) To what extent did participating students and their families show improvement on family stability measures, attendance, report card grades, and graduation rates? This third and final report focuses on outcomes for kindergarten through Grade 12 students and families who participated in the Multi-Agency Team process during 2014–2015, 2015–2016, and 2016–2017.

Recommendations

- KCWMC should work with participating schools to promote strategies to improve attendance, such as student incentives, contracts, mentoring, Truancy Court, and parent workshops.
- Work with the Montgomery County Department of Recreation to continue and strengthen support for students' involvement in after-school activities, such as Excel Beyond the Bell and RecExtra. Previous studies have shown a positive relationship between participation in after-school activities and school attendance.
- Continue to collect and maintain records of students and families who participate in the Multi-Agency Team process, as well as their periodic family stability ratings, so that referral trends and services provided can be monitored, and progress after referral can be tracked.

What the Study Found

- Ratings of family stability at the time of program entry and approximately six months later showed statistically significant improvement on safety, family conflict, mental health, and physical health (see Figure below). Changes in income, employment, and residential stability were not statistically significant.
- No evidence of improvement in student attendance was observed; difficulties of assessing attendance over time, especially among middle and high school students, was discussed in the report.
- No significant change was seen in marking period grade averages for all middle and high school students, but when analysis was limited to students who started the program with low grade averages, high school students showed statistically significant improvement in the four marking periods following program entry. The percent of students in KCWMC who graduated was comparable with non-program students who had similar attendance histories.

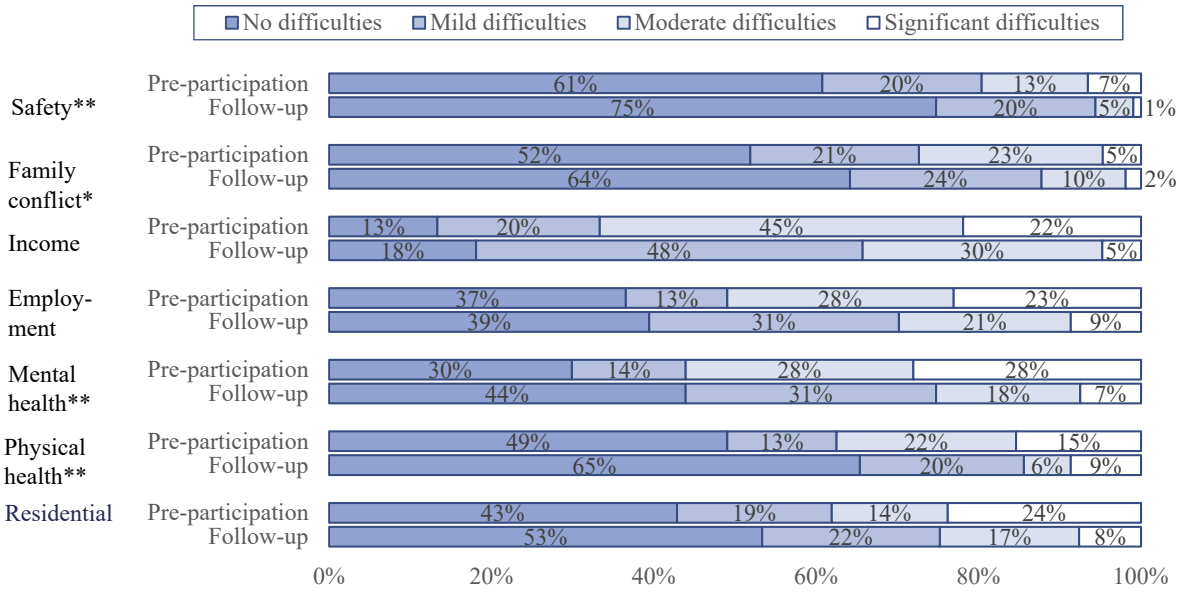

Figure. Pre-Participation and Follow-up Ratings of Family Stability (N = 107).

* p <.05; ** p < .01.

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Executive Summary

The Office of Shared Accountability (OSA) conducted a multi-year evaluation of the Kennedy Cluster Watkins Mill Cluster (KCWMC) Project in Montgomery County Public Schools (MCPS). The project is a collaboration among MCPS, the Montgomery County Government, the Montgomery County Collaboration Council, the Montgomery County Department of Health and Human Services (DHHS), the Montgomery County Department of Recreation, the Montgomery County Police Department, the Montgomery County State's Attorney's Office, and the Maryland Department of Juvenile Services. The overarching goal of the KCWMC Project is to remove the barriers to student success. To work toward that goal, the project is guided by three objectives:

- support the well-being of students and families through the Multi-Agency Team process
- provide a rich out-of-school-time environment that promotes positive youth development
- create a network of community partners that builds capacity at the school and community level to serve students and their families

This report focuses on the Multi-Agency Team component of the KCWMC Project; the study followed up the students and families who participated in the Multi-Agency Team process during the last three school years, 2014–2015, 2015–2016, and 2016–2017. The other two components of the project—out-of-school-time activities and community partnerships—were examined in a previous report (Wade and Zhao, 2015), and student and family outcomes were reported for the 2014–2015 and 2015–2016 school years in an earlier report (Wade, Jackson, Zhao, and Hickson, 2017).

The following evaluation questions guided this study:

1. Did family stability and the family's ability to meet its needs improve?
2. Did the school attendance of students whose families participated in the Multi-Agency Team process change after entering the program?
3. Did the marking period averages of students whose families participated in the Multi-Agency Team process change after entering the program?
4. What was the graduation rate for Grade 12 students whose families participated in the Multi-Agency Team process?

Summary of Methodology

This evaluation used a pre-post design to analyze outcomes measuring family stability, and the attendance, academic achievement, and graduation rates of students who participated in the Multi-Agency Team process of the KCWMCP.

Study Schools

Fourteen schools participated in the KCWMC project during the 2014–2015 school year, 16 schools participated during the 2015–2016 school year, and 17 during the 2017–2018 school year, including 11 elementary schools, 4 middle schools, and the 2 cluster high schools. Schools are listed in Appendix B.

A total of 504 students and their families had records of Multi-Agency Team participation during the three school years and thus comprised the study sample.

Summary of Findings

Characteristics of participants in the Multi-Agency Team process. During the three school years reported here, from 2014–2015 through 2016–2017, 504 families participated in the Multi-Agency Team process of the KCWMC Project. More than 90% were receiving or previously received FARMS services, more than half were Hispanic/Latino, about one third were Black or African American, and about one third were receiving ESOL services at the time of program entry. A range of supports and referrals were provided, including family services, financial services, and health and mental health services.

Outcomes associated with the Multi-Agency Team process. This study continued the follow-up of students and families who participated in the KCWMC Project during the 2014–2015 through 2016–2017 school years by examining changes in family stability and trends in student attendance, marking period average, and graduation.

Families who participated in the KCWMC Project showed significant gains in several areas of family stability. Ratings of family stability at the time of program entry and about six months later showed statistically significant improvement in family safety, family conflict, mental health and physical health.

No significant change in average attendance was seen among all participating students in elementary school, but among middle and high school students, average percent of days attended was significantly lower the year after program entry compared to the year the students began participating in KCWMC. Supplemental analyses examined changes in attendance among students who entered the program with low attendance; no differences were seen for elementary or middle school students, but high school students had significantly lower attendance in the year following program entry compared to the year they started, as well as more unexcused absences.

Marking period grade averages did not change significantly over the four marking periods following program entry among all middle and high school students in the Multi-Agency Team process. Supplemental analyses examined changes in marking period averages among students who entered the program with low grade averages; among high school students, statistically significant improvement was shown over the four marking periods after program entry. Analysis of middle school students who entered the program with low grade averages revealed no change over the four marking periods following program entry.

Overall, this follow-up examination of student attendance and school performance offers some limited evidence of improvement associated with participation in KCWMC, but also some areas of continued concern. Attendance of middle and high school students continued to be a concern after program participation. High school students who entered the program with low grade averages did show some improvement in the marking periods that followed, and the percent of students in KCWMC who graduated was comparable with that of non-program students who had similar attendance histories.

Recommendations

1. KCWMC should work with participating schools to promote strategies to improve attendance, such as student incentives, contracts, mentoring, Truancy Court, and parent workshops.

2. Work with Montgomery County Department of Recreation to continue and strengthen support for students' involvement in after-school activities, such as Excel Beyond the Bell and RecExtra. Previous studies (e.g., National Institute on Out-of-School Time, 2009) have shown a positive relationship between participation in after-school activities and school attendance.

3. Continue to collect and maintain records of students and families who participate in the Multi-Agency-Team process, as well as their periodic family stability ratings, so that referral trends and services provided can be monitored, and progress after referral can be tracked.

Evaluation of the Kennedy Cluster Watkins Mill Cluster Project in Montgomery County Public Schools: Follow-up of Participants in the Multi-Agency Team Process from 2014 through 2017

Julie Wade

The Office of Shared Accountability (OSA) conducted a multiyear evaluation of the Kennedy Cluster Watkins Mill Cluster (KCWMC) Project in Montgomery County Public Schools (MCPS). The project is a collaboration among MCPS, the Montgomery County Government, the Montgomery County Collaboration Council, the Montgomery County Department of Health and Human Services (DHHS), the Montgomery County Department of Recreation, the Montgomery County Police Department, the Montgomery County State's Attorney's Office, and the Maryland Department of Juvenile Services. The overarching goal of the KCWMC Project is to remove the barriers to student success. To work toward that goal, the project is guided by three objectives:

- support the well-being of students and families through the Multi-Agency Team process
- provide a rich out-of-school-time environment that promotes positive youth development
- create a network of community partners that builds capacity at the school and community level to serve students and their families

The purpose of the multiyear evaluation has been to understand how the KCWMC Project operates and to determine the extent to which the project is meeting its objectives. A previous report (Wade and Zhao, 2015) examined the implementation of the project, as well as the extent to which the project met two of its goals: providing a rich out-of-school-time environment, and developing partnerships and collaborations among school and county agency staff. A follow-up report (Wade, Jackson, Zhao, and Hickson, 2017) examined the process and outcomes associated with the work of the Multi-Agency Team, focusing on the students and families who participated in the Multi-Agency Team process during the 2014–2015 and 2015–2016 school years. This second follow-up report extends the evaluation of family and student outcomes, analyzing changes in family stability, student attendance, school achievement, and graduation data for participants in the Multi-Agency Team process during three school years, from 2014–2015 to 2016–2017.

Background

The KCWMC Project, through the joint efforts of MCPS and Montgomery County Government agencies, has created a service delivery model to address the challenges underlying the racial/ethnic achievement gaps in MCPS (MCPS, 2013). The project aims to remove obstacles to student success, such as poverty, poor healthcare, lack of English language skills, and social and emotional issues, so that children can come to school ready to learn.

Program History

The project was initiated in the Kennedy Cluster in 2007 with a focus on addressing the racial/ethnic achievement gap. In eight years, from the 2008–2009 school year to the 2016–2017 school year, the project has grown from five schools in the Kennedy Cluster to 17 schools in the Kennedy and Watkins Mill clusters. Currently, the project includes 11 elementary schools, 4 middle schools, and 2 high schools; the participating schools are listed in Appendix B, Table B-1. A more detailed account of the program's history, development, and current operation can be found in the first report (Wade and Zhao, 2015).

Many of the students from the two clusters are from low-income households and are impacted by English language learning needs. The demographic characteristics of the Kennedy and Watkins Mill cluster schools compared with the characteristics of all MCPS schools are shown in Appendix A, Table A-1. Across all school levels (elementary, middle, and high), Kennedy and Watkins Mill cluster schools have higher percentages of English for Speakers of Other Languages (ESOL), Free and Reduced-price Meals System (FARMS), Hispanic/Latino, and Black or African American students than MCPS overall (Table A-1).

Program Components

The KCWMC Project model is based on the assumption that schools, families, and communities play important roles in helping students succeed in school. The objectives of the project may be described as a three-tier approach, providing services at three levels:

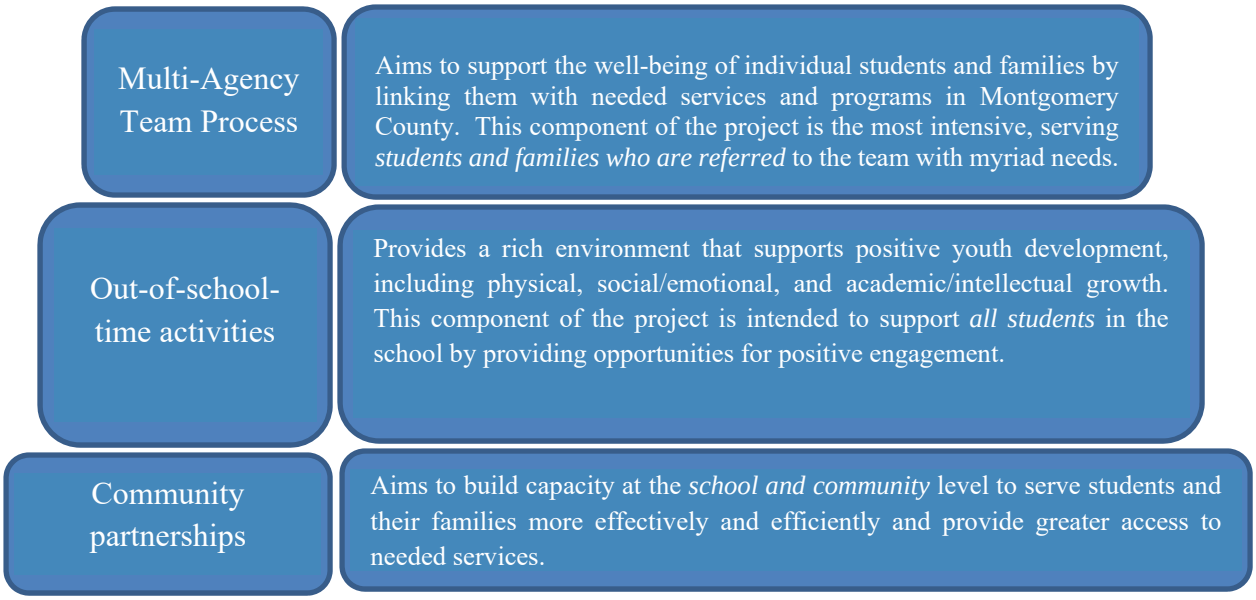

Figure 1. Components of the Kennedy Cluster Watkins Mill Cluster Project.

Through its three levels of services (Figure 1), the Kennedy Cluster Watkins Mill Cluster Project works to provide activities and services to the students and families in the two clusters, and to build partnerships to support the needs of the school community. The Cluster Project advocates for and coordinates out-of-school-time activities that provide all students in the school with opportunities for positive youth development. Community partnership development is an ongoing commitment of the Cluster Project. These two components of the project were evaluated in a previous report on the implementation of the Cluster Project (Wade and Zhao, 2016). The current report examines student outcomes related to the first component identified in Figure 1, the Multi-Agency Team Process.

The Multi-Agency Team Process

The Multi-Agency Team is a group of community professionals representing a range of county agencies and departments. The team comprises representatives from MCPS Kennedy and Watkins Mill cluster schools (may include counselor, principal, assistant principal, and/or pupil personnel worker); the MCPS Office of Student and Family Support and Engagement; DHHS (including Behavioral Health and Crisis Services; Children, Youth, and Family Services; Income Supports; and Special Needs Housing); the Montgomery County Police Department; the Montgomery County Recreation Department; the Montgomery County Collaboration Council; and the Montgomery County State's Attorney's Office. In addition, the team includes a project care coordinator, an interpreter, and the referring source—often a school counselor or pupil personnel worker. Team meetings are facilitated by one of the co-chairs of the KCWMC project, Ms. Fran Brenneman (DHHS) or Mr. Donald Kress (MCPS). Multi-Agency Team meetings are held every week during the school year, alternating weeks at the two cluster high schools. On average, between four and eight cases are discussed at each team meeting. Each referred case is scheduled for a 40-minute discussion.

Referrals. Students are referred to the team by a school staff member or by a service provider outside of school, and the school counselor reviews the referral for suitability for the Multi-Agency Team. Referrals are made for a range of concerns, including student attendance issues, student need for psychological services, family need for counseling, family legal issues, family financial needs, family or student need for medical referral, and many others. A detailed description of the Multi-Agency Team referral process, including the parent consent form and the needs questionnaire are included in the first report (Wade and Zhao, 2015).

Multi-Agency Team meeting. At the Multi-Agency Team meeting, the counselor explains the reasons for referral and provides relevant background, and the parents and student[1] are asked for input. During the discussion, team members talk with the family about ways to address the needs, which may include actions at school, and/or recommendations and referrals to services in the community. The team provides information to connect students and their families with resources for accessing health care, housing, financial assistance, legal aid, and many other social services in the community. An action plan with recommendations by the Multi-Agency Team are recorded by the project care coordinator, who also follows up with the family after the team meeting to facilitate contact with the referred services and support follow-through with recommended plans.

[1] Students age 18 or older can attend with or without a parent; students younger than 18 can attend with parental consent.

Logic Model

The KCWMC Project Evaluation Committee developed a logic model for the project in fall 2014. The full logic model includes the three program components, and shows the implementation sequence for each and the links between them and the expected program benefits (see Wade & Zhao, 2015). Figure 1 depicts the logic model for the Multi-Agency Team component of the project.

	Services, Activities (examples) ⇨	Outputs ⇨	Short-term Outcome indicators ⇨	Long-term Outcome indicators
Multi-Agency Team	**For Students:** Needs assessment, social/emotional/behavioral support; medical care referral; academic support; recreation	Number of referrals; types and number of services provided; follow-up provided by Care Coordinator	Prevent dropout; increase likelihood of retention/promotion; improve attendance	Meeting grade-level proficiency level in reading/math; pass courses; earn credit; GPA improvement; graduation, college/career-ready
	For Family: Needs assessment; referral to social services; referral to mental health services; medical care referral; food; housing assistance; employment assistance; legal assistance; transportation	Number of referrals; types and number of services provided; follow-up provided by Care Coordinator	Families meeting basic needs; families support student in school	Improved family stability and self-sufficiency; families gain trust with school and community agencies

Figure 2. Logic model for Multi-Agency Team component of the Kennedy Cluster Watkins Mill Cluster project (Office of Shared Accountability and KCWMC Project Evaluation Steering Committee, model developed in 2014)

Update on Select Literature

Several previous reports from MCPS (Keller, 2012; Wade, Jackson, Zhao, & Hickson, 2017; Wade & Zhao, 2015) have provided reviews of selected literature related to the KCWMC Project, as well as summaries of evaluations of the project itself. This update will report on studies that have been recently added to the literature on school-linked services.

In a study of Baltimore's Community Schools, Durham and Connolly (2016) found that students in longer-operating Community Schools had higher attendance. However, the authors note that students did not have higher attendance in all Community Schools; specifically, attendance in high schools remains a serious challenge, and it appears there is a relationship between the amount of time a school has implemented the model and student attendance. The authors note the need for more research to better understand the barriers to higher attendance.

Students in schools involved in the City Connects program, which supports students and schools by evaluating the needs of all students in a school and connecting them to services that are largely provided by community partner organizations, have yielded increased achievement and educational attainment relative to students in similar schools that have not implemented the program (Walsh, Madaus, et al., 2014; Walsh, Lee-St. John, Raczek, Foley, & Madaus, 2014). Bowden et al. (2015) conducted a cost-benefit analysis of City Connects and concluded that the benefit-cost ratio is 3.0, indicating benefits far outweigh costs; the net benefits are estimated at $9,280 per student.

Finally, two recent studies conducted systematic, comprehensive reviews of literature related to Comprehensive Community Initiatives (Flanagan, Varga, Zaff, Margolius, & Lin, 2018) and Community Schools (Maier, Daniel, Oakes, & Lam, 2017); both are areas of research that may inform the work of the KCWMC Project.

Comprehensive Community Initiatives (CCIs) are locally organized collaborations among community systems, including schools, community-based organizations, and businesses. Flanagan and colleagues (2018) conducted a systematic review of the literature associated with CCIs; their initial search included more than 1,900 articles and narrowed to 25 relevant articles that studied five initiatives. Their review focused on population-level outcomes for children, youth, and families. The authors concluded that CCIs show promise in three major areas. Broadly, the CCI programs were found to: (1) strengthen protective factors and reduce risk factors; (2) delay or reduce substance use among youth; (3) reduce the likelihood of and delay engaging in violent and/or delinquent behaviors (Flanagan, 2018).

In their review of the evidence for the effectiveness of Community Schools, Maier and her colleagues examined 143 research studies (Maier et al., 2017). Their report synthesized high-quality studies and drew conclusions from findings that warranted confidence, while also pointing out areas in which the research is inconclusive. They concluded that "well-implemented community schools lead to improvement in student and school outcomes, and contribute to meeting the educational needs of low-achieving students in high-poverty schools." (Maier et al., 2017, p. v). Their review revealed strong evidence for the efficacy of interventions utilizing integrated student supports, expanded learning time and opportunities, and family and community engagement. The authors report that sufficient evidence exists to qualify the community schools approach as an evidence-based intervention under the *Every Student Succeeds Act of 2015* (i.e., a program of intervention must have at least one well-designed study that fits into its four-tier definition of evidence). The study also concluded that effective program implementation and sufficient exposure to services increase the success of a community schools approach, and that the cost-benefit research suggests an excellent return on investment of up to $15 in social value and economic benefits for every dollar spent on community school services (Maier et al., 2017).

Previous Studies of Kennedy Cluster Watkins Mill Cluster Project in MCPS

To date, there have been three studies conducted of the Cluster Project. Keller (2013) conducted a case study of the Kennedy Cluster Project and found evidence that the project has contributed to positive academic outcomes for at-risk students, such as increased graduation rate, reduced dropouts, and reduced mobility. Keller pointed out that an additional benefit of the project was the

partnerships formed among schools and agencies, noting that "Better communications among members of the Multi-Agency Team yielded more efficient delivery of educational and community resources to students both inside and outside school" (p. ii).

Wade and Zhao's (2015) initial report on the KCWMC Project indicated that the opportunities provided by the project benefit the cluster communities in a range of ways. School-based staff respondents reported that the Multi-Agency Team is an important support for students and their families and that professional development opportunities help school staff learn about community resources and how to link students and families with needed services. Over two thirds of school-based staff survey respondents reported that they had attended a professional development opportunity given by the KCWMC Project. Access to services was named the most valuable aspect of the project by school-based staff, and the collaborative nature of the project was viewed by school staff and project representatives as a major strength.

A follow-up study of students and parents who participated in the Multi-Agency Team Process of the KCWMC Project was reported by Wade, Jackson, Zhao, and Hickson (2017). That study included 325 students and their families who participated in the Multi-Agency Team of the KCWMC Project in 2014–2015 and 2015–2016. In follow-up surveys, families reported positive experiences with the team and project staff, and they indicated greater awareness of resources in the community. Ratings of family stability at the time of program entry and approximately six months later showed significant levels of improvement on physical safety, family conflict, income, work effectiveness, mental health, physical health, and housing stability. Middle and high school students who entered the program with low grade averages showed some improvement in grade averages in the two marking periods that followed; for high school students, the improvement was statistically significant.

Purpose and Scope of the Study

The multi-year evaluation focused on the three objectives of the KCWMC Project—supporting students and families with the Multi-Agency Team, providing a rich out-of-school-time environment, and creating partnerships among agencies and schools. This report examined the Multi-Agency Team process and student and family outcomes related to it. The following evaluation questions guided this section of the study.

1. Did family stability and the family's ability to meet its needs improve?
2. Did the school attendance of students whose families participated in the Multi-Agency Team process change after entering the program?
3. Did the marking period averages of students whose families participated in the Multi-Agency Team process change after entering the program?
4. What was the graduation rate for Grade 12 students whose families participated in the Multi-Agency Team process?

Methodology

Evaluation Design

This evaluation used a pre-post design to examine student outcome measures, including attendance, grade averages, and graduation.

Study Schools

Fourteen schools were participating in the KCWMC project during the 2014–2015 school year, 16 schools were participating during 2015–2016, and 17 were participating in the 2017–2018 school year, including 11 elementary schools, 4 middle schools, and the 2 cluster high schools (Appendix B).

Study Sample

This report focused on students and families who participated in the Multi-Agency Team process during the 2014–2015, 2015–2016, and 2016–2017 school years. The sample included 504 students who had records of Multi-Agency Team participation during those school years.

No comparison group was used in this study because no school records exist to identify a non-program group with similar needs. To provide context in the report of the percentage of Grade 12 KCWMC Project students who graduated, a group of students in the same two high schools who had similar attendance histories was identified and their graduation status was reported.

Measures

Family outcomes were assessed with a published rating scale and student outcomes were measured using MCPS student data. Outcome measures are described below.

A rating scale of family stability was administered to families referred to the Multi-Agency team during school year 2016–2017. Ratings were obtained at the time of the team meeting and about six months later. The instrument used was adapted from The Family Advocacy and Support Tool (FAST) which was developed by the Praed Foundation (Praed Foundation, 2017). The FAST is an open domain tool. Ratings for 107 of the 205 families were available for analysis.

DHHS staff rated each participating family on a four-point scale along seven dimensions: 1) family members are safe from being physically injured in the home; 2) conflict (may be physical, emotional, or verbal) occurs between family members; 3) income and other sources of money available to family members (particularly caregivers) that can be used to address family needs; 4) the adult's work effectiveness including, but not limited to, attendance, productivity, and relationships with co-workers; 5) mental health needs, problems with alcohol, illegal drugs and/or prescription drugs; 6) the current physical health of family members; and 7) the stability of the

family's housing. Ratings ranged from no risk or difficulties to severe or significant risk or difficulties.

Student school attendance was examined for students who participated in the Multi-Agency Team process, specifically: the average percentage of days attended in the school year of program entry and in the school year following; and the number of unexcused absences in the school year of program entry and in the school year following. To examine attendance rates across time, student attendance data for the 2014–2015, 2015–2016, and 2016–2017 school years were recoded to reflect their attendance at two points in time: year of program entry, and the year that followed (regardless of the calendar year). In other words, a student whose family participated in the Multi-Agency Team process during the 2014–2015 school year would have attendance data for that year as the "program entry" data point, and attendance data for the following school year would serve as the "year following program entry" data point. Students whose families entered the program during 2015–2016 would have their attendance data for the 2015-2016 program as "program entry", and data for 2016–2017 recoded as the "year following program entry". Only students with attendance data for two years were included in the analyses. The calendar year of participation was not considered in the analyses.

Student academic progress was examined for students who participated in the Multi-Agency Team process. For middle and high school students, marking period averages at the time of referral were compared with those in the marking periods that followed. To examine marking period averages (MPAs) across time, MPAs for each marking period in the 2014–2015, 2015–2016, and 2016-2017 school years were recoded to reflect MPAs in five points in time: program entry, and at four marking periods that followed (regardless of the school year or school marking period). In other words, a student whose family began participation in the Multi-Agency Team process during marking period 1 of 2014–2015 would have MPA for that marking period as the "program entry" data point, and MPA for marking period 2 of 2014–2015 school year would serve as the "1st marking period following program entry" data point, and so on. Students whose families entered the program during later marking periods would have their MPA for the marking period they began the program as "program entry," and data for subsequent marking periods recoded as described.

Graduation rates were reported for students who were enrolled in Grade 12 during any of the three years examined in the study. To provide context, a group of students from the same two high schools who were not participating in the KCWMC Project were selected based on attendance rates similar to the students in the program; graduation rates for both groups were presented.

Data Sources

KCWMC project records provided records of services received by students and families who participated in the Multi-Agency Team process during the 2014–2015, 2015–2016, and 2016–2017 school years. Staff from the KCWMC project provided secure password-protected files containing Multi-Agency Team service records for analysis by OSA.

KCWMC assessment data were used for analysis of family stability before and after participation in the Multi-Agency Team process; data from the rating scale of family stability were provided by project staff to OSA for analysis.

MCPS student records provided demographic data for the students and were used to examine student attendance, numbers of unexcused absences, marking period averages for secondary students, and graduation status.

Analysis of Data

Descriptive statistics were used to report characteristics of students who participated in the Cluster Project and to report services offered to project participants.

Family stability ratings were collected at two points in time: at the time of the Multi-Agency Team meeting, and approximately six months later. Descriptive statistics were used to report the ratings at each time point. For families with ratings at both referral and follow-up, chi-square analysis was conducted and McNemar's test of proportionality was examined to determine whether responses changed over time.

Attendance rates (mean percentage of days attended) were analyzed using paired t tests to examine change in attendance from the year of program enrollment to the year following for participating students. The number of unexcused absences was analyzed for the year students enrolled in the program and for the following year using a paired t test.

Report card grades (marking period averages) for middle and high school students were analyzed using repeated measures ANOVA. Only students with grades reported for at least four marking periods after program entry were included in the analyses.

Graduation status was tracked and reported for students who participated in the Multi-Agency Team process and who would have been in Grade 12 during any of the three years reported. For context, a group of students from the same two high schools who had similar attendance histories was identified and their graduation status was reported for comparison.

To focus on students whose attendance or academic performance was low when they entered the program, analyses also were conducted with subsets of students whose prior attendance or performance was below the median for all students in the program. Although these analyses introduced a statistical concern (see limitations below), it was important to examine changes among students for whom these areas—attendance or academic performance—were a concern. Results from these supplemental analyses are detailed in Appendix D.

To examine the magnitude of change in attendance and marking period averages, effect sizes were calculated in addition to tests of statistical significance. Cohen's *d* was computed to measure the magnitude of program effect and determine if the difference was practically significant (American Psychological Association, 2010). The formula and interpretation of Cohen's *d* are described in Appendix C.

Strengths and Limitations of the Methodology

Strengths. To ensure that the evaluation addressed the issues of most importance and interest to the administrators and stakeholders of the project, the evaluation plan was developed in collaboration with the KCWMC Project Evaluation Advisory Committee, comprising administrators from DHHS, MCPS, and partner agencies.

In a program like the KCWMC project, with a wide array of services and activities, participation is tailored to the needs of the student and family. Students and their families may be engaged in different services and combinations of services for different amounts of time. To strengthen the measurement of progress, analyses of family stability ratings, student attendance and grade averages were conducted across time. Student's attendance or grade average at the marking period or year of program entry was the starting or baseline measure, and change was analyzed over the marking periods or year that followed program entry.

Limitations. Conducting an evaluation of a multi-faceted program that seeks to address different needs depending on the participant is challenging. Some issues that have been reported by other researchers include study attrition as a result of family mobility, varied levels of implementation, and identification of appropriate control groups (Castrechini and London, 2012).

Some of these methodological limitations apply to the current study. Most notably, no appropriate comparison groups were available for the analyses in this report. Since the group in interest in this study comprised students and family members who were referred for and received KCWMC Project services, the "defining characteristic"—the need for services—is not a characteristic that can be matched in a comparison group in this study. Therefore, the pre-post evaluation design was used, but it must be understood that observing changes in the study (KCWMC) group without an examination of change in an untreated comparison group leaves open the possibility that the change may have been due to other factors (e.g., maturation, time of year) and that it could have occurred without KCWMC Project participation. Similarly, without a comparison group it is not possible to know what the students' outcomes may have been without the project.

An additional methodological limitation relates to the ratings of family stability. The family stability ratings are done by staff who are aware of and possibly involved in providing services for the family, so the staff members who generate these ratings may be unconsciously biased toward rating family stability more favorably at the follow-up.

Some measures were available only annually or at year-end, including the percent of days attended, the number of unexcused absences, and graduation status. The school-year measure of chronic absenteeism was used to more closely align with the definition specified by the U.S. Department of Education (2016). Using an annual measure when the participants may have entered the program any time during the school year limits the precision of measures for "program entry year" and "year following program entry."

Because the KCWMC Project is intended to address a range of concerns that vary by student, the outcomes impacted by the project are also expected to vary by student. For example, if a student was referred for attendance issues, then one expected outcome is improved attendance. On the

other hand, if a student with good attendance was referred because they were struggling academically, we might expect GPA but not attendance to change. In an effort to attend to the multifaceted nature of the KCWMC Project, we conducted additional analyses for specific subsets of participating students who entered the program with either low attendance or low academic performance. Findings from these additional analyses are reported in Appendix D, since, although it was important to examine the progress of students who entered the program with the need for improvement in those areas, selecting low-attending or low-performing students for analysis can introduce a statistical problem known as regression to the mean. Regression to the mean can be a concern in these analyses because starting with a measure that is very low (or very high) increases the likelihood that subsequent measures will be closer to the mean of all measures. In other words, if a low attending or low achieving group is selected at the start of the analysis, the measures following for that group are likely to go up, toward the overall mean. In this study, an effort was made to reduce the problem by identifying the low-attending and low-performing groups using scores that occurred *prior* to scores that were used in the analysis (Linden, 2013). However, findings from these analyses must be viewed with caution.

Results

Demographic characteristics of participants

The demographic characteristics of students who participated in the Multi-Agency Team during the three school years of the study are shown in Table 1. About one third of the students were in elementary school (Pre-K through Grade 5) at the time of referral to the Multi-Agency Team, about one third were in middle school, and about one third were in high school. More than 90 percent of the students who participated in the Multi-Agency Team were receiving or previously received FARMS services, and a little more than one third of the participating students were enrolled in ESOL classes at the time of program entry. The percentage of participating students who were enrolled in ESOL classes increased over the three school years from 29 percent to 41 percent. During all three years of the study, more than half the participants were Hispanic/Latino and about one third were Black or African American. More boys than girls participated in the Multi-Agency Team in all three years of the study (Table 1).

Table 1
Characteristics of Students who Participated in the KCWMC Multi-Agency Team

	KCWMC Participants, All years *N* = 504		KCWMC participation began in SY 2014--2015 *N* = 124		KCWMC participation began in SY 2015--2016 *N* = 183		KCWMC participation began in SY 2016--2017 *N* = 197	
Grade Level	n	%	n	%	n	%	n	%
Pre-K, K, 1, 2	95	18.9	15	12.1	39	21.3	41	20.8
3, 4, 5	65	12.9	11	8.9	25	13.7	29	14.7
6, 7, 8	177	35.1	61	49.2	59	32.2	57	29.0
9, 10,11, 12	167	33.1	37	29.8	60	32.8	70	35.5
Race/Ethnicity								
Black or African American	159	31.5	38	30.6	61	33.3	60	30.5
Hispanic/Latino	297	58.9	74	59.7	105	57.4	118	59.9
White	25	5.0	6	4.8	10	5.5	9	4.6
Two or more races	15	3.0	5	4.0	5	2.7	5	2.5
Gender								
Female	219	43.5	58	46.8	80	43.7	81	41.1
Male	285	56.5	66	53.2	103	56.3	116	58.9
Services								
ESOL (current)	187	37.1	36	29.0	70	38.3	81	41.1
Special Education (current)	126	25.0	28	22.6	43	23.5	55	27.9
FARMS (current or prior)	473	93.8	117	94.4	171	93.4	185	93.9
Cluster								
Kennedy	254	50.4	67	54	89	48.6	98	49.7
Watkins Mill	250	49.6	57	46	94	51.4	99	50.3

Note. Students whose race/ethnicity are designated as American Indian, Asian, or Pacific Islander are not included in table by race/ethnicity because disaggregated groups are fewer than 5; they are included in other categories and totals.

The demographic composition of the Kennedy and Watkins Mill Cluster schools is shown in Appendix A, Table A-1, along with that of all MCPS schools. Compared to the total school populations of the two clusters, a larger percentage of students whose families were referred to the Multi-Agency Team process were Hispanic/Latino, and larger percentages of students receiving ESOL, special education, and FARMS also were represented among the students and families who were referred to the Multi-Agency Team process compared to the cluster populations.

Supports and services provided or recommended for participating students and families

Families received or were referred to a wide range of services through their participation in the Multi-Agency Team process (Table 2). More than three quarters of the families (79 percent to 88 percent over the three years of the study) received assistance with family services, such as childcare help, family counseling, or legal assistance. Other types of services and referrals provided for families in the Multi-Agency Team process were financial service referrals, health referrals,

mental health referrals, and links to recreation activities or programs. It should be noted that new service codes were developed in the 2016–2017 school year, so services provided during that year may have had different designations than in the previous two years. For example, some of the services identified in the first two years as Financial Services, such as food assistance, clothing, and utilities, may have been coded as "formal/informal supports" in 2016–2017 and thus categorized in Family Services.

Table 2
Number and Percentage of Families Who Received Different Types of Services and Referrals Through Participation in the Multi-Agency Team Process During the 2014–2015, 2015–2016, and 2016–2017 School Years

		Families Receiving Services/Referrals					
Service/ Referral Type	Examples of Services/Referrals	2014–2015 *N* = 124		2015–2016 *N* = 183		2016–2017 *N* = 197	
		n	*%*	*n*	*%*	*n*	*%*
Family Services	Childcare help, child support, family counseling, legal assistance, domestic violence, employment assistance, victim assistance, early childhood service referral, transportation assistance; education/literacy[a], formal/informal supports[a], safety[a]	104	83.8	171	93.4	174	88.3
Financial Services	Cash assistance, food assistance, food stamps, housing/rental assistance, clothing, furniture, medical coverage, budgeting assistance, utilities, employment/income[a]	92	74.2	159	86.9	68	34.5
Health Services	Alcohol/drug treatment referral, medical care referral, dental care referral, immunizations assistance, vision/hearing referral, somatic health[a], access to care[a]	90	72.6	147	80.3	93	47.2
Mental Health Services	Mental health referral for child, mental health referral for adult, behavioral health[a]	61	49.2	107	58.5	110	55.8
Recreation	Excel Beyond the Bell registration, camp registration, swim lessons, pool passes, therapeutic camp referral	46[b] (*N* = 84)	54.8	86	47.0	[b]	[b]

[a] New service category designation used in 2016-2017.
[b] Referrals for Recreation were not included in all records during 2014–2015 or in records for 2016-2017

Evaluation Question 1. **Did family stability and the family's ability to meet its needs improve?**

Of the 318 families receiving services during the 2016–2017 school year and the first half of the 2017–2018 school year, pre-service family stability ratings were available for 296 families (93%). Table 3 summarizes these ratings. The dimensions with the highest proportion of families rated experiencing significant difficulties were related to mental health and substance abuse (26%), financial resources (24% severe risk) and employment (24%). Less than 10 percent of families were rated at severe risk of safety issues (being physically injured in the home) or experiencing family conflict.

Table 3
Number and Percent of Pre-Participation Ratings of Level of Functioning on Seven Items of Family Stability (N = 296)

	Good functioning/ No risk or difficulties		*Adequate functioning / Mild risk or difficulties*		*Fair functioning / Moderate risk or difficulties*		*Significant risk or difficulties*	
Survey Item	*n*	*%*	*n*	*%*	*n*	*%*	*n*	*%*
Family safety / family members are safe from physical injury at home (N = 296)	166	56.1	72	24.3	40	13.5	18	6.1
Family conflict / physical, emotional, or verbal conflict that occurs between family members (N = 295)	126	42.7	82	27.8	62	21.0	25	8.5
Financial resources / income and other sources of money available (N=295)	48	16.3	63	21.4	112	38.1	71	24.1
Employment / work effectiveness (N = 296)	112	38.0	49	16.6	63	21.4	71	24.1
Family mental health and substance abuse (N = 296)	75	25.3	41	13.9	102	34.5	78	26.4
Health status of family members (N = 296)	152	51.9	41	14.0	57	19.5	43	14.7
Residential / stability of family's housing (N = 296)	131	44.9	54	18.5	42	14.4	65	22.3

Follow-up ratings were examined for families who participated in the Multi-Agency Team meeting during the 2016–2017 school year. Of the 205 families receiving services during the 2016–2017 school year, follow-up ratings (conducted by the KCWMC Project care coordinator six months after the Multi-Agency Team meeting) were available for 131 families (64%). Table 4 illustrates that income, employment, and mental health needs were still the dimensions with the highest proportions of families rated with moderate or significant difficulties, along with stability of housing; however, the proportions of families at moderate or significant risk were much lower than at pre-participation. That is, while nearly a quarter of families had significant difficulties on these dimensions in the pre-participation ratings, less than ten percent of the families who had follow-up assessments were rated at the significant level of difficulty.

Table 4
Number and Percent of Follow-Up Ratings of Level of Functioning on Seven Items of Family Stability (*N*=131)

	Good functioning/ No risk or difficulties		*Adequate functioning / Mild risk or difficulties*		*Fair functioning / Moderate risk or difficulties*		*Significant risk or difficulties*	
Survey Item	*n*	%	*n*	%	*n*	%	*n*	%
Family safety / family members are safe from physical injury at home (*N* = 296)	83	75.5	21	19.1	5	4.5	1	0.9
Family conflict / physical, emotional, or verbal conflict that occurs between family members (*N* = 295)	71	64.5	26	23.6	11	10.0	2	1.8
Financial resources / income and other sources of money available (*N*=295)	21	19.3	52	47.7	31	28.4	5	4.6
Employment / work effectiveness (*N* = 296)	45	41.7	32	29.6	22	20.4	9	8.3
Family mental health and substance abuse (*N* = 296)	50	45.0	34	30.6	19	17.1	8	7.2
Health status of family members (*N* = 296)	71	65.1	23	21.1	6	5.5	9	8.3
Residential / stability of family's housing (*N* = 296)	58	52.7	26	23.6	18	16.4	8	7.3

Note. Analyses are limited to participants referred during 2016–2017 who had follow-up assessments.

Finally, among the 205 families receiving services during the 2016–2017, 107 (52%) were assessed on the family stability rating scale by the KCWMC Project care coordinator both before and after receiving services. Table 5 shows, among the families who had both sets of ratings, the percentage of families rated at no risk or difficulty in the initial rating and the percentage rated at no risk or difficulty at the six-month follow-up. The table also shows the percentage point difference, and whether the difference in the percentage of families at "no risk/no difficulties" is statistically significant.

Conducting chi-square analyses on the raw data was problematic because many cells had counts fewer than five. To facilitate statistical analysis of the results, categories were collapsed into 0 (no risk or difficulty) and 1 (any rating above 0—representing mild, moderate, or severe difficulty). Chi-square analyses were conducted on the collapsed ratings and the McNemar test of proportionality was examined.

Statistically significant increases in the percentage of families rated at no risk or no difficulties were revealed for four of the seven dimensions on the rating scale. The percent change was largest (12 percentage points or more) and differences were statistically significant for safety, family conflict, family mental health, and family health.

Table 5
Mean Percentage of Families Rated at No Risk on Seven Items on Kennedy Cluster/Watkins Mill Cluster Project Pre-Participation and Follow-Up Family Stability Survey (*N*= 107)

Survey item	Pre-Participation	Follow-up	Change	Signif.
Family safety / family members are safe from physical injury at home (N = 107)	60.7	74.8	14.1	.006
Family conflict / physical, emotional, or verbal conflict that occurs between family members (N = 106)	51.9	64.2	12.3	.041
Financial resources / income and other sources of money available (N=105)	13.3	18.1	4.8	.267
Employment / work effectiveness (N = 104)	36.5	39.4	2.9	.701
Family mental health and substance abuse (N = 107)	29.9	43.9	14.0	.008
Health status of family members (N = 104)	49.0	65.4	16.4	.009
Residential / stability of family's housing (*N* = 105)	42.9	53.3	10.4	.061

Note. Analyses are limited to participants referred during 2016-2017 who had both pre-participation and follow-up ratings. Significance is determined by McNemar Test.

Figure 3 displays the ratings for families with both pre-participation and follow-up assessments of family stability. For each of the dimensions, the percentage of families rated at no risk increases between the pre-participation and the six-month follow-up assessment. Though income is the dimension with the highest percentage of families rated at moderate or severe difficulty in the follow-up assessment, the percentage of families rated no or mild risk doubled between pre-participation and the six-month follow-up. Similar improvements can be seen for employment and mental health.

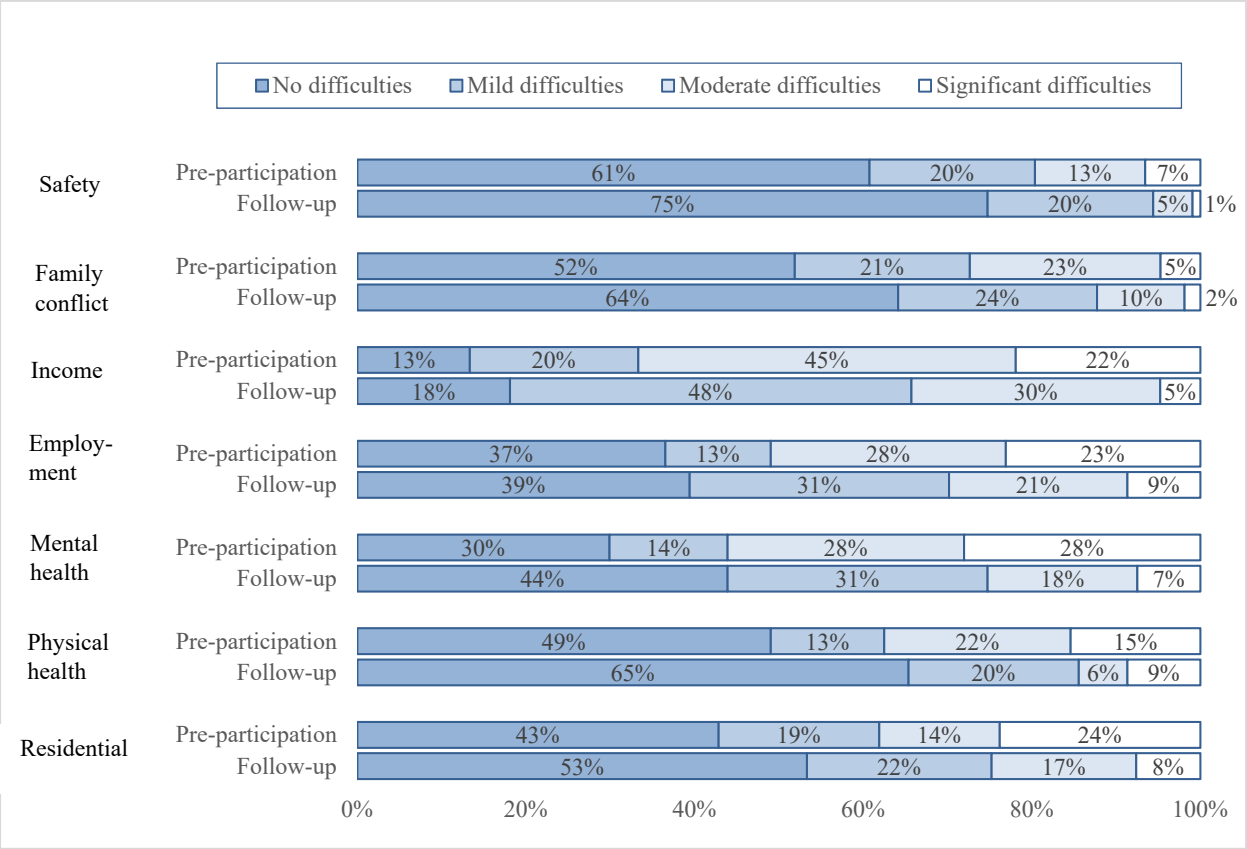

Figure 3. Pre-Participation and Follow-up Ratings of Family Stability (N = 107).

Evaluation Question 2. **Did the school attendance of students whose families participated in the Multi-Agency Team process change after entering the program?**

Mean school attendance rates for students at elementary, middle, and high school levels whose families participated in the Multi-Agency Team process are shown in Table 6. The mean attendance rate (percent days attended) for the school year they entered the program (when Multi-Agency Team meeting was held) and for the year that followed are shown for all students at each school level. Students referred while in elementary school had the highest attendance rates and high school students had the lowest rates (Table 6).

Table 6
Mean Percent Days of School Attendance in the Year of Program Entry and the Year Following

		Year of Program entry		Year after Program entry			
School Level	***N***	Mean %	SD	Mean %	SD	*p*	Cohen's *d*
Elementary School	74	91.3	5.4	90.4	5.9	.181	-.21
Middle School	111	86.6	12.0	83.8	16.1	.029	-.33
High School	68	80.8	18.2	69.2	23.8	.000	-1.31

Notes. SD = standard deviation. Only students with attendance data in the year of program entry and the year following the Multi-Agency Team meeting are included; this limits the sample to those students who began the program during the 2014–2015 or 2015–2016 school year.

Among the KCWMC elementary participants, the mean attendance rate did not differ significantly across the two years. At the middle and high school levels, paired t-tests showed that the decreases in percent days attended from the year of enrollment to the year following—from 87% to 84% for middle school students, and from 81% to 69% for high school students—were statistically significant (middle school: $t = 2.22$, $df = 110$, $p = .029$; high school: $t = 5.76$, $df = 67$, $p = .000$). The magnitude of the differences (Cohen's d) were of practical significance, in a negative direction, at all levels (Table 3).

To provide context, attendance rates over two school years (2015–2016 and 2016–2017) for *all* students in elementary, middle, and high schools in the two clusters are shown in Appendix D, Table D-1. For all students in the two clusters, attendance rates decreased from 2015–2016 to 2016–2017: elementary students decreased 0.6 percentage point; middle school students decreased 1.0 percentage point; high school students decreased 5.6 percentage points (Table D-1). Differences were statistically significant at each school level, and the magnitude of the differences was practically significant at the middle and high school levels (Table D-1).

Since not all students whose families participated in the Multi-Agency Team process had poor attendance when starting the program, additional analyses were conducted with a subset of students who entered the program with low attendance rates. Results of these analyses are shown in Appendix E. Students were divided into high and low prior attendance groups, above and below the median attendance rate for year prior to program entry. The mean attendance rate from program entry to the year following for the low attendance group at each school level was examined; descriptive statistics and results from paired t-tests are shown in Appendix D, Table D-2. Attendance of elementary and middle school students who started with low attendance did not change significantly from the year of enrollment to the following year. At the high school level, the mean percent days attended showed a statistically significant decrease from the year of program entry to the following year (Appendix D, Table D-2).

The number of unexcused absences for students participating in the Multi-Agency Team process also was examined. The mean number of unexcused absences for students at each school level for the year the student entered the program and for the year following program entry are shown in Table 7. Descriptive statistics and results from paired samples t-tests are reported.

Table 7
Number of Unexcused Absences During Program Entry Year and in Following Year

		Program entry year		1 year after program entry			
School Level	***N***	Mean number unexcused absences	SD	Mean number unexcused absences	SD	*p*	Cohen's *d*
Elementary School	74	11.6	9.2	11.8	8.5	.810	-.03
Middle School	111	16.0	18.2	20.1	25.5	.036	-.32
High School	71	26.0	31.2	38.5	38.9	.000	-.83

Notes. SD = standard deviation. Means were tested with paired t tests. Only students with attendance data in the year of program entry and the year following the Multi-Agency Team meeting are included; this limits the sample to those students who began the program during the 2014–2015 or 2015–2016 school year.

At the elementary level, the number of end-of-year unexcused absences did not change from the program year to the following year (Table 7). For students in middle and high school, the number of unexcused absences increased from the program year to the following year; at both levels the differences were statistically significant, and the magnitude of the differences were of practical educational significance: middle (d = -.32, reflecting a small effect size), and high school (d = -.83, reflecting a large effect size).

Supplementary analyses were conducted to examine changes in the number of unexcused absences for students who had low attendance rates when they entered the program (Appendix D, Table D-3). Results were similar to those for all project participants; the number of unexcused absences decreased slightly for elementary students and increased from the program year to the following year for middle and high school students, but the differences were not statistically significant.

Evaluation Question 3. **Did the marking period averages of students whose families participated in the Multi-Agency Team process change after entering the program?**

Marking period grade averages for middle and high school students whose families participated in the Multi-Agency Team process are shown in Table 8. The mean grade average for the marking period (MPA) at entry to the program (when the Multi-Agency Team meeting was held) and for the four marking periods which followed are shown for all students at each school level. For all participating students at the middle and high school levels, the change in grade averages over four marking periods beyond program entry were not statistically significant (Table 8).

Table 8
Marking Period Grade Averages at Program Entry and During Four Marking Periods Following

		Program entry		1 MP after program entry		2 MP after program entry		3 MP after program entry		4 MP after program entry		
School Level	***N***	Mean MPA	SD	Mean MPA	SD	Mean MPA	SD	Mean MPA	SD	Mean MPA	SD	*p*
Middle School	112	2.36	.85	2.29	.94	2.28	.97	2.32	.95	2.15	1.01	.061
High School	59	1.74	1.23	1.93	1.31	1.85	1.26	1.96	1.25	1.76	1.29	.357

Notes. MP = marking period; MPA = marking period average; SD = standard deviation. Only students with grade averages in four marking periods after the Multi-Agency Team meeting are included; this limits the sample to those students who began the program during the 2014–2015 or 2015–2016 school year.

Since not all students entered the program with low grades, the marking period grade averages for all students may not reflect progress of those students who were struggling academically. To examine changes in grade averages of students whose marking period grade average was low when they entered the program, supplementary analyses were conducted (Appendix D, Table D-4). When the mean marking period grade average was analyzed over four marking periods for the students who started with a low grade average (below the median), the change was statistically significant for high school students ($F = 3.82$, $p = .006$; Cohen's $d = 1.13$, indicating a meaningful and large effect over time). The change in grade averages was not statistically significant for middle school students. Table D-4 and Figure D-1 in Appendix D show the mean MPAs over the four marking periods following program entry for students who began the project with low marking period grade averages.

Evaluation Question 4. **What was the graduation rate for Grade 12 students whose families participated in the Multi-Agency Team process?**

Among the participating students who were in Grade 12 during the 2014–2015, 2015–2016, or 2016–2017 school year, status at the end of the Grade 12 school year was examined. Table 9 shows the number and percent of Grade 12 students who graduated, as well as the number and percent whose records indicated they were still enrolled, or had dropped out of school. The number who had transferred to another school outside of MCPS is indicated in the footnote but was not included in the computation of percentages, since their status was unknown.

Table 9
Status at the End of Grade 12 for Students who Participated in KCWMC Project During 2014–2015, 2015–2016, or 2016–2017

Status at end of Grade 12	2014–2015 *N* = 16		2015–2016 *N* = 21		2016–2017 *N* = 9		Total, three years *N* = 46	
	n	%	*n*	%	*n*	%	*n*	%
Graduated	11	68.8	20	95.2	9	100.0	40	87.0
Continued enrollment	1	6.2	1	4.8	0	0.0	2	4.3
Dropped out	4	25.0	0	0.0	0	0.0	4	8.7

Note. 3 students (2 begin program in 2014–2015, 1 in 2015–2016) transferred to schools outside of MCPS so their status was unknown.

Across the three school years, the percentage of KCWMC Project Grade 12 students who graduated was 87%. An additional 4% were still enrolled in MCPS, and the remaining four students (9%) dropped out of school (Table 9).

To provide context for the graduation rates of students in the KCWMC Project, a group of students from the two high schools was identified for comparison; the non-project comparison students had school attendance levels similar to that of the KCWMC participants in their year of program entry. The graduation status of students in the two groups was compared. Table 10 shows the graduation rate for KCWMC students and that of the non-project comparison students from the same two high schools.

Table 10
Status at the End of Grade 12 for Students who Participated in KCWMC Project and non-KCWMC Students with Similar Attendance Levels During 2014–2015, 2015–2016, and 2016–2017

Status at end of Grade 12	KCWMC Students *N* = 46		Comparison Students *N* = 35	
	n	%	*n*	%
Graduated	40	87.0	30	85.7
Continued enrollment	2	4.3	1	2.9
Dropped out	4	8.7	4	11.4

The graduation rate of the KCWMC students was comparable to the rate of non-project students. This is particularly notable considering that the non-project comparison group was selected based only on attendance, and without information about other factors that may affect the likelihood of graduating, such as poverty, challenges to family stability, health and mental health issues, and other concerns that impact many of the students in the KCWMC group.

Summary and Discussion

The theory of action guiding the KCWMC Project suggests that students are impacted by the social, emotional, and physical well-being of their families, and that supporting the well-being of families may improve school engagement, attendance, and/or performance. Our previous study of outcomes associated with the KCWMC Project reported positive family outcomes, such as improved family stability and greater awareness of community resources among family members. This study continued the follow-up of students and families who have participated in the KCWMC Project during the last three school years by examining family stability before and after participation, and analyzing longer-term changes in attendance, marking period average, and graduation.

Consistent with findings reported in our previous study, family well-being and stability showed significant improvement over the course of program involvement, with fewer families at risk or experiencing difficulties after participation in the KCWMC Project. Specifically, ratings of family safety, family conflict, mental health and physical health showed statistically significant improvement after program participation compared to ratings at the time of referral.

No evidence of improvement in attendance was observed for students participating in the program. No significant differences were seen for elementary school students in the year following program entry compared with the year they began the program, but for middle and high school students, a decline in attendance was observed.

Examination of student marking period grade averages of middle and high school students who participated in the project showed no statistically significant change over the four marking periods that followed program entry when the grade averages of all participating students were analyzed. When the marking period averages of students whose grade averages were low (below the median) in the marking period before starting the program, high school students showed statistically significant improvement. Analysis of the grades of middle school students who entered the program with low grade averages, however, revealed no statistically significant change over the four marking periods following program entry.

As posited in the literature (e.g., Castrechini and London, 2012), analysis of student outcome data for a multi-faceted program like the KCWMC Project poses numerous challenges. In this evaluation, several issues must be considered as the findings are interpreted. First, students enter the program with a wide range of needs, and an array of services were provided in various combinations and amounts to address the unique needs of each student and family. Participation varies in length and intensity. Thus, the logic model suggests that the impacts of the program will vary depending on the needs.

The lack of an appropriate comparison group is the second major challenge to evaluating outcomes for this study. The most rigorous approach to identifying whether changes in outcomes are attributable to the program would involve an experimental design with random assignment to the

program or a non-program group, which is not possible within this project. It is not known what the attendance and school performance of these students would have been in the absence of the supports provided. In fact, research has shown that attendance levels generally decline between 6th and 12th grade, and the risk of declining attendance appears to be greater in schools with higher levels of poverty (Benner & Wang, 2014). Therefore, programs that aim to improve attendance in middle and high schools face an uphill battle; improving attendance is particularly challenging in these grades, and analyzing attendance outcomes is problematic without a matched comparison group that allows examination of attendance trends without program participation.

This follow-up examination of student attendance and school performance offers some limited evidence of improvement associated with participation in KCWMC, but also some areas of continued concern. Attendance of middle and high school students continued to be a concern after program participation. High school students who entered the program with low grade averages did show some improvement in the marking periods that followed, and the percent of students in KCWMC who graduated was comparable with that of non-program students who had similar attendance histories.

Recommendations

1. KCWMC should work with participating schools to promote strategies to improve attendance, such as student incentives, contracts, mentoring, Truancy Court, and parent workshops.

2. Work with Montgomery County Department of Recreation to continue and strengthen support for students' involvement in after-school activities, such as Excel Beyond the Bell and RecExtra. Previous studies (e.g., National Institute on Out-of-School Time, 2009) have shown a positive relationship between participation in after-school activities and school attendance.

3. Continue to collect and maintain records of students and families who participate in the Multi-Agency Team process, as well as their periodic family stability ratings, so that referral trends and services provided can be monitored, and progress after referral can be tracked.

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Appendix A

Table A-1
Demographic Characteristics of Students
in Kennedy Cluster and Watkins Mill Cluster Schools and MCPS, 2016–2017

	High Schools		Middle Schools		Elementary Schools	
Characteristics	KCWMC (2 schools)	MCPS (25 schools)	KCWMC (4 schools)	MCPS (38 schools)	KCWMC (11 schools)	MCPS (133 schools)
Race/Ethnicity						
Black or African American	30.4	21.6	30.5	21.5	31.0	21.6
Asian	7.7	14.1	8.7	14.8	7.6	13.7
Hispanic/Latino	51.4	29.7	50.5	28.3	50.1	32.3
White	7.4	30.2	7.5	30.7	8.4	27.0
Two or more races	3.0	4.2	2.6	4.6	3.2	5.1
Service Provided						
ESOL (current)	22.6	10.9	16.6	9.1	38.3	23.6
Special Education (current)	13.3	10.3	11.9	11.1	14.2	13.6
FARMS (current)	55.5	30.0	63.4	33.8	67.1	40.3

Appendix B

Table B-1
Schools in the Kennedy Cluster and
Watkins Mill Cluster Project 2016–2017

Elementary Schools
Bel Pre
Brookhaven
Capt. James E. Daly
Georgian Forest
Glenallan
Glen Haven
South Lake
Stedwick
Strathmore
Watkins Mill
Whetstone
Middle Schools
Argyle
Col. E. Brooke Lee
Neelsville
Montgomery Village
High Schools
John F. Kennedy
Watkins Mill

Appendix C

Effect sizes for comparison of two means over time (tested with paired t tests). Effect sizes were estimated for differences between means with the standardized mean difference statistic, or Cohen's *d*, corrected for the correlation between the two measures (Cohen, 1988). The following formula was used:

$$\frac{\text{mean}_{\text{time 1}} - \text{mean}_{\text{time 2}}}{\text{pooled standard deviation of outcome measure}} \Big/ \sqrt{(1 - r)}$$

In this study, time 1 is the year of program entry and time 2 is the following year. r = the correlation between the two measures (time 1 and time 2)

Effect sizes for more than two means over time (tested with repeated measures ANOVA). Partial eta-squared was used as the estimate for effect size of results measured by analysis over more than two measures in time. To allow straightforward comparisons among findings, the partial eta-squared was converted to an effect size measure expressed by Cohen's *d*. The following formulas were used:

$$\text{Partial eta-squared} = \frac{SS_{\text{time}}}{SS_{\text{time}} + SS_{\text{error}}}$$

To convert to *d* (Cohen, 1988):

$f = \sqrt{(\text{eta-squared} / (1 - \text{eta-squared}))}$

$d = 2 * f * \sqrt{(3*(k-1)/(k+1))}$

where k is the number of time measures

In the standard interpretation of Cohen's *d* (Cohen, 1988), an effect size of 0.80 is considered large; 0.50 moderate and 0.20 small. Researchers have recognized that these guidelines may not be the best representation of practical significance in education studies (Lipsey et al., 2013). In education, 0.15 is considered a small and practically significant effect (Lipsey, 1990). This study uses .15 as the criterion for practical significance, of small magnitude.

Appendix D

Two-year attendance of all students in clusters. The school attendance over two years for all students in the Kennedy Cluster and Watkins Mill Cluster elementary, middle, and high schools is shown in Table D-1.

Table D-1
Mean Percent Days of School Attendance Over Two Years for All Students in Kennedy Cluster and Watkins Mill Cluster

		2015-2016		2016-2017			
School Level	***N***	Mean %	SD	Mean %	SD	*p*	Cohen's *d*
Elementary School	5,597	94.2	5.5	93.6	8.6	.000	- .10
Middle School	3,117	95.4	5.0	94.4	6.4	.000	- .38
High School	2,941	92.7	10.1	87.1	15.8	.000	- .83

Notes. SD = standard deviation. Only students with attendance data in the two school years shown are included.

Following attendance of all students in the two clusters over two years showed that average percent of days attended was lower in the second year. Differences were statistically significant for all levels (elementary, middle, and high school), and the effect size indicated differences of practical significance for students in middle and high school (middle school, d = -.38, a small effect size, and high school, d = -.83, a large effect size).

Two-year attendance of students entering the KCWMC Project with low attendance. To examine attendance patterns of students whose attendance rate was low when they entered the program, each school level group (elementary, middle, and high) was divided into high and low attendance groups, above and below the median attendance rate for year prior to program entry. The mean attendance rate from program entry to the year following for the low attendance group at each school level was examined; descriptive statistics and results from paired t-tests are shown in Table D-2.

Table D-2
Mean Percent Days of School Attendance in the Year of Program Entry and the Year Following for Students Starting the Program with Low Attendance

		Year of Program entry		Year after Program entry			
School Level	***N***	Mean %	SD	Mean %	SD	*p*	Cohen's *d*
Elementary School	33	89.4	6.2	90.1	4.1	.540	.13
Middle School	44	81.6	12.6	78.9	15.7	.114	-.44
High School	28	70.7	20.3	56.8	23.7	.001	-.1.12

Notes. SD = standard deviation. Means were tested with paired t tests. Only students with attendance data in the year of program entry, the year prior, and the year following the Multi-Agency Team meeting are included; this limits the sample to those students who began the program during the 2014–2015 or 2015–2016 school year.

The attendance rate for elementary students who started the program with low attendance went up slightly in the year following program entry, but the difference was not statistically nor practically significant. Attendance of middle school students who started with low attendance did not differ significantly in the following year. At the high school level, the mean percent days attended showed a statistically significant decrease—from 71 percent to 57 percent (t = 3.7, df = 27, p = .001)—from the year of program entry to the following year. The changes in attendance rate for the middle and high school low attendance students were large enough to be of practical significance (middle: d = -.44, representing a small effect size; and high: d = -1.12, representing a large effect size).

Unexcused absences of students participating in KCWMC Project with low attendance. The number of unexcused absences also were examined for students who entered the program with low attendance (i.e., below the median attendance rate for the year prior to program entry). The mean number of unexcused absences for students at each school level was examined for the year the student entered the program and for the year following program entry. Descriptive statistics and results from paired samples t-tests are shown in Table D-3.

Table D-3
Number of Unexcused Absences During Program Entry Year and in Following Year for Students Starting the Program with Low Attendance

		Program entry year		1 year after program entry			
School Level	***N***	Mean number unexcused absences	SD	Mean number unexcused absences	SD	*p*	Cohen's *d*
Elementary School	33	14.9	11.0	13.5	8.2	.486	.14
Middle School	44	23.3	21.6	26.8	26.4	.145	-.50
High School	29	41.7	35.5	56.2	45.0	.052	-.57

Notes. SD = standard deviation. Means were tested with paired t tests. Only students with attendance data in the year of program entry, the year prior, and the year following the Multi-Agency Team meeting are included; this limits the sample to those students who began the program during the 2014–2015 or 2015–2016 school year.

Only at the elementary level did the number of end-of-year unexcused absences decrease from the program year to the following year, although the difference was not statistically significant. For students in middle and high school, the number of unexcused absences increased from the program year to the following year, but those differences also were not statistically significant. The magnitude of the differences, however, were of practical educational significance at the middle (d = -.50), and high school (d = -.57) levels.

Students entering the KCWMC Project with low grades. Since the marking period grade averages for all students may not reflect progress of those students who were struggling academically, the grade averages of students whose marking period grade average was low when they entered the program was examined. At each school level (middle and high), students were divided into high and low grade average groups, using the median grade average for the marking period prior to program entry. The mean marking period grade average over time for the students at each school level who started with a low grade average was examined; descriptive statistics and results from repeated measures ANOVA are shown in Table D-4 and Figure D-1.

Table D-4
Marking Period Grade Averages at Program Entry and in Four Marking Periods Following for Students Starting the Program with Low Marking Period Grade Average

		Program entry		1 MP after program entry		2 MP after program entry		3 MP after program entry		4 MP after program entry			
School Level	***N***	Mean MPA	SD	Mean MPA	SD	Mean MPA	SD	Mean MPA	SD	Mean MPA	SD	*p*	Cohen's *d*
Middle School	47	1.86	.78	1.84	.82	1.88	.83	1.94	.92	1.81	.94	.858	.21
High School	25	0.77	.82	1.12	1.16	1.19	1.15	1.49	1.14	1.31	1.22	.006	1.13

Notes. MP = marking period; MPA = marking period average; SD = standard deviation. Means were tested with repeated measures ANOVA. Only students with grade averages in four marking periods after the Multi-Agency Team meeting and whose previous marking period grade average was in the lower half are included in analysis.

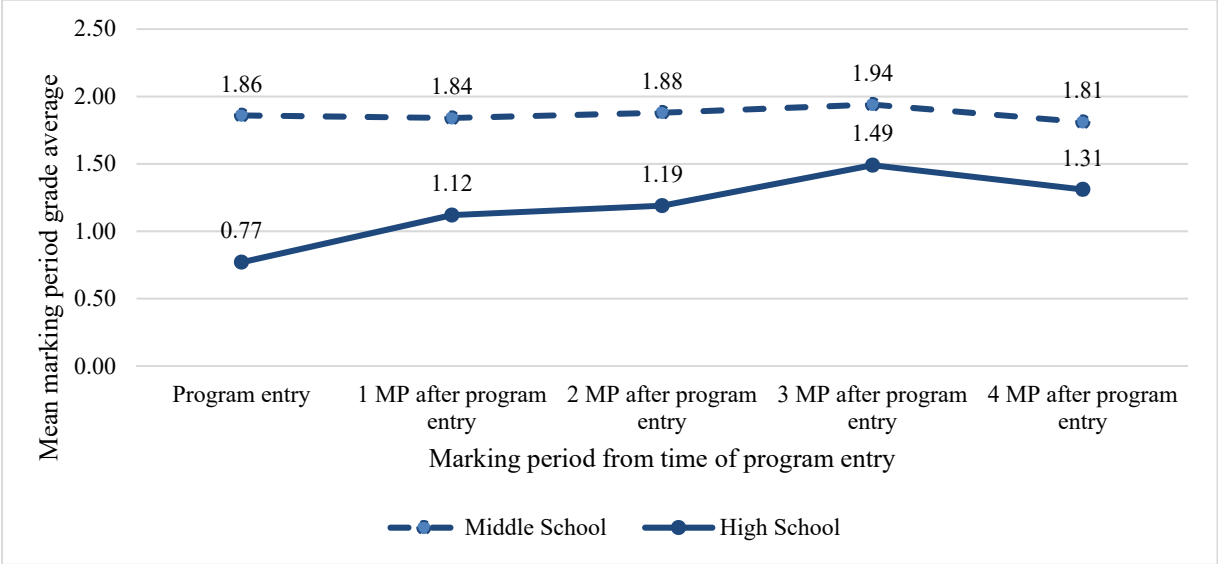

Figure D-1. MPA at program entry and in four marking periods following for middle and high school students starting program with low grade averages.

Mean marking period grade averages for the high school students who started the program with low MPAs increased in the four marking periods following program entry; the change in grade average was statistically significant ($F = 3.82$, $p = .006$; Cohen's $d = 1.13$, indicating a meaningful and large effect over time). The change in grade averages was not statistically significant for middle school students.