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**Comprehensive Approaches to Addressing Mental Health Needs and Enhancing School Security: A Cluster Randomized Controlled Trial\***

**Final Summary Report**

**2015-CK-BX-0017**

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# **Comprehensive Approaches to Addressing Mental Health Needs and Enhancing School Security: A Cluster Randomized Controlled Trial**

## **Final Summary Overview**

**2015-CK-BX-0017**

**Purpose of Project:** This project involves the implementation of a comprehensive intervention to promote school safety coupled with a rigorous research study to understand the impact of the intervention on school safety. Consequently, there are major goals related to the intervention itself as well as related to the research study.

### ***Intervention Goal:***

- 1) Support the effective implementation of a positive school climate intervention based on three key intervention components: (1) restorative practices, (2) mental health first aid training, and (3) assessment of and adaptation to the physical environment of the school.

The guiding principle behind the intervention was that school safety can be enhanced through deliberate and planned efforts to create positive school climate. These efforts to enhance school climate involved the implementation of three evidence-based interventions. The interventions were guided by a three-person implementation leadership team (3-PLT) operating in each of the treatment schools. Component one involved training teachers and staff in restorative practices including the use of restorative language as well as restorative practices including restorative circles and formal restorative conferences. These processes were intended to improve school climate as well as to provide alternative tools for addressing conflicts and behavioral issues. Component two sought to increase the capacity of teachers and other school personnel to identify students who may be experiencing mental health issues including trauma and crises and to make referrals to appropriate mental health services. This was accomplished through training in a formal curriculum known as Mental Health First Aid (MHFA). Component three involved a Crime Prevention Through Environmental Design (CPTED) assessment of the school, recommendations based on the assessment, and changes to the physical environment where feasible. The recommendations from the assessment included actionable steps intended to improve feelings of safety, beautification, ownership, and youth empowerment.

The 3-PLT operated within each of the treatment schools and consisted of a school climate specialist, a school resource officer, and a representative of the school's leadership team, typically a principal. The 3-PLT served as an implementation team to plan and reinforce the interventions, identify barriers, and adapt practices to support effective implementation. The 3-PLT met regularly within the schools and as a community of practice across the treatment schools, facilitated by the Genesee Intermediate School District.

### ***Research Goals:***

- 1) Examine the overall effectiveness of the intervention, estimating prevention benefits with regards to change in violence (e.g., fights, bullying, victimization), mental health (e.g., anxiety, referrals), and school climate over time compared with a control group of students who receive school practice as usual (randomized control trial). This goal includes examination of school-level effects (cluster analysis).
- 2) Examine change within the underlying conceptual model that suggests a reduction in violence stems from improvements to mental health that in turn is improved by more positive school climate (defined from teachers and students).
- 3) Support implementation of an integrated intervention strategy, to study the implementation of the intervention, and identify ways to sustain the intervention.
- 4) Perform a cost-benefit analysis.

### **Project Subjects, Design, Methods and Analysis:**

This project design involved a cluster randomized controlled trial (RCT). The study was conducted in Genesee County, Michigan in a cooperative relationship with the Genesee Intermediate School District (GISD). The random sample is based on 10 treatment schools and 10 control schools that include at least two grades between 4<sup>th</sup> and 6<sup>th</sup> grades. The universe of schools were selected using criteria of having a student population with 50% or higher free or reduced school lunch eligibility, and being committed to the implementation of the 3-PLT team and the interventions, or willing to participate in data collection if selected for participation in the control group. The study involved rolling implementation whereby five treatment and five control schools were enrolled in the study in year one (training in summer 2017; implementation 2017-18 academic year), and an additional five treatment and five control schools in year two (training in summer 2018; implementation 2018-19 academic year).<sup>1</sup>

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<sup>1</sup> During the course of the project, a control school and a treatment school were consolidated resulting in a sample of 10 treatment and 9 control schools in particular academic years.

The study design included a process and outcome evaluation that involved multiple levels of analysis. The process evaluation was focused on understanding the nature of the three interventions as well as their implementation. Consequently, this included observations of training and assessment from training participants. The research team observed meetings of the 3-PLT and reviewed shared communications of the 3-PLT developed as part of the community of practice. As part of this process evaluation, interviews were conducted with treatment school administrators and the CSSI program staff, climate specialists and school resource officers (SRO). Focus groups were conducted with 4th, 5th, and 6th grade teachers at all treatment schools. Meeting notes from the 3-PLT meetings were collected and reviewed from each treatment school.

The outcome assessment included changes in behaviors and perceptions of students, teachers, and staff. It also involved data on school disciplinary incidents. The analysis included assessment of change over time as well as comparisons between treatment and control schools.

Given the school-level RCT, the primary unit of analysis is at the school level. Thus, we are examining treatment effects across the schools. Data collection involved multiple waves of surveys of students in the participating schools, as well as surveys of teachers and staff, and disciplinary records from the schools. Supplementary data collection activities included assessments of training, results from Crime Prevention through Environmental Design (CPTED) surveys, feedback from the 3-PLT, data on program costs and benefits, and a special survey of students and teachers examining the impact of the COVID-19 pandemic. The research team worked with GISD and the 3-PLT teams to develop an implementation guide based on participant observation, review of project meetings and notes, focus groups, and semi-structured interviews.

### ***School Level Descriptive Information by Treatment and Control Conditions***

As a school level RCT, it is informative to understand how well the random assignment process created balance across a number of school-level characteristics. Overall, the mean school level population across all 20 schools in the study was 375.3 (s.d. = 96.1), with control schools enrolling 378.9 students, on average, relative to 371.7 students in the treatment schools. The percent of students on free and reduced lunch was nearly identical across treatment and control schools, whereby 84% of students were eligible for reduced priced lunch in control schools, and 83%, on average, in treatment schools. On-track attendance, a measure of students who are not chronically absent from schools, too, was nearly identical between treatment (73%) and control (73%) schools. With respect to student-teacher ratio, control schools averaged 17.3 students per teacher, while treatment schools averaged 17.5. With respect to student racial composition, control and treatment schools differed somewhat with respect to the percentage of the student bodies that were Black and White, while the balance across Hispanic, multi-racial/ethnic, and other groups were nearly identical. Control schools served a higher percentage of black students (45%) than treatment schools (34%), while treatment schools had a higher percentage of white students (52%) than control schools (40%).

### ***School Staff Sample***

School staff played an integral part in delivering the intervention. As such, we surveyed teachers, staff, and administrators across treatment and control schools. All surveys were delivered post-treatment initiation. Teachers and staff in Cohort 1 were surveyed on four occasions prior to the COVID-19 pandemic (Spring 2018, Fall 2018, Spring 2019, and Fall 2019), while Cohort 2 school officials were surveyed on three occasions (Fall 2018, Spring 2019, and Fall 2019). Responses to the surveys were anonymous, meaning we were unable to track

individual respondents across time. Rather, we utilized a repeated cross-sectional design where we have observations nested within waves, which are nested within schools. The overall response rate for teachers and staff was 87.1% and ranged between 85.4% and 88.6% across waves. This represents a total of 2,078 responses across a total eligible observation pool of 2,386 responses. The majority of the school staff that were surveyed were teachers (68%), followed by support staff (12%). There were no substantive differences in the roles of surveyed respondents across treatment and control conditions. Thirteen percent of the staff surveyed at baseline were male, with 15% of staff from control schools reporting as male and 11% of treatment school staff reporting as male. Lastly, the mean number of years school staff reported having worked in education was nearly identical between treatment and control schools and averaged between 10 and 12 years.

### ***Student Samples***

For the student surveys, we relied upon standard data collection practices of the Genesee Intermediate School District to collect data. Student surveys were collected under passive parental consent, with notices sent to parents before data collection was set to begin informing them of the survey and their ability to opt their child out of participating in the survey. All student surveys were collected anonymously, meaning the research team cannot identify individual student respondents, nor track them across time. Given this, we utilized a repeated cross-sectional design to study student-level outcomes related to the project, with students nested within time, which is nested within Schools. Very few parents in each school and across waves refused to allow their children to participate (i.e., < 20 per wave across all schools), which allowed for an overall response rate that exceeded 90% across all schools and waves. Given the cohort design of the study, students in Cohort 1 of the project were surveyed on five occasions

(Fall 2017, Spring 2018, Fall 2018, Spring 2019, and Fall 2019), while students in Cohort 2 were surveyed on three occasions (Fall 2018, Spring 2019, and Fall 2019). The first wave of data collection across both Cohorts served as pre-test measures taken before the implementation of the treatment. Thus, Cohort 1 has four follow-up observations post treatment, while Cohort 2 has two follow-up observations.

Because of the age range of students involved in the project, two separate survey instruments were used to gather information with 4<sup>th</sup> graders and 5<sup>th</sup>/6<sup>th</sup> graders, respectively. This choice was made based on evidence that students in 4<sup>th</sup> grade may struggle to fully comprehend and provide valid and reliable answers to survey items that use Likert-scale response options and other items that contain more than three choices, while students in the 5<sup>th</sup> and 6<sup>th</sup> grades appear more ready to answer such questions.<sup>2</sup> Constructs measured in these respective surveys are listed in Figure 1. In all, we have 11,766 observations across five waves for our student sample, which represents a 92.8 percent response rate (i.e., 11,766 responses/12,673 eligible respondents). For our 5<sup>th</sup>/6<sup>th</sup> grade sample, we have 7,245 observations, including 1,988 at wave 1, 1,886 at wave 2, 1,820 at wave 3, 808 at wave 4, and 743 at wave 5. For the 4<sup>th</sup> grade sample, we obtained 4,521, including responses from 1,186 students at wave 1, 1,136 at wave 2, 1,086 at wave 3, 591 at wave 4, and 522 at wave 5.

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<sup>2</sup> Mellor, D., & Moore, K. A. (2014). The Use of Likert Scales with Children. *Journal of Pediatric Psychology*, 39(3), 369–379.



**Figure 1: Constructs Measured in Student Surveys**

**4th Grade**

School Disorder  
 Fear of Victimization  
 Perceived Risk of Victimization  
 Delinquency Variety  
 Substance Use Frequency  
 School Victimization Frequency  
 School Commitment  
 Student Relationships  
 Student-Teacher Relationships  
 Classroom Experience  
 School Climate  
 Positive Peer Behavior  
 School-Parent Communication  
 Parent Violence  
 Attitudes Toward the Police  
 Intentions to Report to School Officials  
 Positive Views of Self  
 Future Orientation

**5th/6th Grade**

School Disorder  
 Neighborhood Disorder  
 Neighborhood Fear  
 School Fear  
 Neighborhood Risk of Victimization  
 School Risk of Victimization  
 Delinquency Frequency  
 Substance Use Frequency  
 School Victimization Frequency  
 School Commitment  
 Student Relationships  
 Student-Teacher Relationships  
 Classroom Experience  
 Perceptions of School Discipline  
 School Climate  
 Positive Peer Behavior  
 School-Parent Communication  
 Parent Violence  
 Attitudes Toward the Police  
 Intentions to Report to School Officials  
 Intentions to Report to the Police  
 Family Conflict  
 Family Decision Making  
 Family Activities  
 Family Environment  
 Positive Views of Self  
 Future Orientation

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***School Discipline Data***

Another important source of information on how the treatment regime impacted student behavior and school discipline practices comes from administrative level data on officially documented school disciplinary infractions and the response of school officials to these incidents. Research staff requested data on all officially recorded school disciplinary incidents

from the 2015 to 2020 academic years. All but one school was able to provide this information. The remaining school was only able to generate such data from 2018 through 2020. In total, across the 20 schools there were 46,684 officially documented incidents of student misbehavior recorded in their administrative records systems. The randomization process helped to achieve balance in school level incidents between treatment and control schools. Specifically, the mean number of incidents recorded in the two academic years prior to implementation of the program across treatment and control schools was 484 and 551 incidents per year, respectively.

### ***Analysis Strategy***

The analysis of study outcomes via staff surveys and student surveys used similar methods, with minor alterations due to slight differences in the design of the study, which will be highlighted below. All analyses discussed in this final summary overview were conducted in Stata 17.0 software using all available posttest data. We rely upon the RCT design of the study to help account for both observed and unobserved differences between treatment and control schools. Mixed effects models are used to estimate all treatment effects given the repeated measures cross-sectional design of the study, with observations (level 1) nested within time (level 2), which are nested within schools (level 3). This strategy allows for residual mean differences in study outcomes across schools and time through random intercepts. The models also allowed for systematic differences in treatment effects across schools through the inclusion of a random coefficient indicating treatment versus control groups at the school level. This has been noted as a means to ensure a conservative significance test of program impact.<sup>3</sup> All standard errors were estimated using school level cluster robust standard errors that are robust to heteroscedasticity and autocorrelation within schools.

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<sup>3</sup> Esbensen et al. 2013. Short and Long Term Outcome Results from a Multi-site Evaluation of the G.R.E.A.T. Program. *Criminology and Public Policy* 12:375-411.

Because the design of the evaluation included multiple follow-up observations, our analysis strategy also includes parameters that allow for change in treatment effects over time. Following the work of Esbensen and colleagues (see footnote 3), we allow for the possibility of nonlinear treatment effects over time through the estimation of models that include linear or quadratic functions through the inclusion of orthogonal polynomials. An advantage of this strategy is that the resulting treatment effect estimate represents the mean impact of the intervention across all observed post treatment waves. We include random variance components associated with these measures of time at both levels two and three of the mixed models to allow for differences in the trajectory of the outcome across time and school. We used a joint test of statistical significance to determine whether the linear or quadratic function of treatment effects was ultimately used per outcome through the “test” function in Stata 17.0. Given our use of multilevel models, this joint test was a chi-square test. All models of student outcomes include school-level means of the study outcome measured at the pre-test to account for any pre-treatment differences in these variables by school. Because staff surveys were all completed post treatment, no pre-treatment means were included in these models.

For school discipline data we estimate two-level mixed effects models with observations nested within schools. We aggregated school discipline events (i.e., total number, physical violence, bullying) by year to estimate changes in the yearly rate of school discipline events as well as the rate at which schools used out of school suspensions in response to discipline events. The switch to remote learning in the 2020-2021 academic year presented a challenge to efficiently estimating treatment effects in this academic year, as the rate of documented student misconduct during this academic year was near zero across all participating schools. To account for this, all models were estimated using data both including and excluding the 2020-2021

academic year. Because these outcomes are counts of events, we utilized Poisson regression and the relevant exposure variable to estimate the impact of the treatment on these actions. All standard errors were estimated using school level cluster robust standard errors that are robust to heteroscedasticity and autocorrelation within schools. Like the estimation strategy for the student and staff data, we included orthogonal polynomials to account for time and the possibility of nonlinear treatment effects. The estimated treatment effect, therefore, represents the mean impact of the intervention across all observed post treatment waves. Random variance components associated with these measures of time were included at level two to allow for differences in the trajectory of the outcome across schools. We used a joint chi-square test of statistical significance to determine whether or not the linear or quadratic function of treatment effects was ultimately used per outcome through the “test” function in Stata 17.0. To account for the different size schools involved in the study, models estimating change in the total number of discipline events (i.e., total incidents, physical violence, bullying) in the schools included the total student population as an exposure variable such that treatment effects are interpreted as a rate. For models estimating the rate at which schools used out of school suspensions, the exposure variable was the total number of discipline events in the school in a given year. That is, the pertinent rate for this outcome is not out of school suspensions used per student, but rather the number of times students are subject to exclusionary practices per incident. To account for differences in school size, however, the z-score of the total student population was included as a control variable in these models, and thus is interpreted as the impact of a one standard deviation unit change in student population on the rate of out of school suspensions used per total number of incidents.

## **Project Findings:**

### ***School Staff***

Models estimating the impact of the treatment on school staff perceptions and attitudes suggested a number of improvements in teacher support of treatment related practices. In particular, there were statistically significant improvements both after 1 year and 2 years post program in staff support for practices associated with mental health first aid (1-year  $b = .21$ ;  $p < .05$ ; 2 years  $b = .17$ ;  $p < .05$ ), more positive attitudes about the presence of school resource officers on campus (1-year  $b = .19$ ;  $p < .05$ ; 2 years  $b = .18$ ;  $p < .05$ ), and more support for using restorative practices (1-year  $b = .17$ ;  $p < .05$ ; 2 years  $b = .18$ ;  $p < .05$ ). There was also a significant improvement in staff recognition of the supports provided to them by their local county school district (1-year  $b = .18$ ;  $p < .10$ ; 2 years  $b = .20$ ;  $p < .05$ ). Despite these improvements associated with exposure to the treatment, there were no statistically significant differences between treatment and control school staff in their assessments of school disorder, students' level of fear of victimization, student relationships, student-teacher relationships, classroom experiences, positive parent-staff relationships, negative parent-staff relationships, classroom discipline, school discipline practices, knowledge and use of school assistance for discipline and mental health resources, attitudes about evidence based practices, and attitudes about exclusionary practices.

### ***5<sup>th</sup> and 6<sup>th</sup> Grade Students***

With respect to the 5<sup>th</sup> and 6<sup>th</sup> grade students across treatment and control schools, there were minimal differences between groups across posttest observations for measures of attitudes, perceptions, and intentions. In particular, there were no significant differences between students in treatment and control schools across measures of school disorder, fear of victimization at

school, the perceived risk of victimization at school, school commitment, student relationships, student-teacher relationships, positive classroom experiences, perceptions of school discipline, overall school climate, positive peer behavior, attitudes toward the police, intentions to report infractions to school officials, positive views of oneself, and future orientation. There was a significant increase in intentions to report crimes to the police among students exposed to the treatment relative to students in the control condition that was evident both one-year post program ( $b = .22$ ;  $p < .05$ ) and two years post program ( $b = .22$ ;  $p < .05$ ). With respect to reported behaviors, there were no significant difference post program between treatment and control groups for the frequency of self-reported school-based delinquency or victimization. There was, however, a significant negative impact of treatment status on illegal substance use frequency, with students in treatment schools reporting lower levels of substance use than students in control schools ( $b = -.82$ ;  $p < .05$ ).

#### ***4<sup>th</sup> Grade Students***

Students in 4<sup>th</sup> grade of participating schools were given a self-report survey that contained fewer items than that provided to 5<sup>th</sup> and 6<sup>th</sup> grade students, with questions that typically asked respondents to answer with either a “yes” or “no” instead of Likert scales or higher level response choices. Analyses revealed no significant differences between students in treatment and control schools across measures of school disorder, fear of victimization, the perceived risk of victimization, school commitment, student relationships, student-teacher relationships, positive classroom experiences, overall school climate, positive peer behavior, attitudes toward the police, intentions to report infractions to school officials, positive views of oneself, and future orientation. There were also no significant differences between treatment and control groups with respect to the variety of school-based delinquency experiences and substance

use. There was, however, a positive association between exposure to the treatment and school-based victimization variety that was detected both one-year post program ( $b = .13$ ;  $p < .05$ ) and two years post program ( $B = .14$ ;  $p < .05$ ). Importantly, this scale asked students about lifetime prevalence (i.e., Have any of the following things ever happened to you AT SCHOOL? (At any time in your life.) of seven school-based victimizations, including such things as theft, threats of violence, and physical violence.

### *School Discipline*

Models estimating the impact of exposure to the treatment condition on incidents of student misconduct (i.e., total, violence, bullying) and use of out of school suspensions included 63 observations across 19 schools for estimates including all academic years of data, and 47 observations across 19 schools for estimates derived from data dropping the 2020-2021 academic year given widespread use of remote learning across all treatment and control schools. Consequently, we use a critical value of  $p < .10$  to identify significant treatment effects given the low number of total observations and observations per site. Results including all schools that provided pre-treatment and post-treatment data ( $n = 19$ ) and all academic years suggested that treatment was associated with an increase in the total count of student misbehavior ( $b = .77$ ;  $s.e. = .34$ ;  $p < .05$ ). Importantly, however, there was a single outlier school that reported an increasing rate of student misconduct at a rate that was multiple times higher than other schools in the sample. Supplemental analyses dropping this school from the analysis reduced the treatment effect to null ( $b = .14$ ;  $s.e. = .37$ ;  $p > .10$ ). A similar pattern was evident with respect to incidents of physical violence recorded across treatment and control schools. When the 19 schools with pre- and post-treatment data are included, treatment status was associated with an increase in violence in schools ( $b = 1.06$ ;  $s.e. = .33$ ;  $p < .05$ ), but there was no significant effect after

dropping the outlier school from the analysis ( $b = -.26$ ;  $s.e. = .52$ ;  $p > .10$ ). With respect to bullying, there was no impact of treatment on bullying incidents at school ( $b = -.52$ ;  $s.e. = .36$ ;  $p > .10$ ). Lastly, there was no significant reduction in the use of out of school suspensions per incident in treatment relative to control schools ( $b = -.44$ ;  $s.e. = .41$ ;  $p > .10$ ).

Because all schools in the study used remote learning during the 2020-2021 academic year, with large reductions in the documentation of student misconduct (i.e., near zero documented incidents during the entire academic year), all models were re-estimated dropping this academic year from the analysis. Results suggested no impact of treatment on rates of student misconduct with ( $b = -.13$ ;  $s.e. = .39$ ;  $p > .10$ ) or without ( $b = -.12$ ;  $s.e. = .24$ ;  $p > .10$ ) the outlier school. Rates of physical violence were significantly higher for treatment schools when including the outlier school ( $b = .34$ ;  $s.e. = .18$ ;  $p < .10$ ), but this estimate is not significantly different between treatment and control schools after dropping the outlier school ( $b = .31$ ;  $s.e. = .30$ ;  $p > .10$ ). There was a significant reduction in records of bullying associated with the treatment when including all schools in the model ( $b = -.46$ ;  $s.e. = .28$ ;  $p < .10$ ), but after dropping the outlier school this estimate is not significant ( $b = -.44$ ;  $s.e. = .29$ ;  $p > .10$ ). There was no impact of treatment on the rate of out of school suspensions per incident ( $b = -.36$ ;  $s.e. = .43$ ;  $p > .10$ ).

Overall, the treatment under study did not produce a robust impact on treatment relative to control schools across the total number of disciplinary incidents, acts of physical violence, bullying behaviors, or the use of out of school suspensions per incident. It is worth noting, however, that the results appear to be dependent upon the estimation strategy, including the choice to include controls for rates of incidents per year prior to treatment initiation, the 2020-2021 academic year that was substantively altered due to COVID-19, and an outlier school that



had both a substantially higher rate of student misconduct than other schools that also increased across project years at a rate that far exceeded such records at other schools. The impact of the treatment under study on student misbehavior, as measured through school discipline records, therefore, is unclear.

### ***Implementation Assessment***

As noted above, the study included a systematic process evaluation focused on the implementation of the comprehensive strategies and the role of the 3-PLT. The 3-PLT operated within each treatment school and was supported by the GISD. The GISD commitment included a project director/liaison who facilitated cross-school planning and sharing of information. GISD and the 3-PLTs also cooperated with the research team by allowing researchers to attend meetings, review meeting minutes, and conduct focus groups and interviews.

Fidelity assessment indicated that the interventions were implemented in meaningful fashion in the treatment schools. As noted above, for teachers, administrators, climate specialists and resource officers, survey results showed increased understanding of and support for both restorative practices and mental health first aid. These positive survey results were consistent with the findings from observations, interviews, and focus groups. In the following sections we present some of the qualitative findings from the process evaluation. We present these results in terms of perceptions of the CSSI intervention overall, specific intervention components, and lessons learned.

### ***Overall Assessment***

Many teachers, SROs, climate specialists, and administrators spoke highly of the interventions. Virtually, all school staff mentioned being extremely relieved to have the SRO and

climate specialist at their schools, as they provided much needed support in helping to handle student discipline, and counseling. Examples of this feedback included:

“We keep hearing positive things about the program from teachers. Even at the start, the teachers saw quick changes in youth. Restorative questions from the victims actually made some youth cry. Seeing the great effects of bonding between kids and between teachers and students has been a great motivation for implementing the interventions.” - Climate specialist

“The CSS program is a good idea; it teaches kids how to handle problems more appropriately. As time went on, the CS (climate specialist) and SRO learned how to problem solve quicker and move forward. The program is good for the community and the kids are more empathetic now. Kids that have done classroom circles are nicer to each other.” – Teacher

“I value collaborative time with students instead of kids coming to get discipline”  
– Administrator

One SRO reported the impact of the program:

“Kids come to me and say they were thinking about making a bad decision, but they thought about our conversation and made a better decision and wanted to tell me”. - SRO

### ***Assessment of Specific Interventions – Mental Health First Aid***

Mental health first aid (MHFA) had previously been introduced in the GISD, though not all schools nor teachers and school staff had been trained prior to the CSSI initiative. MHFA is intended to increase awareness among school personnel of signs of mental health distress and trauma so that appropriate referral for assessment and possible treatment can be made. Treatment school personnel were trained in MHFA and feedback from school personnel indicated support.

Sample comments included:

“I attended the Mental Health First Aid training offered through the program. I now know how to identify the warning signs in students.” - Teacher

“Using MHFA, I identified a student with a journal entry that mentioned harming themselves, I was able to quickly make a referral.” - Teacher

“Mental Health First Aid helps in figuring out what the student needs and how to work with them. It also helps in seeing what is going on at a student’s home.” - Teacher

“Mental Health First Aid give us one more tool to use to help students.” -Teacher

“There was a situation that we used MHFA to identify that a student needed treatment. It was an easy process, and the student got the help that they needed.” - Teacher

These comments were reinforced from rapid analysis of administrator interviews that indicated that the mental health portion (i.e., MHFA) was especially important with a high population of mental health disorders.

#### *Assessment of Specific Interventions – Restorative Practices*

The second intervention involved restorative practices. This included restorative principles and language, circles, and formal restorative conferences. Interviews, focus groups, and observations suggested this was the most positively received of all the interventions. Sample comments included:

“Restorative Practices have been wonderful, kids and teachers both love it now.” - Teacher

“When kids feel bad about themselves, I feel comfortable asking if they want to have a circle and can be embraced and accepted.” - Teacher

“Our (teachers) relationships with students have improved and opened up since implementing the program.” - Teacher

“RP (restorative practices) improves the relationships between staff and students. It makes students feel a sense of belonging, importance, structure, and support.” - SRO

These comments by teachers and an SRO were supported by feedback from administrators. One administrator noted a change in student - teacher interactions:

“Teachers will hold circles with students, (this) opens teachers’ eyes to things they may not have known about students. (This) builds empathy and compassion.” - Administrator

Several administrators commented that they saw a change in student-to-student interactions:

“They know there is a process, they can own their issue”, and “it opened up collaboration with other students, where more students are now sharing in circles, and everyone has a voice to value.” - Administrators

### ***Assessment of Specific Interventions – CPTED***

The third component of the CSSI interventions was crime prevention through environmental design (CPTED). This involved a formal assessment of each treatment school by a CPTED subject matter expert, recommendations for specific design elements (e.g., lighting, improving vision lines, signage), and implementation of recommendations within budget feasibility. The recommendations and the ability to implement recommendations varied across the treatment schools and received limited feedback. Although the feedback was limited, it primarily came from administrators and SROs, and was positive. For example:

“As a police officer I had already been exposed to CPTED. CPTED gives the team a ‘lightbulb’. I always knew that I liked some parking lots better than others because I could see everything, but I never realized it was because of a design like CPTED. I enjoyed the technical aspect. I thought that looking at things from a CPTED viewpoint was helpful especially for teachers. It will also be helpful for future grants to help fund improvements.” - SRO

“CPTED report helped us see what we need to keep kids safe.” – Administrator

One SRO commented that he helped the CPTED assessor “identify areas that could invite trouble, such as the tree line.” He also noted that CPTED can increase the awareness of areas that could be risky.”

### ***Assessment of Intervention Structure – 3-PLT***

In addition to the specific interventions, the CSSI was characterized by the leadership structure of the 3-PLT as well as the role of the climate specialists and the SROs. Although our observations suggested variation across the treatment schools in terms of the 3-PLT, overall, this leadership structure appeared to be well received.

“The 3PLT guide was very helpful, and my implementation of the program evolved from listening to input from teachers and the administrator. Scheduling circles with teachers occurred day-to-day sometimes. The administrator was the driver of the project and must be on board to implement the project successfully.” - Climate specialist

The 3- PLT meetings are helpful because they help us “focus on past, present, and future benchmarks, plus planning on goals.”- Administrator

### ***Assessment of Intervention Structure – Climate Specialists***

The role of the climate specialist was seen by many teachers as being essential for the program to be successful, especially due to the support they provided teachers by helping them with their students. By having a climate specialist, teachers had more time to focus on teaching or speaking to a specific student when needed.

“Having a climate specialist has been essential to improving our school climate. The climate specialist has a great relationship with the kids, she builds their confidence with the peer groups she does. The kids would be lost without her. She can sense when the teacher may need help and will step in to help. For instance, I had a kid that was having a breakdown and she jumped in so I could spend time with that student directly.” - Teacher

Other teachers talked more about how the climate specialist was an extremely supportive and helpful resource for a teacher to have available for their classroom, with one teacher stating:

“The climate specialist has been helpful, involved, and wants to help teachers. You don’t feel so alone in the classroom and the kids love her. Some days, we would be lost without her.” - Teacher

Teachers noticed that students appreciated having a climate specialist. For example:

“They (students) have a person to talk to and connect with, kind of like a big sister.” - Teacher

The climate specialist was seen by many school staff members as being essential for the success of the CSSI program in their school.

“Having the climate specialist at school has been helpful, we talk to the climate specialist constantly. Without the climate specialist, the program would not have worked. Having a climate specialist is essential to improving school climate.” - Teacher

### ***Assessment of Intervention Structure – SRO***

In addition to the climate specialist, there was also strong support for the school resource officer. Many teachers and climate specialists commented on the various activities that SROs did with students and how helpful those activities can be to both students and teachers. When referring to their specific SRO and school, one climate specialist stated:

“The SRO teaches law-related education in health class every week and also runs circles. The SRO’s presence has been very helpful for classrooms”. – Climate specialist

Other teachers pointed out the positive relationships that the SROs developed with students, in part due to all the various activities that the SRO did with students.

“The SRO comes in and gives high fives to students. He brings snacks, plays basketball, and he did presentations on safety too. He has helped kids change their minds regarding the police. The SRO is essential, he is a positive role model.” - Teacher

Some school administrators mentioned that having an SRO as being extremely helpful, with one administrator having stated:

“Having an SRO here has been very vital”. - Administrator

*Assessment of Intervention Structure – Relationship of Climate Specialists & SROs*

As new staff to the treatment schools with collaborative roles on the 3-PLT, climate specialists and SROs developed a unique partnership when working with students and staff. The roles that SROs and climate specialists fulfilled were greatly appreciated by school staff members. For example, one teacher commented:

“Some of the components we found most useful was having the climate specialist, school resource officer, and the restorative practices all working together” - Teacher

Almost all the intervention school administrators noticed the value of the roles and partnership between SROs and climate specialists.

“The climate specialist and school resource officer are in classrooms and participate in circles, and even run their own circles. They are both so valuable to have working together for additional support.” - Administrator

Teachers also talked about how SROs and climate specialists were a valuable resource to have for assisting with misbehaving students and disciplinary measures, then providing outcome information about how the problem was handled. One teacher stated:

“When kids go to the SRO and CS (climate specialist) to resolve problems, the problems get resolved and handled faster than the traditional disciplinary process.” - Teacher

Other teachers at intervention schools expressed similar feelings about having both the climate specialist and SRO working together to assist in handling student problems.

“The climate specialist and SRO have been a huge, huge benefit to the school. They have helped in ensuring that students are not missing a lot of instruction time (when they get into trouble).” - Teacher

The positive perceptions of the SROs and the relationship between the climate specialists and SROs also acknowledged that the role of SROs in schools is complex and can be contentious due to lack of trust between some community members (parents, students, school personnel) and the police. They noted that the role of SRO is unique but

also that it can serve to facilitate increased trust and positive relationships. Some of the teachers spoke about how the roles of a traditional police officer outside of the school are different from those of an SRO, then outlined what their SRO had done in their school.

“The role of an SRO is different from the role of a law enforcement officer. They build relationships, are open-minded, and come into the classroom for parties. SROs interact with students in all settings, lunchroom, playground, classroom, etc.” - Teacher

The SROs were also aware that their roles in the school were special and had an impact on students. One SRO mentioned:

“When done right, SROs have a positive attitude and can be a positive influence on kids. When that trust is there, the kids will do the work they need to do by not acting out or getting better grades.” – SRO

Several SROs provided their perceptions about how family dynamics or other influences on students can cause them to be wary of police and how having exposure to an SRO can help to humanize police in the eyes of the youth.

“This program helps kids look at cops differently. They don’t see officers; they see a person that cares about them. After a while, kids realize that cops are meant to keep folks safe. It helps the youth go beyond family taught beliefs. It makes us human.” - SRO

### ***Lessons Learned***

Teachers, administrators, and members of the 3-PLT also offered insights into the key elements of the CSSI interventions that were critical for effective implementation and positive impact within the schools. School staff were asked about ways to improve buy-in and successfully implement the program. Successful implementation was said to be heavily dependent on administrator buy-in. When asked, “If a climate specialist did not have a supportive administrator, what would you suggest (for successful implementation)?”, one climate specialist replied, “I would suggest working with teachers and students directly. Frankly, it is



hard to know what to suggest because a supportive administrator is key to the (implementation) process.”

Several climate specialists suggested that the best way to improve buy-in was to show people the results of the program firsthand and all the successes with students and staff that happen when using the interventions.

“If the administrator in the school is not supportive of the program, don’t give up. Be direct, have the hard conversations, track the successes, invite administrators to watch circles, identify their misunderstandings. Be persistent and you will get administrator buy-in.” – Climate specialist

Administrators that implemented the school safety program held similar feelings as climate specialists regarding ways to increase administrator buy-in. Several administrators suggested reaching out to other schools that had implemented the program to hear about and observe the successes of the program.

“If an administrator is hesitant to implement the CSS program, reach out to other admins (administrators) who have started, observe schools, or talk to climate specialists. There is no reason not to implement the program. It’s one more huge tool for students to be successful.” - Administrator

The project resulted in an implementation guide documenting lessons learned from this study (Koffkey et al., 2021). Due to positive feedback from teachers and students, particularly with respect to proactive restorative practices, GISD has developed capacity internally (e.g., through a train the trainer model) to continue delivering trainings around these interventions.

### ***Cost-benefit Analysis***

Given the limited ability to confidently point to measurable reductions in victimization, out-of-school suspensions, reduced classroom time devoted to discipline, and similar metrics documenting the benefits associated with the interventions, we were unable to conduct a

systematic cost-benefit analysis. We were, however, able to capture data associated with the costs of the comprehensive interventions led by the 3-PLT. We can also compare these costs to estimated benefits associated with reductions in harmful incidents based on other school research. These data provide a mechanism for policymakers and school administrators to roughly estimate the costs associated with this comprehensive school safety approach and to compare to estimated benefits based on reduction in harmful behaviors.

Table 1 presents estimated costs for various categories of expenditures associated with this project involving ten treatment and ten control schools. As is apparent, most of the costs are associated with personnel. The data are also broken down over three years. Recall that implementation followed a rolling approach with five participating treatment schools in year one, ten in year two, and five in year three. Thus, the year two estimates are the most accurate estimates for the interventions operating in all ten schools.

The central support salaries reflect support provided by the GISD to the project. Most critically was the role of project liaison who worked with the research team as well as all 20 of the treatment and control schools. In effect, the project liaison served as an implementation champion whose role was critical to the observed high level of implementation of both the interventions as well as the research design and methodology. The contracted services component of the costs related to two of the critical roles in the treatment schools: the climate specialist and the school resource officer (SRO). The climate specialist and the SRO, along with a member of the school's leadership, comprised the 3-PLT that was responsible for implementation of the interventions at the school level.

**Table 1: Annual and total project costs by spending category**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>
<b>Central Support Salaries</b>				
<i>Project Liaison</i>	\$60,750.00	\$62,483.40	\$63,420.65	\$186,654.05
<i>Program Secretary</i>	\$25,140.80	\$25,350.03	\$25,730.28	\$76,221.11
<i>Finance Accountant</i>	\$19,252.50	\$19,638.83	\$20,033.87	\$58,925.20
<u><i>Subtotal</i></u>	\$105,143.30	\$107,472.26	\$109,184.80	\$321,800.36
<b>Contracted Services</b>				
<i>Climate Specialists</i>	\$276,000.00	\$560,280.00	\$284,342.10	\$1,120,622.10
<i>School Resource Officers</i>	\$257,500.00	\$522,725.00	\$265,282.94	\$1,045,507.94
<i>School Data Technicians</i>	\$83,904.00	\$85,162.56	\$86,440.00	\$255,506.56
<i>School Safety Consultant</i>	\$17,500.00	\$35,000.00		\$52,500.00
<i>Stipends for control group</i>	\$75,000.00	\$150,000.00	\$75,000.00	\$300,000.00
<u><i>Subtotal</i></u>	\$709,904.00	\$1,353,167.56	\$711,065.04	\$2,774,136.60
<b>Training</b>				
<i>YMHA First Aid training (5 per year)</i>	\$2,500.00	\$2,500.00		\$5,000.00
<i>Restorative Justice Training (5 per year)</i>	\$11,250.00	\$15,000.00		
<i>Training supplies (10 trainings per year X \$575 per training)</i>	\$5,750.00	\$5,750.00		\$11,500.00
<u><i>Subtotal</i></u>	\$19,500.00	\$23,250.00	\$0.00	\$42,750.00
<b><u>Total Implementation Costs</u></b>	\$834,547.30	\$1,483,889.82	\$820,249.84	\$3,138,686.96
<b>Travel</b>				
<i>Project Director Travel</i>	\$772.80	\$772.80	\$772.80	\$2,318.40
<i>Mental Health Faculty Travel</i>	\$2,576.00	\$5,060.00	\$5,060.00	\$12,696.00
<u><i>Subtotal</i></u>	\$3,348.80	\$5,832.80	\$5,832.80	\$15,014.40
<b>Project Office Supplies</b>				
<i>Laptops</i>	\$6,900.00	\$5,750.00		\$12,650.00
<i>Printers</i>	\$1,000.00	\$1,000.00		\$2,000.00
<i>Tablets</i>	\$3,540.00	\$2,950.00		\$6,490.00
<i>Office supplies</i>	\$800.00	\$800.00	\$800.00	\$2,400.00
<u><i>Subtotal</i></u>	\$12,240.00	\$10,500.00	\$800.00	\$23,540.00
<b><u>Total Research Costs</u></b>	\$15,588.80	\$16,332.80	\$6,632.80	\$38,554.40
<b><u>Total Project Costs</u></b>	\$850,136.10	\$1,500,222.62	\$826,882.64	\$3,177,241.36

The other roles under contractual related to support for the research and the interventions. The data technician worked with the schools and the research team to track a wide range of metrics used in the research. The school safety consultant conducted safety assessments and developed safety plans for each treatment school based on CPTED principles. Stipends were provided to the control schools to support their data collection and offset costs for agreeing to participate in the study.

As noted in the table, just under \$43,000 was spent on training in restorative practices and mental health first aid. These costs were frontloaded in year one and two to support the implementation of the interventions. Of note, the GISD followed a train-the-trainer model whereby school climate specialists and other personnel within the district were trained to continue to provide training in year three and following the end of the grant-funded project.

Finally, there were travel and office supply costs that primarily related to costs associated with participation in the research project.

Costs are broken down by school and student in Table 2. Year 2 represents the best estimate of total annual costs as all ten treatment schools were participating in the implementation of the comprehensive strategies. As noted, the cost per school was estimated at just over \$148,000 for the year. The average cost per student was estimated at \$824. These estimates are likely higher than would be the case for many school districts for several reasons. First, they include some costs associated with participation in a systematic research study such as central support and office supplies. Second, some of the personnel costs may already be included in a school or school district budget. For example, schools employing climate specialists or school resource officers may already incur many of the estimated expenses.

**Table 2: Average cost per school, per student**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Total</b>
<i>Implementation Costs</i>	\$834,547.30	\$1,483,889.82	\$820,249.84	\$3,138,686.96
<i>Total Schools</i>	10	10	10	10
<i>Average Cost per School</i>	\$83,454.73	\$148,388.98	\$82,024.98	\$313,868.70
<i>Total Students</i>	1800	1800	1800	5,400
<i>Average Cost per Student</i>	\$463.64	\$824.38	\$455.69	\$1,743.72

The expenses are also given additional context when considering the costs associated with school conflict and violence. Table 3 presents estimated expenses for types of violent incidents that schools may experience. These include relatively rare incidents of homicides and suicides, as well as more common incidents of self-harm and assault. These estimates suggest that prevention of a relatively small number of self-harm and assault incidents would more than make up for the costs associated with this comprehensive safety intervention.

**Table 3: Medical costs associated with four types of violent incidents among youth aged 0-15 (2019)<sup>1</sup>**

	<b>Homicide</b>	<b>Suicide</b>	<b>Self-Harm</b>	<b>Assault</b>
<i>Rate (incidents per 100,000)</i>	1.5	0.9	76.7	168.3
<i>Cost per incident</i>	\$20,157	\$12,821	\$24,920	\$10,263

**1. Source: Economic Cost of Injury Estimates, CDC**

[https://www.cdc.gov/mmwr/volumes/70/wr/mm7048a1.htm?s\\_cid=mm7048a1\\_w](https://www.cdc.gov/mmwr/volumes/70/wr/mm7048a1.htm?s_cid=mm7048a1_w)

### ***Impact of COVID-19 Pandemic***

The schools were significantly affected by the COVID-19 pandemic. This had implications for the continued implementation of the intervention, as well as for research activities. GISD worked with each of the treatment schools to continue the intervention in the 2020-21 academic year. During fall 2021, the treatment and control schools followed different enrollment patterns based on their specific school districts. This included hybrid enrollment

(some students in person, some in virtual classrooms) as well as all virtual learning and variations of in-person, virtual (e.g., rotating days). In mid-fall as the pandemic intensified, the schools moved to a complete virtual format. The treatment intervention was modified to accommodate these learning environments. The school climate specialists proved to be valuable resources to teachers, parents, and students. The school resource officers moved to a more limited role but continued to be part of the treatment.

The pandemic resulted in school closures just as the research team prepared to collect what would have been the final teacher, staff, and student surveys. We considered the possibility of trying to collect student data remotely but in consultation with school officials decided that the history effect of not being in school, administration effects, and the fear of low responses precluded this and would not have yielded data that could be compared to prior waves of the survey.

During this period, we collected data from teachers and climate specialists to assess whether there were differences in treatment and control schools in maintaining contact with students and the quality of those interactions during the pandemic period of remote, virtual learning. These data are being analyzed and will be reported in peer-reviewed journals.

### **Implications for Policy and Practice:**

**3-PLT Model:** The treatment schools demonstrated that with support from the school district, as well as school leadership, a comprehensive school safety model could be successfully implemented. The model was based on a 3-person leadership team, including school climate specialists, utilizing restorative practices, mental health first aid, and crime prevention through environmental design. There was strong teacher support for the interventions. Although the

findings did not reveal consistent differences in attitudes and reported behavior among students, these null findings should be taken in context. A concern raised by many stakeholders contemplating the incorporation of restorative practices in schools is that the approach may lead to increased student misconduct and school disorder because the ramifications associated with rule violations are not as severe as traditional school discipline. Results of the current study suggest schools did not experience a robust increase in school misconduct, and students and teachers did not report a diminution in school climate. Thus, current results suggest school climate and student misconduct are not negatively impacted by a change to restorative practices.

**Training:** The project included training in the comprehensive school model and followed a train-the-trainer approach. This resulted in increased capacity in the treatment schools, Genesee Intermediate School District staff, and research staff, in the principles related to the project interventions (restorative practices, mental health first aid, CPTED). Although we do not have data on replicability, the results of the study suggest this model is sustainable and replicable in other schools.

## **Future Research**

The current study was a significant investment on the part of the National Institute of Justice into the viability and effectiveness of comprehensive approaches to school safety. Our study highlights the difficulty in both changing the ways schools operate, but also in evaluating the effectiveness of such changes. In particular, school-level RCTs are difficult to evaluate without a large number of participating schools, which makes such efforts resource intense. Future researchers planning to evaluate such interventions, however, should anticipate idiosyncratic issues across schools that can impact their ability to evaluate interventions. The current study faced issues associated with school closures, school mergers, changes in school

grade-level composition, and the loss of historic administrative data that rendered some observations inconclusive or non-existent. Given this, researchers should anticipate such issues when determining adequate sample sizes to draw school-level inferences.



### **Scholarly Products Produced or in Process:**

- Melde, C., McGarrell, E., Heinze, J., Franzen, S., Franke, D., Eisman, A., Rexin, M., & Yake, J. 2022. "Outcome Evaluation Results of a Comprehensive School Safety Initiative: A Cluster Randomized Trial." Presentation at the Annual Meeting of the Academy of Criminal Justice Sciences.
- Koffkey, C., Franzen, S., Michaels, K., Eisman, A., Markee, P., Hutchison, P., & Melde, C. 2021. *Comprehensive School Safety Implementation Guide*. University of Michigan, School of Public Health, Youth Violence Prevention Center (unpublished).
- Eisman, A., Heinze, J., Kilbourne, A., Franzen, S., Melde, C., McGarrell, E. 2020. "Comprehensive Approaches to Addressing Mental Health Needs and Enhancing School Security A Hybrid Type II Cluster Randomized Trial." *Health & Justice* 8,2. <https://doi.org/10.1186/s40352-020-0104-y>
- Scott, B., Heinze, J., Zimmerman, M., Melde, C. & McGarrell, E. 2021. "School Victimization and Commitment: Why Extracurriculars Matter." Poster Presentation. *ResilienceCon* 2021 Virtual Conference, April 11-13, 2021.
- Genesee Intermediate School District. 2021. "The Power of the Circle: Restorative Practices in Education." Training program offered to district schools (5 offerings in spring 2021).
- Scott, B. et al. 2021.. "Using Implementation Facilitation to Enhance Delivery of Mental Health First Aid as Part of a Comprehensive School Safety Program." Presentation at the American Public Health Association annual conference.
- Franke, D., McGarrell, E. and Melde, C. 2018. "Restorative Practices in Flint, Michigan Elementary Schools: A Randomized Controlled Trial." Presentation at the annual meeting of the Academy of Criminal Justice Sciences.
- McGarrell, E. 2017. "Comprehensive Approaches to School Safety in Genesee County, Michigan." Presentation at the National Institute of Justice, National Comprehensive School Safety Initiative Conference. Alexandria, VA

### **Papers in Process:**

1. "Enhancing School Safety through a Comprehensive School Safety Intervention: A Cluster Randomized Controlled Trial"
2. "The Relationship between School Climate and Student Mental Health Outcomes."
3. "Implementation of an Integrated School Safety Intervention."
4. "Measuring Costs and Benefits of a Comprehensive School Safety Intervention."
5. "Teacher Assessment of a Comprehensive School Safety Intervention."
6. "Does a Comprehensive School Safety Intervention Build Capacity and Resilience During a Global Pandemic: Teachers Offer Perspective."
7. "Does a Comprehensive School Safety Intervention Help Students Cope with a Global Pandemic."

8. “Implementing Crime Prevention Through Environmental Design (CPTED) in Schools: An Administrator Perspective.”
9. “School Victimization and Commitment: Why Extracurriculars Matter.”
10. “Family Activities Protect Youth from Risky Behaviors at School.”
11. “Student attitudes toward School Resource Officers.”