Safe and Supportive Schools (S3)

GRANT DESCRIPTIVE STUDY

S3 Grantee Profile | Maryland State Department of Education

Highlights

The primary school climate improvement goal of Maryland's four-year[1] Safe and Supportive Schools (MD S3) grant was to reduce high rates of drug- and violence-related behavior in 31 high schools that fully implemented interventions across 12 school districts. The MD S3 grant was unique in that it employed a randomized controlled trial (RCT) research design to test the effectiveness of the Positive Behavioral Interventions and Supports (PBIS) framework. This design involved a total of 58 high schools, 31 of which received interventions and 27 of which served as comparison schools. From baseline to final year, 100 percent of schools with "fully implemented"[2] interventions and sufficient data reported a decrease in student alcohol use; 87 percent reported a decrease in harassment of bullying on school property; 80 percent reported improved school safety scores; and 80 percent reported a reduction in the number of suspensions due to violence without serious injury.

How Did They Do It?

MD S3 collected annual school climate survey data and worked with the districts and schools to use discipline, incident, and administrative data to choose and implement evidence-based interventions. MD S3 was implemented as a collaboration between the Maryland State Department of Education (MSDE), the Sheppard Pratt Health System (SPHS), and Johns Hopkins University (JHU). MD S3 built upon Maryland's established PBIS effort, in place since 1999. The PBIS Maryland was successful in training more than 1,037 schools in school-wide PBIS prior to the grant; however, increased support was needed to meet the needs of struggling students in low-performing high schools. The MD S3 grant was designed to fill that gap, focusing on implementation of PBIS and more intensive targeted interventions in the 31 MD "intervention" high schools.

MD S3 implemented the grant using a rigorous randomized controlled trial (RCT) design. Schools were randomly selected by a statistician to receive the MD S3 intervention (i.e., receive training, intervention supports, and technical assistance) or, alternatively,

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[1] While the S3 grant funded all of the grantees for four years, grant activities extended into a fifth year. This profile summarizes activities reported by grantees across all years in which they were actively working with participating districts and schools to improve school climate. However, the Results section presents data only on schools that achieved "full implementation."

[2] MD S3 defined *fully implemented schools* as trained schools with high-fidelity Tier 1 and Tier 2 PBIS supports.

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serve as comparison schools (i.e., receive no training or intervention supports until the end of the project). Specifically, in Year 1 of the grant 29 schools were enrolled into the intervention condition and 23 into the comparison condition. In Years 2 and 3 of the grant, two schools were added to the intervention condition and four to the comparison condition, bringing the total number of schools to 31 intervention and 27 comparison schools, for a total of 58 schools. All 58 schools provided administrative and school climate survey data across four annual waves of data collection.

School Participation

The MSDE, SPHS, and JHU participated in the recruitment and selection of school districts (also referred to as *local education agencies* [LEAs][3]) and schools. Participating districts were selected based on an invitation from the Maryland State Superintendent followed by the MD S3 Team's presentation of the initiative and the requirements for participating districts and high schools. Attempts were made to engage districts that both met the application requirements and had the highest concentration of low-achieving high schools (e.g., high habitual truancy and suspensions for bullying, substance abuse, and violence). All of the districts approached about participation in the MD S3 Initiative volunteered to participate. After selection and acceptance into the MD S3 program, schools were randomly assigned to either the intervention or the comparison condition.

MD S3 Grant Year 4 Demographics (School Year 2013–14)

This section provides descriptive information about participating districts and schools and the demographics of the students they served. See also Appendix A for a list of MD S3's participating districts and schools.

Number of districts served: 12 districts

Number of schools served: 58 high schools (31 intervention, 27 comparison)[4]

School size: Range: 331–2,224 students; average: 1,250 students

Total number of students served by MD S3 schools: 72,500

Participating schools' student demographics

Race and ethnicity:[5]

- 52 percent White
- 34 percent Black
- 7 percent Hispanic
- 4 percent Asian/Pacific Islander
- 0 percent American Indian/Alaskan[6]
- 4 percent two or more races

Other student demographics:

- 35 percent free- and reduced-price-lunch eligible
- 11 percent with individualized education programs (IEPs) [7]

Source: NCES Common Core of Data (CCD)
(http://nces.ed.gov/ccd/schoolsearch/index.asp)

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[3] Grants were awarded to State education agencies (SEAs), and S3 states partnered with a selection of local education agencies (LEAs), or school districts and participating schools. In these profiles, consistent with grantees' use of terminology, we use the term *districts* (in lieu of *LEAs*).

[4] Readers should note that, while demographics are reported for all 58 schools, just 31 received the intervention. NCSSLE did not have access to the list of control schools. MD S3 reported that the control schools were offered the intervention supports beginning in Year 5; thus, we liberally interpret them as beneficiaries of their efforts.

[5] Percentages were calculated by dividing the reported number of students in a given demographic by the total reported enrollment. Due to data reporting inconsistencies, totals may not equal 100 percent.

[6] The percentage of students who are American Indian/Alaskan is below 1 percent and, therefore, is reported as 0 percent.

[7] The percentage of students with IEPs was reported by the S3 project staff in their final performance report.

Key Partners

The MD S3 Initiative was a collaborative partnership between the MSDE, SPHS, and JHU. MD S3 leveraged existing external partnerships that were essential to implementing the S3 grant. These partnerships further promoted collaboration across inter-related student service divisions as well as other community and university partners. MSDE partnered with two external core agencies and two other additional partners. These included:

Core Partners
- **The Sheppard Pratt Health System** (SPHS), which assisted with the implementation of evidence-based programs (EBPs) to meet student needs and worked collaboratively with MDES and JHU to conduct training and provide technical assistance to school-based staff.
- **Johns Hopkins University** (JHU), which partnered with SPHS and MSDE to develop the MD S3 School Climate Survey System and oversee fidelity of implementation, surveys, and other data collection activities for the project. They also conducted presentations at professional meetings and trainings, documented the psychometric properties of the MD S3 School Climate Survey, conducted intervention effectiveness and evaluation studies, and assessed project outcomes using a randomized controlled trial design.

Additional Partners
- **Center for School Mental Health** at the University of Maryland, which provided technical assistance and information on EBPs specific to the needs of participating high schools, assisted with the implementation of Cognitive Behavioral Intervention for Trauma in Schools (CBITS), and supplied a community resource mapping manual.
- **National PBIS Technical Assistance Center**, funded by the Office of Special Education Programs (OSEP), which developed the capacity of schools to prevent problem behaviors, promote positive school culture, and evaluate the impact on both social and academic success of all youth, including those with the highest level of need.

Project Components

Infrastructure Development

To the extent possible, the MD S3 grant built upon existing State student support efforts while simultaneously funding significant operational and infrastructure development. Over the course of the grant period, MD S3 enhanced their infrastructure by:
- Developing the MD S3 School Climate Survey System, which can be used as a sustainable and valid statewide system for assessing school safety, engagement, and environment as reported by students, staff, and parents. The MD S3 Survey is now available to schools statewide through additional grants held by JHU faculty, and the broader partnership with MSDE and SPHS.
- Creating on online resource binder that contains toolkits, trainings, templates, best practices, and EBP orientations (see the Products section for more information).
- Building capacity throughout the State for training and implementation of EBPs at the State and district levels to ensure sustainability beyond the grant term.

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School Climate Measurement

MD S3 was a data-driven effort that utilized administrative and survey data to focus school climate improvement efforts, decide where to concentrate resources, and help select appropriate interventions. These data also were used to develop School Climate Profile Scores (Maryland's name for its school safety scores) to monitor change over time. Although MD S3 anticipated concerns regarding the public posting of the School Climate Profile Scores, the distributed information that accompanied sharing of the scores was well managed and, in turn, did not pose a significant challenge for the State, districts, or participating schools. The following describes MD S3's measurement tools.

Administrative Data

Administrative data on referrals, suspensions, attendance, and academic records were furnished through the Maryland Report Card. The report card shares the most current information (graduation, demographic, enrollment, attendance, and school achievement data) to assist stakeholders in measuring student achievement in all 24 Maryland school districts from year to year.

Surveys

MD S3 administered the following surveys annually each spring from 2011–15.
- MD S3 School Climate Survey for students, parents and staff
  - The instrument was developed by a research team at the Johns Hopkins University Center for Youth Violence Prevention in collaboration with MD S3 State partners.
  - Survey items were derived from focus groups with youth and district staff and included previously published and validated measures (e.g., Youth Risk Behavior Survey [YRBS], Communities That Care Youth Survey [CTCYS], and Monitoring the Future [MTF]).
  - Three parallel surveys were developed for students (168 questions), school staff (94 questions), and parents (62 questions). The surveys were also translated into Spanish.
  - Consistent with the U.S. Department of Education (USDOE) model of school climate, the MDS3 School Climate Survey assessed three broad areas of school climate: safety, engagement, and environment, which break down into 13 specific factors (safety, bullying and aggression, substance use, connection to teachers, student connectedness, academic engagement, school connectedness, parent engagement, equity, rules and consequences, physical comfort, support, and disorder) (see Bradshaw, Waasdorp, Debnam, & Lindstrom Johnson, 2014, for psychometrics).
  - Student participation in the survey ranged from approximately 25,000 to 32,000 per year, or an annual average of 28,550 across all four years of the project.
  - For additional details on the survey and its psychometrics, as well as administration procedures, see Bradshaw, Waasdorp, Debnam, & Lindstrom Johnson, 2014.[8]

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[8] Bradshaw, C. P., Waasdorp, T. E., Debnam, K. J., & Lindstrom Johnson, S. (2014). Measuring school climate: A focus on safety, engagement, and the environment. *Journal of School Health, 84,* 593–604. doi: 10.1111/josh.12186

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All surveys were administered electronically. Details about the survey system, including how to access the system as well as generate reports, are available in the [MD S3 Survey System Reporting Manual](#).

School Safety Scores

The **school safety score** is a figure calculated based on a formula that uses survey data, incident data, and other data representing factors known to influence student and school success. The scores are used to facilitate comparisons between schools in the same State and for individual schools over time. The following summarizes MD S3's School Safety Score.

- *Name of score*: School Climate Profile Score
- *Formula:* The School Climate Profile Score is calculated using 71 items from the MD S3 School Climate Survey, which is composed of three scale scores (Safety, Engagement, and Environment). The three scales are combined using a weighted average of 30 percent for each scale and 10 percent for out-of-school suspension and truancy incident data. The suspension data are computed from the total number of out-of-school suspension offenses for the school year divided by the school enrollment. The incident data are rescaled to reflect the percentage of students not suspended and not habitually truant, respectively. The School Climate Profile Score is calculated on a scale of one to seven, with seven indicating a more positive school climate.
- *Hyperlink:* No longer available (site taken down following close of grant.[9]
- *Change over time:* Change in school safety scores are reported in the Results section with other Government Performance and Results Act (GPRA) data.

Interventions: Frameworks, Programs, Practices, and Strategies

Key interventions used by those schools in the intervention condition were decided through collaboration between State and district partners based on current needs and priorities. MD S3 used survey data collected each spring and the most recent administrative data to inform the selection and implementation of a variety of interventions and approaches (see Table 1). The specific frameworks, programs, practices, and strategies were tailored to the needs for each school and district.

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[9] Original link: http://www.marylandpublicschools.org/MSDE/divisions/studentschoolsvcs/student_services_alt/MDS3/cp/ Individual school scores were found by selecting the county from the list of participating districts on the right side of the web page, and then the specific school in that county.

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Table 1. Intervention frameworks, programs, and practices

Frameworks
• PBIS (21)[10]
Tier 1 Programs
• Botvin Life Skills Training (LST)* (4) • Olweus Bullying Prevention Program (9)
Tier 2 Programs
• Check and Connect* (16) • Check-In/Check-Out (CICO)* (19)
Tier 3 Programs
• Cognitive Behavioral Intervention for Trauma in Schools (CBITS)* (2)

Note: * indicates a program that is classified as an Evidence-Based Program (EBP), meaning that it is found on the National Registry of Evidence-based Practices (NREPP) or the What Works Clearinghouse; the number of schools using each intervention is noted in parentheses.

The following exhibit (see Figure 1) displays specific, evidence-based programmatic interventions used by MD S3 mapped onto their school climate model.

Figure 1. Linking evidence-based programs with school climate model

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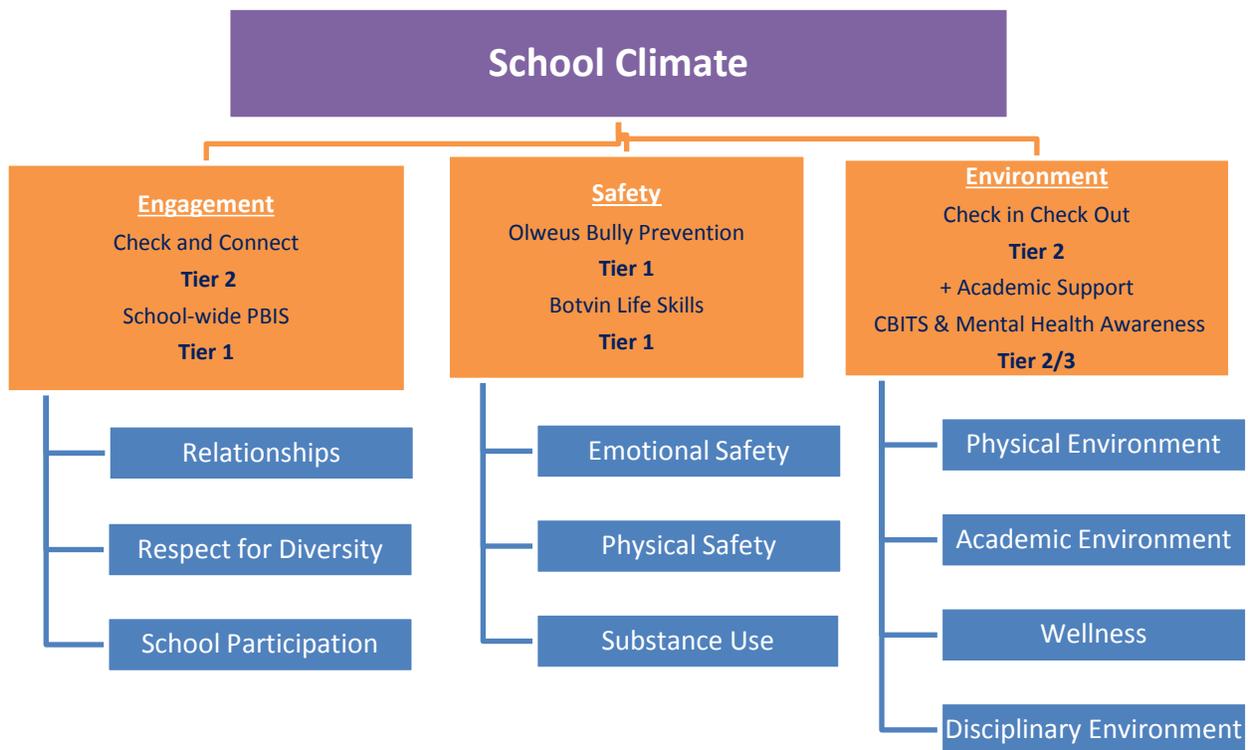
[10] MD S3 reported that, by the last year of the project, just 21 of the 31 intervention schools trained on PBIS reached over 80 percent fidelity as assessed by the School-wide Evaluation Tool (SET).

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Engagement Strategies

In addition to frameworks, programs, and practices, MD S3 implemented a number of strategies to engage different groups affected by school climate. Four work groups guided the initiative, focusing on youth voice, mental health, bullying prevention, and the Common Core State Standards (CCSS) connections (with academics). These work groups included membership from all staff levels—from school climate specialist (SCS) to project director—and identified specific, desired outcomes driven by the needs identified in the intervention schools in which the SCSs worked.

Also, a number of strategies were used to engage different groups affected by school climate. Specifically:

- *State, district, and school leadership* was engaged through annual meetings and administrative meetings in which survey data were shared and reviewed with the leaders of both intervention and comparison schools and their district leadership.
- *Staff* were involved through training in EBPs and support in implementing them with fidelity. MD S3 also offered professional development to explain and answer questions about the connection between school climate and academics, particularly the integration of Common Core standards and school climate.
- *Student voice* was emphasized in Youth Empowerment Summits (spring and fall 2013), and the MD S3 Summer 2013 Institute, which focused on giving power to youth voice. Topical film festivals were also held at high schools in different counties to engage students outside of the classroom on issues pertinent to their specific settings. Some of the films screened included "Teaching Expectations," "Bullying Prevention," and "Character Kickoff." Materials specific to youth voice are included in the MD S3 online resource binder (see the Products section). An anti-bullying video can be viewed at https://youtu.be/Fl0dyjaX5rU.
- *Family and community partnerships* were promoted through inclusion of stakeholders as school-based team members, invitations to participate in planning and implementation of events (character kickoffs, PBIS rollouts), bullying prevention community committees, collaborative partnerships between community agencies and schools specific to the implementation of EBPs, and data sharing when appropriate.

Training, Coaching, and Technical Assistance

Professional development supports such as training, coaching, and technical assistance (TA) let staff know that school climate is a priority. Training helps staff develop the skills they need to understand the issues, use data to guide their work, and effectively implement intervention(s) with fidelity. Coaches can provide a range of supports, such as keeping school climate and student support materials up to date, mentoring staff about policies and practices, or conducting observations and performance feedback sessions. Technical assistance, provided by members of the school climate team or contractors, can support communities of practice among coaches or school staff, help outline training plans, aid in conducting research to support the work, or help school climate teams address issues such as the need for adaptations to interventions.

Training

MD S3 provided a variety of training events for MDSE staff, school and district administrators, teachers, support staff, students, and other partners. For example:

- **June 2013 MD S3 School Teams Trainings**: These training sessions focused on two main topics: youth voice and mental health supports. For youth voice, student participants met in small groups in the morning and presented their perspectives to

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the adults in the afternoon. During lunch, youth shared videos that they had created. To train schools on integrating mental health with education, schools networked with one another and learned from an affiliated partner, UMD's Center for School Mental Health. The activity was structured such that teams could share celebrations and problem-solve roadblocks with other schools. Planners organized table discussions around each of the EBPs. In addition, an MSDE representative spoke about the importance of considering suggestions for aligning the Common Core with both academics and behavior.

- **June 2013 Leadership Summit:** School climate coaches, students, school leadership, staff, and MD S3 technical assistance coordinators attended this summit. Building leaders were trained to use the District Capacity Assessment tool to bolster support for the MD S3 Initiative. Time was also dedicated to mental health awareness/training on recognizing mental health warning signs and knowing the appropriate path for referring students for support.
- **Winter 2014 Booster Sessions:** These sessions offered "refreshers" to school administrators on the use of the MD S3 School Climate data, fidelity data, and observational data. These sessions also reviewed the use of the data to inform the implementation and sustainability of the EBPs.
- **Equity Conference Fall 2015:** 350 State, district, and school personnel attended this full-day training and action planning conference. Two national experts presented on disproportionality of school discipline and related problem-solving strategies. A panel of local school system leaders also presented and shared information pertaining to their respective efforts to educate and support "all" of Maryland's youth.
- **Annual Summer Institute:** This institute, held for both intervention and control schools, offered information on EBPs, presentations from national experts, processes for implementation, and peer-to-peer knowledge sharing.
- **Ongoing Trainings**:
  - Web-based data reporting systems; these were led by research and evaluation teams for each district and school administrators at all 58 schools.
  - The following interventions: PBIS, Botvin Life Skills, Olweus Bullying Prevention, Check and Connect, and Check-In/Check-Out.
- **Community and School Resource Mapping:** Participating schools were trained in this technique during MD S3 summer training. School climate specialists (SCS) provided TA and coaching to school and district teams following the training during scheduled team meetings.
- **School Networking Opportunities**: In response to school requests, in addition to conference-based networking opportunities, MD S3 facilitated networking through joint webinars and meetings so that school teams could problem-solve and celebrate implementation efforts.

Coaching and Technical Assistance Model
A trained team of 10 school climate specialists led trainings and on-site coaching activities to ensure high-fidelity implementation of the EBPs in the 31 intervention schools (see the Results section, Additional Analyses subsection, for information on the fidelity tools that were used). The coaches were expected to spend approximately two days per week working with each of their three assigned schools to support high-quality implementation of the prevention programs. Additional support and TA were provided to district-level teams to encourage high-quality implementation and sustainability. District teams comprised local stakeholders (youth, parents, community members, and staff) who actively participated in all phases of the project.

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Product Development and Dissemination

To support training, TA, and program implementation, S3 grantees developed a variety of unique products. These include theoretical and logic models, administrative guides, reference manuals, toolkits, videos, reports, Web pages, briefs, workbooks, fact sheets, rating forms, readiness and implementation checklists, and peer-reviewed journal articles. In addition, grantees developed and offered many training presentations and webinars. These resources were shared broadly among participating districts and other districts that took an interest in the work being done. Key products generated by the MD S3 grant include:

- [Resource Binder](), the hub for all MD S3 resources, intervention guides, data, and ready-to-use templates. This online platform contains a wealth of information that can be accessed and utilized by MD S3 schools as well as by schools, districts, and education agencies outside of the grant, statewide and nationwide. The Binder includes information on:
    - **Bullying prevention** (e.g., prevention and intervention, parent training, sample surveys, anti-bullying activities)
    - **Specific programmatic interventions** (e.g., Tier I PBIS, Botvin Lifeskills, CBITS, Check and Connect, Youth Mental Health First Aid)
    - **Coaching** (e.g., discussion guides, coaching templates for data-based decision making, resource mapping, and shared responsibility)
    - **Data** (e.g., "Understanding your Data" worksheets, data-based decision-making presentations, action and intervention planning guides)
    - **Development of systems** (e.g., exemplary school tiered intervention plans, PBIS training checklist, guide for engaging school administrators)
    - **Integration of behavior and academics** (e.g., academic and motivation strategies for students, presentation on the Common Core and school climate, selected research on student learning and school climate)
    - **National conference presentations** (e.g., MD S3 school, district, and grant presentations on topics such as integrating Common Core standards, mapping districtwide character education, improving mental health through a better school climate, effective coaching for high schools)
    - **Forms and templates** (e.g., coaching guide, Check and Connect program planning guide, implementation checklist)
    - **Student voice** (e.g., student panel workbook, sample school success stories, student panel questions).
- Other materials, such as posters, newsletters, videos, manuals for accessing data, and newsletters, were developed to support survey administration.

Results

Monitoring and evaluation activities examined all the data that had been collected in order to determine how MD S3's efforts impacted school climate in participating districts and schools. Outcome data included survey data, behavioral incident reports and other disciplinary action data, attendance data, and student academic performance. S3 grantees performed a variety of analyses to demonstrate the results of their work. The following sections provide details on reporting requirements as well as additional analyses or evaluations that were performed.

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Government Performance and Results Act Results

The Government Performance and Results Act of 1993 (GPRA) requires all federal grantees to demonstrate their effectiveness on a grant-specific set of indicators. MD S3 grantees reported annually on four GPRA measures. MD S3 GPRAs included the percentage of MD S3 participating schools implementing interventions that, over the four years of the grant, experienced:

An increase or decrease in the percentage of students who reported:
- Student-reported alcohol use in the past 30 days (GPRA measures a&b); and
- Student-reported harassment or bullying on school property (c&d).

Improvement or worsening of:
- School safety scores (e&f).

An increase or decrease in the number of:
- Suspensions for violence without injury (g&h).[11]

GPRA Performance Summary

At the end of the grant period, the 15 intervention schools that had fully implemented[12] their selected interventions reported the following successes (see also Figure 2):
- One hundred percent reported reductions in student-reported alcohol use;
- Eighty-seven percent reported a reduction in harassment or bullying on school property;
- Eighty percent improved their School Climate Profile school safety score; and
- Eighty percent reported a reduction in student suspensions for violence without injury.
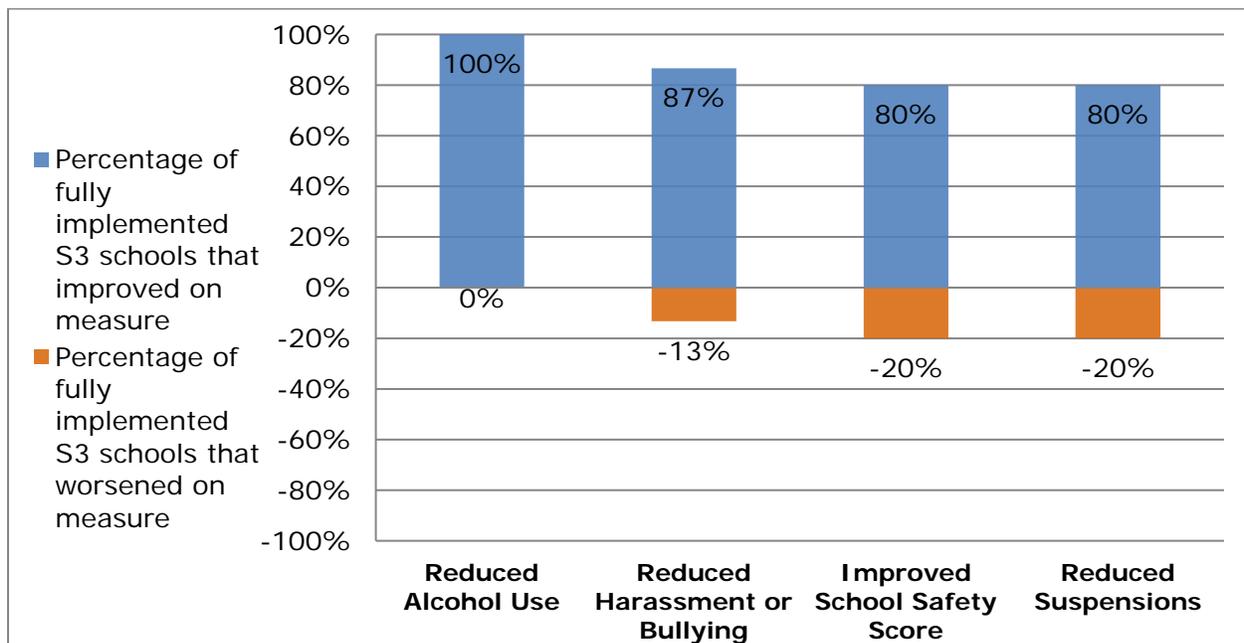
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[11] Readers should note that suspension data, in particular, may be affected by changes in State policies during the course of the S3 grant period that may be unrelated to S3 programming.

[12] Generally, for S3 grantees, a school was considered "fully implemented" if the majority of programmatic interventions in the school were fully implemented as planned, and the remainder of programs were close to being implemented and/or would be finished by the end of the school year. However, MD S3 defined *fully implemented* schools as trained schools with high-fidelity Tier 1 and Tier 2 supports.

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Figure 2. Maryland GPRA results baseline (2010–11) to final year (2014–15)

Note: Schools were recruited in two cohorts, with the first cohort enrolling in 2011 and completing the project in June 2014. The second cohort enrolled in 2012 and completed the project in June 2015. All schools participated in spring 2014 data collection, and data collection for the second cohort was conducted in spring 2015.

MD S3 reported that decreases or worsening on GPRA indicators were not statistically significant. Variation in buy-in and implementation quality also contributed to less favorable outcomes in these schools relative to the schools that experienced improvements.

Additional Analyses

MD S3 was designed with data and analysis in mind. Maintaining data collection in both intervention and control groups over all four years of the grant enabled the evaluation team to continuously monitor and compare progress and impact.

Evaluators: The evaluation team was led by JHU.

Randomized Controlled Trial

Analysis approach: The MD S3 evaluation team examined the adoption and implementation of PBIS in 31 high schools randomly assigned to implement PBIS, within the context of a larger randomized trial of 58 high schools. They were particularly interested in the extent to which levels of bullying and other indicators of school disorder were affected through PBIS implementation. MD S3 implemented a group randomized controlled trial (RCT) to allow for stronger conclusions regarding the impact of the interventions. The primary outcomes were assessed through the school climate surveys, school safety score, and incident data. A series of analyses was conducted on multiple baseline school demographic and incident data to ensure balance across the two conditions. Survey and incident data from both the intervention and the control group schools were collected and analyzed annually in order to monitor program impacts. Evaluation team staff also used three previously validated fidelity measures: the Implementation Phases Inventory (IPI), the School-wide Evaluation Tool (SET), and the Individual Student Systems Evaluation Tool (I-SSET). The SET and I-SSET

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were completed by trained assessors who were unaware of the schools' intervention versus control group status. These three measures documented fidelity of implementation of EBPs. Importantly, staff administered SET and I-SSET tools in both the control and intervention schools because control schools could have been implementing other programs outside of those selected for implementation as part of the trial.

Summary of findings: The Bradshaw et al., 2015, study concluded that baseline indicators of school climate issues ("disorder") were generally not associated with PBIS implementation and, thus, did not appear to be barriers to adoption of PBIS. Participating high schools, on average, increased levels of implementation over the course of the grant, making greater gains in Tier 1 supports compared to advanced tier supports. Specifically, SET scores two years after training for 22 of the 31 schools (71 percent) met or exceeded 80 percent fidelity on the Tier 1 supports and scored 82.50 percent on average. During this same period, less than half of the schools implemented 80 percent of the advanced-tier components (as measured by the I-SSET), and the average I-SSET score was 77.62 percent. The evaluators observed that high schools need to set realistic expectations for the amount of time required for program adoption that meets high-fidelity implementation, particularly for advanced-tier implementation.

Selected peer-reviewed publications about RCT analyses: [13]

- Bradshaw, C. P., Pas, E. T., Debnam, K. J., & Lindstrom Johnson, S. (2015). A focus on implementation of Positive Behavioral Interventions and Supports (PBIS) in high schools: Associations with bullying and other indicators of school disorder*. School Psychology Review.*
- Bradshaw, C. P., Waasdorp, T. E., Debnam, K. J., & Lindstrom Johnson, S. (2014). Measuring school climate: A focus on safety, engagement, and the environment. *Journal of School Health, 84,* 593–604. doi:10.1111/josh.12186
- Bradshaw, C. P., Debnam, K. J., Lindstrom Johnson, S., Pas, E., Hershfeldt, P., Alexander, A., Barrett, S., & Leaf, P. J. (2014). Maryland's evolving system of social, emotional, and behavioral interventions in public schools: The Maryland Safe and Supportive Schools Project. *Adolescent Psychiatry, 4*(3), 194–206. doi:10.2174/221067660403140912163120
- Bradshaw, C. P., Pas, E., Bloom, J., Barrett, S., Hershfeldt, P., Alexander, A., McKenna, M., Chafin, A. E., & Leaf, P. (2012). A state-wide collaboration to promote safe and supportive schools: The PBIS Maryland Initiative. *Administration and Policy in Mental Health and Mental Health Services Research, 39*(4), 225–237. doi:10.1007/s10488-011-0384-6

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[13] To date, the JHU research team has published more than 25 peer-reviewed reports and chapters based on the MD S3 data. Given the overall study design, the vast majority of the papers focused on correlational and longitudinal findings related to various aspects of school climate and student behavior, rather than focusing specifically on the outcomes of the trial. Additional outcome-focused papers are also available.

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Special Feature: MDS3 Randomized Controlled Trial Experimental Evaluation

Maryland's evaluation met the gold standard for research design: a randomized control trial. Schools that received supports (i.e., EBPs) to improve school climate were selected randomly and were statistically no different from the comparison schools at baseline. Schools were matched on select baseline administrative data (e.g., school demographics, discipline problems, academic performance) and then randomized to either the "intervention" condition or a "comparison" condition, balancing conditions within district. This allowed the researchers to examine whether school-level changes could be linked to the interventions. MDS3's primary implementation framework was PBIS.

The PBIS Maryland Initiative is a collaboration between the Maryland State Department of Education (MSDE), Sheppard Pratt Health System (SPHS), and Johns Hopkins University (JHU) Bloomberg School of Public Health. This partnership was initiated at the State level in 1998 to scale up a three-tiered public health approach in schools to support students' mental health needs. After exploring different frameworks for implementation, the partnership selected the PBIS framework and began to train schools in 1999, with the support of the National Technical Assistance Center on PBIS (see www.pbis.org). As reported in Bradshaw Debnam et al., 2014 (see the Additional Analyses section), "this particular model also helped to "connect the dots" for meeting a range of behavioral, academic, and mental health needs of children through schools." To date, the PBIS Maryland partnership has disseminating the model across the State in more than 70 percent of the State's public schools, all of which are implementing Tier 1 elements of the PBIS model. However, implementation was concentrated in elementary and middle school settings. MD S3 supported meeting the needs of adolescents by scaling up the PBIS model in high schools.

This Special Feature summarizes Bradshaw, Pas et al., 2015 (see the Additional Analyses section), which examined the adoption and implementation of PBIS in the 31 high schools randomly assigned to implement PBIS, within the context of the larger 58 high school trial. Intervention schools received initial training in the three-tiered PBIS model (Sugai & Horner, 2006[14]) and used their baseline school climate data to select EBPs; see Table 1. Intervention frameworks, programs, and practices. MD S3 provided training and resources to support implementation of one or more of the EBPs in the intervention schools while the comparison schools were monitored over the same three-year period (and received training at the end of the study). MDS3 expected to reduce behavior problems, improve academic outcomes, and improve self-reporting and observational measures of school climate.

As part of this study, rollout of the core features of PBIS was measured by a set of research-based implementation tools administered by outside observers. Evaluators assessed PBIS implementation in schools with varying levels of baseline problems with bullying and other school climate issues (termed *disorder*). Multilevel analyses on the longitudinal implementation data showed that schools with higher initial rates of bullying generally implemented PBIS with greater fidelity. Participating high schools, on average, increased levels of implementation over the course of the grant compared to nonparticipating schools, making greater gains in Tier 1 supports compared to Tier 2 and 3 supports. Maryland concluded that baseline indicators of "disorder" did not predict success with PBIS implementation and that the degree of disorder at baseline did not appear to be a barrier to adoption of the three-tiered PBIS model. This suggests that

schools with increased bullying may be particularly motivated to adopt PBIS. Additional details were not yet reported; however, evaluators shared that additional publications are forthcoming.

School Environment Observational Study

Analysis Approach: MD S3 also explored how the environment outside of the classroom influences perceptions of school climate and delinquent behavior (i.e., violence involvement and drug use).Through a separate grant from the William T. Grant Foundation, MD S3 augmented data collection to include setting-level observational data of randomly selected classrooms, nonclassroom areas, and schools using the Assessing School Settings: Interactions of Students & Teachers (ASSIST; Rusby et al., 2001), and the School Assessment for Environmental Typology (SAfETy; Bradshaw, Milam, Furr-Holden, & Lindstrom Johnson, 2015). Site visits were conducted four times over three years, and Site Visit Reports were created for each of the 58 participating schools, the 12 school districts, and the MSDE following each data collection time point. These reports included information about staff praise, adult supervision, use of student engagement strategies, on-task/off-task student behavior in the classroom, disruptive student behavior, and aspects of school bullying.[15] Observational data were compared with survey data (from spring 2012) on student perceptions of school climate (i.e., rules and consequences, disorder, and physical safety) as well as their involvement in violence and substance use.

Summary of findings: Through this observational study, it was concluded that changes to the school environment reduced violence involvement, but only in as much as they altered student perceptions of the environment.

Reports about classroom observation analyses:

- Bradshaw, C. P., Milam, A. J., Furr-Holden, C. D., & Lindstrom Johnson, S. (2015). The School Assessment for Environmental Typology (SAfETy): An observational measure of school environment. *American Journal of Community Psychology*, 56, 280–292, doi: 10.1007/s10464-015-9743-x

MD S3 Data Spotlights Published by MDS3 Team

MDS3 analysts also performed analyses of grant data. The following lists three briefs with a short summary of findings for each spotlight.

- MDS3 Data Spotlight—Engagement and School Support (September 2015): Students who felt that their teachers and administrators were helpful had better grades, as did students who reported that their teachers were caring and encouraging. Students with teachers who provided positive feedback also had higher report card grades.
- MDS3 Data Spotlight—Equity (September 2015): White students generally had higher rates of agreement with statements about school equity and inclusiveness than Black/African-American, Asian/Pacific Islander, and Hispanic/Latino groups. Male students had higher rates of agreement that boys and girls were treated equally well than girls.
- MDS3 Data Spotlight—Substance Abuse (September 2015): Students with higher report card grades reported lower levels of substance use. Substance users were

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[14] Sugai, G., & Horner, R. (2006). A promising approach for expanding and sustaining school-wide positive behavior support. *School Psychology Review*, *35*, 245–259.
[15] Data were provided in two ways: (1) scores (in percentiles) that allowed schools to compare themselves with other schools in the project and (2) a graphic indicating change in scores from fall 2011 to spring 2014 for each school.

more likely than students who did not use substances to have trouble controlling their temper, get angry easily, threaten others, and act without thinking.

Lessons Learned

As with any pilot program, MD S3 experienced its share of implementation challenges and learning opportunities. The following notable issues may be of interest to others:

- Initially, teacher buy-in was a significant hurdle. However, once a few individuals became committed to the process, they served as ambassadors for the MD S3 work. Overcoming this challenge depended significantly on the commitment of the building principal, the dedication of the implementation team to provide support, and a level of accountability and clear communication from administrators.
- In larger high schools, it was difficult to communicate with the entire faculty because faculty meeting time was limited, and whole-school communication systems were not fully developed. MD S3 found that one strategy to further engage staff was to use school climate survey data and site-visit data to communicate the importance of addressing school climate issues.
- MD S3 experienced some initial pushback from schools and coaches regarding the burden of data collection in the schools. To reduce burden, MD S3 involved the coaches in scheduling and facilitating data collection, keeping them aware of all communication with the schools. As a result, the coaches developed a greater understanding of the importance of data collection and were more effective at explaining to school staff that time spent on data collection was a valuable and integral part of improving school climate.
- MD S3 schools experienced a high level of success in administering the MD S3 School Climate Survey, although for some of the MD S3 schools, it was challenging to get all the students into the computer labs to complete the surveys. Nevertheless, the rates of student participation increased significantly over the course of the project. As with other S3 sites, achieving a high parent response rate was a challenge. Specifically, MD S3 experienced an increase in parent participation between Years 1 and 2 of the project; however, parent participation declined in Years 3 and 4. In order to support data collection and increase response rates across groups, MD S3 implemented the following strategies at different junctures:
    - Expanded the data collection window to span February through June of each school year;
    - Hired a data liaison who traveled to schools to provide on-site technical assistance;
    - Outfitted data collectors with large lapel buttons that read *MD S3 Data Collector* and provided them with information cards in case students or staff had questions;
    - Ensured that a data representative was in each school office during active data collection to answer calls or respond to e-mails;
    - Offered awards such as "Most Improved Participation Rate" for schools with high participation rates or creative methods for data collection;
    - Incentivized staff participation in the final year through a school-level incentive (e.g., high staff participation in survey data collection was recognized through public recognition at the State training);
    - Facilitated idea sharing about successful implementation across all MD S3 schools through booster trainings, electronic notebooks, and meetings with district points of contact;

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- o Created tip sheets on successful data collection, which are included on the MD S3 resource binder Web page (linked in the Products section); and
- o Provided annual training to administrators and school staff on data use and generated annual reports summarizing goals as related to data.
- During the final months of the grant there was a change in leadership at the State superintendent, assistant superintendent, and executive director levels. MD S3 intended to maintain consistency and progress by engaging the new leadership and disseminating the project findings.
- The implementation schools in MD S3 focused initially on fundamentals of Tier I PBIS implementation, before expanding to advanced tiers. Those schools that initially attempted to install Tier 2 and 3 EBPs quickly discovered the importance of first building Tier 1 systems and then revisiting the scope and sequence of implementation as a result.
- MD S3 focused on programming that empowered youth voice. By leveraging student engagement and student voice, MD S3 improved implementation and school climate. Student focus groups were held from the beginning phases (design of the initiative) and were ongoing. Schools incorporated youth voice by allowing students to participate on teams, lead EBP implementation efforts, and share efforts with community stakeholders, thus strengthening the efforts.
- The annual EBP training proved to be a useful vehicle through which to disseminate information to participating schools about programs and services. It also served as a mechanism for engaging other schools that were not a part of the S3 grant and served to facilitate sustainability efforts for the work begun under the grant.

Sustainability and Scaling Up

By the close of the grant, MD S3 left the State in a strong position to continue school climate improvement efforts. Specifically:

- MD S3 created the Resource Binder (see also the Products section) in summer 2013 for statewide dissemination. The Resource Binder platform acts as a warehouse for MD S3 products, trainings, handbooks, resource maps, and presentations. In addition to providing continual support to MD S3 schools, educational institutions not involved in the grant can access all the resources produced by and for MD S3 schools.
- More than 1,000 schools across 24 systems were trained in PBIS, with 866 actively implementing Tier 1 (universal PBIS) with fidelity. There are ongoing conversations across the State and the SPHS and JHU partners about further scale-up of PBIS in the advanced tiers. In addition, there have been pilots for Check-In/Check-Out training, and MD S3 is building exemplars in advanced tiers with SPHS in order to build MD capacity for implementation.
- MD S3 wrote a board report focused on scaling up the school climate effort, which initially focused on PBIS Tiers II and III, but then became a collaboration of departments within the State with early childhood, special education, student services, and instruction. MD S3 emphasized that piloting the PBIS effort in high schools raised public attention regarding the importance and effectiveness of PBIS and the MD S3 Initiative. In addition, the PBIS National TA Center worked intensively to develop a high school curriculum based on the lessons learned in Maryland.
- School climate is now a priority in Maryland. In the groundbreaking 2014 State Report on Best Practices in School Discipline, which addressed suspension and expulsion reform efforts, the MD S3 was cited as an exemplary model, and all

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schools were encouraged to use the MD S3 School Climate Survey and adopt multi-tiered student supports.

- The MD S3 School Climate Survey is now available to schools statewide through additional grants to JHU faculty and the broader partnership with MSDE and SPHS. The survey has been expanded into additional districts, and scaled up fully in one larger school system that has more than 110 schools actively participating in the survey and reviewing data (e.g., sample letter to parents).
- The School Climate Survey has been translated into Spanish and has been piloted in Mexico.
- The survey was expanded to cover elementary school students, their parents, and staff.
- The JHU research team, in collaboration with SPHS, MSDE, and researchers at the University of Virginia, received additional funding from the National Institute of Justice to expand the MD S3 project into 40 middle schools in four Maryland school systems (three of which participated in the high school MD S3 project). This grant allows for both an extension and replication of the high school MD S3 project. School Year 2015–16 was the first year of implementation, and the work follows a similar design as that of the high school RCT, with 20 schools randomized to receive training, coaching, and other forms of implementation support, in contrast to 20 comparison schools; all 40 schools receive access to the MD S3 School Climate Survey.
- MSDE was one of 20 States awarded the NITT-Project AWARE-SEA grant from SAMHSA, which builds on the capacity achieved through MD S3 in three school systems. The focus of the grant is to increase local and State mental health awareness, promotion, and identification through the dissemination of the Youth Mental Health First Aid (YMHFA) curriculum. This effort will also build State-level capacity to train YMHFA and to support systemic change to improve access, referral, and followup to students in need of mental health services.
- JHU faculty leveraged six additional federal and foundation grants that will build on the initial efforts of MD S3, and ensure the integration of Tier II and III interventions and the cultural proficiency as part of the work in middle schools that will be using the MD S3 School Climate Survey.

Contact Information

For more information about MD S3, please refer to the information below.
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S3 Grantee Profiles were prepared for each of the 11 S3 grantees as part of the S3 Descriptive Study (S3DS). The profiles provide detailed information about how each S3 grantee approached and executed their grant, including how intervention schools were selected, key data collection tools and activities, use of programmatic interventions and related supports, products created, findings from their data, lessons learned, and plans for sustainability of their school climate improvement work. The 11 S3 grantee profiles and a cross-grantee executive summary can be accessed here: https://safesupportivelearning.ed.gov/state-grantees/safe-and-supportive-school-s3-grants.

Grantee profile published on June 4 2018.

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Appendix A: List of Maryland Participating Districts and Schools

Participating Districts	Participating Schools
1. Anne Arundel	1. Annapolis High School 2. Arundel High School 3. Chesapeake High School 4. Glen Burnie High School 5. Meade High School 6. North County High School 7. Northeast High School 8. Old Mill High School 9. South River High School
2. Baltimore County	10. Catonsville High School 11. Chesapeake High School 12. Dulaney High School 13. Dundalk High School 14. Franklin High School 15. George W. Carver Center for Arts and Technology 16. Hereford High School 17. Kenwood High IB and Sports Science 18. Lansdowne High and Academy of Finance 19. Loch Raven High School 20. Milford Mill Academy 21. New Town High School 22. Overlea High and Academy of Finance 23. Owings Mills High School 24. Parkville High and Center for Math/Science 25. Patapsco High and Center for Arts 26. Pikesville High School 27. Randallstown High School 28. Sparrows Point High School 29. Towson High Law and Public Policy 30. Western School of Technology and Environmental Science 31. Woodlawn High Center for Pre-Eng. Res.
3. Calvert	32. Calvert High School 33. Huntingtown High School
4. Caroline	34. Colonel Richardson High School 35. North Caroline High School
5. Charles	36. Henry E. Lackey High School 37. La Plata High School 38. Maurice J. McDonough High School 39. North Point High School 40. Thomas Stone High School 41. Westlake High School
6. Dorchester	42. Cambridge-South Dorchester 43. North Dorchester High School

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Participating Districts	Participating Schools
7. Frederick	44. Middletown High School 45. Oakdale High School 46. Tuscarora High School
8. Queen Anne's	47. Kent Island High School 48. Queen Anne's County High School
9. Somerset	49. Crisfield Academy and High School 50. Washington Academy and High School
10. Washington	51. Boonsboro High School 52. Smithsburg High School
11. Wicomico	53. James M. Bennett High School 54. Mardela Middle and High School 55. Parkside High School 56. Wicomico High School
12. Worcester	57. Pocomoke High School 58. Stephen Decatur High School

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