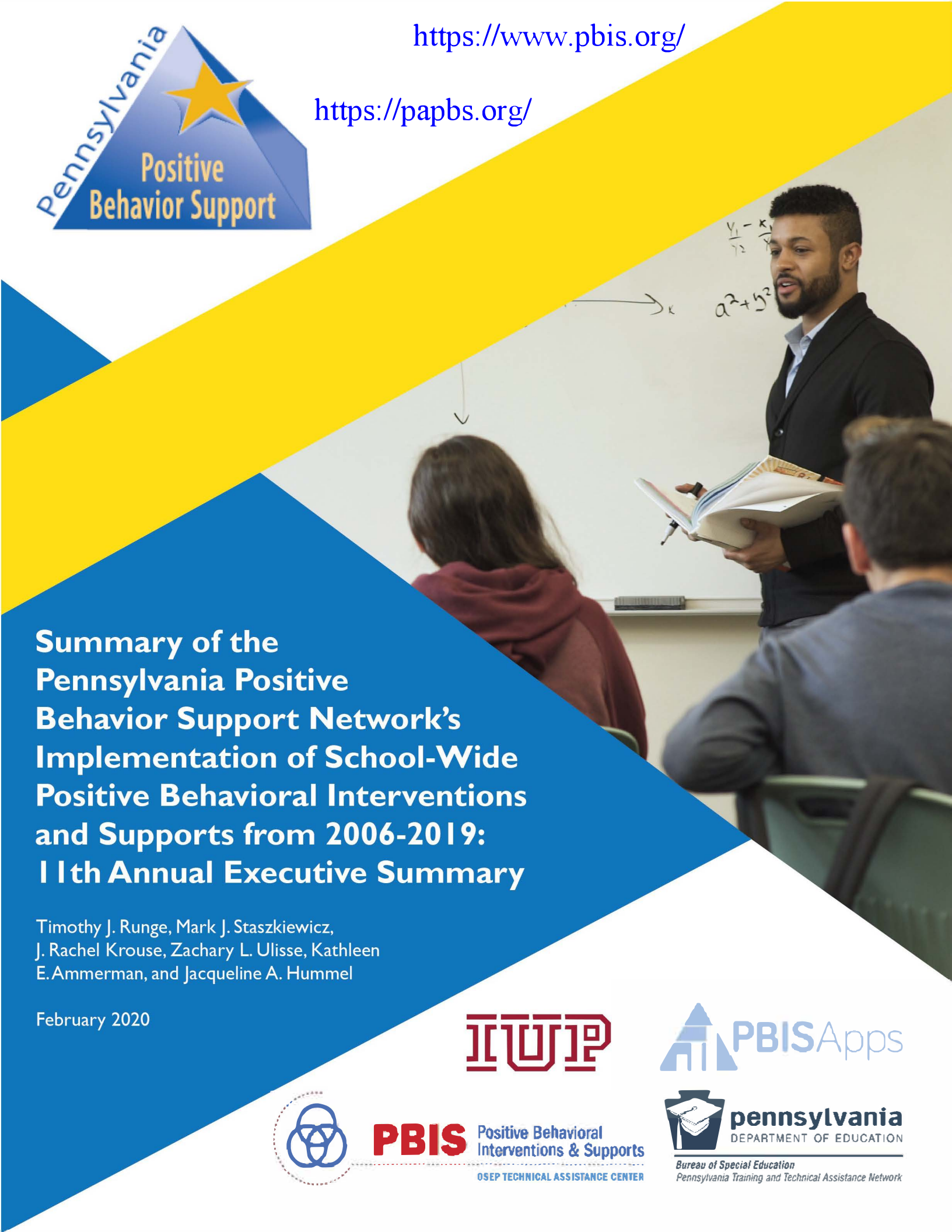https://www.pbis.org/

https://papbs.org/

Summary of the Pennsylvania Positive Behavior Support Network's Implementation of School-Wide Positive Behavioral Interventions and Supports from 2006-2019: 11th Annual Executive Summary

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PBIS Positive Behavioral Interventions & Supports
OSEP TECHNICAL ASSISTANCE CENTER

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DEPARTMENT OF EDUCATION
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Pennsylvania Training and Technical Assistance Network

TABLE OF CONTENTS

PREFACE

Positive Behavior Support (PBS) is a broad term used to describe a set of approaches that enhance quality of life and reduce problem behaviors (Kincaid et al., 2016) and is sometimes referred to by different names (e.g., Effective Behavior Support; Positive Behavioral Interventions and Supports). The term School-Wide Positive Behavioral Interventions and Supports (SWPBIS) is used throughout this report as it is the most commonly-used term for PBS practices applied to educational settings. Readers interested in an historical review of SWPBIS are encouraged to seek other resources (e.g., Sugai & Horner, 2009).

Purpose and Structure of the PAPBS Network Evaluation

The extent to which resources have been allocated by the Pennsylvania Positive Behavior Support (PAPBS) Network and its aligned organizations for more than a decade to implement SWPBIS beckons the need to systematically evaluate its inputs and outputs. Moreover, Yarbrough, Shulha, Hopson, and Caruthers (2011) argued that educational efforts should be systematically evaluated. To that end, Algozzine and colleagues (2010) suggested a blueprint for large-scale evaluation of SWPBIS, making the case for collecting data in the following five domains:

Context Domain	Assesses the goals and objectives of SWPBIS implementation and which individuals provided and received implementation support
Input Domain	Provides a review of the funding support for SWPBIS, content of SWPBIS professional development, and recipients' satisfaction with professional development
Fidelity Domain	Summarizes the extent to which SWPBIS is implemented as prescribed
Impact Domain	Reviews the extent to which behavioral and academic outcomes for students change as a result of SWPBIS implementation
Replication, Sustainability, and Improvement Domain	Offers data regarding the degree to which SWPBIS is sustained and expanded to more schools

Data Analytic Approach

This is the 11th annual study of SWPBIS implementation efforts and the association between high-fidelity installation and various outcomes. Data utilized in this report were collected consistent with the Indiana University of Pennsylvania (IUP) Institutional Review Board approval for this project (Log No. 08-251).

As the number of schools submitting data has grown, complications arose as to how such data should be stored for analysis. The term *year* can be interpreted two ways with regard to SWPBIS implementation and this program evaluation report. One use is the *academic year* which corresponds to the calendar. Academic year 2017-2018, for example, corresponds to fall 2017 through spring 2018. This is often the traditional way in which school years are referred. A second use, however, is *implementation year,* which corresponds to the number of years a school has been implementing SWPBIS. Two schools may have the same academic year but two different implementation years. For example, Schools A and B could be implementing SWPBIS in 2018-2019, but School A is in its 5th year of SWPBIS implementation whilst School B is in its 1st year of SWPBIS implementation.

Consistent with previous PAPBS Network program evaluations, a decision has been made to track all data by implementation year, which means different academic year data are included for schools, depending upon which academic year they became officially involved. One consequence of this is that as data are added, the picture those data convey changes from one academic year to the next. For example, for the 5th annual report (i.e., 2012-2013), the impact that two successive years of SWPBIS implementation had is based on data from only those schools at that time. For this 11th annual report, the same question regarding the impact of two successive years of SWPBIS implementation includes not only those schools that were in the database five years ago, but all the schools that have since completed two consecutive years of implementation.

Limitations

The following limitations to this program evaluation should be considered when interpreting results presented within this report:

1. Data are aggregated across all PAPBS Network schools to maximize statistical power despite cascading training and implementation over the past decade.

2. A preference was made to statistically analyze data from schools with fidelity and outcome data before and after initial training. To allow for pre- and post-implementation comparisons and to maximize available data, an assumption was made for schools trained since 2009-2010 that they were not implementing SWPBIS in years prior to their first year of validated SWPBIS implementation.

3. Many effects of systems-level change, such as those thought to be influenced by SWPBIS implementation, remain undetected for at least three years (Castillo & Curtis, 2014).

Consequently, longitudinal analyses spanning at least three years were given preference in this report.

4. A selection bias may be present in the data analyzed for this report. Schools that observe positive outcomes associated with SWPBIS implementation may be more likely to voluntarily submit their data for analyses, whereas schools that experience challenges or minimal success might elect to withhold their data.

5. SWPBIS implementation fidelity was appraised using any of the following validated measures: (a) *Effective Behavior Support: Team Implementation Checklist* (TIC; Sugai, Horner, & Lewis-Palmer, 2002, 2009); (b) the *School-wide Benchmarks of Quality* (BoQ; Kincaid, Childs, & George, 2005, 2010); (c) the *School-wide Evaluation Tool* (SET; Sugai, Lewis-Palmer, Todd, & Horner, 2005); and (d) the *School-wide PBIS Tiered Fidelity Inventory* (TFI; Algozzine et al., 2014; McIntosh et al., 2017). Mercer, McIntosh, and Hoselton (2017) confirmed concurrent validity of these instruments, permitting the use of any of these measures to establish SWPBIS implementation.

6. In situations where a school submitted two or more fidelity measures for the same academic year, preference was given for the TFI, SET, or BoQ. Additionally, the most recent instrument was prioritized over earlier instruments completed in the same academic year.

7. This evaluation utilized an *ex post facto* design in which schools self-select into the treatment group. Therefore, readers should never conclude that SWPBIS caused any changes in the outcomes reported within this program evaluation report. Rather, the appropriate interpretation is to conclude that SWPBIS is associated with changes in the data.

8. All analyses and interpretations contained within this report are those of the authors and do not necessarily reflect the views of the sponsoring or collaborating agencies. The authors are not responsible for any misrepresentations of these results. Pennsylvania Department of Education, Bureau of Special Education, and Pennsylvania Training and Technical Assistance Network (PaTTAN) retain full authority regarding the dissemination of results and conclusions contained within this report.

Acknowledgements

An effort as expansive as implementing School-wide Positive Behavioral Interventions and Supports (SWPBIS) across Pennsylvania takes extended resources and the collaboration of multiple agencies. Among the many organizations and agencies that have provided substantive support to the creation and dissemination of these annual evaluation reports, we need to recognize: the Pennsylvania Department of Education; Pennsylvania Bureau of Special Education; Pennsylvania Training and Technical Assistance Network (PaTTAN); Indiana University of Pennsylvania (IUP); the Educational and School Psychology Department at IUP; the IUP Research Institute; and the IUP Center for Media Production and Research.

The research team at IUP is proud to have participated in annual evaluations of SWPBIS since May 2009. It is not possible to list every individual who has participated and assisted in

these annual evaluations. However, we specifically recognize the following: Dr. Angela Kirby (Director of PaTTAN – Harrisburg), Dr. James Palmiero (former Director of PaTTAN – Pittsburgh); Dr. Tina Lawson (Statewide PBS Coordinator); Dr. Kathryn Poggi (Western Regional PBS Coordinator); Dr. Nikole Hollins-Sims (Central Regional PBS Coordinator); and Rebecca Tagg, Aleksey Aleskeev, Melissa Gilroy, Cong Xu, Kevin O'Donnell, Stephen McFall, Krista Hunter, Timothy Hall, Michael Boneshefski, Douglas Longwill, Krista Streyle, Haylee Peace, Kyra Hulsebos, Adrienne Bardo, Sadie Breon, and Tyler Myers (IUP Research Assistants).

The Community of Practice on School-Based Behavioral Health (CoP on SBBH) and PAPBS Network have been instrumental in the adoption of SWPBIS in schools across Pennsylvania and the annual evaluations.

Implementation and evaluation of SWPBIS is reliant upon the children, youth, advocates, parents, educators, aligned mental health providers, and communities that support SWPBIS in Pennsylvania's educational settings and on their efforts to collect and report data ultimately benefit the entire CoP on SBBH and PAPBS Network.

Financial support is provided by a contract between the IUP Research Institution and PaTTAN – Pittsburgh and its fiscal agent, Intermediate Unit 1. Coordination of these contracts at the IUP Research Institute is facilitated by Mark Berezansky, Tracy Eisenhower, Kathy Boyd, Ute Lowery, and Bernard Piwinsky.

INTRODUCTION TO SWPBIS

This executive report is designed to provide a brief, but comprehensive, summary of the 11th annual review of PAPBS Network schools' implementation of SWPBIS. While it follows the general outline of the full report, the reader should refer to the longer version for a more detailed view (Runge, Staszkiewicz, Krouse, Ulisse, Ammerman, & Hummel, 2020).

Multi-Tiered Systems of Support is an organizational framework used in educational systems that involves systematic assessments, preventative core instruction, and tailored interventions for those with strategic or intensive needs. When applied to school settings, SWPBIS is the multi-tiered approach for social, emotional, and behavioral supports while Response to Intervention is the multi-tiered approach to academic supports.

Within SWPBIS, all students are exposed to tiered levels of assessment, instruction, and intervention based on identified needs. Sugai and Horner (2009) described tier 1 interventions as the assessment and instructional practices provided to all students to prevent or minimize barriers to learning while concurrently promoting inclusive educational practices for all students. Typically, 15-30% of the school population will require tier 2 services layered on top of the tier 1 supports, and 5-10% of students with intensive needs are then provided tier 3 interventions and supports.

An initial cohort of 34 schools began adopting SWPBIS in summer 2007 with assistance and training by the U.S. Department of Education, Office of Special Education Programs trainers from the Technical Assistance Center on Positive Behavioral Interventions and Supports. Schools that were trained beginning in 2009-2010 do not meet the pure definition of a cohort due to various training times and focuses, among other reasons, and are collectively referred to as Cohort 2 schools.

CONTEXT OF PENNSYLVANIA'S SWPBIS

The first domain of the Algozinne et al. (2010) blueprint for the evaluation of SWPBIS is Context, and it includes the leadership driving SWPBIS training and implementation, support for SWPBIS from stakeholder groups, participation in the affiliated PAPBS Network, and the goals and objectives of the statewide effort.

Findings

The coordination of the SWPBIS implementation across the commonwealth of Pennsylvania is the responsibility of the CoP on SBBH. The CoP on SBBH consists of a broad range of stakeholder groups representing education, mental health, social services, labor and industry, law, families, youth, and advocacy groups. A complete membership listing can be reviewed at the CoP on SBBH website: www.papbs.org.

A cross-sectional review of the number of schools affiliated with the PAPBS Network is provided in Figure 1. Readers are reminded that the data in each year reflect affiliation for that academic year, and schools that are affiliated for more than one academic year are counted each academic year of their affiliation. From a longitudinal perspective, the number of affiliated schools has increased every academic year since the affiliation process began in 2011-2012. The 2018-2019 academic year witnessed another high-water mark, with 1,379 affiliated schools across Pennsylvania. This represented an 11.8% increase from the previous academic year. In fact, there has been double-digit proportional increases in the number of affiliated schools over the past four academic years, suggesting robust growth in PAPBS Network membership. The PAPBS Network website (www.papbs.org) offers the most current, publicly-available listing of affiliated schools.

A caution is made regarding the data reflected in Figure 1: these data represent PAPBS Network affiliation, not necessarily quality of SWPBIS implementation. It is known that some affiliated schools have yet to implement tier 1 SWPBIS with integrity; therefore, the only appropriate interpretation of the data in Figure 1 is related to affiliation with the PAPBS Network, not how many schools are implementing tier 1 SWPBIS.

FIGURE 1

Cross Sectional Review of the Number of Sites Affiliated with the PAPBS Network
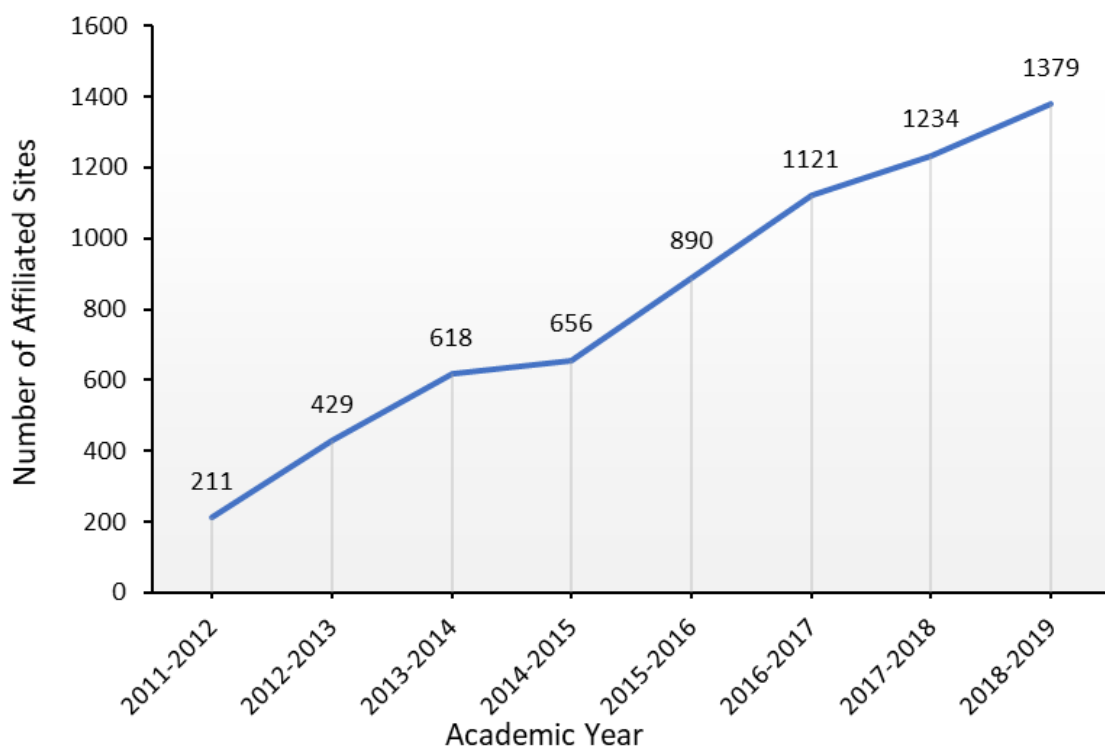
Note. PAPBS = Pennsylvania Positive Behavior Support.

The number of PAPBS Network affiliated schools disaggregated by building type is provided in Table 1. For these data, schools were categorized based on the grades taught in the building. Grade-span designations aligned with those employed by the Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports. Schools that educated students across these designated grade spans were counted for each grade span that applied. For example, a K-8 school was counted once as an elementary school and once as a middle school. Therefore, the data from Table 1 do not align with data in Figure 1.

TABLE 1

Number of Participating Buildings by Grade Level

	Elementary (K-5)	Middle (6-8)	High (9-12)	K-8	K-12	Alternative
2011-2012	137	48	24	n/a	n/a	n/a
2012-2013	300	208	63	n/a	n/a	n/a
2013-2014	424	299	118	n/a	n/a	n/a
2014-2015	368	131	107	25	3	21
2015-2016	517	160	152	23	14	24
2016-2017	613	203	200	49	21	35
2017-2018	677	227	212	52	26	40
2018-2019	763	252	226	63	29	46

PAPBS Network affiliation remains strongest among elementary schools, with 763 affiliated schools in 2018-2019. Middle (*n* = 252) and high (*n* = 226) schools remain the second and third largest grouping of building types, respectively. Proportional growth from the previous year paralleled that of the number of affiliated schools: 55.3% growth in affiliated elementary schools occurred from 2017-2018 to 2018-2019; 18.3% growth in affiliated middle schools occurred from 2017-2018 to 2018-2019; and 16.4% growth in affiliated high schools occurred from 2017-2018 to 2018-2019.

Schools that affiliate with the PAPBS Network commit to a long-term training and technical assistance plan to implement all tiers of SWPBIS. This training and technical assistance is provided by PAPBS Network Facilitators, each of whom has completed a competitive application and rigorous training process. These application and training processes began in 2013-2014 once the CoP on SBBH recognized the need to explicitly train a cadre of professionals who would, in turn, support the expansion of SWPBIS. A cross-sectional review of the number of PAPBS Network Facilitators is provided in Figure 2. These are cross-sectional data, so every PAPBS Network Facilitator is counted for each academic year in which they maintain their facilitator status. One hundred eighty-one PAPBS Network Facilitators were providing training and technical assistance to affiliated schools throughout the 2018-2019 academic year. This represents a 26.6% increase over the 143 PAPBS Network Facilitators in the 2017-2018 academic year.

FIGURE 2

Number of PAPBS Network Facilitators
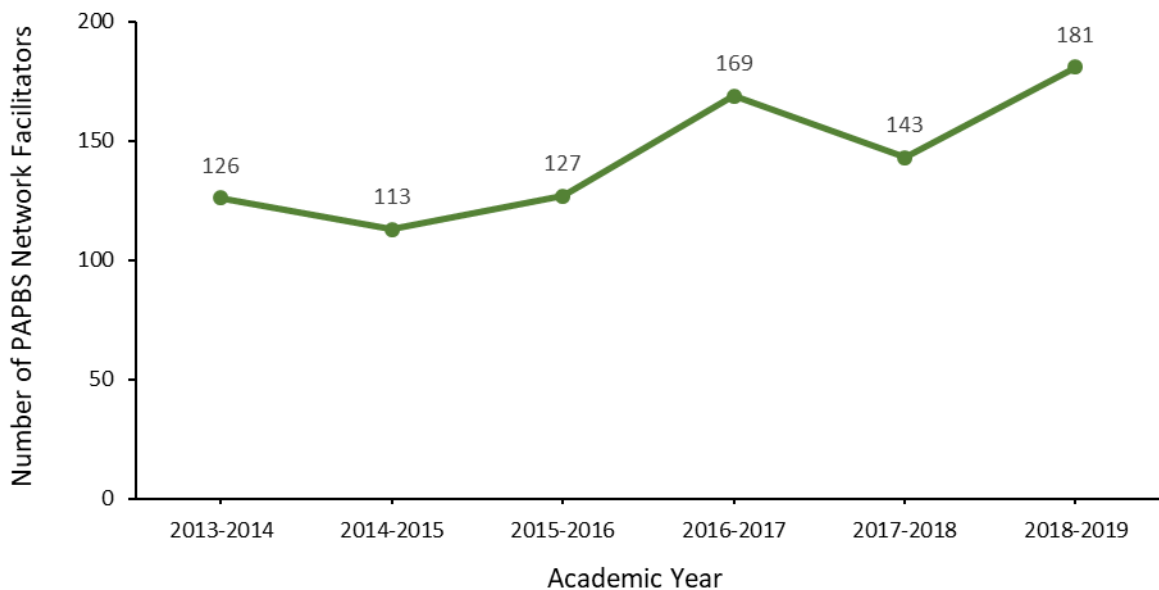
Note. PAPBS = Pennsylvania Positive Behavior Support.

PAPBS Network schools are strongly encouraged to collaborate with community mental and behavioral health providers at all tiers of support, a practice that is endorsed by leading authors in the field of school-based behavior health (Eber et al., 2009; Putnam, Barrett, Eber,

Lewis, & Sugai, n.d.). PAPBS Network schools voluntarily identified the collaborating agency partners that assist with any aspect of the SWPBIS framework. A total of 318 agencies were identified as providing invaluable assistance to schools implementing SWPBIS from 2006 to present, an increase from 282 agencies last year.

RECOMMENDATIONS:

- Efforts at increasing affiliation in the PAPBS Network should continue given the success so far in increasing membership.
- Continued collaboration with community partners must occur for desired student- and school-level outcomes to be achieved.
- The CoP on SBBH is praised for successfully increasing the number of PAPBS Network Facilitators. Efforts to continue increasing the number of Facilitators are needed given the expanded interest in SWPBIS and demand for training and technical assistance.

INPUT OF PENNSYLVANIA'S SWPBIS

According to Algozzine and colleagues (2010), the second of the five domains to be considered in evaluating large-scale implementation includes the inputs provided to support SWPBIS implementation. Where possible, perceptions of the value of these resources are also shared.

Financial Support

Implementing all tiers of SWPBIS requires a significant amount of resources. The following is a summary of federal and state financial support for SWPBIS implementation. Additionally, local support also plays a critical role in the sustained implementation of SWPBIS. Data at the local level, however, are not collected and are thus not reported in this evaluation report.

Findings

Financial support from the *Individuals with Disabilities Education Improvement Act* (IDEIA) Parts B and Part C is provided for training and technical assistance for SWPBIS at the School-Wide and Program-Wide (i.e., birth-to-kindergarten) levels, respectively. It is not possible to track the fiscal support provided via IDEIA, although substantial resources are directed toward PBIS implementation at both the school-age and program-wide levels. Historically, SWPBIS implementation was also supported through a handful of federal grants. These included a multi-year Substance Abuse and Mental Health Services Administration *Safe Schools / Healthy Students* grant (No. 1U79SM061503-01) benefitting three local educational agencies and a United States Department of Education *School Climate Transformation* grant that directly benefitted two large, urban school districts.

Initial training and adoption of SWPBIS in the mid-2000s across Pennsylvania was directly provided by Office of Special Education Programs Technical Assistance Center on Positive Behavioral Interventions and Supports consultants. While the role of this center and its consultants has decreased since the late-2000s, it is important to acknowledge this historic assistance. Most recently, this assistance has focus on equity, disproportionate discipline, and culturally-responsive PBIS practices.

At the state level, the PAPBS Network co-directors continue to provide substantial support for training and installation of SWPBIS. Personnel from these agencies are members of the statewide leadership team and, for some, are designated as PAPBS Network Facilitators providing direct support to local training and implementation efforts.

Financial support for training and implementation was provided via competitive SBBH Performance Grants from 2007-2008 through 2017-2018. In the early years of the PAPBS Network, these funds were used primarily to build tier 1 SWPBIS. In later years, the scope of these SBBH grants expanded beyond implementation to other targeted areas including expansion into other district buildings; emotional support programming; universal screening;

and tier 3 work (e.g., Project Rehabilitation, Empowerment, Natural Supports, Education, and Work). Data regarding total SBBH grant allocations provided to LEAs from 2015-2016 to present are provided in Figure 3. Data prior to 2015-2016 were not available for review, although it is known that these grants did exist as early as 2007-2008. SBBH grants were not offered in 2018-2019.

FIGURE 3

Total SBBH Grant Allocations by Academic Year
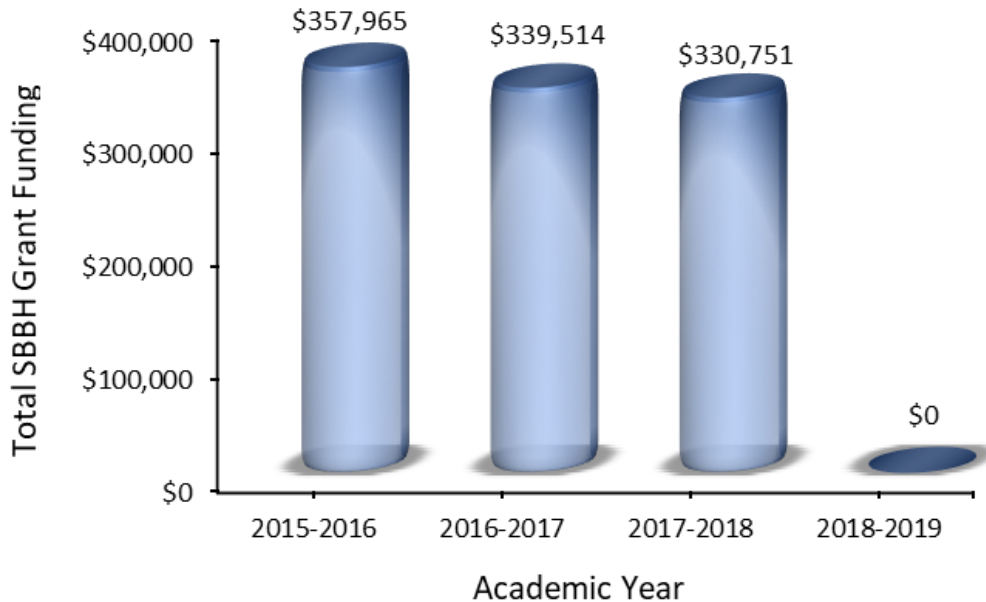
Note. SBBH = School-Based Behavioral Health.

SWPBIS Training and Technical Assistance

PAPBS Network Facilitators agree to use a standardized set of training materials when providing support to affiliated schools. All materials are securely stored on the PAPBS Network's website accessible via password-protected repository.

Findings

Since 2015-2016, the PAPBS Network has requested that Facilitators enter in training and technical assistance information into the *pTrack* system. Doing so is completely voluntary, so the comprehensiveness of these data is unknown; however, these data provide reasonable estimates of the number and type of training and technical assistance provided as well as the time engaged in those activities. A longitudinal review of the number of training and technical assistance events as well as the cumulative hours engaged in these activities is provided in Figure 4. Across the last four academic years, the number of training and technical assistance events has steadily declined as has the total number of hours PAPBS Network Facilitators have logged in these activities. This is particularly important to acknowledge given that the number

of PAPBS Network schools implementing SWPBIS has grown rather considerably during this same period of time. Such an inverse relationship between the provision of training and technical assistance and the number of implementing schools seems at odds with reasonable expectations.

FIGURE 4

Training and Technical Assistance Provided by PAPBS Network Facilitators
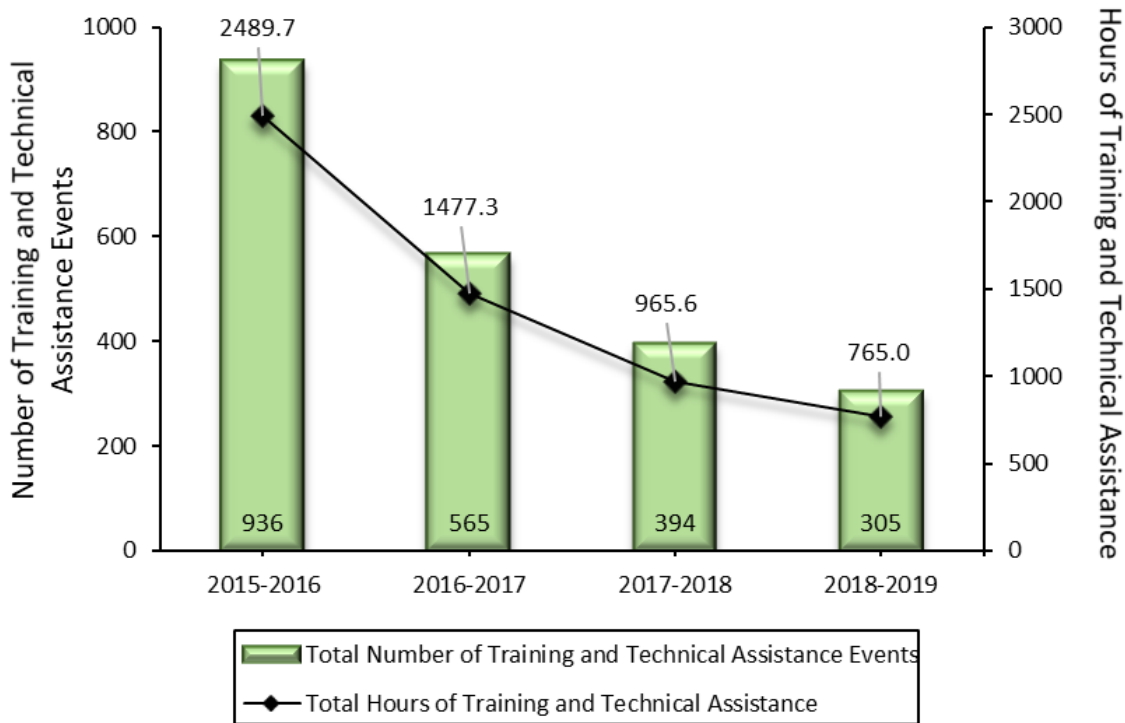
Note. PAPBS = Pennsylvania Positive Behavior Support.

Beginning in spring 2011, the CoP on SBBH has hosted PBIS Implementers Forums to provide networking and professional development opportunities for affiliated schools, advocates, and aligned professionals. This annual event was held May 14-15, 2019 in Hershey, PA. The 2019 forum was attended by 1,825 registrants which represented the largest attendance in the 9-year history of the forums (see Figure 5).

FIGURE 5

Attendance at the Annual Pennsylvania PBIS Implementers' Forums 2011-2019
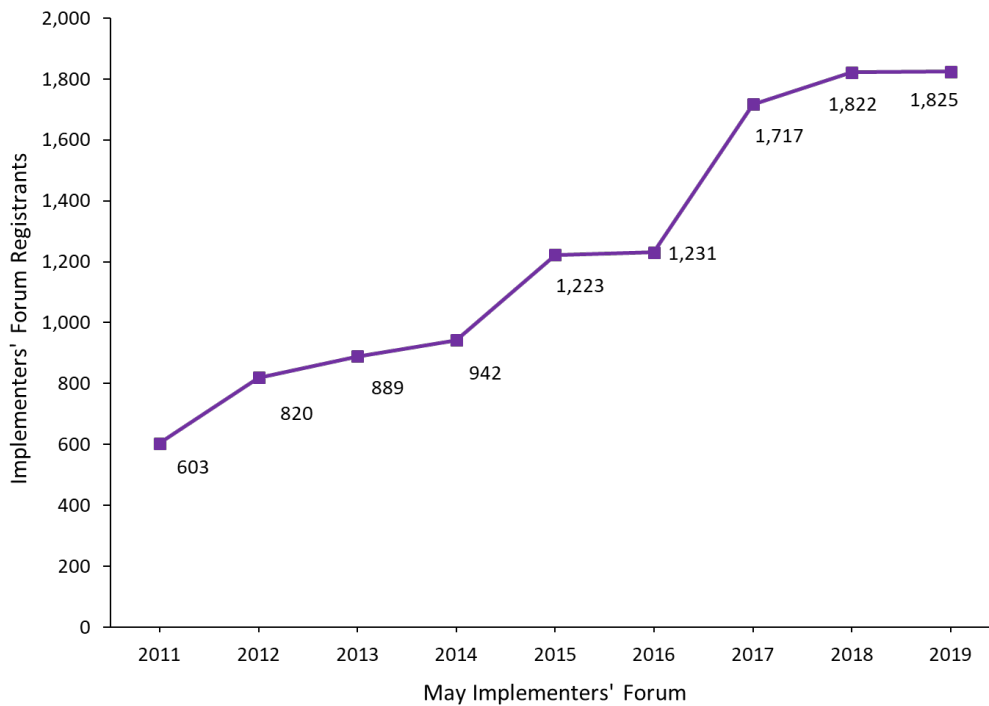
Note. PBIS = Positive Behavioral Interventions and Supports.

RECOMMENDATIONS:

- The lack of specific state funding for SWPBIS implementation via the SBBH grants is concerning. It is hoped that resources at the state level can be reconsidered so that critical funds to support initial training, adoption, and implementation of advanced tiers of SWPBIS can occur.
- The CoP on SBBH might consider re-evaluating the quality of reporting provided by PAPBS Network Facilitators to ensure that accurate data about the number of training and technical assistance events are submitted. Additionally, it may be helpful to specifically inquire with PAPBS Network schools and Facilitators to determine if additional resources are needed to meet schools' demands for training and technical assistance.
- Resources to continue offering the PAPBS Network Facilitators' Forum and PBIS Implementers' Forum must continue as these events are critical to the work of the CoP on SBBH and implementation of SWPBIS.

FIDELITY OF PENNSYLVANIA'S SWPBIS

Since affiliation with the PAPBS Network does not necessarily ensure fidelity of implementation, it is important to not only assess the number of affiliated PAPBS Network schools, but also take account of the number of PAPBS Network schools that have achieved fidelity of implementation of any or all tiers of SWPBIS. Typically, fidelity of implementation is completed in the spring of each academic year; however, fidelity checks can be performed earlier in the academic year, particularly when a school is adopting tier 1 SWPBIS given that fidelity data can be used for immediate action planning and implementation changes. Only research-validated fidelity instruments were used to document fidelity of implementation at the Tier 1 level (i.e., TIC, BoQ, SET, TFI) or advanced tiers (i.e., TFI).

Tier 1 SWPBIS Implementation

Fidelity of implementation is categorized one of three ways for each academic year: (a) *fully implementing* if the fidelity measure score met or exceeded the minimum threshold for that instrument; (b) *partially implementing* if the fidelity measure was completed but the score fell below the minimum threshold for that instrument; (c) *not implementing* if no fidelity data were submitted at all.

An absence of reported fidelity data for a school resulted in its categorization as not implementing SWPBIS, although it cannot be confirmed that absence of fidelity data is truly indicative of non-implementation

Findings

A cross-sectional review of the number of PAPBS Network schools implementing tier 1 SWPBIS each spring since 2007 is provided in Figure 6. Over the past 12 years, the number of schools implementing tier 1 SWPBIS has increased considerably, with confirmation of fidelity in 565 schools in spring 2019. In just the past academic year alone, the PAPBS Network has seen a 43.4% increase in the number of schools implementing tier 1 SWPBIS. Moreover, growth in the past four years is at 200%.

FIGURE 6

Cross-Sectional Count of Combined Cohort Schools Tier 1 SWPBIS Implementation Fidelity 2006-2019
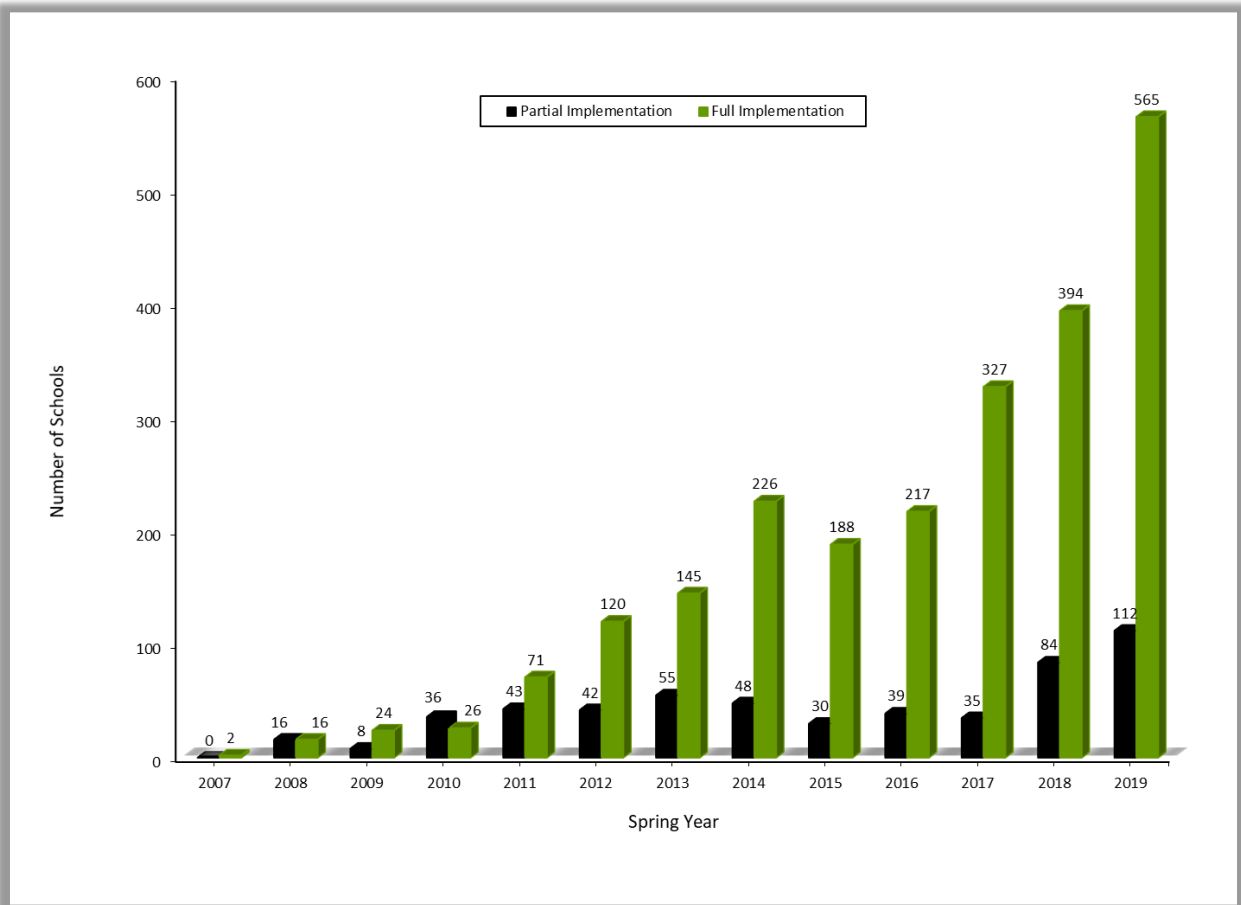
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports.

Implementation fidelity disaggregated by building level for the 2018-2019 academic year are provided in Figure 7. Consistent with national data, the majority of schools implementing tier 1 SWPBIS were at the elementary level (65.5%; *n* = 372). Middle and high schools accounted for 14.5% and 7.3% of all tier 1 SWPBIS sites, respectively. Schools categorized as Other accounted for 10.1% of all tier 1 SWPBIS schools. Just over 2% of all tier 1 SWPBIS schools in 2018-2019 were Alternative education settings.

FIGURE 7

Number of Schools Implementing Tier 1 SWPBIS by Building Type in Spring 2019
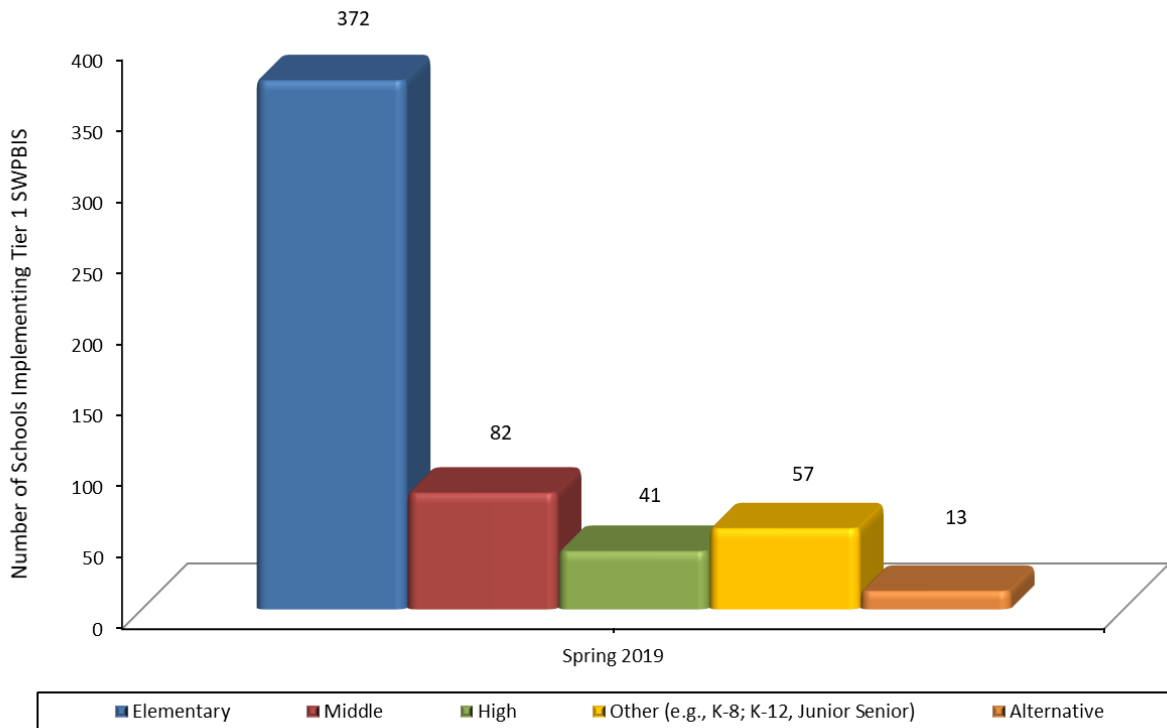
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports.

Advanced-Tier SWPBIS Implementation

Findings

Figure 8 provides a review of the number of PAPBS Network schools that achieved high-fidelity implementation of tier 1, tier 2, and tier 3 SWPBIS across the past three academic years. It is important to state that schools implementing any advanced tier of SWPBIS (tier 2 or tier 3) would be counted for each tier of high-fidelity implementation in Figure 8. For example, a school that implemented all three tiers of SWPBIS would be counted three times in Figure 8: once for tier 1 SWPBIS implementation, once for tier 2 SWPBIS implementation, and once for tier 3 SWPBIS implementation.

FIGURE 8 ━━

Number of Schools Implementing SWPBIS Tier 1, 2, or 3 in Spring 2017 through Spring 2019
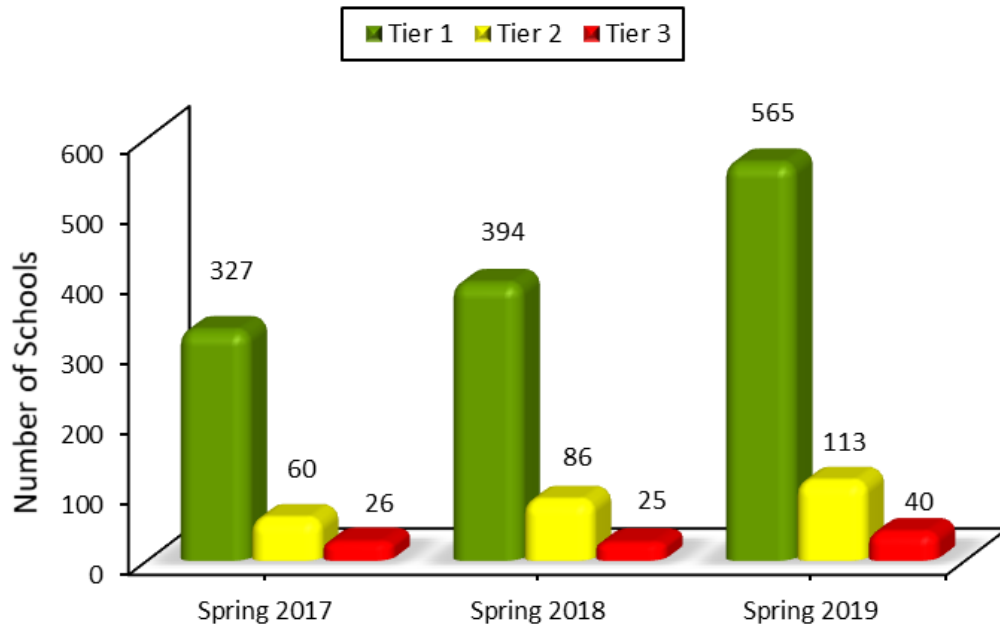
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports; Schools are counted for each tier of SWPBIS implemented.

Across the past three academic years, the number of PAPABS Network schools that have achieved full implementation of any tier of SWPBIS has steadily increased. By 2018-2019, the largest number of schools achieving full implementation of tier 1 (*n* = 565), tier 2 (*n* = 113), and tier 3 (*n* = 40) SWPBIS occurred. These longitudinal trends are encouraging data to highlight the expansion of SWPBIS across Pennsylvania.

An account of the number of PAPBS Network schools implementing tier 1 only, tiers 1 and 2, or all three tiers of SWPBIS is provided in Figure 9 for the 2018-2019 academic year. Unlike the data presented in Figure 8 above, a school is only counted once in Figure 9. As of spring 2019, 451 PAPBS Network schools were implementing just tier 1 SWPBIS with fidelity. An additional 74 PAPBS Network schools were implementing tiers 1 and 2 SWPBIS with fidelity. Finally, 40 PAPBS Network schools were implementing all tiers of the SWPBIS framework. While the accomplishments of schools implementing tier 1 or tiers 1 and 2 is praised, it is extremely important to highlight the 40 schools that successfully implemented the comprehensive, multi-tiered SWPBIS framework. This represents a 67% increase from the 24 schools implementing all three tiers of SWPBIS in 2017-2018.

FIGURE 9

Number of Schools by Tiers of SWPBIS Implementation in Spring 2019
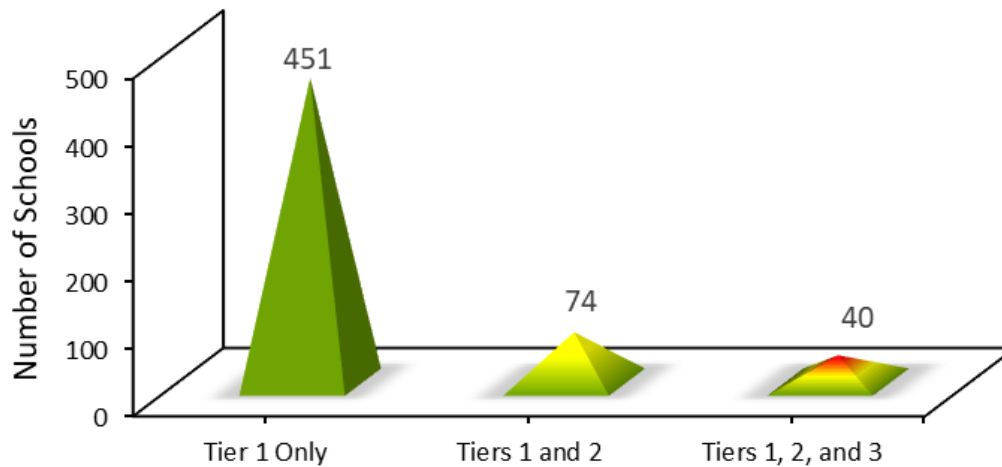
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports; Schools are counted only once, depending on the tier(s) of SWPBIS for which full implementation was secured.

RECOMMENDATIONS:

- Efforts should be made to specifically focus on implementing tier 1 SWPBIS in more middle and high schools. Additional demonstration sites are needed across Pennsylvania.
- The PAPBS Network may wish to capitalize on the experiences of schools that fully implement all three tiers of SWPBIS by highlighting them in discipline newsletters, developing materials to share with aligned professional groups and policy makers to expand PBIS into more contexts, and marketing them as model or demonstration sites that can be visited by schools aspiring to implement all three tiers.

IMPACT OF PENNSYLVANIA'S SWPBIS

Algozzine and colleagues (2010) proffered that the large-scale evaluative framework should typically provide most attention to the effect of SWPBIS on student and school outcomes. Outcomes monitored by the CoP on SBBH and PaTTAN were originally established in 2006-2007 with modifications made over the years.

Staff Perceptions of the Status of Behavioral Support

Each spring, school staff complete the *Effective Behavior Support: Self-Assessment Survey* (EBS: SAS; Sugai et al., 2003, 2009) to gauge perceptions of PBIS implementation across all school ecologies.

Findings

The number of schools that submitted EBS: SAS data from pre-implementation through year 11 of SWPBIS implementation, along with the staff responses, appear in Table 2. The number of schools providing staff perceptions of SWPBIS implementation decline over the consecutive years of implementation. It must be stressed, however, that these data are cross-sectional and not strictly longitudinal. Therefore, the data represent all the schools in each year for which data were provided and do not track individual schools directly across time. Such an analysis still provides valuable trends. One metric found in Table 2 is the minimum percentage of perceived implementation for any of the schools in that year. The second metric is the maximum percentage of perceived implemenation as reported for any school in that year. The third measure is the mean of all the reported perceived implementation percentages for that year. Overall, it appears that from baseline through the 11th year of SWPBIS implementation, the percentages tend to remain fairly stable between 60% and 68%. In other words, approximately two-thirds of the respondents perceive that tier 1 SWPBIS is fully implemented after two years.

Conclusions

- Staff members at schools that have implemented SWPBIS for more years tend to believe that SWPBIS is being more fully implemented.
- While the mean level of perceived implementation is higher over time, the percentage of staff who believe the school has more fully implemented SWPBIS remains fairly stable and the percentage of staff who believe the school is not as fully implementing tends to decrease slightly over time.

RECOMMENDATIONS:

- Given that approximately 30% to 40% of staff do not perceive that SWPBIS is fully implemented when, indeed, it is implemented, there is a need in schools to continually publicize SWPBIS implementation and its benefits. If staff do not perceive that it is fully implemented, they may not be behaving in a manner that will get the most out of its implementation.

TABLE 2

Staff Perception of the Status of Behavioral Support at the School-Wide Level as Reported on the EBS: SAS Data

Year of Implementation	N	Minimum	Maximum	M	SD
Pre-Implementation	389	5.4	91.7	39.3	16.8
1	338	4.7	94.1	56.2	16.5
2	260	17.6	95.4	63.6	17.3
3	195	16.4	96.7	66.9	16.1
4	148	15.3	97.9	66.8	16.2
5	128	10.5	97.9	66.4	16.7
6	98	18.3	93.6	68.2	15.3
7	75	17.2	97.6	67.5	17.4
8	41	30.5	95.7	65.6	17.1
9	18	36.3	93.4	65.1	16.4
10	13	33.3	94.8	69.6	16.8
11	9	18.4	87.8	62.0	22.1

Note. EBS: SAS = *Effective Behavior Support: Self-Assessment Survey*. All data are reported as percentages of respondents.

Staff Perceptions of School Safety

The *School Safety Survey* (Sprague, Colvin, & Irvin, 2002) asks respondents to assess the level of risk factors and protective factors that are present within the school and community environment.

Findings

The cross-sectional graph of protective factor scores and risk factor scores from the pre-implementation year through year 11 of SWPBIS implementation appear in Figure 10. The 469 schools for which pre-implementation data were available had mean protective scores of 70.0% and mean risk scores of 42.7%. In the 11th year of SWPBIS implementation, the schools for which data were available had mean scores of 74.8% and 40.1% for the protective and risk factors, respectively. The trend line for the protective factors is clearly moving in a positive direction, and the trend for the risk factors is moving in a slightly, less-obvious negative direction.

FIGURE 10

*Protective and Risk Measure Scores Over Time*
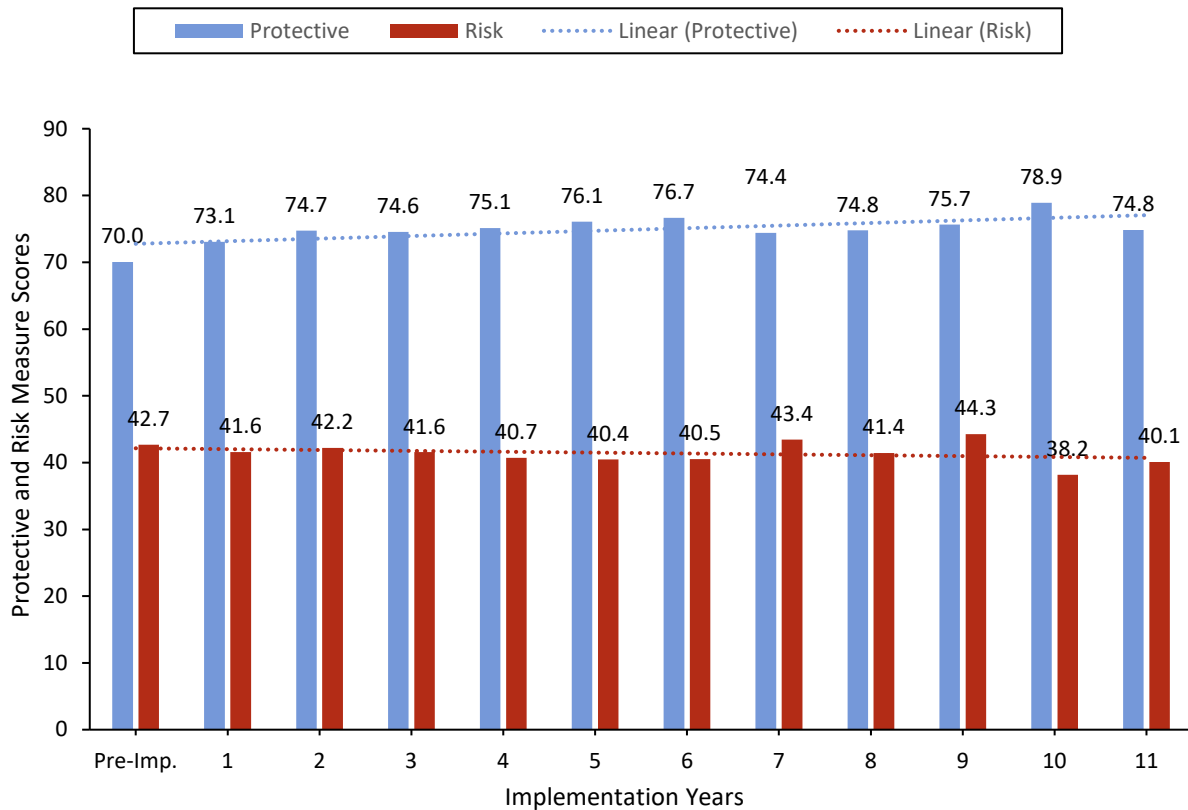
Note. Pre-Imp. = Pre-Implementation; data represent the proportion of items endorsed by respondents.

Figure 11 shows the relationship from the pre-implementation through year 11 of SWPBIS implementation for the protective-risk ratio. It is possible that, within a school over multiple years, staff perceptions of protective factors increase, while the risk factors remain the same. Similarly, protective factors may stay the same and risk factors may decline. Each of these scenarios would result in a positive movement in safety and would be reflected in larger ratios between protective and risk factor scores. In the pre-implementation year, the schools reported a protective-to-risk ratio of 1.9. In the 11th year of implementation, the schools also reported a protective-to-risk ratio of 1.9.

FIGURE 11

Ratio of Protective to Risk Factors Over Time
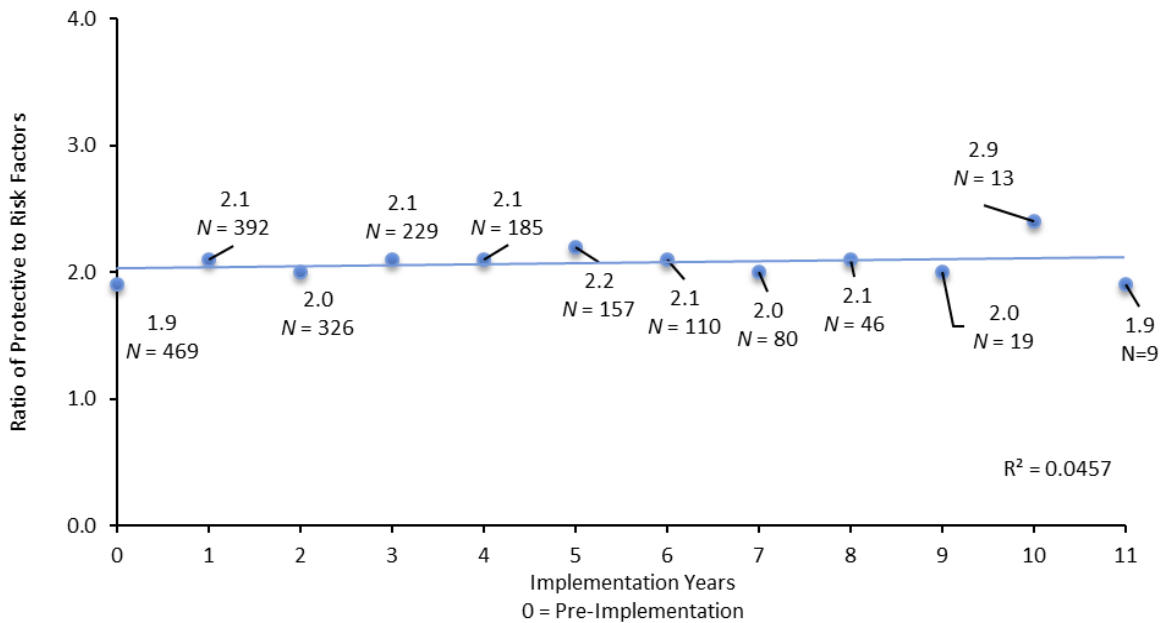
Conclusions

- There appears to be a link between implementation of SWPBIS and changes in perceptions of school protective factors.
- Across SWPBIS schools, the trends suggest a greater sense of protective factors.
- Within SWPBIS schools, there was an increase in perceived safety from pre-implementation to year 1 of implementation with continued improvements during the second year of implementation.

RECOMMENDATIONS:

- Given that SWPBIS tends to focus on positive behaviors and that the focus is not on the removal or remediation of risk factors external to the school, it might make sense that future investigations into SWPBIS impact on school safety focus on different dimensions of protective factors. This is particularly true of the first two years of implementation.
- As found in prior years, it is likely that perceptions of school safety are impacted by factors external to the school (e.g., national events). Consequently, future analyses might benefit by organizing analyses within academic years rather than within implementation years.

Office Discipline Referrals

One goal of SWPBIS is to reduce disruptive behavior that interferes with the learning environment. While such behavior can manifest in infinite ways, typically the most egregious behavior leads to some form of exclusion from the learning environment. Temporary exclusion from the learning environment is often recorded as an office discipline referral (ODR).

Findings

The overall findings in the 2017-2018 data are similar to previous annual evaluation reports: ODR rates vary considerably depending on the grade spans within a building implementing SWPBIS. Elementary schools implementing SWPBIS tend to use ODRs at far lower rates compared to all other building levels that implement SWPBIS. Alternative and high schools implementing SWPBIS typically use ODRs at far higher rates compared to all other buildings that implement SWPBIS. Middle and PreK-8 schools implementing SWPBIS use ODRs at comparable rates. This pattern of pairwise comparisons is consistent with national data trends as well.

Complete longitudinal fidelity and ODR data were available from 20 elementary schools across a 7-year span from pre-implementation to year 6 of tier 1 SWPBIS implementation. A visual display of these longitudinal results is provided in Figure 12. The median ODR rate did not change across the 7-year span, indicating that tier 1 SWPBIS was not associated with changes in ODR rates. National data from the 2017-2018 academic year (School-Wide Information System [SWIS], 2018) were also available to compare these 20 schools to national median ODR rates at the 25th, 50th, and 75th percentile rank as indicated by corresponding horizontal lines on the graph. Overall, PAPBS Network elementary schools generally used ODRs at a rate comparable to the 50th percentile rank across the nation.

FIGURE 12

Longitudinal Median ODR Rates for Elementary Schools from Pre-Implementation to Year 6 of Tier 1 SWPBIS Implementation
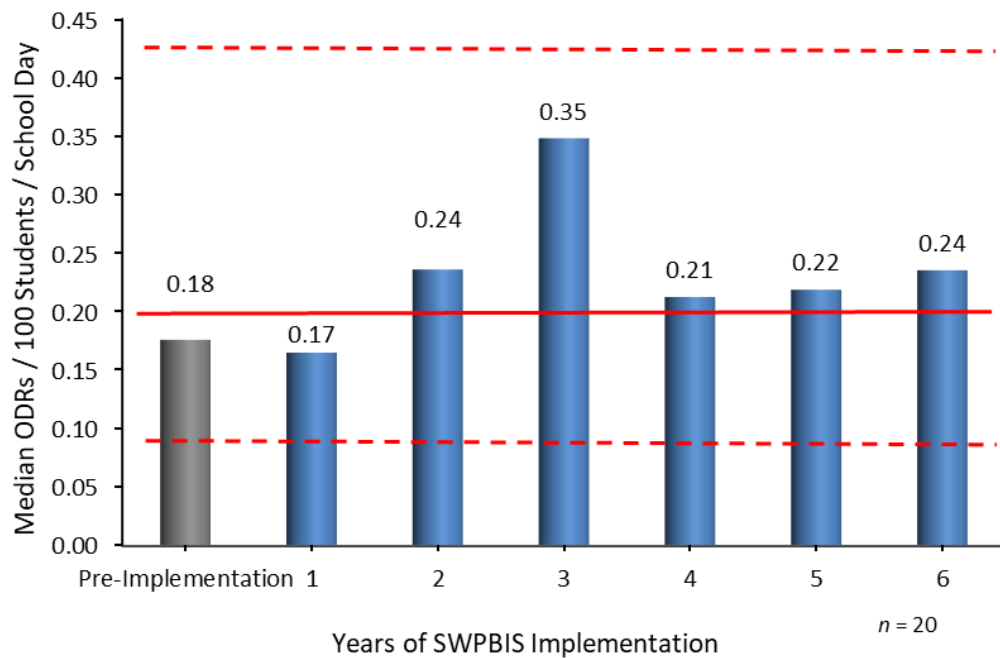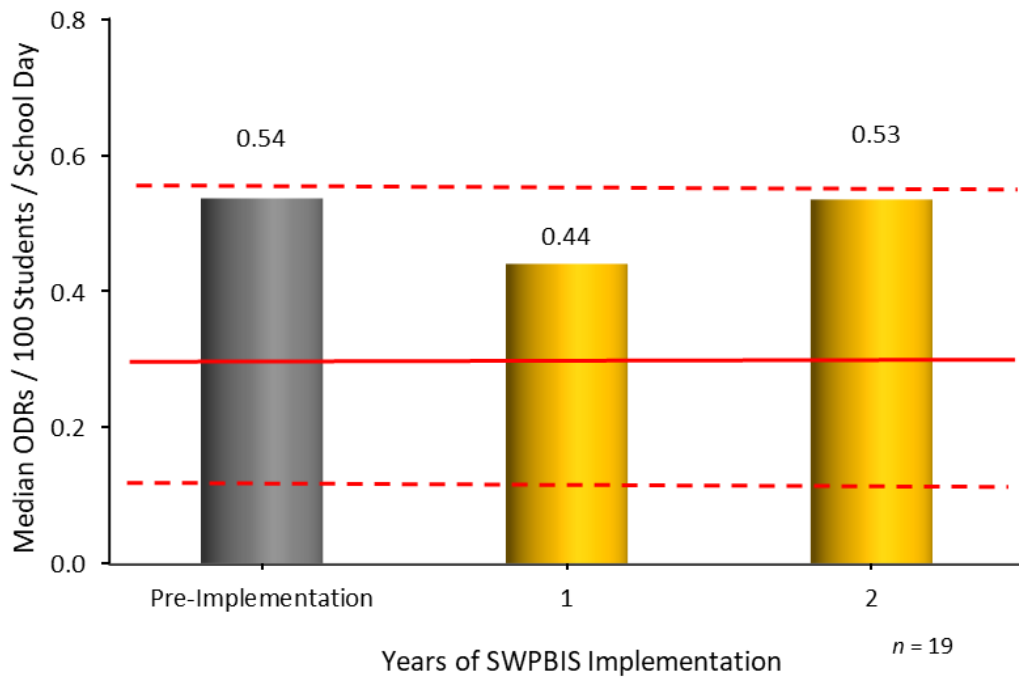

Note. ODR = office discipline referral; SWPBIS = School-Wide Positive Behavioral Interventions and Supports; median ODR rates were statistically similar from pre-implementation through year 6; solid red line represents the national median; dashed red lines represent the 25th and 75th national percentiles (SWIS, 2018).

Interpretation of these ODR rates may be somewhat difficult given the metric used (i.e., ODRs / 100 Students / School Day) is rather small. Conversion of this to a number of ODRs per 100 students per 180 school days may make these figures more interpretable. Based on the conversion, a typical elementary school implementing tier 1 SWPBIS would likely observe 41 ODRs per 100 students per 180 school days. If the average enrollment of an elementary school is 450 students, then this ODR rate equates to 184 ODRs per school year for a typical-sized elementary school in the PAPBS Network.

Complete longitudinal fidelity and ODR data were available from 19 middle schools across a 3-year span from pre-implementation to year 2 of tier 1 SWPBIS implementation. A visual display of these longitudinal results is provided in Figure 13. The median ODR rate was statistically similar across the 3-year period, indicating that tier 1 SWPBIS was not associated with changes in ODR rates among this sample of middle schools. National data from the 2017-2018 academic year (SWIS, 2018) were also available to compare these 19 schools to national median ODR rates at the 25th, 50th, and 75th percentile rank as indicated by corresponding horizontal lines on the graph. Overall, PAPBS Network middle schools generally used ODRs at a rate comparable to just below the 75th national percentile rank.

FIGURE 13 ━━━

Longitudinal Median ODR Rates for Middle Schools from Pre-Implementation to Year 2 of Tier 1 SWPBIS Implementation

Note. ODR = office discipline referral; SWPBIS = School-Wide Positive Behavioral Interventions and Supports; median ODR rates were statistically similar from pre-implementation through year 2; solid red line represents the national median; dashed red lines represent the 25th and 75th national percentiles (SWIS, 2018);

Conversion of these data to the number of ODRs per 100 students per 180 school days may aid in interpreting these data. Using this conversion, a middle school implementing tier 1 SWPBIS observes 91 ODRs per 100 students per 180 school days. Given the average enrollment of a middle school is 650 students, then the median ODR rate for a typically-sized middle school would be 589 ODRs in a school year.

Longitudinal analyses of ODR rates from high schools were performed from sites that provided complete ODR rate and tier 1 SWPBIS data. The two-year analysis comparing ODR rates from pre-implementation to the initial year of tier 1 SWPBIS adoption among a sample of 12 high schools is provided in Figure 14. The median ODR rate did not change across the 2-year period, indicating that tier 1 SWPBIS was not associated with changes in ODR rates among this sample of high schools. National data from the 2017-2018 academic year (SWIS, 2018) were also available to compare these 12 schools to national median ODR rates at the 25th, 50th, and 75th percentile rank. These national comparative data are indicated by corresponding horizontal lines on the graph. Overall, PAPBS Network high schools generally used ODRs at rates higher than the 75th national percentile rank.

FIGURE 14

Longitudinal Median ODR Rates for High Schools from Pre-Implementation to Year 1 of Tier 1 SWPBIS Implementation
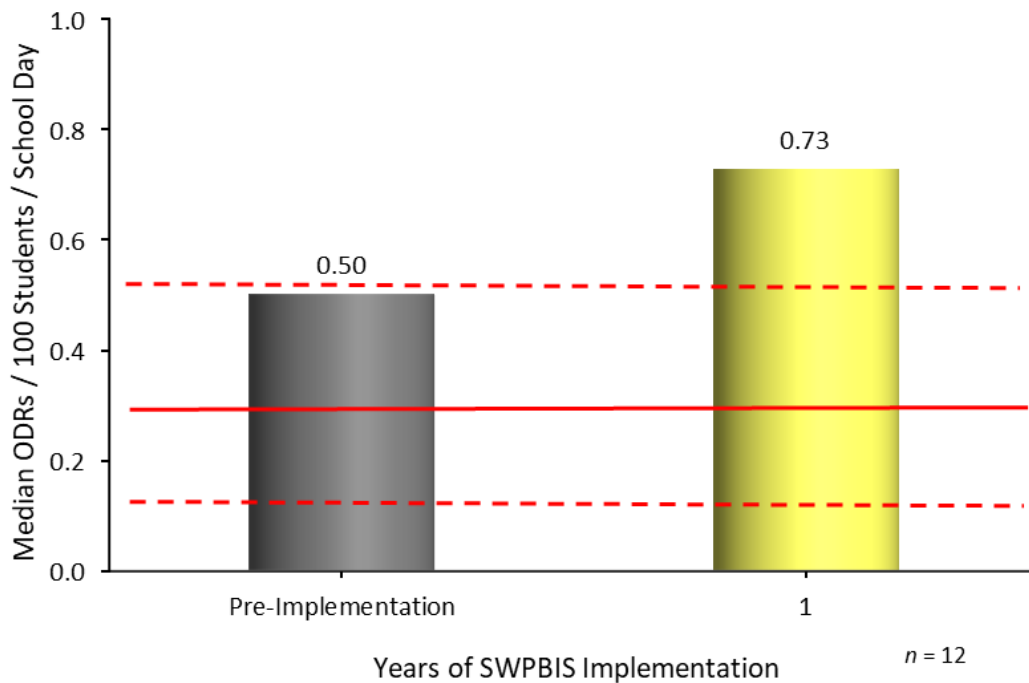

Note. ODR = office discipline referral; SWPBIS = School-Wide Positive Behavioral Interventions and Supports; median ODR rates were statistically similar from pre-implementation to year 1; solid red line represents the national median; dashed red lines represent the 25th and 75th national percentiles (SWIS, 2018).

Conversion of this to the number of ODRs per 100 students per 180 school days may aid in interpreting these data. Using this conversion, a high school implementing tier 1 SWPBIS observes 111 ODRs per 100 students per 180 school days. Given the average enrollment of a PAPBS Network high school is 800 students, then the median ODR rate for a typically-sized high school is 886 ODRs in a school year.

ODR and fidelity data from 2017-2018 were analyzed to determine if there were differences between schools implementing only tier 1 SWPBIS and schools implementing all three tiers of SWPBIS. Only data from elementary schools were analyzed given the aforementioned building-level differences and relatively small number of non-elementary schools that implemented all three tiers of SWPBIS. A visual display of these groups is provided in Figure 15. Results indicated that the ODR rates were statistically comparable, indicating that ODR rates are statistically similar for elementary school implementing only tier 1 SWPBIS when compared to elementary schools implementing all 3 tiers of SWPBIS.

FIGURE 15

2017-2018 Median ODR Rates for Elementary Schools Implementing Tier 1 SWPBIS Compared to Schools Implementing Tiers 1-3 SWPBIS
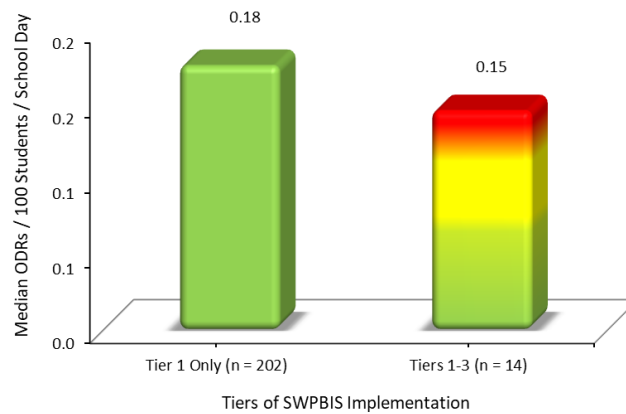

Note. ODR = office discipline referral; SWPBIS = School-Wide Positive Behavioral Interventions and Supports; median ODR rates were statistically similar.

Conclusions

- Middle and high schools use ODRs at rates higher than national averages. This provides opportunities to improve such rates with targeted efforts at these schools.
- ODRs do not significantly change once SWPBIS is implemented in elementary, middle, and high schools.
- Implementation of all three tiers of SWPBIS may not result in substantially lower ODR rates compared to schools that implement just tier 1 SWPBIS. This finding, however, is based on a small sample of data.

RECOMMENDATIONS:

- ODR rates, particularly at the secondary level, should continue to be monitored as more schools submit complete longitudinal data. This will increase the statistical power to detect meaningful changes in ODR rates.
- The CoP on SBBH and PAPBS Network may wish to provide targeted training and technical assistance to secondary schools in an effort to reduce ODR rates.
- ODR rates in a sample of schools for which all three tiers of SWPBIS have been fully adopted compared to schools implementing just tier 1 should continue, particularly as the number of schools fully implementing all three tiers continues to climb.

ODR Triangle Data

Schools that utilize the secure, online SWIS platform for recording and tracking ODRs can generate year-end ODR Triangle Data reports that provide the proportion of students who receive 0-1, 2-5, and 6+ ODRs in an academic year. These ranges of ODRs received correspond to ranges of behavioral risk: low, moderate, and high (McIntosh et al., 2009; Pas et al., 2011).

Findings

Consistent with findings from previous annual evaluations, current analyses indicated that the proportion of students receiving 0-1, 2-5, or 6+ ODRs in an academic year was meaningfully different across elementary, middle, and high schools. Consequently, longitudinal analyses were disaggregated by building level.

Analyses of elementary school ODR Triangle Data indicated that SWPBIS was not associated with any statistically significant changes in the proportion of students receiving 0-1 ODR, 2-5 ODRs, or 6+ ODRs across year 1 through year 6 of tier 1 SWPBIS implementation. A visual display of this is provided in Figure 16.

FIGURE 16

Longitudinal ODR Triangle Data for Elementary Schools Implementing Tier 1 SWPBIS for Four Consecutive Years
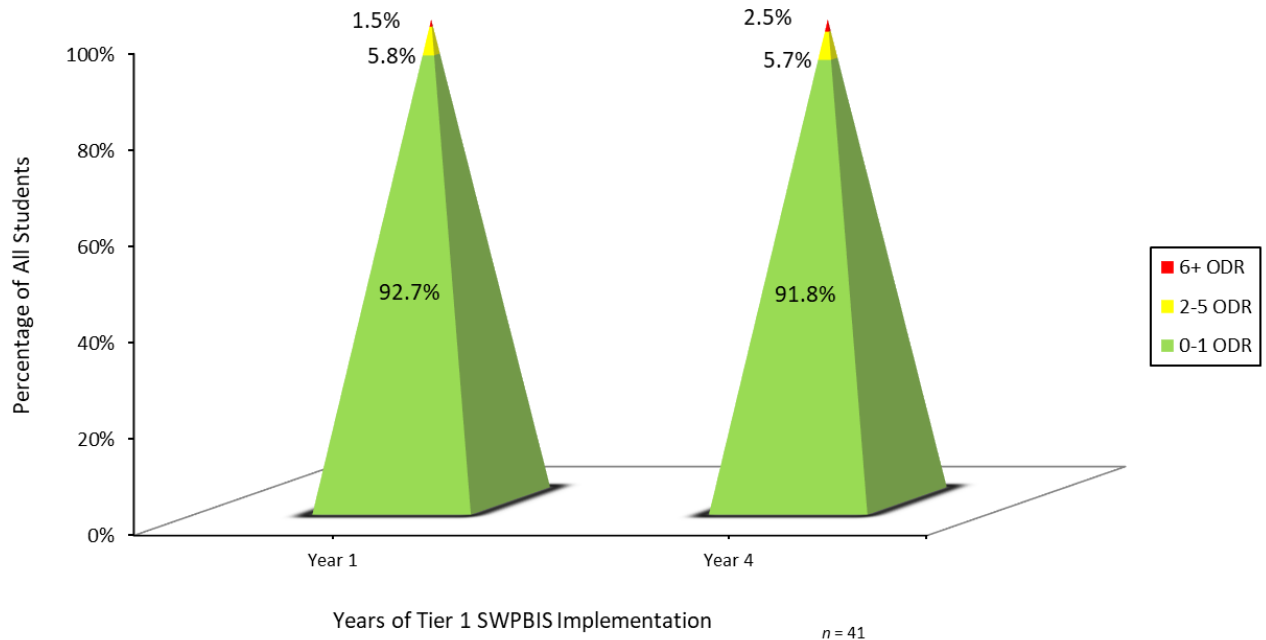
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports; ODR = office discipline referral; percentages may not add to 100% due to rounding; ODR Triangle proportions did not significantly change from one year to another.

It is noteworthy, however, that despite a lack of change over time, the proportion of elementary students that receive 0-1 ODR in an academic year is very high: just over 9 out of every 10 students receives one or no ODRs in an academic year. These data suggest that tier 1 SWPBIS provides sufficient instruction and support to meet the behavioral needs of over 90% of all students in an elementary school. Less than 10% of all students in a school are repeatedly disruptive to the learning environment resulting in multiple ODRs in a given academic year. Moreover, less than 3% of all elementary students receive a high number of ODRs (i.e., 6+) in a given year indicating that their needs are more complex than what can be adequately supported by tier 1 SWPBIS alone.

Longitudinal analyses of middle schools' ODR Triangle Data are limited to relatively short periods of time (i.e., <4 consecutive years of implementation) given the smaller number of middle schools that have implemented SWPBIS for multiple years. Data from 13 middle schools implementing tier 1 SWPBIS indicated the proportion of students receiving 0-1 ODR, 2-5 ODRs, and 6+ ODRs in a year remained similar across the three-year period. A visual display of year 1 and year 3 data provided in Figure 17.

FIGURE 17

Longitudinal ODR Triangle Data for Middle Schools Implementing Tier 1 SWPBIS for Three Consecutive Years
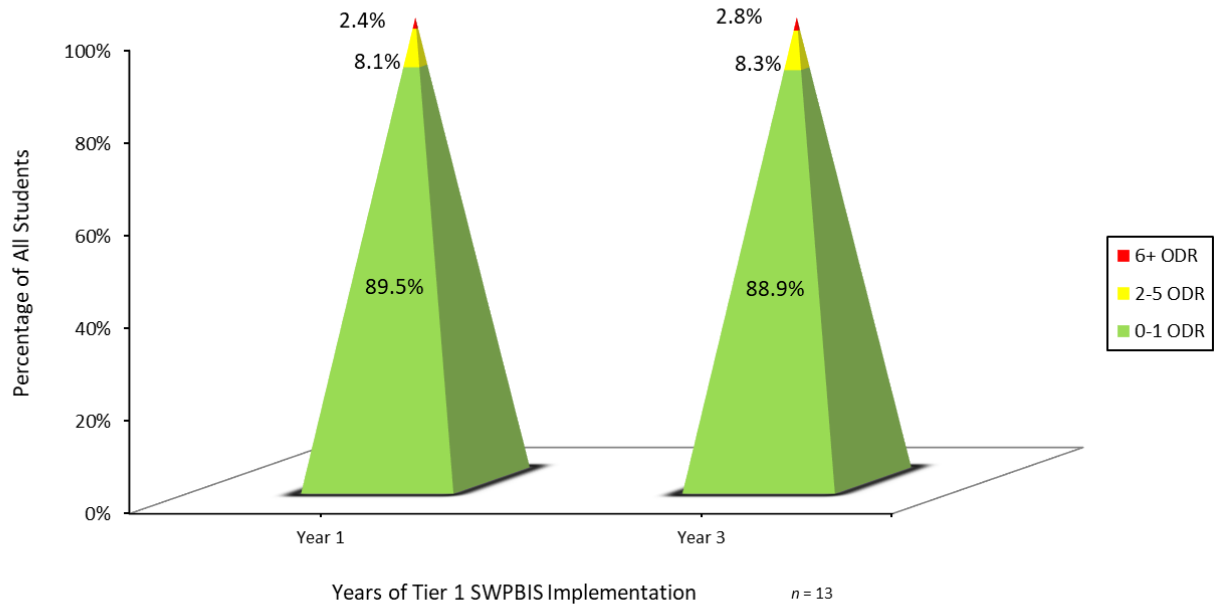
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports; ODR = office discipline referral; percentages may not add to 100% due to rounding; ODR Triangle proportions did not significantly change from one year to another.

Despite the absence of significant longitudinal changes, the data suggest that tier 1 SWPBIS provides enough instruction and support to adequately meet the behavioral needs of nearly 9 out of 10 middle school students. Approximately 8% of middle school students require an additional tier of SWPBIS supports to be successful, while just under 3% of all middle school students demonstrate chronic behavioral challenges that warrant substantial intervention and supports typically associated with tier 3 SWPBIS.

There are relatively few PAPBS Network high schools implementing tier 1 SWPBIS over multiple years that also provided complete longitudinal ODR Triangle data. Therefore, longitudinal analyses of high schools' ODR Triangle Data were limited to a two-year span (i.e., year 1 and year 2 of tier 1 SWPBIS). Results suggested that ODR Triangle Data remain statistically similar across a two-year period. A visual display of these data is provided in Figure 18.

FIGURE 18

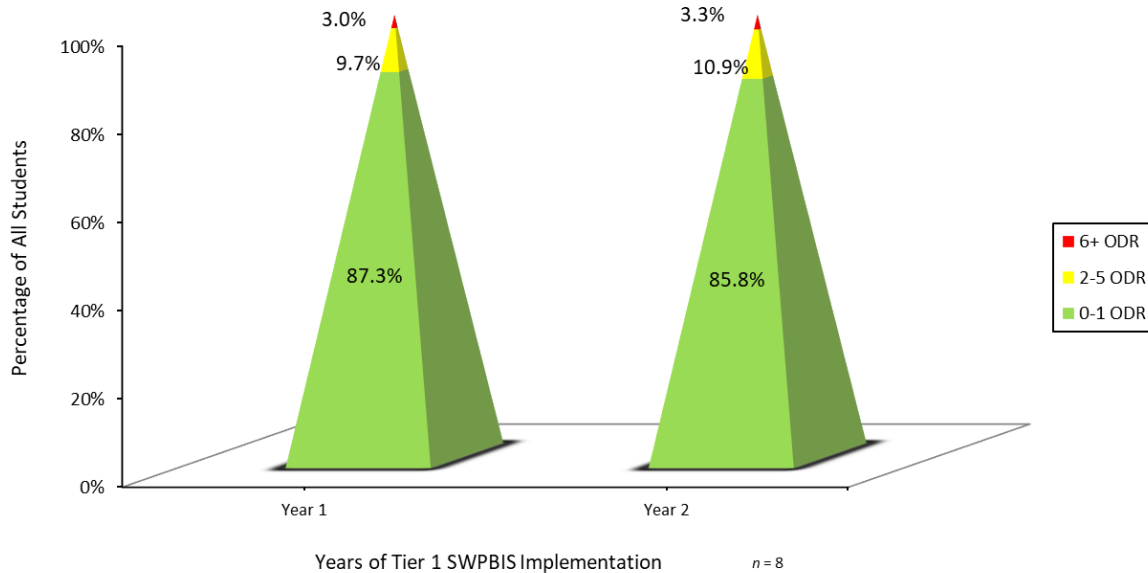*Longitudinal ODR Triangle Data for High Schools Implementing Tier 1 SWPBIS for Two Consecutive Years*

Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports; ODR = office discipline referral; percentages may not add to 100% due to rounding; ODR Triangle proportions did not significantly change from one year to another.

In conclusion, high schools do not report statistically significant changes in ODR Triangle Data over two consecutive years of tier 1 SWPBIS implementation. From a global perspective, however, these data reflect the reality that nearly 9 out of 10 high school students meet school-wide behavioral expectations without substantially disrupting the learning environment. Approximately 13-14% of all high school students display behavioral challenges that warrant the supports and interventions provided at the advanced tiers of SWPBIS. Finally, as was the case with elementary and middle schools, a very small proportion of all high school students (approximately 3%) displays chronic behavioral challenges that cannot be adequately addressed with tier 1 SWPBIS alone.

Conclusions

- ODR Triangle Data must be analyzed separately for different building grade spans.
- Tier 1 SWPBIS provides sufficient behavioral support to meet the needs of large proportions of students in elementary, middle, and high schools.

RECOMMENDATIONS:

- It will be important to monitor ODR Triangle Data as more schools utilize fidelity measures assessing implementation integrity at the advanced levels of SWPBIS, especially given that advanced tiers of SWPBIS likely will directly affect ODR Triangle Data proportions.

Suspensions

Students' inappropriate behavior is sometimes so chronic, disruptive, dangerous, or severe that administrators remove them from the building for a short period of time through the use out-of-school suspensions (OSS). One of the aims of SWPBIS is to reduce the use of OSS.

Findings

Overall, OSS rates among elementary schools were statistically significantly lower than OSS rates in secondary schools across pre-implementation through at least six consecutive years of SWPBIS implementation, a finding consistent with national studies (Spaulding et al., 2010). Subsequent OSS analyses were disaggregated by elementary and secondary schools.

An illustration of pre-implementation OSS rates compared to OSS rates during year 4 of SWPBIS is provided in Figure 19 for a group of elementary schools implementing SWPBIS. Longitudinal analyses indicated that OSS rates do not change from pre-implementation rates after 4 years of tier 1 SWPBIS implementation. Figure 19 also displays the national average OSS rate among elementary schools allowing for comparison of PAPBS Network schools to schools across the country. Data analyses indicated that PAPBS Network elementary schools use OSS at statistically significantly lower rates than national averages.

FIGURE 19

Annual Average OSS Days Served per 100 Students in Elementary Schools Pre-Implementation to Year 4
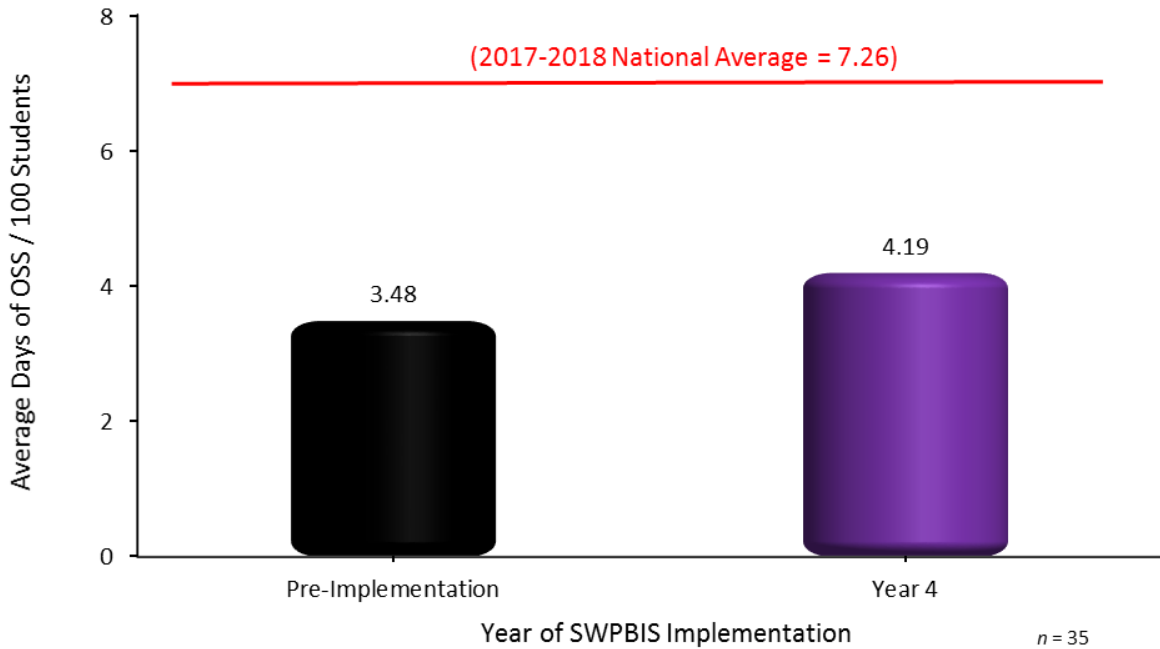
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports; OSS = out-of-school suspension; average OSS rates did not significantly change from one year to another; PAPBS Network elementary schools reported statistically significantly lower OSS rates than national averages.

   Longitudinal analyses were performed on data from secondary schools implementing SWPBIS. Data from 26 secondary schools indicated that OSS rates statistically significantly decline two years after adopting tier 1 SWPBIS. A visual display of these results is found in Figure 20. Further inspection of the results indicated that the greatest decline in OSS rates was from pre-implementation to year 1. OSS rates from year 1 to year 2 remained statistically similar. Additionally, data analyses revealed that secondary schools in Pennsylvania utilize OSS at comparable rates to national averages across pre-implementation and two years of SWPBIS implementation.

FIGURE 20

Longitudinal Average OSS Days Served per 100 Students in Secondary Schools from Pre-Implementation to Year 2
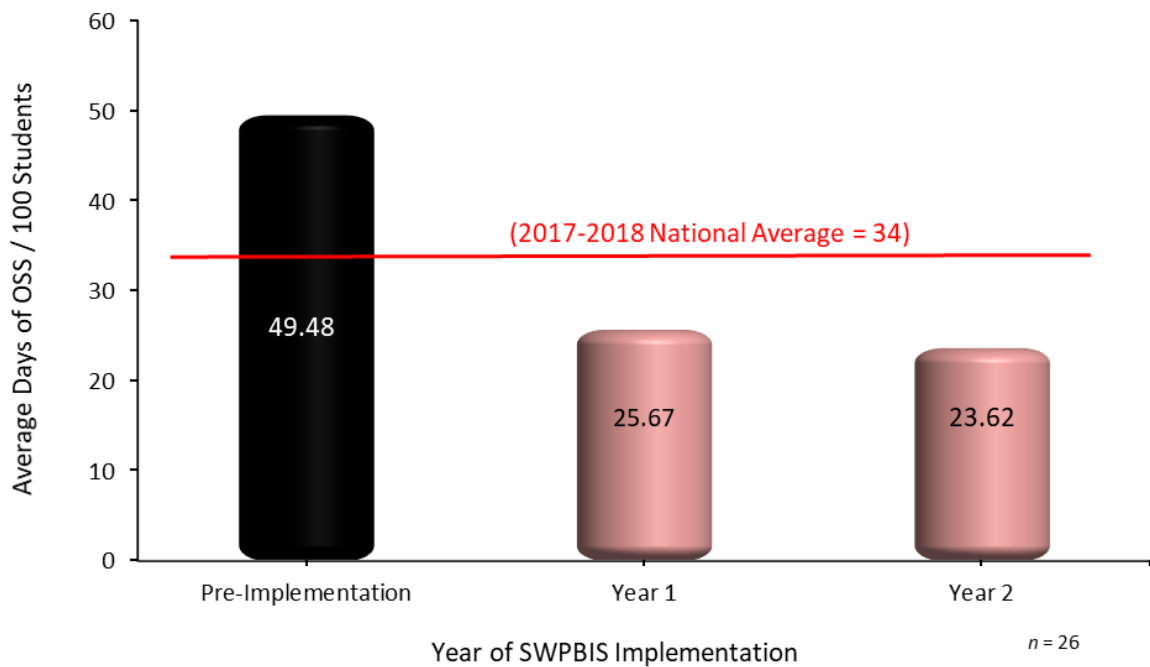

Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports; OSS = out-of-school suspensions. OSS rates statistically significantly declined from pre-implementation to year 1 and remained statistically similar from year 1 to year 2. PAPBS Network secondary schools used OSS at similar rates to national averages across pre-implementation and multiple years of SWPBIS implementation.

Conclusions

- The evidence suggests that tier 1 SWPBIS implementation has a stronger influence on reducing OSS rates in secondary schools than in elementary schools.

RECOMMENDATIONS:

- Future investigation should focus on whether there are differential effects on OSS rates by schools implementing tier 1 SWPBIS compared to schools implementing all three tiers of SWPBIS. This would be important to investigate given most students who receive an OSS have complex social, emotional, and behavioral needs that are best addressed via a comprehensive three-tiered SWPBIS framework not just tier 1 SWPBIS.

Out-of-School Placements

In certain instances, a student's local school does not have the necessary resources to deliver this intensive intervention, and thus an out-of-school placement (OSP) is recommended. Beginning in 2010-2011, PAPBS Network schools were invited to submit OSP data.

Findings

OSP rates for all students, students identified as emotionally disturbed, and the proportion of all placements that were for students identified as emotionally disturbed are disaggregated by elementary / middle / K-8 and high schools given the statistically significant mean differences in some of the cross-sectional data.

Data from over 20 elementary, middle, and K-8 were available for a five-year longitudinal analysis from pre-implementation to year 4 of SWPBIS. Results did not indicate statistically significant pre-post SWPBIS implementation changes in OSP rates for all students or OSP rates for students identified as emotionally disturbed. Therefore, it does not appear that SWPBIS is associated with immediate changes in OSP rates for students.

Longitudinal OSP rates for all students and students identified as emotionally disturbed submitted by elementary, middle, and K-8 schools implementing SWPBIS for one to four years are presented in Figure 21. Importantly, pre-implementation OSP rates are not presented in these results. Data analytic procedures revealed that OSP rates for all students statistically significantly declined from year 1 to year 4. OSPs for all students dropped from an average of 1.08 OSPs per 100 students in year 1 to an average of 0.59 OSPs per 100 students in year 4. Similarly, OSP rates for students identified as emotionally disturbed statistically significantly decreased from year 1 to year 4. OSPs for students identified as emotionally disturbed dropped from an average of 0.36 per 100 students in year 1 to an average of 0.17 per 100 students in year 4.

FIGURE 21

Longitudinal Analysis of Out-of-School Placements for All Students and Students with Emotional Disturbance per 100 Students for Elementary, Middle, and K-8 Schools After SWPBIS is Adopted
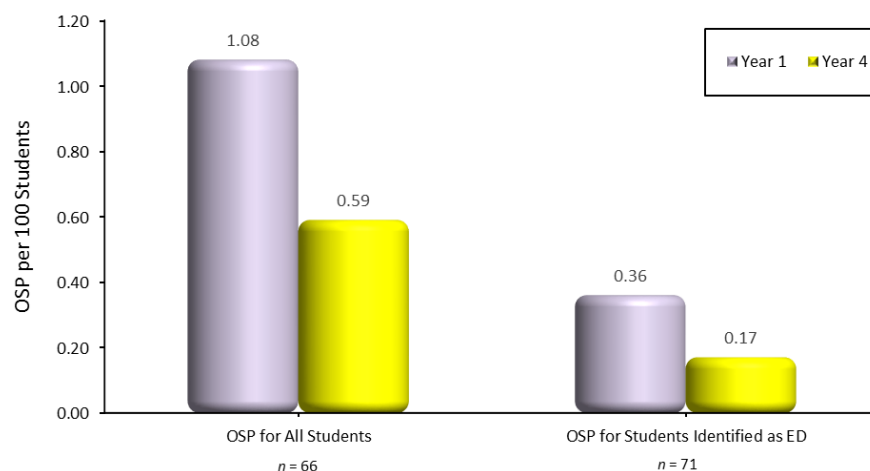
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports; OSP = Out-of-School Placement; ED = emotional disturbance. OSP for all students and for students identified as emotionally disturbed were statistically significantly lower at the fourth year of SWPBIS compared to the first year of SWPBIS.

An attempt was made to conduct longitudinal analyses with high schools disaggregated from elementary, middle, and K-8 schools given these disparate findings among some of the OSP metrics. Unfortunately, too few high schools provided adequate fidelity and OSP data to conduct meaningful longitudinal analyses.

Conclusions

- OSPs for all students and students identified as emotionally disturbed does not immediately decline upon implementing SWPBIS; however, significant declines over multiple years of tier 1 SWPBIS implementation were observed.

RECOMMENDATIONS:

- Support should be provided to high schools to obtain more complete, longitudinal OSP data to conduct analyses with these buildings.
- Future investigation should focus on the relationship between OSP rates and PAPBS Network schools that are implementing multiple tiers of SWPBIS compared to schools implementing only tier 1 SWPBIS. Students with the most complex needs, and traditionally considered for an OSP, might be more likely to remain in their neighborhood school if their school implemented a comprehensive, three-tiered SWPBIS framework compared to a school that implemented only tier 1 SWPBIS. Future empirical inquiry should investigate this hypothesis.

Check-In / Check-Out

Check-In / Check-Out (CICO; Crone, Hawken, & Horner, 2010) is a standard-protocol intervention often implemented at tier 2 in the SWPBIS framework. Given its relative ubiquitous implementation in SWPBIS schools, a review of findings, conclusions, and recommendations is provided.

Findings

The proportion of students enrolled in CICO who experienced success was compared across elementary, secondary, and K-8 schools using 2017-2018 data. Initial analyses indicated that CICO success rates were statistically comparable across these schools.

A series of longitudinal analyses were conducted across multiple years-long spans (e.g., 3-year; 4-year; 5-year) to empirically evaluate how well CICO positively supports students' needs. All results were similar; however, only the 5-year analysis is reported here to preserve space in this report. An interesting finding was discovered: The proportion of students who achieved CICO criterion statistically significantly changed over time, and these changes over time are rather robust and worthy of meaningful consideration. A visual display of these longitudinal data is provided in Figure 22.

Follow-up analyses were revealing. The highest proportion of students enrolled in CICO who met criterion occurred in the initial year of adoption with all subsequent years of CICO implementation reflecting statistically lower rates of success. Success rates after the initial year of CICO implementation were statistically similar.

FIGURE 22

CICO Longitudinal Success Rates in Elementary and Secondary Schools
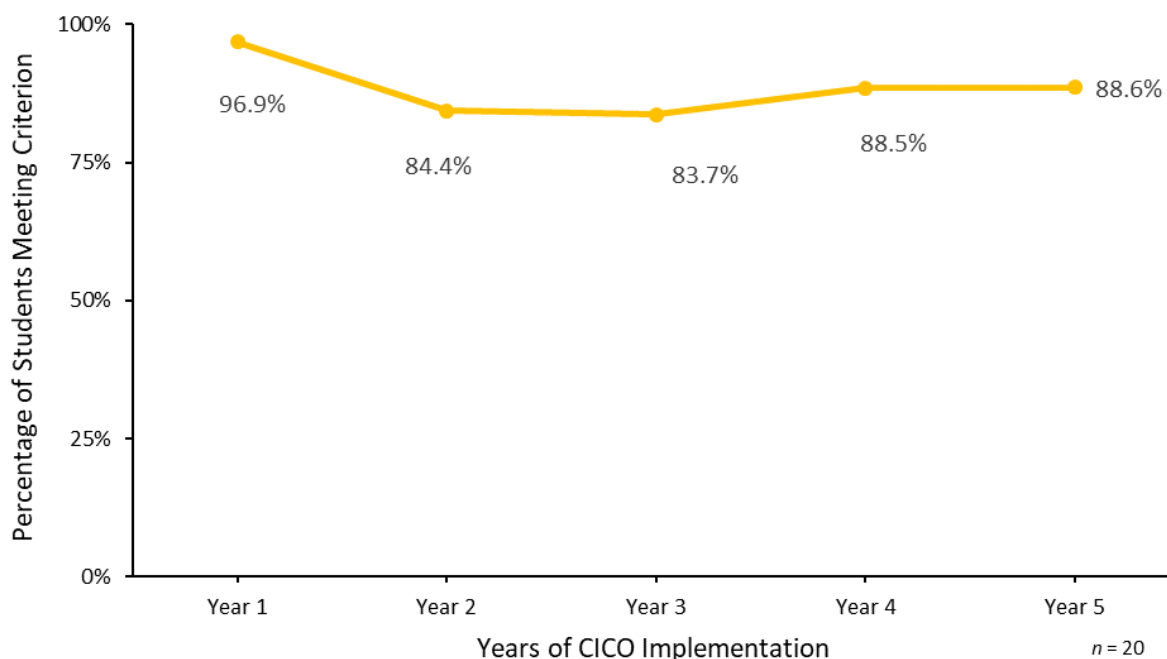
Note. CICO = Check-In / Check-Out. Success rates were statistically significantly higher in year 1 compared to all other years of CICO implementation. No other post hoc analyses were statistically significant.

Conclusions

- CICO is a highly effective tier 2 SWPBIS intervention that can help support students with mild to moderate needs for behavioral support.
- CICO success rates may decline after the first year of implementation. This conclusion is offered with caution given this was the first time such a finding was revealed in the data.

RECOMMENDATIONS:

- The PAPBS Network and Facilitators should provide support for more schools to implement CICO given its efficacy and cost-benefits for implementation. Implementation efforts at the secondary level should be emphasized as well.
- Longitudinal trends should continue to be monitored to confirm this preliminary finding of statistically significantly higher success rates in year 1 of CICO compared to subsequent years of implementation.
- Fidelity of CICO implementation should be assessed to confirm the extent to which it is implemented with integrity.

Academic Achievement

According to Gage, Leite, Childs, and Kincaid (2017), after controlling for school-level characteristics such as population density, student enrollment, racial constitution of school populations, and percentage of students receiving free and reduced meals, SWPBIS may be associated with an increased probability of achieving state-level proficiency targets. It would certainly not be unreasonable to expect that improved learning environments should result in improvements in the academic achievement of students.

Findings

Since PSSA test results are based on the academic year and since in any given year of implementation of SWPBIS there are multiple academic years, a concept of weighted averages was created by which SWPBIS schools could be compared to a weighted state-wide average. In the case of *Pennsylvania System of School Assessment* (PSSA) Mathematics, there does appear to be some measurable, positive impact of SWPBIS. See Table 3 for a presentation of cross-sectional PSSA Math data.

TABLE 3
Hypothetical Weighted State-Level Mean Percentage of Student Achieving Proficient or Advanced on PSSA Math by Years of Implementation vs. SWPBIS Schools

Years of Implementation	Average Percentage of Advanced / Proficient Performance in PSSA Math Hypothetical State-Wide	Number of SWPBIS Schools	Average Percentage of Advanced / Proficient Performance in PSSA Math SWPBIS Schools
Pre-Implementation	57.6%	709	57.8%
1 Year	54.2%	617	57.2%**
2 Years	52.8%	458	56.8%**
3 Years	52.5%	344	56.6%**
4 Years	48.5%	281	52.1%**
5 Years	46.7%	191	52.0%**
6 Years	46.9%	142	49.8%
7 Years	46.2%	72	47.5%
8 Years	42.5%	38	44.1%
9 Years	42.2%	23	47.4%
10 Years	42.3%	12	53.1%*
11 Years	42.1%	2	35.0%

Note. PSSA = Pennsylvania System of School Assessment; SWPBIS = School-Wide Positive Behavioral Interventions and Supports.
** $p < .01$; * $p < .05$; all other comparisons not significant.

In the case of the PSSA Reading / English Language Arts (ELA), the results of comparing state-wide percentages of proficiency with that of SWPBIS schools were inconsistent (see Table 4). In some years, the differences were in the direction of the state-wide percentages, and in other cases they were in the direction of the SWPBIS schools. This mixed result would be consistent with a finding that there are no significant differences between the two.

TABLE 4 ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━

Hypothetical Weighted State-Level Mean Percentage of Student Achieving Proficient or Advanced on PSSA Reading / ELA by Years of Implementation vs. SWPBIS Schools

Years of Implementation	Average Percentage of Advanced / Proficient Performance in PSSA Reading / ELA Hypothetical State-Wide	Number of SWPBIS Schools	Average Percentage of Advanced / Proficient Performance in PSSA Reading / ELA SWPBIS Schools
Pre-Implementation	65.8%	704	63.4%*
1 Year	64.8%	612	62.7%*
2 Years	64.3%	457	63.0%
3 Years	64.1%	342	62.7%
4 Years	59.0%	279	61.9%**
5 Years	62.3%	191	62.9%
6 Years	62.4%	142	62.2%
7 Years	62.3%	71	59.9%
8 Years	61.1%	38	60.4%
9 Years	60.9%	23	62.1%
10 Years	65.2%	11	68.6%
11 Years	61.4%	2	26.9%

Note. PSSA = Pennsylvania System of School Assessment; ELA = English Language Arts; SWPBIS = School-Wide Positive Behavioral Interventions and Supports.
** $p < .01$; * $p < .05$; all other comparisons not significant.

Conclusions

- The findings identified above were based on cross-sectional analyses in which a weighted average had to be used to allow for a reasonable comparison. However, there is sufficient evidence to support the possibility that there is a link between SWPBIS implementation and mathematics academic performance as measured by the PSSA. Whether this is causal is a legitimate question for further inquiry. In the case of Reading / ELA, there is not much evidence to make this same claim.

RECOMMENDATIONS:

- As recommended in prior years, it would be beneficial if investigations regarding the link between SWPBIS and academic performance could identify non-SWPBIS schools in any given year that have similar characteristics to SWPBIS schools and compare these schools' performance levels more directly.
- PSSA data measures success solely on the basis of how many students achieve proficient or advanced levels. A student who performs Below Basic one year and subsequently scores Basic the next year is not considered a success, even though that student performed better the second year. Once again, a more realistic measure of academic performance would be to use data from the *Pennsylvania Value-Added Assessment System* to allow comparisons within schools and over time.

# REPLICATION, SUSTAINABILITY, AND IMPROVEMENT OF PENNSYLVANIA'S SWPBIS

Algozzine and colleagues' (2010) final evaluative domain is the extent to which SWPBIS is scaled-up across locations and sustained across multiple years. Scale-up efforts should reflect an increasing number of sites implementing SWPBIS.

Findings

Cross-sectional data of the number of schools achieving full implementation of tier 1 SWPBIS each spring since 2007 are provided in Figure 23. Given that these are cross-sectional data, it is important to note that schools are counted for each year in which full implementation of tier 1 SWPBIS was empirically established. These data reflect an impressive expansion of tier 1 SWPBIS implementation over the past five academic years. In fact, the 2018-2019 academic year witnessed a remarkable 25% increase in the number of schools achieving tier 1 SWPBIS fidelity status. By spring of 2019, 565 schools had confirmed fidelity of implementation at tier 1.

FIGURE 23 ━━━━━━━━━━━━━━━━━

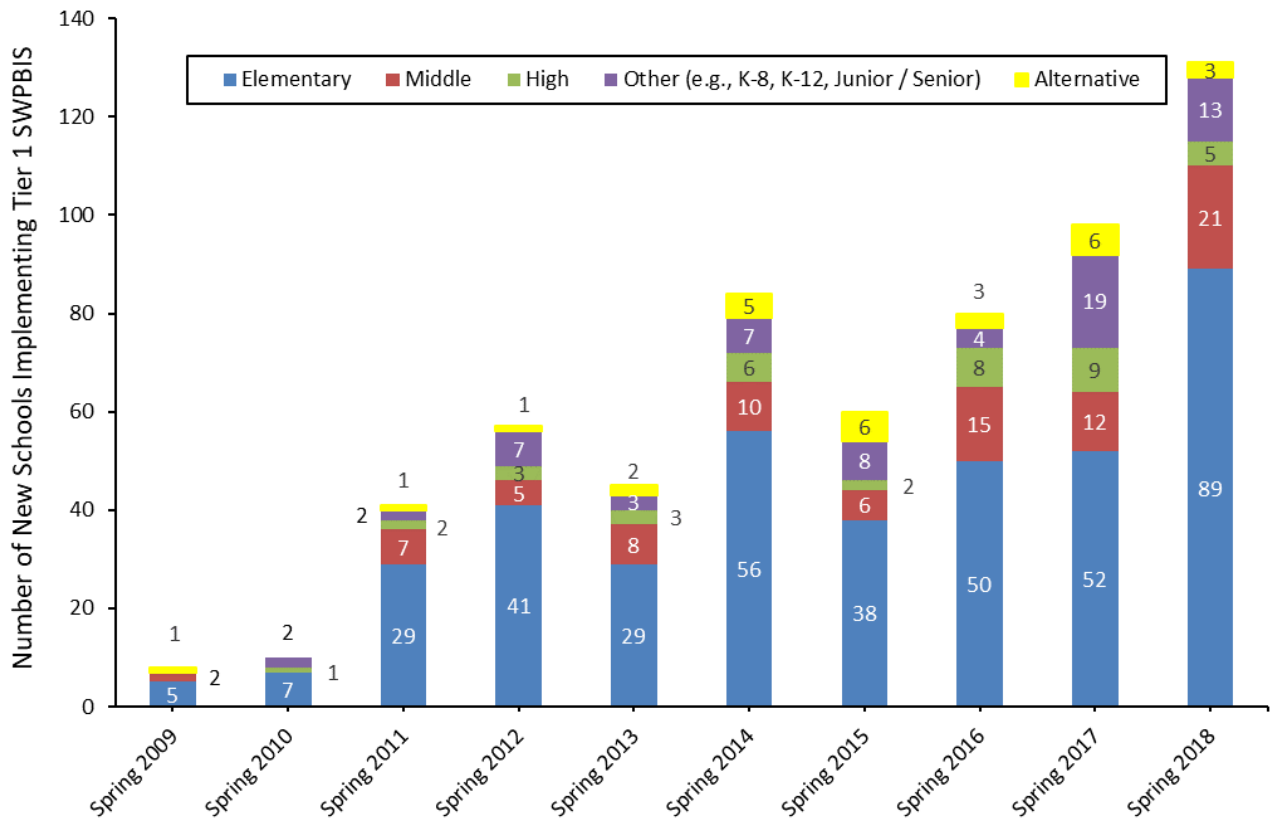*Cross Sectional Review of Tier 1 SWPBIS Implementation*
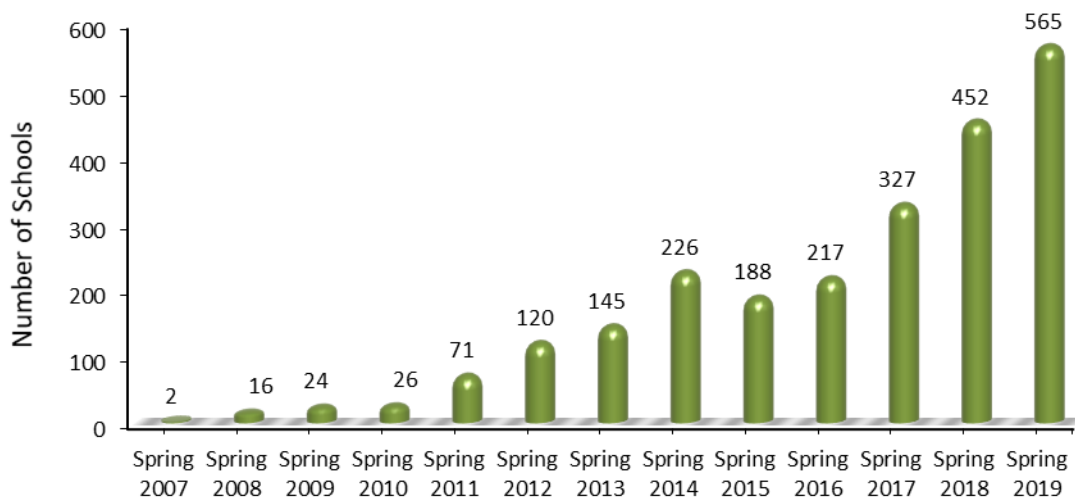
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports.

It is also important to report the number of schools that initially adopt tier 1 SWPBIS each academic year. To accomplish this, a longitudinal review of schools that initially adopt tier 1 SWPBIS is performed. Longitudinal data analyses, as displayed in Figure 24, reflect the second largest annual increase in the number of schools implementing tier 1 SWPBIS in spring 2018 compared to the previous year. This growth represents a 33.7% increase from spring 2017 to spring 2018. The largest proportional growth in newly-adopting tier 1 SWPBIS schools in spring 2018 disaggregated by building level was observed in middle schools, with an increase of 9 more middle schools adopting tier 1 SWPBIS in spring 2018 compared to the number of

newly-adopting middle schools in spring 2017. This represents a 75.0% growth in middle schools initiating tier 1 SWPBIS in spring 2018 over the previous year's growth (i.e., spring 2016 to spring 2017). These data also indicate positive growth in the number of newly adopting elementary schools: 37 more newly-adopting elementary schools in spring 2018 compared to the number of newly-adopting elementary schools in spring 2017; representing 71.2% growth from spring 2017 to spring 2018. The number of high schools, alternative schools, and others (K-8, K-12, junior / senior high) newly adopting tier 1 SWPBIS increased across all three categories, but growth in these schools from spring 2017 to spring 2018 was not as robust as in previous years.

FIGURE 24

*Longitudinal Review of Schools Initially Adopting Tier 1 SWPBIS by Academic Year*

Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports.

It is also important that PAPBS Network schools achieve long-term, high-fidelity implementation of all tiers of SWPBIS. The number of schools implementing tier 1 SWPBIS across initial adoption through long-term implementers (i.e., 6 or more years) is provided in Figure 25.

FIGURE 25

Consecutive Years of Tier 1 SWPBIS Implementation
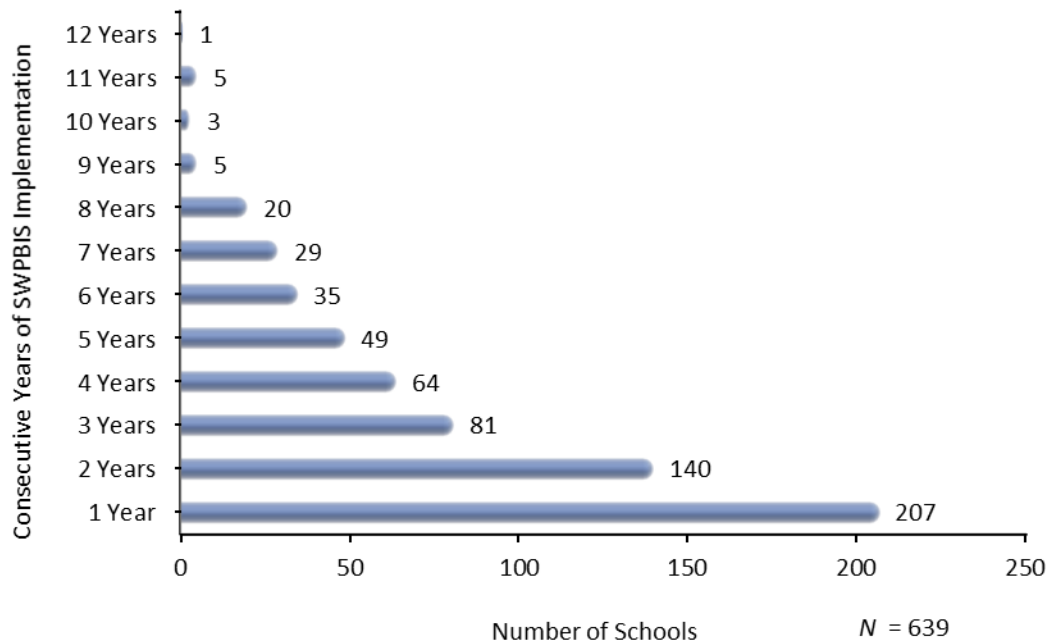
Note. SWPBIS = School-Wide Positive Behavioral Interventions and Supports. These data reflect any school that ever submitted tier 1 SWPBIS fidelity data since 2006-2007.

Using Hume's and McIntosh's (2013) categorizations of implementation sustainability, the largest proportion of schools implementing tier 1 SWPBIS are considered *early adopters* (*n* = 347; 54.3%). These schools are congratulated for their development and initial implementation of tier 1 SWPBIS. Additionally, these schools should prepare themselves for the upcoming challenges that need to be overcome to sustain implementation. Just over 30% of all tier 1 SWPBIS schools (*n* = 194) are categorized as *low-sustaining* sites. These schools are praised for their capacity to sustain implementation of tier 1 SWPBIS for three to five years. Their challenge, then, is to focus on how to embed these policies, procedures, and practices into standard operations. Finally, 15.3% of all tier 1 SWPBIS schools are categorized as *high-sustaining sites*, meaning tier 1 policies, procedures, and practices are core to the standard operations in a school. For these 98 schools, the challenges of sustaining tier 1 SWPBIS have largely been overcome and work toward implementing advanced-tier SWPBIS is likely occurring.

Conclusions

- SWPBIS implementation occurs most often in elementary schools. Middle and high school implementation sites are far fewer.
- Longitudinal data clearly indicate that sustained, long-term implementation of high-fidelity tier 1 SWPBIS is possible in any building.

RECOMMENDATIONS:

- Resources used to achieve implementation, replication, and sustainability levels reported to date should be increased if SWPBIS is to be expanded into more schools.
- An emphasis on implementing SWPBIS in secondary schools should be made given the relatively lower numbers and proportion of PAPBS Network schools above the elementary grades.

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