2014 Executive Summary

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January 2014
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Preface

The purpose of this and previous Pennsylvania Positive Behavior Support (PAPBS) Executive Summary is to appraise the implementation of Pennsylvania’s School-Wide Positive Behavioral Interventions and Supports (SWPBIS) project. Consistent with the recommendations of OSEP Technical Assistance Center on PBIS, this program evaluation parallels the organizational structure offered by Algozinne et al. (2010) for evaluating large-scale implementation of Positive Behavioral Interventions and Supports (PBIS).

Methodology

A number of direct and indirect sources of data were utilized for this program evaluation. When publicly available, the authors collected direct sources of data to reduce data submission requirements on PAPBS Network schools. Such data collected from public domains (e.g., websites) included academic performance data, enrollment, and attendance rates. The remaining data reviewed for this program evaluation were voluntarily submitted by PAPBS Network schools. These confidential data included referrals to special education, office discipline referrals, out-of-school suspensions, indices of least restrictive environment (LRE), and out-of-school placements. PAPBS Network schools were assured that these sensitive data would be publicly reported in aggregate, anonymous manner, a practice consistent with the IUP Institutional Review Board approval for this project (Log No. 08-251). In a very few instances, data from a single school are provided with the district and school name redacted. Permission to make these results public in anonymous form was provided to these authors by district administrators. Additionally, some other analyses could not be reported due to a small number of schools that submitted relevant data for the analyses; as such, anonymity could not be maintained if these results were provided in this report.

A combination of inferential and cross sectional reviews appear throughout this report. Inferential statistics were employed, when possible, to analyze outcomes associated with PBIS implementation. Statistically significant findings suggest that there is a high likelihood that the changes in the data over time are real changes, not statistical artifacts (e.g., due to chance). A descriptive review of cross sectional data was also performed when complete longitudinal data were not available. Cross sectional reviews maximize available data by summarizing results across multiple years; however, the data likely came from different schools from one year to the next. As such, interpretation of cross sectional reviews is not as clear as those made from inferential statistics in which complete longitudinal data from the same schools are available.

Caveats

Readers should consider results and conclusions offered in this executive summary with some caution due to the following limitations.

- Precise documentation of when cohort 1 schools were trained and commenced implementation is available. Training and implementation within cohort 2 schools, however, was not as uniform and systematic as with cohort 1 schools. Therefore, although most schools are categorized as cohort 2 schools, it is understood that this is not
a cohort in the traditional sense. Designation of all but the original 33 schools as cohort 2 schools, however, facilitates presenting and explaining results within this report.

- A decision to separate schools into cohort 1 and 2 was also made due to contextual changes that occurred regionally and nationally soon after cohort 1 schools commenced implementation. Since the time cohort 1 schools were trained, the regional and national landscape has dramatically changed with PBIS scale-up efforts occurring in most states in America.

- Curtis, Castillo, and Cohen (2008) posited that noticeable changes in critical outcomes often do not materialize until a school reform effort life SWPBIS is implemented with integrity for 3-5 years. Given delayed effects of SWPBIS, most analyses reported are conducted with a consideration of the length of high fidelity implementation.

- Limited availability of complete longitudinal data hampered efforts to confidently generalize results of inferential statistical analyses beyong the sample of SWPBIS schools that submitted longitudinal data. Cross sectional approaches were used when robust longitudinal data sets were unavailable.

- A school’s willingness to voluntarily share its data may result in a selection bias within the datasets analyzed. Results and interpretations contained within this report may be skewed in favor of fully implementing schools or those that were proud of their outcomes.

- The construct of SWPBIS fidelity was measured by three different instruments; therefore, mild caution is needed when judging implementation status. When multiple sources of fidelity data were available for a school during the same general period of time, a greater reliance was placed on the Schoolwide Evaluation Tool (SET; Sugai, Lewis-Palmer, Todd, & Horner, 2005) data over other measures given its superior psychometric merits. Additional measures of fidelity included Effective Behavior Support: Team Implementation Checklist (TIC; Sugai, Horner, & Lewis-Palmer, 2002, 2009) and School-wide Benchmarks of Quality (BoQ; Kincaid, Childs, & George, 2005, 2010).

- This evaluation utilized an ex post facto design in which schools were not randomly assigned to treatment and control groups. Although the ex post facto design of this evaluation was utilized and is considered standard practice in education, a cause and effect relationship cannot be assumed even when inferential analyses indicate statistically significant changes over time. In such scenarios, statistically significant changes are interpreted to mean that SWPBIS is associated with the observed changes, but not necessarily a cause of those changes.
Acknowledgements

Countless members from various agencies and organizations have vigorously supported the PAPBS Network across the Commonwealth. While too numerous to specifically list, particular recognition is offered to those that have provided support to these authors in the preparation of this fifth annual program evaluation report. These agencies and organizations include Pennsylvania Department of Education (PDE); Pennsylvania Bureau of Special Education (BSE); Pennsylvania Training and Technical Assistance Network (PaTTAN); Intermediate Unit #1; PAPBS Network; Office of Special Education Programs (OSEP) Technical Assistance Center on PBIS; Educational and Community Supports at the University of Oregon; the Educational and School Psychology Department at Indiana University of Pennsylvania (IUP); and IUP Research Institute. We especially acknowledge the assistance of the following individuals in the preparation of this and previous program evaluation reports: Dr. James Palmiero, Ronald Sudano, Tina Lawson, Kathryn Poggi, Teresa Stoudt, and Tracy Ficca. PaTTAN and Intermediate Unit consultants, PAPBS Network Facilitators, and PAPBS Network school personnel were invaluable in collecting and submitting data for this report.

The following past and present IUP Research Assistants were integral to the current and previous work on this initiative: Rebecca Tagg, Aleksey Aleskeev, Melissa Gilroy, Cong (Amy) Xu, Kevin O’Donnell, Stephen McFall, Krista Hunter, and Timothy Hall. Mark Berezansky, Tracy Eisenhower, and Bernard Piwinsky of the IUP Research Institute provided invaluable assistance in administering the contract to conduct this program evaluation.

Finally, our greatest appreciation is extended to PAPBS Network schools, school leadership teams, those in the local community supporting implementation, and the collaborating mental health agencies who work tirelessly to implement, improve, and sustain PBIS in Network schools. Their efforts, as summarized within this report, clearly indicate that PBIS is school reform movement characterized by considerably strong outcomes for students, staff, and local communities. These results, in concert with results of other large-scale evaluations, make it difficult to ignore the influence of PBIS on education. Without the amazing work of PAPBS Network schools, we would not be able to make these positive claims.

Data analysis and summation of results which formed the basis of this Executive Summary were supported in part by a contract between the PaTTAN / Intermediate Unit #1 and IUP Research Institute. Opinions expressed within are solely those of the authors and do not necessarily reflect the position of the funding agencies or PDE, and such endorsements should not be inferred.
Introduction

A brief review of the SWPBIS framework, empirical evidence supporting positive outcomes associated with SWPBIS implementation, the purpose of annual PA SWPBIS Evaluation, and general outline for the current program evaluation is offered below. Persons interested in a more thorough description are encouraged to read previous years’ reports (Runge & Staszkiewicz, 2010; Runge, Staszkiewicz, & O’Donnell, 2012).

Overview of SWPBIS

PBIS is a three-tiered system of prevention and intervention in which support services for all students are titrated based on demonstrated needs. PBIS, as a consequence, creates a safe school environment in which effective teaching can occur to promote academic success for all students (Sugai & Horner, 2009). At the universal, SWPBIS level (i.e., tier 1 prevention), all students and staff in a building are exposed to school-wide practices intended to prevent problematic and disruptive behavior from occurring. This level of prevention includes explicit teaching and practice of prosocial behaviors and adherence to rules and routines in every school environment coupled with systematic reinforcement of these behaviors. While SWPBIS is effective for the vast majority of students, 20-30% of all students still require additional supports to be successful in school. Approximately 12-18% of all students will respond positively to SWPBIS plus an additional layer of supports, termed tier 2 interventions. These strategic interventions typically take the form of supplemental behavioral interventions and supports (March & Horner, 2002; Sugai et al., 2000), small group counseling, brief psychoeducational counseling, implementation of commercially-available standard protocol interventions (i.e., Crone, Horner, & Hawken, 2010), or interventions tailored from brief functional behavioral assessments. Approximately 2-8% of all students still do not respond to universal SWPBIS and strategic tier 2 interventions. These students exhibit chronic externalizing and/or internalizing problem behaviors. Some of these students are frequently removed from the learning environment due to recurrent, challenging overt behavior while other students exhibit symptoms associated with social isolation, depression, and other indicators of mental illness. These students require highly individualized and intensive supports in conjunction with the tier 1 and 2 supports. This tertiary level of intervention (i.e., tier 3 intervention) is student-centered and family-oriented in that supports are implemented not only for the student, but also for the family, given that there are often significant needs that extend across all the student’s ecologies. Positive Behavior Support Plans (PBSP) and intensive wrap-around mental health services are typically implemented across multiple life domains (Eber, Sugai, Smith, & Scott, 2002).

Efficacy of SWPBIS

A large corpus of evidence clearly indicates high fidelity SWPBIS dramatically reduces disruptive behavior across all school settings (e.g., Bradshaw, Mitchell, & Leaf, 2010; Colvin, Kameeniu, & Sugai, 1993). Other studies confirm that high fidelity SWPBIS implementation is associated with the following outcomes:

- reductions in out-of-school suspensions (Muscott, Mann, & LeBrun, 2008);
- improved student attendance rates (Wells, Malloy, Cormier, 2006);
• decreases in student tardies to class (Tyre, Feuerborn, & Pierce, 2011);
• reductions in problematic and dangerous behavior during recess and other unstructured settings (Franzen & Kamps, 2008);
• reductions in antisocial behavior on school campuses (i.e., assaults; McCurdy, Mannella, Eldridge, 2003);
• more inclusive school cultures that are accepting of students with significant disabilities (Freeman et al., 2006; Medley, Little, & Akin-Little, 2008);
• teachers spending more time delivering instruction and principals providing more instructional supervision (Scott & Barrett, 2004);
• teachers having a greater sense of self-efficacy as instructors (Ross & Horner, 2007);
• and greater organizational health and staff affiliation (Bradshaw, Koth, Thornton, & Leaf, 2009).

Arguably the most impressive research finding is the compelling evidence indicating high fidelity SWPBIS is associated with substantial gains in academic skills as measured by state No Child Left Behind (NCLB; 2002) accountability measures (e.g., Bradshaw et al., 2010; Eber et al., 2010; Lassen, Steele, & Sailor, 2006; Runge, Staszkiewicz, McFall, & Hunter, 2013).

**Purpose of PA SWPBIS Evaluation**

An initial cohort of 34 schools were selected in spring 2007 by PDE, BSE, and PaTTAN to receive training and technical assistance to implement the PBIS framework. Since that time, a large number of additional schools have been trained and supported in PBIS implementation efforts. All schools associated with the PAPBS Network have adopted the PBIS framework endorsed by The National Center on PBIS (http://www.pbis.org/).

Large-scale program evaluation of all PAPBS Network schools has occurred since fall 2008. These evaluations are completed to critically evaluate the sustained and expanded implementation of the PBIS model across Pennsylvania. The current Executive Summary provides a review of all available data pertaining to the PAPBS Network’s implementation of SWPBIS since its inception in spring 2007. Complete results of the analyses for individual years, 2007 through 2013, are provided in previous executive summaries.

**Framework of PA SWPBIS Evaluation**

The authors utilized the general framework offered by Algozzine et al. (2010) for the present program evaluation. Five broad domains represent the foundation of this program evaluation framework: Context; Input; Fidelity; Impact; and Replication, Sustainability, and Improvement. Each domain is summarized below and has a corresponding chapter within this program evaluation Executive Summary.

1. Context represents a summary of the goals of SWPBIS implementation, and documentation regarding the training and supports provided to schools.
2. Input provides a summary of professional training activities and materials, training attendee satisfaction, and the depth, breadth and quality of onsite technical assistance.
3. Fidelity refers to the extent to which the SWPBIS framework was implemented as intended.

4. Impact summarizes the effects of SWPBIS on any number of outcomes deemed essential to stakeholders.

5. Replication, Sustainability, and Improvement is the capacity to improve SWPBIS implementation integrity in individual schools across time, the ability to sustain high fidelity implementation within individual schools, and the capacity to scale-up SWPBIS in other schools and districts.

A number of indicators and outcomes are monitored by the PAPBS Network and subsequently summarized in this Executive Summary report. A detailed review of each measure incorporated in this report can be located in other historical documents (e.g., Runge, Staszkiewicz, McFall, & Hunter, 2012).
**Context of PA SWPBIS**

The first broad domain of large-scale SWPBIS evaluation is Context. Data summarized in this section include the shared goals, objectives, and activities of the PAPBS Network.

**PAPBS Network Leadership and Mission Statement**

The PAPBS Network is led by Pennsylvania’s Community of Practice on School-Based Behavior Health State Leadership Team (SLT) comprised of members from the following agencies:

- Allegheny Department of Human Services
- Bloomsburg University of Pennsylvania, McDowell Institute for Teacher Excellence in Positive Behavior Support
- Community Care Behavioral Health
- Devereux Center for Effective Schools
- Disability Rights Network of Pennsylvania
- Education Law Center
- Indiana University of Pennsylvania, Department of Educational and School Psychology
- Juvenile Court Judges’ Commission
- Mental Health Association of Pennsylvania
- Pennsylvania Department of Drug and Alcohol Programs
- Pennsylvania Department of Education
- Pennsylvania Department of Education, Bureau of Special Education
- Pennsylvania Department of Education, Bureau of Special Education, Pennsylvania Training and Technical Assistance Network
- Pennsylvania Department of Education, Division of Student Services and Safe Schools
- Pennsylvania Department of Labor and Industry, Office of Vocational Rehabilitation
- Pennsylvania Department of Public Welfare, Office of Child Development and Early Learning
- Pennsylvania Department of Public Welfare, Office of Mental Health and Substance Abuse Services
- Pennsylvania Governor’s Commission on Children and Families
- Pennsylvania Intermediate Unit Special Education Directors
- Pennsylvania Keys
- Pennsylvania Network for Student Assistance Services
- Pennsylvania Student Assistance Program
- Pennsylvania Youth and Family Training Institute
- Pennsylvania Youth Leadership Network
- Philadelphia Public Citizens for Children and Youth
- Rehabilitation and Community Provider Association (formerly Pennsylvania Community Providers Association)
- Value Behavioral Health
- Youth and Family Training Institute

The PAPBS Network is affiliated with the Association of Positive Behavior Support (APBS). The PAPBS Network endorses missions, goals, and objectives aligned with APBS. The stated mission of the PAPBS Network, as codified on the papbs.org website (n.d.), reads:

The Pennsylvania Positive Behavior Support Network (PAPBS Network), through training and technical assistance, supports schools and their family and community partners to create and sustain comprehensive, school-based behavioral health support systems in order to promote the academic, social and emotional well-being of all Pennsylvania’s students.
Stated Goals

Under the direction of the SLT, the PAPBS Network promotes PBIS implementation in all educational settings across Pennsylvania. The goals of the PAPBS Network (n.d.) website explicate the following goals:

- Develop and implement a school-wide cross-system approach for supporting the academic and emotional well-being of all students using research-based positive behavioral supports and strategies of varying intensity: 1) universal or preventative strategies for the benefit of all students; 2) secondary strategies for those who will achieve with enhanced supports; and 3) tertiary or intensive services for those who will achieve with intensive and coordinated supports.
- Achieve sustainability by seeking funding and legislative support for demonstration models, providing training and technical assistance, and encouraging the facilitation of collaborative partnerships among schools, families, youth and agencies.
- Foster a consistent application of best practice standards among schools, families and agencies.
- Promote shared values that are consistently demonstrated through practice and partnerships of schools, agencies and families.
- Develop and embed opportunities for collaboration between systems partners and families.
- Establish a dialogue that will inform ongoing training needs.
- Reduce fragmentation of training resources.
- Conduct cross-systems professional development to ensure a common language, knowledge base, and understanding of supports and services available to children, youth and families.
- Develop a cross-systems/integrated planning process for individual child/family needs.
- Develop a cross-systems progress monitoring/data collection system to ensure accountability to the academic achievement and well-being of all children, youth and families.
- Ensure that youth and families will have opportunities for meaningful participation in all PAPBS Network activities, including the development, provision and monitoring of services, policies and procedures.

Documentation of Training

Runge, Staszkiewicz, and O'Donnell (2011) offered a comprehensive review of the training delivered to PAPBS Network schools. In summary, 28 schools received training to implement SWPBIS in June 2007 with six more schools added in January 2008. One school team removed itself from the PAPBS Network during 2008-2009 due to a realignment of district priorities. Training and technical assistance for cohort 1 schools in recent years has focused almost exclusively on high fidelity tier 2 and 3 supports. Overall, training and technical assistance have diminished over the years as schools fully adopt the three-tiered model.

Some cohort 2 schools were originally trained on SWPBIS in 2009-2010. More schools were trained in subsequent years, and these schools are categorized as cohort 2 schools for program evaluation purposes. As noted earlier, precise documentation of when cohort 2 schools were trained is difficult. The training materials and onsite technical assistance used with cohort 1 schools continues with cohort 2 schools. As cohort 2 schools implemented SWPBIS with fidelity, they were provided training and technical assistance to implement tiers 2 and 3 supports.
The recent growth of PBIS across the Commonwealth afforded the opportunity for PaTTAN to host annual Implementers’ Forum conferences each May since 2011. These gatherings provide excellent opportunities to share ideas, showcase successes, and learn from nationally-renowned researchers.

Training and technical assistance to cohort 1 schools was originally provided by OSEP Technical Assistants. Since 2009, training and technical assistance load has been borne by PAPBS Network Facilitators. These PAPBS Network Facilitators are required to successfully complete a rigorous and systematic process before they are granted permission to independently train and support schools. The work of these PAPBS Network Facilitators in recent years is certainly responsible for the expansion of PBIS across Pennsylvania.

**Schools Receiving Training and Technical Support**

A frequency count of schools that receiving training and/or technical assistance on SWPBIS as of May 2013 is summarized in Table 1. Data are disaggregated by cohort and region of the Commonwealth. A geographic representation of these same data is provided in Figure 1. Regions indicated correspond to the respective PaTTAN offices through which data collection for this project is managed. The number of participating LEAs is not an arithmetic sum of the schools given that often multiple schools within the same LEA participated in SWPBIS training.

**Table 1**

**Participating Buildings / LEAs / IUs by Cohort and Region**

<table>
<thead>
<tr>
<th></th>
<th>West</th>
<th>Central</th>
<th>East</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cohort 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>12</td>
<td>4</td>
<td>17</td>
<td>33</td>
</tr>
<tr>
<td>LEAs</td>
<td>7</td>
<td>4</td>
<td>12</td>
<td>23</td>
</tr>
<tr>
<td>Collaborating IUs</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td><strong>Cohort 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>92</td>
<td>137</td>
<td>167</td>
<td>396</td>
</tr>
<tr>
<td>LEAs</td>
<td>41</td>
<td>50</td>
<td>48</td>
<td>139</td>
</tr>
<tr>
<td>Collaborating IUs</td>
<td>8</td>
<td>10</td>
<td>9</td>
<td>27</td>
</tr>
<tr>
<td><strong>Combined Cohorts</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Schools</td>
<td>104</td>
<td>141</td>
<td>184</td>
<td>429</td>
</tr>
<tr>
<td>LEAs</td>
<td>45</td>
<td>52</td>
<td>52</td>
<td>149</td>
</tr>
<tr>
<td>Collaborating IUs</td>
<td>8</td>
<td>10</td>
<td>9</td>
<td>27</td>
</tr>
</tbody>
</table>
A summary of building level constitution across the separate and combined cohorts is presented in Table 2. The total number of schools indicated in this table exceeds the total number of SWPBIS-trained schools offered in Table 1 because some schools span multiple grade ranges (e.g., a PreK-8 school would be counted three times: Preschool, Elementary, and Middle). Arbitrary categorization of preschool, elementary, middle, and high school was made by these authors purely for reporting purposes. The trend of a majority of schools trained in SWPBIS being at the elementary level continues and is consistent with scale-up efforts in other states (e.g., Bradshaw et al., 2010; Eber et al., 2010). It is encouraging to observe an increasing number of preschool, middle, and high schools seeking training in PBIS. The total number of students educated in these schools is approximately 233,700 representing 13.0% of the 1.8 million students educated in Pennsylvania’s public schools (PDE, n.d.).

While not reflected in these data, Pennsylvania observed the first-in-the-nation implementation of PBIS at the post-secondary level. Bloomsburg University of Pennsylvania, under the leadership of the McDowell Institute for Teacher Excellence in Positive Behavior Support (http://www.bloomu.edu/mcdowell), implemented SWPBIS in selected undergraduate courses with expansion expected in the coming years. As with Program-Wide PBIS at the preschool level, data from post-secondary PBIS implementation is not summarized in this report.

Schools are strongly encouraged to collaborate with community mental health agencies in the training and implementing of all tiers of the PBIS framework. A list of collaborating mental health agencies is provided in Table 3.
Table 2

*Number of Participating Buildings by Grade Level*

<table>
<thead>
<tr>
<th></th>
<th>Preschool</th>
<th>Elementary (K-5)</th>
<th>Middle (6-8)</th>
<th>High School (9-12)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort 1</td>
<td>2</td>
<td>23</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>Cohort 2</td>
<td>28</td>
<td>277</td>
<td>199</td>
<td>58</td>
</tr>
<tr>
<td>Combined Cohorts</td>
<td>30</td>
<td>300</td>
<td>208</td>
<td>63</td>
</tr>
</tbody>
</table>

Table 3

*PAPBS Network Collaborating Mental Health Agencies*

<table>
<thead>
<tr>
<th>Agency</th>
<th>Collaborating Mental Health Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>5Star</td>
<td>Horsham Clinic, Juvenile Probation Human Services</td>
</tr>
<tr>
<td>Abuse and Rape Crisis Center</td>
<td></td>
</tr>
<tr>
<td>Aldersgate Youth Services Bureau</td>
<td></td>
</tr>
<tr>
<td>Alfred I. DuPont Children’s Hospital</td>
<td></td>
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<tr>
<td>Allegheny Children’s Initiative</td>
<td></td>
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<tr>
<td>Alternative Community Resources Program, Inc.</td>
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<tr>
<td>Beacon Light</td>
<td></td>
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<tr>
<td>Behavioral Specialists, Inc.</td>
<td></td>
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<tr>
<td>Berks Counseling Center</td>
<td></td>
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<tr>
<td>Big Brothers / Big Sisters</td>
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<tr>
<td>Blair Family Solutions</td>
<td></td>
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<tr>
<td>Bradley Center</td>
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<tr>
<td>Bucks County Council on Alcohol and Drug Dependence</td>
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<tr>
<td>CCRES, Inc.</td>
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<tr>
<td>Cen-Clear Child Services</td>
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<td>Center for Humanistic Change</td>
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<tr>
<td>Central Intermediate Unit 10</td>
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<tr>
<td>Centre County Can Help Agency</td>
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<tr>
<td>Chester County ARC</td>
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<tr>
<td>Child and Family Focus</td>
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<tr>
<td>Child Behavioral Health</td>
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<tr>
<td>Child Guidance</td>
<td></td>
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<tr>
<td>Children’s Aid Society</td>
<td></td>
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<tr>
<td>Clearfield-Jefferson Community Mental Health Center</td>
<td></td>
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<tr>
<td>CMSU Mental Health - Synergy</td>
<td></td>
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<tr>
<td>Colonial Intermediate Unit 20</td>
<td></td>
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<tr>
<td>COMHAR, Inc.</td>
<td></td>
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<tr>
<td>Community Behavioral Health</td>
<td></td>
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<tr>
<td>Community Care Behavioral Health</td>
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<tr>
<td>Community Counseling</td>
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</table>

*(table continues)*
### Table 3 (continued)

<table>
<thead>
<tr>
<th>Community Services Group</th>
<th>Resolve Behavioral Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive Counseling Services</td>
<td>Rockford Center</td>
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<tr>
<td>Council on Chemical Abuse</td>
<td>Safe Harbor Behavioral Health</td>
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<tr>
<td>Creative Health</td>
<td>Sagewood, Inc.</td>
</tr>
<tr>
<td>Crozer-Keystone Health System</td>
<td>Scranton Counseling</td>
</tr>
<tr>
<td>D. T. Watson</td>
<td>Sharon Regional Health System</td>
</tr>
<tr>
<td>Delaware County Intermediate Unit 25</td>
<td>Southwest Behavioral Health</td>
</tr>
<tr>
<td>Delaware Valley Children’s Center</td>
<td>SPARC</td>
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<tr>
<td>Devereux Center for Effective Schools</td>
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<td>Devereux Community Services</td>
<td>St. Anthony’s Point</td>
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<td>Strawberry Fields, Inc.</td>
</tr>
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<td>Elwyn, Inc.</td>
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<tr>
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<td>The Achievement Center</td>
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<tr>
<td>Family Behavioral Resources</td>
<td>Tides</td>
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<td>Family Care for Children and Youth</td>
<td>Turtle Creek Valley MH / MR</td>
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<tr>
<td>Family Links</td>
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<tr>
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<td>Value Behavioral Health</td>
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<td>Fellowship Health Resources</td>
<td>Vocational and Psychological Services</td>
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<td>Watson</td>
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<tr>
<td>Glade Run Lutheran Services</td>
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<td>High Point Center for Human Services</td>
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<td>Women’s Resource Center</td>
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<tr>
<td>Hopeful Hearts Home Care</td>
<td>Youth Service Bureau</td>
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</tbody>
</table>

### Staff that Attended Training

While exact data regarding who attended PBIS trainings was not available for review, it is believed that the majority of SWPBIS training attendees were general and special education teachers and building-level administrators. Related service providers such as school counselors, school psychologists, school social workers, behavioral specialists, Title I staff, nurses, home and school visitors, central administrators, and mental health agency personnel likely attended training sessions.
**Input of PA SWPBIS**

The third broad domain of large-scale SWPBIS program evaluation is Input, defined as the actions taken to train, support, and sustain implementation (Algozinne et al., 2010). Data regarding the content of the professional development training and onsite technical assistance provided to PAPBS Network schools is summarized below.

**Content of the Professional Training and Technical Support**

Schools participating in PAPBS Network Facilitator training on PBIS received their training in a variety of formats (e.g., small- or large-group delivery). The utilization of Independent PAPBS Network Facilitators, all of whom must utilize the same training materials, has standardized the training process so that all PAPBS Network schools are provided the same level of support and content. The training materials were developed in consultation with OSEP PBIS Technical Assistance Consultants. A review of this training series is available in the PBIS Professional Development Blueprint (Lewis, Barrett, Sugai, & Horner, 2010).

Archived training materials for the above topics are available on a password-protected website for PAPBS Network Facilitators. Materials include sample agendas, PowerPoint and supplemental materials, and sample materials from PAPBS Network schools along with agendas, minutes, and planning documents from the PAPBS Network SLT.

**Level of Support Provided to Schools**

Targeted, onsite technical assistance is provided to PAPBS Network schools once their core team completes the initial training. The focus of this support runs the gamut from guiding the writing of behavioral lesson plans to facilitating efficient team meetings using the Team Initiative Problem-Solving (TIPS) model (Newton, Todd, Algozzine, Horner, & Algozzine, 2009). In almost all cases, PAPBS Network Facilitators agree to provide training and onsite technical assistance for free to interested schools.

While PaTTAN provided considerable financial compensation to cohort 1 schools in the early years of the project, the limited financial assistance schools receive from PDE is in the form of School-Based Behavioral Health (SBBH) Performance Grants. Twenty-one LEAs were awarded SBBH grants for the 2012-2013 academic year. Awards did not exceed $14,000 per LEA. A listing of these schools is offered in Table 4.
Table 4  
2012-2013 SBBH Performance Grant Awardees

<table>
<thead>
<tr>
<th>SWPBIS Establishment Grantees</th>
<th>SWPBIS Expansion Grantees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duquesne City School District</td>
<td>Abington School District</td>
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<tr>
<td>Greater Johnstown School District</td>
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</tr>
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<td>New Kensington School District</td>
<td>Chichester School District</td>
</tr>
<tr>
<td>Reading School District</td>
<td>East Stroudsburg School District</td>
</tr>
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<td>West Oak Lane Charter School</td>
<td>Eastern Lancaster School District</td>
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<tr>
<td></td>
<td>Gateway School District</td>
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<td></td>
<td>Jersey Shore Area School District</td>
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<td>Northampton Area School District</td>
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<td>Propel Charter Schools</td>
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<td></td>
<td>Seneca Highlands IU 9</td>
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<tr>
<td></td>
<td>Scranton City School District</td>
</tr>
<tr>
<td></td>
<td>Williamsport Area School District</td>
</tr>
</tbody>
</table>
Fidelity of PA SWPBIS

Fidelity refers to the match between the design of an intervention and its actual implementation. Within the context of SWPBIS, fidelity is an objective measure of the degree to which the basic principles of the framework, as instructed in training sessions, are actually implemented within the school. Monitoring fidelity is not merely an academic exercise. In fact, fidelity of intervention implementation is the bedrock of any program evaluation. Outcomes associated with an intervention are uninterpretable and meaningless in the absence of clear evidence that the intervention was implemented as designed.

Fidelity of SWPBIS implementation was objectively assessed across years using three different instruments: SET (Sugai et al., 2005), BoQ (Kincaid et al., 2005, 2010), and TIC (Sugai et al., 2002, 2009). The majority of annual fidelity data, overall, is from BoQ with some corroborating SET data in a given year. SET data were given primary preference, then BoQ, then TIC in instances of multiple sources of fidelity data were available for the same general time period (e.g., 3-month interval). Inconsistencies among multiple fidelity sources for the same time period were extremely rare, occurring in less than 1% of instances.

All schools were categorized each spring as fully implementing SWPBIS, partially implementing SWPBIS, or unknown / not implementing SWPBIS based on the SET, BoQ, or TIC data available at that time. Distinction between partially and fully implementing schools was important given previous program evaluation results indicating differential effects on SWPBIS as a function of the degree to which the framework was implemented as designed (Childs, Kincaid, & George, 2010; Runge & Staszkiewicz, 2010; Runge et al., 2013). Missing fidelity data were also noted and specifically indicated in the analyses. At least two possible explanations exist for missing data: (1) the school ceased implementing SWPBIS; or (2) the school failed to submit fidelity data despite actually implementing the framework to some degree. In either case, interpretation of the level of implementation cannot be made when data are missing.

Cross sectional fidelity data for the number of cohorts 1 and 2 implementing SWPBIS are presented in Figures 2 and 3, respectively. Cross sectional data from cohort 1 indicate high fidelity implementation of SWPBIS gradually increased in the first two years following the initial summer 2007 training. At its highest point, 23 schools (69.7%) were categorized as fully implementing SWPBIS in spring 2009. Since that time, a gradual decline in fully implementing schools is observed. The fewest number of schools designated as fully implementing SWPBIS occurred in spring 2013 with just 8 (24.2%) of schools meeting fidelity criteria. Concurrent with this downward trend is an increasing number of schools for which SWPBIS fidelity is not known.

There were a total of 396 cohort 2 schools known to have been trained in SWPBIS by the end of the 2012-2013 academic year. Since spring 2009, a steady increase in high-fidelity SWPBIS implementation is observed with the highest number of cohort 2 schools achieving full implementation status in spring 2013 ($n = 106$). An additional 36 schools (9.1%) were designated as partially implementing SWPBIS in spring 2013.
Figure 2
*Cross Sectional Count of Cohort 1 Implementation Fidelity Across Time*

Before Training

<table>
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<tr>
<th>Year</th>
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<th>Full</th>
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<td>16</td>
<td>0</td>
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<tr>
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<td>16</td>
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</tr>
<tr>
<td>Spring 2013</td>
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<td>0</td>
<td>0</td>
</tr>
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</table>

After Training

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</tr>
<tr>
<td>Spring 2008</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Spring 2009</td>
<td>2</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Spring 2010</td>
<td>8</td>
<td>11</td>
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<td>12</td>
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<td>Spring 2012</td>
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<td>17</td>
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</tr>
<tr>
<td>Spring 2013</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

N = 33

Figure 3
*Cross Sectional Count of Cohort 2 Implementation Fidelity Across Time*

<table>
<thead>
<tr>
<th>Year</th>
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<th>Full</th>
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<tbody>
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<td>Spring 2012</td>
<td>250</td>
<td>104</td>
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<tr>
<td>Spring 2013</td>
<td>254</td>
<td>36</td>
<td>106</td>
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</table>

N = 396
Fidelity data from both cohorts were combined to determine the number of Pennsylvania schools that were either partially or fully implementing SWPBIS. These data are visually displayed in Figure 4. Full implementation status reached a height of 120 schools in spring 2012, with an additional 42 schools at a partial implementation level. A slight decline in the number of fully implementing schools is noted in spring 2013 with 114 schools achieving full implementation status at that time.

Figure 4
*Cross Sectional Count of Combined Cohort Schools Implementing SWPBIS Across Time*

Another consideration when interpreting these data is the large number and percentage of schools for which fidelity data were unavailable. Any number of hypotheses might explain this phenomenon. In any case, an important consideration for future investment is to reinforce schools that submit data for program evaluation purposes. Perhaps the recognition program instituted by the PAPBS Network in the last few years will result in a higher number and percentage of schools complying with data submission requests.

In summary, data indicate that the number of schools implementing SWPBIS with integrity reached a high point in the past two academic years. By spring 2012, 120 schools achieved full implementation status. This number of fully implementing schools increased slightly from what was originally reported in the previous year’s Executive Summary report, and this difference is the result of some schools submitting fidelity data after data analyses were completed. It is anticipated that this phenomenon will repeat for spring 2013 fidelity data as some schools submit fidelity data in fall 2013.
Impact of PA SWPBIS

The PAPBS Network SLT and PaTTAN identified the outcomes of interest to evaluate in each annual program evaluation. Descriptive and statistical analyses of these variables are reviewed within this section.

Staff Perceptions of Status of Behavioral Support

The *Effective Behavior Support: Self-Assessment Survey* (EBS: SAS; Sugai et al., 2003) measures staff perceptions of implementation of SWPBIS features across four broad areas: School-Wide, Non-Classroom, Classroom, and Individual. Data for respondents’ perceptions of current status are available for the School-Wide domain only. It is important to note that these data represent staff perceptions and are not necessarily reflective of actual level of implementation of SWPBIS. As such, the EBS: SAS is not considered to be an objective measure of SWPBIS implementation fidelity.

For the current Executive Summary, an analysis was undertaken to determine if staff perceptions of implementation integrity were consistent with more objective measures of fidelity. One hundred twelve cohort 2 schools provided EBS: SAS data and had verified levels of implementation. Of these schools, 27 were categorized as partially implemented based on SET, BoQ, or TIC and 85 were categorized as fully implementing by the same objective measures.

The mean percentage of staff from fully implementing schools reporting perceptions of fidelity consistent with objective indices of fidelity was 67.1% compared to only 42.3% for staff from the partially implementing schools. This difference between full and partially implementing SWPBIS schools was statistically significant, \( t(110) = -8.2, p <.01 \), indicating a substantial difference of staff perceptions by implementation integrity. Longitudinal analyses of how staff perceptions change concurrent with improved fidelity over time similarly indicated that staff perceptions of SWPBIS implementation are related to the successive integrity of actual implementation. Taken together, these results confirm that staff perceptions are consistent with objective measures of fidelity. Staff are very aware of when they are implementing SWPBIS with integrity and when they have yet to achieve full implementation status.

Staff Perceptions of School Safety

It is believed that staff from SWPBIS schools will perceive a decrease in risk factors within the school building and the surrounding community. Risk factors include drug and gang activity, vandalism, truancy, community poverty and crime, and instances of child abuse. At the same time, staff from SWPBIS schools may likely report increases in perceived protective factors within their school building and the surrounding community. Protective factors include opportunities for students to engage in extracurricular activities, parental involvement, school-community collaboration, acceptance of diversity, and high expectations for student learning and productivity.

Cross sectional data from cohort 1 staff regarding their perceptions of risk and protective factors are displayed in Figure 5. Over the course of the six years, some stabilization with risk
factors averaging 41% and protective factors around 80% has emerged. Since implementation, risk factors have dropped from 44.5% to 41.8% while the protective factors have increased from 74.0% to 80.0%. Clearly, these trends are in a very positive direction.

Figure 5
Cross Sectional Comparison of Average Percentage of Risk and Protective Factors – Cohort 1

It was possible to gather risk and protective factors data on 110 cohort 2 schools and to compare the results between schools that were partially implementing and those that were fully implementing SWPBIS. Independent samples t-tests revealed significant differences as a result of SWPBIS fidelity: risk factors, \( t(108) = 2.35, p = .02 \); protective factors, \( t(108) = -6.61, p < .001 \). As can be seen in Figure 6, schools that were fully implementing SWPBIS staff reporting significantly more positive ratings of school safety than schools that were partially implementing SWPBIS. Fully implementing schools reported significantly fewer risks and more protective qualities.

These results confirm there is an apparent decrease in risk factors and an increase in protective factors among schools that fully implement SWPBIS over an extended period of time. Further, schools that fully implement SWPBIS perceive themselves as having fewer risk factors and fostering more protective factors than schools that partially implement SWPBIS.
Figure 6
Cross Sectional Comparison of Risk and Protective Factors by SWPBIS Implementation – Cohort 2

Note: Statistically significant differences in risk and protective factors by implementation fidelity, $p < .05$

Student and Staff Attendance

Inferential analyses to investigate the association between student and staff attendance rates, length of SWPBIS implementation (i.e., 0-4 years), and building level (i.e., elementary, middle, high school, and other) among cohort 2 schools were conducted. No statistically significant findings were noted. Collectively, these results suggest that schools that implement SWPBIS observe average daily student attendance rates that are comparable across grade levels and length of SWPBIS implementation.

Office Discipline Referrals

Initial Office Discipline Referral (ODR) analyses focused on whether there were statistically significant differences between elementary, middle, and high schools with regard to the daily ODR rates. Descriptive statistics for ODRs after SWPBIS implementation among cohort 2 schools are presented in Figure 7. A three-way ANOVA revealed that daily ODRs were statistically different between building levels in the first year of SWPBIS implementation, $F(2, 145) = 7.528$, $p = .001$. Likewise, statistically significant mean differences were found in the second consecutive year of SWPBIS implementation, $F(2, 84) = 14.162$, $p = .000$. Post hoc analyses showed that high schools experience statistically higher daily ODR rates compared to elementary and middle schools in the first two years of SWPBIS implementation. These results are consistent with those reported by others (Kaufman et al., 2010; Spaulding et al., 2010).
High schools observed statistically higher ODR rates compared to elementary and middle schools in Years 1 and 2, \( p < .05 \); Year 1 Elementary \( n = 106 \), Middle \( n = 24 \), High \( n = 18 \); Year 2 Elementary \( n = 70 \), Middle \( n = 11 \), High \( n = 6 \).

**Elementary schools**

Additional analyses were conducted to determine if the length of full implementation status had a differential effect on ODR rates. That is, would a school that implemented for three or four consecutive years have a substantially lower ODR rate than a school that only recently achieved full implementation status? Put another way, can a school implementing SWPBIS sustain low rates of ODRs across multiple years? No statistically significant differences were observed for across three years of SWPBIS implementation. In other words, the average number of ODRs per 100 students per school day remains statistically similar across three years of SWPBIS implementation. A visual display is presented in Figure 8.

**Secondary schools**

As with the longitudinal analyses completed with elementary schools, paired-samples t-tests were conducted with longitudinal data from secondary schools to determine if length of SWPBIS had a differential effect on ODRs. Similar to the results with the elementary schools, data analyses revealed no differences in ODRs across a two to three year period. These results are interpreted to mean that ODRs remain relatively consistent across a three-year period of SWPBIS implementation. A visual display of these longitudinal analyses using data from 10 secondary schools is presented in Figure 9.
Figure 8
*Longitudinal ODR Rates for Elementary Schools by Length of Full SWPBIS Implementation – Cohort 2*

![Bar chart showing longitudinal ODR rates for elementary schools by length of full SWPBIS implementation.](image1)

- Consecutive Years of SWPBIS Implementation
- N = 25
- Average ODRs / 100 Students / School Day:
  - 1 year: 0.314
  - 3 years: 0.338

Figure 9
*Longitudinal ODR Rates for Secondary Schools by Length of Full SWPBIS Implementation – Cohort 2*

![Bar chart showing longitudinal ODR rates for secondary schools by length of full SWPBIS implementation.](image2)

- Consecutive Years of SWPBIS Implementation
- N = 10
- Average ODRs / 100 Students / School Day:
  - 1 year: 0.404
  - 3 years: 0.482
**ODR triangle data**

ODR Triangle Data are reviewed to determine the extent to which high fidelity SWPBIS achieves the goal of preventing behavioral disruptions among a majority of students. ODR Triangle Data represent the percentage of all students in a building who receive 0-1 ODR, 2-5 ODRs, and 6+ ODRs in a given school year. Ideally, a large majority of students should exhibit few or no disruptive behaviors warranting removal from instructional settings, with very few, if any, students so chronically disruptive that they are repeatedly removed from instructional settings.

ODR Triangle Data were aggregated across cohorts since baseline data were not available for any school. The first set of analyses focused on whether ODR Triangle Data differed as a product of the grade range of buildings and the length of time SWPBIS was implemented with integrity. A 4 X 5 factorial MANOVA was conducted to determine if significant differences in ODR Triangle Data were present across building levels (i.e., elementary, middle, high, PreK-8/12) and consecutive years of full SWPBIS implementation (i.e., 1 to 6 years). The main effect for consecutive years of SWPBIS implementation ($\lambda = .966$, $p = .761$) and interaction of consecutive years of SWPBIS implementation and building level ($\lambda = .944$, $p = .889$) were not statistically significant. This is interpreted to mean that ODR Triangle Data remain consistent across multiple years of high-fidelity SWPBIS implementation.

A significant main effect was found for building level, $\lambda = .872$, $p < .000$. The effect size ($\eta^2 = .066$), according to Cohen (1988), is considered moderate suggesting statistically and practically-relevant differences across building levels. Scheffe post hoc comparisons of ODR Triangle Data by building level revealed a number of significant differences among building levels. Specifically, elementary schools observe significantly higher percentages of students receiving 0-1 ODR compared to middle and high schools. In turn, elementary schools implementing SWPBIS reported significantly fewer percentages of students receiving 2-5 or 6+ ODRs compared to middle and high school counterparts.

Similarly, PreK-8/12 schools observed significantly more students receiving 0-1 ODR compared to high schools. While differences between PreK-8/12 and high schools were not noted for 2-5 and 6+ ODRs, these results suggest that SWPBIS is effective for larger percentages of students in PreK-8/12 schools than traditional high schools. Significant differences in ODR rates among the overall student population were not revealed between middle and high schools, thus these results fail to replicate findings by Kaufmann et al. (2010).

Taken together, these results suggest that high fidelity SWPBIS implementation tends to be effective for a larger percentage of elementary-aged students compared to secondary-aged peers. Similarly, PreK-8/12 schools demonstrate more favorable results compared to high schools. A visual presentation of the same data reported is offered in Figure 10. Facilitation of the visual display is accomplished by setting the ordinate at 70%, as opposed to the typical 0%.
Subsequent ODR Triangle Data analyses revealed that ODR Triangle data are statistically similar across consecutive years of SWPBIS implementation. That is, once full implementation of SWPBIS is achieved, schools typically maintain comparable ODR Triangle Data across a six year period of time. These results were observed for all grade levels and are consistent with national studies.

Suspensions

Exclusionary disciplinary practices, including out-of-school suspensions (OSS) and expulsions, are used in an attempt to punish dangerous and chronically disruptive behavior. Although utilization of these disciplinary practices temporarily removes students from school settings, the long-lasting, negative consequences of exclusionary practices on students and schools is staggering including lower academic performance of students (Arcia, 2006; Rausch & Skiba, 2004), a higher rate of school drop-out (Brooks, Schiraldi, & Zeidenberg, 2000; Skiba, Peterson, & Williams, 1997), and negative effects on school climate (Bowditch, 1993). An increasingly stronger call for thoughtful reconsideration of suspension and expulsion practices is worthy given these troubling outcomes (Lee, Cornell, Gregory, & Fan, 2011).

Average number of OSS days served among elementary and secondary students are visually displayed in Figure 11. Readers are cautioned to only compare elementary and
secondary schools within a given year due to the cross sectional nature of these data. Statistically significant mean differences in OSS rates were observed between elementary and secondary schools at baseline through three years of sustained SWPBIS implementation. For example, the mean difference in OSS rates between cohort 2 elementary and secondary schools at baseline was 32.152 OSS days per 100 students, $t(61) = 31.914, p = .000$, with secondary schools utilizing OSS significantly more than elementary schools. Given that these results are consistent with findings by Spaulding et al. (2010), all subsequent OSS analyses were disaggregated by elementary and secondary schools. Insufficient sample sizes of alternative programs and schools configured in non-traditional ways (e.g., K-12; K-8) disallowed comparisons of these schools to elementary or secondary schools.

Figure 11

*Cross Sectional Comparison of Average OSS Days Served per 100 Students – Cohort 2*

Longitudinal analyses of complete data submitted by schools provide a means by which comparisons of OSS rates can be made across multiple years. Data from both cohorts were combined to maximize sample sizes needed to conduct repeated measures ANOVAs. Elementary school OSS rates did not statistically change from one year to the next across baseline to three years of SWPBIS implementation. Non-significant OSS rates were similarly observed for secondary schools. This means that, within PAPBS Network schools, SWPBIS is not associated with substantial reductions in OSS rates as compared to OSS rates prior to implementation. Such findings are inconsistent with those offered by Bradshaw et al. (2010) and others. Results from PAPBS Network schools, however, are interpreted with caution given limited sample sizes for both elementary and secondary schools. Visual displays of these results are presented in Figures 12 and 13 for elementary and secondary schools, respectively.
Figure 12
*Longitudinal Comparison of Average OSS Days Served per 100 Students in Elementary Schools*

![Bar chart showing the longitudinal comparison of average OSS days served per 100 students in elementary schools. The chart indicates a decrease in OSS days as SWPBIS implementation increases, with N = 8.](chart12)

Figure 13
*Longitudinal Comparison of Average OSS Days Served per 100 Students in Secondary Schools*

![Bar chart showing the longitudinal comparison of average OSS days served per 100 students in secondary schools. The chart indicates a decrease in OSS days as SWPBIS implementation increases, with N = 2.](chart13)
Again, a small sample size likely compromised the statistical power of the repeated measures analyses conducted and the generalizability of findings to other schools. For these schools, however, a downward trend is evident from baseline to three years of SWPBIS implementation. These reductions likely resulted in increased instructional time for the students, decreased time dealing with major behavioral violations in the classroom for educators, and decreases in administrative time processing an OSS.

Expulsions

Expulsions typically occur when students violate a major code of student conduct including possession of a weapon, alcohol, or drugs. Kaufmann et al. (2010) documented that expulsions are meted out more frequently in secondary schools compared to elementary schools. An analysis of cross sectional data from combined cohorts revealed trends similar to national findings. For each year, baseline through four years of SWPBIS implementation, secondary schools expelled students at a significantly higher rate. For example, secondary schools expelled students prior to implementation of SWPBIS much more frequently than elementary schools, $t(75) = -2.945, p = .004$. Similarly, secondary schools expelled students at a significantly higher rate than elementary school at two years of SWPBIS implementation, $t(30) = -3.170, p = .003$. These results are visually displayed in Figure 14.

Figure 14
Cross Sectional Comparison of Average Expulsions per 100 Students – Combined Cohorts
Expulsions occur in elementary schools at such an infrequent rate that subsequent investigation focused exclusively on secondary schools. Multiple paired-samples t-tests were conducted to compare baseline expulsion rates with consecutive years of SWPBIS implementation. Changes in expulsion rates were negligible from baseline to three years of high fidelity SWPBIS. It is important to point out that from baseline through year 4, the number of high schools went from 24, 13, 7, 6, and 2, respectively.

Secondary Level of Support in SWPBIS – Check-In / Check-Out

School teams and PBIS leaders are reminded that PBIS is a three-tiered system of support in which SWPBIS is only the universal, tier 1 prevention framework. Once SWPBIS is firmly implemented with integrity, planning and implementation of tier 2, or selected, interventions and supports will commence. Despite differences across schools in the types of needs and availability of resources to meet those needs, one standard protocol tier 2 intervention is often selected for implementation: Check-In / Check-Out (CICO; Crone et al., 2010). While CICO is likely the only tier 2 intervention commonly implemented by large numbers of SWPBIS schools. Therefore, CICO receives brief attention in annual program evaluations.

The number cohort 1 and cohort 2 schools implementing CICO by building level from 2008-2009 to present is displayed in Figure 15. Note that these data reflect all schools reporting CICO data regardless of whether SWPBIS integrity could be verified.

Figure 15
Cumulative Number of Schools Implementing CICO – Combined Cohorts

Note. CICO = Check-In / Check-Out. Schools that span multiple grade ranges were counted for each appropriate level (e.g., K-8 schools were counted as both elementary and middle).
Consistent with trends observed in previous annual program evaluations, the majority of PAPBS Network schools implementing CICO are elementary buildings. By 2012-2013, elementary schools accounted for 85% of all schools implementing CICO.

Sustained implementation of CICO is often typical for multiple years among elementary schools. Longitudinal data from the 15 elementary schools implementing CICO in 2010-2011 revealed that all but one (93.3%) maintained implementation through the 2012-2013 academic year. Thus, once an elementary school implements CICO, it appears that this intervention becomes institutionalized as a practice of providing strategic support to students at risk for social and/or behavioral difficulties. Similar analyses of sustained implementation at the secondary level could not be interpreted due to low sample sizes.

**Effect of CICO on student behavior**

CICO data were aggregated across both cohorts to facilitate an analysis of the global efficacy of CICO. Only data from those schools with verified high fidelity implementation of SWPBIS were included in subsequent analyses given that CICO must be embedded within a fully-operational SWPBIS framework (Crone et al., 2010). CICO is effective for most students enrolled as evidenced by 76.3% and 84.1% of elementary and secondary students, respectively, meeting or exceeding CICO goals across all academic years. The relative difference in success rates between elementary and secondary students was not statistically significant. Thus, it is concluded that CICO is equally effective for all students, regardless of grade, so long as the SWPBIS framework is intact. From the perspective of targeted interventions, high fidelity SWPBIS and CICO are meeting the needs of a majority of students for whom SWPBIS in isolation was not enough support to meet their needs.

Runge, Staszkiewicz, McFall, and Hunter (2012, 2013) tentatively suggested that success rates may decline as schools implement CICO over a period of time. Those preliminary findings from past annual program evaluations were revisited because more data were available for the present report. Complete data for 22 schools fully implementing SWPBIS and CICO across a two-year period were analyzed. Results indicate that CICO success rates significantly dropped in year 2 compared to year 1 success rates, \( t(21) = 2.950, p = .008 \). Schools observe an average of 91.9% of students reaching CICO goals in the first year of implementation. In year 2 of CICO implementation, success rates dropped to an average of 78.1%. It is not entirely clear why the drop in success rates occurs after year 1. Some possible explanations, however, may be that schools are more cautious in the selection of students for CICO in the initial year of implementation to maximize the likelihood of success and, once high success rates are achieved, enroll students more at-risk in CICO during year 2. An equally plausible explanation is that the excitement and motivation to implement CICO with integrity wanes across years resulting in diminishing effects.

Additional longitudinal analyses of CICO success rates across a three to five year span were also conducted with available data. Success rates in year 2 through year 5 were statistically similar, ranging from 72.5% to 79.86%. Given the lack of statistically significant differences in years 2 through 5, it is concluded that success rates are comparable across years of sustained CICO implementation.
Taken together, these data indicate that SWPBIS schools typically observe high success rates with CICO in the first year of implementation. A pronounced decline in success rates occurs in year 2 with a plateauing effect through year 5. This plateauing effect is tentatively suggested with the caveat that small sample sizes limited statistical power to detect meaningful differences. Visual display of longitudinal data for the six elementary schools is presented in Figure 16.

Figure 16
*CICO Longitudinal Success Rates in Elementary Schools – Combined Cohorts*

Note. CICO = Check-In / Check-Out.

**Out-of-School Placements**

With few exceptions, most schools can generally meet the majority of students’ needs given available resources and staff. Still, a very small percentage of students require intensive services and supports that cannot typically be provided in the child’s neighborhood school. These students’ needs are often met by transporting the student to a different school where those services and supports are available. Data from 2011-2012, the most recent year for which data were available, indicates that approximately 4.6% of all students with special education needs are educated in an out-of-school placement (PDE, 2012).

Data from PAPBS Network schools regarding out-of-school placements have been voluntarily submitted since the 2008-2009 academic year. Additionally, schools were asked to
report how many out-of-school placements were made for students identified under the special education category of emotional disturbance (ED). Therefore, percentages of all students with emotional disturbance placed in non-neighborhood schools compared to all out-of-school placements regardless of exceptionality were calculated.

Analyses of out-of-school placements revealed no statistically significant differences in the data across the two cohorts. Consequently, subsequent analyses were employed using data aggregated from both cohorts. Cross sectional analyses of elementary and secondary schools’ out-of-school placement practices for all students from baseline to three years of SWPBIS are reported in Table 17. Again, valid interpretations of mean differences can only be made by comparing elementary to secondary schools for the same year.

These data indicate that elementary schools utilized out-of-school placements significantly less often at baseline compared to secondary schools, $t(59) = 5.84, p = .019$. The same conclusion is reached at the first year of SWPBIS implementation, $t(40) = 7.03, p = .012$. Out-of-school placements for all students were comparable across elementary and secondary schools at two and three years of SWPBIS implementation.

Figure 17

Cross Sectional Analysis of Number of Out-Of-School Placements for All Students in Elementary and Secondary Schools

![Chart showing average out-of-school placements per 100 students across baseline, Year 1, Year 2, and Year 3 for elementary and secondary schools.](image)

*Note.* Statistically significant differences between elementary and secondary schools at baseline and Year 1 of SWPBIS implementation, $p < .05$. Differences among grade levels are statistically similar in Years 2 and 3. Baseline Elementary $n = 39$, Secondary $n = 21$; Year 1 Elementary $n = 30$, Secondary $n = 11$; Year 2 Elementary $n = 20$, Secondary $n = 6$; Year 3 Elementary $n = 12$, Secondary $n = 5$. 
Cross sectional analyses of out-of-school placement practices for students with ED from baseline to three years of SWPBIS were statistically similar across elementary and secondary schools. It appears that elementary and secondary schools utilize out-of-school placements for students with ED at similar rates within baseline years and through three years of SWPBIS implementation.

Cross sectional analyses of the percentage of all students educated in an out-of-school placement that are identified as ED from baseline to three years of SWPBIS were not statistically different. Elementary and secondary schools use out-of-school placements for students with ED at similar rates compared to all students regardless of exceptionality status.

Complete longitudinal data were analyzed to evaluate trends across years regarding out-of-school placement practices. Longitudinal data from more than one year of SWPBIS after baseline were available for a very small number of schools, so analyses focused on the baseline and one-year post implementation data provided by six schools. Visual display of longitudinal data for these six schools is provided in Figure 18. While a statistically non-significant difference was found, likely due to the small sample size, for these schools, the decrease in overall out-of-school placements is remarkable. The lack of statistically significant longitudinal differences indicates that these results may not generalize to other elementary schools.

Figure 18
Longitudinal Analysis of All Out-of-School Placements per 100 Students in Elementary Schools

Longitudinal analyses were conducted to evaluate whether out-of-school placements for students with ED changed concurrent with implementation of SWPBIS. Complete longitudinal data were available for eight schools from baseline to one year of SWPBIS implementation. These averages are displayed in Figure 19. The observed change was minimal as evidenced by a visual inspection of the data and non-significant mean differences.
Additional longitudinal analyses were conducted to evaluate whether SWPBIS was associated with changes in the percentage of all students educated in out-of-school placements that were students with ED. Complete longitudinal data were available for eight schools from baseline to one year of SWPBIS implementation. These averages are displayed in Figure 20. The observed change was minimal as evidenced by a visual inspection of the data and non-significant mean differences.

Figure 19
Longitudinal Analysis of Out-of-School Placements for Students with Emotional Disturbance per 100 Students

![Figure 19](chart19.png)

Figure 20
Longitudinal Analysis of All Out-of-School Placements Used for Students with Emotional Disturbance

![Figure 20](chart20.png)
SWPBIS is the foundation of the three-tiered logic of PBIS and, in isolation, SWPBIS may not be sufficient in meeting the needs of students who exhibit the most challenging behaviors warranting an out-of-school placement. So these results may be more encouraging once schools sustain SWPBIS implementation over multiple years and implement tiers 2 and 3 supports for these students. It is possible that out-of-school placements will markedly decrease with sustained SWPBIS implementation and the additional support and services provided once schools implement all three tiers of the PBIS framework.

**Fiscal savings to school districts**

Permission was granted by one school district to review its analysis of fiscal savings resultant from high-fidelity PBIS implementation. The district has implemented a comprehensive, three-tiered PBIS system for a number of years in its elementary and secondary schools. Tier 1 support was the traditional SWPBIS model, and tier 2 included CICO, Second Step (Committee for Children, 2011), and a group psychoeducational intervention designed to build self-esteem in intermediate and middle school students. Tier 3 supports included various empirically-validated individual and group therapies; family check-ups by therapists; linking students and families to after-school, community-based programs; truancy interventions; mentoring; family counseling; crisis intervention; and transition treatment planning for students who were placed in and out of alternative settings.

The district calculated the average daily cost per day to place a student in an alternative education setting compared to the cost of keeping the student in his/her neighborhood school. By keeping students in their neighborhood schools, the district could use those cost savings to hire mental health professionals and create educational environments and supports to meet the challenging needs these students faced. The district’s own analysis confirmed that for every dollar spent on tier 3 personnel and supports, a savings of $13 was realized. This is significant from a fiscal and programmatic level. From a fiscal perspective, these cost savings resulted in an average savings of $15,861 per student that would have otherwise been placed in an out-of-district alternative setting. From a programmatic perspective, the district estimated that it would cost $134,000 to operate a comprehensive set of tier 3 supports – including the costs to hire three highly qualified mental health clinicians. The district calculated that keeping nine students in their neighborhood schools would save the district enough money to operate these tier 3 supports. Any additional students who did not use out-of-district placements would result in additional savings for the district. With three mental health clinicians having the capacity to support 100 students, there would be 91 students for whom adequate support would be provided without any additional cost to the district.

As an example of this cost savings, the district adequately met the needs of 17 students who previously would have been placed out-of-district in 2009-2010. The savings from these 17 students were calculated at $300,000. It cost the district $134,000 to fund the tier 3 services these students needed, including the cost of three full-time mental health clinicians. Thus, the tier 3 services not only paid for themselves, but actually resulted in a savings of $166,000 for the district. Since these services for the 17 students covered the cost of all tier 3 supports for the district, an additional 83 students who were at-risk for out-of-school placements were supported in their neighborhood school at no additional cost to the district. Similar savings were reported
in subsequent academic years with a small number of students who would have otherwise been placed out-of-school covering the cost of not only their own tier 3 supports, but also the supports of many other students at-risk for out-of-district placements. It is noteworthy that in all years, important student outcomes such as attendance, grades, ODRs, and provision of costly wrap-around services were positively affected. In conclusion, these data and resulting analyses provide anecdotal, yet compelling, evidence that implementation of high fidelity PBIS results in considerable savings to districts while providing equal, if not better, educational, behavioral, and mental health services to students than if they were placed in out-of-district settings.

**Academic Achievement**

A primary measure of academic achievement in assessing the effectiveness of SWPBIS is the performance of students on the *Pennsylvania System of School Assessment* (PSSA). The data for the two cohorts were analyzed separately because pre-implementation data on PSSA Math and PSSA Reading and years of continuous implementation of SWPBIS are only available for cohort 1. For cohort 2, it was possible to compare the performance of students in partially-implementing and fully-implementing schools.

Since cohort 1 schools have been part of the SWPBIS project for at least four prior years, not all the analyses reported in earlier annual summaries were conducted again for this fifth-year report. In some cases, such analyses were no longer possible. Readers are directed to read Executive Summaries from previous years (e.g., Runge et al., 2013) for a detailed review of the robust academic outcomes associated with high fidelity SWPBIS implementation.

What is possible, now, however, is to look at the relationship between performance on the PSSA and the number of years of implementation to determine if there is a correlation between academic performance and the length of time that schools have implemented SWPBIS. PSSA results for 2011-2012 were available for 16 of the 17 cohort 1 schools for which consecutive years of implementation were known. The percentage of students “Below Basic or Basic” in reading was 28.4 and the percentage who were “Proficient or Advanced” in reading was 71.6. In the case of PSSA Math, 21.1% were “Below Basic or Basic” and the remaining 78.9% were “Proficient or Advanced.” An interesting question deals with the strength of the relationship between the years of implementation and the schools’ success with regard to the percentage of students earning “Proficient or Advanced” PSSA scores. This relationship was measured by means of the Pearson product-moment correlation coefficient. In the case of PSSA Reading, the correlation between years of successive implementation of SWPBIS and the percentage of students scoring “Below Basic or Basic” was -0.493 and, as would be expected, the correlation between years of successive implementation of SWPBIS and the percentage of students scoring “Proficient or Advanced” was, similarly, 0.495. This correlation approached significance at .05 with an $p = .051$. In other words, approximately 24% of the variance in PSSA Reading scores can be explained by the number of years of successive implementation with a larger percentage of students scoring “Proficient or Advanced” and a fewer percentage of students scoring “Below Basic or Basic” as the number of years of implementation increased.

In the case of PSSA Math, the correlations between the number of consecutive years of SWPBIS implementation and the percentage of students “Below Basic or Basic” and “Proficient
or Advanced” were 0.511 and 0.512, respectively. Each of these correlations is significant, at $p = .043$. The amount of shared variance, or the amount of variability in the PSSA Math scores that can be explained by the years of consecutive implementation of SWPBIS is slightly over 26%.

Given that the number of schools for which these data were available is only 16, that the strength of a correlation for an sample of 16 needs to be fairly large, and that the correlations were so similar with regard to PSSA Reading and PSSA Math, it appears that there very well may be a moderate relationship between the measures of academic performance and years of SWPBIS implementation. Certainly, the evidence would not suggest that a relationship is non-existent.

Complete PSSA and SWPBIS implementation data were available for 132 of the cohort 2 schools. Of these, 34 were considered partial implementers and 98 were considered full implementers. A primary question with the cohort 2 schools was whether or not there would continue to be a difference in academic performance between partially and fully implementing SWPBIS schools. Visual display of the mean percentage of students performing in these reporting categories is provided in Figure 21.

![Figure 21](image)

*Average Percentage of Students in PSSA Reading and Math Reporting Categories*

*Note.* PSSA = *Pennsylvania System of School Assessment*; Mean percentages in all PSSA reporting categories were statistically different between partial and full implementing schools.

With regard to performance on PSSA Reading, the fully implementing schools had a lower percentage of students performing “Below Basic or Basic” and a larger percentage of students performing at “Proficient or Advanced” compared to the partially implementing schools. The same pattern was found on PSSA Math. Independent samples t-tests were used to determine if each pair of differences was statistically significant. There was a significant effect for level of implementation for “Below Basic or Basic” on PSSA Reading, $t(130) = 2.2, p = .03$;
for “Proficient or Advanced” on PSSA Reading, \( t(130) = -2.2, p = .03 \); for “Below Basic or Basic” on PSSA Math, \( t(130) = 2.7, p = .03 \); and for “Proficient or Advanced” on PSSA Math, \( t(130) = -2.7, p = .03 \).

The final academic achievement analysis involved a comparison of the partially and fully implementing cohort 2 schools with the performance of all Pennsylvania schools for which PSSA data were available in 2012. PSSA data from 2012 were obtained from the PDE website (http://www.portal.state.pa.us/portal/server.pt/community/school_assessments/7442). For the 34 partially implementing cohort 2 schools, 34.1% of students performed “Below Basic or Basic” compared to 29.2% of all students in the state on PSSA Reading. This mean difference is statistically significant, \( t(33) = 2.16, p = .04 \). For the fully implementing schools, however, the 28.4% of students performing “Below Basic and Basic” was not statistically significantly different from the State average. Similarly, with the percentage of students who are at “Proficient or Advanced” on PSSA Reading, the schools that were partially implementing performed significantly below the State average (65.9% vs. 70.8%), \( t(33) = -2.15, p = .039 \). For the fully implementing schools, however, the differences with State averages were not significant. It appears as though fully implementing SWPBIS may not help as much as partially implementing SWPBIS may hinder achievement on PSSA Reading.

In the case of PSSA Math, a completely different finding was discovered. The State average for the percentage of students performing “Below Basic or Basic” of 25.3% was not significantly different from that of the schools that were partially implementing SWPBIS. However, the schools that were fully implementing SWPBIS had only 21.2% of their students performing “Below Basic or Basic” which is significantly lower than that of the State, \( t(97) = -2.69, p = .008 \). Similarly, for the percentage of students who scored “Proficient or Advanced” on PSSA Math, there were no differences between the partially implementing schools and the State average. There was, however, a significant difference between the fully implementing schools and the State average, \( t(97) = 2.65, p = .009 \). In the case of PSSA Math, it appears that fully implementing SWPBIS resulted in improved performance while partially implementing SWPBIS was not associated with weaker performance.

**Pennsylvania Value-Added Assessment System**

While analyzing PSSA data is one helpful means of interpreting students’ academic performance in a given year, longitudinal analyses of cross sectional PSSA data may be misleading. It is also important to track academic progress within students and not simply within schools. Different statistical models, therefore, should also be employed to determine the annual growth of students on yearly reading and mathematics tests. The *Pennsylvania Value-Added Assessment System* (PVAAS) data allow for these types of longitudinal analyses.

PVAAS is a statistical analysis of PSSA data which quantifies the average amount of academic growth students in a school make in an academic year. The PVAAS model employed is considered superior to other growth models because it accounts for measurement error typically disregarded in other models (Sanders, 2006).
PSSA performance data from each year for the same students are averaged across grades and schools to provide an Annual Growth Index (AGI) metric. The AGI is the average growth students in a school make in a given academic year compared to how they performed the previous year. While the tests do differ from year to year, performance is tracked across the same students from year to year. The AGI reported for a school is a numerical value built around 0. An AGI of 0 is interpreted to mean that the average achieving student in a school met the standard for academic growth in Pennsylvania. An AGI above 0 is interpreted to mean the average achieving student in the school exceeded the standard for academic growth in Pennsylvania. An AGI below 0 is interpreted to mean the average achieving student in the school did not meet the standard for academic growth in Pennsylvania. The higher the absolute value of the AGI the further away the average student in the school grew / did not grow compared to the standard academic growth in Pennsylvania. For example, an AGI of 9.5 indicates substantially more growth than an AGI of 1.5. Both AGIs, however, are interpreted to mean students grew more than the typical student in Pennsylvania.

Only analyses with elementary schools were performed given limited fidelity and PVAAS data at the secondary level. Cohort differences were not detected, so data from both cohorts were combined to increase sample sizes for subsequent analyses. Initial analyses were conducted to determine if the length of sustained SWPBIS implementation was associated with differences in PVAAS AGI scores. Averages with 95% confidence intervals for non-implementing schools compared to schools implementing SWPBIS for one, two, or three or more years are presented in Figures 22 and 23 for Reading and Math, respectively. Given the small number of schools implementing for three, four, five, and six years, these schools were aggregated into one category (>2 years) to maintain school anonymity.

Figure 22
2012 PVAAS Reading Scores by Length of Sustained SWPBIS Implementation in Elementary Schools
No statistically significant differences were detected among non-implementing schools and schools implementing SWPBIS with integrity for one or more years. These results suggest that PVAAS results for SWPBIS implementing schools were no different than non-implementing schools. Such findings were not unexpected given that statistically significant differences in PSSA results appeared only after three years of high-fidelity implementation (Runge et al., 2013). Moreover, McGlinchey and Goodman (2008) suggest that substantial and noticeable effects of school reform efforts may take up to five years to manifest. Therefore, while PVAAS data from 2012 do not suggest any significant association between SWPBIS and PVAAS, these data should be monitored in future years as positive results may emerge in the next few years.
Replication, Sustainability, and Improvement of PA SWPBIS

The fifth and final domain offered by Algozzine et al. (2010) for large-scale SWPBIS evaluation focuses on advocacy and replication of SWPBIS while still maintaining the positive outcomes associated with high fidelity implementation (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; McIntosh, Horner, & Sugai, 2009). Moreover, this domain attempts to document how well and for how long schools maintain SWPBIS implementation once full achievement status has been achieved.

Advocacy

A number of advocacy efforts were initiated and/or sustained in the past academic year. Notably, the Arc of Pennsylvania developed a position paper on disability harassment and bullying, highlighting SWPBIS as the recommended model for implementation in schools. A new coalition of broad-based groups advocating for the expansion of PBIS was formed called the Alliance for Pennsylvania Positive Behavior Support (All for PAPBS). Organizations affiliated with All for PAPBS include The Arc of Pennsylvania, B2EST Program of Arcadia University, Bloomsburg University/McDowell Institute, Devereux Center for Effective Schools, Disability Rights Network, Education Law Center, Education Voters of Pennsylvania, Juvenile Law Center, Mental Health Association in Pennsylvania, Pennsylvania Community Providers Association, Pennsylvania State Education Association, and Western Pennsylvania Coalition of Education Advocates. Activities of the Alliance this year focused on increasing legislative and stakeholder outreach and awareness.

Act 70 was signed into Pennsylvania law on July 18, 2013 amending the Public School Code providing for the Office for Safe Schools and for allocation of certain appropriated funds – this year over $8.5 million – to fund school safety initiatives. Allied members of the PAPBS SLT, in particular the Education Law Center and the Disability Rights Network, advocated that the Legislature consider PBIS as a framework to create safe and secure environments in which all students can learn. As one outcome of the legislation’s passage, schools can apply to the Office of Safe Schools for targeted grants to implement PBIS.

Through House Resolution 53, the Pennsylvania House of Representatives in March 2013 established the Select Committee on School Safety to investigate and make recommendations concerning safety and security in public and non-public schools. As a consequence, written and oral testimony highlighting the outcomes of PBIS, and specifically SWPBIS, were provided to the Select Committee during the course of two hearings in June and July by, respectively, Dr. Timothy Runge, of IUP, and Sallie Lynagh, of the Disability Rights Network of Pennsylvania (see “Written Comments to Select Committee on School Safety” at http://www.iup.edu/page.aspx?id=124318 and transcript at http://www.legis.state.pa.us/cfdocs/legis/tr/transcripts/2013_0134T.pdf). Written testimony supporting expansion of SWPBIS was also submitted by the Education Law Center and the Juvenile Law Center.

The third annual PAPBS Implementers’ Forum was held in Hershey, PA May 29-30, 2013, titled PBIS Implementers’ Forum: Moving Beyond Universal Supports. This years’ Forum
resulted in the largest number of registrants, totaling 889 educators from across the Commonwealth. Registrant figures for each year’s PBIS Implementers’ Forum are displayed in Figure 24 and indicate an increase in attendees since its inception.

Sustained and expanded implementation of SWPBIS would not be possible without the dedication and expertise of the PAPBS Network Facilitators who train and support network schools. By August 2011, 39 individuals achieved certification as Independent PAPBS Network Facilitators. While an accurate count of Independent and Provisional PAPBS Network Facilitators was not available for spring 2013, the estimated number is approximately 80. Expansion of SWPBIS implementation across the Commonwealth is directly correlated to the increased number of Independent and Provisional PAPBS Network Facilitators.

Figure 24
*Attendees at the Annual Pennsylvania PBIS Implementers’ Forum*

![Attendees at the Annual Pennsylvania PBIS Implementers’ Forum](image)

**Replication**

Replication refers to the number of schools that achieve full implementation status across time. Fidelity data from combined cohorts were analyzed to illustrate the expansion of SWPBIS in Pennsylvania since its early adoption in summer 2007. Visual display of these data was presented in Figure 4 earlier in this report. The height of expansion was achieved in spring 2012, with 120 schools reaching full implementation status. One hundred fourteen schools were fully implementing in spring 2013.

The number of schools by grade level across combined cohorts that achieved full implementation status is presented in Figure 25. Consistent with national trends, the largest percentage of SWPBIS schools are at the elementary grades. Increasing numbers of middle and high schools are implementing SWPBIS with integrity as well.
Figure 25
Cross Sectional Analysis of Full Implementation Status for Combined Cohorts by Building Level

Sustainability

It is not sufficient for a school to implement a school reform effort like SWPBIS for one year given that substantial changes in key outcomes likely will not realize for three to five years (McGlinchey & Goodman, 2008). Therefore, it is important to monitor the length with which schools maintain full implementation of SWPBIS because this is an indicator of both how well the organizational structure is routinized as general operating procedure and whether the desired effects materialized.

There were no statistically significant differences in length of consecutive years of SWPBIS implementation by grade level, $F(4, 173) = 1.279, p = .280$. This indicates that elementary, middle, and high schools are equally as likely to sustain implementation of SWPBIS for multiple years. The number of consecutive years of SWPBIS implementation, as of spring 2013, is provided in Figure 26 for combined cohorts. Not surprisingly, the largest number of schools have implemented SWPBIS for one year. A healthy number of schools have implemented for 2-4 years, accounting for 56% of all schools known to implement SWPBIS. Note that the two demonstration sites from cohort 1 have implemented for at least seven years. Objective documentation of this is confirmed via annual SET or BoQ data; however,
anecdotally, it is believed that these two schools have implemented with integrity for longer than seven years but the objective fidelity measures prior to 2006-2007 were never collected.

Figure 26
*Consecutive Years of SWPBIS Implementation – Combined Cohorts*

As with any systems-change effort, long-term sustainability of SWPBIS faces myriad challenges. Successful long-term implementation of SWPBIS is reliant on a small number of critical features that are not, interestingly, related to specific personnel but, instead, contextual factors. McIntosh, Filter, Bennett, Ryan, and Sugai (2010) suggested that SWPBIS typically does not sustain if the framework is inconsistent with the school context, if other initiatives compete for limited resources, resources and funding are cut, and desired efficacy data are absent. Moreover, sustained SWPBIS must be actively and publicly supported by the building administrator, although he / she does not have to be the leader of the behavior team. SWPBIS must be a top priority for a school and its staff. Core team members must hold regular, productive, data-focused meetings in which responsibilities are distributed across team members. While a majority of all staff must buy-in to the PBIS model, 100% buy-in from faculty is not only unlikely but not necessary for sustained implementation.

A small sample of schools involved in the PAPBS Network agreed to participate in a study independent of the general data compliance requirements of annual program evaluations to investigate factors that encourage and limit sustained SWPBIS implementation. Runge, Wagner, and Gorlaski (in review) analyzed data from 86 respondents representing 15 schools at various stages of SWPBIS implementation who voluntarily completed the on-line *School-wide Universal Behavior Sustainability Index – School Teams* ([SUBSIST], McIntosh, Doolittle, Vincent, Horner, & Ervin, 2009). Wilcoxon signed-rank tests were conducted on each of SUBSIST factor scores to rank order the relative importance of enablers of sustained SWPBIS implementation. Survey data confirmed that the building leadership and removal of barriers to implementation were rated statistically higher than all other factors. Respondents rated central office leadership as the least important enabler of sustained implementation. Building administrators need to
value and actively support SWPBIS to address student behavior. Failure to secure building administrator support portends the demise of SWPBIS. Concurrently, the capacity of schools to mitigate barriers to implementation such as competition from other initiatives for the same resources and high staff turnover is important to sustained implementation. Of far less importance to sustainability is active central administrative support for SWPBIS (Runge et al., in review).

Some general themes regarding sustained SWPBIS emerge when cross sectional and longitudinal implementation data from PAPBS Network schools are viewed in the context of theoretical understandings of sustained implementation and objective data collected from a limited sample of PAPBS Network schools. First, most schools require one to three years after commencing staff training to implement SWPBIS with integrity. Once schools achieve full implementation status and, presumably, observe their efforts paying dividends for students, staff, and communities, sustained implementation over multiple years is likely. Second, the specific conditions attributable to multi-year implementation of SWPBIS largely hinge on concordance of the PBIS logic and operationalization with administrative and staff orientations, appropriate allocation of hard and soft resources to developing and sustaining implementation, and evidence indicating that the SWPBIS model adequately meets the needs of large proportions of students. Many of these conditions are directly the product of local efforts; however, support for sustained and expanded implementation is also contingent on efforts at the regional, state, and national levels. The OSEP National Technical Assistance Center on PBIS, PAPBS SLT, PAPBS Network, and allied organizations in Pennsylvania continue to advocate for resources to sustain and expand PBIS, and in particular SWPBIS, across the Commonwealth. These data suggest that such efforts are fruitful and should continue.
Summary

The mission of the PAPBS Network is to establish efficient and effective cross-systems of care for all students and families using a three-tiered public health model in which SWPBIS is the foundation of PBIS. All students are exposed to universal, tier 1 interventions, identified as SWPBIS. Since its inception in summer 2007, the PAPBS Network has trained over 400 schools in SWPBIS.

All PAPBS Network schools received training and onsite technical assistance from a PAPBS Network Facilitator using the same general training materials endorsed by the PAPBS SLT and the OSEP Technical Assistance Center on PBIS. PAPBS Network schools were encouraged, but not required, to collaborate on PBIS and SWPBIS implementation efforts with at least one local community mental health agency. At least 112 private and public mental health organizations collaborate with PAPBS Network schools.

Approximately 70% of all schools trained in SWPBIS educate students in the elementary grades. A growing percentage of schools trained in SWPBIS are at the middle and preschool levels. High schools remain the smallest proportion of schools trained on SWPBIS, with approximately 15% of all trained schools educating students in grades 9-12. In total, 233,700 students attend schools trained in SWPBIS, accounting for 13% of all students in Pennsylvania. This percentage continues to trend upward relative to data from previous years’ annual reports.

The number of schools achieving SWPBIS full implementation status by spring 2012 was at its highest ever: 120 schools with objective fidelity checks meeting or exceeding minimum criterion. One hundred fourteen schools reported full fidelity in spring 2013, although this number will likely increase as some schools submitted fidelity data for spring 2013 after data analysis for this report commenced. An additional 36 schools were designated as partially implementing SWPBIS by spring 2013. While the number of schools achieving partial or full implementation status is encouraging, it still represents roughly 35% of all schools known to have received training.

Analyses of how well staff perceive themselves to be implementing SWPBIS are, generally, consistent with more objective measures of fidelity. Data from cohort 2 schools suggest that school staff do a better job of recognizing when they are partially implementing SWPBIS than when they have actually achieved full implementation of SWPBIS. Taken together, these data suggest that SWPBIS teams and building administrators need to do a better job of publicizing strong implementation fidelity not only with the community, but also with their own colleagues.

Data from staff surveys of risk and protective factors for school violence were largely consistent with previous annual reports: perceptions of risk factors for school violence decreased simultaneously with an increased perception of protective factors across multiple years of SWPBIS implementation. Additionally, data from cohort 2 confirms that perceived risk factors are significantly lower in fully implementing schools compared to partially implementing schools. Likewise, staff in fully implementing schools perceive significantly more protective factors compared to the ratings of staff from partially implementing schools. These results, taken
together, provide compelling evidence that high fidelity SWPBIS implementation over an extended period of time is associated with substantial decreases in school / community characteristics typically associated with school violence concurrent with substantive increases in school / community characteristics that protect the school and its staff and students from the negative consequences of violence.

Data do not indicate SWPBIS has any appreciable effect on student or staff attendance, although these results are interpreted cautiously given ceiling effects within the data. ODR rates were significantly different between elementary, middle, and high schools across multiple years of SWPBIS implementation, with elementary schools removing students from classrooms at a significantly lower rate than middle and high schools. Similarly, middle schools reported significantly lower ODR rates than high schools. ODR rates in at all building levels (i.e., elementary, middle, high) from baseline to three years of implementation appeared to be relatively stable, suggesting that initial rates of ODR in the first year of SWPBIS implementation are sustained.

ODR Triangle Data were statistically different across grade levels with elementary schools reporting significantly higher percentages of students receiving one or no ODRs compared to middle and high schools. Similarly, elementary schools reported significantly fewer percentages of students receiving 2-5 or 6+ ODRs in an academic year compared to middle and high schools. These results suggest that SWPBIS has a much broader influence on the student population of a building compared to middle and high schools.

SWPBIS at the elementary level, on average, results in nearly 93% of the student population receiving one or no ODR. This percentage is markedly higher than the 85% and 81% observed in middle and high schools, respectively. Approximately 5% of all elementary students receive two to five ODRs in a year compared to approximately 11% of middle and high school students. At the highest rates of disruptive behavior, six or more ODRs in an academic year, just under 2% of all elementary students met this criterion. Five and eight percent of middle and high school students, respectively, fell in this category. These data confirm that SWPBIS is generally effective for a large majority of students. Additional analyses suggest that ODR Triangle Data are relatively stable across a three-year period of SWPBIS implementation.

Elementary schools implementing SWPBIS employ OSS as a disciplinary consequence significantly less often than secondary schools. Longitudinal analyses at both the elementary and secondary levels revealed a declining, but non-significant, trend in OSS from baseline to three-years of SWPBIS implementation. Although these encouraging trends are real and substantial for the schools included in the analysis, results may not necessarily generalize to all schools.

Expulsion rates were statistically lower for elementary schools compared to secondary schools involved in the PAPBS Network across a four-year period. Longitudinal data at the secondary level suggest no substantive changes in expulsion rates across multiple years of SWPBIS implementation.

CICO is a standard protocol, tier 2 intervention that is often implemented once SWPBIS is firmly in place. The largest number of schools implementing CICO was observed in 2012-
2013, with 36 elementary schools, five middle schools, and one high school implementing the intervention protocol. Longitudinal data indicated that most schools sustain CICO implementation across multiple years. Efficacy of CICO was considered across all grade levels so that anonymity of secondary schools could be maintained. Seventy-seven percent of all students enrolled in CICO achieved minimum daily points across a five-year period supporting the conclusion that CICO is effective for the majority of students. Closer examination of the data revealed that schools tend to observe higher efficacy rates in the initial year of CICO implementation before experiencing a drop-off in efficacy during year 2 of CICO implementation. Moreover, CICO success rates stabilized from year 2 to year 5 across most schools.

Out-of-school placements are typically reserved for students with the most challenging academic, behavioral, social, and emotional needs, warranting very specialized supports and services not available in the neighborhood school. Data from PAPBS Network schools demonstrate that elementary schools utilize out-of-school placements for all students at a substantially lower rate than secondary schools. Longitudinal data from a small number of schools suggested that out-of-school placement rates decline from baseline to implementation of SWPBIS; however, the lack of statistically significant findings prevents the generalization of these results to other schools. Cross sectional and longitudinal analyses did not suggest that high fidelity SWPBIS results in any appreciable change in out-of-school placements for students with emotional disturbance.

One PAPBS Network school district granted permission to share data revealing the fiscal savings schools may experience as a result of a high fidelity, multi-tiered system of support. This district has implemented PBIS in all its schools for a number of years. Using the costs of out-of-school placements, the district then estimated that educating nine students in their neighborhood school would allow enough revenue to be retained by the district to fully staff and support its own, multi-tiered system of support, complete with three mental health clinicians. Any additional students who were educated in their neighborhood school versus an out-of-school placement would provide considerable cost savings because they could be provided highly intensive and effective supports and services at no additional cost to the district. In one year for which the district analyzed these cost savings, it was discovered that the multi-tiered PBIS model saved the district $166,000 while providing high quality mental and behavioral health services to 100 students, some of whom in previous years would have required a costly out-of-school placement. While these findings may be unique to this particular school, the evidence is rather compelling: high fidelity PBIS may provide a cost savings to school districts while permitting students with challenging needs to remain with their peers in their neighborhood school.

Three primary analyses were performed using PSSA Math and Reading outcomes. First, there was a significant positive correlation between the number of years of successive implementation of SWPBIS and PSSA Math. The more years a school implemented SWPBIS, the larger the percentage of students scoring at proficient or advanced on the PSSA Math. Approximately 26% of the variance in PSSA Math scores was explained by the years of SWPBIS implementation. Similar results were found between the years of implementation of SWPBIS and performance on PSSA Reading. While not statistically significant, the relationship between years of implementation and performance in PSSA Reading approached significance.
with just slightly below 25% of the variance explained. Secondly, for cohort 2 schools, in all cases of performance on the PSSA Math and Reading, fully implementing schools outperformed partially implementing schools. Finally, when compared to statewide average, fully implementing schools performed better than the State average on PSSA Math but no differences were found on PSSA Math between partially implementing schools and State averages. On the other hand, in the case of PSSA Reading, partially implementing schools did worse than the State average while fully implementing schools were statistically equal to the State average.

PVAAS data from combined cohorts were compared to State averages to determine if high fidelity SWPBIS is associated with significant growth in reading and mathematics. Results of one-way ANOVAs revealed that PVAAS data for SWPBIS schools were statistically similar to statewide averages. This finding is not unexpected given that changes in academic outcomes such as PSSA materialized only after three years of SWPBIS implementation. Once more longitudinal PVAAS data are available, more encouraging trends may emerge.

A number of advocacy efforts were accomplished in 2012-2013. Nearly 900 professionals, from educators to mental health providers to parents, attended the 3rd annual PBIS Implementers’ Forum in Hershey, PA in May 2013. The new coalition All for PAPBS, comprised of 12 organizations representing legal, educational, and mental health advocates, was formed and focused on increasing legislative awareness and outreach to other stakeholder groups. In the Pennsylvania Legislature, Act 70 was signed into law on July 18 providing substantial funds for school safety initiatives. Members of the PAPBS SLT provided written and oral testimony to the PA House of Representatives Select Committee on School Safety regarding PBIS as a component of a comprehensive, evidenced-based framework to promote school safety and positive learning environments for all students.

As of spring 2013, 88 elementary schools were at full implementation status, followed by 13 middle schools, eight high schools, four PreK-8/12 schools, and one alternative education setting. The range of consecutive years of SWPBIS implementation extended to at least seven years. Most schools that submitted fidelity data in spring 2013 were in their first year of implementation; however, 100 schools were in their second to fourth consecutive year of achieving full implementation of SWPBIS. Results from a related study by the lead author of this Executive Summary suggest that the primary enabling factors to sustained SWPBIS implementation were strong building leadership and neutralization of implementation barriers. Interestingly, central office leadership was rated as having the least important affect on sustained implementation.

The information offered in this Executive Summary provides a clear picture of SWPBIS implementation in Pennsylvania from 2007 through 2013. It is the collective efforts of statewide leadership, advocacy by many organizations, provision of comprehensive training and technical assistance, adherence to the PBIS model, regard for implementing with fidelity, collection and submission of outcome data, and analysis of these data that, in the end, provide compelling evidence that SWPBIS, and the larger PBIS model, is positively affecting many schools across the Commonwealth.
Implications for Further Investment

A trend from previous years that continues today is the burgeoning number of schools that receive training and subsequently implement SWPBIS with integrity. This growth is important to the viability of PBIS in Pennsylvania, validates the efforts of the PAPBS Network and SLT, and, most importantly, is exciting for the communities, staff, and students of SWPBIS schools.

Of primary concern is Network schools’ data submission compliance record. Only a small proportion of Network schools submitted both fidelity and outcome data. With limited data, the capacity to conduct data analytic procedures and make valid interpretations was undermined. Additional considerations for increasing data submission compliance must be made if future program evaluations are to continue focusing on all schools implementing SWPBIS across the Commonwealth. The advent of an on-line secure database (pTrack) to roll out in fall 2013 will hopefully increase data submission compliance.

An alternate model for annual program evaluations that the PAPBS SLT may consider for the future is to focus on a subset of PAPBS Network schools, specifically those schools that have complied with data submission in previous years. It may be more beneficial to concentrate future program evaluations on a smaller number of schools, thus allowing resources for program evaluation purposes to directly support those schools in their data submission compliance.

PAPBS Network schools must recognize the value of collecting and analyzing multiple outcomes related to SWPBIS along with regular measurement of implementation integrity. This process is not only helpful for large-scale program evaluation purposes, but it is even more salient for individual schools and LEAs as communities evaluate the value of their efforts. Additionally, the review of key outcome data and fidelity of implementation is a critical feature of best practice in SWPBIS and other school reform efforts.

PAPBS Network schools are encouraged to submit any available data from previous years to these authors. Even incomplete data can aid in a deeper and more confident understanding of how SWPBIS affects students, teachers, administrators, and communities.

Large- and small-scale studies of SWPBIS in Pennsylvania continue by other researchers independent of the authors of this annual program evaluation. Still other studies of SWPBIS continue, often conducted by doctoral candidate researchers under the mentorship of these authors. These latter efforts are neither funded nor directly supported under the aegis of the PAPBS SLT. As more work is completed, these results will be added to future annual program evaluations. The collective efforts of all these research and program evaluation projects aim to keep building a justification for the sustained and expanded role of SWPBIS in Pennsylvania’s schools.
References


