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Population-level PAX: Prevention Programming Across the Youth System of Care

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Abstract

PAX Good Behavior Game and PAX Tools are trauma-informed, evidence-based preventive interventions with proven effectiveness in randomized efficacy trials, real-world applications, and now, population-level implementations. Beginning in 2019, the state of Arizona backed a statewide initiative to provide training in PAX programming to educators, youth-serving professionals, and families and caregivers. This provided skill training for over 7,000 professionals across Arizona's youth system of care. This initiative resulted in increased efficacy for youth-serving professionals and an improved experience in the system of care for Arizona's youth, including several statistically significant outcomes.

Keywords: PAX, System of Care, Prevention,

For nearly four decades, the system of care approach (SOC) has been utilized in communities to provide a collaborative mental health network and to deliver trauma-informed, evidence-based prevention efforts. The SOC is a network made up of a spectrum of proven community-based services and supports for youth partnering with families to improve outcomes across the lifespan (Stroul et al., 2010). The SOC approach consists of cultural and linguistic responsiveness, promoting active participation in decision-making at the family and individual levels (Larson et al., 2022). The SOC approach provides universal prevention and intervention made up of familydriven, youth-guided services and supports tailored to the strengths and needs of youth.

System of Care Approach and the Public Health Framework

By 2008, all fifty states reported some level of the approach in operation for mental health services and prevention for youth (Cook & Kilmer, 2010). This included integrated networks whose providers communicate across agencies, schools, social services, juvenile justice, and community stakeholders while incorporating the choices of youth and their families. These stakeholders include social service organizations, mental health providers, medical and educational experts, families, youth as active participants, and community members. This comprehensive public health perspective includes an understanding that behavioral health care applies to all youth in the context of the social determinants of health and well-being utilizing a proactive prevention/intervention process (Stroul & Friedman, 2010; Stroul et al., 2021; Markiewicz et al., 2021; Larson et al., 2023). The primary objective of a comprehensive youth system of care is to ensure the holistic and collaborative delivery of behavioral health and prevention services to youth within their homes, schools, and communities that are grounded in evidence-based practices that have demonstrated outcomes at the population level. (Children's Bureau, 2008).

The Youth System of Care Scope of Impact: Benefits for Youth

The positive outcomes of the SOC approach are not limited to individual youth and their families but extend to the broader community, service providers, and funders, benefitting the population as a whole. This public health approach is aligned with emphasizing overall wellness and resiliency at the youth and family level while improving outcomes at the population level (Friedman & Hernandez, 2002). Such prevention efforts can include behavioral health prevention programming, including suicide prevention to social skills strategies integrated into programming within schools, social services settings, and the juvenile justice system. At the family level, it may include community volunteers and workers coaching families on equipping themselves with behavioral strategies they can use with the youth and adolescents they care for.

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Prevention can focus on short-term benefits with long-term outcomes, which include pre-empting behavioral disorders before they develop through trauma-informed prevention programs that teach social skills and work to improve school climate to reduce drug misuse (Markiewicz et al., 2015).

System of Care Approach Population-level Benefits

Recent congressional reports and policy papers detail the evidence of population-level emphasis and benefits of the youth system of care (SAMHSA, 2017a; Tebes et al., 2019; SAMHSA, 2023). These reports are useful resources for mental health and prevention professionals. Prevention efforts downstream such as equipping families with behavioral strategies and mental health support, have resulted in upstream savings of an estimated \$104 billion. This included savings in healthcare, direct and indirect costs, and managing family-focused work environments (SAMHSA, 2017a). Additionally, SOC delivery by way of school-based and family intervention efforts found long-term impacts into adulthood, including reduced involvement in the justice system, increased graduation rates, reduction in teen pregnancy, and higher rates of employment (Cunha et al., 2006; Garcia et al., 2017; Heckman, 2008). For community stakeholders, providers, educators, youth, and families, a system of care represents a powerful preventive intervention approach. Unlike other mental health delivery "models," this trauma-informed philosophy of care, grounded in a public health framework that acknowledges risk factors, determinants of health, and the population effects of prevention efforts, encompasses transparency and breadth.

PAX Good Behavior Game in the Classroom

Education represents an essential stop within the youth system of care, and the PAX Good Behavior Game is one of the most effective prevention programs in education. The PAX Good Behavior Game is a classroom-based universal preventive intervention shown to have vast benefits across an array of outcomes (Embry et al., 2022). Educators are inclined to adopt and implement the PAX Good Behavior Game due to the intervention's components doubling as evidence-based behavioral strategies for use as more effective classroom management. For instance, the intervention provides transferrable, culturally responsive strategies for a variety of common classroom scenarios, including clarifying expectations, obtaining and maintaining students' attention, selecting students, finishing tasks more efficiently and successfully, and providing feedback for both desired and problematic behavior. These effective strategies have a cascading, transactional impact, improving the relationship between the teacher and students and creating a more nurturing environment (Huber et al., 2016; Biglan et al., 2012). This also impacts relationships among students, including increasing the number of identified friendships and reducing bullying (Ialongo et al., 1999; Domitrovich et al., 2015).

The resulting environment and relationships allow the teacher to implement the operative mechanism in the PAX Good Behavior Game – periodic interdependent group contingencies that utilize peer reinforcement for the inhibition of unwanted, contextually inappropriate behaviors. Classrooms implementing the PAX Good Behavior Game robustly demonstrate proximal outcomes such as a 75% reduction in off-task, inattentive, or problematic behaviors (Embry, 2002; Wilson et al., 2014). The improved self-regulation that comes from the PAX Good Behavior Game results in a number of other outcomes useful to the educational sector, including increased reading and math scores (Fruth, 2014; Weis et al., 2015). Students with at least one year of exposure to the PAX Good Behavior Game also demonstrated reduced use of special education services and had higher high school graduation and college entry rates (Bradshaw et al., 2009). The intervention also demonstrates outcomes that support workforce development and maintenance, including an increase in educator efficacy and a reduction in workplace stress (Fruth & Huber, 2015; Huber et al., 2016; Fruth et al., 2017; Ghaderi et al., 2017).

Sectors outside of education begin to recognize benefits from the PAX Good Behavior Game with the onset of the more distal outcomes as indicated through ongoing tracking of students into adulthood through Johns Hopkins University (Ialongo et al., 1999; Ialongo et al., 2001; Kellam et al., 2008). Young people receiving the PAX Good Behavior Game demonstrated an array of improved longitudinal outcomes throughout their teens and into adulthood. This includes less violent, aggressive behavior and fewer conduct disorders through young adulthood (Embry et al., 1996; Ialongo et al., 1999; Kellam et al., 1994; Kellam et al., 1998; Petras et al., 2011). Less violent, anti-social behavior resulted in lower crime rates in teenage and young adult years (Kellam et al., 2008; Petras et al., 2008). These young people also demonstrated reduced psychiatric disorders through adulthood (Kellam et al., 2008; Wang et al., 2009). Alcohol, tobacco, as well as illicit drug use, including opioids, in adulthood also decreased when the individual had the PAX Good Behavior Game as a child (Kellam et al., 2014; Furr-Holden et al., 2004). These young people demonstrated delayed initial sexual activity and less high-risk sexual behavior (Kellam et al., 2014). Young people exposed to the PAX Good Behavior Game were also less likely to contemplate, attempt, and complete suicide (Wilcox et al., 2008; Katz et al., 2013).

Education, health, mental health, juvenile justice, public health, substance use prevention, and other sectors all benefit from children's exposure to the PAX Good Behavior Game. The effects of the intervention have been so pervasive that researchers involved in the ongoing tracking continue to uncover unexpected outcomes. For example, children exposed to the PAX Good Behavior Game later demonstrated enhanced expression of brain-derived neurotrophic factor – genes related to learning and memory and protection from pathological conditions (Musci et al., 2014). These children were even more likely to vote as adults (Holbein et al., 2022). Affecting such an array of outcomes with substantial effect sizes supports Embry's assertion of the PAX Good Behavior Game as behavioral inoculation – especially if employed at population levels (2002).

While a host of other sectors recognize the public health benefits of the PAX Good Behavior Game, the educational sector, and teachers specifically, are responsible for implementing the intervention with children and producing the outcomes. This has made it necessary to formulate the training, maintenance, and professional development in a manner commensurate with other educational interventions (Embry et al., 2019). The intervention also lends itself to a coaching/mentor model familiar to educators (Becker et al., 2013). This has involved integrating the approach and strategies with existing federal, state, and local initiatives such as Positive Behavioral Interventions and Supports, Social-emotional Learning, Trauma-informed Classrooms, Multi-Tiered System of Supports, and others. Crosswalks with current initiatives and even other programming help engender support from school leadership and, most importantly, the teachers themselves. Increasing value in terms of proximal outcomes consistent with teachers' daily objectives increases the likelihood that the intervention is implemented consistently, providing long-term results for the children and community.

PAX Tools in the Community

Most children encounter at least one and typically several different professionals outside of education within the youth system of care. For this diverse range of professionals and caregivers, PAX Tools provides a community-based analog to the PAX Good Behavior Game in the classroom. PAX Tools is a community-based universal preventive intervention made up of trauma-informed, evidence-based strategies for all adults who work with or care for young people (Fruth, Irving, Fechner, & Embry, 2023). Embry (2004) first proposed the idea of utilizing singular evidence-based strategies for adults seeking to improve youth behavior and cooperation. By narrowly tailoring behavioral strategies to the needs posed by young people, professionals and caregivers can generate precise outcomes without off-the-shelf programs that may lack cultural competence, contain inert aspects, or not be aligned for the setting (Embry & Biglan, 2008; Embry, 2011).

PAX Tools provides a menu of these narrowly tailored evidence-based strategies that can be used to mitigate conflict and division between adults and young people in any number of scenarios outside the classroom. These scenarios include getting and staying on the same page, eliciting focused attention, staying on task, delivering feedback, reinforcing desired behavior, de-escalating tension, restoring relationships after a transgression, improving decision-making, and more (Fruth et al., 2021). Like the PAX Good Behavior Game, PAX Tools is not a scripted curriculum or linear program but rather a host of independent strategies with simple recipes that adults can utilize as part of their daily interaction with young people. PAX Tools strategies can be used independently or combined for synergistic effects.

When PAX Tools strategies have been incorporated into the daily procedures of a setting, they have been shown to substantially reduce conflict between young people and staff and reduce conflict among young people (Fruth et al., 2015). In controlled studies, PAX Tools has been shown to significantly reduce symptoms of depression in young people while significantly increasing young people's ability to solve problems on their own. Like the PAX Good Behavior Game, PAX Tools also showed benefits for those implementing. PAX Tools has been shown to significantly increase supervisor recognition for staff implementing the intervention (Fruth, Irving, Fechner & Embry, 2023). PAX Tools offers a number of variations within the suite of programming commensurate with the variety of stakeholders who may utilize the programming. At the time of publication, PAX Tools provided distinct, specialized programs for parent educators, human service professionals, youth workers, as well as parents and caregivers.

Funding Population-level Prevention in Arizona

Beginning in 2019, the state of Arizona utilized funding and support from a number of sources spanning several state departments in order to provide PAX universal prevention programming across the youth system of care. The initiative started with the Arizona Health Care Cost Containment System (AHCCCS), Arizona's Medicaid program operating under an integrated managed care model, providing two years of funding for PAX Good Behavior Game training for any Arizona educators who elected to enroll. This ensured training and materials at no cost to the educator to implement the intervention in the classroom.

This also provided for follow-up professional development training for those already utilizing PAX in the state before the initiative as well as those trained through the initiative and needing additional support. This also provided for coaching/mentor (entitled PAX Partner) training to develop capacity and sustainability both at the school level and state level.

AHCCCS utilized federal State Opioid Response (SOR) funding to make the preventive intervention available to educators throughout the state. SOR funding required that awardees, such as the state of Arizona, provide services across the continuum – including prevention. This was predicated upon Arizona's 1375 suspected opioid overdose deaths and 6961 doses of Naloxone (emergency overdose-reversing medication) dispensed in 2018 (Arizona Department of Health Services, 2018). This made PAX as prevention a logical fit for the Arizona SOR initiative, as PAX directly addresses underlying causes of addiction by increasing self-regulation and specifically reducing opioid misuse in adulthood (Kellam et al., 2014).

Concurrently, the Arizona Governor's Office of Youth, Faith and Family (GOYFF) provided two years of funding for PAX Tools training to parent and community educators. This ensured that those working at the local level to provide parent education as well as support for other community members could receive PAX Tools training and materials at no cost. This initiative would soon expand to provide access to PAX Tools training to other stakeholders across Arizona's youth system of care. GOYFF utilized Substance Abuse Block Grant (SABG) funding to ensure professionals and supporters outside the classroom had access to trauma-informed, evidence-based behavior strategies. SABG funding provides resources to states for the prevention and treatment of all substance misuse (SAMHSA, 2013). This funding source was also an ideal fit for PAX programming, which has been shown to reduce the misuse of a range of substances (Furr-Holden et al., 2004).

In 2021, two years after the beginning of the initiative, the Arizona Department of Education provided two years of funding for the school-based programming when federal SOR funding to AHCCCS was reduced. The Department of Education utilized Elementary Secondary School Emergency Relief (ESSER) funding, which provided schools with relief funds to help them offset the social and academic effects of the COVID-19 pandemic (Arizona Department of Education, 2022). The department specifically sought to utilize the PAX Good Behavior Game to assist in academic recovery for students who experienced interrupted schooling based on the history of PAX increasing academic performance regardless of curriculum (Weis et al., 2015).

In 2021, AHCCCS also utilized American Rescue Plan Act (ARPA) allocations to fund community-based services and, later, school-based services after ESSER funds decreased. ARPA was passed to provide additional relief to families and communities in the wake of COVID-19 (AHCCCS, 2023). PAX programming qualified for this funding, in part, due to its history of reducing psychiatric disorders (Kellam et al., 2008). At the time of publication, AHCCCS again signed to provide two more years of funding for both school and community-based programming through 2025.

Methods

Design

This population-level evaluation utilized a quasi-experimental intervention-only pre/post-test research design. This design is appropriate for the moderate monitoring of an intervention at the public health scale (CDC, 2019). While more sensitive methodologies are necessary to detect necessary outcomes for early field testing during the efficacy, effectiveness, and real-world trials, they are not appropriate nor consistent with the needs and objectives of the stakeholders in a population-level implementation of an intervention. Interventions tabbed for implementation at a population level already have proven benefits at each previous stage of testing. Further, the function of the research and evaluation in early field testing is to investigate the intervention and its effects on participants. This requires a sizable portion of the resources of an initiative dedicated to research and evaluation. The function of research and evaluation for a population-level preventive intervention is to monitor proximal outcomes to ensure an acceptable consistency and magnitude with the proximal outcomes at previous levels of the intervention's investigation. This monitoring allows for calibration of implementation while also ensuring resources are dedicated to implementation rather than the re-evaluation of an already-proven intervention.

Measures

The instruments utilized in evaluating programming in the initiative were provided anonymously via email link directly after training and then again several weeks into implementation for each participant. These instruments assessed the effectiveness of each training and, later, the maintenance of the implementation.

The pre/post assessments also provided an opportunity to detect changes according to standardized measures for constructs such as workplace stress in adults as well as social development and risk probability for psychiatric disorders in children. These constructs were assessed through factor-analyzed items from standardized measures, including the Maslach Burnout Inventory (Maslach et al., 1997) and the Strengths and Difficulties Questionnaire (Goodman, 1997).

The pre-test in the evaluation occurred at the conclusion of training for each of the participants. This initial test assessed the effectiveness of the training and also provided baseline scores for the standardized items for follow-up in the post-test. These anonymous instruments were provided privately and anonymously via email link to participants following each training and recorded their experiences and impressions of training in areas, including professional gains, integration with existing policy, comprehension of strategies, intention to implement, confidence in implementing, appropriateness for settings, as well as thoughts about sustainability.

Participants received the post-test for the evaluation several weeks into their PAX implementation. This assessment gauged participants' impressions, progress, and use of intervention in their setting. The post-test measure captured the use of intervention in the field and also helped to confirm the effectiveness of training and provide indications as to the sustainability of the intervention. The measure assessed the frequency of use, the appropriateness of the intervention for the setting and young people, the success thus far, the integration with existing programming, the perceived effect on discipline, and the perceived effect on implementer well-being.

Population

Beginning in fiscal year 2020, Arizona state departments made PAX training available to educators or other professionals who work with youth. This access has been relatively uninterrupted, save for the first few months of the COVID-19 Pandemic. At the time of publication, this initiative has provided 7,280 professionals with training in trauma-informed, evidence-based strategies for working with young people. These participants opted into training and implementation without any sort of departmental or professional mandate but merely promotion through typical professional networks. Throughout the initiative, training was made available in atlarge opportunities for individuals. As well, agencies and schools booked site-specific trainings for their employees. The total number of Arizona participants per training type is found in Figure 1.

PAX Trainings	FY 20	FY 21	FY 22	FY 23
PAX Tools for Human Services	-	544	267	661
PAX Tools for Youth Worker	-	-	82	272
PAX Tools for Community Educators	117	230	70	140
PAX Tools for Caregivers	-	-	-	593
PAX Good Behavior Game	981	990	1024	945
PAX Partner	-	103	82	179
Total	1098	1867	1525	2790

Figure 1. Arizona Participants by Training Type

Results

From the Fall of 2019 through the Summer of 2023, thousands of Arizona professionals, including educators, human service professionals, parent and community educators, youth workers, and specialized caregivers all engaged in PAX training. Many opted into completing the pre- and post-measures assessing the effectiveness of training, the success of the intervention, its effects on the children they work with, and its effects on themselves as professionals. Training participants from every sector had generally positive impressions of the training and the intervention.

Human service professionals from a number of fields, including youth work, behavioral health, juvenile justice, and out-of-school time, participated in PAX Tools for Human Services training. The majority of these professionals marked the highest rating for PAX Tools on the constructs of *Understanding Strategies* (90.69%), Helpfulness (87.75%), and Likely to Implement (80.39%) This feedback is found in Figure 2.

			1
Construct	Response	Number	Percent
Understand the	Not	0	0.00%
strategies			
	Somewhat	19	9.31%
	Very	185	90.69%
Helpful in	Not	1	0.49%
setting			
	Somewhat	24	11.76%
	Very	179	87.75%
Likely to	Not	2	0.98%
implement			
	Somewhat	38	18.63%
	Very	164	80.39%

Figure 2. PAX Tools for Human Services Participant Feedback

Youth workers, part-time staff, and early career professionals participated in PAX Tools for Youth Workers training. A plurality of these professionals marked the middle rating for the construct of *Consistency with Objectives* (45.90%), and an equal plurality marked the middle and highest ratings for the construct of *Confident Implementing* (44.26%) This feedback is found in Figure 3.

			1
Construct	Response	Number	Percent
Consistent with objectives	Not	12	9.84%
	Somewhat	56	45.90%
	Very	52	42.62%
Confident implementing	Not	12	9.84%
	Somewhat	54	44.26%

Figure 3. PAX Tools for Youth Workers Participant Feedback

Parent educators, health educators, community educators, and public health officials participated in PAX Tools for Community Educators training. The overwhelming majority of these professionals marked the highest rating for the construct of *Appropriateness* (86.15%), and a majority marked the middle rating for the construct of *Intent to Use* (70.77%). This feedback is found in Figure 4.

Very

54

44.26%

Figure 4. PAX Tools for Community Educators Feedback

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Construct	Response	Number	Percent
Appropriate for	Not	0	0
populations			
	Somewhat	9	13.85%
	Very	56	86.15%
Intent to conduct workshops	Not	1	1.54%
	Somewhat	46	70.77%
	Very	18	27.69%

Foster parents, kinship parents, and other caregivers for children in care participated in PAX Tools for Caregivers training. The majority of these caregivers marked the highest rating for the constructs *Appropriateness* (72.90%) and *Likely to Use* (90.14%). This feedback is found in Figure 5.

Figure 5. PAX Tools for Caregivers Feedback

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Construct	Response	Number	Percent
Appropriate for	Not	6	1.23%
setting			
	Somewhat	125	25.67%
	Very	355	72.90%
Likely to	Not	3	0.62%
implement			
	Somewhat	44	9.03%
	Very	439	90.14%

Schoolteachers and other educational professionals participated in PAX Good Behavior Game training. The majority of these educators marked the highest ratings for the constructs of *Useful for Testing* (59.41%), *Support for Behavior* (71.70%), and *Understanding Strategies* (78.37%). This feedback is found in Figure 6.

Figure 6. PAX Good Behavior Game Feedback

Construct	Response	Number	Percent
Useful preparing for testing	Not	20	1.40%
	Somewhat	558	39.19%
	Very	846	59.41%
Support for behavioral difficulties	Not	11	0.77%
	Somewhat	392	27.53%
	Very	1021	71.70%
Understand the strategies	Not	3	0.21%
	Somewhat	305	21.42%
	Very	1116	78.37%

Schoolteachers, curriculum coaches, and other educational support professionals participated in PAX Partner training. The majority of these educational professionals marked the middle rating. For the constructs of *Consistent with Policy* (58.7%) and *Confidence Supporting* (60.09%). This feedback is found in Figure 7.

Figure 7. PAX Partner Feedback

Construct	Response	Number	Percent
Consistent with behavior policy	Not	4	1.72%
	Somewhat	136	58.37%
	Very	93	39.91%
	Not	4	1.72%
Confident to support	Somewhat	140	60.09%
	Very	89	38.20%

Educators who participated in the PAX Good Behavior Game training also demonstrated outcomes on the pre- and post-assessments to determine the effects on their professional wellness as well as the children they work with using factor-analyzed items from normed measures. Each of the four items from the Maslach Burnout Inventory moved in the desired direction from pre to post. For example, *I feel used up at the end of the workday* moved from 3.78 at pre to 3.56 at post – meaning educators felt less "used up" after using PAX. However, the Maslach Burnout Items did not meet statistical significance. Four out of five items from the Strengths and Difficulties Questionnaire moved in the desired direction from pre to post. For example, *Considerate of other people's feelings* moved from .95 at pre to 1.44 at post – meaning children were more considerate after using PAX. Educator and student outcomes are found in Figure 8.

Construct	Pre Mean	Post Mean	Direction	t test	
Maslach Burnout Inventory					
I feel emotionally drained from my work.	3.68	3.56	+	0.742	
I feel used up at the end of the workday.	3.78	3.56	+	0.563	
I feel energetic.	4.47	4.72	+	0.295	
I've become more callous toward people since	1.70	1.33	+	0.350	
I took this job.					
Strengths and Difficulties Questionnaire					
Often unhappy, depressed or tearful.	0.86	0.56	+	0.0255*	
Often fights with other children or bullies	0.90	0.50	+	0.0045*	
them.					
Constantly fidgeting or squirming.	1.24	0.94	+	0.00885*	
Picked on or bullied by other children.	0.72	0.72		0.979	
Considerate of other people's feelings.	0.95	1.44	+	0.00084*	

Figure 8. Student and Educator Outcomes from PAX Good Behavior Game

Discussion

The system of care includes youth, families, and an array of professionals and stakeholders across health care, education, social services, juvenile justice, and youth-serving organizations. These professionals possess individualized expertise and potential to support young people but may also be inclined to bring their individualized lens to issues based on their education and training as well as the function of their particular sectors. These individual stakeholders across the system inevitably have varying levels of access to resources such as a trauma-informed approach, evidence-based strategies, and skills training for working with youth.

The statewide PAX initiative in Arizona, beginning in 2019, addressed a distinct skill variability among professionals and stakeholders across the system of care. First and foremost, this initiative brought increased skills and competency with trauma-informed, evidence-based skills training to the stakeholders serving youth and families. This promoted a shared language and common approach among stakeholders within the system of care by providing access to skills training tailored to their background and expertise while promoting improved outcomes. Statewide access to these training resources, as well as focused outreach, brought unprecedented programming to remote, rural, and indigenous regions of the state across all 15 counties.

At-large, individual, and site-specific training modalities allowed for a standardized continuity in messaging within settings and sectors. The programming allowed sectors, outfitted with increased skills and expertise, to better fulfill their functions with greater competence and confidence while satisfying the SOC aim of improved outcomes for youth and families. The diverse training options throughout the initiative provided for the saturation of youth-serving environments with professionals equipped with evidence-based skills training. These diverse trainings and modalities also provided for a unique continuity of programming throughout quarantine and the COVID-19 Pandemic that stalled or stopped less nimble or diverse programming during this time. Coincidentally, the time during the pandemic also marked a period of unprecedented turnover within education, human services, and youth-serving professions. This initiative allowed for instantaneous skills training and expertise to assist in the development of an incoming workforce. Further, the unified approach and skill building for multiple sectors resulted in the generation of synergistic effects brought on by a tapestry of trained professionals, stakeholders, and newly complementary environments.

Ultimately, as a result of the Arizona PAX prevention initiative and subsequent monitoring and evaluation, a single child likely has a far different experience with stakeholders across the Arizona SOC. This child engages with educators, professionals, and even youth workers at their local Boys & Girls Club, now possessing trauma-informed, evidence-based strategies for caring for them. This means they will interact with them in a way that is far less likely to exacerbate adversity or re-traumatize while limiting their problematic behavior and promoting positive behavior. This child will receive services tailored to their specific needs and strengths, including consideration of context, culture, and linguistics. The improved competency and efficacy of the adults in this child's life make them much more reliable and consistent. This makes the child's environment much more predictable and allows the child a degree of agency while also building skills, including self-regulation and cause and effect. This child now navigates a day in which nearly every stop is populated by caring adults with new skills that complement one another and share a language and approach that bring comfort and familiarity and, ultimately, success and mastery on the part of the child. This initiative provided evidence-based skills training to stakeholders and professionals across the SOC that better allowed them to make their help helpful to not only this child but every child in Arizona.

References

Arizona Department of Education. (2022). Welcome to the Elementary and Secondary School Emergency Relief Fund. https://www.azed.gov/esser-overview.

- Arizona Department of Health Services. (2018). 2018 opioid deaths and hospitalizations. https://www.azdhs.gov/documents/prevention/health-systems-development/epidemic/2018-opioid-death-hospitalizations.pdf.
- Arizona Health Care Cost Containment System. (2023). American Rescue Plan Act allocations. https://www.azahcccs.gov/AHCCCS/Initiatives/ARPA/index.html.
- Becker, K. D., Darney, D., Domitrovich, C., Keperling, J. P., & Ialongo, N. S. (2013). Supporting universal prevention programs: A two-phased coaching model. *Clinical Child and Family Psychology Review*, 16(2), 213-228.
- Behar, L., Macbeth, G. & Holland, J. (1993). Distribution and costs of mental health service within a system of care for children and adolescents. *Administration and Policy in Mental Health Services* 20, 283–295
- Biglan, A., Flay, B.R., Embry, D.D., & Sandler, I.N. (2012). The critical role of nurturing environments for promoting human well-being. *American Psychologist*, 67(4),
- Bradshaw, C. P., Zmuda, J. H., Kellam, S. G., & Ialongo, N. S. (2009). Longitudinal impact of two universal preventive interventions in first grade on educational outcomes in high school. *Journal of Educational Psychology*. 101(4):926-937.
- Brashears, F., Davis, C., Katz-Leavy, J. (2012). Systems of care: The story behind the numbers. *American Journal of Community*, 49(3-4), 494-502.
- Centers for Disease Control and Prevention. (2019). Evaluation Guide. Retrieved from https://www.cdc.gov/evaluation/guide/index.htm
- Children's Bureau, (2008). An individualized, strengths-based approach in public child welfare driven systems of care. ICF International. https://ncwwi.org/files/Vision_Mission_Values/Individualized_strengths-based_approach.pdf
- Cil, G., Fruth, J., & Biglan, T. (2021). Evaluating population-level implementations of evidence-based programming: PAX Good Behavior Game and youth crime. *International Journal of Education and Social Science*, 8(5).
- Cook, J., & Kilmer, R. (2010). Defining the scope of systems of care: An ecological perspective. *Evaluation and Program Planning*, 33(1), 18-20.
- Cunha, F., Heckman, J., Lochner, L., & Masterov, D. (2006). Interpreting the evidence on lifecycle skill formation. Handbook of the Economics of Education, 1, 697–812.
- Domitrovich, C. E., Pas, E. T., Bradshaw, C. P., Becker, K. D., Keperling, J. P., Embry, D. D., & Ialongo, N. (2015). Individual and school organizational factors that influence implementation of the PAX Good Behavior Game intervention. *Prevention Science*. DOI: 10.1007/s11121-015-0557-8.
- Friedman R., Hernandez M. (2002). The national evaluation of the comprehensive community mental health services for children and their families program: A commentary. Child Services, 2002(5) (1), 67-74.
- Embry, D. D. (2002). The Good Behavior Game: A best practice candidate as a universal behavioral vaccine. Clinical Child & Family Psychology Review, 5(4). 273-297.
- Embry, D.D. (2004). Community-based prevention using simple, low-cost, evidence-based kernels and behavior vaccines. *Journal of Community Psychology*, 32(5), 575-591.
- Embry, D. D. (2011). Behavioral Vaccines and Evidence-Based Kernels: Nonpharmaceutical
- Approaches for the Prevention of Mental, Emotional, and Behavioral Disorders. *Psychiatric Clinics of North America*, 34(March), 1-34.
- Embry, D.D., & Biglan, A. (2008). Evidence-based kernels: Fundamental units of behavioral influence. *Clinical Child and Family Psychology Review*, 11(3), 75-113.
- Embry, D. D., Flannery, D. J., Vazsonyi, A. T., Powell, K. E., & Atha, H. (1996). Peacebuilders: a theoretically driven, school-based model for early violence prevention. *American Journal of Preventative Medicine*, 12(5).91-100
- Embry, D.D., Fruth, J.D., & Irving, C. (2022). PAX Good Behavior Game (5th Ed.). Tucson, AZ: PAXIS Institute.
- Embry, D.D., Van Ryzin, M., Biglan, A., & Fruth, J. (2019). Increasing efficacy in a population-level implementation. *Journal of Psychology and Behavioral Science*. 7(2).
- Fruth, J.D. (2014). Impact of a universal prevention strategy on reading and behavioral outcomes. Reading Improvement, 51(3). 281-290.
- Fruth, J.D., & Huber, M. (2015). Teaching prevention: The impact of a universal preventive intervention on teacher candidates. *Journal of Education and Human Development*,4(1).

- Fruth, J.D., Huber, M., & Avila-John, A. (2017). Universal prevention for middle childhood students and candidates. *Critical Issues in Teacher Education*,24(1).
- Fruth, J.D., Irving, C., Fechner, A., & Embry, D. (2023). PAX Tools: Behavioral support programming for youth workers. Relational Child and Youth Care Practice, 35(3).
- Fruth, J.D., Irving, C., Tummino, M.K. & Embry, D.D., (2021) PAX Tools for Human Services. Tucson AZ: PAXIS Institute.
- Fruth, J.D., Mayer, G.H., & Finnegan, E.M. (2015). Creating nurturing environments and engaging populations with evidence-based kernels. *Journal of Instructional Psychology*, 42(1).
- Furr-Holden, C. D., Ialongo, N. S., Anthony, J. C., Petras, H., & Kellam, S. G. (2004). Developmentally inspired drug prevention: middle school outcomes in a school-based randomized prevention trial. *Drug and Alcohol Dependence*, 73(2).
- García, J., Heckman, J., Leaf, D., & Prados, M. (2017). Quantifying the life-cycle benefits of a prototypical early childhood program. (No. w23479). National Bureau of Economic Research.
- Ghaderi, A., M. Johansson and P. Enebrink (2017). Pilotstudie av PAX i skolan: En kulturanpassad version av PAX Good Behavior Game. Stockholm, Sweden, Karolinska Institutet: 33.
- Goodman, R. (1997). Strengths and Difficulties Questionnaire (SDQ) [Database record]. APA PsycTests. https://doi.org/10.1037/t00540-000
- Heckman, J. (2008). Schools, skills, and synapses. Economic Inquiry, 46(3), 289–324.
- Holbein, J. B., Bradshaw, C. P., Munis, B. K., Rabinowitz, J., & Ialongo, N. S. (2022). Promoting Voter Turnout: an Unanticipated Impact of Early-Childhood Preventive Interventions. *Prevention Science*, 23(2).
- Huber, M., Fruth, J.D., Avila-John, A. & Ramirez, E. (2016). Teacher self-efficacy and student outcomes: A transactional approach to prevention. *Journal of Education and Human Development*, 5(1).
- Ialongo, N., Poduska, J., Werthamer, L., & Kellam, S. (2001). The distal impact of two first-grade preventive interventions on conduct problems and disorders in early adolescence. *Journal of Emotional & Behavioral Disorders*, 9(3).
- Ialongo, N., Werthamer, L., Kellam, S. G., Brown, C. H., Wang, S., & Lin, Y. (1999). Proximal impact of two first-grade preventive interventions on the early risk behaviors for later substance abuse, depression, and antisocial behavior. *American Journal of Community Psychology*, 27(5).
- Katz, C., Bolton, S. L., Katz, L. Y., Isaak, C., Tilston-Jones, T., Sareen, J., & Swampy Cree Suicide Prevention Team. (2013). A systematic review of school-based suicide prevention programs. *Depress Anxiety*, 30(10).
- Kellam, S. G., Hendricks Brown, C., Poduska, J., Ialongo, N., Wang, W., Toyinbo, P., Petras, H., Ford, C., Windham, A., & Wilcox, H. (2008). Effects of a universal classroom behavior management program in first and second grades on young adult behavioral, psychiatric, and social outcomes. *Drug and Alcohol Dependence*, 95(1).
- Kellam, S.G., Ling, X., Merisca, R., Brown, C.H., & Ialongo, N. (1998). The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. *Development and Psychopathology*, 10(02), 165-185.
- Kellam, S. G., Rebok, G. W., Ialongo, N., & Mayer, L. S. (1994). The course and malleability of aggressive behavior from early first grade into middle school: Results of a developmental epidemiologically- based preventive trial. *Journal of Child Psychology and Psychiatry*, 35(2), 259-281.
- Kellam, S. G., Wang, W., Mackenzie, A. C., Brown, C. H., Ompad, D. C., Or, F., Ialongo, N. S., Poduska, J. M., & Windham, A. (2014). The impact of the Good Behavior Game, a universal classroom-based preventive intervention in first and second grades, on high-risk sexual behaviors and drug abuse and dependence disorders into young adulthood. *Preventive Science*, 15(1).
- Keyes K., & Galea, S. (2016). Setting the agenda for a new discipline: Population health science. *American Journal of Public Health, 106*(4), 633–634.
- Larson, J., Kazura, A., Fortuna, L., French, W. P., Hodas, G. R., Metz, P., McGinty, K., Bellonci, C., Lee, T., Lohr, W. D., & Sharma, P. (2022). Clinical update: Child and adolescent behavioral health care in community systems of care. *Journal of the American Academy of Child & Adolescent Psychiatry*, 62(4), 367-384.
- Maslach, C., Jackson, S. E., & Leiter, M. P. (1997). Maslach Burnout Inventory: Third edition.

 In C. P. Zalaquett & R. J. Wood (Eds.), *Evaluating stress: A book of resources* (pp. 191–218). Scarecrow Education.
- Matarese, M., McGinnis, L., & Mora, M. (2005). Youth involvement in systems of care: A guide to empowerment. American Institutes for Research. Technical Assistance Partnership.
- Markiewicz, J., Swanberg, K., & Weis, M. (2015). Awareness, education and collaboration: Promising school-based opioid prevention approaches. Issue Brief: Project Aware. Now is the Time Technical Assistance Center.

Musci, R. J., Bradshaw, C. P., Maher, B., Uhl, G. R., Kellam, S. G., & Ialongo, N. S. (2014). Reducing aggression and impulsivity through school-based prevention programs: a gene by intervention interaction. *Prevention Science*, 15(6).

- National Healthcare Quality and Disparities Report (2021). Rockville, MD: Agency for Healthcare Research and Quality, AHRQ Pub. No. 21(22)-0054-EF.
- Petras, H., Kellam, S. G., Brown, C. H., Muthen, B. O., Ialongo, N. S., & Poduska, J. M. (2008). Developmental epidemiological courses leading to antisocial personality disorder and violent and criminal behavior. Effects by young adulthood of a universal preventive intervention in first-and second-grade classrooms. *Drug and Alcohol Dependence, 95*(1).
- Petras, H., Masyn, K., & Ialongo, N. (2011). The developmental impact of two first grade preventive interventions on aggressive/disruptive behavior in childhood and adolescence: an application of latent transition growth mixture modeling. *Preventive Science*, 12(3).
- SAMHSA. (2013). Substance Abuse and Treatment Block Grant fact sheet. https://www.samhsa.gov/sites/default/files/sabg_fact_sheet_rev.pdf.
- SAMHSA. (2017a). The Comprehensive Community Mental Health Services for Children with Serious Emotional Disturbances Program: 2017 Report to Congress PEP20-01-02-001.
- SAMHSA. (2023). Strategic Plan: Fiscal Year 2023-2026. Publication No. PEP23-06-00-002 MD: National Mental Health and Substance Use Laboratory.
- Stroul, B., Blau, G., & Friedman, R. (2010). Updating the system of care concept and philosophy. Washington, DC: Georgetown University Center for Child and Human Development, National Technical Assistance Center for Children's Mental Health.
- Stroul, B., Blau, G., & Larsen, J. (2021). The Evolution of the System of Care Approach. Baltimore: The Institute for Innovation and Implementation, School of Social Work, University of Maryland.
- Tebes, J., Champine, R., Matlin, S. & Strambler, M. (2019). Population health and trauma-informed practice: Implications for programs, systems, and policies. *American Journal of Community Psychology, 64*(3-4), 494-508.
- Unclaimed Children Revisited: The Status of Children's Mental Health Policy in the United States. National Center for Children in Poverty. November 2008 Report.
- Wang, Y., Browne, D. C., Petras, H., Stuart, E. A., Wagner, F. A., Lambert, S. F., Kellam, S. G., & Ialongo, N. S. (2009). Depressed mood and the effect of two universal first grade preventive interventions on survival to the first tobacco cigarette smoked among urban youth. *Drug and Alcohol Dependence*, 100(3).194-203.
- Weis, R., Osborne, K., & Dean, E. (2015) Effectiveness of a Universal, Interdependent Group Contingency Program on Children's Academic Achievement: A Countywide Evaluation, *Journal of Applied School Psychology*, 31(3). 199-218.
- Wilcox, H. C., Kellam, S. G., Brown, C. H., Poduska, J. M., Ialongo, N. S., Wang, W., &Anthony, J. C. (2008). The impact of two universal randomized first-and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug and Alcohol Dependence*, 95(1).
- Wilson, D., Hayes, S., Biglan, A., & Embry, D. (2014). Evolving the future: Toward a science of intentional change. *Brain and Behavioral Sciences*, 37(4).