PAXIS Institute encourages joint research projects on expanding the effectiveness of PAX GBG or related evidence-based kernels. Presently, the portfolio of research projects involve:

- Florida State University
- Johns Hopkins Center for Prevention and Early Intervention
- Pennsylvania State University
- The Manitoba Centre for Health Policy
- University of Alberta
- University of Arizona
- University of Calgary
- University of Maryland
- University of South Carolina
- University of Virginia
- Wright State University, Ohio

O. Expand Population Level Targeting

PAX GBG or its related evidence-based kernels can be used or adapted across stages of human development from prenatal through adulthood. Similarly, the kernels or PAX elements can be used across multiple settings (Schools, Families, Organizations such as after school or Sunday schools, and community settings), plus have different levels application by intensity. These applications involve separate discussions and recipes. Expanding the reach or intensity or developmental stages can have multiple benefits for prevention, early intervention and treatment— which is discussed in the original kernels paper (*25*). Other papers discuss how to use these tools to solve novel problems in communities (*26*).

P. Recognition and Reinforcement of Successes

With recognition and reinforcement of successes, those successes will decline or decay. People tire of toiling away without being recognized for their contributions, and a 25-year pin and coffee mug do not count for much.

Just as PAX GBG in the classroom builds in recognition and reinforcement of increasing PAX, so must your organizational implementation. This must be part of the monthly implementation and dissemination plan. These recognitions and reinforcements need not be costly, but they must be often enough to register on the public and the people who performing the miracle of PAX.

Community tours of schools using PAX can do this. Simple news stories, and newsletter info can help with this. Putting staff in a tootle chair to receive accolades from the students who adore PAX, and much more simple low cost ways to keeping people noticed for the PAX they do and promote.

Q. Document Impact & Update Research

Impact is relative simple and understandable, which should promoted every few months to stakeholders. It might be that since the introduction of PAX that:

- Spleems (unwanted behaviors) have declined rapidly
- More teachers report being able to teach effectively
- Attendance or benchmark scores have gone up
- Nurses' office visits have gone down
- Etc.

If you are doing research on PAX GBG or kernels, please submit it for publication. Also please visit www.pubmed.gov at least once every six-months to find out the latest findings, which should also be noted at www.GoodBehaviorGame.org

Attachment A: What is PAX?

The next two pages are a simple description of what PAX GBG is and how it works. This may be reproduced freely. A hyper-link for the PDF version is:

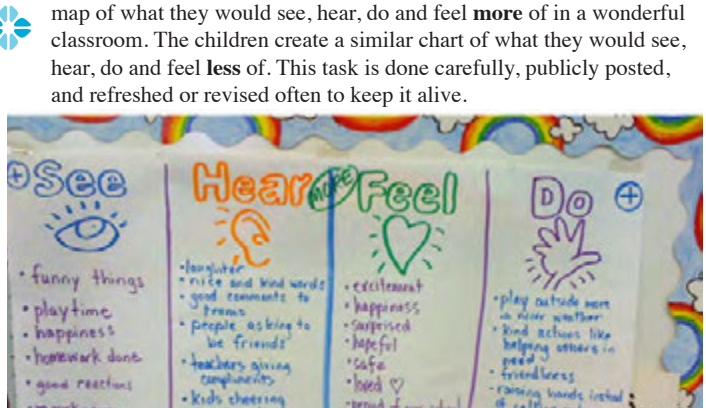
http://bit.ly/What-IS-PAX-April-2014

pax Good Behavior Game What Is It?

Visit www.GoodBehavior.Game.org

PAX teaches students self-regulation, self-control, and self-management while collaborating with others for peace, productivity, health & happiness. PAX is not a classroom management program *per se* or about consequences and control, yet it does make classrooms joyful again for learning. PAX combines the science from PeaceBuilders®, Good Behavior Game (GBG) & other studies. How does PAX GBG work? PAX nurtures self-regulation in peer-contexts in order to improve attention and reduce impulsivity, thus wiring the brain during any school activity for long-term gain.

1. With facilitation from adults, the children create a large, visual word-map of what they would see, hear, do and feel **more** of in a wonderful classroom. The children create a similar chart of what they would see, hear, do and feel **less** of. This task is done carefully, publicly posted, and refreshed or revised often to keep it alive.



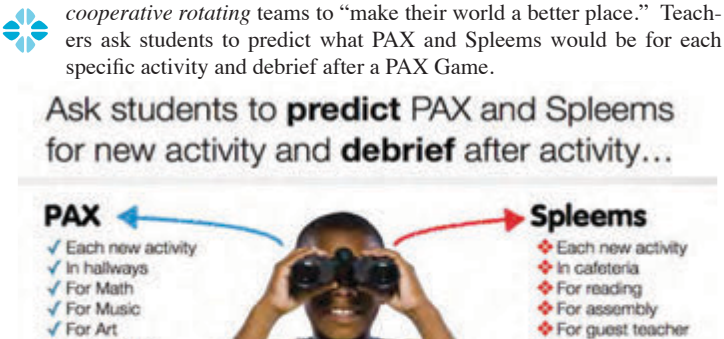
The things happening **more** are called PAX™ (Peace, Productivity, Health and Happiness). The things that happen **less** (unwanted behaviors) are called SPLEEMS™. Very soon, children start to discriminate between PAX™ and SPLEEMS™ for learning sustainable self-regulation and attention—helped by these novel words in each new situation.

Unlike common school "rules" such as raise your hand, stay in your seat, etc., PAX and SPLEEMS are contextually based on the activity. So, PAX and Spleems are quite different during silent reading, cooperative learning, gym, working in groups, in computer lab, in the hallways, in the cafeteria, in the lunchroom, in art or music, etc. Remember, these contextual, lifeskill discriminations take time—just like reading or math skills take time to evolve.

2. The job of teachers and other adults is to notice PAX positively and often, plus record SPLEEMS very accurately during PAX Games. Teachers and adults also set up conditions of success among students to create PAX, and not to foster SPLEEMS either intentionally or unintentionally. Adults learn not to nag, scold, or lecture about SPLEEMS—lest students learn to play "Teacher Nintendo"—pushing buttons for attention.

3. Adults notice unwanted behaviors (Spleems) in a neutral way and use positive cues like the harmonica for quiet or hand signals for voices to reduce Spleems. These PAX strategies reduce accidental re-traumatization of children exposed to harsh faces, voices, coercion, and perceived threats from others. Thus, PAX prevents future trauma.

4. Children practice making more PAX and "sweeping away" SPLEEMS in *cooperative rotating* teams to "make their world a better place." Teachers ask students to predict what PAX and Spleems would be for each specific activity and debrief after a PAX Game.



5. A classroom educator or other adult acts as a gentle "umpire" during PAX games, which happen several times a day during any normal classroom or broader school activity. PAX games might occur during math, reading or *any* academic task. The PAX Game can be played during transitions, in the library or going to bathroom breaks, on a field trip, in the gym, in cafeteria and even school buses as children gain PAX skills.

6. A classroom typically has 3-5 PAX teams at any given time. Teams an be ad hoc for hallways, etc. These can be structured in different ways to suit particular needs. PAX is designed to teach students how to cooperate and get along with all types of people—a critical lesson for life, the teams are "balanced", including different types of children. The "problem" children should never be placed on one team, nor should they be excluded from playing. The teams are frequently rotated so that children learn how to help each other succeed. PAX is inclusive for all children, having many adaptations and supports.

7. *EVERY* team can win if it has three or fewer SPLEEMS during a PAX Game. The teacher or adult is the umpire of SPLEEMS. The game will not work well if the adults try to make it a winner-take-all situation, in which only the team with the fewest SPLEEMS wins. It will not work well if the adults have fits over SPLEEMS. Remember, just like everyone poops, everyone SPLEEMS—including adults.

8. The structure of PAX mimics successful anthropological, cultural practices around the world by using rotating teams of diverse children who work toward a common good for all. PAX helps teach students to avoid blaming others, and encourages them to try again when one or a group stumbles in achieving a goal. *(Please continue on the reverse side)*

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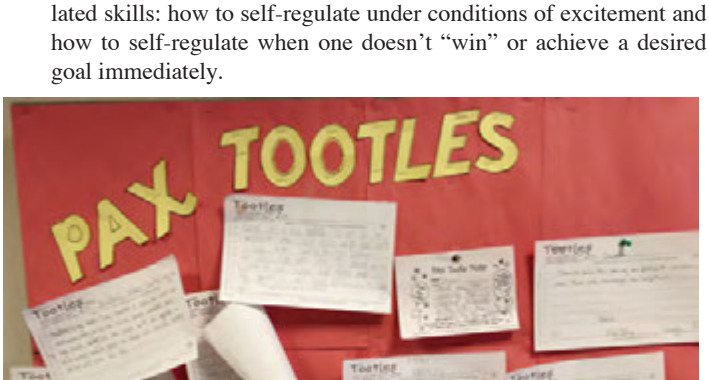
NREPP National Registry of Evidence-based Programs and Practices

9. The PAX Game should be played at least three times a day during normal classroom activities. Students typically learn PAX skills quickly, though need practice to play longer. Wise teachers make a daily ritual of planning when to play the Games with their students.

10. PAX Games start very briefly—a minute or two, increasing in time as students win 12 out of 15 games (or 85%) each week. Eventually, First Graders can "play" the PAX Game for 30 to 45 minutes, vastly increasing fully engaged teaching and learning. Older children can learn to play longer.

11. Teams and the classroom accumulate PAX minutes by playing the game for longer times, while still only getting three or fewer SPLEEMS for any given game. The students love seeing themselves making more and more PAX, which brings them peace, productivity, health and happiness. The students and the adults also have a lot of good old-fashioned, fun—without any batteries.

12. When the kids win a PAX game, they earn a randomly selected, fun, and intrinsically motivating, play-based ("brain break") for a few seconds or minutes. They might earn a 10-second giggle fest, or a 30-second dancing jig, or one minute to whisper to their friends. There are hundreds of these activities that the adult can choose to put in the "Granny's Wacky Prize" bag, and the children will eagerly invent new suggestions that don't involve material, extrinsic rewards. These active, fun intrinsic rewards teach children two related skills: how to self-regulate under conditions of excitement and how to self-regulate when one doesn't "win" or achieve a desired goal immediately.



13. Students and adults learn to write Tootle™ Notes (the Opposite of Tattles) to each other: student-to-student, student-to-adult, adult-to-adult, and adult-to-student. This helps sustain and build PAX. The procedure for Tootle Notes from peers reduces bullying and increases positive friendships as well as support for helping each other. Tootles also help spread PAX to families.

14. As both the adults and students become adept at PAX, the students develop an extraordinary ability to turn on their attention voluntarily; to go up and down in excitement with grace; to handle distractions and disappointments well; and to cooperate for common goals with other people of differing abilities and skills. Both adults and students start to savor the daily joys they created. In a word, the young people become "everyday scientists" to better their world and themselves.

15. PAX trained teachers and their PAX Partners (mentors) have access to special web-based supports to broaden benefits of PAX, for problem solving, and for monitoring results as well as implementation.

Common Questions and Answers

Does PAX take away time from teaching and learning? **No**, after you and your students learn to use PAX well, you will gain 1-2 hours a day for high-quality teaching and learning. Students learn more with PAX.

Does PAX work for children who come from very difficult or chaotic situations? **Yes.** In fact, PAX has largest effects on the children with the most disadvantages or existing problems, but also benefits all children by reducing exposure to bullying, problem behavior, etc.

Can PAX GBG work for children of many ages? **Yes**. Empirical studies show benefits from Pre-K through High-School. The long-term studies focused on younger children. PAX has variations and adaptations for stages of development, from pre-k to grade 12.

But We Have A Good School and Families? Bullying, mental illness, drug use and suicides are increasing and happening among families and schools from every walk of life. PAX can prevent those tragedies by early reduction in anxieties, impulsivity, poor peer relations, etc.

Do I have to give up what I am doing right now for classroom management? **No**, though most teachers find that they no longer need all the negative consequences like the red, yellow and green cards. PAX teaches self-regulation and control so that you don't have to be a cop, the judge, and detention monitor.

Does PAX transfer to home situations? **Yes**, and there are tools to help with that. The children will spread it. Prior studies shows it improves family life.

Why is the special language of PAX, SPLEEMS, Granny's Wacky Prizes, Tootles, etc. important? The language: 1) is fresh and reduces automatic, conditioned negative behavior; 2) helps the students rapidly generalize their self-regulation skills; 3) unites children in a bigger purpose than "following the rules"; 4) appeals to children; and 5) provides a common language for the school community. This special language helps children generalize their skills.

Can PAX be part of an IEP or Individual Educational Plan and/or Positive Behavioral Supports? **Yes.** Special materials and training provide additional supports, using a simple "functional behavioral assessment" that sites can link to previously proven practices to support children with higher needs. In most jurisdictions, licensed professionals may bill health insurance for providing these additional services.

If I am a good teacher and my students are doing well, will PAX still help? **Yes!** This has been shown to be helpful in almost every case. It makes a great teacher even better, and makes good students better–too.

How can I learn more about PAX? Vist our website. Then, secure training, copyrighted materials, and web-based supports – only available from PAXIS Institute. Please read your manual, as it contains much wisdom from thousands of teachers who learned to use PAX before you. Our websites have additional supports, only for teachers and PAX Partners with licensed PAX Good Behavior Game® manuals and training.

To learn more about PAX GBG, visit GoodBehaviorGame.org or call 1-877-GO-PAXIS, or send an inquiry email to gbg@paxis.org. You may view videos about PAX GBG at: GoodBehaviorGame.org, promoteprevent.org,or www.gov.mb.ca/healthychild/pax/. The scientific studies for the recipe for PAX GBG can be found at www.pubmed.gov, search under "Good Behavior Game"; Peacebuilders, and "evidence-based kernels".

Attachment B: PAX Good Behavior Game Logic Models

The next three pages are the actual logic models related to PAX GBG.

The first is the biosocial model based on the nurturing environments how PAX GBG works at an individual level. That is different than the logical model to make it happen for school district, a community or a larger political division.

The second page is about the population-level change logic model, discussed in detail here.

The third page is an example of how the two logic models can be discussed or explained in the context of common, localized strategic prevention framework logic models.

PAX Good Behavior Game Logic Model

Evolutionary Threats
(Prenatal Through Early Childhood)

High Exposure to Toxic Influences/Toxins
High Exposure to Problematic Behaviors or ACEs*
High Reinforcement of Anti-Social Behavior
Exposure to Low Psychological Flexibility
*Adverse Childhood Experiences
Poor Health
RNA
DNA
Epigenetic Changes
High Probability of...
- Mental "Disorders"
- Emotional "Disorders"
- Behavioral "Disorders"
- Related Physical "Disorders"

Inspirational Credit: Clyde Hertzman

Evolutionary Adaptations

Evolutionary Adaptations to a Predatory, Stressful World of Worse Social Determinants with Probability of:
- Foreshortened future view
- Low reward delay
- Impulsivity, or withdrawal
- High rates aggression
- Depression
- Increased risk taking
- Early sexual intercourse
- Multiple sexual partners
- Low offspring investment
- Obesity

Early Protection or Buffering by PAX Good Behavior Game

Low Exposure to Toxic Influences
High Exposure to Positive Behaviors; by Peers & Adults
Nurturing Environments
Exposure to, & Learning of, Psychological Flexibility
High Reinforcement by Peers & Adults of Prosocial Behavior
Health
RNA
DNA
Epigenetic Changes
High Probability of...
- Mental Health
- Emotional Balance
- Behavioral Competence
- Related Physical Health

Inspirational Credit: Clyde Hertzman

Evolutionary Adaptations

Evolutionary Adaptations to a Cooperative World with Positive Social Supports with Probability of:
- Longer future view
- Higher reward delay
- Lower impulsivity
- Higher cooperation
- Optimism, resiliency
- Smart risk taking
- Delayed sexual intercourse
- Stable relationships
- High offspring investment
- Fewer metabolic disorders

Multi-problem Impact

Behaviors to Decrease
- Reinforcements for negative behavior from peers & adults
- Conduct problems
- Hyperactivity
- Traumatic stimuli
- Emotional disturbances

Linked mechanisms

Behaviors to Increase
- Reinforcements for prosocial acts by peers & adults
- Self-regulation & self-control
- Social competence
- Peer cooperation
- Psychological flexibility

Predict Benefits: Estimate local, state, & national prevalence & costs saved by proposed prevention recipes.

Create policy, organizational, & advocacy supports to nurture efforts

Develop Business Model

Cultivate some current or early adopters for local impact data and local testimonials.

Plan Population-Level Change: Reach, Efficacy, Adoption, Implementation,& Maintenance

Create Community Prevention Score/Dashboard

Lo Hi

Cite powerful studies & links to cultural practices

Cite relevant endorsements or standards

Create system for monitoring, evaluation & improvement

Update Research Databases for Proven Prevention Solutions PsychInfo, pubmed.gov, etc. See Flay et al (2005) for standards of evidence.

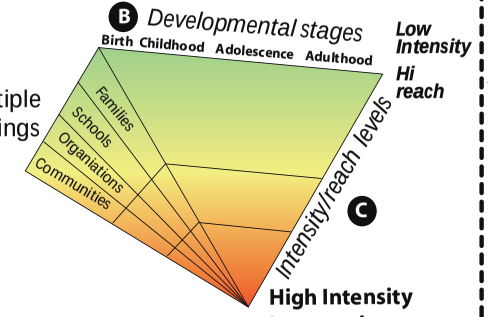
Document User Experiences & Lessons Learned at Local, State, & National Levels

Report on monitoring & evaluation of quick, medium, longer term outcomes

Recognize & Reward successes in/by
- Media
- Political arena
- Other leaders
- Imitable models from all ages and backgrounds

- Draw out common values
- Defuse fears & avoidance

Population-Level Targeting



Note: Workforce development efficiency achieved by broad use of similar/same evidence-based strategies or evidence-based kernels.

Launch Social Marketing: Advocacy & Media

Products have catchy, positive name (a meme)

Performance shows benefits & little pain

Place for getting product is easy & non-stigmatizing

Price is low for to use in money or time.

Promotion focuses on popularity, joining, aligned values & benefits for all. Creative epidemiology aligns people & organizations for common action.

Localize workforce & training systems

Monitor & Coach implementation & proximal outcomes

A nurturing environment happens by daily intention, attention, effort, and observation of the effects the actions. The PAX GBG is one of the best, most proven examples of nurturing environment in a classroom. PAX operates at multiple levels to effect people's behavior in the moment, and it has long-term effects on profoundly important behaviors for peaceful, productive, healthy, and happy lives. The logic of making this happen occurs in daily interactions in a classroom, with interactions with other adults in the school, with others in the community and even as a result of people who may never set foot in a PAX Classroom. Our logic model is about creating lasting, beneficial change for all.

See: **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), 257-271; Wilson, D. S., Hayes, S. C., Biglan, A., & Embry, D. D. (2013, in press). Evolving the Future: Toward a Science of Intentional Change. Brain and Behavioral Sciences.**

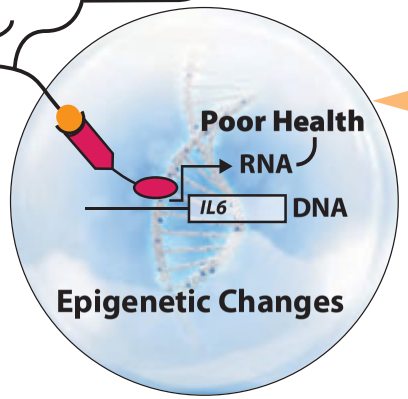
Evolutionary Threats
(Prenatal Through Early Childhood)

High Exposure to Toxic Influences/Toxins

High Exposure to Problematic Behaviors or ACEs*

High Reinforcement of Anti-Social Behavior

Exposure to Low Psychological Flexibility



High Probability of…
- Mental "Disorders"
- Emotional "Disorders"
- Behavioral "Disorders"
- Related Physical "Disorders"

See: A. Biglan, B. R. Flay, D. D. Embry, I. N. Sandler, The critical role of nurturing environments for promoting human well-being. American Psychologist 67, 257 (2012).

**Adverse Childhood Experiences*

Inspirational Credit: Clyde Hertzman

Evolutionary Adaptations

Evolutionary Adaptations to a Predatory, Stressful World of Worse Social Determinants with Probability of:
- Foreshortened future view
- Low reward delay
- Impulsivity, or withdrawal
- High rates aggression
- Depression
- Increased risk taking
- Early sexual intercourse
- Multiple sexual partners
- Low offspring investment
- Obesity

Dennis Embry PhD (c) 2020

11th Annual Early Childhood Mental Health Conference

Early Protection or Buffering by PAX Good Behavior Game

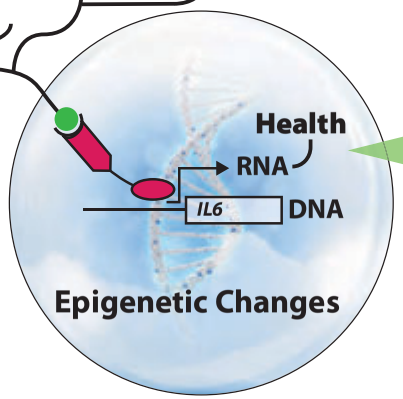
Low Exposure to Toxic Influences

High Exposure to Positive Behaviors; by Peers & Adults

High Reinforcement by Peers & Adults of Prosocial Behavior

Exposure to, & Learning of, Psychological Flexibility

Nurturing Environments



High Probability of…
- Mental Health
- Emotional Balance
- Behavioral Competence
- Related Physical Health

Inspirational Credit: Clyde Hertzman

Evolutionary Adaptations

Evolutionary Adaptations to a Cooperative World with Positive Social Supports with Probability of:
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- Smart risk taking
- Delayed sexual intercourse
- Stable relationships
- High offspring investment
- Fewer metabolic disorders

Keynote 3 Friday 09 11 20

Multi-Addiction Prevention Model

Theory of Change

On May 28, The *2009 Institute of Medicine Report on the Prevention of Mental, Emotional, & Behavioral Disorders*[1] (funded by the Substance Abuse and Mental Health Administration) proves that lifetime multiple addictions (Tobacco, Alcohol, Illegal Drugs and Prescription Drug Abuse) are predicted by early behaviors of peers in primary grades, which can be prevented, averted, or reduced by a classroom/school environmental strategies that immediately alter environmental risk factors and increases environmental protective factors against lifetime ATOD addictions.

Environmental Problem Statement			Environ. Strategies	Activities	Population-Level, Public Health Outcomes		
Problem	**But why?**	**But why here?**	**Examples:**	**Examples:**	**Short Term**	**Intermediate**	**Long-Term (3-5 years)**
US K-12 school children have had rising rates of early predictors of serious lifetime mental, emotional, and behavioral disorders that then predict lifetime serious ATOD addiction disorders,[2-6] and these predictors are increasing every two years.[7-9]	Multiple environmental factors have increased early disruptive, disturbing, & inattentive behaviors that predict lifetime ATOD and related risks.[1 10-13]	Proximity to 911 worsened these trends; More children identified in preschool years; Rising bullying; CDC shows rising rates in NJ	Decrease disturbing, disruptive, destructive and inattentive behaviors in elementary grades & after school settings 50% to 80%, to avert lifetime ATOD Increase positive peer reinforcement for non-deviant behavior predicting lifetime ATOD	Create powerful demonstration of early wins using IOM strategies (e.g., PAX Good Behavior Game); Train 25% or more primary grade classrooms to implement behavioral vaccine	45% to 85% reduction in the proximal environmental risk factors within primary grade classrooms, with in 3-9 months following implementation	20% to 30% reduction within 9 to 24 months of serious, intermediate risk factors at school, home or community for later lifetime ATOD: 10% to 20% increase in protective factors like attendance & reading achievement	**Better morale by teachers & staff related to early prevention strategies;** **40% to 60% reduced bullying, acts of violence, delinquency, and indicators of DSM-IV disorders;[14-20]** **50% to 75% reduction in environment factors of classrooms predicting lifetime student ATOD;[20-25]** **10% to 20% more children at grade level reading by 4th grade;[17 26-29]** **30% reduction in referrals for special services including psychotropic meds;[30-32]** **Near zero first use of tobacco at 6th grade;[33-37]** **Lifetime alcohol use <10% at 6th grade;[30 31 33 37-44]** **30% reduction in service use for problems with behavior, emotions, drugs, or alcohol;[29 31]** **40% to 50% reduction in suicidal thoughts and attempts.[38]**
	Marketing of psychotropic medications[45-47] for treatment of pediatric patients swamps out non-drug prevention strategies. *(Note: many of these drugs are frequently abused).*	NJ School nurses report higher rates of disorders associated with psychiatric and behavioral problems; NJ's economy is significantly predicated on seeing these problems as biological disorders	Promote early evidence-based prevention strategies from the 2009 IOM report that health-care organizations, doctors, nurses, schools, and other clinicians can bill for instead of psychotropic meds. Promote similar solutions to policy makers and families to adopt	Presentations to insurance underwriters, & ground round presentations, pediatric, family practice an other organization presentations about adopting polices for behavioral vaccines	Requests by local medical, psychiatric, & social service agencies to receive training in implementing IOM behavioral vaccines for ATOD and related mental disorders	Adoption of policies for reimbursement and funding for sustainable IOM identified behavioral vaccines proven to prevent or reduce lifetime ATOD; Behavior vaccines appear in IEPs for children with DSM-IV diagnoses	
	Fiscal crises & cutbacks have increased teacher and family stress, which worsens risk factors	The financial crises hit NJ worse, and those stressors affect children's risk factors significantly	Promote the adoption universal access policies to IOM prevention strategies that show high-levels of return on investment for state, local and businesses.	Presentations to state & local policy makers, local funders & businesses on fast fiscal benefits of behavioral vaccines	Local individuals, organizations, & businesses contributing resources for sustainable actions	Local data indicators of cost savings or averted such as better school attendance, fewer IEPs, less absenteeism by staffs, lower vandalism costs	
	Federal, state, & local policies focused ATOD prevention on adolescents, well after early hi risk	NJ has not implemented SAMHSA's policy on the 2009 IOM Report and early ages in 2010	Educate stakeholders, policy makers, local funders, & organizations about implementing IOM report for faster, more cost efficient prevention.	Media and civic promotions for adopting and spreading behavioral vaccines for major benefits	Increase in local news stories & reports about behavioral effect of the efforts for early prevention.	Written polices, regulations and funding announcements for universal access to behavioral vaccines.	

1. O'Connell ME, Boat T, Warner KE, editors. *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities*. Washington, DC: Institute of Medicine; National Research Council, 2009.
2. Costello EJ, Copeland W, Angold A. Trends in psychopathology across the adolescent years: what changes when children become adolescents, and when adolescents become adults? *J Child Psychol Psychiatry* 2011;52(10):1015-25.
3. Copeland W, Shanahan L, Costello EJ, Angold A. Cumulative prevalence of psychiatric disorders by young adulthood: a prospective cohort analysis from the Great Smoky Mountains Study. *J Am Acad Child Adolesc Psychiatry* 2011;50(3):252-61.
4. Twenge JM, Gentile B, DeWall CN, Ma D, Lacefield K, Schurtz DR. Birth cohort increases in psychopathology among young Americans, 1938-2007: A cross-temporal meta-analysis of the MMPI. *Clin Psychol Rev* 2010;30(2):145-54.
5. Costello EJ, Egger H, Angold A. 10-year research update review: the epidemiology of child and adolescent psychiatric disorders: I. Methods and public health burden. *J Am Acad Child Adolesc Psychiatry* 2005;44(10):972-86.
6. Collishaw S, Maughan B, Goodman R, Pickles A. Time trends in adolescent mental health. *J Child Psychol Psychiatry* 2004;45(8):1350-62.
7. Merikangas KR, He JP, Burstein M, Swendsen J, Avenevoli S, Case B, et al. Service utilization for lifetime mental disorders in U.S. adolescents: results of the National Comorbidity Survey-Adolescent Supplement (NCS-A). *J Am Acad Child Adolesc Psychiatry* 2011;50(1):32-45.
8. Merikangas KR, He JP, Brody D, Fisher PW, Bourdon K, Koretz DS. Prevalence and treatment of mental disorders among US children in the 2001-2004 NHANES. *Pediatrics* 2010;125(1):75-81.
9. Costello EJ, Foley DL, Angold A. 10-year research update review: the epidemiology of child and adolescent psychiatric disorders: II. Developmental epidemiology. *J Am Acad Child Adolesc Psychiatry* 2006;45(1):8-25.
10. Biglan A, Brennan PA, Foster SL, Holder HD, Derzon JH, Embry DD, et al. *Helping Adolescents at Risk: Prevention of Multiple Problem Behaviors.* New York: Guilford Press, 2004.
11. Sourander A, Elonheimo H, Niemela S, Nuutila AM, Helenius H, Sillanmaki L, et al. Childhood predictors of male criminality: a prospective population-based follow-up study from age 8 to late adolescence. *J Am Acad Child Adolesc Psychiatry* 2006;45(5):578-86.
12. Molina BSG, Pelham Jr WE. Childhood predictors of adolescent substance use in a longitudinal study of children with ADHD. *Journal of Abnormal Psychology* 2003;112(3):497-507.
13. White HR, Xie M, Thompson W, Loeber R, Stouthamer-Loeber M. Psychopathology as a predictor of adolescent drug use trajectories. *Psychol Addict Behav* 2001;15(3):210-8.
14. Vazsonyi AT, Belliston LM, Flannery DJ. Evaluation of a School-Based, Universal Violence Prevention Program: Low-, Medium-, and High-Risk Children. *Youth Violence and Juvenile Justice* 2004;2(2):185-206.
15. Flannery DJ, Vazsonyi AT, Liau AK, Guo S, Powell KE, Atha H, et al. Initial behavior outcomes for the PeaceBuilders universal school-based violence prevention program. *Developmental Psychology* 2003;39(2):292-308.
16. Krug EG, Brener ND, Dahlberg LL, Ryan GW, Powell KE. The impact of an elementary school-based violence prevention program on visits to the school nurse. *American Journal of Preventive Medicine* 1997;13(6):459-63.
17. Ialongo N, Werthamer L, Kellam SG, Brown CH, Wang S, Lin Y. 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* 1999;27(5):599-641.
18. Ialongo N, Poduska J, Werthamer L, Kellam S. The distal impact of two first-grade preventive interventions on conduct problems and disorder in early adolescence. *Journal of Emotional & Behavioral Disorders* 2001;9(3):146-60.
19. Kellam SG, Rebok GW, Ialongo N, Mayer LS. The course and malleability of aggressive behavior from early first grade into middle school: Results of a developmental epidemiology-based preventive trial. *Journal of Child Psychology and Psychiatry* 1994;35:259-81.
20. Dolan LJ, Kellam SG, Brown CH, Werthamer-Larsson L, et al. The short-term impact of two classroom-based preventive interventions on aggressive and shy behaviors and poor achievement. *Journal of Applied Developmental Psychology* 1993;14:317-45.

21. Embry DD, Flannery DJ, Vazsonyi AT, Powell KE, Atha H. Peacebuilders: a theoretically driven, school-based model for early violence prevention. *American Journal of Preventive Medicine* 1996;12(5 Suppl):91-100.
22. Domitrovich CE, Bradshaw CP, Greenberg MT, Embry D, Poduska JM, Ialongo NS. Integrated models of school-based prevention: Logic and theory. *Psychology in the Schools* 2010;47(1):71-88.
23. Flannery DJ, Vazsonyi AT, Liau AK, Guo S, Powell KE, Atha H, et al. Initial behavior outcomes for the peacebuilders universal school-based violence prevention program. *Developmental Psychology* 2003;39(2):292-308.
24. Embry DD. The Good Behavior Game: a best practice candidate as a universal behavioral vaccine. *Clinical Child & Family Psychology Review* 2002;5(4):273-97.
25. Witvliet M, van Lier PAC, Cuijpers P, Koot HM. Testing links between childhood positive peer relations and externalizing outcomes through a randomized controlled intervention study. *Journal of Consulting and Clinical Psychology* 2009;77(5):905-15.
26. Dion E, Roux C, Landry D, Fuchs D, Wehby J, Dupere V. Improving attention and preventing reading difficulties among low-income first-graders: a randomized study. *Prev Sci* 2011;12(1):70-9.
27. Medland MB, Stachnik TJ. Good-behavior game: A replication and systematic analysis. *Journal of Applied Behavior Analysis* 1972;. 5(1):45-51.
28. Rowe KJ, Rowe KS. The relationship between inattentiveness in the classroom and reading achievement: Part B: An explanatory study. *J Am Acad Child Adolesc Psychiatry* 1992;31(2):357.
29. Bradshaw CP, Zmuda JH, Kellam S, Ialongo N. Longitudinal Impact of Two Universal Preventive Interventions in First Grade on Educational Outcomes in High School. *Journal of Educational Psychology* 2009;101(4):926-37.
30. Kellam S, Brown CH, Poduska J, Ialongo N, Wang W, Toyinbo P, et al. Effects of a universal classroom behavior management program in first and second grades on young adult behavioral, psychiatric, and social outcomes,. *Drug & Alcohol Dependence* 2008(Special Issue):24.
31. Kellam SG, Mackenzie AC, Brown CH, Poduska JM, Wang W, Petras H, et al. The good behavior game and the future of prevention and treatment. *Addict Sci Clin Pract* 2011;6(1):73-84.
32. van Lier PAC, Muthen BO, van der Sar RM, Crijnen AAM. Preventing Disruptive Behavior in Elementary Schoolchildren: Impact of a Universal Classroom-Based Intervention. *Journal of Consulting & Clinical Psychology* 2004;72(3):467-78.
33. Storr CL, Ialongo NS, Kellam SG, Anthony JC. A randomized controlled trial of two primary intervention strategies to prevent early onset tobacco smoking. *Drug & Alcohol Dependence* 2002;66(1):51.
34. Kellam SG, Anthony JC. Targeting early antecedents to prevent tobacco smoking: Findings from an epidemiologically based randomized field trial. *American Journal of Public Health* 1998;88(10):1490-95.
35. van Lier PAC, Huizink A, Vuijk P. The role of friends' disruptive behavior in the development of children's tobacco experimentation: Results from a preventive intervention study. *Journal of Abnormal Child Psychology: An official publication of the International Society for Research in Child and Adolescent Psychopathology* 2011;39(1):45-57.
36. Huizink AC, van Lier PAC, Crijnen AAM. Attention deficit hyperactivity disorder symptoms mediate early-onset smoking. *European Addiction Research* 2008;15(1):1-9.
37. Yan W, Dorothy CB, Hanno P, Elizabeth AS, Fernando AW, Sharon FL, et al. 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* 2009;100(3):194-203.
38. Wilcox HC, Kellam S, Brown CH, Poduska J, Ialongo N, Wang W, et al. The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug & Alcohol Dependence* 2008(Special Issue):14.
39. Poduska JM, Kellam SG, Wang W, Brown CH, Ialongo NS, Toyinbo P. Impact of the Good Behavior Game, a universal classroom-based behavior intervention, on young adult service use for problems with emotions, behavior, or drugs or alcohol. *Drug and Alcohol Dependence* 2008;95(Suppl1):S29-S44.
40. Petras H, Kellam S, Brown CH, Muthen B, Ialongo N, Poduska J. 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 & Alcohol Dependence* 2008(Special Issue):15.

41. Kellam SG, Reid J, Balster RL. Effects of a universal classroom behavior program in first and second grades on young adult problem outcomes. *Drug and Alcohol Dependence* 2008;95(Suppl1):S1-S4.
42. Furr-Holden CD, Ialongo NS, Anthony JC, Petras H, Kellam SG. Developmentally inspired drug prevention: middle school outcomes in a school-based randomized prevention trial. *Drug & Alcohol Dependence* 2004;73(2):149-58.
43. Flory K, Milich R, Lynam DR, Leukefeld C, Clayton R. Relation between childhood disruptive behavior disorders and substance use and dependence symptoms in young adulthood: individuals with symptoms of attention-deficit/hyperactivity disorder and conduct disorder are uniquely at risk. *Psychology of Addictive Behaviors* 2003;17(2):151-8.
44. Eddy JM, Reid JB, Stoolmiller M, Fetrow RA. Outcomes During Middle School for an Elementary School-Based Preventive Intervention for Conduct Problems: Follow-Up Results From a Randomized Trial. *Behavior Therapy* 2003;34(4):535.
45. Healy D. The Latest Mania: Selling Bipolar Disorder. *PLoS Med* 2006;3(4).
46. Nielsen M, Gotzsche P. An analysis of psychotropic drug sales. Increasing sales of selective serotonin reuptake inhibitors are closely related to number of products. *Int J Risk Saf Med* 2011;23(2):125-32.
47. Berndt ER, Bhattacharjya A, Mishol DN, Arcelus A, Lasky T. An analysis of the diffusion of new antidepressants: variety, quality, and marketing efforts. *J Ment Health Policy Econ* 2002;5(1):3-19.

Cited References

1. A. Biglan, B. R. Flay, D. D. Embry, I. N. Sandler, The critical role of nurturing environments for promoting human well-being. *American Psychologist* **67**, 257-271 (2012)10.1037/a0026796).
2. A. Biglan, D. D. Embry, A Framework for Intentional Cultural Change. *Journal of Contextual Behavioral Science* **2**, (2013).
3. M. E. O'Connell, T. Boat, K. E. Warner, Eds., *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities*, (Institute of Medicine; National Research Council, Washington, DC, 2009), pp. 576.
4. S. Aos, S. Lee, E. Drake, A. Pennucci, T. Klima, M. Miller, L. Anderson, J. Mayfield, M. Burley, Good Behavior Game, Return on Investment: Evidence-Based Options to Improve Statewide Outcomes. 2013.
5. A. C. Wagenaar, D. M. Murray, T. L. Toomey, Communities Mobilizing for Change on Alcohol (CMCA): Effects of a randomized trial on arrests and traffic crashes. *Addiction* **95**, 209-217 (2000).
6. D. H. Barlow, M. Hersen, Single-case experimental designs. Uses in applied clinical research. *Archives of General Psychiatry* **29**, 319-325 (1973); published online EpubSep (
7. M. Sidman, *Tactics of scientific research.*, (Basic Books, Oxford, England, Oxford, England, 1960), pp. x, 428.
8. K. W. Reagles, J. O'Neill, Single-subject design for client groups: Implications for program evaluation. *Rehabilitation Counseling Bulletin* **21**, 13-22 (1977).
9. C. R. Ramsay, L. Matowe, R. Grilli, J. M. Grimshaw, R. E. Thomas, Interrupted time series designs in health technology assessment: lessons from two systematic reviews of behavior change strategies. *International Journal of Technology Assessment in Health Care* **19**, 613-623 (2003); published online EpubFall (
10. H. S. Bloom, Using "short" interrupted time-series analysis to measure the impacts of whole-school reforms: With applications to a study of accelerated schools. *Evaluation Review* **27**, 3-49 (2003).
11. A. Biglan, D. Ary, A. C. Wagenaar, The value of interrupted time-series experiments for community intervention research. *Prevention Science* **1**, 31-49 (2000).
12. P. O. Sjoden, Single case studies in psychology and psychiatry. *Scandinavian Journal of Gastroenterology - Supplement* **147**, 11-21 (1988).
13. J. D. Nolan, D. Houlihan, M. Wanzek, W. R. Jenson, The Good Behavior Game: A classroom-behavior intervention effective across cultures. *School Psychology International*, (2013)10.1177/0143034312471473).
14. K. D. Becker, D. Darney, C. Domitrovich, J. P. Keperling, N. S. Ialongo, Supporting universal prevention programs: A two-phased coaching model. *Clinical Child and Family Psychology Review* **16**, 213-228 (2013); published online EpubJune (
15. K. D. Becker, C. P. Bradshaw, C. Domitrovich, N. S. Ialongo, Coaching teachers to improve implementation of the good behavior game. *Administration and Policy in Mental Health and Mental Health Services Research*, No Pagination Specified (2013); published online EpubMarch 17 (10.1007/s10488-013-0482-8).

16. D. S. Wilson, S. C. Hayes, A. Biglan, D. D. Embry, Evolving the Future: Toward a Science of Intentional Change. *Brain and Behavioral Sciences* **in press**, (2014).
17. D. D. Embry, Community-Based Prevention Using Simple, Low-Cost, Evidence-Based Kernels and Behavior Vaccines. *Journal of Community Psychology* **32**, 575 (2004).
18. M. E. Cramer, K. J. Mueller, D. Harrop, Comprehensive evaluation of a community coalition: a case study of environmental tobacco smoke reduction. *Public Health Nurs* **20**, 464-477 (2003); published online EpubNov-Dec (
19. L. O. Keller, M. A. Schaffer, B. Lia-Hoagberg, S. Strohschein, Assessment, program planning, and evaluation in population-based public health practice. *J Public Health Manag Pract* **8**, 30-43 (2002); published online EpubSep (
20. P. A. Margolis, R. Stevens, W. C. Bordley, J. Stuart, C. Harlan, L. Keyes-Elstein, S. Wisseh, From concept to application: the impact of a community-wide intervention to improve the delivery of preventive services to children. *Pediatrics* **108**, E42 (2001); published online EpubSep (
21. R. E. Glasgow, H. G. McKay, J. D. Piette, K. D. Reynolds, The RE-AIM framework for evaluating interventions: what can it tell us about approaches to chronic illness management? *Patient Educ Couns* **44**, 119-127 (2001); published online EpubAug (
22. R. E. Glasgow, T. M. Vogt, S. M. Boles, Evaluating the public health impact of health promotion interventions: the RE-AIM framework. *Am J Public Health* **89**, 1322-1327 (1999); published online EpubSep (
23. L. M. Klesges, P. A. Estabrooks, D. A. Dzewaltowski, S. S. Bull, R. E. Glasgow, Beginning With the Application in Mind: Designing and Planning Health Behavior Change Interventions to Enhance Dissemination. *Annals of Behavioral Medicine* **29**, 66-75 (2005).
24. D. D. Embry, The Good Behavior Game: A Best Practice Candidate as a Universal Behavioral Vaccine. *Clinical Child & Family Psychology Review* **5**, 273-297 (2002).
25. D. D. Embry, A. Biglan, Evidence-Based Kernels: Fundamental Units of Behavioral Influence. *Clinical Child & Family Psychology Review* **11**, 75-113 (2008); published online EpubSeptember, 2008 (10.1007/s10567-008-0036-x).
26. D. D. Embry, M. Lipsey, K. A. Moore, D. F. McCallum, Best Intentions are Not Enough: Techniques for Using Research and Data to Develop New Evidence-Informed Prevention Programs. *Emphasizing Evidence-Based Programs for Children and Youth: An Examination of Policy Issues and Practice Dilemmas Across Federal Initiatives.* 2013.
27. D. D. Embry, A. Biglan, in *National Registry of Effective Programs and Practices*. (Substance Abuse and Mental Health Administration, 2009).