



## What if all first graders in the United States and Ohio were protected by the Good Behavior Game, when they entered school — as recommended in the 2009 Institute of Medicine Report?

The 2009 Institute of Medicine's *Report on the Prevention of Mental, Emotional, and Behavioral Disorders Among Young People (1)* singled out the Good Behavior Game as potentially one of the most effective early, universal school-based prevention strategies (based on multiple randomized, longitudinal trials; (2-11). Accordingly, the Substance Abuse and Mental Health Services Administration (SAMSHA) has fund 38 sites across America to prove that it is replicable using the commercially-available version from a Johns Hopkins study called the PAX Good Behavior Game. Based on those successes, SAMSHA recently funded seven states to expand the reach of the GBG.

Each year, approximately 4 million young people enter the first grade in the United States.

What if those first graders' futures were protected by the widespread use of the GBG? That could transform every state and Congressional District, with potential to make the United States equal to or exceed other rich democracies in terms of positive long-term outcomes of young children.

By reaching 4,000,000 first graders, key indicators can change dramatically. How would local, state, and national indicators change across the United States if each of those children received the benefits of the GBG? Here are the estimates based on previous research findings:

- **350,306** fewer young people will need any form of special education services
- **226,668** more boys will likely graduate from high school
- **272,002** more boys will likely attend college
- **361,444** more girls will likely graduate from high school
- **282,440** more girls will likely attend college
- **39,564** fewer young people will commit and be convicted of serious violent crimes
- **391,518** fewer young people will develop serious drug addictions
- **267,881** fewer young people will become regular smokers
- **144,244** fewer young people will develop serious alcohol addictions
- **197,510** fewer young women will contemplate suicide
- **267,881** fewer young men will contemplate suicide

Using the Washington State Institute for Public Policy's cost effectiveness study (12), the economic benefits can be extrapolated below when those young people reach age 21, as a result of having the GBG just in first grade. With cohort of first graders being protected and promoted by the GBG, American families, schools communities, cities, counties, and the state will have **\$18.3 billion** more in their pockets to start businesses, improve communities, invent new knowledge to meet the challenges of the future, create infrastructure, as well as engage in more peaceful, productive, healthy, and happy lives. This gift for the present and the future of each first grader will cost about the price of 20 reams of copy paper (two boxes), which is \$50-\$70 at an office supply store.



## What About the Potential Impact of GBG in Ohio?

By reaching all 1st graders in Ohio each year, major benefits can occur for the estimated 148,657 young people in the state. How would local, state, and national indicators change if each of those children received the benefits of the GBG? Here are the estimates based on the previous research findings:

- 12,904** Fewer young people will need any form of special education services
- 8,349** More boys will likely graduate from high school
- 10,019** More boys will likely attend college
- 13,314** More girls will likely graduate from high school
- 10,404** More girls will likely attend college
- 1,457** Fewer young people will commit and be convicted of serious violent crimes
- 14,422** Fewer young people will develop serious drug addictions
- 9,867** Fewer young people will become regular smokers
- 5,313** Fewer young people will develop serious alcohol addictions
- 7,275** Fewer young women will contemplate suicide
- 9,867** Fewer young men will contemplate suicide

Using the Washington State Institute for Public Policy's cost effectiveness study (12), the economic benefits can be extrapolated when those young people reach age 21, as a result of having GBG just in first grade. With cohort of first graders being protected and promoted by GBG, the state's citizens, families, schools, communities, and children themselves will save an estimated **\$695.5 Million (NET)** when the children reach age 21.

And what does it cost per child to protect children for their lifetimes? Less than the CDC's measles, mumps, varicella, and rubella vaccine (MMVR) of \$128.00. All up it costs about the price of a premium box of copy paper (10 reams) per child—\$60 to \$75. The rate of return on investment is better than 30-to-1 (12). The polio vaccine had a rate of return of 3-to-1, and we never denied providing polio vaccine to any child in America. Why would we not protect our future generations from the mental, emotional, behavioral, and related physical disorders?

### References Cited

1. 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.
2. G. Leflot, P. A. van Lier, P. Onghena, H. Colpin, The role of children's on-task behavior in the prevention of aggressive behavior development and peer rejection: a randomized controlled study of the Good Behavior Game in Belgian elementary classrooms. *J Sch Psychol* **51**, 187-199 (2013); published online EpubApr (10.1016/j.jsp.2012.12.006).
3. S. G. Kellam, W. Wang, A. C. Mackenzie, C. H. Brown, D. C. Ompad, F. Or, N. S. Ialongo, J. M. Poduska, A. Windham, 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. *Prev Sci*, (2012); published online EpubOct 17 (10.1007/s11121-012-0296-z).
4. C. P. Bradshaw, J. H. Zmuda, S. Kellam, N. Ialongo, Longitudinal Impact of Two Universal Preventive Interventions in First Grade on Educational Outcomes in High School. *Journal of Educational Psychology* **101**, 926-937 (2009).
5. H. C. Wilcox, S. Kellam, C. H. Brown, J. Poduska, N. Ialongo, W. Wang, J. Anthony, The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug & Alcohol Dependence*, **14** (2008).
6. H. Petras, S. Kellam, C. H. Brown, B. Muthen, N. Ialongo, J. Poduska, 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*, **15** (2008).
7. P. A. C. van Lier, B. O. Muthen, R. M. van der Sar, A. A. M. Crijnen, Preventing Disruptive Behavior in Elementary Schoolchildren: Impact of a Universal Classroom-Based Intervention. *Journal of Consulting & Clinical Psychology* **72**, 467-478 (2004).
8. C. D. Furr-Holden, N. S. Ialongo, J. C. Anthony, H. Petras, S. G. Kellam, Developmentally inspired drug prevention: middle school outcomes in a school-based randomized prevention trial. *Drug & Alcohol Dependence* **73**, 149-158 (2004); published online EpubFeb 7 (
9. C. L. Storr, N. S. Ialongo, S. G. Kellam, J. C. Anthony, A randomized controlled trial of two primary intervention strategies to prevent early onset tobacco smoking. *Drug & Alcohol Dependence* **66**, 51 (2002).
10. N. Ialongo, J. Poduska, L. Werthamer, S. Kellam, The distal impact of two first-grade preventive interventions on conduct problems and disorder in early adolescence. *Journal of Emotional & Behavioral Disorders* **9**, 146-160 (2001).
11. N. Ialongo, L. Werthamer, S. G. Kellam, C. H. Brown, S. Wang, Y. Lin, 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**, 599-641 (1999).
12. S. Aos, S. Lee, E. Drake, A. Pennucci, T. Klima, M. Miller, L. Anderson, J. Mayfield, M. Burley, Return on Investment: Evidence-Based Options to Improve Statewide Outcomes. 2011.