



## RETURN ON (TAXPAYER) INVESTMENT: EVIDENCE-BASED OPTIONS TO IMPROVE STATEWIDE OUTCOMES —UPDATE FOR THE LEGISLATURE—

The 2009 Legislature directed the Washington State Institute for Public Policy (Institute) “to calculate the return on investment to taxpayers from evidence-based prevention and intervention programs and policies.”<sup>1</sup>

This legislative request, while clearly broad in scope, centers narrowly on one straightforward question: are there more effective ways to use taxpayer money to achieve particular public outcomes?

The Legislature specifically asked the Institute to identify public policies that have been shown to improve—cost efficiently—the following outcomes:

- ✓ Crime
- ✓ Education
- ✓ Child maltreatment
- ✓ Substance abuse
- ✓ Mental health
- ✓ Public health
- ✓ Public assistance
- ✓ Employment
- ✓ Housing

This short report summarizes the work currently underway at the Institute. Initial findings will be presented prior to the 2011 Legislative Session, with a full report due June 2011. The legislation authorized the Institute to receive outside funding for this project; the MacArthur Foundation is supporting 80 percent of the work, with the Legislature funding 20 percent. To the extent that we secure future funding, it will be possible to expand coverage of these nine areas as well as undertake additional topics.

### Background

The Institute is a nonpartisan research unit of the Washington State Legislature. One of our duties is to provide information to the Legislature on Washington’s evidence-based initiatives. This role has evolved over the last 15 years.

### Summary

The 2009 Legislature directed the Washington State Institute for Public Policy “to calculate the return on investment to taxpayers from evidence-based prevention and intervention programs and policies.”

The Legislature instructed the Institute to produce “a comprehensive list of programs and policies that improve . . . outcomes for children and adults in Washington and result in more cost-efficient use of public resources.” This project is updating and extending previous Institute analyses prepared for the Legislature.

This short report summarizes the Institute’s four-step analytical approach and lists the topics being reviewed, as well as Institute staff contacts for each area. Initial findings will be presented prior to the 2011 Legislative Session, with a full report due June 2011.

In the mid-1990s, the Legislature directed the Institute to identify evidence-based juvenile justice programs that could lower crime. The Institute built its first benefit-cost analytical tool in 1997 to help the Legislature select sound investments.<sup>2</sup> This initial effort identified several programs—not then operating in Washington—that could reduce crime and save Washington taxpayers money. In subsequent sessions, the Legislature used the results to begin a series of policy reforms.<sup>3</sup> Many “real world” lessons were learned.<sup>4</sup>

<sup>2</sup> S. Aos, R. Barnoski, R. Lieb (1998). *Watching the Bottom Line: Cost-Effective Interventions for Reducing Crime in Washington*, Olympia: Washington State Institute for Public Policy (98-01-1201).

<sup>3</sup> R. Barnoski (2004). *Outcome Evaluation of Washington State’s Research-Based Programs for Juvenile Offenders*, Olympia: Washington State Institute for Public Policy (04-01-1201).

<sup>4</sup> R. Barnoski (2009). *Providing Evidence-Based Programs With Fidelity in Washington State Juvenile Courts: Cost Analysis*, Olympia: Washington State Institute for Public Policy (09-12-1201).

<sup>1</sup> Laws of 2009, ch. 564, § 610 (4).

In the early 2000s, the Legislature began to direct the Institute to apply the same benefit-cost approach to other public policy areas, including K–12 education, early childhood education, child welfare, adult mental health, and substance abuse.<sup>5</sup>

We are currently updating these previous results and extending the return-on-investment approach to several new areas. Our ongoing goal is to produce better “bottom-line” estimates for each successive legislative session.

## General Research Approach

Over the last decade, as we have carried out each of these research reviews, we have been developing and improving a four-step research approach.

- 1) We assess evidence on “what works.”
- 2) We calculate costs and benefits for Washington State and produce a *Consumer Reports*-like ranking of public policy options.
- 3) When possible, we provide a “portfolio” analysis of how a combination of policy options could affect statewide outcomes of interest.
- 4) We measure the riskiness of our conclusions by testing how bottom lines vary when estimates and assumptions change.

For this project, we are also developing a software application to help legislative and executive staff use the information.

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<sup>5</sup> Previous benefit-cost studies prepared by the Washington State Institute for Public Policy for the Legislature include:

- S. Lee, S. Aos, M. Miller (2008). *Evidence-Based Programs to Prevent Children from Entering and Remaining in the Child Welfare System: Benefits and Costs for Washington* (08-07-3901).
- S. Aos, A. Pennucci (2007). *Report to the Joint Task Force on Basic Education Finance: School Employee Compensation and Student Outcomes* (07-12-2201).
- S. Aos, M. Miller, J. Mayfield (2007). *Benefits and Costs of K–12 Educational Policies: Evidence-Based Effects of Class Size Reductions and Full-Day Kindergarten* (07-03-2201).
- S. Aos, M. Miller, E. Drake (2006). *Evidence-Based Public Policy Options to Reduce Future Prison Construction, Criminal Justice Costs, and Crime Rates* (06-10-1201).
- S. Aos, J. Mayfield, M. Miller, W. Yen (2006). *Evidence-Based Treatment of Alcohol, Drug, and Mental Health Disorders: Potential Benefits, Costs, and Fiscal Impacts for Washington State* (06-06-3901).
- S. Aos, M. Miller, E. Drake (2006). *Evidence-Based Adult Corrections Programs: What Works and What Does Not* (06-01-1201).
- S. Aos, R. Lieb, J. Mayfield, M. Miller, A. Pennucci (2004). *Benefits and Costs of Prevention and Early Intervention Programs for Youth* (04-07-3901).

**Step 1: What Works?** The first step produces estimates of policies and programs that have been shown to improve the legislative list of outcomes. We carefully analyze all high-quality research from the United States and elsewhere to identify those interventions that have best achieved the outcomes (and which ones have not). We look for research studies with strong, credible evaluation designs, and we discard studies with weak designs. Our empirical approach follows a meta-analytic framework to assess systematically the entire research literature on a given topic.

**Step 2: What Makes Economic Sense?** Next, we insert costs and benefits into the analysis by answering two questions:

- 1) How much does it cost to produce the effect found in Step 1?
- 2) How much is it worth to people in Washington State to achieve the outcome?

To answer these questions, we have been developing an economic model that provides internally consistent bottom lines measured with standard financial statistics: net present values, benefit-cost ratios, and returns on investment. We present these estimates from three distinct perspectives: the benefits that accrue solely to program participants, those received by taxpayers, and any other measurable (non-participant and non-taxpayer) benefits. The sum of these perspectives provides a “total Washington” view on whether a program produces benefits that exceed costs.

## Step 3: Impacts on Statewide Outcomes.

Together, Steps 1 and 2 allow us to prepare *Consumer Reports*-like lists of what works and what does not, ranked by benefit-cost estimates. In the third analytic step, we estimate the degree to which a “portfolio” of policies is likely to affect big-picture statewide outcomes such as crime or high school graduation rates.

For example, in 2006 the Institute produced estimates of how a combination of prevention, juvenile justice, and adult corrections’ programs could influence Washington’s crime rate, the need to build prisons, and overall state and local criminal justice spending. The Legislature used this information in decision making during the 2007 Session.

Step 3 thus moves from lists of what works to a strategic analysis of ways to improve statewide outcomes.

**Step 4: Assessing Risk.** The final analytical step involves testing the robustness of our results. Considerable uncertainty can exist in any estimate of benefits and costs; thus, it is important to understand how conclusions might change when assumptions are altered. To test risk, we perform a “Monte Carlo simulation” in which we vary the key factors in our calculations and then re-estimate the results of our analysis. The purpose is to determine the probability that costs would outweigh benefits if a particular policy were adopted. This type of risk and uncertainty analysis is commonly used by many businesses in decision making; we employ the same tools to test the riskiness of public sector decisions.

## Specific Policy Areas Covered

In undertaking this review, we prioritized certain categories of interventions, focusing primarily on those already implemented in Washington State. As the project evolves, we will expand the interventions and outcomes for each policy area as well as cover new topics.

Each topic area described below lists the lead Institute staff person assigned; this may be helpful to legislative and executive staff during the 2011 Legislative Session.

Initial results will be available prior to the 2011 session and will include preliminary rankings of programs currently being implemented in Washington. A full report will be published in June 2011 that will cover a broader scope of policy options.

### Crime

We are reviewing corrections, sentencing, and prevention programs and policies that aim to reduce crime in Washington. The analysis will cover policies such as adult sentencing and programs including cognitive behavioral therapy, adult basic education in prison, adult drug courts, Functional Family Therapy, Aggression Replacement Training, and Multisystemic Therapy. *Institute contact: Elizabeth K. Drake, ekdrake@wsipp.wa.gov.*

### Early Childhood Education

Publicly funded preschool is typically provided to three- and four-year-old children who are low-income or considered at risk for school failure; our review focuses on that population. We are examining model programs such as Perry Preschool as well as state and federal programs (e.g., Head Start). Student test scores—the most commonly measured outcomes—are being analyzed by grade level to investigate whether early test score gains fade out over time. We are also assessing preschool’s impact on other outcomes, including high school graduation, crime, child welfare, and teen pregnancy. *Institute contact: Annie Pennucci, pennuccia@wsipp.wa.gov.*

### K–12 Education

School programs and policies that provide assistance to struggling students are being reviewed. Specifically, we are examining tutoring programs, parent involvement efforts, and instructional models for English language learners. We are focusing on four student outcomes: graduation rates, test scores, grade repetition, and participation in special education. Ongoing work will examine other K–12 supports, such as extended learning (before/after, Saturday, and summer school programs) and the use of classroom aides. We will also update prior Institute reviews of class size policies, full-day kindergarten, truancy and dropout prevention, and teacher qualifications and professional development. *Institute contact: Annie Pennucci, pennuccia@wsipp.wa.gov.*

### Child Welfare

For this topic, we are focusing on programs that affect outcomes such as documented child abuse and neglect and out-of-home placements as well as child and parent mental health where appropriate. We are reviewing prevention programs designed to prevent child abuse and neglect (e.g., home visiting strategies), intervention programs for families already involved in the child welfare system (e.g., parent training), and administrative policies (e.g., alternative response approaches). *Institute contact: Stephanie Lee, slee@wsipp.wa.gov.*

## Children's Mental Health and Substance Abuse

We are examining programs designed to prevent youth from using alcohol, tobacco, and/or illicit drugs. Of special interest are outcomes such as initiation of substance use, development of a substance use disorder, and other risky behaviors (e.g., crime). We are also reviewing non-pharmacological treatment programs for common mental disorders in childhood and adolescence: depression, anxiety disorders, disruptive behavior disorders (e.g., conduct disorder), suicide attempts, and attention-deficit/hyperactivity disorder (ADHD). *Institute contact: Tali Klima, klima@wsipp.wa.gov.*

## Adult Mental Health and Substance Abuse

We are updating our review of non-pharmacological treatments for major depression, anxiety disorders, bipolar disorder, and schizophrenia. Our analysis examines the effects of treatment on symptom reduction or remission as well as improvement in global functioning. We are also reviewing interventions for disordered use of alcohol and drugs and interventions for persons with co-occurring mental illness and substance abuse disorders. *Institute contact: Marna Miller, millerm@wsipp.wa.gov.*

## Public Assistance and Employment

A variety of publicly funded programs attempt to improve employment outcomes of dislocated workers, public assistance recipients, persons with mental illness, and other underemployed individuals with barriers to employment. These programs vary in their approaches: supported employment, education, targeted training, job search assistance, and work experience. We are examining changes in employment and earnings associated with participation in these types of programs. *Institute contact: Jim Mayfield, mayfield@wsipp.wa.gov.*

## Public Health

We are updating prior reviews of teen pregnancy prevention programs, including school-based education and skills development, service learning programs, and youth development approaches. For teen parents, home visiting programs that aim to prevent a rapid repeat pregnancy are under review. Additionally, we are examining strategies in schools and childcare settings that attempt to reduce childhood obesity rates. These strategies include nutrition education; offering healthier foods; limiting access to low-nutrient/high-calorie drinks and snacks; and increasing the frequency, intensity, and duration of physical activity. From a consumer demand standpoint, we are reviewing the effects of energy-dense snack and soft drink taxes on consumption behavior as well as the effects of providing nutritional information on menus. *Institute contact: Laurie Anderson, landerson@wsipp.wa.gov.*

## Housing

Some programs combine housing assistance with other interventions; housing helps stabilize individuals as they receive mental health treatment, for example, or after they are released from prison. We are estimating the effectiveness of the supported housing components of these interventions on outcomes such as homelessness, hospitalization, and crime. *Institute contact: Roxanne Lieb, liebr@wsipp.wa.gov.*

## Return on Investment Analysis

For each of the topics described above, we are conducting a benefit-cost analysis and updating and extending our return-on-investment model. We are also developing software that will allow legislative and executive staff to easily access the information. *Institute contact: Steve Aos, saos@wsipp.wa.gov.*