

# Benefit-cost analysis to inform state policymaking

---

Stephanie Lee

WASHINGTON STATE INSTITUTE  
FOR PUBLIC POLICY

Health  
Policy  
Institute of  
Ohio

Investing in what  
works: Evidence-  
based policy  
prescriptions to  
improve health  
value

Columbus, OH  
April 26, 2016

# Washington State Institute for Public Policy

## Created by the WA Legislature

- ✓ Non-partisan staff with bi-partisan governance
- ✓ Projects assigned via legislative bills or Board of Directors



## Recent Assignments:

What Works? What are the costs and benefits of policies to improve:

- ✓ Crime
- ✓ K-12 & early education
- ✓ Health Care
- ✓ Child welfare
- ✓ Mental health
- ✓ Substance abuse
- ✓ Public health
- ✓ Employment

## Presenting our findings

All Research Areas

# Washington State Institute for Public Policy

- HOME
- REPORTS
- BENEFIT-COST RESULTS**
- ABOUT WSIPP

Health Care

WSIPP's mission is to carry out practical, non-partisan research—at legislative direction—on issues of importance to Washington State.

POLICY AREAS

FEATURED REPORTS

CURRENT PROJECTS

BOARD  
STAFF  
CONTACT

110 FIFTH AVENUE SE, SUITE 214  
P O BOX 40999  
OLYMPIA, WA 98504

360.586.2677 PHONE  
360.586.2793 FAX  
institute@wsipp.wa.gov

Program	Benefit-Cost Ratio
Lifestyle intervention counseling program	100 %
Lifestyle intervention group-based counseling programs	81 %
Behavioral intervention person programs	66 %
Behavioral intervention programs	56 %
Cesarean section rate interventions (private population)	100 %
Cesarean section rate interventions (Medicaid population)	99 %
Cesarean section rate population)	85 %
Behavioral intervention person programs	55 %
Cesarean section rate population)	83 %

# Methods

Are there policies demonstrated to improve outcomes with a positive return on investment?

1. **Evidence:** What works to improve outcomes; what does not?

We meta-analyze all rigorous evaluations of policies to improve public outcomes of legislative interest.

2. **Economics:** What is the return on investment?

We compute benefits and costs to the people of Washington State using a consistent framework.

3. **Risk:** What is the likelihood that a program or policy will at least “break even?”

We model the uncertainty around measurement and assumptions to assess the riskiness of each option.

# Step 1: What is the evidence?

- ✓ Find all program evaluations on a given topic.
- ✓ Select only those that meet standards for rigor.
  - Comparison group?
  - Statistical controls?
  - Causality
- ✓ Meta-analyze average effect on each outcome.
  - Standardized metric
  - How much change can we expect?
- ✓ For example,
  - How much change do we observe in smoking on average?
  - How much change do we observe in diabetes incidence on average?

## Step 2: What are the economics?

- ✓ What is the “price” of each outcome?
- ✓ Behavioral and physical health disorders
  - Labor market earnings
  - Health care utilization and costs
  - Mortality (value of a statistical life)
- ✓ Early substance use
  - Links to later abuse/dependence
- ✓ High school graduation
  - Labor market earnings
  - Health care utilization and costs
- ✓ Crime
  - Criminal justice system
  - Victims

## Step 3: What is the risk?

### ✓ Uncertainty across many domains

- Program effectiveness
- General assumptions, e.g.,
  - Discount rate
  - Value of a statistical life

### ✓ Monte Carlo analysis

- 10,000 simulation runs
- Bottom-line statistic: How likely for the program to at least “break even” (pay for itself over the long term)?

# Our "Consumer Reports" Findings

All  
Research  
Areas

Juvenile  
Justice

Adult  
Criminal  
Justice

Child  
Welfare

Pre-K to  
12  
Education

Children's  
Mental  
Health

Health  
Care

Substance  
Abuse

Adult  
Mental  
Health

Public  
Health &  
Prevention

Workforce  
Development

## Public Health & Prevention

PDF

For questions on benefit-cost results relating to Public Health & Prevention, contact [Stephanie Lee](#).

Program name (click on the program name for more detail)	Date of last literature review	Total benefits	Taxpayer benefits	Non- taxpayer benefits	Costs	Benefits minus costs (net present value)	Benefit to cost ratio	Chance benefits will exceed costs
<b>School-based</b>								
Mentoring for students: school-based (taxpayer costs only)	Jun. 2014	\$29,407	\$8,716	\$20,691	(\$1,164)	\$28,243	\$25.26	74 %
Mentoring for students: school-based (with volunteer costs)	Jun. 2014	\$28,776	\$8,651	\$20,125	(\$1,814)	\$26,962	\$15.86	73 %
School-based programs to increase physical activity	Nov. 2015	\$15,532	\$3,497	\$12,035	(\$463)	\$15,069	\$33.54	66 %
Elementary school-based social development programs	Dec. 2014	\$14,661	\$4,174	\$10,487	(\$239)	\$14,422	\$61.36	73 %
Good Behavior Game	Apr. 2012	\$13,522	\$4,099	\$9,423	(\$166)	\$13,355	\$81.27	91 %
Seattle Social Development Project	Apr. 2012	\$16,225	\$5,071	\$11,154	(\$3,131)	\$13,094	\$5.18	67 %
Positive Action	Aug. 2015	\$12,498	\$2,979	\$9,518	(\$438)	\$12,059	\$28.50	88 %
Caring School Community (formerly Child Development Project)	Jun. 2014	\$10,019	\$2,374	\$7,645	(\$1,235)	\$8,784	\$8.11	60 %
Other school-wide positive behavior programs	Aug. 2015	\$8,846	\$2,158	\$6,688	(\$610)	\$8,235	\$14.49	77 %
Promoting Alternative Thinking Strategies (PATHS)	Jun. 2015	\$7,855	\$1,786	\$6,069	(\$354)	\$7,501	\$22.19	62 %
School-based tobacco prevention programs	Dec. 2014	\$4,887	\$1,205	\$3,682	(\$63)	\$4,824	\$77.72	99 %
Behavioral Monitoring and Reinforcement Program (BMRP)	Apr. 2012	\$4,955	\$1,436	\$3,519	(\$1,319)	\$3,637	\$3.76	61 %
Project EX	Dec. 2014	\$3,253	\$805	\$2,448	(\$59)	\$3,194	\$54.98	91 %
All Stars	Dec. 2014	\$2,824	\$641	\$2,184	(\$103)	\$2,722	\$27.47	97 %
Minnesota Smoking Prevention Program	Dec. 2014	\$1,729	\$385	\$1,344	(\$32)	\$1,697	\$53.68	82 %



# Features of WSIPP's benefit-cost approach

1. **Per-participant basis:** What are the costs and benefits for each person who *participates*?
  - ✓ Estimates do not rely on successful completion of treatment
2. **Societal perspective:** Who benefits from this investment?
  - ✓ Participants (e.g., labor market earnings)
  - ✓ Taxpayers (e.g., avoided system costs)
  - ✓ Others (e.g., avoided victimizations)
3. **Lifetime horizon:** How will benefits and costs accrue over the life cycle?
  - ✓ What are tomorrow's dollars worth today?

# Benefits and costs of benefit-cost analysis

## ✓ Benefits

- Provides additional information beyond “Is this program effective?”
- Appeals to policymakers on both sides of the aisle
- Offers basis for comparison within policy areas

## ✓ Costs

- Time- and labor-intensive
- Findings are specific to inputs (e.g., Washington state)
- Not exhaustive—we don’t know how to value every outcome
- Can be incomplete

# How WSIPP findings are used

## 1. Funding decisions by the legislature

- ✓ Portfolio of crime prevention strategies (2007-current)
- ✓ Juvenile justice funding (2009-current)

## 2. Policy choices

- ✓ K-12 class sizes

## 3. Inventories used by agencies

Classify programs into evidence-based, research-based, or promising

- ✓ Children's services
- ✓ Adult behavioral health
- ✓ K-12 programs for struggling students
- ✓ Adult corrections

# Thank You



Website: <http://www.wsipp.wa.gov>  
E-mail: [stephanie.lee@wsipp.wa.gov](mailto:stephanie.lee@wsipp.wa.gov)