Benefit-cost analysis to inform state policymaking

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

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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

Olympia, WA
Presenting our findings
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

**Public Health & Prevention**

For questions on benefit-cost results relating to Public Health & Prevention, contact Stephanie Lee.

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Date of Last Literature Review</th>
<th>Total Benefits</th>
<th>Taxpayer Benefits</th>
<th>Non-Taxpayer Benefits</th>
<th>Costs</th>
<th>Benefits Minus Costs (Net Present Value)</th>
<th>Benefit to Cost Ratio</th>
<th>Chance Benefits Will Exceed Costs</th>
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</thead>
<tbody>
<tr>
<td><strong>School-based</strong></td>
<td></td>
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<td></td>
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<tr>
<td>Mentoring for students: school-based (taxpayer costs only)</td>
<td>Jun. 2014</td>
<td>$29,407</td>
<td>$8,716</td>
<td>$20,691</td>
<td>($1,154)</td>
<td>$28,243</td>
<td>$25.26</td>
<td>74%</td>
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<td>Mentoring for students: school-based (with volunteer costs)</td>
<td>Jun. 2014</td>
<td>$28,776</td>
<td>$8,951</td>
<td>$20,275</td>
<td>($1,814)</td>
<td>$26,962</td>
<td>$15.86</td>
<td>73%</td>
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<tr>
<td>School-based programs to increase physical activity</td>
<td>Nov. 2015</td>
<td>$15,532</td>
<td>$3,497</td>
<td>$12,035</td>
<td>($463)</td>
<td>$15,069</td>
<td>$33.54</td>
<td>66%</td>
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<td>Elementary school-based social development programs</td>
<td>Dec. 2014</td>
<td>$14,661</td>
<td>$4,174</td>
<td>$10,487</td>
<td>($239)</td>
<td>$14,422</td>
<td>$61.36</td>
<td>73%</td>
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<tr>
<td>Good Behavior Game</td>
<td>Apr. 2012</td>
<td>$13,522</td>
<td>$4,909</td>
<td>$8,423</td>
<td>($166)</td>
<td>$13,355</td>
<td>$81.27</td>
<td>91%</td>
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<td>Seattle Social Development Project</td>
<td>Apr. 2012</td>
<td>$16,225</td>
<td>$5,071</td>
<td>$11,154</td>
<td>($3,131)</td>
<td>$13,094</td>
<td>$5.18</td>
<td>67%</td>
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<td>Positive Action</td>
<td>Aug. 2013</td>
<td>$12,498</td>
<td>$2,979</td>
<td>$9,518</td>
<td>($438)</td>
<td>$12,059</td>
<td>$28.50</td>
<td>88%</td>
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<td>Caring School Community (formerly Child Development Project)</td>
<td>Jun. 2014</td>
<td>$10,019</td>
<td>$2,574</td>
<td>$7,445</td>
<td>($1,235)</td>
<td>$8,784</td>
<td>$8.11</td>
<td>60%</td>
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<td>Other school-wide positive behavior programs</td>
<td>Aug. 2013</td>
<td>$8,846</td>
<td>$2,158</td>
<td>$6,688</td>
<td>($610)</td>
<td>$8,235</td>
<td>$14.49</td>
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<td>Promoting Alternative Thinking Strategies (PATHS)</td>
<td>Jun. 2015</td>
<td>$7,655</td>
<td>$1,786</td>
<td>$5,869</td>
<td>($354)</td>
<td>$7,501</td>
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<td>School-based tobacco prevention programs</td>
<td>Dec. 2014</td>
<td>$4,887</td>
<td>$1,205</td>
<td>$3,682</td>
<td>($63)</td>
<td>$4,824</td>
<td>$77.72</td>
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<td>Behavioral Monitoring and Reinforcement Program (BMRP)</td>
<td>Apr. 2012</td>
<td>$4,955</td>
<td>$1,436</td>
<td>$3,519</td>
<td>($1,19)</td>
<td>$3,637</td>
<td>$3.76</td>
<td>61%</td>
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<td>Project EX</td>
<td>Dec. 2014</td>
<td>$3,253</td>
<td>$805</td>
<td>$2,448</td>
<td>($59)</td>
<td>$3,194</td>
<td>$54.98</td>
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<td>All Stars</td>
<td>Dec. 2014</td>
<td>$2,824</td>
<td>$641</td>
<td>$2,184</td>
<td>($103)</td>
<td>$2,722</td>
<td>$27.47</td>
<td>97%</td>
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<td>Minnesota Smoking Prevention Program</td>
<td>Dec. 2014</td>
<td>$1,729</td>
<td>$385</td>
<td>$1,344</td>
<td>($32)</td>
<td>$1,697</td>
<td>$53.68</td>
<td>82%</td>
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</table>
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

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