

The WSIPP benefit-cost analysis examines, on an apples-to-apples basis, the monetary value of programs or policies to determine whether the benefits from the program exceed its costs. WSIPP's research approach to identifying evidence-based programs and policies has three main steps. First, we determine "what works" (and what does not work) to improve outcomes using a statistical technique called meta-analysis. Second, we calculate whether the benefits of a program exceed its costs. Third, we estimate the risk of investing in a program by testing the sensitivity of our results. For more detail on our methods, see our [Technical Documentation](#).

Current estimates replace old estimates. Numbers will change over time as a result of model inputs and monetization methods.

Remote cognitive behavioral therapy (CBT) for children with anxiety

Children's Mental Health: Anxiety

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: These treatments utilize the same principles and techniques as those of other Cognitive Behavior Therapy (CBT) treatments for anxiety (e.g., strategies to control physiological responses to anxiety, cognitive restructuring and self-talk, exposure to feared stimuli, and positive reinforcement). However, they are unique insofar as clients have reduced (if any) face-to-face time with therapists. Clients are supported remotely via email or phone contact. A manual or online program helps to guide progress of the intervention.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

| | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$2,017 | Benefit to cost ratio | n/a |
| Participants | \$3,977 | Benefits minus costs | \$7,599 |
| Others | \$296 | Chance the program will produce | |
| Indirect | \$518 | benefits greater than the costs | 93 % |
| Total benefits | \$6,808 | | |
| Net program cost | \$791 | | |
| Benefits minus cost | \$7,599 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|----------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| K-12 grade repetition | \$0 | \$8 | \$0 | \$4 | \$11 |
| Labor market earnings associated with major depression | \$1 | \$1 | \$0 | \$0 | \$2 |
| Health care associated with major depression | \$0 | \$0 | \$0 | \$0 | \$0 |
| Labor market earnings associated with anxiety disorder | \$3,918 | \$1,779 | \$0 | \$0 | \$5,698 |
| Health care associated with anxiety disorder | \$80 | \$244 | \$302 | \$123 | \$749 |
| Costs of higher education | (\$22) | (\$15) | (\$7) | (\$7) | (\$50) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$399 | \$399 |
| Totals | \$3,977 | \$2,017 | \$296 | \$518 | \$6,808 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

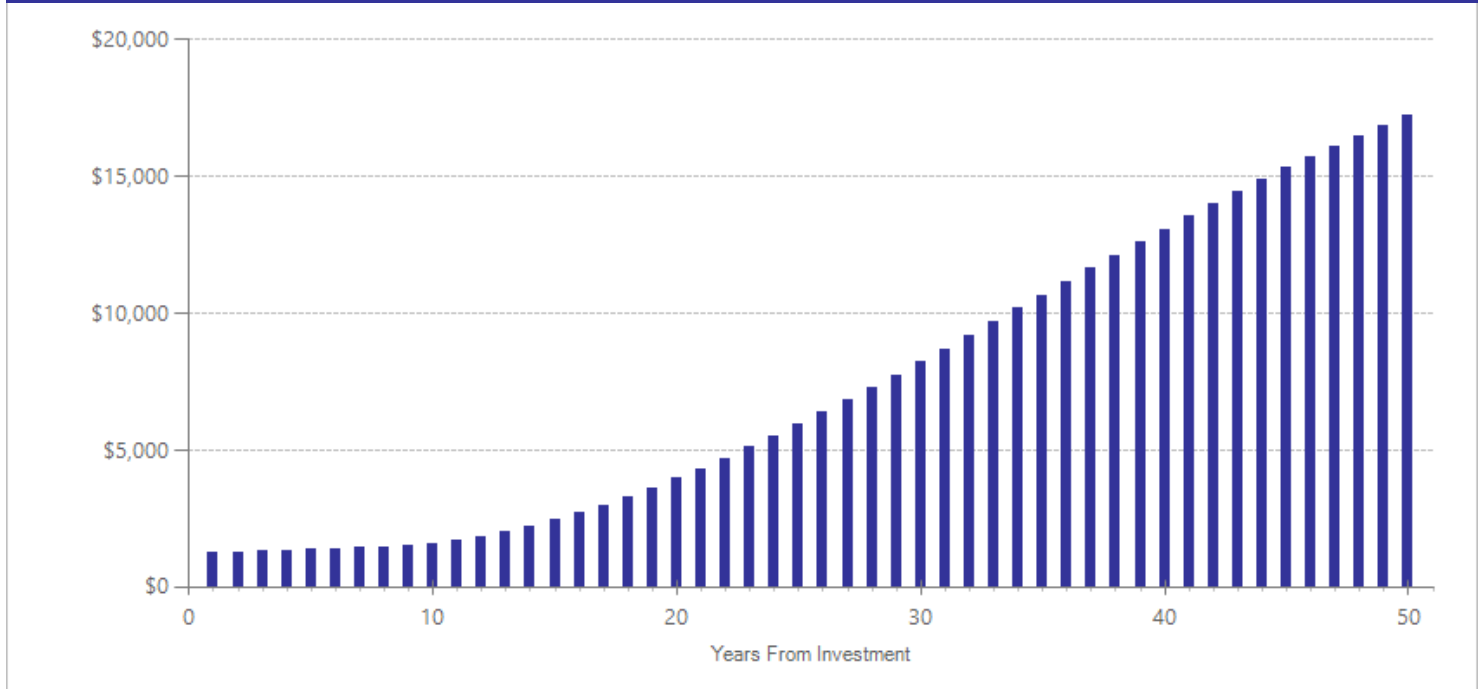
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$217 | 2010 | Present value of net program costs (in 2016 dollars) | \$791 |
| Comparison costs | \$943 | 2010 | Cost range (+ or -) | 10 % |

Per-participant costs are based on average therapist time, as reported in the treatment studies. Hourly therapist cost is based on the actuarial estimates of reimbursement by modality (Mercer. (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*). Comparison costs are based on the average reimbursement for treatment of child anxiety.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Anxiety disorder | 10 | 5 | 210 | -0.439 | 0.285 | 11 | -0.203 | 0.142 | 12 | -1.141 | 0.001 |
| Global functioning [^] | 10 | 2 | 46 | 0.451 | 0.212 | 11 | 0.209 | 0.110 | 12 | 1.074 | 0.001 |
| Major depressive disorder ^{^^} | 10 | 1 | 30 | 0.000 | 0.260 | 11 | 0.000 | 0.021 | 12 | 0.000 | 1.000 |

[^]WSIPP’s benefit-cost model does not monetize this outcome.

^{^^}WSIPP does not include this outcome when conducting benefit-cost analysis for this program.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Khanna, M.S., & Kendall, P.C. (2010). Computer-assisted cognitive behavioral therapy for child anxiety: Results of a randomized clinical trial. *Journal of Consulting and Clinical Psychology, 78*(5), 737-745.
- Lyneham, H.J., & Rapee, R.M. (2006). Evaluation of therapist-supported parent-implemented CBT for anxiety disorders in rural children. *Behaviour Research and Therapy, 44*(9), 1287-1300.
- March, S., Spence, S.H., & Donovan, C.L. (2009). The efficacy of an internet-based cognitive-behavioral therapy intervention for child anxiety disorders. *Journal of Pediatric Psychology, 34*(5), 474-487.
- Rapee, R.M., Abbott, M.J., & Lyneham, H.J. (2006). Bibliotherapy for children with anxiety disorders using written materials for parents: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 74*(3), 436-444.
- Spence, S.H., Holmes, J.M., March, S., & Lipp, O.V. (2006). The feasibility and outcome of clinic plus internet delivery of cognitive-behavior therapy for childhood anxiety. *Journal of Consulting and Clinical Psychology, 74*(3), 614-621.

Acceptance and Commitment Therapy (ACT) for children with anxiety

Children's Mental Health: Anxiety

Benefit-cost estimates updated December 2017. Literature review updated August 2017.

Program Description: Acceptance and Commitment Therapy for anxiety aims to increase client acceptance of negative thoughts and feelings and to reduce the negative behavioral impact of anxiety. Acceptance and Commitment Therapy relies on six core processes of change: 1) acceptance; 2) learning to view thoughts as hypotheses rather than facts, 3) being present, 4) viewing the self as context for experience, 5) identifying core values, and 6) acting based on those values. These core principles are applied through various exercises and through homework. In the single study reported here, the treatment was delivered in 10 group sessions with parents present at all sessions.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$1,998 | Benefit to cost ratio | n/a |
| Participants | \$3,972 | Benefits minus costs | \$6,901 |
| Others | \$271 | Chance the program will produce | |
| Indirect | \$294 | benefits greater than the costs | 99 % |
| Total benefits | \$6,534 | | |
| Net program cost | \$367 | | |
| Benefits minus cost | \$6,901 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|----------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| K-12 grade repetition | \$0 | \$8 | \$0 | \$4 | \$11 |
| Labor market earnings associated with anxiety disorder | \$3,921 | \$1,781 | \$0 | \$0 | \$5,702 |
| Health care associated with anxiety disorder | \$73 | \$224 | \$278 | \$112 | \$687 |
| Costs of higher education | (\$22) | (\$15) | (\$7) | (\$7) | (\$51) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$185 | \$185 |
| Totals | \$3,972 | \$1,998 | \$271 | \$294 | \$6,534 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

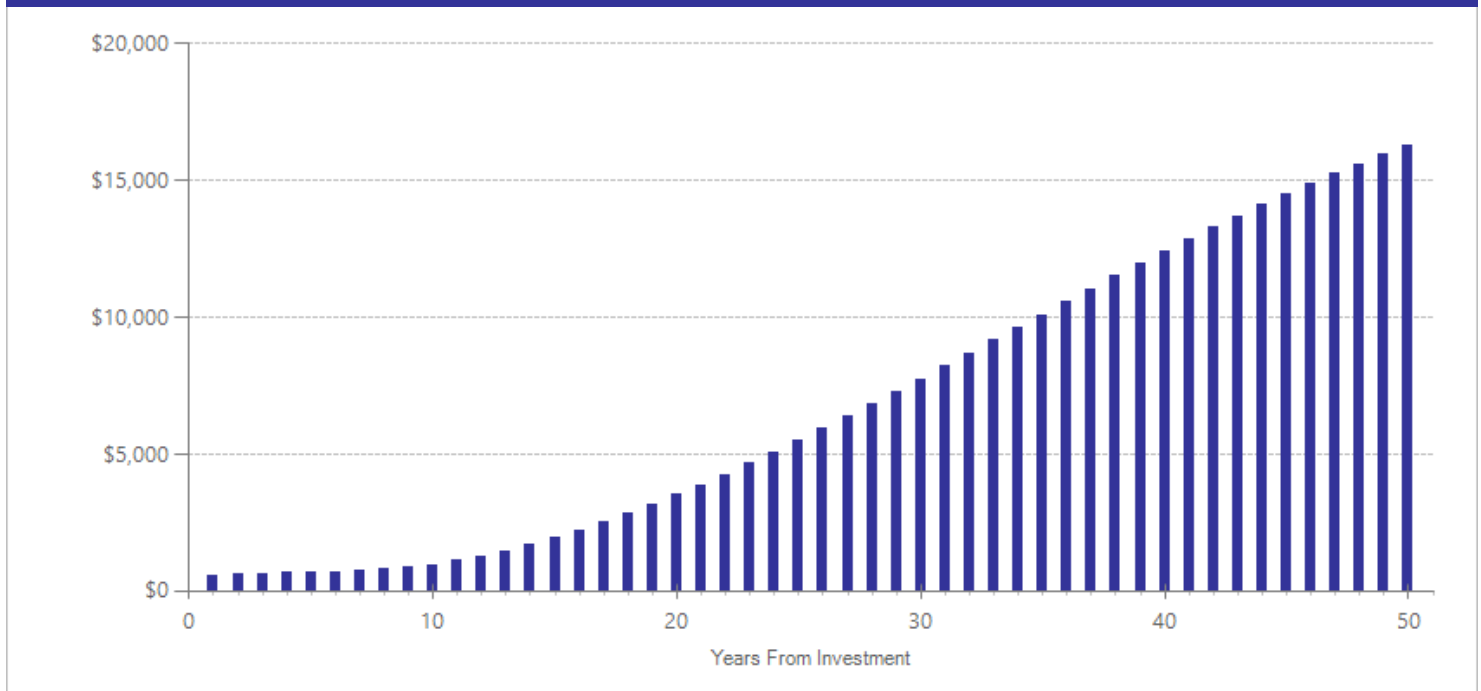
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$660 | 2016 | Present value of net program costs (in 2016 dollars) | \$367 |
| Comparison costs | \$943 | 2010 | Cost range (+ or -) | 15 % |

The therapy in this study included 10 weekly 90-minute group sessions. Per-participant costs are based on therapist time as reported in the studies, multiplied by DSHS reimbursement rates reported in Mercer (2015) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2016. Comparison costs are based on the average reimbursement for treatment of child anxiety.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|-------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Anxiety disorder | 11 | 1 | 68 | -0.450 | 0.197 | 11 | -0.208 | 0.103 | 12 | -0.450 | 0.022 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

Hancock, K., & Swain, J. (2016). Long term follow up in children with anxiety disorders treated with Acceptance and Commitment Therapy or cognitive behavioral therapy: Outcomes and predictors. *Journal of Child and Adolescent Behaviour*, 4,5

Group cognitive behavioral therapy (CBT) for children with anxiety

Children's Mental Health: Anxiety

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Treatments usually include multiple components, such as strategies to control physiological responses to anxiety, cognitive restructuring and self-talk, exposure to feared stimuli, and positive reinforcement. This brief therapy can be administered in individual, group, or family format; well-known examples include the Coping Cat and Coping Koala programs. The results below are those from group formats.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$1,884 | Benefit to cost ratio | n/a |
| Participants | \$3,718 | Benefits minus costs | \$6,612 |
| Others | \$275 | Chance the program will produce | |
| Indirect | \$318 | benefits greater than the costs | 100 % |
| Total benefits | \$6,194 | | |
| Net program cost | \$418 | | |
| Benefits minus cost | \$6,612 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|----------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| K-12 grade repetition | \$0 | \$7 | \$0 | \$3 | \$11 |
| Labor market earnings associated with anxiety disorder | \$3,664 | \$1,664 | \$0 | \$0 | \$5,328 |
| Health care associated with anxiety disorder | \$74 | \$227 | \$281 | \$113 | \$694 |
| Costs of higher education | (\$20) | (\$14) | (\$6) | (\$7) | (\$47) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$208 | \$208 |
| Totals | \$3,718 | \$1,884 | \$275 | \$318 | \$6,194 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

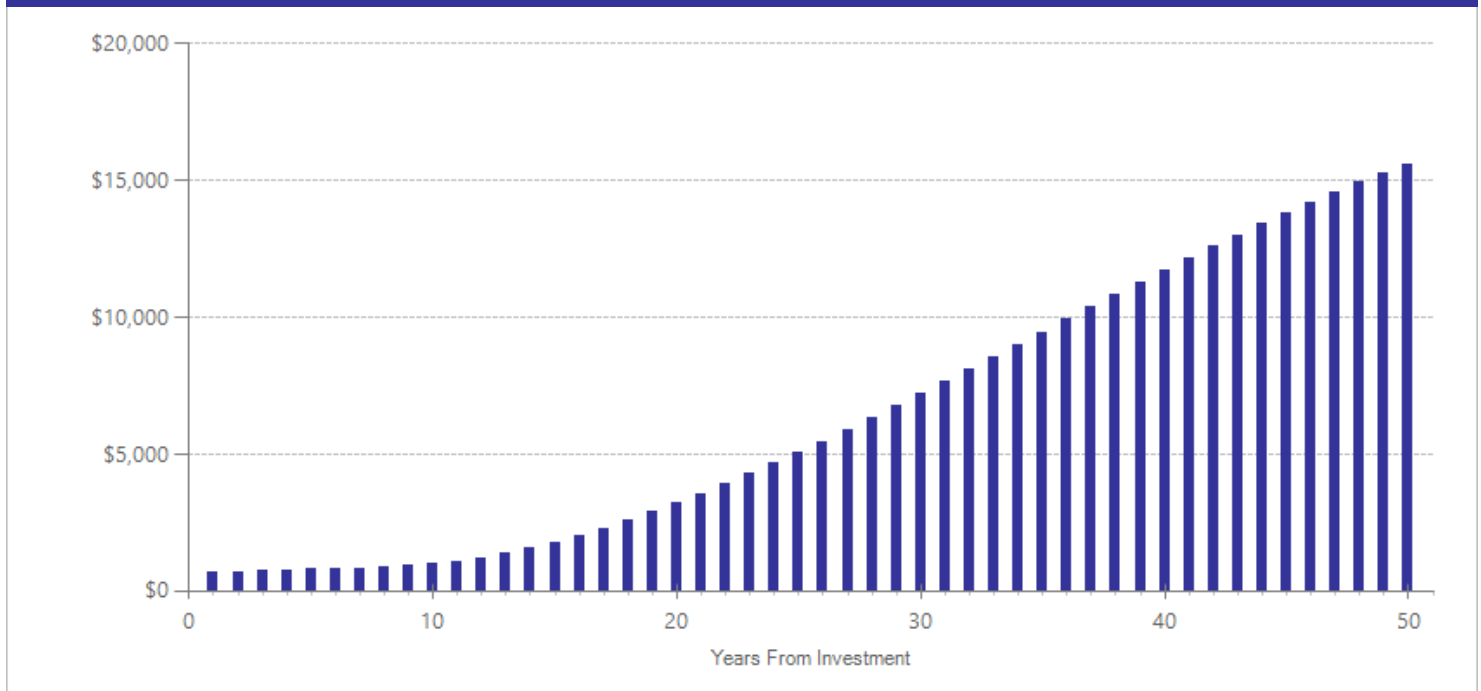
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$559 | 2010 | Present value of net program costs (in 2016 dollars) | \$418 |
| Comparison costs | \$943 | 2010 | Cost range (+ or -) | 10 % |

Per-participant costs are based on a weighted average of 15.7 hours of therapist time, as reported in the treatment studies, multiplied by the 2014 actuarial estimates of reimbursement for group therapy (Mercer. (2013). *Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2014*). Comparison costs are based on the average reimbursement for treatment of child anxiety.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|-------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Anxiety disorder | 10 | 13 | 469 | -0.414 | 0.118 | 11 | -0.191 | 0.069 | 12 | -0.950 | 0.001 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Barrett, P. M. (1998). Evaluation of cognitive-behavioral group treatments for childhood anxiety disorders. *Journal of Clinical Child Psychology, 27*(4), 459-468.
- Bernstein, G. A., Layne, A. E., Egan, E. A., & Tennison, D. M. (2005). School-based interventions for anxious children. *Journal of the American Academy of Child & Adolescent Psychiatry, 44*(11), 1118-1127.
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- Rapee, R. M., Abbott, M. J., & Lyneham, H. J. (2006). Bibliotherapy for children with anxiety disorders using written materials for parents: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 74*(3), 436-444.
- Rapee, R. (2000). Group treatment of children with anxiety disorders: Outcome and predictors of treatment response. *Australian Journal of Psychology, 52*(3), 125-129.
- Shortt, A. L., Barrett, P. M., & Fox, T. L. (2001). Evaluating the FRIENDS program: A cognitive-behavioral group treatment for anxious children and their parents. *Journal of Clinical Child Psychology, 30*(4), 525-535.
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- Spence, S. H., Donovan, C., & Brechman-Toussaint, M. (2000). The treatment of childhood social phobia: The effectiveness of a social skills training-based, cognitive behavioural intervention, with and without prenatal involvement. *Journal of Child Psychology and Psychiatry, 41*(6), 713-726.
- Spence, S. H., Holmes, J. M., March, S., & Lipp, O. V. (2006). The feasibility and outcome of clinic plus internet delivery of cognitive-behavior therapy for childhood anxiety. *Journal of Consulting and Clinical Psychology, 74*(3), 614-621.

Individual cognitive behavioral therapy (CBT) for children with anxiety

Children's Mental Health: Anxiety

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Treatments usually include multiple components, such as strategies to control physiological responses to anxiety, cognitive restructuring and self-talk, exposure to feared stimuli, and positive reinforcement. This brief therapy can be administered in individual, group, or family format; well-known examples include the Coping Cat and Coping Koala programs. The results below are those from individual formats.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

| | | | |
|-------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$1,487 | Benefit to cost ratio | \$5.55 |
| Participants | \$2,960 | Benefits minus costs | \$3,554 |
| Others | \$200 | Chance the program will produce | |
| Indirect | (\$311) | benefits greater than the costs | 98 % |
| <u>Total benefits</u> | <u>\$4,335</u> | | |
| <u>Net program cost</u> | <u>(\$782)</u> | | |
| Benefits minus cost | \$3,554 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:¹

Benefits to:

| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
|--|----------------|----------------|---------------------|-----------------------|----------------|
| K-12 grade repetition | \$0 | \$6 | \$0 | \$3 | \$9 |
| Labor market earnings associated with anxiety disorder | \$2,922 | \$1,327 | \$0 | \$0 | \$4,249 |
| Health care associated with anxiety disorder | \$54 | \$165 | \$205 | \$83 | \$507 |
| Costs of higher education | (\$16) | (\$11) | (\$5) | (\$6) | (\$38) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$391) | (\$391) |
| Totals | \$2,960 | \$1,487 | \$200 | (\$311) | \$4,335 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

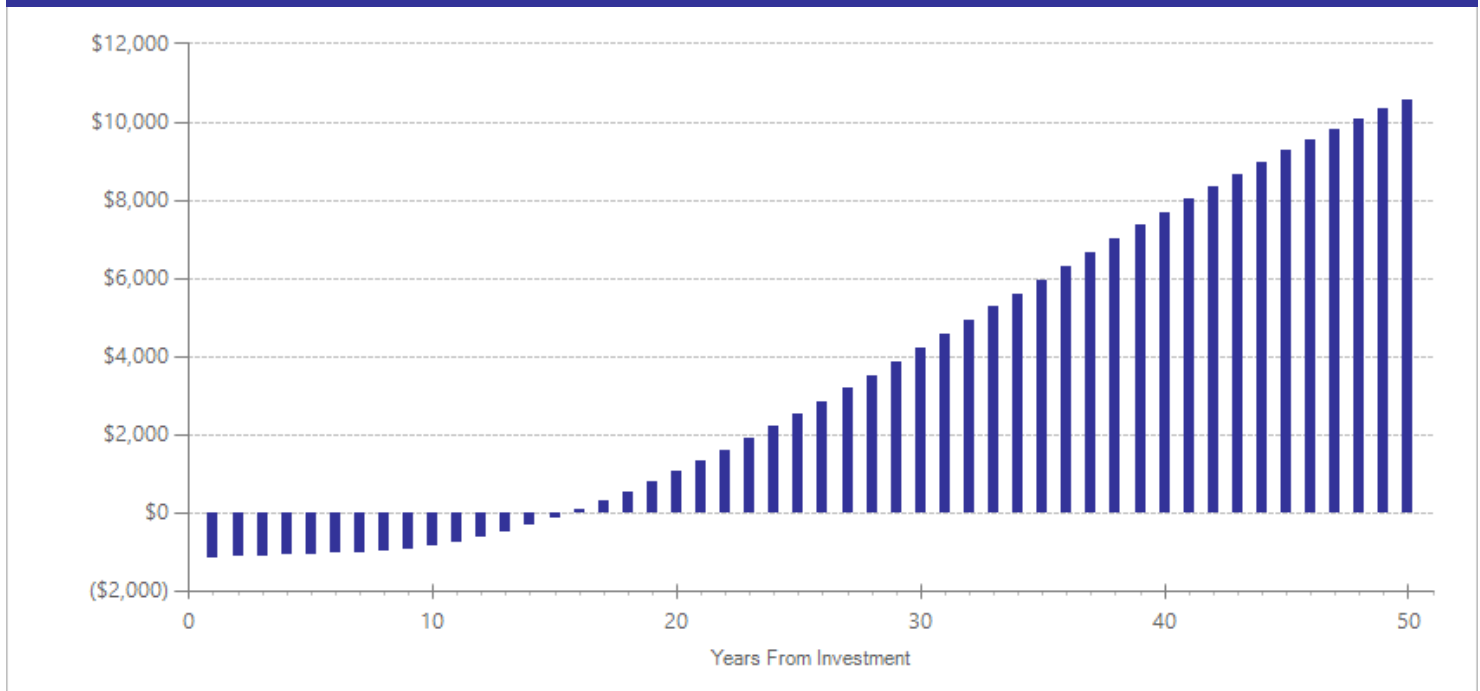
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$1,661 | 2010 | Present value of net program costs (in 2016 dollars) | (\$782) |
| Comparison costs | \$943 | 2010 | Cost range (+ or -) | 10 % |

Per-participant costs are based on a weighted average of 14.22 hours of therapist time, as reported in the treatment studies, multiplied by the hourly therapist cost is based on the 2014 actuarial estimates of reimbursement for individual therapy (Mercer. (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*). Comparison costs are based on the average reimbursement for treatment of child anxiety.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Anxiety disorder | 11 | 9 | 523 | -0.347 | 0.081 | 11 | -0.161 | 0.052 | 12 | -0.735 | 0.001 |
| Global functioning [^] | 11 | 2 | 279 | 0.092 | 0.139 | 11 | 0.043 | 0.066 | 12 | 0.092 | 0.506 |
| Major depressive disorder ^{^^} | 11 | 1 | 41 | -0.202 | 0.227 | 11 | 0.000 | 0.025 | 12 | -0.482 | 0.036 |
| Suicidal ideation [^] | 11 | 2 | 279 | 0.285 | 0.124 | 11 | 0.132 | 0.065 | 12 | 0.285 | 0.021 |

[^]WSIPP’s benefit-cost model does not monetize this outcome.

^{^^}WSIPP does not include this outcome when conducting benefit-cost analysis for this program.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

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Parent cognitive behavioral therapy (CBT) for young children with anxiety

Children's Mental Health: Anxiety

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Parents received training in cognitive behavioral approaches to use with their anxious children. Approaches usually include multiple components, such as strategies to control physiological responses to anxiety, cognitive restructuring and self-talk, exposure to feared stimuli, and positive reinforcement. This brief therapy can be administered in individual, group, or family format. Well-known examples include the Coping Cat and Coping Koala programs.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$468 | Benefit to cost ratio | n/a |
| Participants | \$913 | Benefits minus costs | \$2,459 |
| Others | \$75 | Chance the program will produce | |
| Indirect | \$355 | benefits greater than the costs | 99 % |
| Total benefits | \$1,811 | | |
| Net program cost | \$648 | | |
| Benefits minus cost | \$2,459 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| K-12 grade repetition | \$0 | \$2 | \$0 | \$1 | \$2 |
| Labor market earnings associated with anxiety disorder | \$898 | \$408 | \$0 | \$0 | \$1,306 |
| Health care associated with anxiety disorder | \$20 | \$61 | \$76 | \$31 | \$188 |
| Costs of higher education | (\$5) | (\$3) | (\$1) | (\$2) | (\$11) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$325 | \$325 |
| Totals | \$913 | \$468 | \$75 | \$355 | \$1,811 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

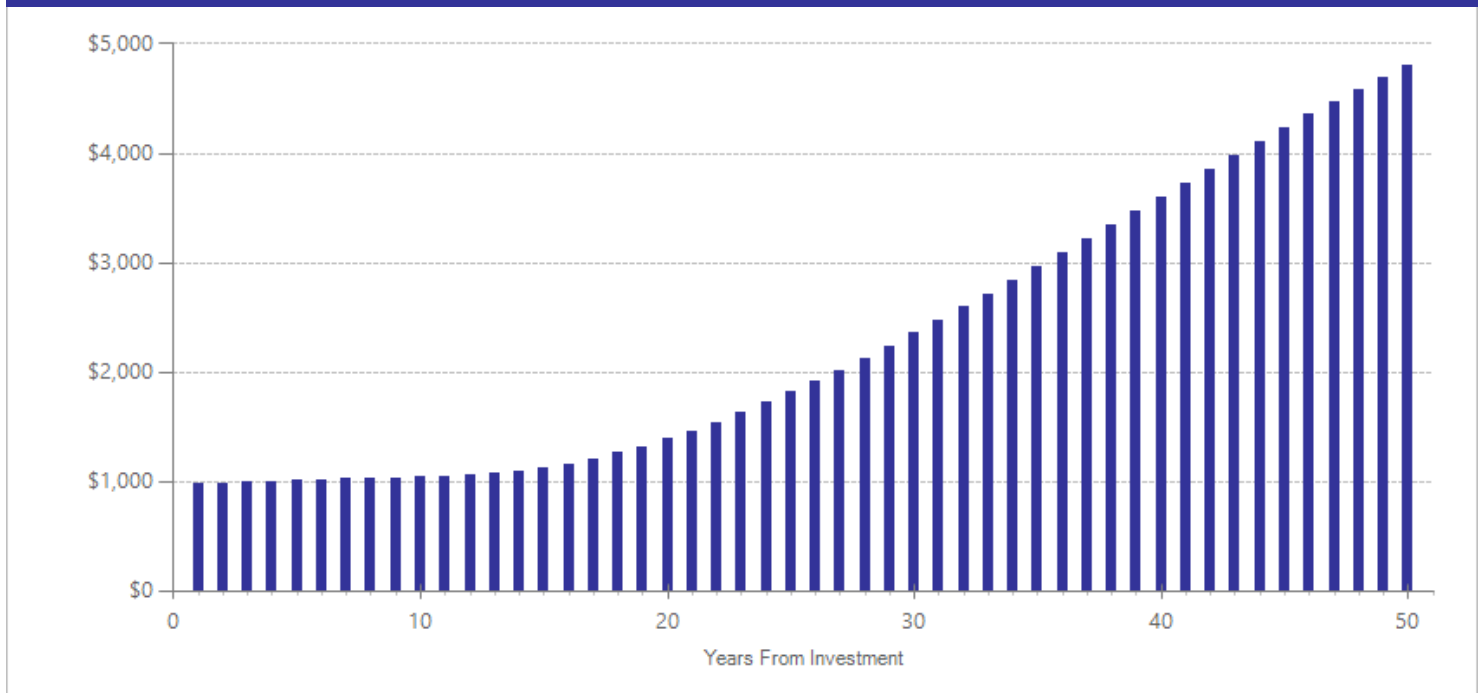
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$348 | 2010 | Present value of net program costs (in 2016 dollars) | \$648 |
| Comparison costs | \$943 | 2010 | Cost range (+ or -) | 10 % |

Per-participant costs are based on average therapist time, as reported in the treatment studies. Hourly therapist cost is based on the actuarial estimates of reimbursement by modality (Mercer. (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*). Comparison cost is based on the average reimbursement for treatment of child anxiety.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|-------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Anxiety disorder | 6 | 3 | 135 | -0.266 | 0.155 | 6 | -0.123 | 0.078 | 7 | -0.842 | 0.013 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

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Behavioral parent training (BPT) for children with ADHD

Children's Mental Health: Attention Deficit Hyperactivity Disorder

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: This is a brief intervention (spanning a couple of months) that involves psychoeducation on ADHD and teaching parents behavior management techniques, such as reinforcement and teacher correspondence. Parent programs were delivered in either individual or group format. Many studies utilize or build on Barkley's Defiant Children program.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|--------------|---------------------------------|-------|
| Taxpayers | \$101 | Benefit to cost ratio | n/a |
| Participants | \$159 | Benefits minus costs | \$552 |
| Others | \$110 | Chance the program will produce | |
| Indirect | \$70 | benefits greater than the costs | 91 % |
| Total benefits | \$439 | | |
| Net program cost | \$113 | | |
| Benefits minus cost | \$552 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|--------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$6 | \$14 | \$3 | \$22 |
| Labor market earnings associated with high school graduation | \$164 | \$74 | \$75 | \$0 | \$313 |
| K-12 grade repetition | \$0 | \$1 | \$0 | \$1 | \$2 |
| K-12 special education | \$0 | \$8 | \$0 | \$4 | \$12 |
| Health care associated with disruptive behavior disorder | \$6 | \$20 | \$25 | \$10 | \$61 |
| Costs of higher education | (\$12) | (\$8) | (\$3) | (\$4) | (\$26) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$56 | \$56 |
| Totals | \$159 | \$101 | \$110 | \$70 | \$439 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

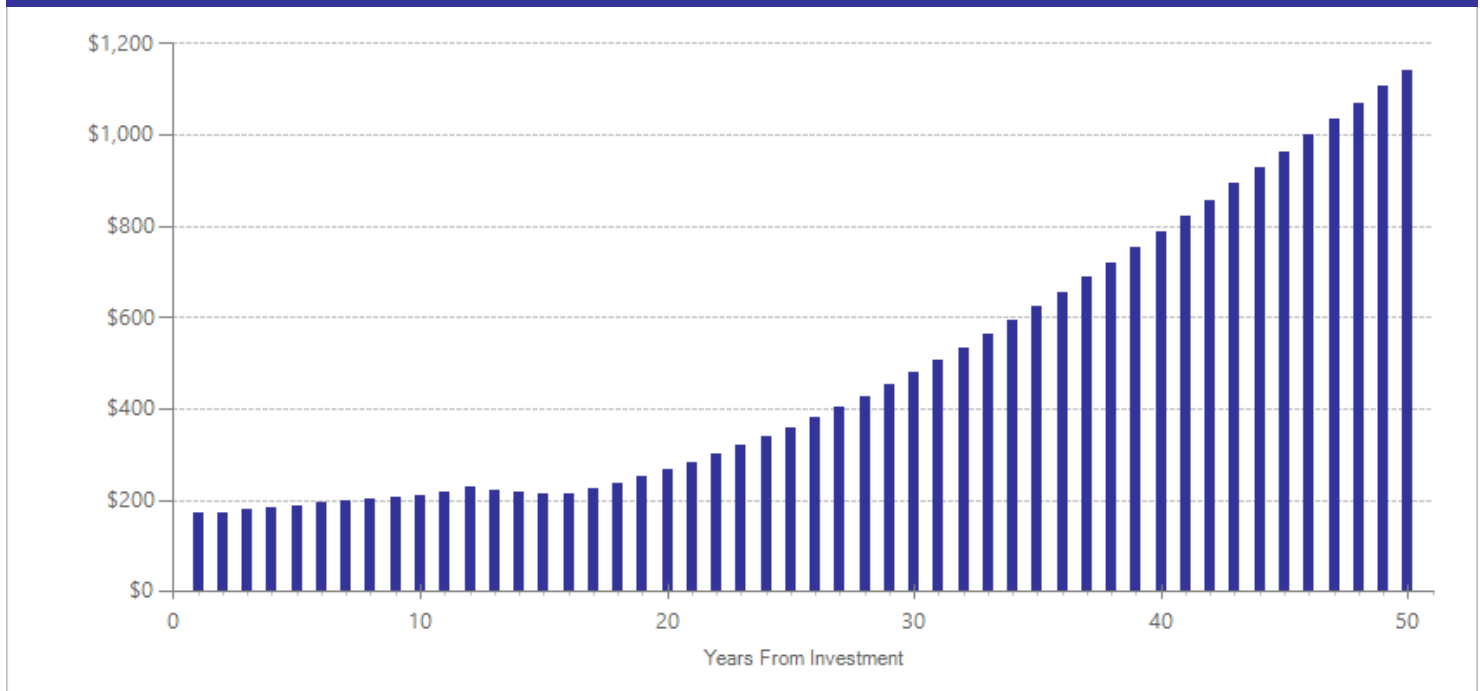
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$846 | 2010 | Present value of net program costs (in 2016 dollars) | \$113 |
| Comparison costs | \$950 | 2010 | Cost range (+ or -) | 10 % |

We estimated per-participant cost of treatment based on average therapist time, as reported in the treatment studies. Hourly therapist cost is based on the actuarial estimates of reimbursement by modality (Mercer. (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*). Comparison cost is based on the average reimbursement for treatment of child ADHD.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | 6 | 7 | 277 | -0.233 | 0.097 | 7 | -0.001 | 0.012 | 8 | -0.465 | 0.001 |
| Disruptive behavior disorder symptoms | 6 | 4 | 184 | -0.119 | 0.118 | 7 | -0.057 | 0.066 | 10 | -0.232 | 0.305 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Cognitive behavioral therapy (CBT) for children with ADHD

Children's Mental Health: Attention Deficit Hyperactivity Disorder

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Cognitive training and cognitive-behavioral therapies are included in this program grouping. Both target problem-solving in order to reduce impulsive behavior; specific strategies include self-monitoring, modeling/role playing, self-instruction, generation of alternatives, and reinforcement.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|------------------|---------------------------------|-----------|
| Taxpayers | (\$146) | Benefit to cost ratio | (\$1.01) |
| Participants | (\$216) | Benefits minus costs | (\$2,108) |
| Others | (\$151) | Chance the program will produce | |
| Indirect | (\$547) | benefits greater than the costs | 8 % |
| <u>Total benefits</u> | <u>(\$1,059)</u> | | |
| <u>Net program cost</u> | <u>(\$1,049)</u> | | |
| Benefits minus cost | (\$2,108) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|----------------|---------------------|-----------------------|------------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | (\$8) | (\$19) | (\$4) | (\$31) |
| Labor market earnings associated with high school graduation | (\$224) | (\$102) | (\$103) | \$0 | (\$429) |
| K-12 grade repetition | \$0 | (\$1) | \$0 | (\$1) | (\$2) |
| K-12 special education | \$0 | (\$19) | \$0 | (\$10) | (\$28) |
| Health care associated with disruptive behavior disorder | (\$9) | (\$27) | (\$33) | (\$13) | (\$82) |
| Costs of higher education | \$17 | \$11 | \$5 | \$6 | \$38 |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$525) | (\$525) |
| <u>Totals</u> | <u>(\$216)</u> | <u>(\$146)</u> | <u>(\$151)</u> | <u>(\$547)</u> | <u>(\$1,059)</u> |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

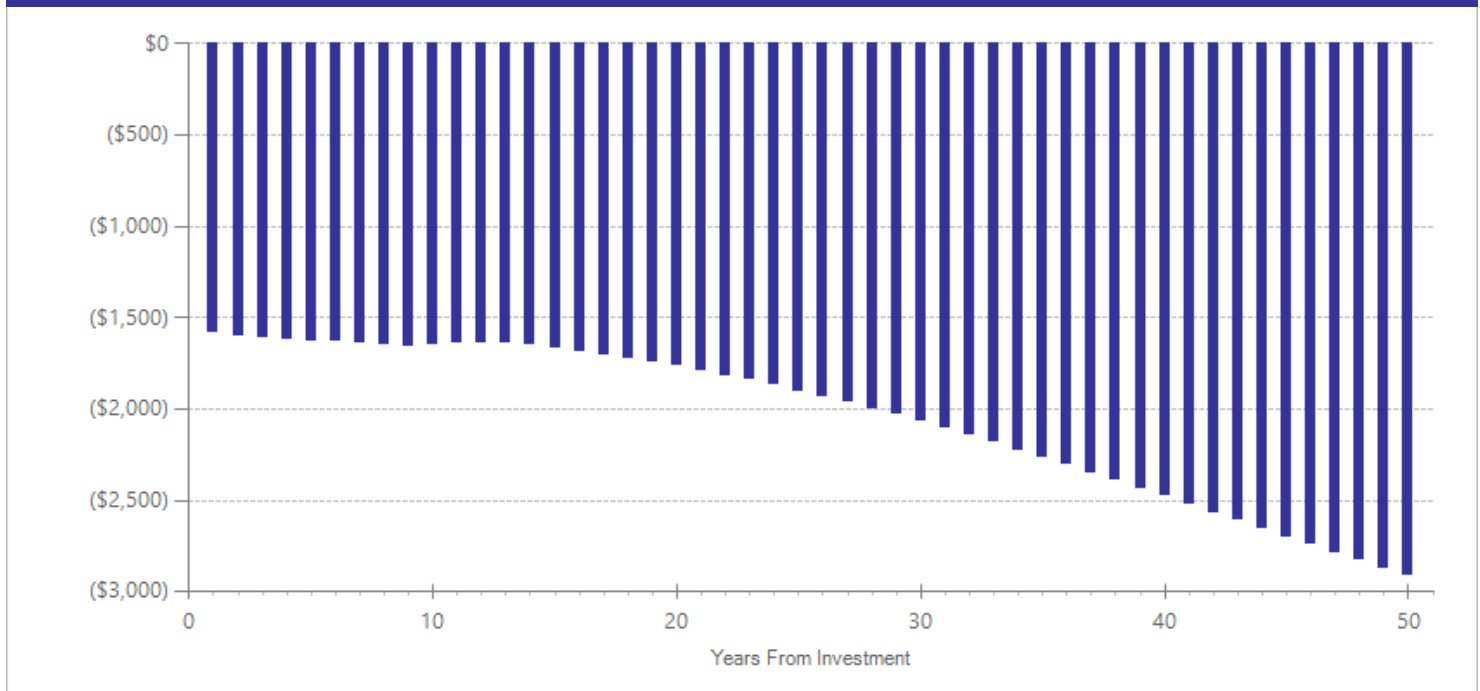
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$1,913 | 2010 | Present value of net program costs (in 2016 dollars) | (\$1,049) |
| Comparison costs | \$950 | 2010 | Cost range (+ or -) | 10 % |

We estimated per-participant cost of treatment based on average therapist time, as reported in the treatment studies. Hourly therapist cost is based on the actuarial estimates of reimbursement by modality (Mercer. (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*). Comparison cost is based on the average DSHS reimbursement for treatment of child ADHD.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | 9 | 7 | 96 | 0.015 | 0.152 | 10 | 0.000 | 0.008 | 11 | 0.040 | 0.791 |
| Disruptive behavior disorder symptoms | 9 | 2 | 42 | 0.148 | 0.362 | 10 | 0.071 | 0.189 | 12 | 0.148 | 0.682 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

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WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Multimodal Therapy (MMT) for children with ADHD

Children's Mental Health: Attention Deficit Hyperactivity Disorder

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: These treatments target more than one dimension with psychosocial interventions. For instance, many therapies provide behavioral training to parents, school consultations with teachers, and self-control training with children. In this analysis, all studies utilized either behavioral or cognitive-behavioral orientations.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|------------------|---------------------------------|-----------|
| Taxpayers | \$2,698 | Benefit to cost ratio | \$0.66 |
| Participants | \$662 | Benefits minus costs | (\$2,988) |
| Others | \$5,853 | Chance the program will produce | |
| Indirect | (\$3,309) | benefits greater than the costs | 42 % |
| Total benefits | \$5,904 | | |
| Net program cost | (\$8,892) | | |
| Benefits minus cost | (\$2,988) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|----------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$2,417 | \$5,477 | \$1,208 | \$9,102 |
| Labor market earnings associated with test scores | \$999 | \$454 | \$436 | \$0 | \$1,889 |
| K-12 grade repetition | \$0 | \$2 | \$0 | \$1 | \$3 |
| K-12 special education | \$0 | \$20 | \$0 | \$10 | \$30 |
| Health care associated with disruptive behavior disorder | \$12 | \$36 | \$45 | \$18 | \$111 |
| Costs of higher education | (\$349) | (\$232) | (\$104) | (\$116) | (\$801) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$4,430) | (\$4,430) |
| Totals | \$662 | \$2,698 | \$5,853 | (\$3,309) | \$5,904 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

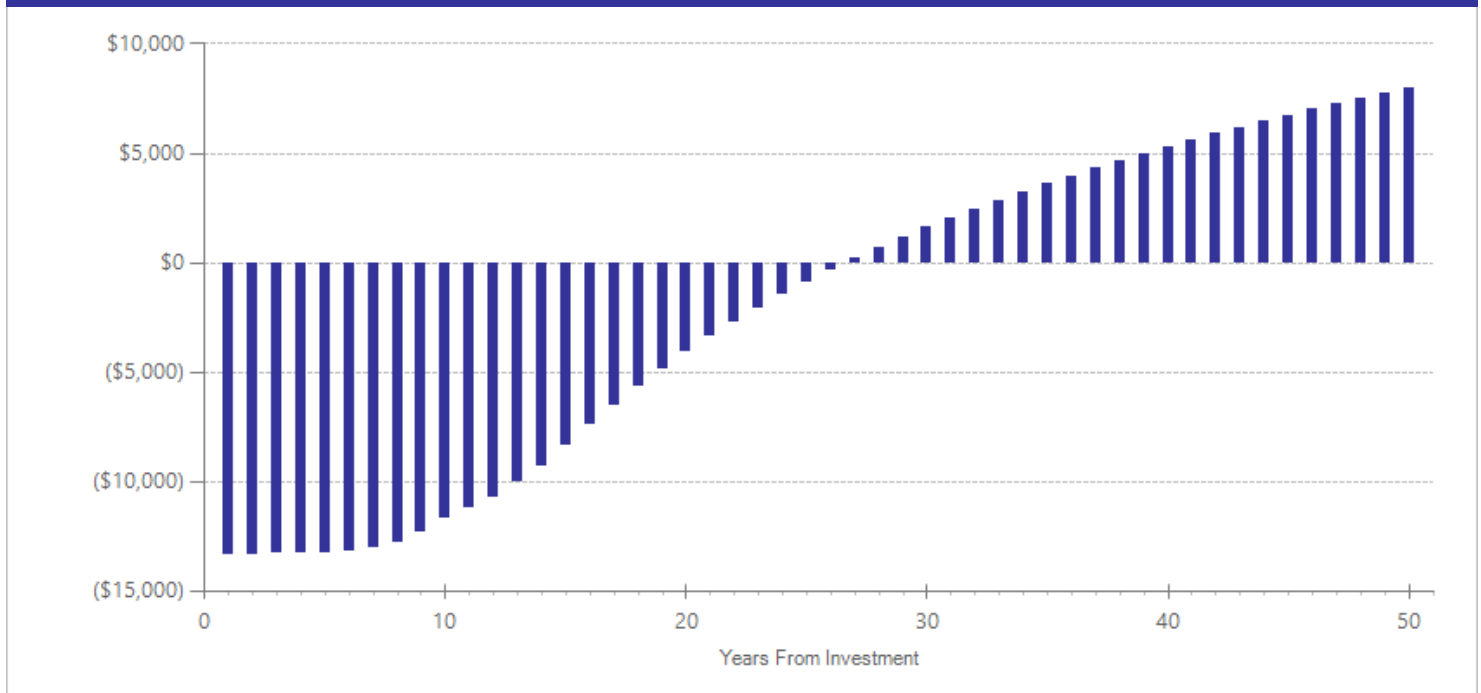
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$9,120 | 2010 | Present value of net program costs (in 2016 dollars) | (\$8,892) |
| Comparison costs | \$950 | 2010 | Cost range (+ or -) | 20 % |

Per-participant costs are based on the average cost of intensive behavioral treatment reported in Jensen et al., (2005). Cost-effectiveness of ADHD treatments: findings from the Multimodal Treatment Study of children with ADHD. *American Journal of Psychiatry* 162, 1628–1636. Comparison costs are based on the average DSHS reimbursement for treatment of child ADHD.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | 8 | 9 | 453 | -0.079 | 0.079 | 9 | 0.000 | 0.005 | 10 | -0.186 | 0.125 |
| Crime | 8 | 1 | 81 | -0.430 | 0.230 | 16 | -0.430 | 0.230 | 26 | -0.430 | 0.062 |
| Disruptive behavior disorder symptoms | 8 | 7 | 362 | -0.229 | 0.096 | 9 | -0.109 | 0.068 | 12 | -0.341 | 0.007 |
| Global functioning [^] | 8 | 1 | 30 | 0.141 | 0.256 | 9 | 0.000 | 0.011 | 10 | 0.151 | 0.582 |
| Test scores | 8 | 5 | 324 | 0.023 | 0.079 | 9 | 0.014 | 0.087 | 17 | 0.023 | 0.774 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Blues Program

Children's Mental Health: Depression

Benefit-cost estimates updated December 2017. Literature review updated May 2015.

Program Description: This prevention program targets high school and college students with depressive symptoms who do not have major depression. The program consists of six weekly one-hour group sessions and home practice assignments. Sessions focus on engaging in pleasant activities, cognitive restructuring techniques, and response plans for future life stressors.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|----------------|---------------------------------|----------|
| Taxpayers | \$11 | Benefit to cost ratio | (\$0.24) |
| Participants | \$1 | Benefits minus costs | (\$144) |
| Others | \$12 | Chance the program will produce | |
| Indirect | (\$52) | benefits greater than the costs | 41 % |
| <u>Total benefits</u> | <u>(\$28)</u> | | |
| <u>Net program cost</u> | <u>(\$116)</u> | | |
| Benefits minus cost | (\$144) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|-------------|---------------------|-----------------------|---------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| K-12 grade repetition | \$0 | \$3 | \$0 | \$1 | \$4 |
| Labor market earnings associated with major depression | \$6 | \$3 | \$0 | \$2 | \$10 |
| Health care associated with major depression | \$4 | \$12 | \$14 | \$6 | \$35 |
| Costs of higher education | (\$8) | (\$6) | (\$3) | (\$3) | (\$19) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$58) | (\$58) |
| <u>Totals</u> | <u>\$1</u> | <u>\$11</u> | <u>\$12</u> | <u>(\$52)</u> | <u>(\$28)</u> |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

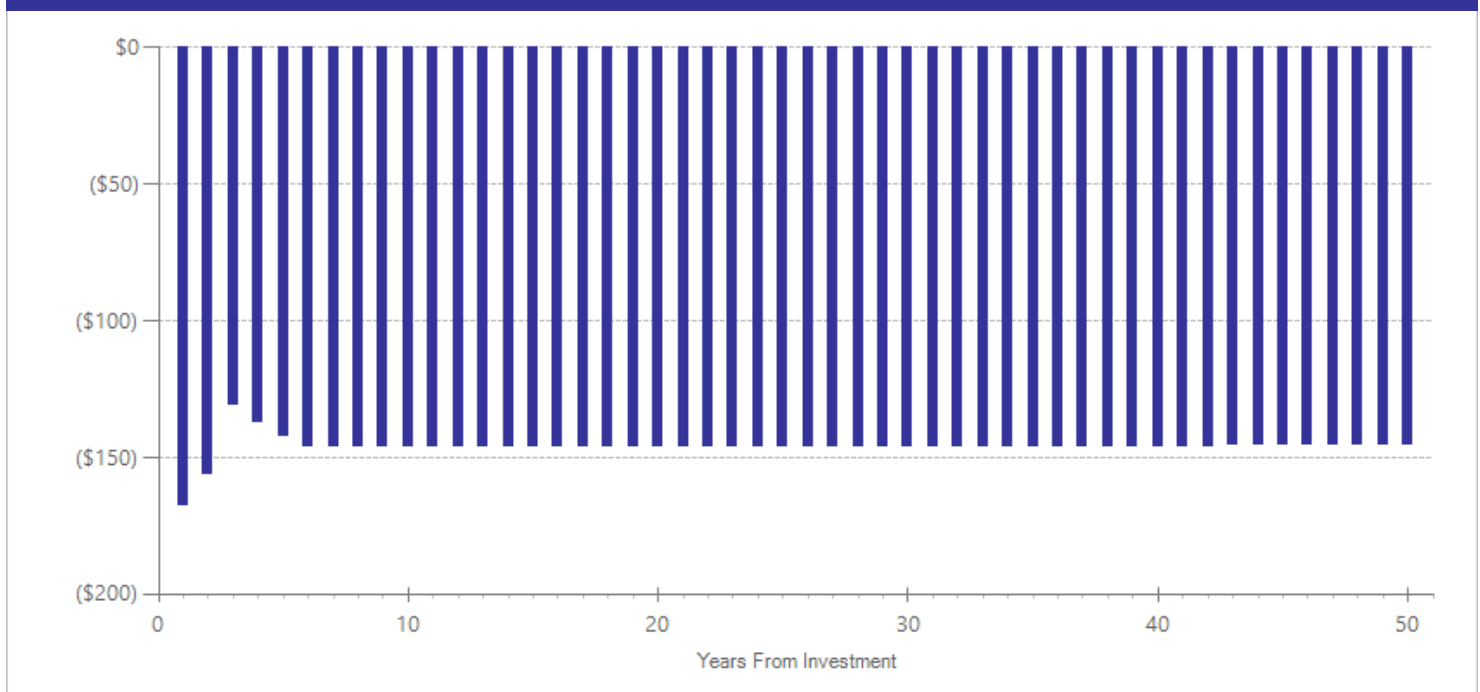
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$114 | 2014 | Present value of net program costs (in 2016 dollars) | (\$116) |
| Comparison costs | \$0 | 2014 | Cost range (+ or -) | 10 % |

The Blues Program typically consists of six 1-hour group sessions. In the studies we reviewed, there was an average of 6.85 students per group with an average of 73 students served by each teaching team. The program was team-taught by either a graduate student and undergraduate assistant or two school personnel (typically a school counselor or school nurse). We used the average salary and benefits for a certified school counselor and certified school nurse in the 2014-2015 school year (<http://www.k12.wa.us/safs/PUB/PER/1415/ps.asp>) as the cost for staff time. Program leaders received an average of ten hours of training.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Major depressive disorder | 16 | 4 | 292 | -0.201 | 0.125 | 18 | 0.000 | 0.019 | 19 | -0.313 | 0.015 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Cognitive behavioral therapy (CBT) for children & adolescents with depression

Children's Mental Health: Depression

Benefit-cost estimates updated December 2017. Literature review updated August 2017.

Program Description: Cognitive behavioral therapies (CBT) include various components, such as cognitive restructuring, scheduling pleasant experiences, emotion regulation, communication skills, and problem-solving. In this review, CBT is provided to children and adolescents aged 7 to 17 with major or minor depression, dysthymia, or subthreshold depression. We include programs such as Coping With Depression – Adolescent (CWD-A), Primary and Secondary Control Enhancement Training (PASCET), the Treatment for Adolescents with Depression (TADS) Study, and other CBT models. On average, treatments in this review provided 14 therapeutic hours per client over three months, with a range of 6 to 28 therapeutic hours per client. Therapies were provided in both individual and group modalities.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|----------------|---------------------------------|----------|
| Taxpayers | \$36 | Benefit to cost ratio | (\$0.27) |
| Participants | \$7 | Benefits minus costs | (\$566) |
| Others | \$37 | Chance the program will produce | |
| Indirect | (\$201) | benefits greater than the costs | 31 % |
| <u>Total benefits</u> | <u>(\$122)</u> | | |
| <u>Net program cost</u> | <u>(\$444)</u> | | |
| Benefits minus cost | (\$566) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|-------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$3 | \$7 | \$1 | \$11 |
| K-12 grade repetition | \$0 | \$1 | \$0 | \$0 | \$1 |
| K-12 special education | \$0 | \$9 | \$0 | \$5 | \$14 |
| Labor market earnings associated with major depression | \$5 | \$2 | \$0 | \$4 | \$11 |
| Health care associated with major depression | \$8 | \$25 | \$31 | \$13 | \$77 |
| Costs of higher education | (\$6) | (\$4) | (\$2) | (\$2) | (\$14) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$222) | (\$222) |
| <u>Totals</u> | <u>\$7</u> | <u>\$36</u> | <u>\$37</u> | <u>(\$201)</u> | <u>(\$122)</u> |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

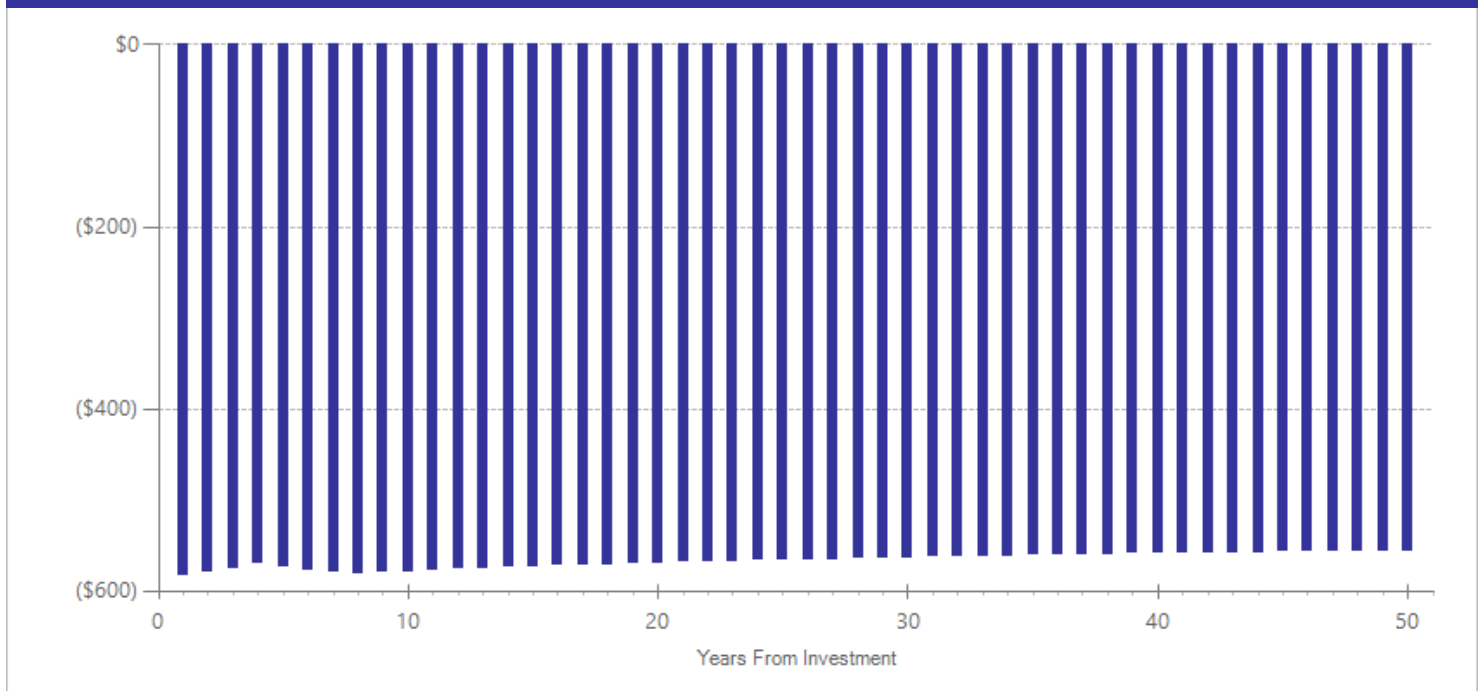
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$1,245 | 2015 | Present value of net program costs (in 2016 dollars) | (\$444) |
| Comparison costs | \$806 | 2015 | Cost range (+ or -) | 15 % |

On average, participants received 14 therapeutic hours. The per-participant cost of treatment by modality (individual or group) was weighted by the treatment Ns reported in the studies. Cost per session is \$44.02/session for group and \$140.90/session for individual modalities (2015 dollars). This rate is based on actuarial tables reported in Mercer (2016) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2017. Comparison group costs are based on the average cost of psychotherapy treatment as usual for children and adolescents with depression, based on a WSIPP analysis.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Anxiety disorder ^{^^} | 14 | 4 | 55 | -0.222 | 0.243 | 14 | -0.102 | 0.117 | 15 | -0.365 | 0.136 |
| Disruptive behavior disorder symptoms | 14 | 2 | 140 | -0.049 | 0.125 | 14 | -0.023 | 0.066 | 17 | -0.077 | 0.539 |
| Externalizing behavior symptoms | 14 | 4 | 208 | -0.005 | 0.101 | 14 | -0.002 | 0.052 | 17 | 0.031 | 0.760 |
| Global functioning [^] | 14 | 6 | 357 | 0.147 | 0.094 | 14 | n/a | n/a | n/a | 0.192 | 0.078 |
| Hospitalization (psychiatric) ^{^^} | 14 | 1 | 41 | -0.091 | 0.214 | 14 | 0.000 | 0.118 | 15 | -0.143 | 0.504 |
| Internalizing symptoms ^{^^} | 14 | 5 | 183 | 0.081 | 0.109 | 14 | 0.059 | 0.088 | 16 | 0.104 | 0.341 |
| Major depressive disorder | 14 | 18 | 564 | -0.284 | 0.078 | 14 | 0.000 | 0.024 | 15 | -0.484 | 0.001 |
| Specialist visits [^] | 14 | 1 | 41 | -0.086 | 0.214 | 14 | n/a | n/a | n/a | -0.135 | 0.529 |
| Suicidal ideation [^] | 14 | 3 | 252 | -0.244 | 0.093 | 14 | n/a | n/a | n/a | -0.302 | 0.001 |
| Suicide attempts [^] | 14 | 1 | 41 | 0.000 | 0.232 | 14 | n/a | n/a | n/a | 0.000 | 1.000 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

^{^^}WSIPP does not include this outcome when conducting benefit-cost analysis for this program.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

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Citations Used in the Meta-Analysis

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Acceptance and Commitment Therapy (ACT) for children with depression

Children's Mental Health: Depression

Benefit-cost estimates updated December 2017. Literature review updated August 2017.

Program Description: Acceptance and Commitment Therapy (ACT) for depression aims to increase client acceptance of negative thoughts and feelings and to reduce the negative behavioral impact of depression. Acceptance and Commitment Therapy relies on six core processes of change: 1) acceptance; 2) learning to view thoughts as hypotheses rather than facts, 3) being present, 4) viewing the self as context for experience, 5) identifying core values, and 6) acting based on those values. These core principles are applied through various exercises and through homework. In the two studies included in this analysis, ACT was delivered either in 10 group or 20 individual sessions.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|----------------|---------------------------------|----------|
| Taxpayers | \$30 | Benefit to cost ratio | (\$0.26) |
| Participants | \$19 | Benefits minus costs | (\$755) |
| Others | \$31 | Chance the program will produce | |
| Indirect | (\$237) | benefits greater than the costs | 31 % |
| <u>Total benefits</u> | <u>(\$157)</u> | | |
| <u>Net program cost</u> | <u>(\$598)</u> | | |
| Benefits minus cost | (\$755) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|-------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| K-12 grade repetition | \$0 | \$0 | \$0 | \$0 | \$0 |
| Labor market earnings associated with major depression | \$10 | \$5 | \$0 | \$49 | \$64 |
| Health care associated with major depression | \$8 | \$25 | \$31 | \$13 | \$78 |
| Costs of higher education | \$0 | \$0 | \$0 | \$0 | \$0 |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$300) | (\$300) |
| Totals | \$19 | \$30 | \$31 | (\$237) | (\$157) |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

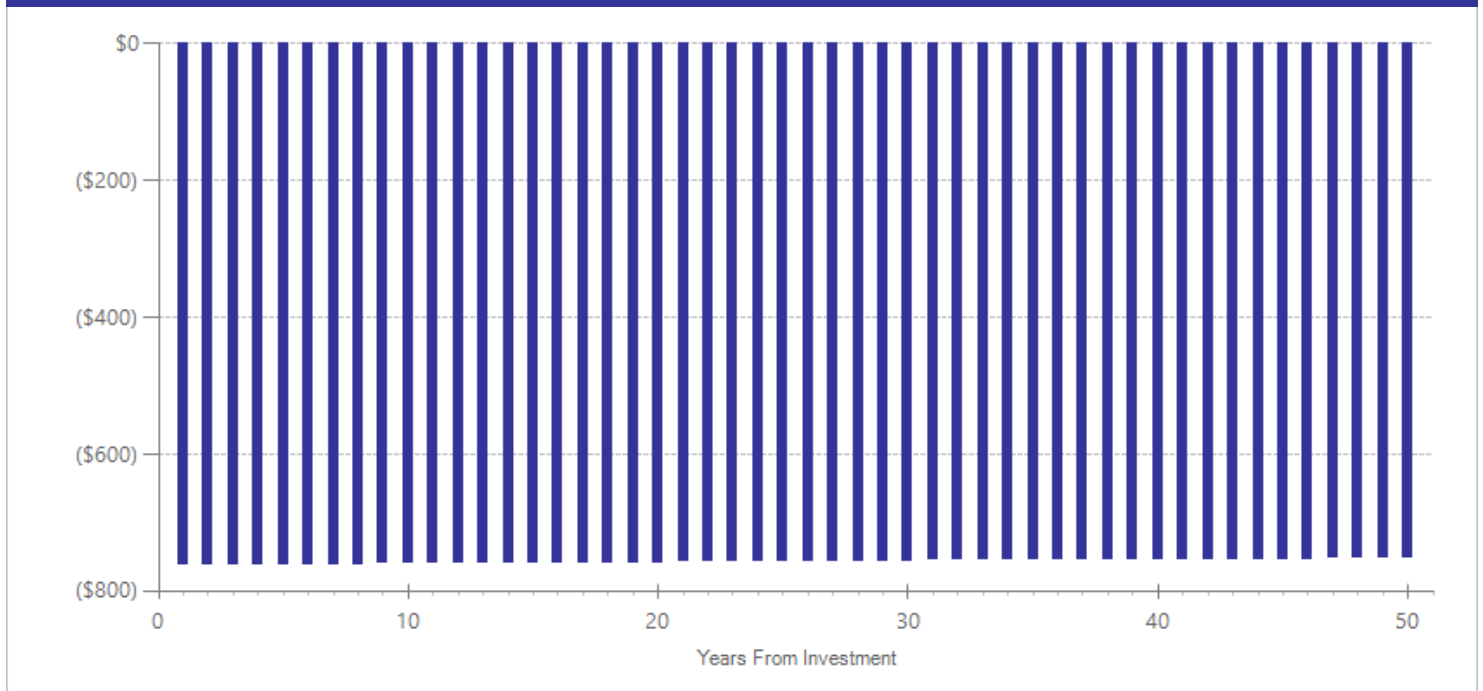
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$1,417 | 2016 | Present value of net program costs (in 2016 dollars) | (\$598) |
| Comparison costs | \$753 | 2010 | Cost range (+ or -) | 15 % |

The therapy in this study included 10 group or 20 individual sessions. Per-participant costs are based on weighted average therapist time as reported in the studies, multiplied by DSHS reimbursement rates reported in Mercer (2015) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2016. Comparison costs are based on the average reimbursement for treatment of child depression.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Major depressive disorder | 15 | 2 | 46 | -0.281 | 0.232 | 15 | 0.000 | 0.030 | 16 | -0.438 | 0.061 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Hayes, L., Boyd, C. P., & Sewell, J. (2011). Acceptance and Commitment Therapy for the treatment of adolescent depression: A pilot study in a psychiatric outpatient setting. *Mindfulness, 2*(2), 86-94.
- Livheim, F., Hayes, L., Ghaderi, A., Magnusdottir, T., Hogfeldt, A., Rowse, J., . . . Tengstrom, A. (2015). The effectiveness of Acceptance and Commitment Therapy for adolescent mental health: Swedish and Australian pilot outcomes. *Journal of Child and Family Studies, 24*(4), 1016-1030.

Other behavioral parent training (BPT) for children with disruptive behavior disorders

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: In addition to several brand-name parenting programs, we grouped other brief treatments in which parents were taught behavior management skills and communication either alone or with their children (in a family format). In the studies included here, treatment duration ranged from two to six months, with weekly sessions.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$680 | Benefit to cost ratio | n/a |
| Participants | \$754 | Benefits minus costs | \$2,383 |
| Others | \$612 | Chance the program will produce | |
| Indirect | \$224 | benefits greater than the costs | 89 % |
| Total benefits | \$2,271 | | |
| Net program cost | \$112 | | |
| Benefits minus cost | \$2,383 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$30 | \$72 | \$15 | \$116 |
| Labor market earnings associated with high school graduation | \$753 | \$342 | \$346 | \$0 | \$1,440 |
| K-12 grade repetition | \$0 | \$5 | \$0 | \$2 | \$7 |
| K-12 special education | \$0 | \$169 | \$0 | \$84 | \$254 |
| Health care associated with disruptive behavior disorder | \$55 | \$170 | \$211 | \$85 | \$521 |
| Costs of higher education | (\$54) | (\$36) | (\$16) | (\$18) | (\$123) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$56 | \$56 |
| Totals | \$754 | \$680 | \$612 | \$224 | \$2,271 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

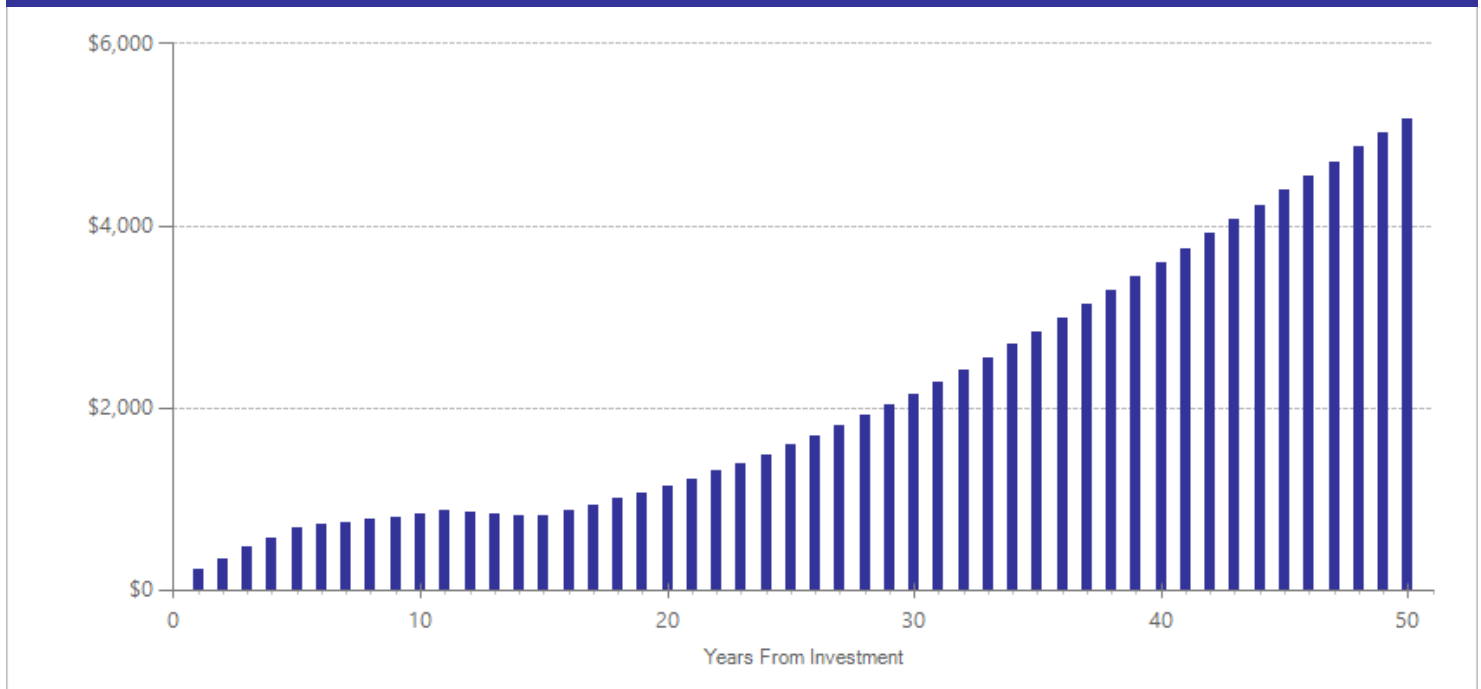
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$778 | 2010 | Present value of net program costs (in 2016 dollars) | \$112 |
| Comparison costs | \$881 | 2010 | Cost range (+ or -) | 10 % |

These interventions typically take place over a two- to six-month period. We estimated per-participant costs based on therapist time, as reported in the treatment studies. Hourly therapist cost was based on the latest actuarial estimates of reimbursement by modality in WA State (DSHS).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Disruptive behavior disorder symptoms | 7 | 7 | 136 | -0.186 | 0.139 | 8 | -0.089 | 0.081 | 11 | -0.746 | 0.001 |
| Internalizing symptoms | 7 | 2 | 62 | -0.123 | 0.205 | 8 | -0.090 | 0.164 | 10 | -0.442 | 0.033 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Triple-P Positive Parenting Program: Level 4, individual Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Triple P—Positive Parenting Program (Level 4, self-directed) is an intensive individual-based parenting program for families of children with challenging behavior problems. In the self-directed modality, parents receive a full Level 4 curriculum with a workbook and exercises to complete at their own pace. They are also offered support from a therapist by telephone on a regular basis.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$1,168 | Benefit to cost ratio | \$3.36 |
| Participants | \$1,255 | Benefits minus costs | \$2,339 |
| Others | \$1,098 | Chance the program will produce | |
| Indirect | (\$191) | benefits greater than the costs | 86 % |
| <u>Total benefits</u> | <u>\$3,331</u> | | |
| <u>Net program cost</u> | <u>(\$992)</u> | | |
| Benefits minus cost | \$2,339 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|----------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$50 | \$113 | \$25 | \$188 |
| Labor market earnings associated with high school graduation | \$1,221 | \$555 | \$559 | \$0 | \$2,335 |
| K-12 grade repetition | \$0 | \$7 | \$0 | \$4 | \$11 |
| K-12 special education | \$0 | \$249 | \$0 | \$125 | \$373 |
| Health care associated with disruptive behavior disorder | \$119 | \$364 | \$451 | \$182 | \$1,115 |
| Costs of higher education | (\$84) | (\$56) | (\$25) | (\$28) | (\$194) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$498) | (\$498) |
| Totals | \$1,255 | \$1,168 | \$1,098 | (\$191) | \$3,331 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

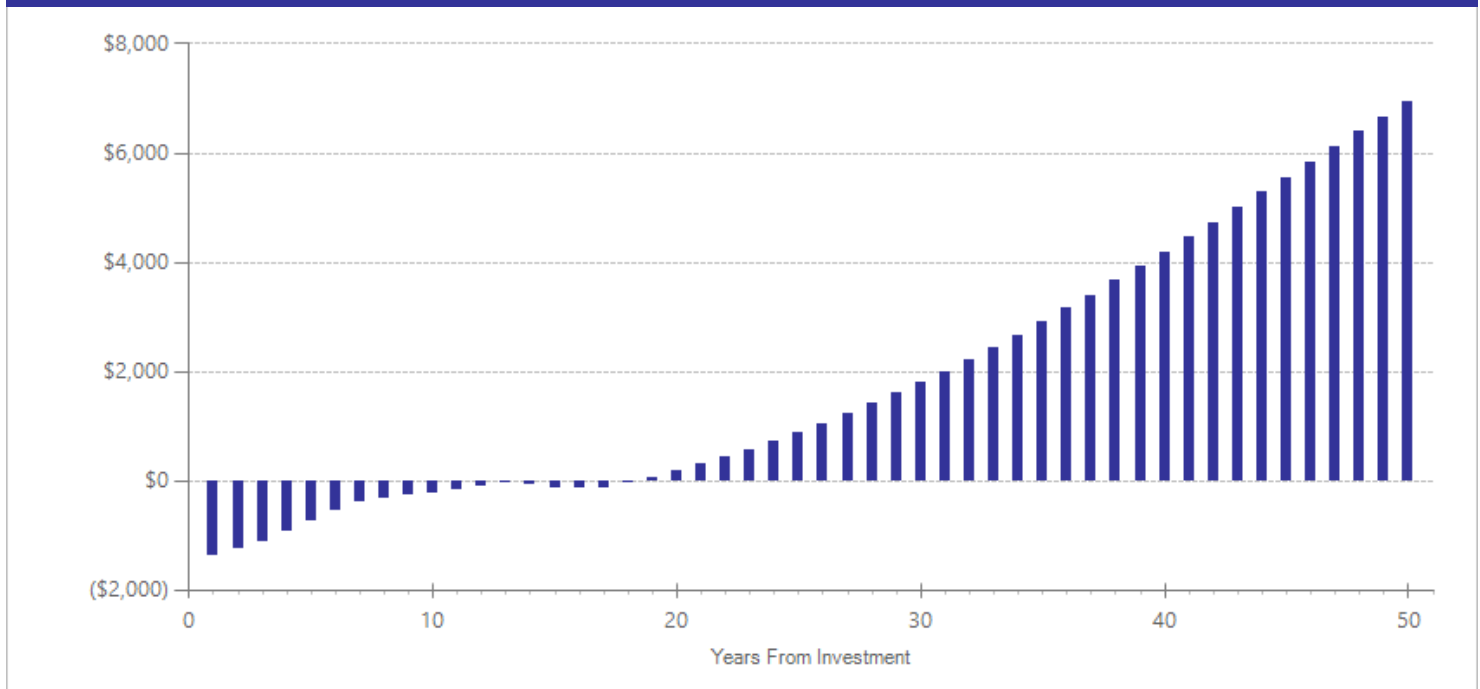
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$1,792 | 2010 | Present value of net program costs (in 2016 dollars) | (\$992) |
| Comparison costs | \$881 | 2010 | Cost range (+ or -) | 10 % |

Expenditures per family provided by Washington State DSHS Children's Administration, June 2011; based on 10-16 sessions of individual family behavioral training over three to four months.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Disruptive behavior disorder symptoms | 5 | 5 | 150 | -0.336 | 0.122 | 7 | -0.160 | 0.093 | 10 | -0.866 | 0.001 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Triple-P Positive Parenting Program: Level 4, group Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Triple P—Positive Parenting Program (Level 4, group) is an intensive class-based parenting program for families of children with more challenging behavior problems. The focus is learning skills and role-playing strategies to cope with and correct behavior problems.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$410 | Benefit to cost ratio | n/a |
| Participants | \$468 | Benefits minus costs | \$2,201 |
| Others | \$383 | Chance the program will produce | |
| Indirect | \$380 | benefits greater than the costs | 100 % |
| Total benefits | \$1,641 | | |
| Net program cost | \$560 | | |
| Benefits minus cost | \$2,201 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$19 | \$43 | \$9 | \$72 |
| Labor market earnings associated with high school graduation | \$464 | \$211 | \$211 | \$0 | \$886 |
| K-12 grade repetition | \$0 | \$3 | \$0 | \$1 | \$4 |
| K-12 special education | \$0 | \$87 | \$0 | \$44 | \$131 |
| Health care associated with disruptive behavior disorder | \$36 | \$112 | \$138 | \$56 | \$342 |
| Costs of higher education | (\$32) | (\$21) | (\$10) | (\$11) | (\$73) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$281 | \$281 |
| Totals | \$468 | \$410 | \$383 | \$380 | \$1,641 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

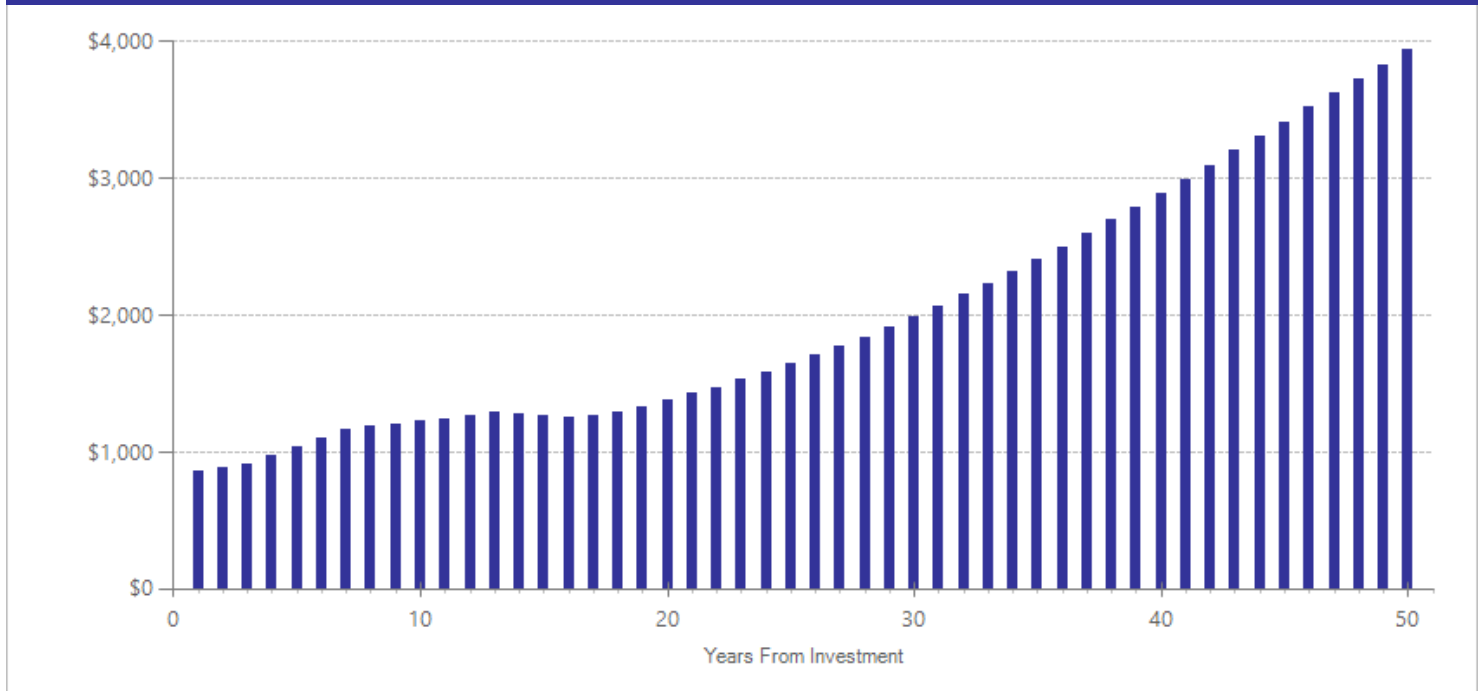
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$367 | 2010 | Present value of net program costs (in 2016 dollars) | \$560 |
| Comparison costs | \$881 | 2010 | Cost range (+ or -) | 20 % |

This program typically consists of 10-16 sessions over a period of three to four months. Per-family costs are based on current Washington expenditures per family for individual behavioral treatment with Triple P, under the assumption that with group training, eight families could receive training at the same time from the same therapist. We also added an estimated cost for venue rental (a cost that is unnecessary when conducting the program with individual families).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Disruptive behavior disorder symptoms | 5 | 8 | 1154 | -0.170 | 0.043 | 5 | -0.081 | 0.041 | 8 | -0.491 | 0.001 |
| Internalizing symptoms | 5 | 1 | 186 | -0.025 | 0.127 | 5 | -0.018 | 0.099 | 7 | -0.066 | 0.602 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Hahlweg, K., Heinrichs, N., Kuschel, A., Bertram, H., & Naumann, S. (2010). Long-term outcome of a randomized controlled universal prevention trial through a positive parenting program: Is it worth the effort? *Child and Adolescent Psychiatry and Mental Health, 4*, 14-27.
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Parent Child Interaction Therapy (PCIT) for children with disruptive behavior

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Parent Child Interaction Therapy (PCIT) is a program where a therapist directly observes a parent and child through a one-way mirror while providing direct coaching to the parent through a radio earphone. The focus is on building the skills of the parent to more positively interact with the child and manage his or her behavior. Therapists aim to ultimately restructure the parent-child relationship and provide the child with a more secure attachment to the parent.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|------------------|---------------------------------|---------|
| Taxpayers | \$1,154 | Benefit to cost ratio | \$2.21 |
| Participants | \$1,286 | Benefits minus costs | \$1,704 |
| Others | \$1,092 | Chance the program will produce | |
| Indirect | (\$414) | benefits greater than the costs | 78 % |
| Total benefits | \$3,118 | | |
| Net program cost | (\$1,414) | | |
| Benefits minus cost | \$1,704 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|----------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$51 | \$117 | \$25 | \$194 |
| Labor market earnings associated with high school graduation | \$1,261 | \$573 | \$576 | \$0 | \$2,410 |
| K-12 grade repetition | \$0 | \$8 | \$0 | \$4 | \$11 |
| K-12 special education | \$0 | \$238 | \$0 | \$118 | \$356 |
| Health care associated with disruptive behavior disorder | \$112 | \$343 | \$425 | \$171 | \$1,050 |
| Costs of higher education | (\$87) | (\$58) | (\$26) | (\$29) | (\$200) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$703) | (\$703) |
| Totals | \$1,286 | \$1,154 | \$1,092 | (\$414) | \$3,118 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

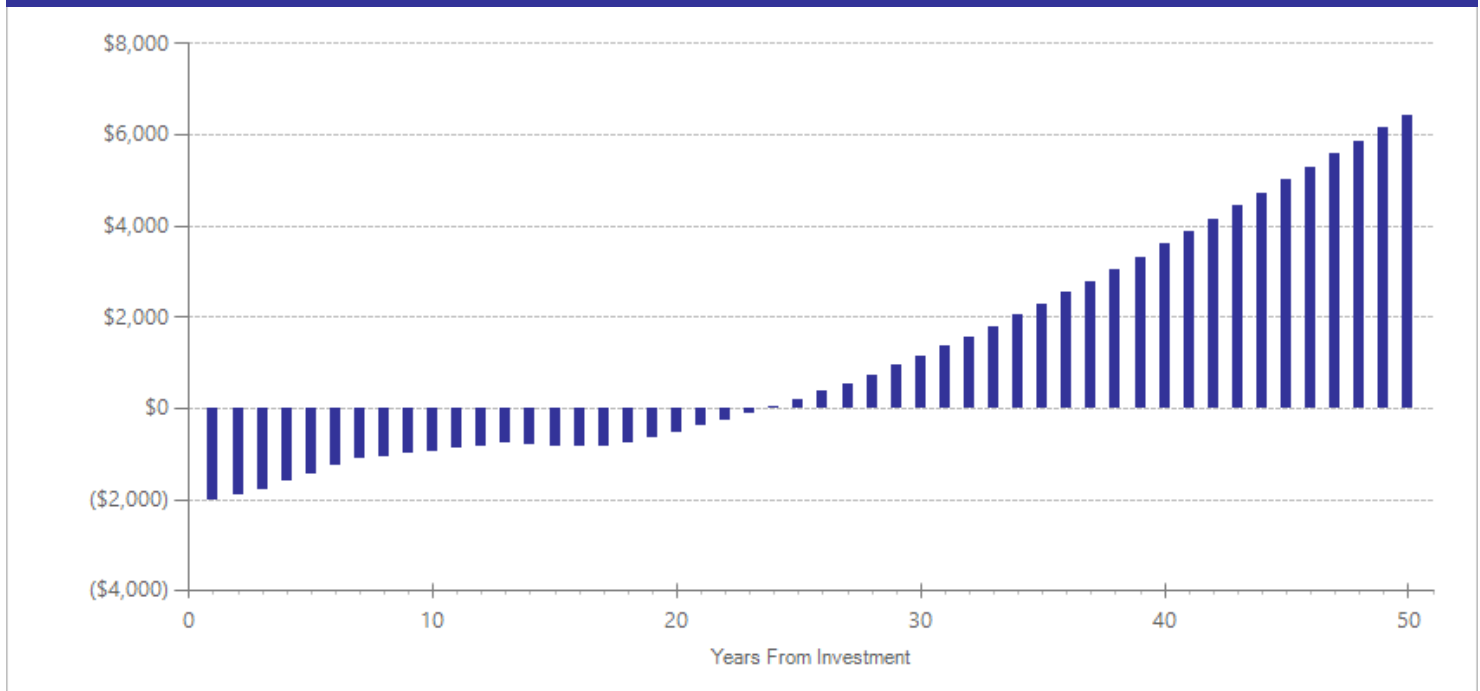
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$2,240 | 2007 | Present value of net program costs (in 2016 dollars) | (\$1,414) |
| Comparison costs | \$1,000 | 2007 | Cost range (+ or -) | 10 % |

This program is typically delivered over a three- to four-month period. Standard per-family PCIT expenditures provided by Washington State DSHS Children's Administration (average reimbursement rate for families receiving PCIT in Washington in 2007).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Primary or secondary participant | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | Primary | 5 | 4 | 87 | -0.273 | 0.175 | 6 | -0.001 | 0.016 | 7 | -0.720 | 0.001 |
| Disruptive behavior disorder symptoms | Primary | 5 | 10 | 213 | -0.392 | 0.102 | 6 | -0.187 | 0.095 | 9 | -1.045 | 0.001 |
| Parental stress [^] | Secondary | n/a | 5 | 145 | -0.860 | 0.129 | 31 | -0.447 | 0.158 | 32 | -0.860 | 0.001 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Parent Management Training—Oregon Model (treatment population)

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated May 2015.

Program Description: Parent Management Training—Oregon Model (PMTO) is a family-based program that focuses on teaching parents to apply five parenting practices: skill encouragement, appropriate discipline, monitoring, problem solving, and positive involvement. This analysis focuses on the use of PMTO in populations with emerging or identified conduct problems.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$698 | Benefit to cost ratio | \$2.77 |
| Participants | \$531 | Benefits minus costs | \$1,234 |
| Others | \$588 | Chance the program will produce | |
| Indirect | \$115 | benefits greater than the costs | 84 % |
| Total benefits | \$1,932 | | |
| Net program cost | (\$698) | | |
| Benefits minus cost | \$1,234 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$43 | \$105 | \$22 | \$169 |
| Labor market earnings associated with high school graduation | \$497 | \$226 | \$228 | \$228 | \$1,180 |
| K-12 grade repetition | \$0 | \$6 | \$0 | \$3 | \$8 |
| K-12 special education | \$0 | \$233 | \$0 | \$117 | \$350 |
| Health care associated with disruptive behavior disorder | \$70 | \$215 | \$266 | \$108 | \$658 |
| Costs of higher education | (\$37) | (\$24) | (\$11) | (\$12) | (\$84) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$350) | (\$350) |
| Totals | \$531 | \$698 | \$588 | \$115 | \$1,932 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

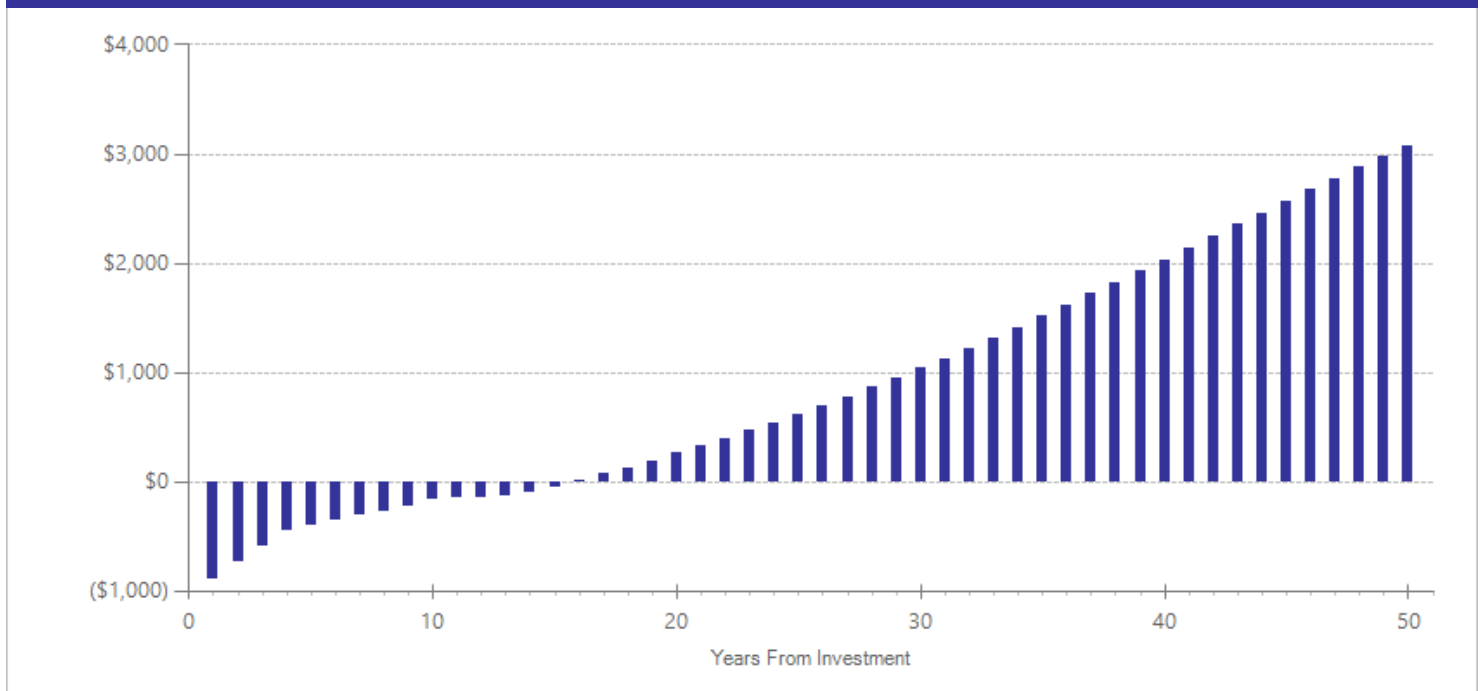
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$1,520 | 2011 | Present value of net program costs (in 2016 dollars) | (\$698) |
| Comparison costs | \$863 | 2011 | Cost range (+ or -) | 10 % |

This program was delivered in a group format and an individual family therapy format. An average of 14 staff hours were required to deliver the program to the families in the evaluations that we reviewed. The families in the comparison groups received an average of 7.95 staff hours. The type of provider varied widely depending on the delivery format and specific setting. We estimated the hourly staff costs from the reimbursement rates of therapeutic psychoeducation in the community for a non-disabled population, based on actuarial tables reported for disabled adults in Mercer. (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Externalizing behavior symptoms | 8 | 4 | 274 | -0.271 | 0.090 | 8 | -0.129 | 0.072 | 11 | -0.271 | 0.003 |
| Internalizing symptoms | 8 | 3 | 232 | -0.148 | 0.097 | 8 | -0.108 | 0.086 | 10 | -0.148 | 0.129 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Bank, L., Marlowe, J.H., Reid, J.B., Patterson, G.R., & Weinrott, M.R. (1991). A comparative evaluation of parent-training interventions for families of chronic delinquents. *Journal of Abnormal Child Psychology*, 19(1), 15-33.
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Collaborative primary care for children with behavior disorders

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated August 2017.

Program Description: Collaborative primary care for behavior disorders integrates behavioral health into the primary care setting to treat children and adolescents with oppositional defiance disorder, attention deficit/hyperactivity disorder, or other behavior disorders. In the collaborative care model, a care manager coordinates with a primary care provider and behavioral health care providers to develop and implement measurement-based treatment plans for individual patients. Care managers also provide psychoeducation and brief psychotherapy-based modules, such as cognitive behavioral therapy. Studies in this meta-analysis report on Doctor-Office Collaborative Care (DOCC), a specific collaborative care model. In the included studies, patients received collaborative care for six months. Patients in the comparison group received "enhanced" treatment as usual, which consisted of brief psychoeducation and referrals to usual mental health services.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$466 | Benefit to cost ratio | \$5.10 |
| Participants | \$541 | Benefits minus costs | \$1,127 |
| Others | \$422 | Chance the program will produce | |
| Indirect | (\$28) | benefits greater than the costs | 73 % |
| Total benefits | \$1,401 | | |
| Net program cost | (\$275) | | |
| Benefits minus cost | \$1,127 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$22 | \$53 | \$11 | \$85 |
| Labor market earnings associated with high school graduation | \$547 | \$248 | \$251 | \$0 | \$1,046 |
| K-12 grade repetition | \$0 | \$3 | \$0 | \$2 | \$5 |
| K-12 special education | \$0 | \$115 | \$0 | \$57 | \$172 |
| Health care associated with disruptive behavior disorder | \$34 | \$105 | \$130 | \$52 | \$322 |
| Costs of higher education | (\$40) | (\$27) | (\$12) | (\$13) | (\$92) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$137) | (\$137) |
| Totals | \$541 | \$466 | \$422 | (\$28) | \$1,401 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

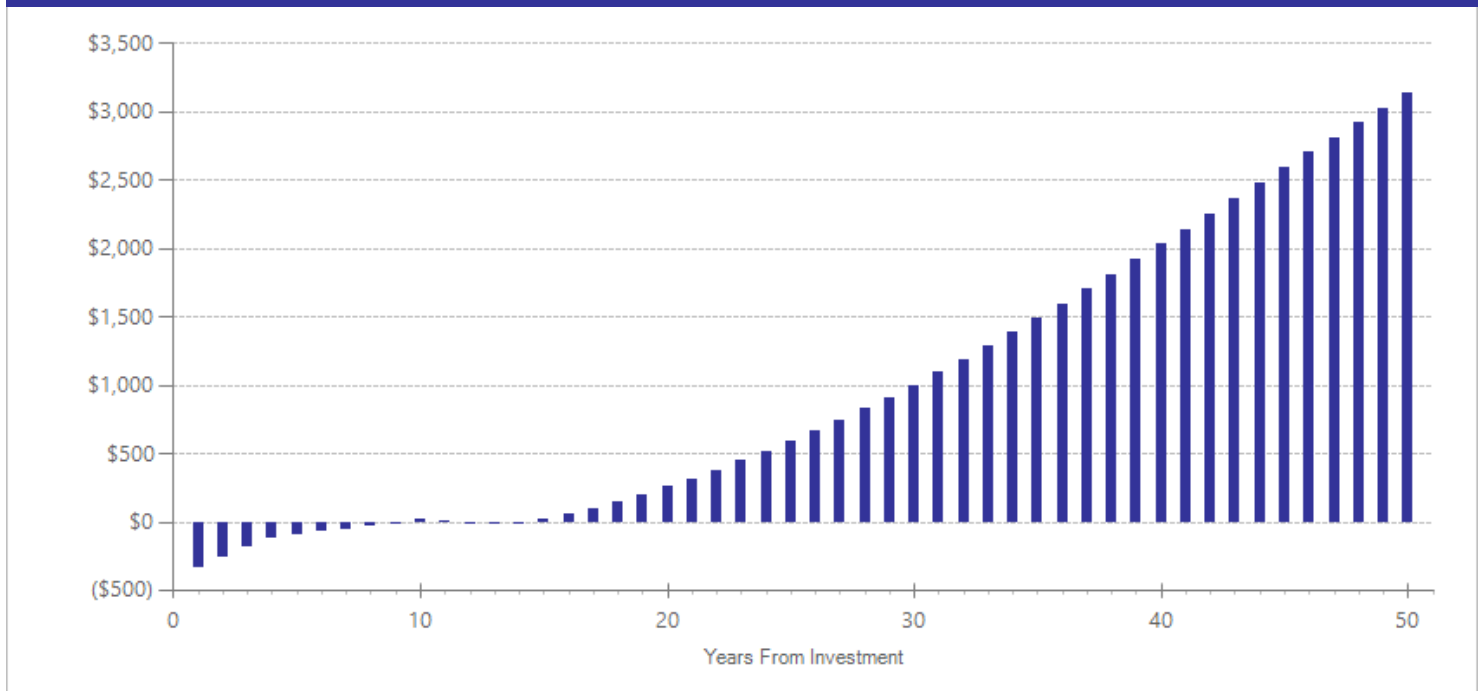
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$511 | 2010 | Present value of net program costs (in 2016 dollars) | (\$275) |
| Comparison costs | \$259 | 2010 | Cost range (+ or -) | 15 % |

Per-participant cost estimates are based on the average cost per child enrolled in the treatment group and average cost per child enrolled in the comparison group, as reported in Yu et al. (2017). These estimates include the costs of training, outreach, equipment, and provider salaries.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | 8 | 2 | 201 | -0.161 | 0.141 | 8 | 0.000 | 0.010 | 9 | -0.309 | 0.075 |
| Disruptive behavior disorder symptoms | 8 | 2 | 201 | -0.138 | 0.141 | 8 | -0.066 | 0.078 | 11 | -0.247 | 0.081 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

Kolko, D.J., Campo, J., Kilbourne, A.M., Hart, J., Sakolsky, D., & Wisniewski, S. (2014). Collaborative care outcomes for pediatric behavioral health problems: a cluster randomized trial. *Pediatrics*, *133*(4), 981-92.

Kolko, D.J., Campo, J.V., Kilbourne, A.M., & Kelleher, K. (2012). Doctor-office collaborative care for pediatric behavioral problems: a preliminary clinical trial. *Archives of Pediatrics & Adolescent Medicine*, *166*(3), 224-31.

Incredible Years: Parent training Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Incredible Years Parent Training (www.incredibleyears.com) is a group, skills-based behavioral intervention for parents of children with behavior problems. The curriculum focuses on strengthening parenting skills (monitoring, positive discipline, confidence) and fostering parents' involvement in children's school experiences in order to promote children's academic, social, and emotional competencies and reduce conduct problems. Training classes include child care, a family meal, and transportation.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|------------------|---------------------------------|---------|
| Taxpayers | \$934 | Benefit to cost ratio | \$1.79 |
| Participants | \$1,429 | Benefits minus costs | \$1,039 |
| Others | \$498 | Chance the program will produce | |
| Indirect | (\$500) | benefits greater than the costs | 55 % |
| <u>Total benefits</u> | <u>\$2,360</u> | | |
| <u>Net program cost</u> | <u>(\$1,321)</u> | | |
| Benefits minus cost | \$1,039 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|--------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$16 | \$37 | \$8 | \$62 |
| Labor market earnings associated with high school graduation | \$402 | \$183 | \$185 | \$0 | \$769 |
| K-12 grade repetition | \$0 | \$4 | \$0 | \$2 | \$6 |
| K-12 special education | \$0 | \$75 | \$0 | \$38 | \$113 |
| Health care associated with disruptive behavior disorder | \$34 | \$106 | \$131 | \$53 | \$324 |
| Costs of higher education | (\$28) | (\$19) | (\$8) | (\$9) | (\$64) |
| Subtotals | \$408 | \$365 | \$345 | \$92 | \$1,210 |
| From secondary participant | | | | | |
| Labor market earnings associated with major depression | \$980 | \$445 | \$0 | \$9 | \$1,434 |
| Health care associated with major depression | \$40 | \$124 | \$153 | \$62 | \$379 |
| Subtotals | \$1,021 | \$569 | \$153 | \$70 | \$1,813 |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$662) | (\$662) |
| Totals | \$1,429 | \$934 | \$498 | (\$500) | \$2,360 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

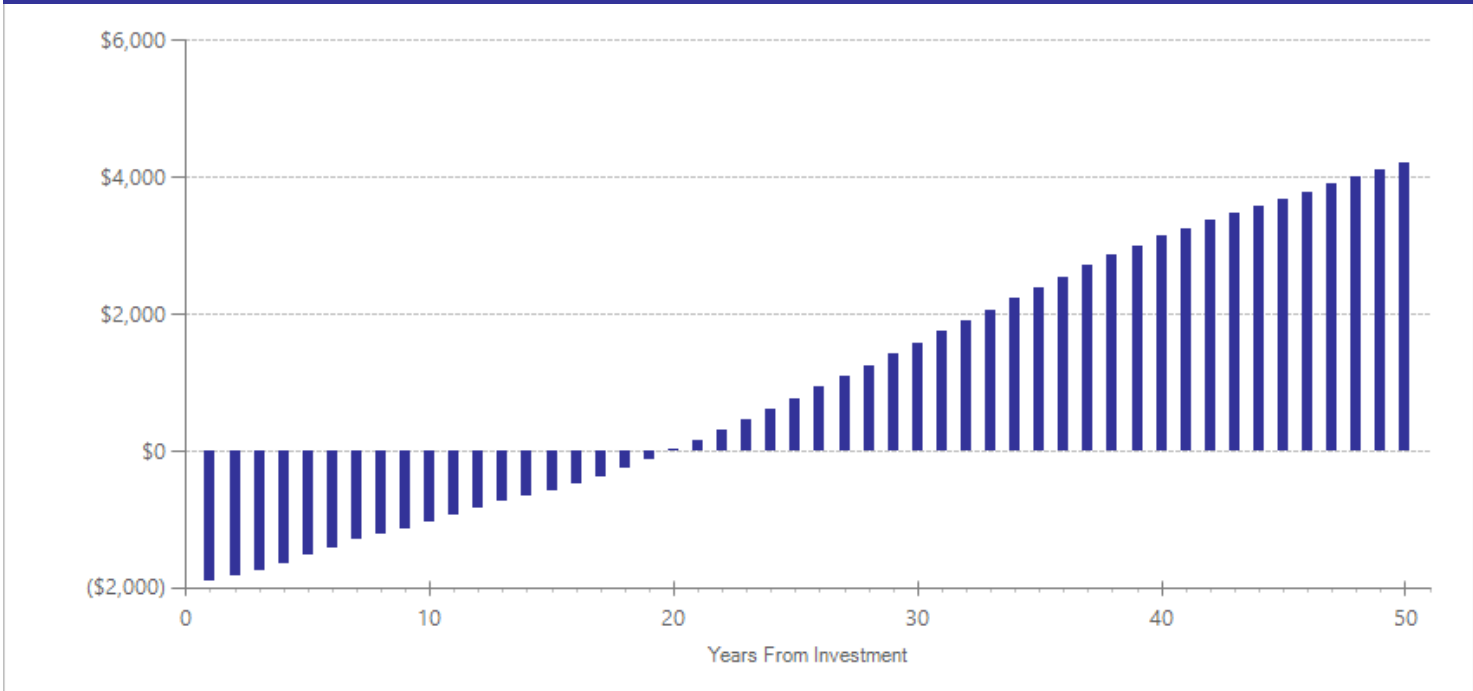
| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$2,215 | 2013 | Present value of net program costs (in 2016 dollars) | (\$1,321) |
| Comparison costs | \$881 | 2010 | Cost range (+ or -) | 10 % |

This intervention typically takes place over 12 to 16 weekly sessions. The costs to administer parent training classes per family were provided by Washington State DSHS Children’s Administration, 2012. WSIPP also added costs for practitioner training and curriculum for the parent classes, based on the findings of Foster et al., 2007 (training and curricula costs are low on a per-family basis, as curricula are shared between practitioners and distributed across many families who receive the intervention). Based on personal communication with Lisa St. George from Incredible Years (June 2014), we assumed that a practitioner team might use their purchased training and curricula to serve 24 families per year on average, for about five years (120 families served per team).

Foster, E.M., Olchowski, A.E., & Webster-Stratton, C.H. (2007). Is stacking intervention components cost-effective? An analysis of the Incredible Years program. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(11).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Primary or secondary participant | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | Primary | 5 | 1 | 50 | -0.220 | 0.234 | 6 | -0.001 | 0.015 | 7 | -0.595 | 0.013 |
| Disruptive behavior disorder symptoms | Primary | 5 | 17 | 1280 | -0.126 | 0.047 | 6 | -0.060 | 0.035 | 9 | -0.452 | 0.001 |
| Internalizing symptoms | Primary | 5 | 3 | 187 | -0.103 | 0.116 | 6 | -0.075 | 0.095 | 8 | -0.348 | 0.003 |
| Major depressive disorder | Secondary | 26 | 4 | 210 | -0.094 | 0.160 | 26 | -0.049 | 0.195 | 27 | -0.094 | 0.557 |
| Parental stress [^] | Secondary | 26 | 4 | 202 | -0.407 | 0.168 | 26 | -0.212 | 0.206 | 27 | -0.605 | 0.016 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

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Multimodal Therapy (MMT) for children with disruptive behavior

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: These treatments target more than one setting with psychosocial interventions. For instance, many therapies intervene with both parents and teachers. In this analysis, all studies utilized either behavioral or cognitive-behavioral orientations. Interventions included in our review varied in intensity (multiple times per day to biweekly) and duration (three to nine months).

Benefit-Cost Summary Statistics Per Participant

Benefits to:

| | | | |
|-------------------------|------------------|---------------------------------|--------|
| Taxpayers | \$761 | Benefit to cost ratio | \$1.70 |
| Participants | \$1,446 | Benefits minus costs | \$945 |
| Others | \$726 | Chance the program will produce | |
| Indirect | (\$629) | benefits greater than the costs | 51 % |
| <u>Total benefits</u> | <u>\$2,303</u> | | |
| <u>Net program cost</u> | <u>(\$1,358)</u> | | |
| Benefits minus cost | \$945 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:¹

Benefits to:

| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
|--|----------------|--------------|---------------------|-----------------------|----------------|
| Crime | \$0 | \$9 | \$21 | \$4 | \$34 |
| Labor market earnings associated with test scores | \$1,451 | \$659 | \$639 | \$0 | \$2,750 |
| K-12 grade repetition | \$0 | \$1 | \$0 | \$1 | \$2 |
| K-12 special education | \$0 | \$49 | \$0 | \$24 | \$74 |
| Health care associated with disruptive behavior disorder | \$19 | \$59 | \$73 | \$29 | \$180 |
| Costs of higher education | (\$25) | (\$17) | (\$8) | (\$7) | (\$57) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$680) | (\$680) |
| <u>Totals</u> | <u>\$1,446</u> | <u>\$761</u> | <u>\$726</u> | <u>(\$629)</u> | <u>\$2,303</u> |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

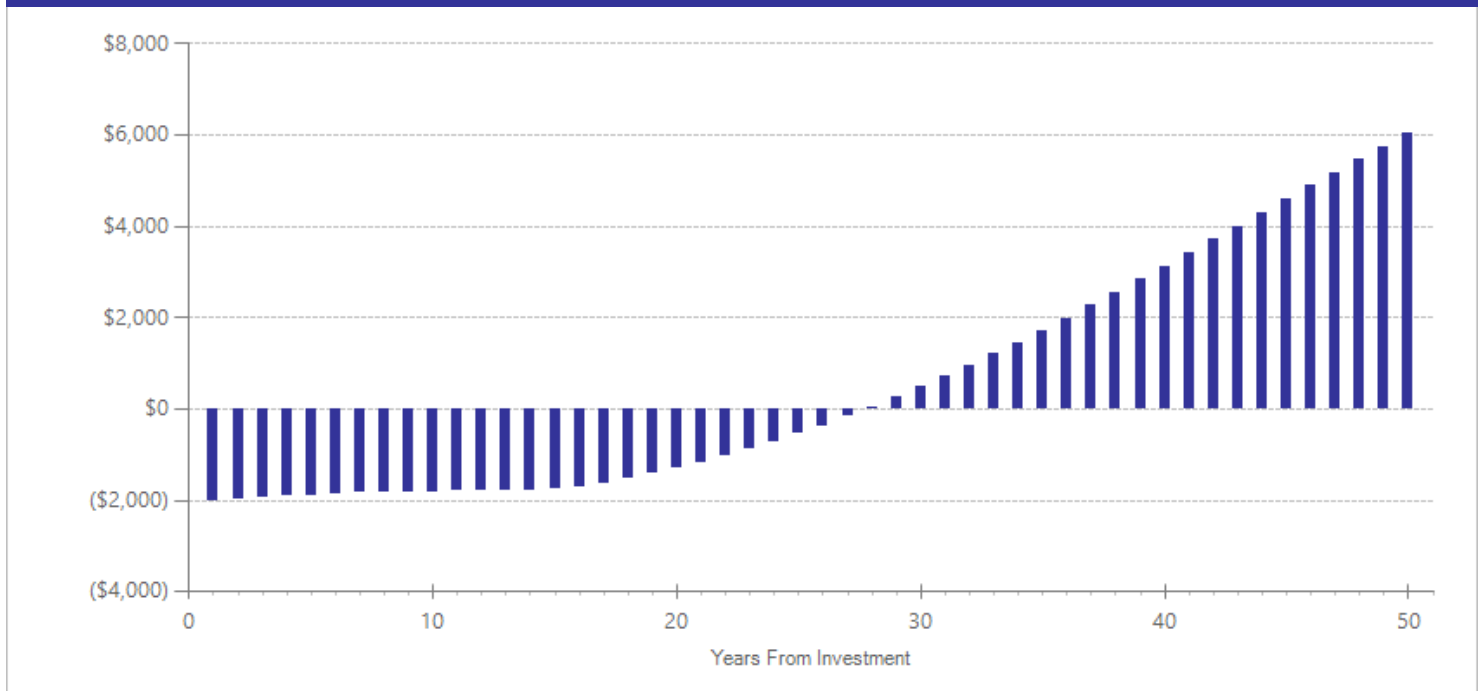
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$2,128 | 2010 | Present value of net program costs (in 2016 dollars) | (\$1,358) |
| Comparison costs | \$881 | 2010 | Cost range (+ or -) | 10 % |

These interventions vary in length, typically taking place over a three- to nine-month period. We estimated per-participant costs based on therapist time, as reported in the treatment studies. Hourly therapist cost was based on the actuarial estimates of reimbursement by modality Mercer, (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | 6 | 1 | 40 | -0.027 | 0.221 | 6 | 0.000 | 0.011 | 9 | -0.084 | 0.706 |
| Disruptive behavior disorder symptoms | 6 | 3 | 101 | -0.054 | 0.174 | 8 | -0.026 | 0.091 | 11 | -0.274 | 0.524 |
| Test scores | 6 | 1 | 40 | 0.047 | 0.221 | 6 | 0.019 | 0.243 | 17 | 0.073 | 0.742 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Helping the Noncompliant Child

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated June 2015.

Program Description: In this program, a therapist directly observes a parent and child through a one-way mirror, and provides direct coaching to the parent through a radio earphone. The program is delivered in two phases. The first phase focuses on “differential attention”, when parents are taught to describe the child’s appropriate behavior to the child rather than giving commands and to give rewards through positive physical attention and verbal praise. In the second phase, parents learn the importance of clear, simple instructions and to provide positive rewards for compliance and negative consequences for noncompliance.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|----------------|---------------------------------|--------|
| Taxpayers | \$574 | Benefit to cost ratio | \$2.23 |
| Participants | \$634 | Benefits minus costs | \$857 |
| Others | \$549 | Chance the program will produce | |
| Indirect | (\$203) | benefits greater than the costs | 65 % |
| <u>Total benefits</u> | <u>\$1,555</u> | | |
| <u>Net program cost</u> | <u>(\$698)</u> | | |
| Benefits minus cost | \$857 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$25 | \$57 | \$13 | \$95 |
| Labor market earnings associated with high school graduation | \$617 | \$280 | \$282 | \$0 | \$1,180 |
| K-12 grade repetition | \$0 | \$4 | \$0 | \$2 | \$5 |
| K-12 special education | \$0 | \$112 | \$0 | \$56 | \$168 |
| Health care associated with disruptive behavior disorder | \$59 | \$180 | \$223 | \$90 | \$552 |
| Costs of higher education | (\$42) | (\$28) | (\$12) | (\$14) | (\$96) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$350) | (\$350) |
| <u>Totals</u> | <u>\$634</u> | <u>\$574</u> | <u>\$549</u> | <u>(\$203)</u> | <u>\$1,555</u> |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²“Others” includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³“Indirect benefits” includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

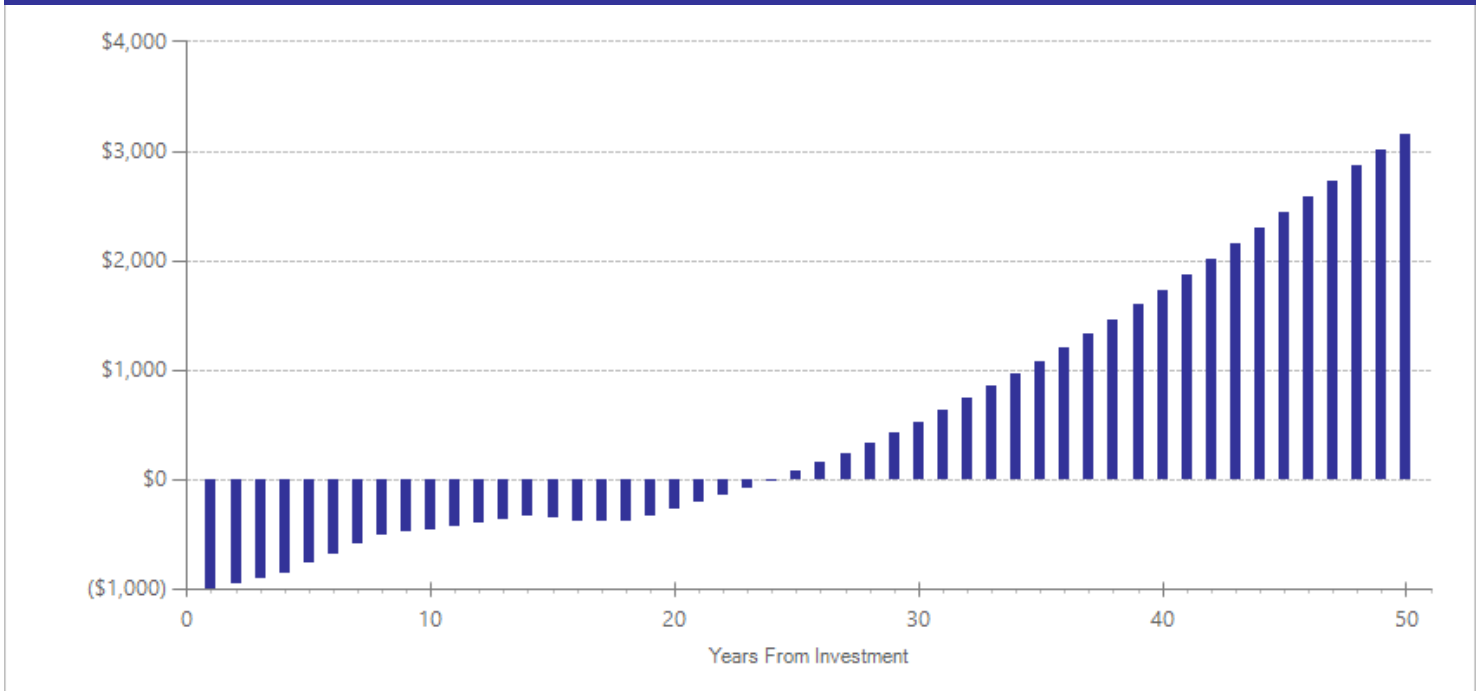
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$1,612 | 2007 | Present value of net program costs (in 2016 dollars) | (\$698) |
| Comparison costs | \$1,000 | 2007 | Cost range (+ or -) | 10 % |

This program is very similar to Parent-Child Interaction Therapy (PCIT), requiring similar equipment and therapist qualifications. In 2007, the standard PCIT expenditures provided by Children’s Administration (average reimbursement rate for families receiving PCIT in Washington) was \$2,240. Helping the Noncompliant Child requires ten sessions, compared to an average of 13.9 sessions in the studies we reviewed for PCIT, so we estimate the cost for HNC to be 10/13.9 multiplied by \$2,240.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Primary or secondary participant | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | Primary | 4 | 1 | 63 | -0.590 | 0.271 | 4 | 0.000 | 0.001 | 5 | -1.039 | 0.001 |
| Disruptive behavior disorder symptoms | Primary | 4 | 3 | 79 | -0.529 | 0.377 | 4 | -0.122 | 0.129 | 7 | -0.811 | 0.030 |
| Parental stress [^] | Secondary | 26 | 1 | 63 | -0.375 | 0.269 | 26 | -0.179 | 0.158 | 28 | -0.669 | 0.014 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Families and Schools Together (FAST)

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Families and Schools Together (FAST) is a multi-family after-school program. Originally developed to serve young school-age children at risk of school failure, the program is now also offered in schools with high rates of poverty and other risk factors. The goals of the program are to increase parent involvement in schools, strengthen the parent-child relationship, reduce stress by developing parent support groups, and prevent substance abuse by the child and family. Groups of 8 to 12 families meet for eight consecutive weeks for 2½ hours after school or early in the evenings. Teams of trained facilitators conduct meetings that involve experiential learning, parent-child play, and a shared meal.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|------------------|---------------------------------|--------|
| Taxpayers | \$764 | Benefit to cost ratio | \$1.23 |
| Participants | \$1,523 | Benefits minus costs | \$439 |
| Others | \$928 | Chance the program will produce | |
| Indirect | (\$901) | benefits greater than the costs | 50 % |
| Total benefits | \$2,315 | | |
| Net program cost | (\$1,876) | | |
| Benefits minus cost | \$439 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|--------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$31 | \$76 | \$16 | \$124 |
| Labor market earnings associated with test scores | \$1,499 | \$681 | \$668 | \$0 | \$2,848 |
| K-12 grade repetition | \$0 | (\$255) | \$0 | (\$128) | (\$383) |
| K-12 special education | \$0 | \$169 | \$0 | \$85 | \$254 |
| Health care associated with disruptive behavior disorder | \$51 | \$155 | \$192 | \$78 | \$476 |
| Costs of higher education | (\$27) | (\$18) | (\$8) | (\$9) | (\$61) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$943) | (\$943) |
| Totals | \$1,523 | \$764 | \$928 | (\$901) | \$2,315 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

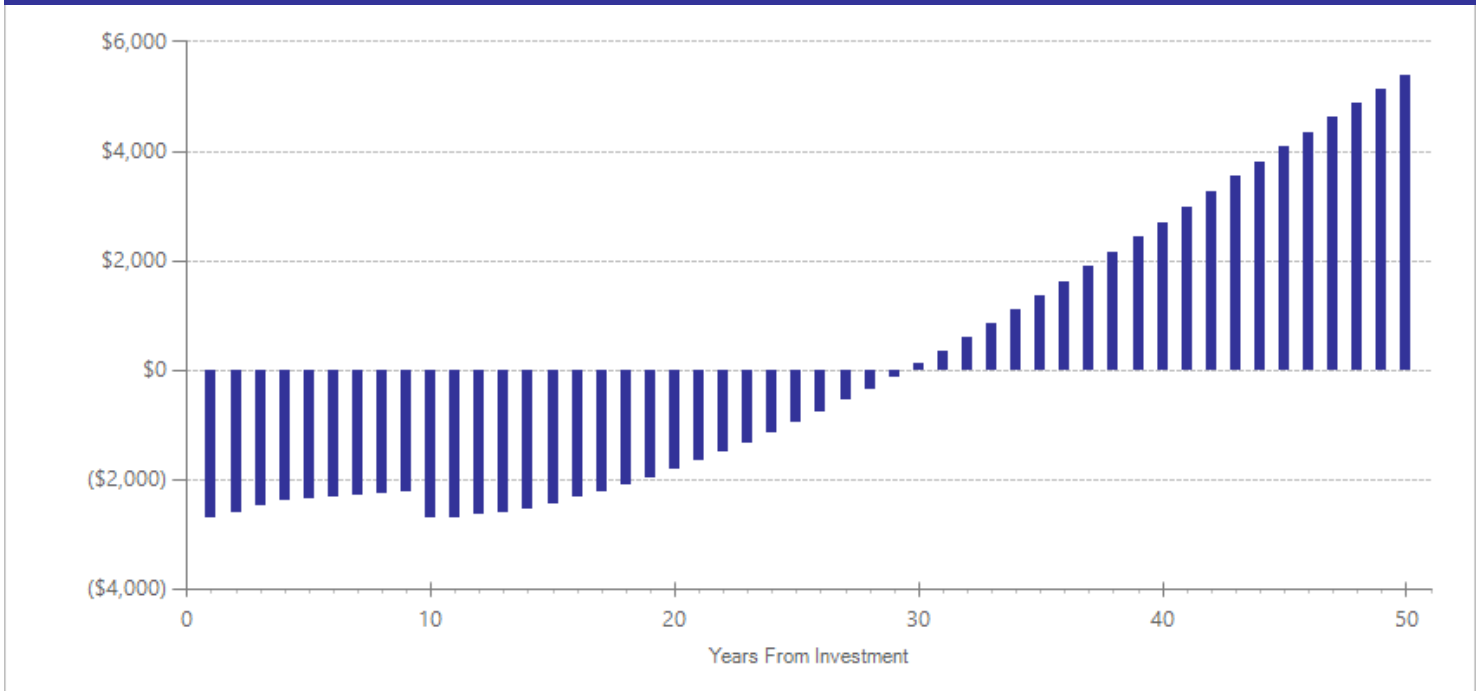
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$1,694 | 2009 | Present value of net program costs (in 2016 dollars) | (\$1,876) |
| Comparison costs | \$0 | 2009 | Cost range (+ or -) | 10 % |

This program is typically provided in eight sessions over two months. Kratochwill (2009) provided costs for the program evaluated in Madison, WI. Implementation (actual presentation of the program) cost \$1,194 per child, plus an average cost of \$500 per child to train the program facilitators. Training costs assumes eight groups could be accommodated per training. See Kratochwill, T.R., McDonald, L., Levin, J.R., Scalia, P.A., & Coover, G. (2009). Families and Schools Together: An experimental study of multi-family support groups for children at risk. *Journal of School Psychology, 47*(4), 245-265.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Externalizing behavior symptoms | 8 | 5 | 391 | -0.200 | 0.078 | 8 | -0.095 | 0.085 | 11 | -0.284 | 0.003 |
| Grade point average [^] | 8 | 1 | 140 | -0.086 | 0.123 | 8 | -0.086 | 0.123 | 8 | -0.086 | 0.486 |
| Internalizing symptoms | 8 | 5 | 391 | -0.014 | 0.077 | 8 | -0.010 | 0.061 | 10 | -0.011 | 0.889 |
| K-12 grade repetition | 8 | 1 | 140 | 0.288 | 0.212 | 8 | 0.288 | 0.212 | 9 | 0.288 | 0.176 |
| Test scores | 8 | 3 | 179 | 0.031 | 0.113 | 8 | 0.017 | 0.124 | 17 | 0.104 | 0.487 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Kratochwill, T.R., McDonald, L., Levin, J.R., Scalia, P.A., & Coover, G. (2009). Families and Schools Together: An experimental study of multi-family support groups for children at risk. *Journal of School Psychology, 47*(4), 245-265.
- Kratochwill, T.R., McDonald, L., Levin, J.R., Young Bear-Tibbetts, H., & Demaray, M.K. (2004). Families and Schools Together: An experimental analysis of a parent-mediated multi-family group program for American Indian children. *Journal of School Psychology, 42*(5), 359-383.
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Brief Strategic Family Therapy (BSFT)

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated June 2016.

Program Description: This intervention is aimed at children and adolescents who are at risk of developing serious behavior problems, including delinquency and substance abuse. Therapy targets maladaptive interactions and problems within each family. The program is typically 12 to 16 sessions of 60 to 90 minutes in length over a three- to four-month period. Because such risk can be defined in various ways, the studies in this analysis included participants with different types and severity of problems. This treatment has been extensively tested on ethnic minorities.

More information is available at the program website.

<http://brief-strategic-family-therapy.com/>

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$479 | Benefit to cost ratio | \$0.59 |
| Participants | (\$290) | Benefits minus costs | (\$224) |
| Others | \$162 | Chance the program will produce | |
| Indirect | (\$31) | benefits greater than the costs | 43 % |
| Total benefits | \$320 | | |
| Net program cost | (\$544) | | |
| Benefits minus cost | (\$224) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|--------------|---------------------|-----------------------|--------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | (\$197) | (\$394) | (\$98) | (\$690) |
| K-12 grade repetition | \$0 | \$7 | \$0 | \$4 | \$11 |
| K-12 special education | \$0 | \$412 | \$0 | \$206 | \$617 |
| Property loss associated with alcohol abuse or dependence | (\$5) | \$0 | (\$9) | \$0 | (\$14) |
| Labor market earnings associated with illicit drug abuse or dependence | \$0 | \$0 | \$0 | \$0 | \$0 |
| Health care associated with disruptive behavior disorder | \$186 | \$571 | \$707 | \$285 | \$1,749 |
| Costs of higher education | (\$471) | (\$313) | (\$141) | (\$156) | (\$1,081) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$272) | (\$272) |
| Totals | (\$290) | \$479 | \$162 | (\$31) | \$320 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

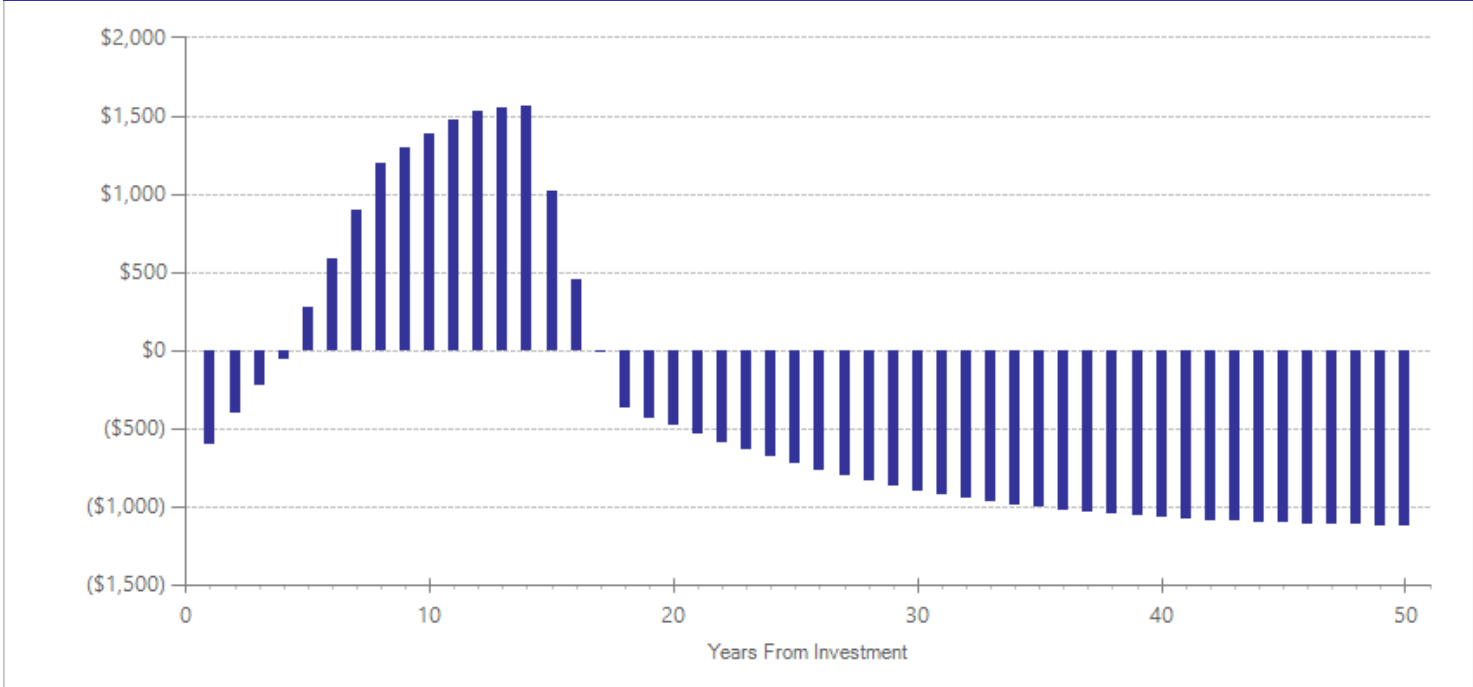
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$1,350 | 2010 | Present value of net program costs (in 2016 dollars) | (\$544) |
| Comparison costs | \$850 | 2010 | Cost range (+ or -) | 10 % |

This intervention usually takes place over a three- to four-month period. We estimated per-participant cost based on an average of 14.8 hours of therapist time, as reported in the treatment studies, multiplied by actuarial estimate of cost of hourly family therapy reported in Mercer. (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*. Comparison cost is based on the average DSHS reimbursement for treatment of child disruptive behavior.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Disruptive behavior disorder symptoms | 4 | 3 | 124 | -0.251 | 0.148 | 14 | -0.119 | 0.092 | 17 | -0.500 | 0.002 |
| Illicit drug use disorder | 4 | 2 | 301 | -0.087 | 0.103 | 13 | 0.000 | 0.187 | 16 | -0.086 | 0.405 |
| Smoking in high school | 4 | 1 | 20 | -1.203 | 0.344 | 17 | -1.203 | 0.344 | 18 | -1.203 | 0.001 |
| STD risky behavior [^] | 4 | 1 | 20 | -0.573 | 0.323 | 17 | n/a | n/a | n/a | -0.573 | 0.076 |
| Youth binge drinking | 4 | 1 | 20 | 0.344 | 0.319 | 17 | 0.344 | 0.319 | 17 | 0.344 | 0.280 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Coatsworth, J.D., Santisteban, D.A., McBride, C.K, Szapocznik, J. (2001). Brief strategic family therapy versus community control: Engagement, retention, and an exploration of the moderating role of adolescent symptom severity. *Family Process, 40*(3), 313-313
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Incredible Years: Parent training and child training

Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Incredible Years Parent Training (www.incredibleyears.com) is a group, skills-based behavioral intervention for parents of children with behavior problems. The curriculum focuses on strengthening parenting skills (monitoring, positive discipline, confidence) and fostering parents' involvement in children's school experiences in order to promote children's academic, social, and emotional competencies and reduce conduct problems. Training classes include child care, a family meal, and transportation. Studies in this category included a child skills training component as well as parent training. Children with behavioral problems are taught social, emotional and academic skills, such as understanding and communicating feelings, using effective problem solving strategies, managing anger, practicing friendship and conversational skills, as well as appropriate classroom behaviors.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|------------------|---------------------------------|-----------|
| Taxpayers | \$357 | Benefit to cost ratio | \$0.18 |
| Participants | \$388 | Benefits minus costs | (\$1,413) |
| Others | \$335 | Chance the program will produce | |
| Indirect | (\$763) | benefits greater than the costs | 12 % |
| <u>Total benefits</u> | <u>\$316</u> | | |
| <u>Net program cost</u> | <u>(\$1,729)</u> | | |
| Benefits minus cost | (\$1,413) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|--------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$15 | \$35 | \$8 | \$58 |
| Labor market earnings associated with high school graduation | \$378 | \$172 | \$173 | \$0 | \$723 |
| K-12 grade repetition | \$0 | \$2 | \$0 | \$1 | \$3 |
| K-12 special education | \$0 | \$76 | \$0 | \$37 | \$113 |
| Health care associated with disruptive behavior disorder | \$35 | \$109 | \$135 | \$54 | \$333 |
| Costs of higher education | (\$26) | (\$17) | (\$8) | (\$8) | (\$60) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$854) | (\$854) |
| <u>Totals</u> | <u>\$388</u> | <u>\$357</u> | <u>\$335</u> | <u>(\$763)</u> | <u>\$316</u> |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

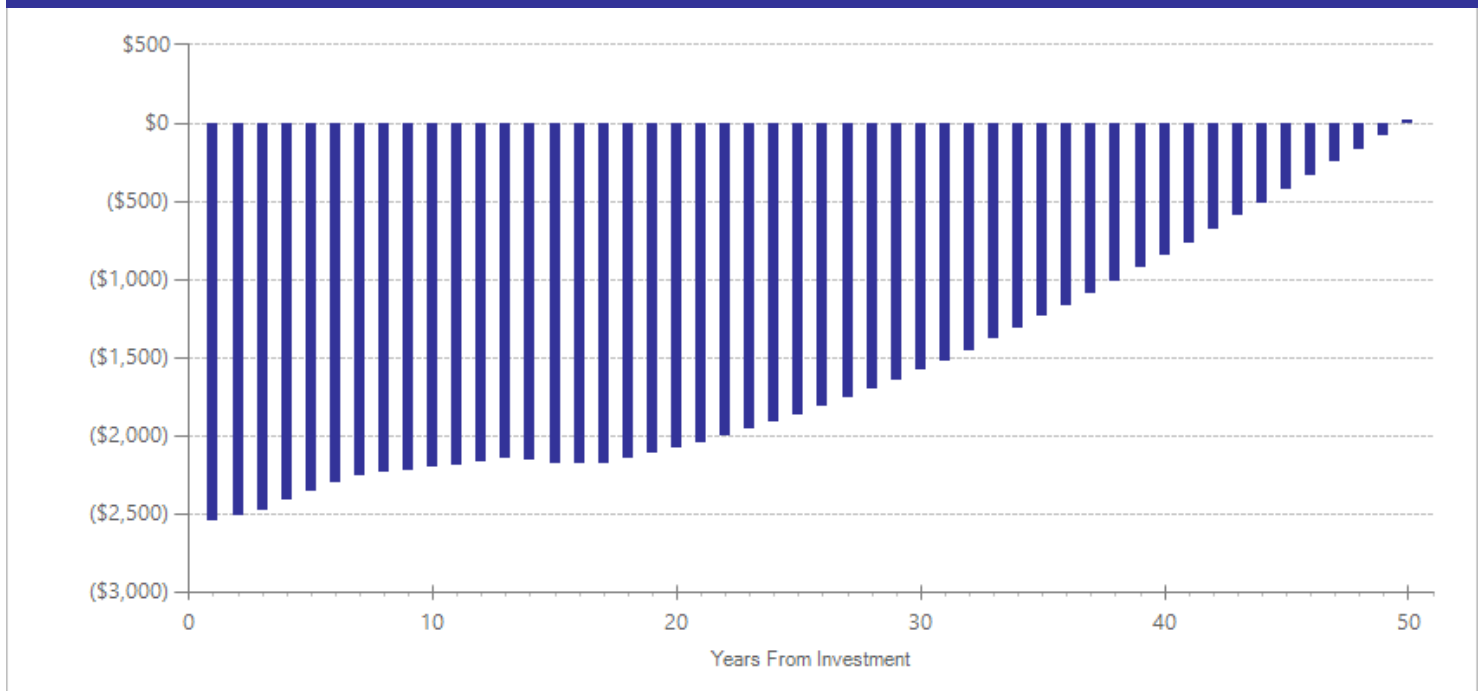
| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$2,610 | 2013 | Present value of net program costs (in 2016 dollars) | (\$1,729) |
| Comparison costs | \$881 | 2010 | Cost range (+ or -) | 10 % |

Cost of parent training class per family provided by Washington State DSHS Children's Administration, 2012. WSIPP also added costs of practitioner training and curriculum for the parent classes and child classes, based on the findings of Foster et al., 2007 (training and curricula costs are low on a per-family basis, as curricula are shared between practitioners and distributed across many families who receive the intervention). Based on conversations with Lisa St. George from Incredible Years (June 2014), we assumed that a practitioner team might use their purchased training and curricula to serve 24 families per year on average, for about five years (120 families served per team). In addition, we estimated an implementation cost (per child) for the child training component, based on the staff time and cost reported in Foster et al. (2007), and assuming each practitioner serves 120 children over five years.

Foster, E.M., Olchowski, A.E., & Webster-Stratton, C.H. (2007). Is stacking intervention components cost-effective? An analysis of the Incredible Years program. *Journal of the American Academy of Child and Adolescent Psychiatry*, 46(11).

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the "break-even" point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Primary or secondary participant | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | | ES | SE | Age | ES | SE | Age | | |
| Attention-deficit/hyperactivity disorder symptoms | Primary | 5 | 2 | 106 | -0.170 | 0.140 | 7 | -0.001 | 0.011 | 8 | -0.566 | 0.001 |
| Disruptive behavior disorder symptoms | Primary | 5 | 5 | 319 | -0.105 | 0.084 | 7 | -0.050 | 0.048 | 10 | -0.584 | 0.007 |
| Internalizing symptoms | Primary | 5 | 2 | 193 | -0.067 | 0.106 | 7 | -0.049 | 0.085 | 9 | -0.245 | 0.200 |
| Parental stress [^] | Secondary | 24 | 1 | 20 | -0.412 | 0.312 | 26 | -0.214 | 0.382 | 27 | -0.737 | 0.021 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Barrera, M., Biglan, A., Taylor, T.K., Gunn, B.K., Smolkowski, K., Black, C., . . . Fowler, R.C. (2002). Early elementary school intervention to reduce conduct problems: A randomized trial with Hispanic and non-Hispanic children. *Prevention Science, 3*(2), 83-94.
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Stop Now and Plan (SNAP) Children's Mental Health: Disruptive Behavior

Benefit-cost estimates updated December 2017. Literature review updated December 2015.

Program Description: Stop Now and Plan (SNAP) is a program to reduce problem behavior and prevent criminal activity in children ages 6-11 with serious disruptive behavior problems. There are separate SNAP programs for girls and boys. SNAP includes a 12-week group program for children and parents. The group sessions are designed to teach children cognitive behavioral skills and give children structured time to practice to apply their skills in specific situations. In separate group sessions, parents learn parenting skills and strategies to cope with their own emotions. After the group sessions, SNAP provides additional services to meet individual family needs such as family counseling, school advocacy, or tutoring.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|------------------|---------------------------------|-----------|
| Taxpayers | \$567 | Benefit to cost ratio | \$0.05 |
| Participants | \$414 | Benefits minus costs | (\$3,177) |
| Others | \$483 | Chance the program will produce | |
| Indirect | (\$1,305) | benefits greater than the costs | 4 % |
| <u>Total benefits</u> | <u>\$160</u> | | |
| <u>Net program cost</u> | <u>(\$3,337)</u> | | |
| Benefits minus cost | (\$3,177) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|--------------|--------------|---------------------|-----------------------|--------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$42 | \$113 | \$21 | \$177 |
| Labor market earnings associated with high school graduation | \$390 | \$177 | \$179 | \$179 | \$925 |
| K-12 grade repetition | \$0 | \$5 | \$0 | \$2 | \$7 |
| K-12 special education | \$0 | \$201 | \$0 | \$101 | \$302 |
| Health care associated with disruptive behavior disorder | \$53 | \$162 | \$200 | \$81 | \$495 |
| Costs of higher education | (\$29) | (\$19) | (\$9) | (\$10) | (\$66) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$1,680) | (\$1,680) |
| <u>Totals</u> | <u>\$414</u> | <u>\$567</u> | <u>\$483</u> | <u>(\$1,305)</u> | <u>\$160</u> |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Annual Cost Estimates Per Participant

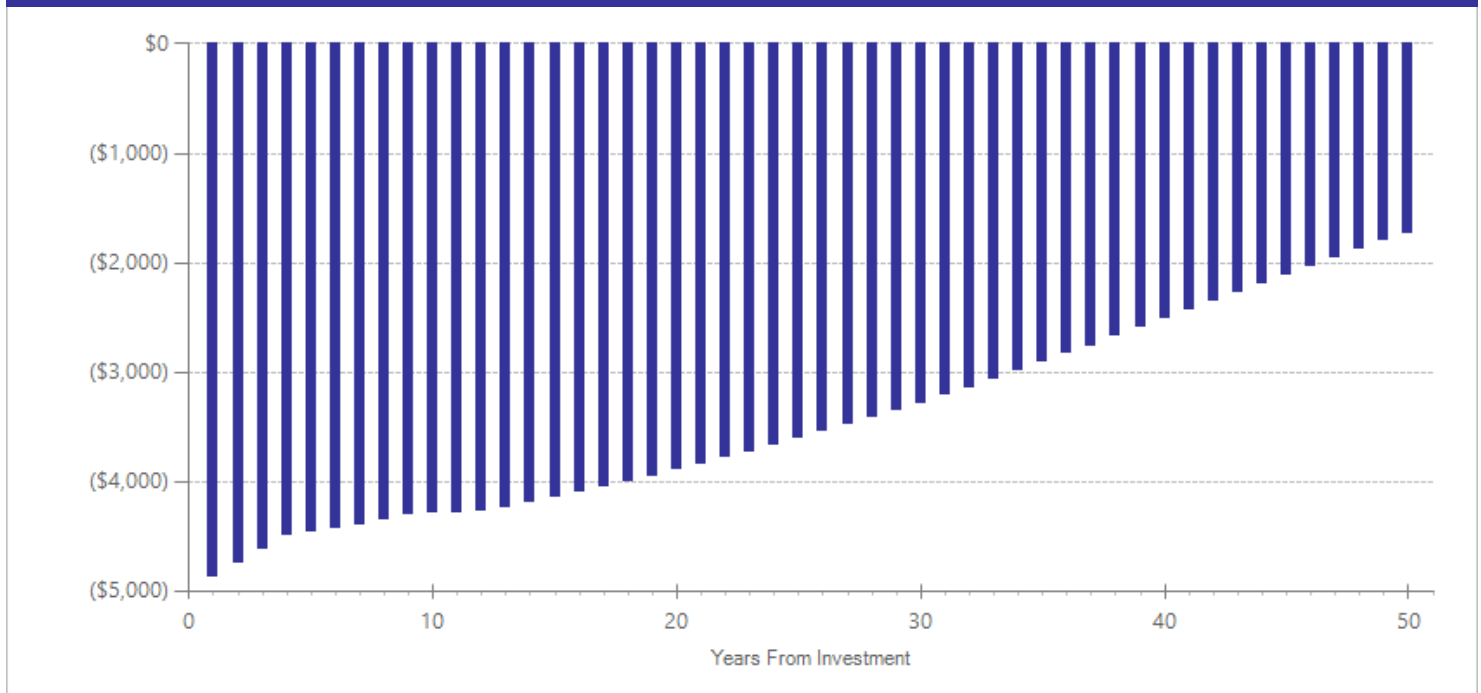
| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$4,795 | 2012 | Present value of net program costs (in 2016 dollars) | (\$3,337) |
| Comparison costs | \$1,567 | 2011 | Cost range (+ or -) | 20 % |

SNAP is a 12-week program. We estimated the cost of the treatment group using cost estimates in Farrington and Koegl, 2014 and the licensing and training costs described in SNAP Schedule C licensing description (Leena Augimeri, personal communication, September 18, 2015). The cost of the control group was calculated based on the units of wraparound services received by participants in the comparison group in Burke & Loeber, 2014. As reported in Burke & Loeber, 2014, 13.1% of the comparison group received 7.9 units of wraparound services during the first three months, and 35% of the comparison group received wraparound services in the subsequent year. We estimated that the average per-participant units of wrap around services remained the same for the next year. To estimate per-unit cost of wrap around services we used the individual treatment reimbursement rate from Mercer, (2013). *Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2014*. All costs were converted from Canadian dollars to US dollars using the average exchange rate from the year the costs were measured. (<http://www.canadianforex.ca/forex-tools/historical-rate-tools/yearly-average-rates>).

Farrington, D.P., & Koegl, C.J. (2014). Monetary benefits and costs of the Stop Now And Plan Program for boys aged 6–11, based on the prevention of later offending. *Journal of Quantitative Criminology*, 31(2), 263-287. Burke, J.D., & Loeber, R. (2014). The effectiveness of the Stop Now And Plan (SNAP) Program for boys at risk for violence and delinquency. *Prevention Science*, 16(2), 242-253

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Externalizing behavior symptoms | 9 | 2 | 150 | -0.167 | 0.119 | 10 | -0.079 | 0.070 | 13 | -0.450 | 0.001 |
| Internalizing symptoms | 9 | 2 | 150 | -0.118 | 0.119 | 10 | -0.086 | 0.099 | 12 | -0.318 | 0.008 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

Burke, J.D., & Loeber, R. (2015). The Effectiveness of the Stop Now and Plan (SNAP) program for boys at risk for violence and delinquency. *Prevention Science, 16*(2), 242-253.

Pepler, D., Walsh, M., Yuile, A., Levene, K., Jiang, D., Vaughan, A., & Webber, J. (2010). Bridging the gender gap: interventions with aggressive girls and their parents. *Prevention Science: the Official Journal of the Society for Prevention Research, 11*(3), 229-38.

Multisystemic Therapy (MST) for youth with serious emotional disturbance (SED)

Children's Mental Health: Serious Emotional Disturbance

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: Multisystemic Therapy (MST) is an intensive family-focused treatment, which combines aspects of cognitive, behavioral, and family therapies. Therapists work in the child's home, school, and community to modify his or her environment. Although MST is often conducted with juvenile offenders, the studies included here focused on children with externalizing problems who were not involved with the juvenile justice system at the time of intervention.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|------------------|---------------------------------|---------|
| Taxpayers | \$3,822 | Benefit to cost ratio | \$1.38 |
| Participants | \$4,293 | Benefits minus costs | \$2,611 |
| Others | \$3,708 | Chance the program will produce | |
| Indirect | (\$2,305) | benefits greater than the costs | 61 % |
| <u>Total benefits</u> | <u>\$9,517</u> | | |
| <u>Net program cost</u> | <u>(\$6,906)</u> | | |
| Benefits minus cost | \$2,611 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|----------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$661 | \$1,787 | \$328 | \$2,776 |
| Labor market earnings associated with high school graduation | \$3,426 | \$1,556 | \$1,579 | \$0 | \$6,561 |
| Child abuse and neglect | \$1,032 | \$0 | \$0 | \$0 | \$1,032 |
| Out-of-home placement | \$0 | \$941 | \$0 | \$467 | \$1,408 |
| K-12 grade repetition | \$0 | \$29 | \$0 | \$14 | \$44 |
| K-12 special education | \$0 | \$476 | \$0 | \$236 | \$712 |
| Health care associated with disruptive behavior disorder | \$112 | \$343 | \$425 | \$171 | \$1,051 |
| Costs of higher education | (\$277) | (\$184) | (\$83) | (\$92) | (\$635) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$3,431) | (\$3,431) |
| Totals | \$4,293 | \$3,822 | \$3,708 | (\$2,305) | \$9,517 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

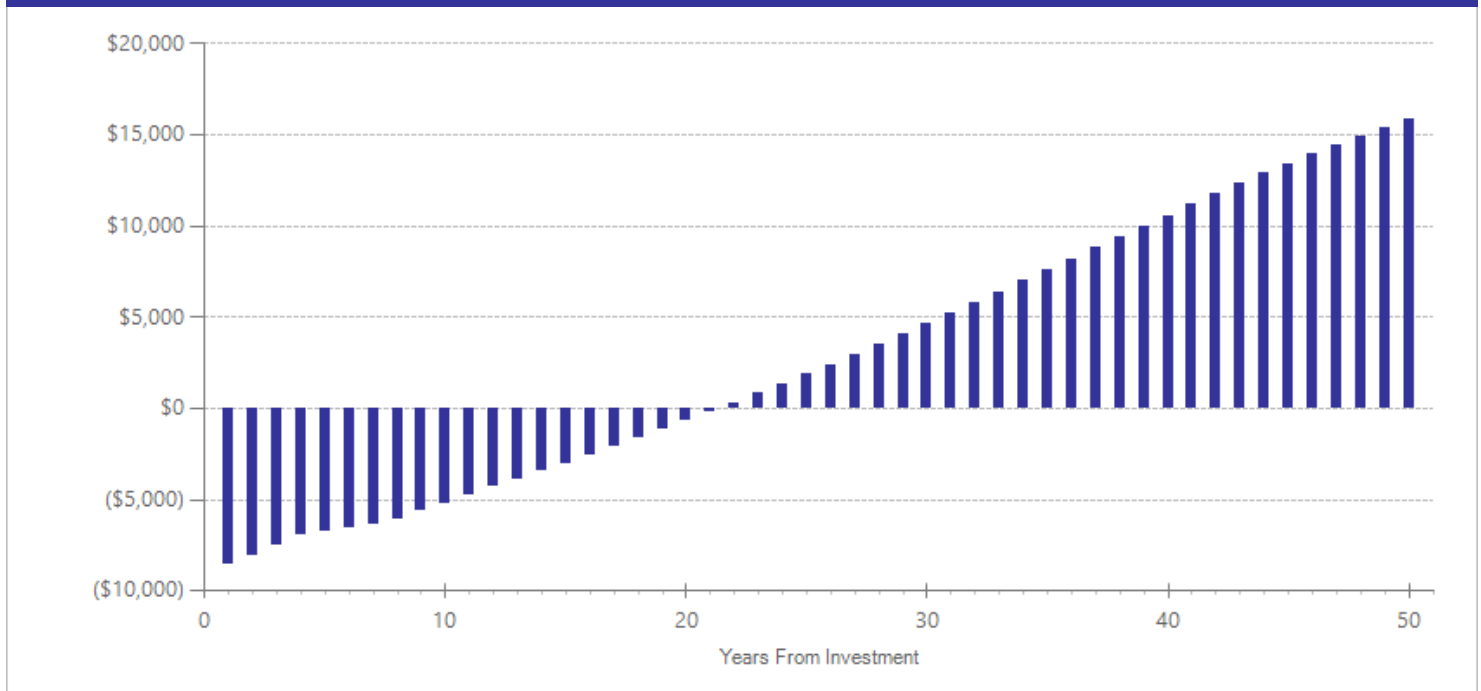
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-----------|
| Program costs | \$7,076 | 2008 | Present value of net program costs (in 2016 dollars) | (\$6,906) |
| Comparison costs | \$850 | 2010 | Cost range (+ or -) | 10 % |

MST-SED is typically provided for four to five months. Per-participant costs from Barnoski, R. (2009). *Providing evidence-based programs with fidelity in Washington state juvenile courts: Cost analysis*. Olympia: Washington State Institute for Public Policy, <http://www.wsipp.wa.gov/rptfiles/09-12-1201.pdf>.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Crime | 14 | 5 | 341 | -0.062 | 0.081 | 16 | -0.062 | 0.081 | 26 | -0.060 | 0.502 |
| Disruptive behavior disorder symptoms | 14 | 6 | 443 | -0.311 | 0.127 | 16 | -0.148 | 0.091 | 19 | -0.311 | 0.015 |
| Hospitalization (psychiatric) | 14 | 2 | 136 | -0.415 | 0.344 | 16 | -0.198 | 0.196 | 19 | -0.719 | 0.256 |
| Internalizing symptoms | 14 | 2 | 72 | -0.026 | 0.167 | 16 | -0.019 | 0.130 | 18 | -0.046 | 0.789 |
| Out-of-home placement | 14 | 4 | 451 | -0.279 | 0.124 | 16 | -0.279 | 0.124 | 17 | -0.459 | 0.009 |
| Substance misuse [^] | 14 | 2 | 72 | -0.044 | 0.167 | 16 | 0.000 | 0.187 | 19 | -0.051 | 0.762 |
| Suicidal ideation [^] | 14 | 1 | 78 | -0.017 | 0.160 | 16 | -0.008 | 0.083 | 19 | -0.031 | 0.877 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Dialectical Behavior Therapy (DBT) for adolescent self-harming behavior

Children's Mental Health: Serious Emotional Disturbance

Benefit-cost estimates updated December 2017. Literature review updated August 2017.

Program Description: Dialectical Behavior Therapy (DBT) is a cognitive behavioral treatment originally developed for chronically parasuicidal adults. DBT involves both group skills training and individual psychotherapy and focuses on mindfulness, interpersonal, emotion-regulating, and self-management skills. In studies included in this meta-analysis, DBT was modified to treat adolescents by shortening the treatment length, streamlining and simplifying some lessons, and including parents in some sessions. Studies in this analysis include adolescents in both inpatient and outpatient treatment settings presenting with suicidal ideation, non-suicidal self-harm, and/or prior suicide attempts. Treatment duration ranges from 2-19 weeks, with multiple sessions per week.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

| | | | |
|----------------------------|----------------|---------------------------------|--------|
| Taxpayers | \$69 | Benefit to cost ratio | \$0.97 |
| Participants | \$27 | Benefits minus costs | (\$5) |
| Others | \$13 | Chance the program will produce | |
| Indirect | \$37 | benefits greater than the costs | 50 % |
| Total benefits | \$146 | | |
| Net program cost | (\$151) | | |
| Benefits minus cost | (\$5) | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

Benefits from changes to:¹

Benefits to:

| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
|---|--------------|-------------|---------------------|-----------------------|--------------|
| K-12 grade repetition | \$0 | \$0 | \$0 | \$0 | \$0 |
| Labor market earnings associated with major depression | \$27 | \$12 | \$0 | \$85 | \$123 |
| Health care associated with psychiatric hospitalization | \$1 | \$57 | \$13 | \$28 | \$99 |
| Costs of higher education | \$0 | \$0 | \$0 | \$0 | \$0 |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | (\$76) | (\$76) |
| Totals | \$27 | \$69 | \$13 | \$37 | \$146 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

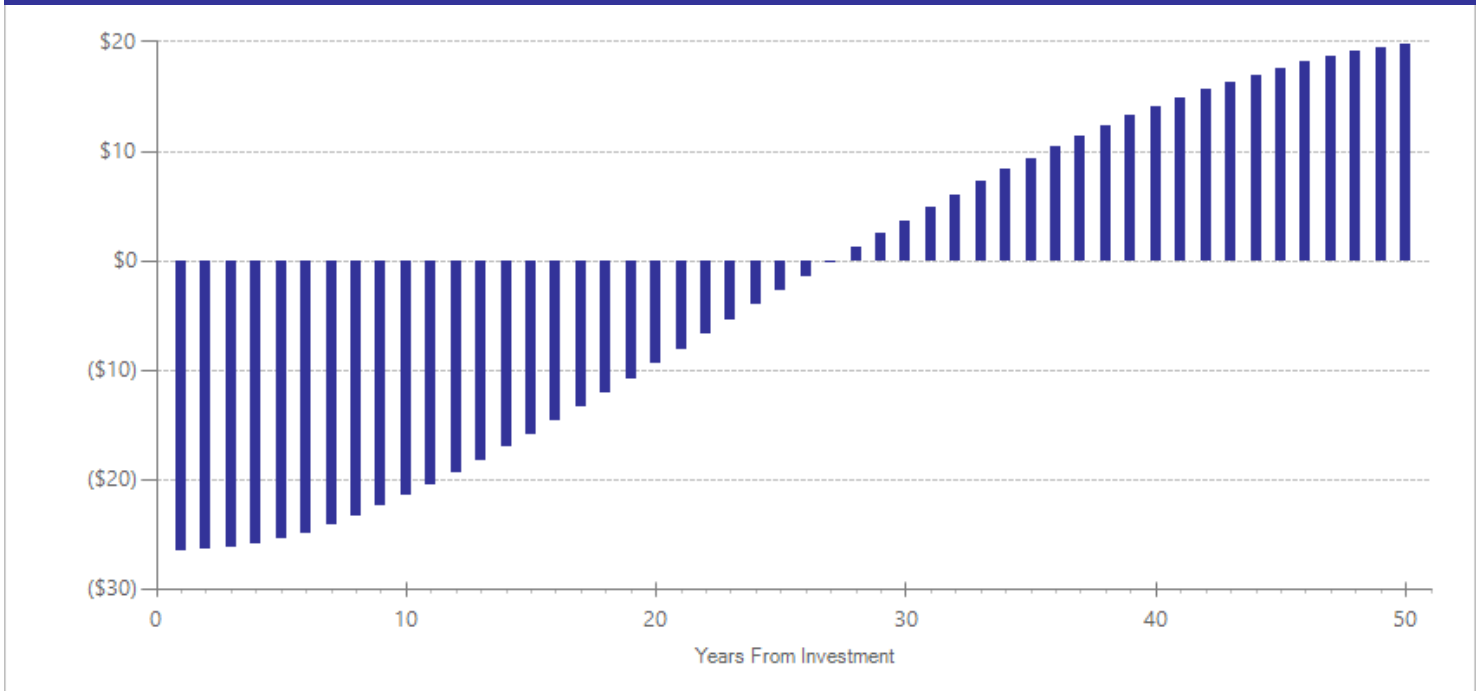
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|---------|
| Program costs | \$2,792 | 2016 | Present value of net program costs (in 2016 dollars) | (\$151) |
| Comparison costs | \$2,641 | 2016 | Cost range (+ or -) | 25 % |

Per-participant costs are based on a weighted average for therapist time of 15.97 hours in individual sessions and 18.17 hours of group sessions, as reported in the treatment studies, multiplied by the hourly therapist cost is based on the 2016 actuarial estimates of reimbursement for individual therapy (Mercer, 2015, Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2016). Comparison costs are calculated in the same way from study reports of control group treatments.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|------------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Hope [^] | 16 | 2 | 71 | 0.493 | 0.181 | 16 | n/a | n/a | n/a | 0.493 | 0.006 |
| Hospitalization (psychiatric) | 16 | 2 | 55 | -0.086 | 0.643 | 16 | 0.000 | 0.118 | 17 | -0.086 | 0.893 |
| Major depressive disorder | 16 | 2 | 71 | -0.445 | 0.180 | 16 | 0.000 | 0.039 | 17 | -0.445 | 0.014 |
| Self-harming behavior [^] | 16 | 1 | 39 | -0.531 | 0.253 | 16 | n/a | n/a | n/a | -0.531 | 0.036 |
| Suicidal ideation [^] | 16 | 2 | 71 | -0.434 | 0.321 | 16 | n/a | n/a | n/a | -0.434 | 0.176 |
| Suicide attempts [^] | 16 | 2 | 55 | 0.143 | 0.244 | 16 | n/a | n/a | n/a | 0.143 | 0.557 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

- Katz, L.Y., Cox, B.J., Gunasekara, S., & Miller, A.L. (2004). Feasibility of dialectical behavior therapy for suicidal adolescent inpatients. *Journal of the American Academy of Child and Adolescent Psychiatry*, 43(3), 276-282.
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Cognitive behavioral therapy (CBT)-based models for child trauma

Children's Mental Health: Trauma

Benefit-cost estimates updated December 2017. Literature review updated August 2017.

Program Description: Treatments include several components, such as psycho-education about post-traumatic stress disorder (PTSD), relaxation and other techniques for managing physiological and emotional stress, the gradual desensitization to memories of the traumatic event (also called exposure), and cognitive restructuring of inaccurate or unhelpful thoughts. In the studies included in this meta-analysis, treatment provided 5 to 27 therapeutic hours per client in individual or group settings, with duration of treatment ranging from one to five months. This review includes studies of Trauma-Focused CBT, Cognitive Behavioral Intervention for Trauma in Schools (CBITS), Narrative Exposure Therapy for traumatized children (Kid-NET), Enhancing Resiliency Among Students Experiencing Stress (ERASE), Trauma and Grief Component Therapy, and Teaching Recovery Techniques (TRT).

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|----------------------------|-----------------|---------------------------------|----------|
| Taxpayers | \$6,873 | Benefit to cost ratio | n/a |
| Participants | \$11,345 | Benefits minus costs | \$21,837 |
| Others | \$2,452 | Chance the program will produce | |
| Indirect | \$1,058 | benefits greater than the costs | 100 % |
| Total benefits | \$21,728 | | |
| Net program cost | \$109 | | |
| Benefits minus cost | \$21,837 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|-----------------|----------------|---------------------|-----------------------|-----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$12 | \$31 | \$6 | \$49 |
| K-12 grade repetition | \$0 | \$9 | \$0 | \$5 | \$14 |
| K-12 special education | \$0 | \$34 | \$0 | \$17 | \$51 |
| Labor market earnings associated with PTSD | \$10,734 | \$4,875 | \$0 | \$0 | \$15,608 |
| Health care associated with PTSD | \$639 | \$1,961 | \$2,429 | \$985 | \$6,013 |
| Costs of higher education | (\$27) | (\$18) | (\$8) | (\$9) | (\$62) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$55 | \$55 |
| Totals | \$11,345 | \$6,873 | \$2,452 | \$1,058 | \$21,728 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

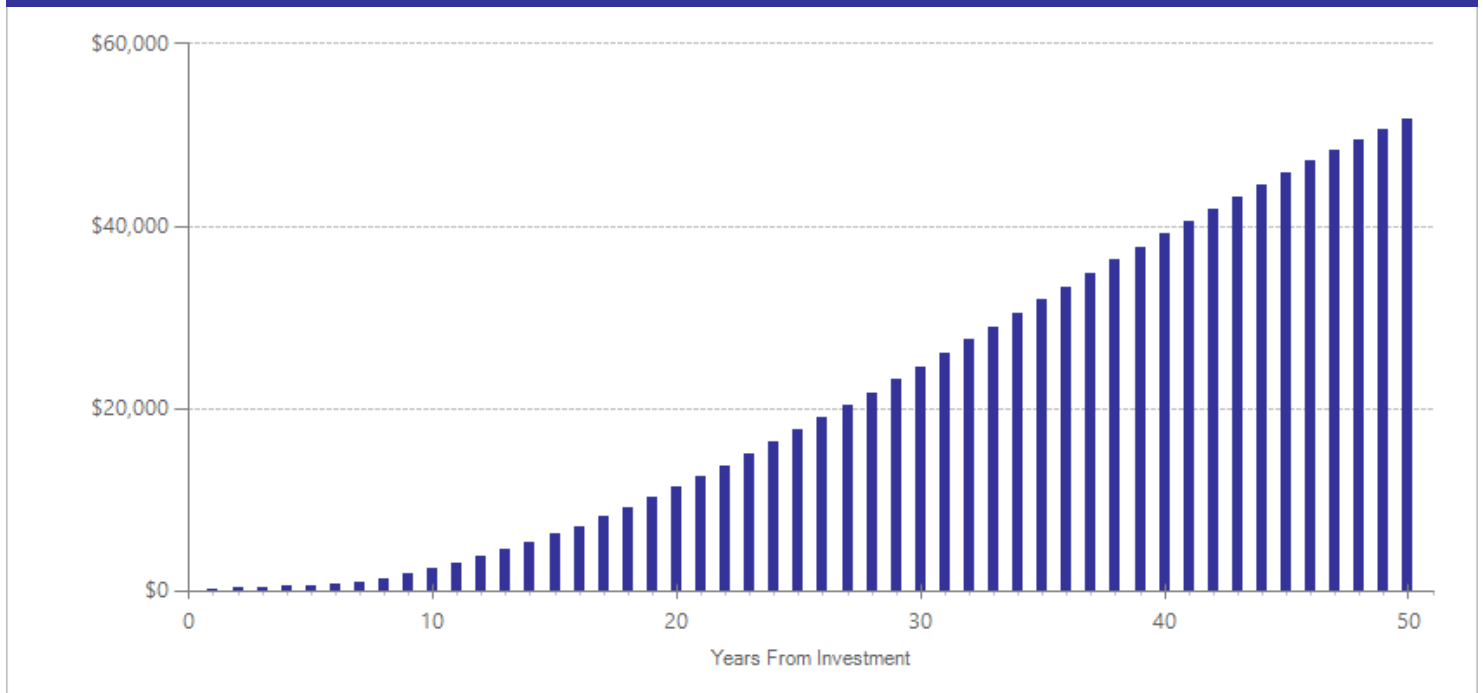
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$1,037 | 2016 | Present value of net program costs (in 2016 dollars) | \$109 |
| Comparison costs | \$1,035 | 2009 | Cost range (+ or -) | 30 % |

Per-participant costs are based on weighted average therapist time, as reported in the included studies. Hourly therapist cost is based on the actuarial estimates of reimbursement by modality (Mercer, 2015, Behavioral Health Data Book for the State of Washington for Rates Effective January 1, 2016). Comparison cost is based on the average reimbursement for treatment of child post-traumatic stress disorder.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Anxiety disorder | 12 | 18 | 999 | -0.166 | 0.047 | 12 | -0.077 | 0.027 | 13 | -0.307 | 0.001 |
| Disruptive behavior disorder symptoms | 12 | 4 | 290 | -0.243 | 0.298 | 12 | -0.116 | 0.162 | 15 | -0.222 | 0.625 |
| Externalizing behavior symptoms | 12 | 9 | 340 | -0.143 | 0.079 | 12 | -0.068 | 0.050 | 15 | -0.171 | 0.031 |
| Global functioning [^] | 12 | 4 | 165 | 0.161 | 0.136 | 12 | n/a | n/a | n/a | 0.490 | 0.038 |
| Internalizing symptoms | 12 | 9 | 296 | -0.223 | 0.107 | 12 | -0.163 | 0.105 | 14 | -0.261 | 0.026 |
| Major depressive disorder | 12 | 24 | 1447 | -0.380 | 0.076 | 12 | 0.000 | 0.031 | 13 | -0.589 | 0.001 |
| Post-traumatic stress | 12 | 33 | 2053 | -0.429 | 0.056 | 12 | -0.429 | 0.056 | 13 | -0.808 | 0.001 |
| Suicidal ideation [^] | 12 | 1 | 26 | -0.106 | 0.283 | 19 | n/a | n/a | n/a | -0.294 | 0.301 |

[^]WSIPP's benefit-cost model does not monetize this outcome.

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

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Citations Used in the Meta-Analysis

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Eye Movement Desensitization and Reprocessing (EMDR) for child trauma

Children's Mental Health: Trauma

Benefit-cost estimates updated December 2017. Literature review updated April 2012.

Program Description: During this individual-based treatment, clients focus on a traumatic memory for 30 seconds at a time while the therapist provides a stimulus. For most clients, the therapist moves his hand slowly back and forth in front of the client (eye movement); for younger children, the therapist may, instead, tap the child's hand. The client reports on what thoughts come to mind and clients are guided to refocus on that thought in the next stimulus session. During therapy visits, clients report on the level of distress they feel. In later phases, a positive thought is emphasized during the stimulus sessions. Afterward, clients are asked to focus on residual physical tensions they may feel in order to enhance relaxation. The intervention is brief, typically one to two months of weekly or biweekly sessions. A more complete description of this therapy is available at: <http://www.emdrnetwork.org/description.html>.

Benefit-Cost Summary Statistics Per Participant

| Benefits to: | | | |
|-------------------------|----------------|---------------------------------|---------|
| Taxpayers | \$2,721 | Benefit to cost ratio | n/a |
| Participants | \$4,906 | Benefits minus costs | \$8,810 |
| Others | \$656 | Chance the program will produce | |
| Indirect | \$362 | benefits greater than the costs | 82 % |
| <u>Total benefits</u> | <u>\$8,645</u> | | |
| <u>Net program cost</u> | <u>\$165</u> | | |
| Benefits minus cost | \$8,810 | | |

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2016). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our [Technical Documentation](#).

Detailed Monetary Benefit Estimates Per Participant

| Benefits from changes to: ¹ | Benefits to: | | | | |
|--|----------------|----------------|---------------------|-----------------------|----------------|
| | Participants | Taxpayers | Others ² | Indirect ³ | Total |
| Crime | \$0 | \$22 | \$56 | \$11 | \$89 |
| K-12 grade repetition | \$0 | \$6 | \$0 | \$3 | \$9 |
| K-12 special education | \$0 | \$53 | \$0 | \$26 | \$79 |
| Labor market earnings associated with anxiety disorder | \$4,768 | \$2,165 | \$0 | \$0 | \$6,933 |
| Health care associated with PTSD | \$159 | \$490 | \$606 | \$246 | \$1,502 |
| Costs of higher education | (\$22) | (\$14) | (\$7) | (\$7) | (\$50) |
| Adjustment for deadweight cost of program | \$0 | \$0 | \$0 | \$83 | \$83 |
| Totals | \$4,906 | \$2,721 | \$656 | \$362 | \$8,645 |

¹In addition to the outcomes measured in the meta-analysis table, WSIPP measures benefits and costs estimated from other outcomes associated with those reported in the evaluation literature. For example, empirical research demonstrates that high school graduation leads to reduced crime. These associated measures provide a more complete picture of the detailed costs and benefits of the program.

²"Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance.

³"Indirect benefits" includes estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

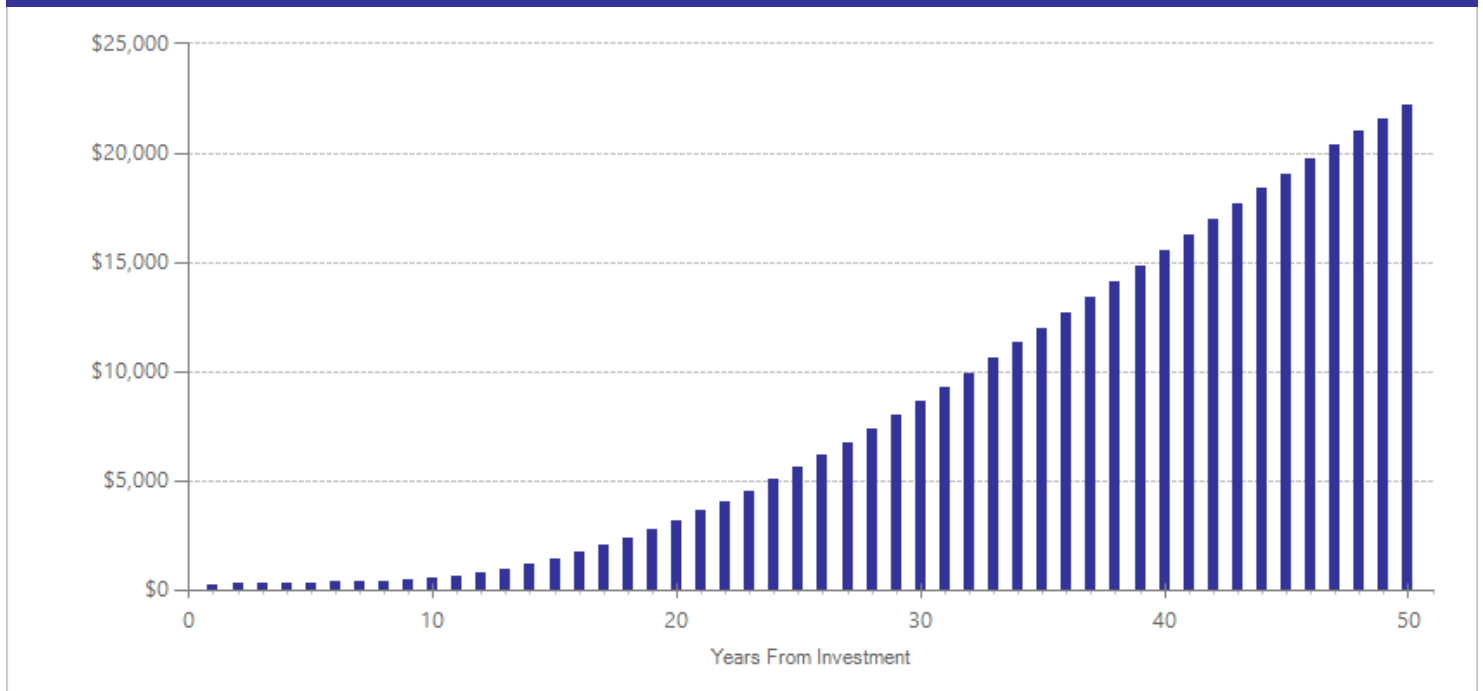
Detailed Annual Cost Estimates Per Participant

| | Annual cost | Year dollars | Summary | |
|------------------|-------------|--------------|--|-------|
| Program costs | \$886 | 2009 | Present value of net program costs (in 2016 dollars) | \$165 |
| Comparison costs | \$1,035 | 2009 | Cost range (+ or -) | 10 % |

This intervention typically takes place over one to two months. We estimated the per-participant cost by computing the average hours of therapy reported in the studies multiplied by the average Regional Support Network costs (for 2009) for individual therapy for child PTSD.

The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta-analysis. The cost range reported above reflects potential variation or uncertainty in the cost estimate; more detail can be found in our [Technical Documentation](#).

Detailed Annual Cost Estimates Per Participant



The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in non-discounted dollars to simplify the “break-even” point from a budgeting perspective. If the dollars are negative (bars below \$0 line), the cumulative benefits do not outweigh the cost of the program up to that point in time. The program breaks even when the dollars reach \$0. At this point, the total benefits to participants, taxpayers, and others, are equal to the cost of the program. If the dollars are above \$0, the benefits of the program exceed the initial investment.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Anxiety disorder | 10 | 2 | 29 | -0.226 | 0.269 | 11 | -0.104 | 0.129 | 12 | -0.184 | 0.521 |
| Externalizing behavior symptoms | 10 | 1 | 14 | -0.512 | 0.378 | 11 | -0.244 | 0.221 | 14 | -0.512 | 0.175 |
| Major depressive disorder | 10 | 2 | 29 | -0.228 | 0.269 | 11 | 0.000 | 0.029 | 12 | -0.192 | 0.476 |
| Post-traumatic stress | 10 | 4 | 60 | -0.356 | 0.277 | 11 | -0.356 | 0.277 | 12 | -0.510 | 0.134 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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New Beginnings for children of divorce

Children's Mental Health

Literature review updated June 2015.

Program Description: The New Beginnings program focuses on preventing adjustment problems for children whose parents have recently divorced. The single rigorous evaluation examines two variations of the program: a group intervention for mothers and a dual intervention program with groups for mothers and concurrent groups for children. In both variations of the program, the mothers' group focused on problem-solving, discipline strategies, mother-child relationship quality, and the mother's view of the child's relationship with the noncustodial father. In the dual intervention, the children's group focused on recognizing and labeling feelings, problem-solving, and positive re-framing.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Externalizing behavior symptoms | 11 | 1 | 150 | -0.135 | 0.163 | 17 | -0.022 | 0.155 | 26 | -0.240 | 0.141 |
| Illicit drug use in high school | 11 | 1 | 150 | -0.036 | 0.593 | 17 | -0.036 | 0.593 | 18 | -0.064 | 0.767 |
| Internalizing symptoms | 11 | 1 | 150 | 0.084 | 0.163 | 17 | -0.099 | 0.155 | 26 | 0.150 | 0.358 |
| Problem alcohol use | 11 | 1 | 164 | 0.076 | 0.155 | 26 | 0.076 | 0.155 | 27 | 0.136 | 0.378 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

Wolchik SA, Sandler IN, Millsap RE, Plummer BA, Greene SM, Anderson ER, et al. (2002). Six-year follow-up of preventive interventions for children of divorce: a randomized controlled trial. *JAMA*, 288 (15), 1874-81.

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Collaborative primary care for children with depression

Children's Mental Health: Depression

Literature review updated August 2017.

Program Description: Collaborative primary care integrates behavioral health into the primary care setting to treat children and adolescents with depression. In the collaborative care model, a care manager coordinates with a primary care provider and behavioral health care providers to develop and implement measurement-based treatment plans for individual patients. Care managers also provide psychoeducation and brief psychotherapy-based modules, such as cognitive behavioral therapy. The included study reports on Reaching Out to Adolescent in Distress (ROAD), a specific collaborative care model that was developed and implemented in Washington State. In the included studies, patients received collaborative care for 12 months. Patients in the comparison group received treatment as usual.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Major depressive disorder | 15 | 1 | 50 | -0.575 | 0.485 | 16 | -0.001 | 0.061 | 17 | -0.898 | 0.007 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

Richardson, L.P., Ludman, E., McCauley, E., Lindenbaum, J., Larison, C., Zhou, C., . . . Katon, W. (2014). Collaborative care for adolescents with depression in primary care: a randomized clinical trial. *Jama*, (312)8, 809-16.

Addition of CBT to antidepressants (compared to antidepressants alone) for adolescent depression

Children's Mental Health: Depression

Literature review updated August 2014.

Program Description: This collection of studies evaluated the effect of adding cognitive behavioral therapy (cognitive restructuring, engagement in pleasurable activities, emotion regulation, communication skills, and problem-solving) to treatment with antidepressants compared to treatment with antidepressants only.

| Meta-Analysis of Program Effects | | | | | | | | | | | |
|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Externalizing behavior symptoms | 15 | 2 | 184 | -0.177 | 0.105 | 16 | -0.084 | 0.065 | 19 | -0.177 | 0.091 |
| Global functioning | 15 | 2 | 243 | 0.171 | 0.091 | 16 | 0.000 | 0.016 | 17 | 0.108 | 0.060 |
| Major depressive disorder | 15 | 5 | 444 | -0.135 | 0.077 | 16 | 0.000 | 0.013 | 17 | -0.135 | 0.078 |
| Suicidal ideation | 15 | 1 | 77 | -0.074 | 0.095 | 16 | 0.000 | 0.010 | 17 | -0.074 | 0.436 |
| Suicide attempts | 15 | 1 | 166 | -0.087 | 0.146 | 16 | 0.000 | 0.014 | 17 | -0.087 | 0.550 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

Adjusted effect sizes are used to calculate the benefits from our benefit cost model. WSIPP may adjust effect sizes based on methodological characteristics of the study. For example, we may adjust effect sizes when a study has a weak research design or when the program developer is involved in the research. The magnitude of these adjustments varies depending on the topic area.

WSIPP may also adjust the second ES measurement. Research shows the magnitude of some effect sizes decrease over time. For those effect sizes, we estimate outcome-based adjustments which we apply between the first time ES is estimated and the second time ES is estimated. We also report the unadjusted effect size to show the effect sizes before any adjustments have been made. More details about these adjustments can be found in our [Technical Documentation](#).

Citations Used in the Meta-Analysis

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Choice Theory/Reality Therapy

Children's Mental Health: Disruptive Behavior

Literature review updated December 2015.

Program Description: Choice Theory/Reality Therapy is a program for parents of elementary students with repeated disciplinary referrals. The program is delivered in nine 90-minute group sessions. The program focuses on responding to child needs, teaching self-control by example, parenting in an authoritative (rather than authoritarian or permissive way) that sets limits in keeping with the child's development and creating a supportive environment in the home.

| Meta-Analysis of Program Effects | | | | | | | | | | | |
|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Externalizing behavior symptoms | 9 | 1 | 15 | -0.099 | 0.372 | 10 | -0.047 | 0.193 | 13 | -0.479 | 0.212 |
| Internalizing symptoms | 9 | 1 | 15 | -0.091 | 0.372 | 10 | -0.066 | 0.291 | 12 | -0.441 | 0.248 |
| Office discipline referrals | 9 | 1 | 15 | -0.526 | 0.378 | 10 | -0.251 | 0.222 | 13 | -0.938 | 0.017 |

Meta-analysis is a statistical method to combine the results from separate studies on a program, policy, or topic in order to estimate its effect on an outcome. WSIPP systematically evaluates all credible evaluations we can locate on each topic. The outcomes measured are the types of program impacts that were measured in the research literature (for example, crime or educational attainment). Treatment N represents the total number of individuals or units in the treatment group across the included studies.

An effect size (ES) is a standard metric that summarizes the degree to which a program or policy affects a measured outcome. If the effect size is positive, the outcome increases. If the effect size is negative, the outcome decreases.

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Citations Used in the Meta-Analysis

Petra, J.R. (2000). *The effects of a choice theory and reality therapy parenting program on children's behavior*. (Doctoral Dissertation). The Union Institute Graduate College.

Intensive Family Preservation Services (HOMEBUILDERS®) for youth with serious emotional disturbance (SED)

Children's Mental Health: Serious Emotional Disturbance

Literature review updated June 2016.

Program Description: Intensive Family Preservation Services are short-term, home-based crisis intervention services that emphasize placement prevention. The original program, HOMEBUILDERS®, was developed in 1974 in Federal Way, Washington. The program emphasizes contact with the family within 24 hours of the crisis, staff accessibility round the clock, small caseload sizes, service duration of four to six weeks, and provision of intensive, concrete services and counseling. This model is intended to prevent removal of a child from his or her biological home (or to promote his or her return to that home) by improving family functioning. For this analysis, we have presented the effects of all services together. In the single study included here, youth were at imminent risk of psychiatric hospitalization.

| Meta-Analysis of Program Effects | | | | | | | | | | | |
|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Externalizing behavior symptoms | 12 | 2 | 180 | 0.120 | 0.116 | 13 | 0.057 | 0.065 | 16 | 0.120 | 0.301 |
| Hospitalization (psychiatric) | 12 | 2 | 180 | -0.239 | 0.181 | 13 | n/a | n/a | n/a | -0.239 | 0.187 |
| Internalizing symptoms | 12 | 2 | 180 | 0.170 | 0.282 | 13 | 0.124 | 0.225 | 15 | 0.170 | 0.546 |

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Citations Used in the Meta-Analysis

Evans, M.E., Boothroyd, R.A., Armstrong, M.I., Greenbaum, P.E., Brown, E.C., & Kuppinger, A.D. (2003). An experimental study of the effectiveness of intensive in-home crisis services for children and their families: Program outcomes. *Journal of Emotional and Behavioral Disorders*, 11(2), 92-102.

Full fidelity wraparound for children with serious emotional disturbance (SED)

Children's Mental Health: Serious Emotional Disturbance

Literature review updated January 2012.

Program Description: Wraparound is an intensive, individualized care planning and management process for children with complex emotional and behavioral needs. During the wraparound process, a team of people who are relevant to the life of the child or youth collaboratively develop an individualized plan of care, implement this plan, monitor the efficacy of the plan, and work towards success over time. The wraparound plan typically includes formal services and interventions, together with community services and interpersonal support and assistance provided by friends, kin, and other people drawn from the family's social networks. After the initial plan is developed, the team continues to meet to monitor progress and revise interventions and strategies when needed.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Disruptive behavior disorder symptoms | n/a | 4 | 199 | -0.288 | 0.202 | 12 | -0.137 | 0.119 | 15 | -0.288 | 0.154 |
| Externalizing behavior symptoms | n/a | 4 | 199 | -0.522 | 0.189 | 12 | -0.249 | 0.143 | 15 | -0.522 | 0.006 |
| Internalizing symptoms | n/a | 4 | 199 | -0.222 | 0.125 | 12 | -0.162 | 0.116 | 14 | -0.222 | 0.075 |

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Citations Used in the Meta-Analysis

- Clark, H.B., Prange, M.E., Lee, B., Stewart, E.S., McDonald, B.A., & Boyd, L.A. (1998) An individualized wraparound process for children in foster care with emotional/behavioral disturbances: follow-up findings and implications from a controlled study. In M. H. Epstein, K. Kutash, & A. Duchnowski (Eds.), *Outcomes for children and youth with emotional and behavioral disorders and their families: Programs and evaluation best practices* (pp. 513-542). Austin, TX: Pro-Ed.
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Child-Parent Psychotherapy

Children's Mental Health: Trauma

Literature review updated June 2013.

Program Description: This intervention is designed for parents (most frequently mothers) whose children have relationships to their parents that are characterized by less positive emotion and trust. In one of the two studies in the review, children had witnessed domestic violence. In the other, mothers had diagnoses of depression. The intervention consists of weekly psychotherapy sessions where both child and parent are present. The goal is to strengthen the relationship between parent and child, thereby increasing the child's sense of safety and attachment. The program is designed to consist of 50 weekly sessions.

| Meta-Analysis of Program Effects | | | | | | | | | | | | |
|----------------------------------|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| Outcomes measured | Primary or secondary participant | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
| | | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | | ES | SE | Age | ES | SE | Age | | |
| Post-traumatic stress | Primary | 4 | 1 | 36 | -0.551 | 0.254 | 5 | -0.551 | 0.254 | 6 | -0.861 | 0.001 |
| Test scores | Primary | 4 | 1 | 43 | 0.282 | 0.206 | 5 | 0.087 | 0.227 | 17 | 0.282 | 0.170 |
| Post-traumatic stress | Secondary | 27 | 1 | 36 | -0.309 | 0.251 | 28 | -0.309 | 0.251 | 28 | -0.483 | 0.056 |

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Citations Used in the Meta-Analysis

- Cicchetti, D., Rogosch, F.A., & Toth, S. L. (2000). The Efficacy of Toddler-Parent Psychotherapy for Fostering Cognitive Development in Offspring of Depressed Mothers. *Journal of Abnormal Child Psychology*, 28(2), 135-148.
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Modularized Approaches to Treatment of Anxiety, Depression, and Behavior (MATCH)

Children's Mental Health: Other
Literature review updated June 2013.

Program Description: Modular treatment consists of modules from the three standard treatment types for child anxiety (Coping Cat), depression (Primary and Secondary Control Enhancement Training), and disruptive behavior (Behavioral Parent Training/Defiant Child), but therapists are free to introduce modules from more than one of the types. For example, during depression treatment, a therapist could use the module for defiant behavior if the child's behavior warranted and return to the depression treatment later.

| Meta-Analysis of Program Effects | | | | | | | | | | | |
|----------------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Externalizing behavior symptoms | n/a | 1 | 62 | -0.413 | 0.187 | 11 | -0.197 | 0.128 | 13 | -0.646 | 0.001 |
| Internalizing symptoms | n/a | 1 | 62 | -0.350 | 0.187 | 11 | -0.255 | 0.176 | 12 | -0.546 | 0.004 |

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Citations Used in the Meta-Analysis

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Motivational interviewing to engage children in mental health treatment

Children's Mental Health: Other

Literature review updated August 2017.

Program Description: Motivational interviewing is a method of communication intended to increase participants' motivation for change. In clinical practice, motivational interviewing can be used with the goal of increasing engagement in treatment.

This analysis includes studies that use motivational interviewing with the goal of improving treatment engagement in mental health services for children and adolescents. In the included studies, participants have been diagnosed with mood or anxiety disorders or have been identified as "at risk" of developing a disorder. Participants in the intervention group received motivational interviewing in addition to being offered psychotherapy (such as cognitive-behavioral therapy). In this collection of studies, the motivational interviews typically lasted about 50 minutes and were provided by clinicians at outpatient mental health centers. Participants in the comparison condition were offered psychotherapy without motivational interviewing.

Meta-Analysis of Program Effects

| Outcomes measured | Treatment age | No. of effect sizes | Treatment N | Adjusted effect sizes and standard errors used in the benefit-cost analysis | | | | | | Unadjusted effect size (random effects model) | |
|---------------------------|---------------|---------------------|-------------|---|-------|-----|-----------------------------|-------|-----|---|---------|
| | | | | First time ES is estimated | | | Second time ES is estimated | | | ES | p-value |
| | | | | ES | SE | Age | ES | SE | Age | | |
| Engagement/Retention | n/a | 2 | 89 | 0.324 | 0.201 | 16 | n/a | n/a | n/a | 0.505 | 0.013 |
| Major depressive disorder | n/a | 1 | 39 | 0.007 | 0.304 | 16 | 0.000 | 0.025 | 17 | 0.011 | 0.970 |

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Citations Used in the Meta-Analysis

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