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Updated Inventory of Evidence-based, Research-based, and Promising Practices: *Prevention and Intervention Services for Adult Behavioral Health*

Benefit-Cost & Meta-Analysis Results

January 2015

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The benefit-cost results in this document are current as of January 2015.
For the most up-to-date benefit-cost results, please visit our website.
http://www.wsipp.wa.gov/BenefitCost

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Assertive Community Treatment

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Assertive Community Treatment (ACT) is a treatment and case management approach that includes the following key elements: a multidisciplinary team that includes a medication prescriber, direct service provided by team members, caseloads that are shared between team members, services provided in locations convenient for the patient, low patient-to-staff ratios. The studies reviewed in this analysis compared ACT to treatment as usual or other forms of case management. ACT is associated with significant reductions in homelessness, for which the current WSIPP benefit-cost model does not estimate monetary benefits. To test the sensitivity of our benefit-cost results to this known limitation, we examined a recent comprehensive benefit-cost study of housing vouchers (Carlson et al., 2011). Our benefit-cost results would not change significantly if we had included the benefits of providing housing estimated by this study. Carlson, D., Haveman, R., Kaplan, T., & Wolfe, B. (2011). The benefits and costs of the Section 8 housing subsidy program: A framework and estimates of firstyear effects. Journal of Policy Analysis and Management, 30(2), 233-255.

Benefit-Cost Summary

Program benefits	
Participants	($1,481)
Taxpayers	$187
Other (1)	$381
Other (2)	($8,550)
Total	($9,463)
Costs	($17,720)
Benefits minus cost	($27,183)

Summary statistics	
Benefit to cost ratio	($0.53)
Benefits minus costs	($27,183)
Probability of a positive net present value	4 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$76	$176	$39	$291
Labor market earnings (alcohol abuse/dependence)	($1,494)	($637)	$0	$0	($2,131)
Health care (alcohol abuse/dependence)	($2)	($15)	($14)	($7)	($38)
Property loss (alcohol abuse/dependence)	($2)	$0	($3)	$0	($4)
Health care (general hospitalization)	$2	$36	$31	$18	$87
Health care (psychiatric hospitalization)	$9	$697	$157	$327	$1,191
Health care (emergency department visits)	$6	$29	$34	$15	$83
Adjustment for deadweight cost of program	$0	$0	$0	($8,941)	($8,941)
Totals	($1,481)	$187	$381	($8,550)	($9,463)

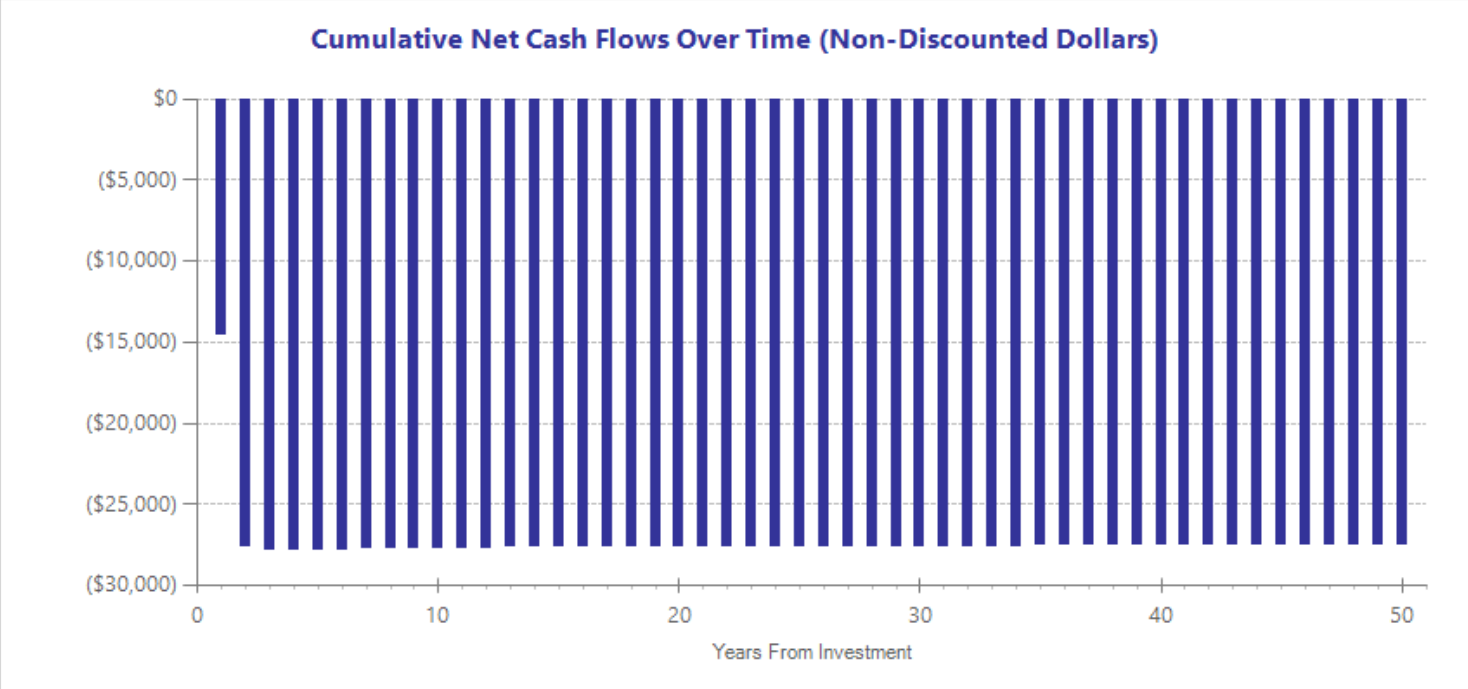
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$14,000	1.892	2013	Present value of net program costs (in 2013 dollars)	($17,720)
Comparison costs	$4,482	1.892	2013	Uncertainty (+ or - %)	10 %

The annual per patient cost of ACT in Washington State was used to estimate the program costs (Washington State Department of Social & Health Services, 2013). Since the comparison groups in the included studies had an average caseload that was 3.12 times as high as the ACT caseload, we estimated the costs of the comparison group by reducing the ACT costs by this factor. Washington State Department of Social & Health Services. (2013). 2013 program description, Washington Program for Assertive Community Treatment. Retrieved from https://fortress.wa.gov/dshs/adsaapps/about/programs/MH%20Program%20for%20Assertive%20Community%20Treatment.docx.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Hospitalization (psychiatric)	Primary	22	2294	-0.178	0.016	-0.178	0.074	42	0.000	0.118	43
Emergency department visits	Primary	3	555	-0.043	0.844	-0.043	0.218	42	n/a	n/a	43
Alcohol abuse or dependence	Primary	4	272	0.097	0.446	0.097	0.127	42	n/a	n/a	43
Crime	Primary	8	934	-0.030	0.644	-0.030	0.064	42	n/a	n/a	43
Hospitalization (general)	Primary	4	458	-0.014	0.897	-0.014	0.110	42	n/a	n/a	43
Psychiatric symptoms	Primary	11	582	-0.050	0.496	-0.050	0.061	42	n/a	n/a	43
Homelessness	Primary	8	628	-0.228	0.020	-0.228	0.098	42	n/a	n/a	43
Global functioning	Primary	5	237	0.142	0.139	0.142	0.096	42	n/a	n/a	43
Illicit drug abuse or dependence	Primary	4	249	0.039	0.749	0.039	0.121	42	n/a	n/a	43

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Cognitive Behavioral Therapy (CBT) for adult anxiety

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Cognitive-behavioral therapies include various components, such as cognitive restructuring, behavioral activation, emotion regulation, exposure, communication skills, and problem-solving. Most commonly, studies offering this treatment provided 10-20 therapeutic hours per client in individual or group modality. Most studies in this analysis focused on a single anxiety disorder (generalized anxiety, obsessive-compulsive, panic, social phobia) with aspects of the treatment tailored to the specific disorder. This review excludes studies of CBT for post-traumatic stress disorder.

Benefit-Cost Summary

Program benefits	
Participants	$25,927
Taxpayers	$11,584
Other (1)	$755
Other (2)	$132
Total	$38,398
Costs	($352)
Benefits minus cost	$38,046

Summary statistics	
Benefit to cost ratio	$109.40
Benefits minus costs	$38,046
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (anxiety disorder)	$25,729	$10,974	$0	$0	$36,703
Health care (anxiety disorder)	$198	$610	$755	$309	$1,872
Adjustment for deadweight cost of program	$0	$0	$0	($177)	($177)
Totals	$25,927	$11,584	$755	$132	$38,398

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

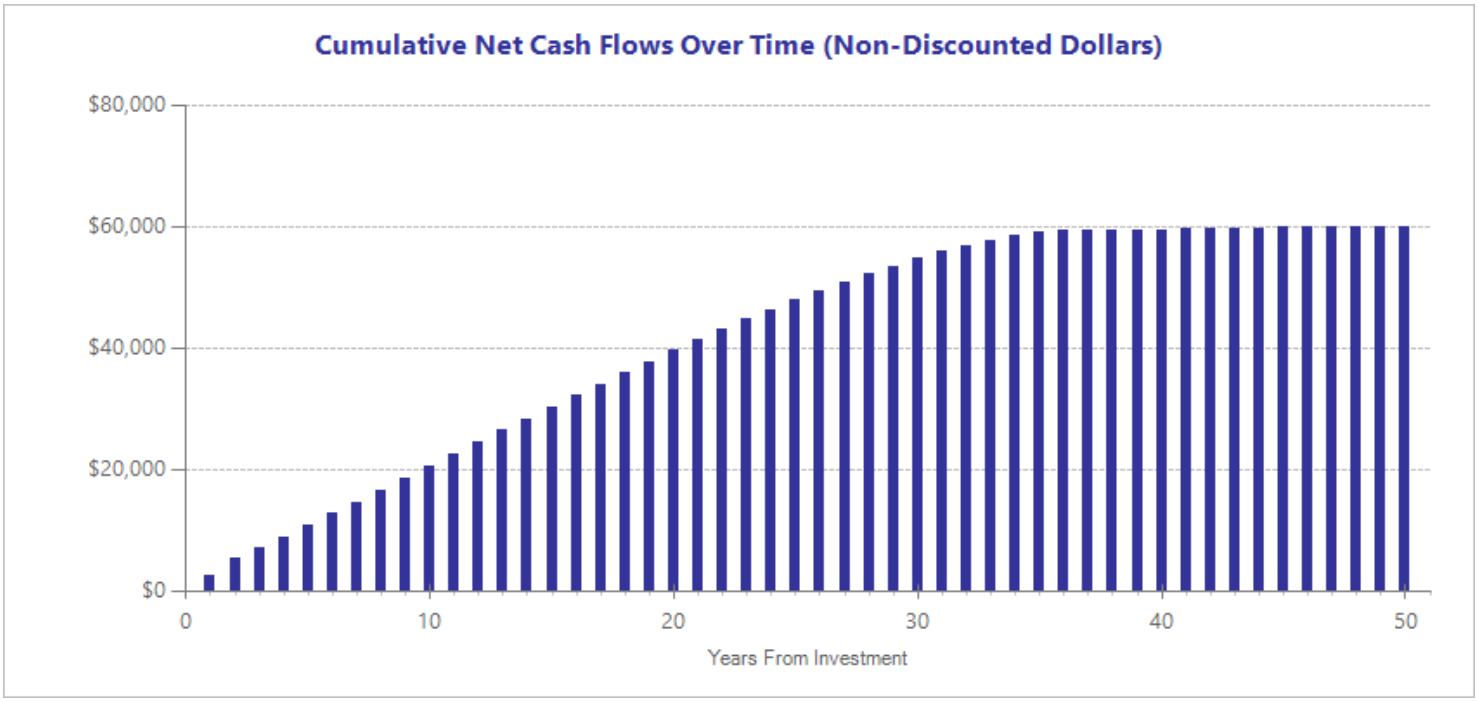
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$1,142	1	2008
Comparison costs	$814	1	2008

Summary statistics	
Present value of net program costs (in 2013 dollars)	($352)
Uncertainty (+ or - %)	10 %

Based on therapist time as reported in the studies, multiplied by reported DSHS reimbursement rates reported in Mercer (2008) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2009.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Anxiety disorder	Primary	22	505	-0.836	0.001	-0.539	0.078	31	-0.280	0.095	33

Citations Used in the Meta-Analysis

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Cognitive Behavioral Therapy (CBT) for adult depression

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Cognitive-behavioral therapies include various components, such as cognitive restructuring, behavioral activation, emotion regulation, communication skills, and problem-solving. Treatment is goal-oriented and generally of limited duration. Most commonly, studies offering this treatment provided 10-20 therapeutic hours per client in individual or group modality.

Benefit-Cost Summary

Program benefits	
Participants	$14,396
Taxpayers	$7,445
Other (1)	$1,876
Other (2)	$2,431
Total	$26,148
Costs	($233)
Benefits minus cost	$25,914

Summary statistics	
Benefit to cost ratio	$112.16
Benefits minus costs	$25,914
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (major depression)	$13,903	$5,930	$0	$1,790	$21,622
Health care (major depression)	$493	$1,515	$1,876	$758	$4,643
Adjustment for deadweight cost of program	$0	$0	$0	($117)	($117)
Totals	$14,396	$7,445	$1,876	$2,431	$26,148

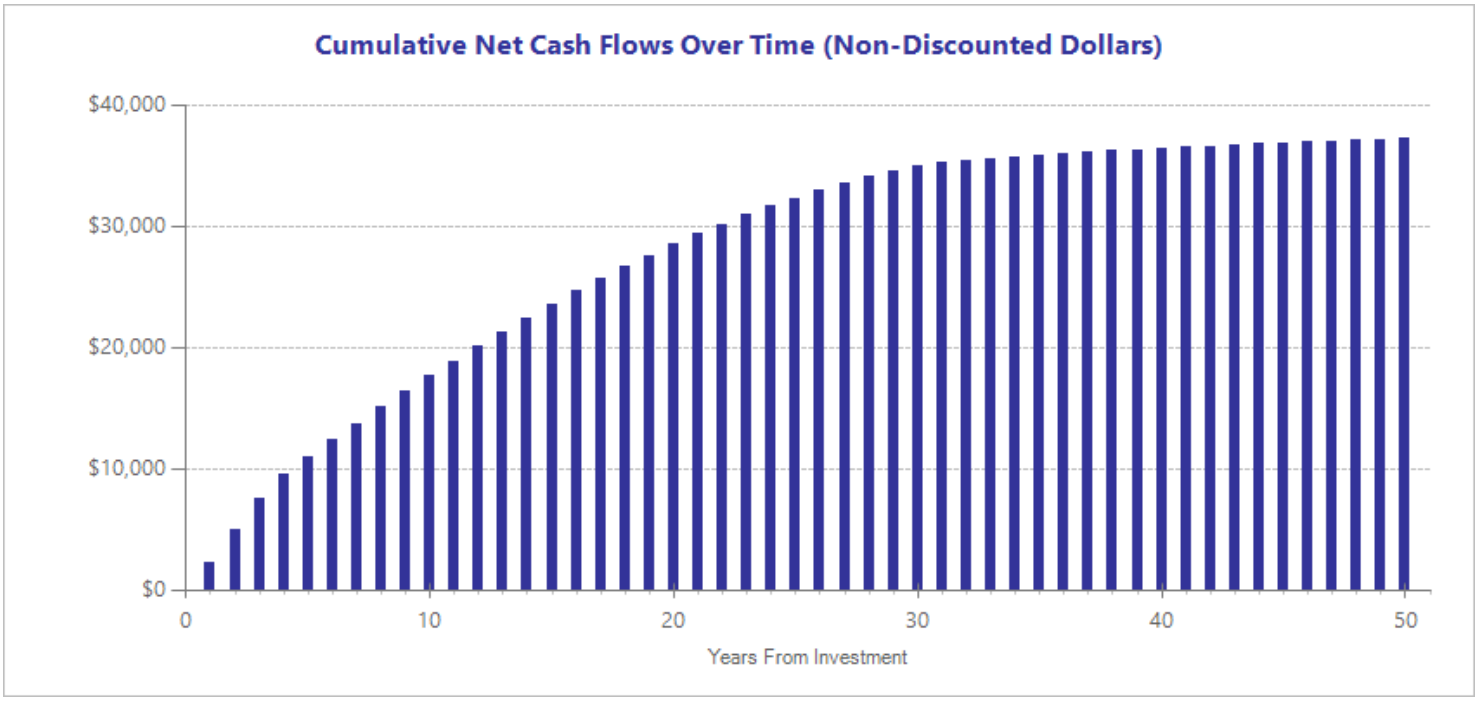
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$890	1	2008	Present value of net program costs (in 2013 dollars)	($233)
Comparison costs	$672	1	2008	Uncertainty (+ or - %)	10 %

Based on therapist time as reported in the studies, multiplied by reported DSHS reimbursement rates reported in Mercer (2008) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2009.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Major depressive disorder	Primary	44	901	-0.694	0.001	-0.482	0.060	37	-0.251	0.073	39

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Cognitive Behavioral Therapy for posttraumatic stress disorder (PTSD)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Treatments include several components, such psycho-education about PTSD, relaxation and other techniques for managing physiological and emotional stress, exposure (the gradual desensitization to memories of the traumatic event) and, cognitive restructuring of inaccurate or unhelpful thoughts. The studies in this review employed a number of trauma-specific treatment models including Prolonged Exposure Therapy (PE), Narrative Exposure Therapy (NET), and Cognitive Processing Therapy (CPT). In the studies in this review, treatments provided between one and 50 therapeutic hours per client in individual or group settings. Studies were conducted on all continents and subjects had experienced a variety of types trauma including terrorism, sexual or physical assault, domestic violence, war, political detention, and automobile accidents.

Benefit-Cost Summary

Program benefits	
Participants	$20,265
Taxpayers	$11,281
Other (1)	$3,794
Other (2)	$1,350
Total	$36,690
Costs	($345)
Benefits minus cost	$36,345

Summary statistics	
Benefit to cost ratio	$106.74
Benefits minus costs	$36,345
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (PTSD)	$19,267	$8,218	$0	$0	$27,485
Health care (PTSD)	$997	$3,063	$3,794	$1,522	$9,376
Adjustment for deadweight cost of program	$0	$0	$0	($172)	($172)
Totals	$20,265	$11,281	$3,794	$1,350	$36,690

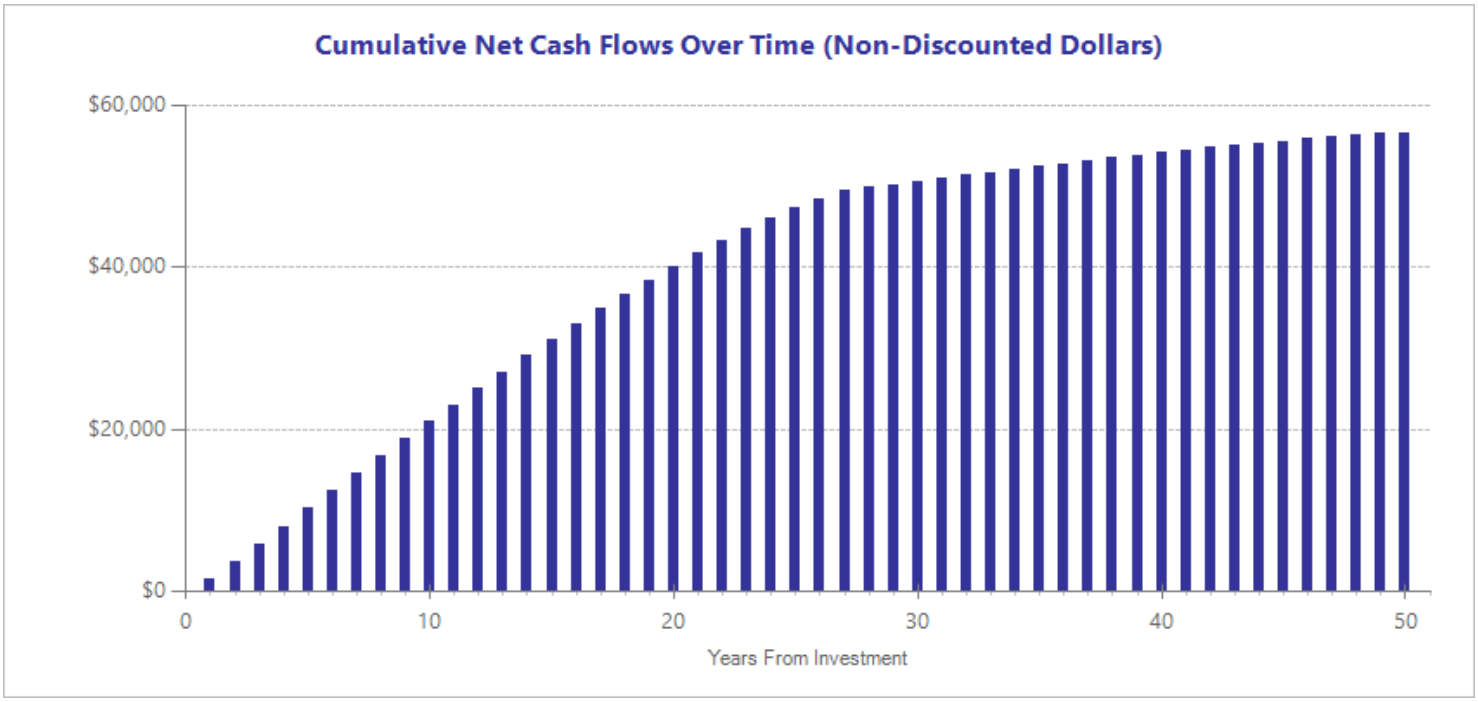
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,136	1	2008	Present value of net program costs (in 2013 dollars)	($345)
Comparison costs	$814	1	2008	Uncertainty (+ or - %)	15 %

Cost of treatment by modality (group/individual) weighted for TX N for individual therapy and TX N for group therapy in the studies. Cost per session: $33.63/session for group, $96.63 for individual therapy, based on actuarial tables reported 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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Post-traumatic stress	Primary	56	1910	-0.909	0.001	-0.452	0.042	39	-0.452	0.042	40
Employment	Primary	1	12	0.821	0.516	0.348	0.535	39	0.348	0.535	40

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Cognitive Behavioral Therapy for schizophrenia/psychosis

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: CBT for Psychosis (CBTp) includes the application of cognitive strategies focused on changing thoughts to improve feelings and behaviors, as well as behavioral techniques most often used to address negative symptoms. It involves teaching of coping strategies, aimed at teaching patients methods of coping with symptoms, training in problem solving, social skills and strategies to reduce risk of relapse. In this collection of studies, CBTp was provided in addition to antipsychotic medication.

Benefit-Cost Summary

Program benefits	
Participants	$63
Taxpayers	$4,633
Other (1)	$1,044
Other (2)	$1,597
Total	$7,336
Costs	($1,421)
Benefits minus cost	$5,915

Summary statistics	
Benefit to cost ratio	$5.18
Benefits minus costs	$5,915
Probability of a positive net present value	59 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Health care (psychiatric hospitalization)	$63	$4,633	$1,044	$2,309	$8,049
Adjustment for deadweight cost of program	$0	$0	$0	($713)	($713)
Totals	$63	$4,633	$1,044	$1,597	$7,336

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

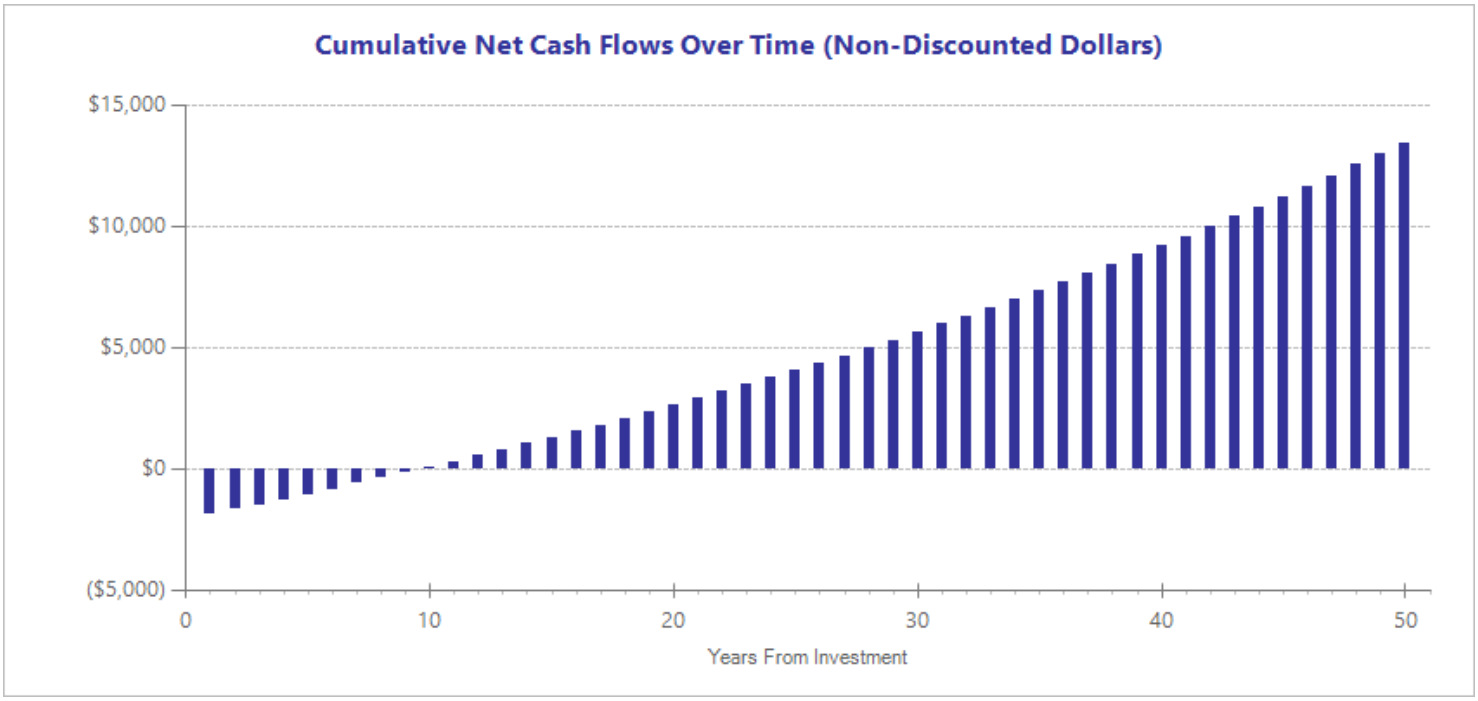
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$1,436	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($1,421)
Uncertainty (+ or - %)	10 %

Cost of treatment by modality (group/individual) weighted for TX N for individual therapy and TX N for group therapy in the studies. Cost per session per person: $37.91/session for group, $120.90 for individual therapy, 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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Psychosis symptoms (positive)	Primary	33	1477	-0.178	0.003	-0.178	0.059	36	-0.132	0.115	37
Psychosis symptoms (negative)	Primary	25	1143	-0.172	0.014	-0.170	0.069	36	-0.126	0.116	37
Psychiatric symptoms	Primary	25	1172	-0.148	0.147	-0.148	0.101	36	-0.110	0.132	37
Hospitalization (psychiatric)	Primary	16	832	-0.124	0.241	-0.124	0.106	36	-0.092	0.122	37
Global functioning	Primary	18	721	0.232	0.001	0.232	0.069	36	0.172	0.147	37
Major depressive disorder	Primary	15	727	-0.123	0.078	-0.123	0.070	36	-0.091	0.096	37
Anxiety disorder	Primary	7	267	0.017	0.866	0.017	0.103	36	0.013	0.097	37
Medication compliance	Primary	2	75	-0.011	0.956	-0.011	0.195	36	-0.008	0.183	37
Suicidal ideation	Primary	2	115	-0.175	0.599	-0.175	0.331	36	-0.129	0.325	37
Hope	Primary	3	92	0.300	0.299	0.300	0.249	36	0.223	0.289	37

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Collaborative Primary Care for depression

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: A care manager provides management and follow-up and collaborates with primary care provider and usually mental health specialists. The manager focuses on improving depression symptoms.

Benefit-Cost Summary

Program benefits	
Participants	$4,455
Taxpayers	$2,408
Other (1)	$730
Other (2)	$1,146
Total	$8,739
Costs	($797)
Benefits minus cost	$7,942

Summary statistics	
Benefit to cost ratio	$11.01
Benefits minus costs	$7,942
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (major depression)	$4,263	$1,818	$0	$1,251	$7,333
Health care (major depression)	$192	$590	$730	$293	$1,805
Adjustment for deadweight cost of program	$0	$0	$0	($398)	($398)
Totals	$4,455	$2,408	$730	$1,146	$8,739

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

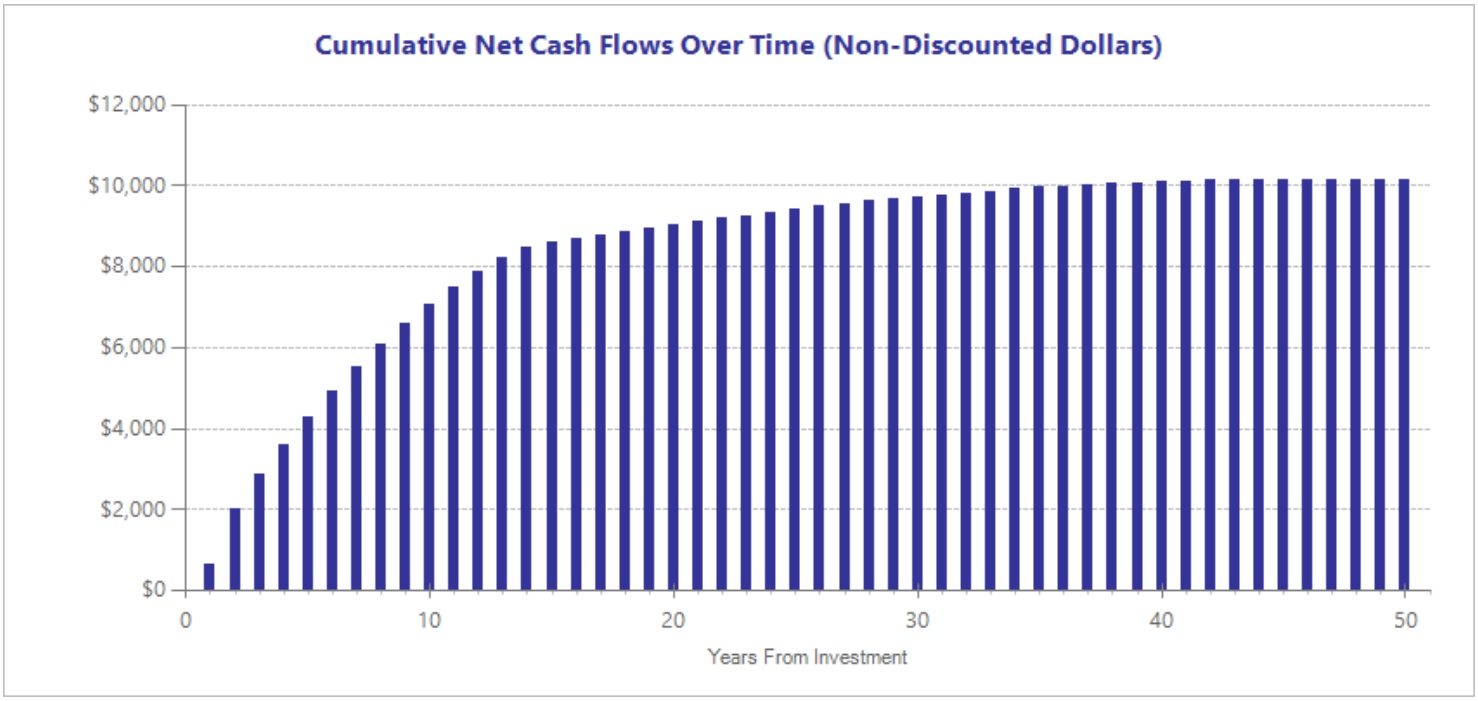
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$787	1	2012
Comparison costs	$0	1	2012

Summary statistics	
Present value of net program costs (in 2013 dollars)	($797)
Uncertainty (+ or - %)	15 %

Cost of telephone contacts, in-person contacts, supervision & information support, screening, educational materials, time spent w/GP. Costs were obtained from Ell, K., Katon, W., Xie, B., Lee, P.J., Kapetanovic, S., Guterman, J., & Chou, C.P. (2010). Collaborative care management of major depression among low-income, predominantly Hispanic subjects with diabetes: A randomized controlled trial. Diabetes Care, 33(4), 706-713. The estimate used the average number of telephone & in-person contacts from studies. There is a wide variation of cost, since the time the care manager spent w/each patient varied widely from study to study.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Major depressive disorder	Primary	48	7158	-0.277	0.001	-0.264	0.034	52	-0.129	0.037	54
Total cost of care	Primary	8	2551	0.079	0.044	0.079	0.040	56	0.039	0.043	58

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Collaborative Primary Care for anxiety

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: A care manager provides management and follow-up for patients with anxiety and collaborates primary care provider and usually mental health specialists. The manager focuses both on improving anxiety symptoms

Benefit-Cost Summary

Program benefits	
Participants	$17,497
Taxpayers	$7,824
Other (1)	$519
Other (2)	($191)
Total	$25,649
Costs	($796)
Benefits minus cost	$24,853

Summary statistics	
Benefit to cost ratio	$32.36
Benefits minus costs	$24,853
Probability of a positive net present value	94 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (anxiety disorder)	$17,360	$7,405	$0	$0	$24,765
Health care (anxiety disorder)	$136	$419	$519	$207	$1,282
Adjustment for deadweight cost of program	$0	$0	$0	($398)	($398)
Totals	$17,497	$7,824	$519	($191)	$25,649

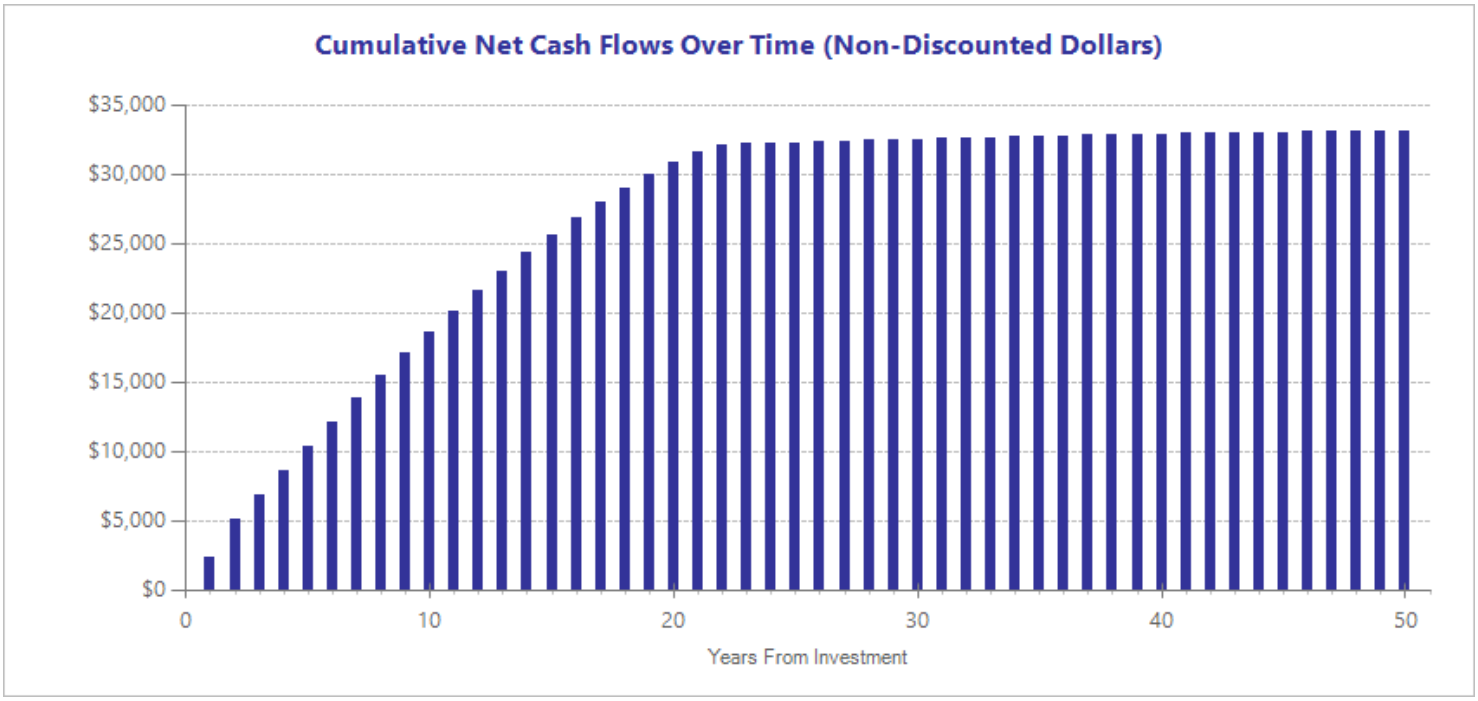
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$787	1	2012	Present value of net program costs (in 2013 dollars)	($796)
Comparison costs	$0	1	2012	Uncertainty (+ or - %)	15 %

Cost of telephone contacts, in-person contacts, supervision & information support, screening, educational materials, time spent w/GP. Costs were obtained from Ell, K., Katon, W., Xie, B., Lee, P.J., Kapetanovic, S., Guterman, J., & Chou, C.P. (2010). Collaborative care management of major depression among low-income, predominantly Hispanic subjects with diabetes: A randomized controlled trial. Diabetes Care, 33(4), 706-713. The estimate used the average number of telephone and in-person contacts from studies. There is a wide variation of cost, since the time the care manager spent w/each patient varied widely from study to study.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Anxiety disorder	Primary	4	689	-0.459	0.001	-0.393	0.123	44	-0.192	0.134	46

Citations Used in the Meta-Analysis

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Schnurr, P. P., Friedman, M. J., Oxman, T. E., Dietrich, A. J., Smith, M. W., Shiner, B., . . . Thurston, V. (2013). RESPECT-PTSD: Re-engineering systems for the primary care treatment of PTSD, a randomized controlled trial. *Journal of General Internal Medicine, 28*(1), 32-40.

Collaborative Primary Care for Depression with comorbid medical conditions

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: A care manager provides management and follow-up for depressed patients with any comorbidity and collaborates w/GP & usually mental health specialists. Manager focuses both on improving depression & chronic illness symptoms.

Benefit-Cost Summary

Program benefits	
Participants	$1,804
Taxpayers	$1,269
Other (1)	$718
Other (2)	$1,025
Total	$4,815
Costs	($840)
Benefits minus cost	$3,976

Summary statistics	
Benefit to cost ratio	$5.75
Benefits minus costs	$3,976
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (major depression)	$1,615	$689	$0	$1,154	$3,458
Health care (major depression)	$189	$580	$718	$291	$1,778
Adjustment for deadweight cost of program	$0	$0	$0	($420)	($420)
Totals	$1,804	$1,269	$718	$1,025	$4,815

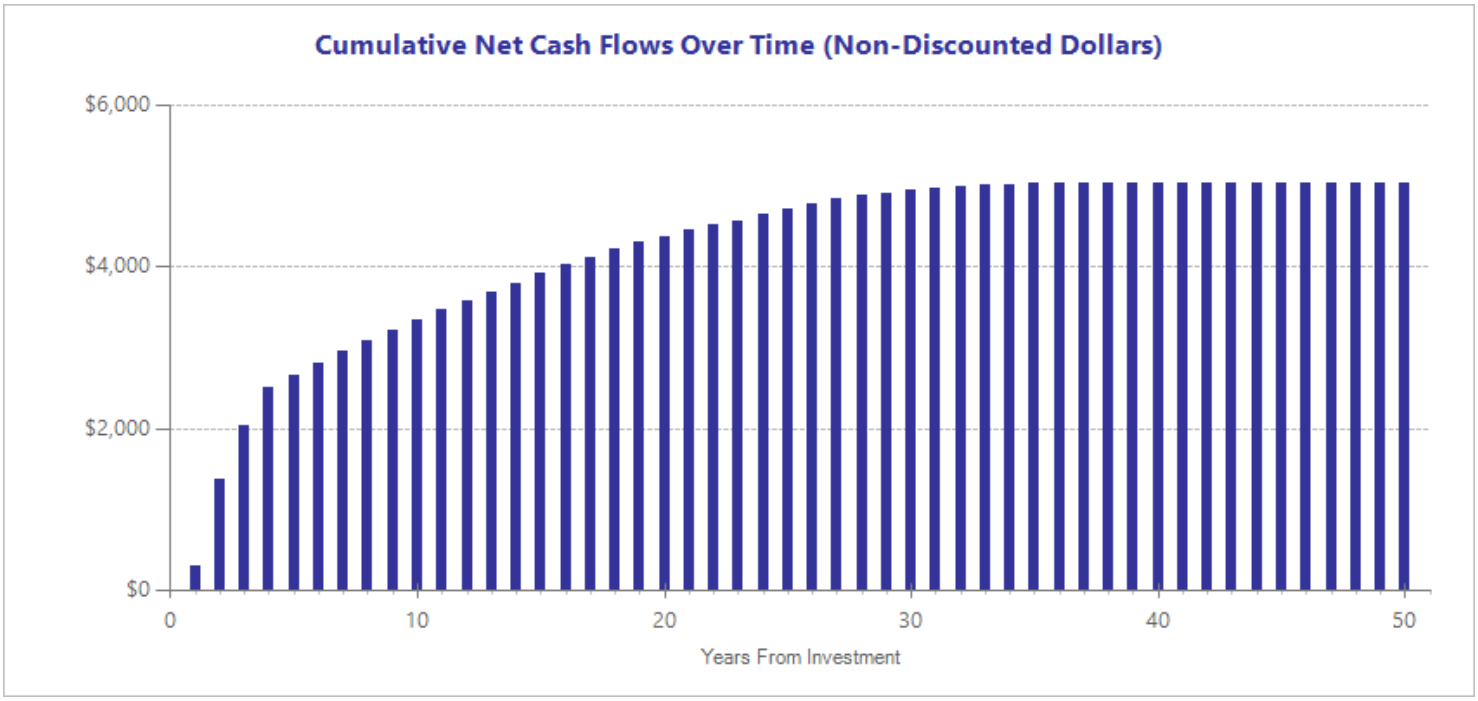
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$831	1	2012	Present value of net program costs (in 2013 dollars)	($840)
Comparison costs	$0	1	2012	Uncertainty (+ or - %)	15 %

Cost of telephone contacts, in-person contacts, supervision & information support, screening, educational materials, time spent w/GP. Costs were obtained from Ell, K., Katon, W., Xie, B., Lee, P.J., Kapetanovic, S., Guterman, J., & Chou, C.P. (2010). Collaborative care management of major depression among low-income, predominantly Hispanic subjects with diabetes: A randomized controlled trial. Diabetes Care, 33(4), 706-713. The estimate used the average number of telephone and in-person contacts from studies. There is a wide variation of cost, since the time the care manager spent w/each patient varied widely from study to study.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Major depressive disorder	Primary	11	1049	-0.352	0.001	-0.352	0.096	62	-0.172	0.105	64
Blood pressure	Primary	4	326	-0.369	0.043	-0.369	0.183	62	-0.181	0.198	64
Blood sugar	Primary	3	279	-0.254	0.059	-0.254	0.135	62	-0.124	0.146	64

Citations Used in the Meta-Analysis

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Forensic Assertive Community Treatment (FACT)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Forensic Assertive Community Treatment (FACT) is an adaptation of Assertive Community Treatment (ACT) for individuals with involvement in the criminal justice system. In this analysis the study population included individuals with serious mental illness who were identified as candidates for FACT in jail.

Benefit-Cost Summary

Program benefits	
Participants	$3
Taxpayers	$597
Other (1)	$906
Other (2)	($5,948)
Total	($4,443)
Costs	($12,548)
Benefits minus cost	($16,990)

Summary statistics	
Benefit to cost ratio	($0.35)
Benefits minus costs	($16,990)
Probability of a positive net present value	0 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$344	$849	$172	$1,365
Health care (psychiatric hospitalization)	$3	$252	$57	$127	$439
Adjustment for deadweight cost of program	$0	$0	$0	($6,247)	($6,247)
Totals	$3	$597	$906	($5,948)	($4,443)

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

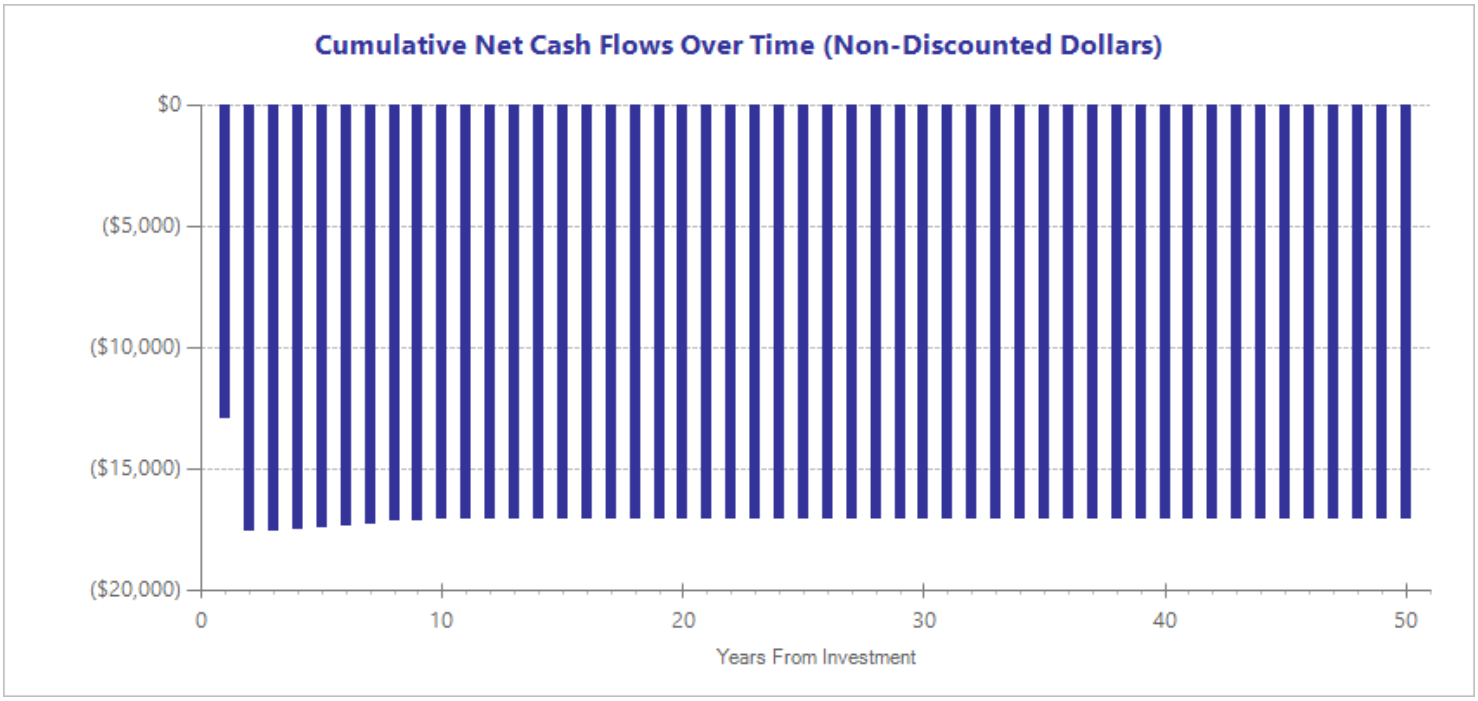
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$14,000	1.33	2013
Comparison costs	$4,482	1.33	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($12,548)
Uncertainty (+ or - %)	10 %

Specific cost data was not available for FACT. We estimated the cost of FACT using the costs of ACT in Washington State. The annual per patient cost of ACT in Washington State was used to estimate the program costs (Washington State Department of Social & Health Services, 2013). We also assumed that the comparison group in the FACT study would have similar costs to the comparison group in the ACT studies that we reviewed. The cost of the comparison group in these studies was estimated by reducing the cost of the ACT intervention by of 3.12 because the comparison group caseloads were higher ACT caseloads by this factor in the ACT studies that we reviewed. Washington State Department of Social & Health Services. (2013). 2013 program description, Washington Program for Assertive Community Treatment. Retrieved from https://fortress.wa.gov/dshs/adsaapps/about/programs/MH%20Program%20for%20Assertive%20Community%20Treatment.docx.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Hospitalization (psychiatric)	Primary	1	72	-0.210	0.226	-0.210	0.174	41	n/a	n/a	42
Crime	Primary	1	72	-0.111	0.524	-0.111	0.173	41	n/a	n/a	42

Citations Used in the Meta-Analysis

Cusack, K.J., Morrissey, J.P., Cuddeback, G.S., Prins, A., & Williams, D.M. (2010). Criminal justice involvement, behavioral health service use, and costs of forensic assertive community treatment: a randomized trial. *Community Mental Health Journal, 46*(4), 356-363.

Illness Management and Recovery (IMR)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Illness Management and Recovery (IMR) is a 40-hour curriculum for individuals with severe mental illness which addresses recovery strategies and information about serious mental illness. The evaluations in this analysis include data from programs where IMR was delivered to individuals and programs where IMR was delivered to a group.

Benefit-Cost Summary

Program benefits	
Participants	$89
Taxpayers	$339
Other (1)	($58)
Other (2)	($1,542)
Total	($1,172)
Costs	($3,396)
Benefits minus cost	($4,568)

Summary statistics	
Benefit to cost ratio	($0.35)
Benefits minus costs	($4,568)
Probability of a positive net present value	17 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	($56)	($139)	($28)	($223)
Labor market earnings (employment)	$84	$36	$0	$0	$120
Health care (psychiatric hospitalization)	$5	$358	$81	$180	$624
Adjustment for deadweight cost of program	$0	$0	$0	($1,693)	($1,693)
Totals	$89	$339	($58)	($1,542)	($1,172)

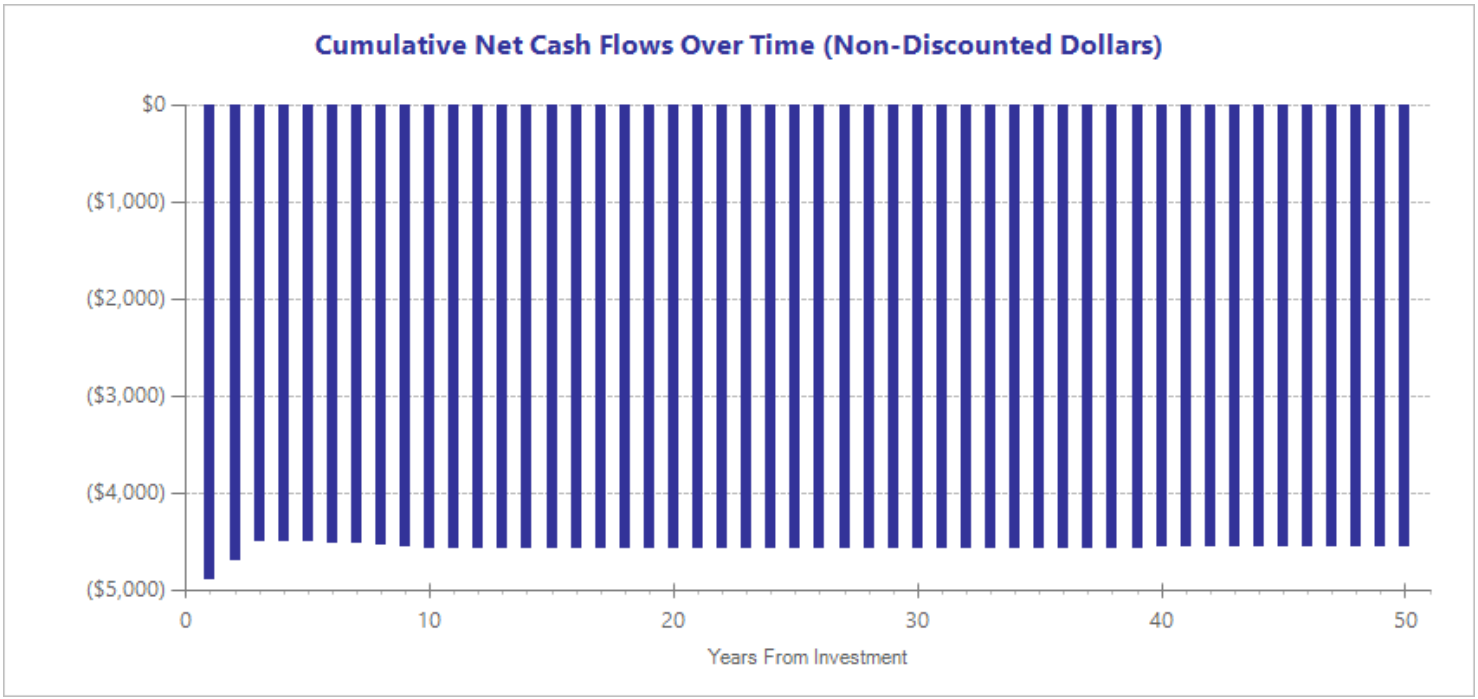
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$3,298	1	2011	Present value of net program costs (in 2013 dollars)	($3,396)
Comparison costs	$0	1	2011	Uncertainty (+ or - %)	10 %

The cost of treatment is the weighted average cost of the individual and group IMR sessions provided in the studies included in the analysis. The group and individual treatment reimbursement rates reported in Mercer (2013) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2014 were used to calculate the cost of treatment.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Employment	Primary	2	93	0.010	0.969	0.010	0.262	48	n/a	n/a	49
Hospitalization (psychiatric)	Primary	3	112	-0.095	0.617	-0.095	0.190	48	n/a	n/a	49
Crime	Primary	1	49	0.027	0.914	0.027	0.246	48	n/a	n/a	49
Psychiatric symptoms	Primary	2	63	-0.517	0.200	-0.517	0.404	48	n/a	n/a	49
Suicidal ideation	Primary	2	63	-0.517	0.437	-0.517	0.665	48	n/a	n/a	49

Citations Used in the Meta-Analysis

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Individual Placement and Support (IPS) for individuals with serious mental illness

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: These studies assess the Individual Placement and Support (IPS) model of supported employment compared with typical vocational services for individuals with serious mental illness. The IPS model focuses on competitive employment, client interests, rapid job placement and ongoing support by employment specialists. In contrast, the comparison groups typically received vocational services that focused on building job skills before employment placement.

Benefit-Cost Summary

Program benefits	
Participants	$1,317
Taxpayers	$562
Other (1)	$0
Other (2)	($393)
Total	$1,487
Costs	($780)
Benefits minus cost	$707

Summary statistics	
Benefit to cost ratio	$2.04
Benefits minus costs	$707
Probability of a positive net present value	66 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (employment)	$1,317	$562	$0	$0	$1,879
Health care (psychiatric hospitalization)	$0	$0	$0	($1)	$0
Adjustment for deadweight cost of program	$0	$0	$0	($392)	($392)
Totals	$1,317	$562	$0	($393)	$1,487

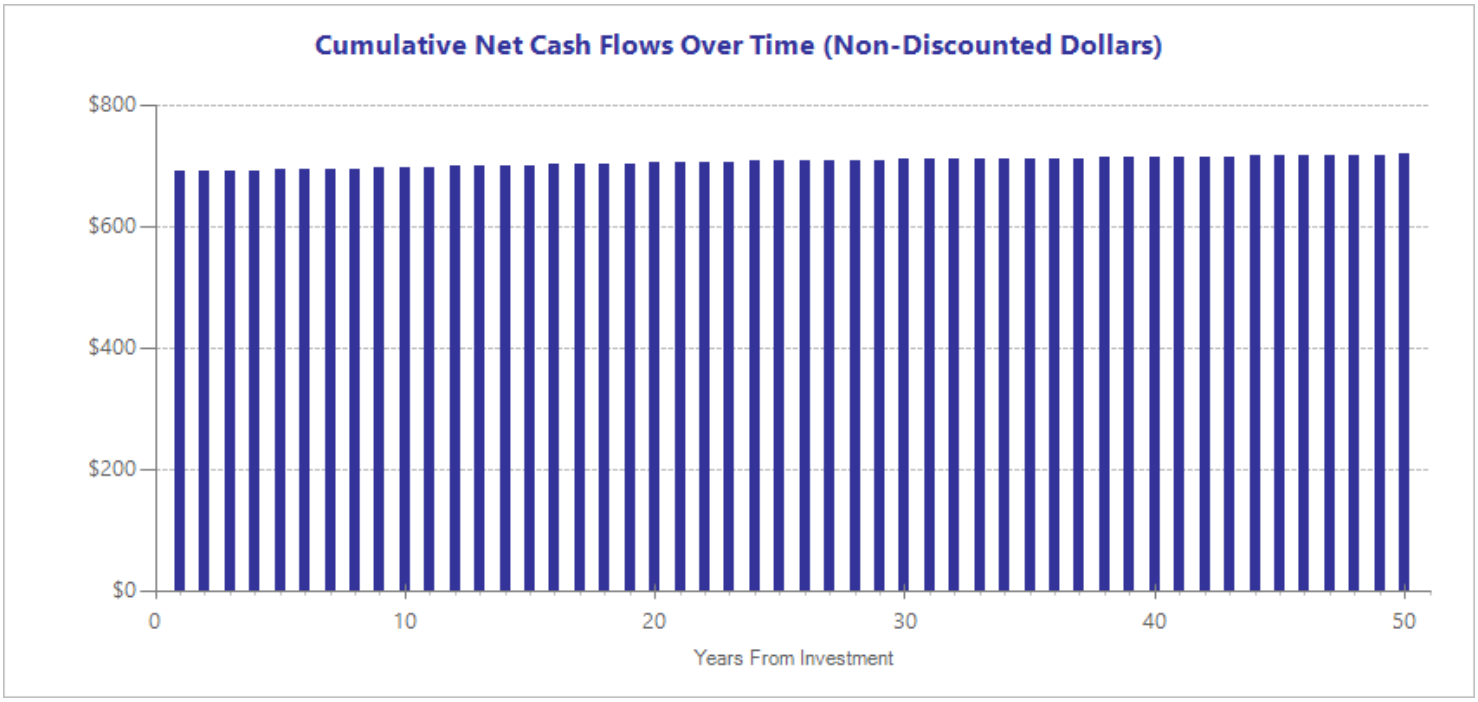
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,644	1	2001	Present value of net program costs (in 2013 dollars)	($780)
Comparison costs	$1,027	1	2001	Uncertainty (+ or - %)	60 %

The cost of IPS is based on the average annual cost found by Latimer et al., 2004. The cost of the comparison group is a weighted average of the costs to provide the services that the comparison group received in the studies we reviewed. Comparison group participants in these studies received enhanced vocational rehabilitation, traditional train and place vocational services or Clubhouse services. The ratio of the cost of enhanced vocational rehabilitation and traditional train and place vocational services compared to IPS was reported by Dixon et al., 2002 and the cost of Clubhouse vocational services was reported by Macias, 2001. Dixon, L., Hoch, J.S., Clark, R., Bebout, R., Drake, R., McHugo, G., & Becker, D. (2002). Cost-effectiveness of two vocational rehabilitation programs for persons with severe mental illness. Psychiatric Services, 53(9), 1118-1124. Latimer, E.A., Bush, P.W., Becker, D.R., Drake, R E., & Bond, G.R. (2004). The cost of high-fidelity supported employment programs for people with severe mental illness. Psychiatric Services, 55(4), 401-406. Macias, C. (2001). Massachusetts Employment Intervention Demonstration Project: An Experimental Comparison of PACT and Clubhouse (Final Report). Retrieved from: http://www.massclubs.org/Docs/ComparisonPACandClubhouseModels2.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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Employment	Primary	5	403	0.358	0.206	0.358	0.283	40	n/a	n/a	41
Hospitalization (psychiatric)	Primary	2	222	-0.003	0.993	-0.003	0.288	40	n/a	n/a	41
Competitive employment	Primary	13	963	1.075	0.001	1.075	0.105	40	n/a	n/a	41
Psychiatric symptoms	Primary	1	74	-0.136	0.404	-0.136	0.164	40	n/a	n/a	41
Hours worked	Primary	4	347	0.303	0.121	0.303	0.196	40	n/a	n/a	41
Earnings	Primary	6	417	0.385	0.002	0.385	0.123	40	n/a	n/a	41

Citations Used in the Meta-Analysis

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Davis, L.L., Leon, A.C., Toscano, R., Drebing, C.E., Ward, L.C., Parker, P.E., Kashner, T.M., ... Drake, R.E. (2012). A randomized controlled trial of supported employment among veterans with posttraumatic stress disorder. *Psychiatric Services, 63*(5), 464-470.

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Tsang, H.W.H., Chan, A., Wong, A., & Liberman, R.P. 2009). Vocational outcomes of an integrated supported employment program for individuals with persistent and severe mental illness. *Journal of Behavior Therapy and Experimental Psychiatry, 40*(2), 292-305.

Twamley, E., Narvaez, J., Becker, D., Bartels, S., & Jeste, D. (2008). Supported employment for middle-aged and older people with schizophrenia. *American Journal of Psychiatric Rehabilitation, 11*(1), 76-89.

Wong, K.K., Chiu, R., Tang, B., Mak, D., Liu, J., & Chiu, S.N. (2008). A randomized controlled trial of a supported employment program for persons with long-term mental illness in Hong Kong. *Psychiatric Services, 59*(1), 84-90.

Medicaid Health Homes

Literature review updated December 2014.

Program Description: A Medicaid health home offers coordinated care to individuals with multiple chronic health conditions, including mental health and substance use disorders. The health home builds linkages to community supports and resources as well as enhances coordination and integration of primary and behavioral healthcare to better meet the needs of people with multiple chronic illnesses. The model aims to improve healthcare quality while also reducing costs. Health homes provide comprehensive case managment, care coordination, health promotion, transitional care when moving from inpatient to other settings. (SAMHSA Health Home Fact Sheet, http://www.integration.samhsa.gov/integrated-care-models/Health_Homes_Fact_Sheet_FINAL.pdf)

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Primary care visits	Primary	1	205	0.472	0.001	0.472	0.127	49	0.472	0.127	51
Emergency department visits	Primary	1	205	-0.073	0.463	-0.073	0.099	49	-0.073	0.099	51
Hospitalization (psychiatric)	Primary	1	205	-0.220	0.027	-0.220	0.099	49	-0.220	0.099	51
Psychiatric symptoms	Primary	1	27	0.173	0.512	0.173	0.264	49	0.173	0.264	51
Global functioning	Primary	1	27	0.340	0.199	0.340	0.265	49	0.340	0.265	51

Citations Used in the Meta-Analysis

Druss, B.G., von, E.S.A., Compton, M.T., Rask, K.J., Zhao, L., & Parker, R.M. (2010). A randomized trial of medical care management for community mental health settings: the Primary Care Access, Referral, and Evaluation (PCARE) study. *The American Journal of Psychiatry, 167*(2), 151-9.

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Kilbourne, A.M., Post, E.P., Nossek, A., Drill, L., Cooley, S., & Bauer, M.S. (2008). Improving medical and psychiatric outcomes among individuals with bipolar disorder: A randomized controlled trial. *Psychiatric Services, 59*(7), 760-768.

Mental health courts

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Mental health courts, modeled after other therapeutic courts (e.g., drug courts, DUI courts), divert offenders with mental health issues from incarceration to treatment in the community. These courts utilize mental health assessments, individualized treatment plans, intensive case management, and judicial monitoring to provide participants with the resources needed to avoid criminal behavior while improving public safety. In some courts, charges are dropped with successful completion of the program. Programs can vary in length sometimes up to 24 months.

Benefit-Cost Summary

Program benefits	
Participants	$0
Taxpayers	$5,541
Other (1)	$13,451
Other (2)	$1,260
Total	$20,253
Costs	($3,007)
Benefits minus cost	$17,245

Summary statistics	
Benefit to cost ratio	$6.75
Benefits minus costs	$17,245
Probability of a positive net present value	100 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$5,541	$13,451	$2,759	$21,752
Adjustment for deadweight cost of program	$0	$0	$0	($1,499)	($1,499)
Totals	$0	$5,541	$13,451	$1,260	$20,253

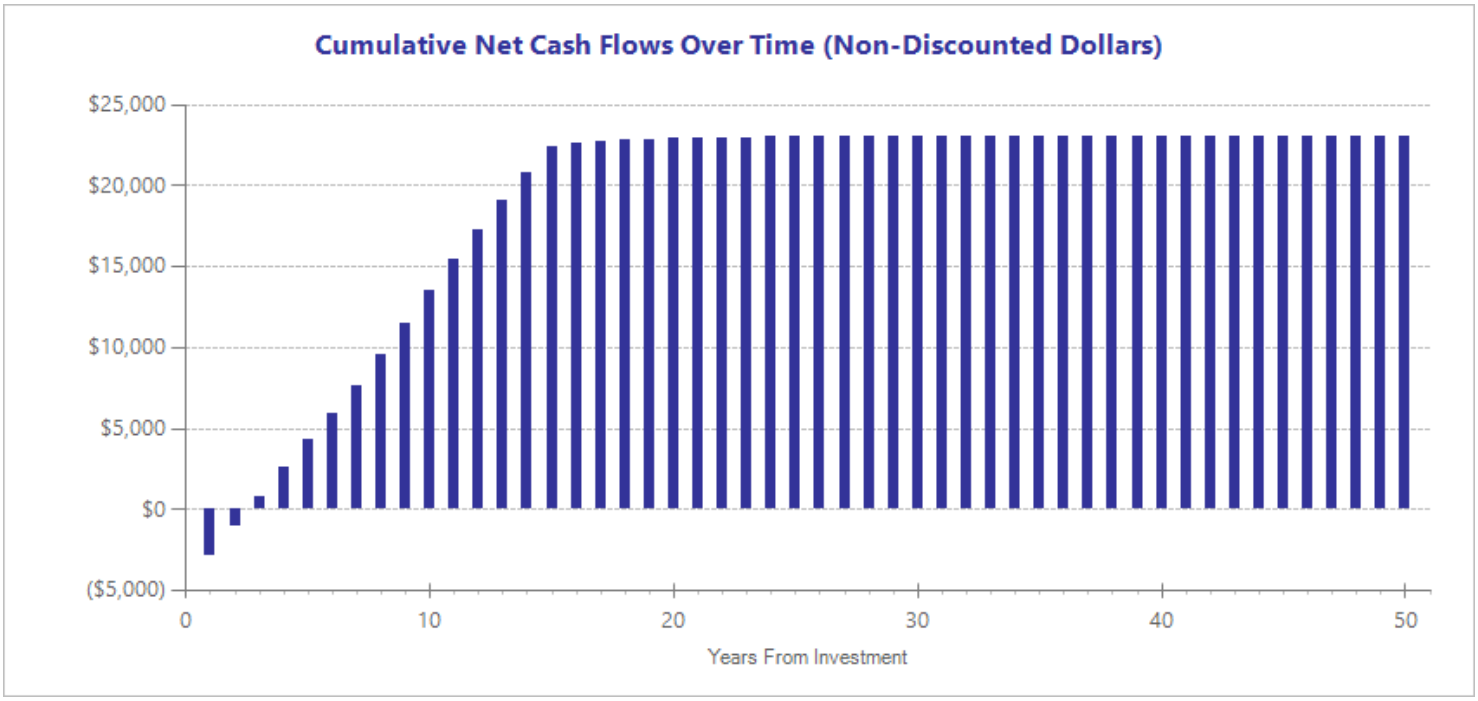
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$2,656	1	2006	Present value of net program costs (in 2013 dollars)	($3,007)
Comparison costs	$0	1	2006	Uncertainty (+ or - %)	10 %

Estimated from Ridgely, M.S., Engberg, J., Greenberg, M.D., Turner, S., DeMartini, C., & Dembosky, J.W. (2007). Justice, treatment, and cost: An evaluation of the fiscal impact of Allegheny County Mental Health Court. Santa Monica, CA: RAND.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Crime	Primary	6	1424	-0.223	0.001	-0.223	0.068	38	-0.223	0.068	48
Psychiatric symptoms	Primary	2	212	-0.309	0.359	-0.309	0.337	38	n/a	n/a	39

Citations Used in the Meta-Analysis

Boothroyd, R. A., Mercado, C. C., Poythress, N. G., Christy, A., & Petrila, J. (2005). Clinical outcomes of defendants in mental health court. *Psychiatric Services, 56*(7), 829-834.

Christy, A., Poythress, N. G., Boothroyd, R. A., Petrila, J., & Mehra, S. (2005), Evaluating the efficiency and community safety goals of the Broward County Mental Health Court. *Behavioral Sciences & the Law, 23*(2), 227-243.

Cosden, M., Ellens, J., Schnell, J. & Yamini-Diouf, J. (2004). *Evaluation of the Santa Barbara County Mental Health Treatment Court with intensive case management*. Santa Barbara: University of California, Santa Barbara; Gervitz Graduate School of Education.

Dirks-Linhorst, P. A., & Linhorst, D. M. (2010). Recidivism outcomes for suburban mental health court defendants. *American Journal of Criminal Justice.* Advance online publication. DOI 10.1007/s12103-010-9092-0

McNiel, D. E., & Binder, R. L. (2007). Effectiveness of a mental health court in reducing criminal recidivism and violence. *American Journal of Psychiatry, 164*(9), 1395-1403.

Moore, M. E., & Hiday, V. A. (2006). Mental health court outcomes: A comparison of re-arrest and re-arrest severity between mental health court and traditional court participants. *Law and Human Behavior, 30*(6), 659-674.

Steadman, H. J., Redlich, A., Callahan, L., Robbins, P. C., & Vesselinov, R. (2011). Effect of mental health courts on arrests and jail days: A multisite study. *Archives of General Psychiatry, 68*(2), 167-172.

Mobile crisis response

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Two types of mobile crisis interventions were included in this analysis: an interdisciplinary team who was dispatched after individuals called a mental health hotline and a 911 response team staffed by police and psychiatric nurses.

Benefit-Cost Summary

Program benefits	
Participants	$6
Taxpayers	$820
Other (1)	$97
Other (2)	($171)
Total	$752
Costs	($1,158)
Benefits minus cost	($406)

Summary statistics	
Benefit to cost ratio	$0.65
Benefits minus costs	($406)
Probability of a positive net present value	28 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$390	$0	$195	$585
Health care (psychiatric hospitalization)	$6	$430	$97	$213	$745
Adjustment for deadweight cost of program	$0	$0	$0	($579)	($579)
Totals	$6	$820	$97	($171)	$752

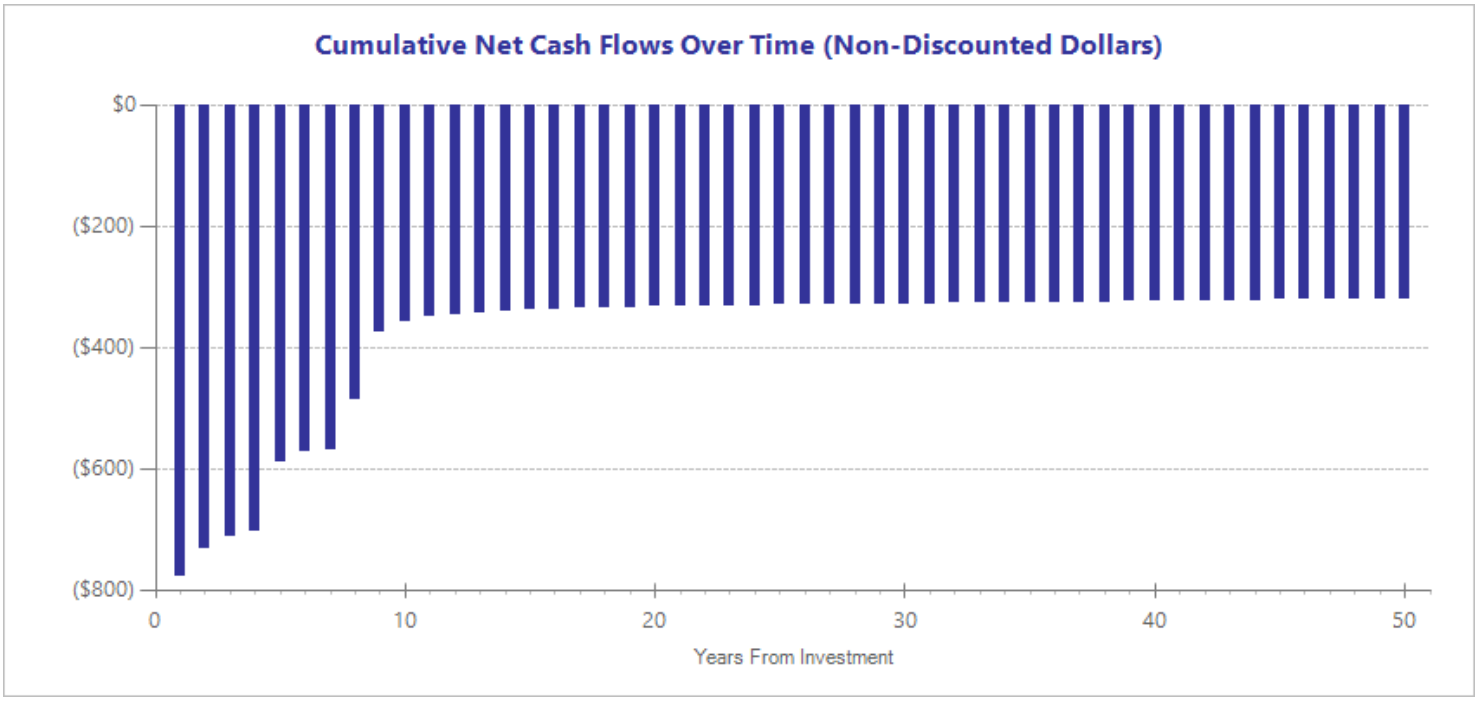
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,124	1	2011	Present value of net program costs (in 2013 dollars)	($1,158)
Comparison costs	$0	1	2011	Uncertainty (+ or - %)	10 %

The number of hours that psychiatric nurses staffed the response teams in Scott, 2000 was divided by the number of clients served by the response team. The hourly rate of a psychiatric nurse was estimated using the individual adult treatment rate in the Mercer (2013) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2014. Scott, R.L. (2000). Evaluation of a mobile crisis program: effectiveness, efficiency, and consumer satisfaction. Psychiatric Services, 51(9), 1153-1156.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Hospitalization (psychiatric)	Primary	2	1173	-0.420	0.052	-0.420	0.216	36	n/a	n/a	37
Crime	Primary	1	73	-0.662	0.030	-0.662	0.304	36	n/a	n/a	37

Citations Used in the Meta-Analysis

Guo, S., Biegel, D.E., Johnsen, J.A., & Dyches, H. (2001). Assessing the impact of community-based mobile crisis services on preventing hospitalization. *Psychiatric Services, 52*(2), 223-228.

Scott, R.L. (2000). Evaluation of a mobile crisis program: effectiveness, efficiency, and consumer satisfaction. *Psychiatric Services, 51*(9), 1153-1156.

Peer support: Substitution of a peer specialist for a non-peer on the treatment team

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: The programs examined in this analysis compared treatment teams with a peer specialist to treatment teams with a non-peer in a similar role. The treatment teams in this analysis provided services to individuals with severe mental illness, major depression or individuals receiving VA services for a psychiatric diagnosis.

Benefit-Cost Summary

Program benefits	
Participants	($897)
Taxpayers	($346)
Other (1)	$84
Other (2)	$21
Total	($1,138)
Costs	$0
Benefits minus cost	($1,138)

Summary statistics	
Benefit to cost ratio	n/a
Benefits minus costs	($1,138)
Probability of a positive net present value	20 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (alcohol abuse/dependence)	($909)	($388)	$0	$0	($1,297)
Health care (alcohol abuse/dependence)	($2)	($4)	($5)	($2)	($14)
Property loss (alcohol abuse/dependence)	($1)	$0	($2)	$0	($3)
Health care (psychiatric hospitalization)	($1)	($40)	($9)	($20)	($70)
Health care (emergency department visits)	$16	$86	$100	$43	$246
Totals	($897)	($346)	$84	$21	($1,138)

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

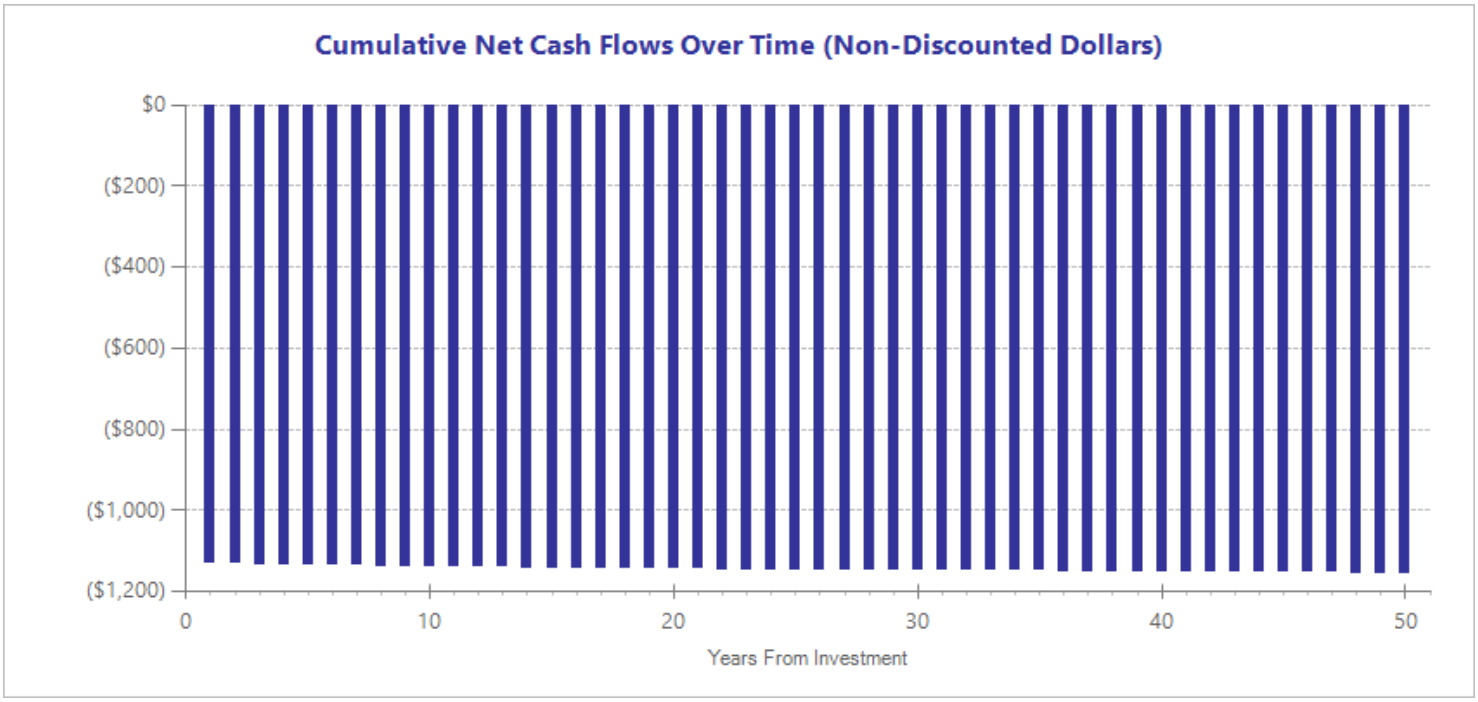
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$0	1	2012
Comparison costs	$0	1	2012

Summary statistics	
Present value of net program costs (in 2013 dollars)	$0
Uncertainty (+ or - %)	10 %

In all studies the peer specialists and non-peer staff had similar roles. Therefore, we did not impute a greater or lesser cost to peer support versus other providers.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Hospitalization (psychiatric)	Primary	4	208	0.022	0.901	0.022	0.174	44	n/a	n/a	45
Emergency department visits	Primary	1	57	-0.471	0.053	-0.471	0.244	44	n/a	n/a	45
Alcohol abuse or dependence	Primary	1	113	0.169	0.228	0.169	0.141	44	n/a	n/a	45
Employment	Primary	1	113	-0.080	0.569	-0.080	0.141	44	n/a	n/a	45
Psychiatric symptoms	Primary	6	338	0.050	0.701	0.050	0.131	44	n/a	n/a	45
Homelessness	Primary	2	149	0.045	0.711	0.045	0.122	44	n/a	n/a	45
Crime	Primary	2	81	0.256	0.246	0.256	0.221	44	n/a	n/a	45

Citations Used in the Meta-Analysis

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Clarke, G.N., Herinckx, H.A., Kinney, R.F., Paulson, R.I., Cutler, D.L., Lewis, K., & Oxman, E. (2000). Psychiatric hospitalizations, arrests, emergency room visits, and homelessness of clients with serious and persistent mental illness: findings from a randomized trial of two ACT programs vs. usual care.*Mental Health Services Research, 2*(3),155-164.

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Felton, C.J., Stastny, P., Shern, D.L., Blanch, A., Donahue, S.A., Knight, E., & Brown, C. (1995). Consumers as peer specialists on intensive case management teams: Impact on client outcomes. *Psychiatric Services, 46*(10), 1037-1044.

Rivera, J.J., Sullivan, A.M., & Valenti, S.S. (2007). Adding consumer-providers to intensive case management: Does it improve outcome?. *Psychiatric Services 58*(6), 802-809.

Solomon, P. & Draine, J. (1995). The efficacy of a consumer case management team: 2-year outcomes of a randomized trial. *Journal of Mental Health Administration, 22*(2), 135-146.

Peer support: Addition of a peer specialist to the treatment team

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: The programs examined in this analysis compared treatment teams with a peer specialist to treatment teams without a peer specialist. The treatment teams in this analysis provided services to individuals with serious mental illness or individuals receiving VA services for a psychiatric diagnosis.

Benefit-Cost Summary

Program benefits	
Participants	$1,522
Taxpayers	$741
Other (1)	$21
Other (2)	($1,652)
Total	$633
Costs	($3,407)
Benefits minus cost	($2,775)

Summary statistics	
Benefit to cost ratio	$0.19
Benefits minus costs	($2,775)
Probability of a positive net present value	1 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (employment)	$1,521	$649	$0	$0	$2,170
Health care (psychiatric hospitalization)	$1	$92	$21	$46	$160
Adjustment for deadweight cost of program	$0	$0	$0	($1,698)	($1,698)
Totals	$1,522	$741	$21	($1,652)	$633

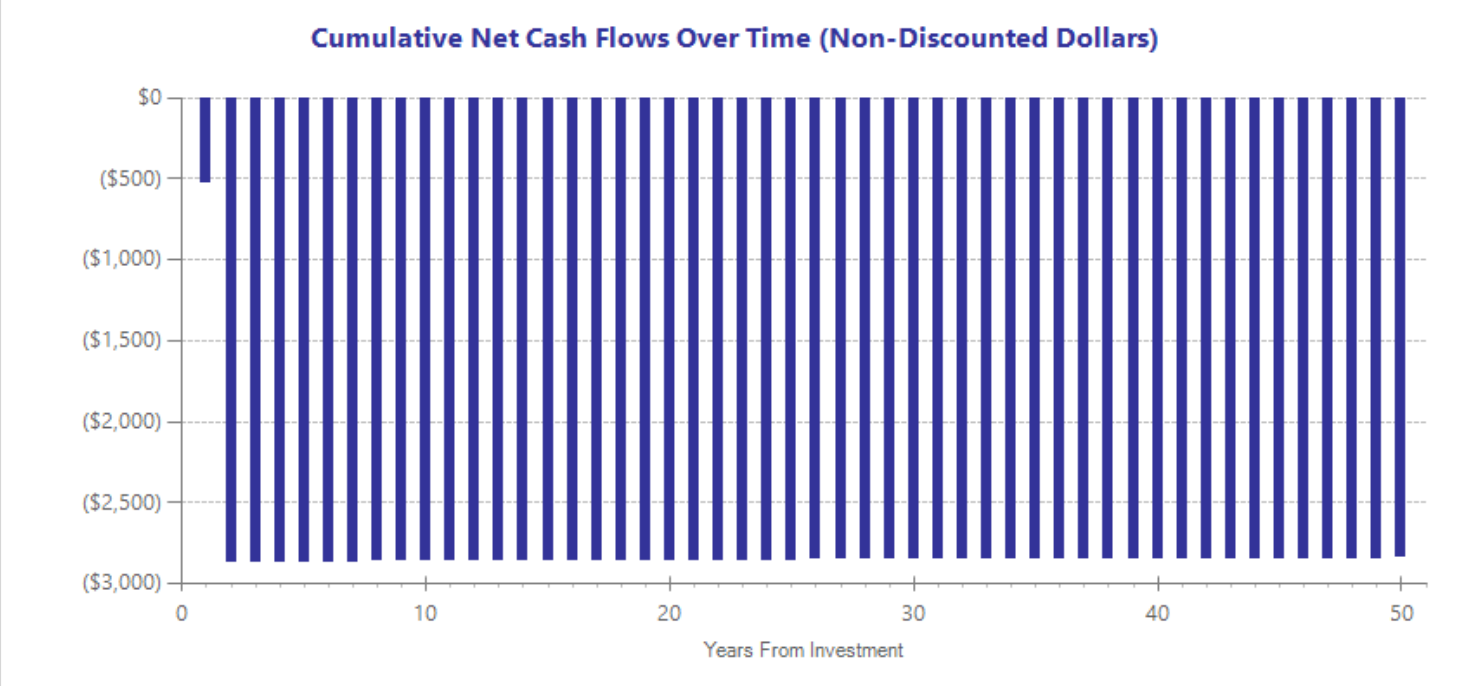
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,842	1.825	2011	Present value of net program costs (in 2013 dollars)	($3,407)
Comparison costs	$0	1.825	2011	Uncertainty (+ or - %)	10 %

The cost of treatment is the weighted average cost of peer services provided in the studies included in this analysis. The average number of service hours estimated from Eisen et al., 2012, Felton et al., 1995, and Sledge et al., 2011 is higher than the average number of encounters with a peer specialist in Washington State as reported in Mercer (2013) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2014. The cost per encounter was estimated using the peer specialist reimbursement cost reported in Mercer, 2013. Felton, C.J., Stastny, P., Shern, D.L., Blanch, A., Donahuee, S.A., Knight, E., & Brown, C. (1995). Consumers as peer specialists on intensive case management teams: Impact on client outcomes. Psychiatric Services, 46(10), 1037-1044.
Sledge, W.H., Lawless, M., Sells, D., Wieland, M., O'Connell, M.J., & Davidson, L. (2011). Effectiveness of peer support in reducing readmissions of persons with multiple psychiatric hospitalizations. Psychiatric Services, 62(5), 541-544. Eisen, S.V., Schultz, M.R., Mueller, L.N., Degenhart, C., Clark, J.A., Resnick, S.G., Christiansen, C.L., ..., & Sadow, D. (2012). Outcome of a randomized study of a mental health peer education and support group in the VA. Psychiatric Services, 63(12), 1243-1246.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Employment	Primary	1	78	0.386	0.004	0.386	0.133	46	n/a	n/a	47
Hospitalization (psychiatric)	Primary	7	2191	-0.064	0.604	-0.064	0.123	46	n/a	n/a	47
Psychiatric symptoms	Primary	3	274	0.035	0.710	0.035	0.093	46	n/a	n/a	47
Crime	Primary	1	36	0.000	1.000	0.000	0.243	46	n/a	n/a	47
Homelessness	Primary	1	36	-0.138	0.569	-0.138	0.243	46	n/a	n/a	47
Global functioning	Primary	1	78	0.685	0.001	0.685	0.135	46	n/a	n/a	47

Citations Used in the Meta-Analysis

Chinman, M., Oberman, R.S., Hanusa, B.H., Cohen, A.N., Salyers, M.P., ... & Young, A.S. (2014). A cluster randomized trial of adding peer specialists to intensive case management teams in the veterans' health administration. *The journal of behavioral health services & research*, 1-13.

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Felton, C.J., Stastny, P., Shern, D.L., Blanch, A., Donahue, S.A., Knight, E., & Brown, C. (1995). Consumers as peer specialists on intensive case management teams: Impact on client outcomes. *Psychiatric Services, 46*(10), 1037-1044.

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Landers, G.M., & Zhou, M. (2011). An analysis of relationships among peer support, psychiatric hospitalization, and crisis stabilization. *Community Mental Health Journal, 47*(1), 106-112.

Min, S.Y., Whitecraft, J., Rothbard, A.B., & Salzer, M.S. (2007). Peer support for persons with co-occurring disorders and community tenure: a survival analysis. *Psychiatric Rehabilitation Journal, 30*(3), 207-213.

Resnick, S.G., & Rosenheck, R.A. (2008). Integrating peer-provided services: a quasi-experimental study of recovery orientation, confidence, and empowerment. *Psychiatric Services : a Journal of the American Psychiatric Association, 59*(11), 1307-1314.

Sledge, W.H., Lawless, M., Sells, D., Wieland, M., O'Connell, M.J., & Davidson, L. (2011). Effectiveness of peer support in reducing readmissions of persons with multiple psychiatric hospitalizations. *Psychiatric Services, 62*(5), 541-544.

Tracy, K., Burton, M., Nich, C., & Rounsaville, B. (2011). Utilizing peer mentorship to engage high recidivism substance-abusing patients in treatment. *The American Journal of Drug and Alcohol Abuse, 37*(6), 525-531.

Primary care in behavioral health settings

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: These studies evaluated co-location of primary care in behavioral health settings (mental health and substance abuse treatment centers). Of 11 studies, 6 were conducted in Veterans' Administration health facilities; 2 were conducted at Kaiser Permanente addiction centers; 3 were conducted at other community addiction treatment centers.

Benefit-Cost Summary

Program benefits	
Participants	$84
Taxpayers	$172
Other (1)	$60
Other (2)	$215
Total	$530
Costs	($215)
Benefits minus cost	$315

Summary statistics	
Benefit to cost ratio	$2.48
Benefits minus costs	$315
Probability of a positive net present value	56 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Labor market earnings (illicit drug abuse/dependence)	$80	$34	$0	$254	$368
Health care (illicit drug abuse/dependence)	$1	$4	$4	$2	$11
Health care (general hospitalization)	$2	$42	$36	$21	$101
Health care (psychiatric hospitalization)	$1	$92	$21	$45	$160
Health care (emergency department visits)	$0	($1)	($1)	($1)	($4)
Adjustment for deadweight cost of program	$0	$0	$0	($107)	($107)
Totals	$84	$172	$60	$215	$530

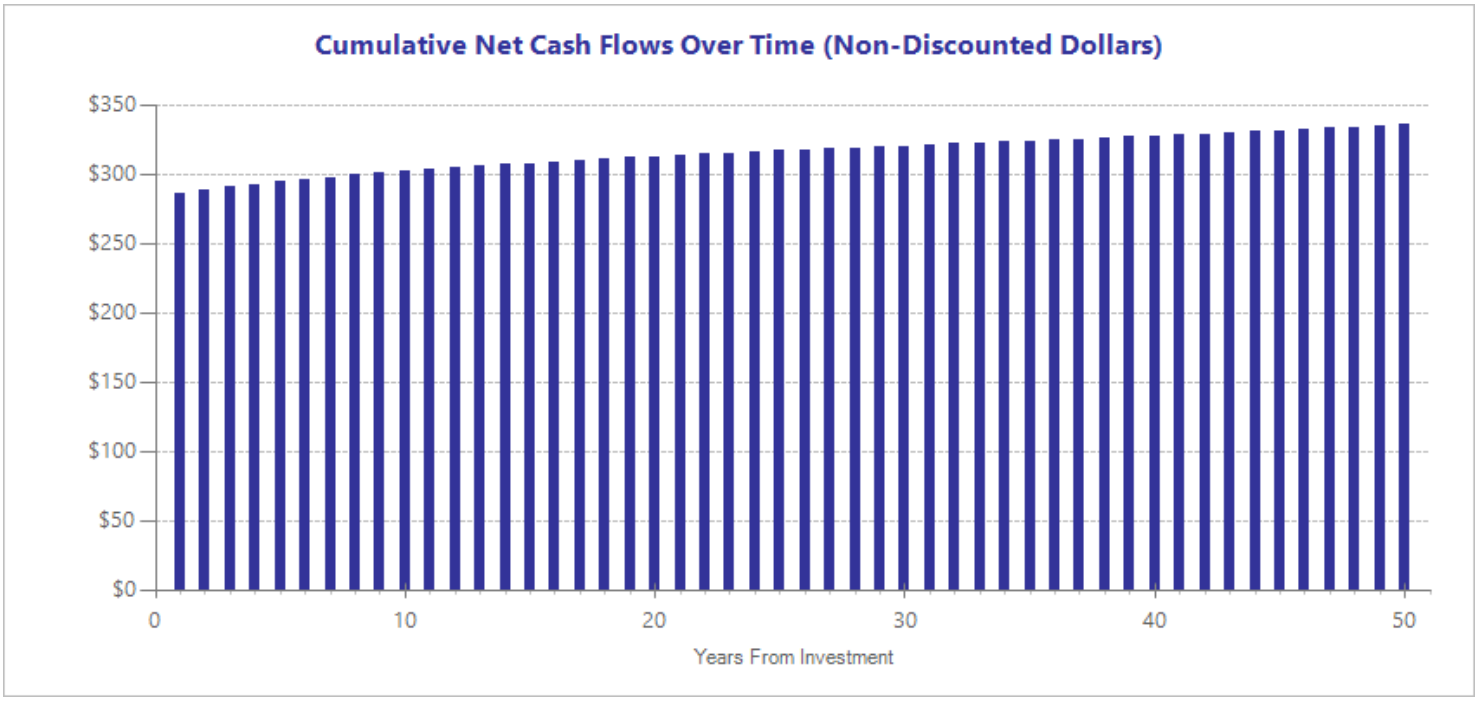
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$217	1	2014	Present value of net program costs (in 2013 dollars)	($215)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	20 %

According to Saxon, A. J., Malte, C. A., Sloan, K. L., Baer, J. S., Calsyn, D. A., Nichol, P., . . . Kivlahan, D. R. (2006). Randomized Trial of Onsite Versus Referral Primary Medical Care for Veterans in Addictions Treatment. Medical Care, 44(4), 334-342. patients in the clinics with co-located at VA centers had an average of 1.1 primary care visits than the comparison group in 12 months; Samet, J. H., Larson, M. J., Horton, N. J., Doyle, K., Winter, M., & Saitz, R. (2003). Linking alcohol- and drug-dependent adults to primary medical care: A randomized controlled trial of a multi-disciplinary health intervention in a detoxification unit. Addiction, 98(4), 509-516 found those in community clinic used 1.0 more primary care visits. For this combination location, assume an average of 1.05 visits per patient. We estimate additional cost of the program by multiplying 1.1 visits time the Medicaid enhanced payment rate for the longest primary care visit. See http://www.hca.wa.gov/medicaid/pages/aca_rates.aspx

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Hospitalization (general)	Primary	9	11301	-0.052	0.425	-0.052	0.044	41	n/a	n/a	42
Hospitalization (psychiatric)	Primary	1	59	-0.068	0.987	-0.068	0.293	41	n/a	n/a	42
Emergency department visits	Primary	9	7320	0.002	0.961	0.002	0.043	41	n/a	n/a	42
Alcohol abuse or dependence	Primary	3	684	-0.001	0.995	-0.001	0.124	41	n/a	n/a	42
Illicit drug abuse or dependence	Primary	2	643	-0.160	0.845	-0.016	0.081	41	n/a	n/a	42
Primary care visits	Primary	7	1361	0.235	0.136	0.235	0.157	41	n/a	n/a	42
Blood pressure	Primary	2	1192	-0.064	0.460	-0.064	0.090	41	n/a	n/a	42
Blood sugar	Primary	2	1072	-0.057	0.530	-0.057	0.091	41	n/a	n/a	42
Cholesterol	Primary	2	1121	-0.054	0.550	-0.054	0.090	41	n/a	n/a	42
Death	Primary	2	98	-0.007	0.860	-0.007	0.160	41	n/a	n/a	42

Citations Used in the Meta-Analysis

Druss, B.G., Rohrbaugh, R.M., Levinson, C.M., & Rosenheck, R.A. (2001). Integrated medical care for patients with serious psychiatric illness: a randomized trial. *Archives of General Psychiatry, 58*(9), 861-8.

Friedmann, P.D., Hendrickson, J.C., Gerstein, D.R., Zhang, Z., & Stein, M.D. (2006). Do Mechanisms That Link Addiction Treatment Patients to Primary Care Influence Subsequent Utilization of Emergency and Hospital Care?. *Medical Care, 44*(1), 8-15.

Kilbourne, A.M., Pirraglia, P.A., Lai, Z., Bauer, M.S., Charns, M.P., Greenwald, D., . . . Yano, E.M. (2011). Quality of general medical care among patients with serious mental illness: does colocation of services matter?. *Psychiatric Services, 62*(8), 922-928.

Laine, C., Hauck, W.W., & Turner, B.J. (2005). Availability of Medical Care Services in Drug Treatment Clinics Associated with Lower Repeated Emergency Department Use. *Medical Care, 43*(10), 985-995.

Parthasarathy, S., Mertens, J., Moore, C., & Weisner, C. (2003). Utilization and Cost Impact of Integrating Substance Abuse Treatment and Primary Care. *Medical Care, 41*(3), 357-367.

Pirraglia, P.A., Kilbourne, A.M., Lai, Z., Friedmann, P.D., & O'Toole, T.P. (2011). Colocated general medical care and preventable hospital admissions for veterans with serious mental illness. *Psychiatric Services, 62*(5), 554-557.

Saxon, A.J., Malte, C.A., Sloan, K.L., Baer, J.S., Calsyn, D.A., Nichol, P., . . . Kivlahan, D.R. (2006). Randomized Trial of Onsite Versus Referral Primary Medical Care for Veterans in Addictions Treatment. *Medical Care, 44*(4), 334-342.

Scharf, D.M, Eberhart, N.K., Horvitz-Lennon, M., R. Beckman, Han, B., Lovejoy, S., Pincus, H.A., Burnam, M.A. (2013). *Evaluation of the SAMHSA Primary and Behavioral ehalth Care Integration Program: Final report.* Rand Corporation. http://aspe.hhs.gov/daltcp/reports/2013/PBHCIfr.shtml

Umbricht-Schneiter, A., Ginn, D.H., Pabst, K.M., & Bigelow, G.E. (1994). Providing medical care to methadone clinic patients: referral vs on-site care. *American Journal of Public Health, 84*(2), 207-210.

Weisner, C., Mertens, J., Parthasarathy, S., Moore, C., & Lu, Y. (2001). Integrating primary medical care with addiction treatment: A randomized controlled trial. *JAMA : The Journal of the American Medical Association, 286*(14), 1715-1723.

Willenbring, M.L., & Olson, D.H. (1999). A randomized trial of integrated outpatient treatment for medically ill alcoholic men. *Archives of Internal Medicine, 159*(16), 1946-1952.

Willenbring, M.L., Olson, D.H., & Bielinski, J. (1995). Integrated Outpatient Treatment for Medically Ill Alcoholic Men: Results from a Quasi-Experimental Study. *Journal of Studies on Alcohol, 56*(3), 337.

Primary care in integrated settings (Veteran's Administration, Kaiser Permanente)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Behavioral health settings (mental health and substance abuse treatment centers) provide primary care for patients on site or nearby. This collection of studies was conducted at Veterans Administration facilities or facilities of Kaiser Permanente where patients might have more ready access to primary care than community-based treatment centers.

Benefit-Cost Summary

Program benefits	
Participants	$78
Taxpayers	$199
Other (1)	$89
Other (2)	$187
Total	$552
Costs	($225)
Benefits minus cost	$327

Summary statistics	
Benefit to cost ratio	$2.46
Benefits minus costs	$327
Probability of a positive net present value	57 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Labor market earnings (illicit drug abuse/dependence)	$69	$30	$0	$214	$313
Health care (illicit drug abuse/dependence)	$1	$5	$4	$2	$12
Health care (general hospitalization)	$3	$44	$38	$22	$107
Health care (psychiatric hospitalization)	$1	$100	$23	$50	$174
Health care (emergency department visits)	$4	$21	$24	$10	$59
Adjustment for deadweight cost of program	$0	$0	$0	($112)	($112)
Totals	$78	$199	$89	$187	$552

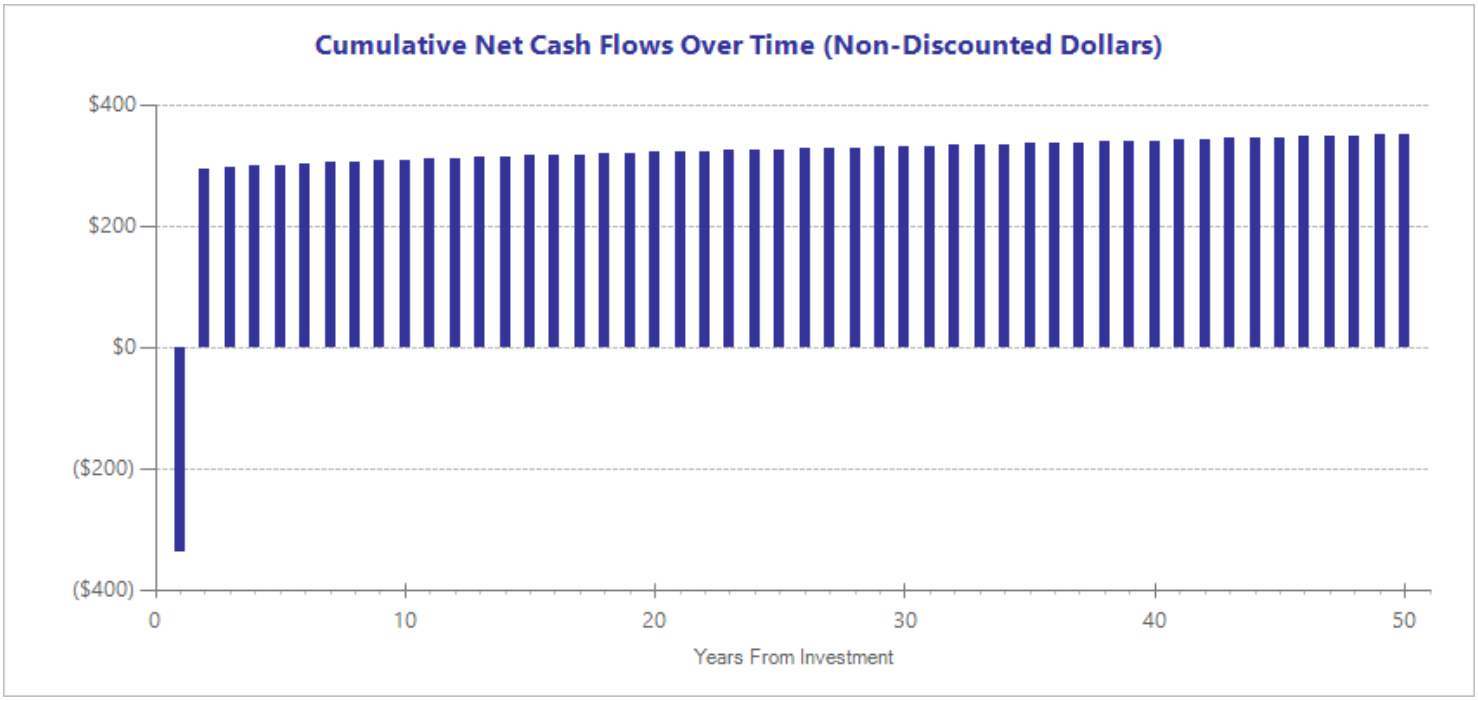
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$228	1	2014	Present value of net program costs (in 2013 dollars)	($225)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	20 %

According to Saxon, A. J., Malte, C. A., Sloan, K. L., Baer, J. S., Calsyn, D. A., Nichol, P., . . . Kivlahan, D. R. (2006). Randomized Trial of Onsite Versus Referral Primary Medical Care for Veterans in Addictions Treatment. Medical Care, 44(4), 334-342. patients in the clinics with co-located had an average of 1.1 primary care visits than the comparison group in 12 months. We estimate additional cost of the program by multiplying 1.1 visits time the Medicaid enhanced payment rate for the longest primary care visit. See http://www.hca.wa.gov/medicaid/pages/aca_rates.aspx

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Emergency department visits	Primary	3	735	-0.090	0.388	-0.090	0.105	41	n/a	n/a	42
Hospitalization (general)	Primary	5	10449	-0.054	0.403	-0.054	0.060	41	n/a	n/a	42
Hospitalization (psychiatric)	Primary	1	59	-0.068	0.818	-0.068	0.293	41	n/a	n/a	42
Alcohol abuse or dependence	Primary	3	684	-0.001	0.995	-0.001	0.124	41	n/a	n/a	42
Illicit drug abuse or dependence	Primary	2	643	-0.016	0.845	-0.016	0.081	41	n/a	n/a	42
Primary care visits	Primary	2	417	0.531	0.005	0.531	0.188	41	n/a	n/a	42
Blood pressure	Primary	1	751	-0.075	0.460	-0.075	0.102	41	n/a	n/a	42
Blood sugar	Primary	1	751	-0.068	0.504	-0.068	0.102	41	n/a	n/a	42
Cholesterol	Primary	1	751	-0.018	0.860	-0.018	0.102	41	n/a	n/a	42
Death	Primary	2	98	-0.077	0.632	-0.077	0.160	41	n/a	n/a	42

Citations Used in the Meta-Analysis

Druss, B.G., Rohrbaugh, R.M., Levinson, C.M., & Rosenheck, R.A. (2001). Integrated medical care for patients with serious psychiatric illness: a randomized trial. *Archives of General Psychiatry, 58*(9), 861-8.

Kilbourne, A.M., Pirraglia, P.A., Lai, Z., Bauer, M.S., Charns, M.P., Greenwald, D., . . . Yano, E.M. (2011). Quality of general medical care among patients with serious mental illness: does colocation of services matter?. *Psychiatric Services, 62*(8), 922-928.

Parthasarathy, S., Mertens, J., Moore, C., & Weisner, C. (2003). Utilization and Cost Impact of Integrating Substance Abuse Treatment and Primary Care. *Medical Care, 41*(3), 357-367.

Pirraglia, P.A., Kilbourne, A.M., Lai, Z., Friedmann, P.D., & O'Toole, T.P. (2011). Colocated general medical care and preventable hospital admissions for veterans with serious mental illness. *Psychiatric Services, 62*(5), 554-557.

Saxon, A.J., Malte, C.A., Sloan, K.L., Baer, J.S., Calsyn, D.A., Nichol, P., . . . Kivlahan, D.R. (2006). Randomized Trial of Onsite Versus Referral Primary Medical Care for Veterans in Addictions Treatment. *Medical Care, 44*(4), 334-342.

Weisner, C., Mertens, J., Parthasarathy, S., Moore, C., & Lu, Y. (2001). Integrating primary medical care with addiction treatment: A randomized controlled trial. *JAMA : The Journal of the American Medical Association, 286*(14), 1715-1723.

Willenbring, M.L., & Olson, D.H. (1999). A randomized trial of integrated outpatient treatment for medically ill alcoholic men. *Archives of Internal Medicine, 159*(16), 1946-1952.

Willenbring, M.L., Olson, D.H., & Bielinski, J. (1995). Integrated Outpatient Treatment for Medically Ill Alcoholic Men: Results from a Quasi-Experimental Study. *Journal of Studies on Alcohol, 56*(3), 337.

Primary care in behavioral health settings (community-based settings)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Behavioral health settings (mental health and substance abuse treatment centers) provide primary care for patients on site or nearby. This collection of studies was conducted at community-based treatment centers.

Benefit-Cost Summary

Program benefits	
Participants	($363)
Taxpayers	($130)
Other (1)	$18
Other (2)	($125)
Total	($599)
Costs	($267)
Benefits minus cost	($866)

Summary statistics	
Benefit to cost ratio	($2.26)
Benefits minus costs	($866)
Probability of a positive net present value	16 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (smoking)	($362)	($154)	$0	($4)	($520)
Health care (smoking)	($1)	($9)	($7)	($4)	($22)
Health care (general hospitalization)	$2	$42	$36	$21	$100
Health care (emergency department visits)	($2)	($9)	($10)	($4)	($25)
Adjustment for deadweight cost of program	$0	$0	$0	($133)	($133)
Totals	($363)	($130)	$18	($125)	($599)

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

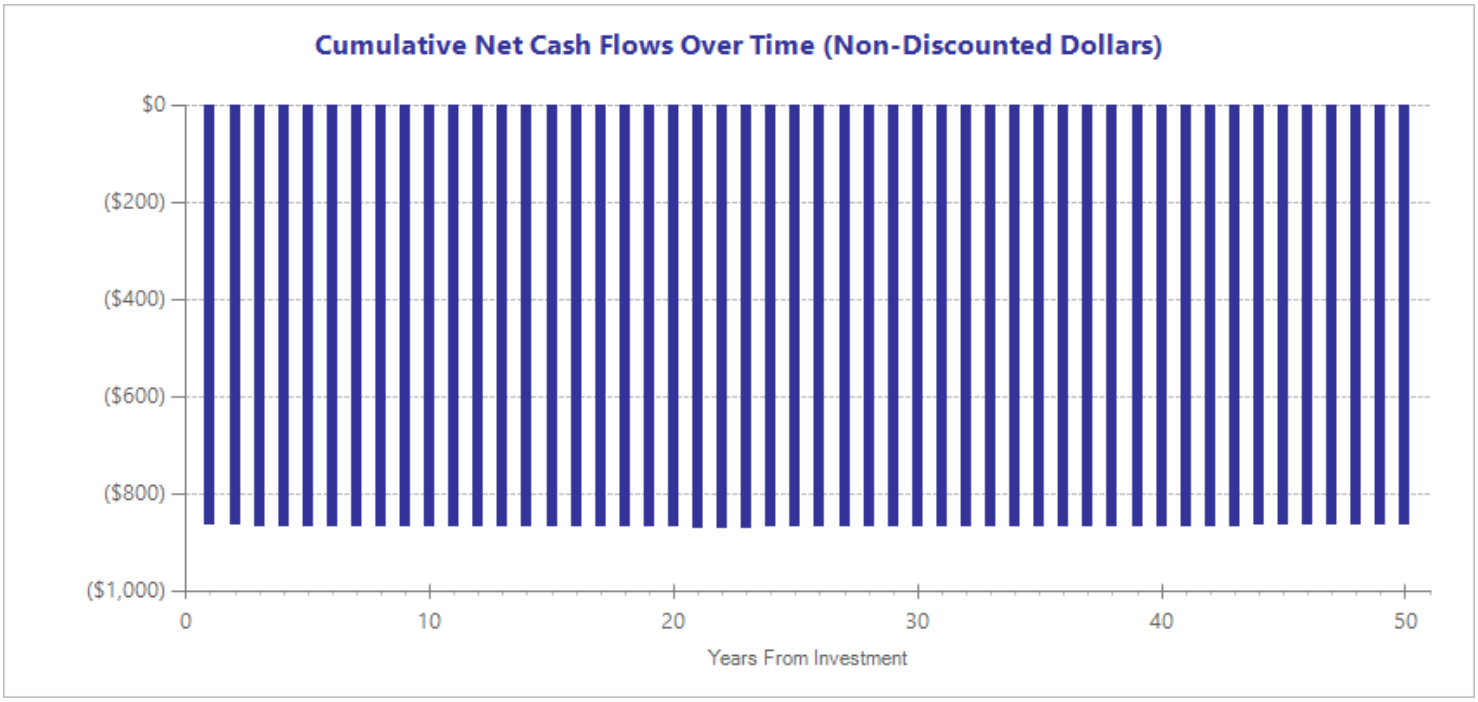
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$270	1	2014
Comparison costs	$0	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	($267)
Uncertainty (+ or - %)	20 %

According to Samet, J. H., Larson, M. J., Horton, N. J., Doyle, K., Winter, M., & Saitz, R. (2003). Linking alcohol- and drug-dependent adults to primary medical care: A randomized controlled trial of a multi-disciplinary health intervention in a detoxification unit. Addiction, 98(4), 509-516, patients in the treatment group received an average on 1 more primary care visit in 12 months than did those in the comparison group. The average visit cost for primary care visit at Navos in Seattle is $270 (per email from Paul Tagenfeldt to M. Miller, April 25, 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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Emergency department visits	Primary	6	6585	0.035	0.433	0.035	0.045	41	n/a	n/a	42
Hospitalization (general)	Primary	4	852	-0.052	0.572	-0.052	0.092	41	n/a	n/a	42
Regular smoking	Primary	1	453	0.116	0.548	0.116	0.194	41	n/a	n/a	42
Primary care visits	Primary	5	944	0.111	0.573	0.111	0.197	41	n/a	n/a	42
Blood pressure	Primary	2	441	-0.022	0.909	-0.022	0.194	41	n/a	n/a	42
Blood sugar	Primary	1	321	-0.015	0.940	-0.015	0.198	41	n/a	n/a	42
Body mass index (BMI)	Primary	1	435	-0.002	0.992	-0.002	0.194	41	n/a	n/a	42
Cholesterol	Primary	1	370	-0.188	0.974	-0.188	0.196	41	n/a	n/a	42

Citations Used in the Meta-Analysis

Friedmann, P.D., Hendrickson, J.C., Gerstein, D.R., Zhang, Z., & Stein, M.D. (2006). Do Mechanisms That Link Addiction Treatment Patients to Primary Care Influence Subsequent Utilization of Emergency and Hospital Care?. *Medical Care, 44*(1), 8-15.

Laine, C., Hauck, W.W., & Turner, B.J. (2005). Availability of Medical Care Services in Drug Treatment Clinics Associated with Lower Repeated Emergency Department Use. *Medical Care, 43*(10), 985-995.

Scharf, D.M, Eberhart, N.K., Horvitz-Lennon, M., R. Beckman, Han, B., Lovejoy, S., Pincus, H.A., Burnam, M.A. (2013). *Evaluation of the SAMHSA Primary and Behavioral ehalth Care Integration Program: Final report.* Rand Corporation. http://aspe.hhs.gov/daltcp/reports/2013/PBHCIfr.shtml

Umbricht-Schneiter, A., Ginn, D.H., Pabst, K.M., & Bigelow, G.E. (1994). Providing medical care to methadone clinic patients: referral vs on-site care. *American Journal of Public Health, 84*(2), 207-210.

PTSD prevention following trauma

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: The studies in this review provide CBT treatment to persons in the first weeks and months following trauma, before a diagnosis of PTSD could be made. Treatments in the studies in this review involved 5 to 10 hours of individual therapy that combined education on effects of trauma, relaxation, and exposure.

Benefit-Cost Summary

Program benefits	
Participants	$2,904
Taxpayers	$1,634
Other (1)	$568
Other (2)	($184)
Total	$4,922
Costs	($826)
Benefits minus cost	$4,096

Summary statistics	
Benefit to cost ratio	$5.98
Benefits minus costs	$4,096
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (PTSD)	$2,755	$1,175	$0	$0	$3,930
Health care (PTSD)	$149	$458	$568	$229	$1,404
Adjustment for deadweight cost of program	$0	$0	$0	($413)	($413)
Totals	$2,904	$1,634	$568	($184)	$4,922

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

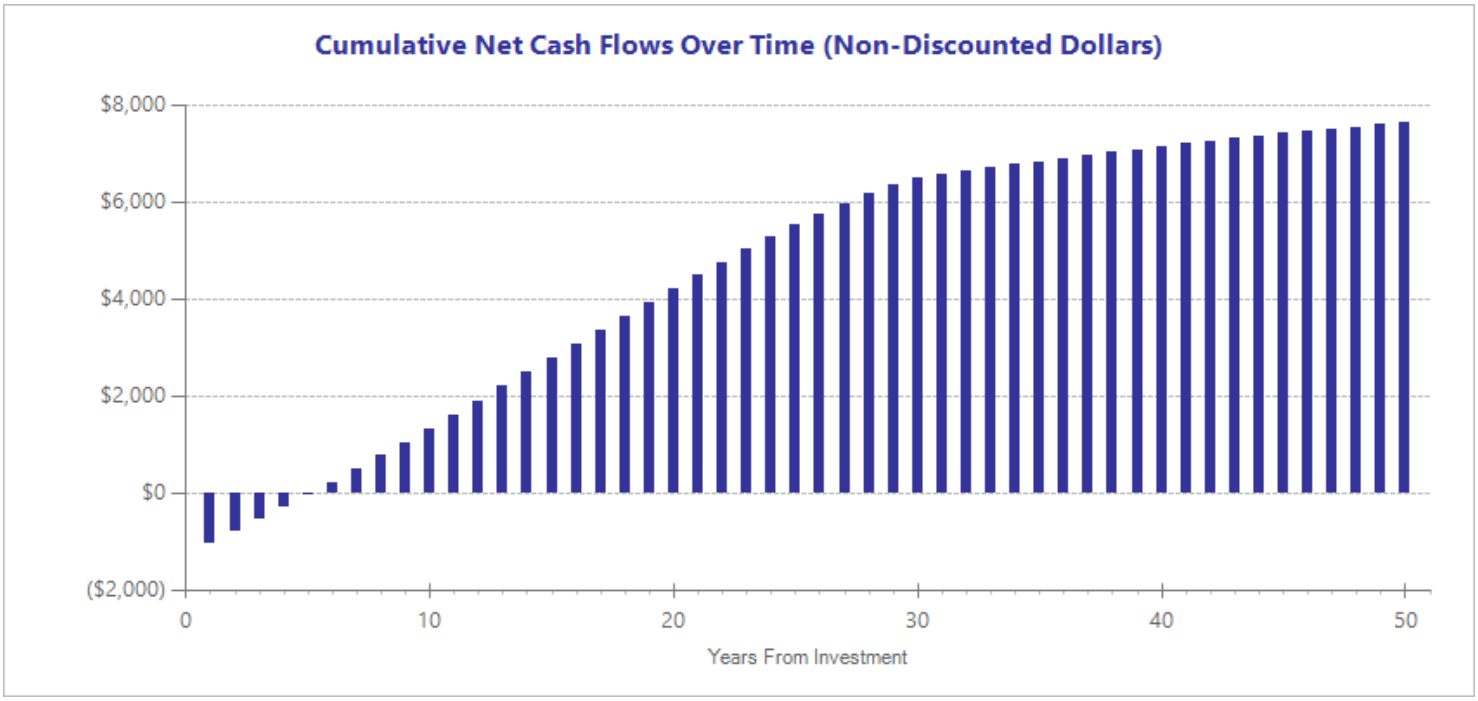
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$772	1	2008
Comparison costs	$0	1	2008

Summary statistics	
Present value of net program costs (in 2013 dollars)	($826)
Uncertainty (+ or - %)	15 %

Cost of treatment by modality (group/individual) weighted for TX N for individual therapy and TX N for group therapy in the studies. Cost per session: $33.63/session for group, $96.63 for individual therapy, based on actuarial tables reported 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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Post-traumatic stress	Primary	11	297	-0.655	0.001	-0.331	0.106	36	-0.331	0.106	37

Citations Used in the Meta-Analysis

Blanchard, E.B., Hickling, E.J., Devineni, T., Veazey, C.H., Galovski, T.E., & Mundy, E. (2003). A controlled evaluation of cognitive behavioral therapy for posttraumatic stress in motor vehicle accident survivors. *Behavior Research and Therapy, 41*(1): 79-96.

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Bryant, R. A., Harvey, A. G., Dang, S. T., Sackville, T., & Basten, C. (1998). Treatment of acute stress disorder: A comparison of cognitive-behavioral therapy and supportive counseling. *Journal of Consulting and Clinical Psychology, 66*(5), 862-866.

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Sijbrandij, M., Olff, M., Reitsma, J. B., Carlier, I. V. E., de, V. M. H., & Gersons, B. P. R. (2007). Treatment of Acute Posttraumatic Stress Disorder With Brief Cognitive Behavioral Therapy: A Randomized Controlled Trial. *American Journal of Psychiatry, 164*(1), 82-90.

Wellness Recovery Action Plan (WRAP)

Literature review updated December 2014.

Program Description: Wellness Recovery Action Plan is a group-based intervention for persons with mental illness, delivered weekly for eight to ten weeks. The program teaches particpants to focus on key elements of recovery (hope, self-advocacy, support) in daily life and teaches participants to organize a list of activities to use to help them feel better when they are experiencing mental health difficulties.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Psychiatric symptoms	Primary	3	381	-0.141	0.245	-0.141	0.121	46	n/a	n/a	47
Patient self-advocacy	Primary	1	251	0.099	0.489	0.090	0.143	46	n/a	n/a	47
Hope	Primary	1	309	0.139	0.429	0.139	0.176	46	n/a	n/a	47
Anxiety disorder	Primary	1	251	-0.070	0.424	-0.070	0.088	46	n/a	n/a	47
Mental health recovery	Primary	3	381	-0.070	0.340	0.072	0.076	46	n/a	n/a	47

Citations Used in the Meta-Analysis

Cook, J.A., Copeland, M.E., Floyd, C.B., Jonikas, J.A., Hamilton, M.M., Razzano, L., Carter, T.M., ... Boyd, S. (2012). A randomized controlled trial of effects of Wellness Recovery Action Planning on depression, anxiety, and recovery. *Psychiatric Services, 63*(6), 541-7.

Cook, J.A., Jonikas, J.A., Hamilton, M.M., Razzano, L.A., Grey, D.D., MacFarlane, R.T., Carter, T.M., ... Boyd, S. (2012). Results of a randomized controlled trial of mental illness self-management using wellness recovery action planning. *Schizophrenia Bulletin, 38*(4), 881-891.

Cook, J.A., Jonikas, J.A., Hamilton, M.M., Goldrick, V., Steigman, P.J., Grey, D.D., Burke, L., ... Copeland, M.E. (2013). Impact of Wellness Recovery Action Planning on Service Utilization and Need in a Randomized Controlled Trial. *Psychiatric Rehabilitation Journal, 36*(4), 250-257.

Fukui, S., Starnino, V.R., Susana, M., Davidson, L.J., Cook, K., Rapp, C.A., & Gowdy, E.A. (2011). Effect of Wellness Recovery Action Plan (WRAP) participation on psychiatric symptoms, sense of hope, and recovery. *Psychiatric Rehabilitation Journal, 34* (3), 214-22.

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Supported housing for chronically homeless adults

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: These programs provide permanent supportive housing to chronically homeless single adults. Most of the studies reviewed here used the Housing First model which provides independent apartments with no specific requirements for abstinence or treatment. Programs typically provide intensive case management and services. Housing is in independent apartments; participants hold the lease but receive subsidies to pay rent. Supported housing is associated with significant reductions in homelessness which we are unable to monetize at this time. To test the sensitivity of our benefit-cost results to this known limitation of our model, we examined a recent comprehensive benefit-cost study of housing vouchers (Carlson et al., 2011). Our benefit-cost results would not change significantly if we had included the benefits of providing housing estimated by this study. Carlson, D., Haveman, R., Kaplan, T., & Wolfe, B. (2011). The benefits and costs of the Section 8 housing subsidy program: A framework and estimates of firstyear effects. Journal of Policy Analysis and Management, 30(2), 233-255.

Benefit-Cost Summary

Program benefits	
Participants	$667
Taxpayers	$561
Other (1)	$305
Other (2)	($7,334)
Total	($5,801)
Costs	($14,944)
Benefits minus cost	($20,745)

Summary statistics	
Benefit to cost ratio	($0.39)
Benefits minus costs	($20,745)
Probability of a positive net present value	0 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$69	$162	$34	$265
Labor market earnings (employment)	$660	$282	$0	$0	$942
Health care (alcohol abuse/dependence)	$0	$3	$2	$1	$7
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$1
Labor market earnings (illicit drug abuse/dependence)	($7)	($3)	$0	$0	($10)
Health care (illicit drug abuse/dependence)	$0	($1)	($1)	($1)	($3)
Health care (general hospitalization)	$6	$96	$83	$48	$233
Health care (psychiatric hospitalization)	$1	$81	$18	$40	$141
Health care (emergency department visits)	$7	$35	$41	$18	$100
Adjustment for deadweight cost of program	$0	$0	$0	($7,475)	($7,475)
Totals	$667	$561	$305	($7,334)	($5,801)

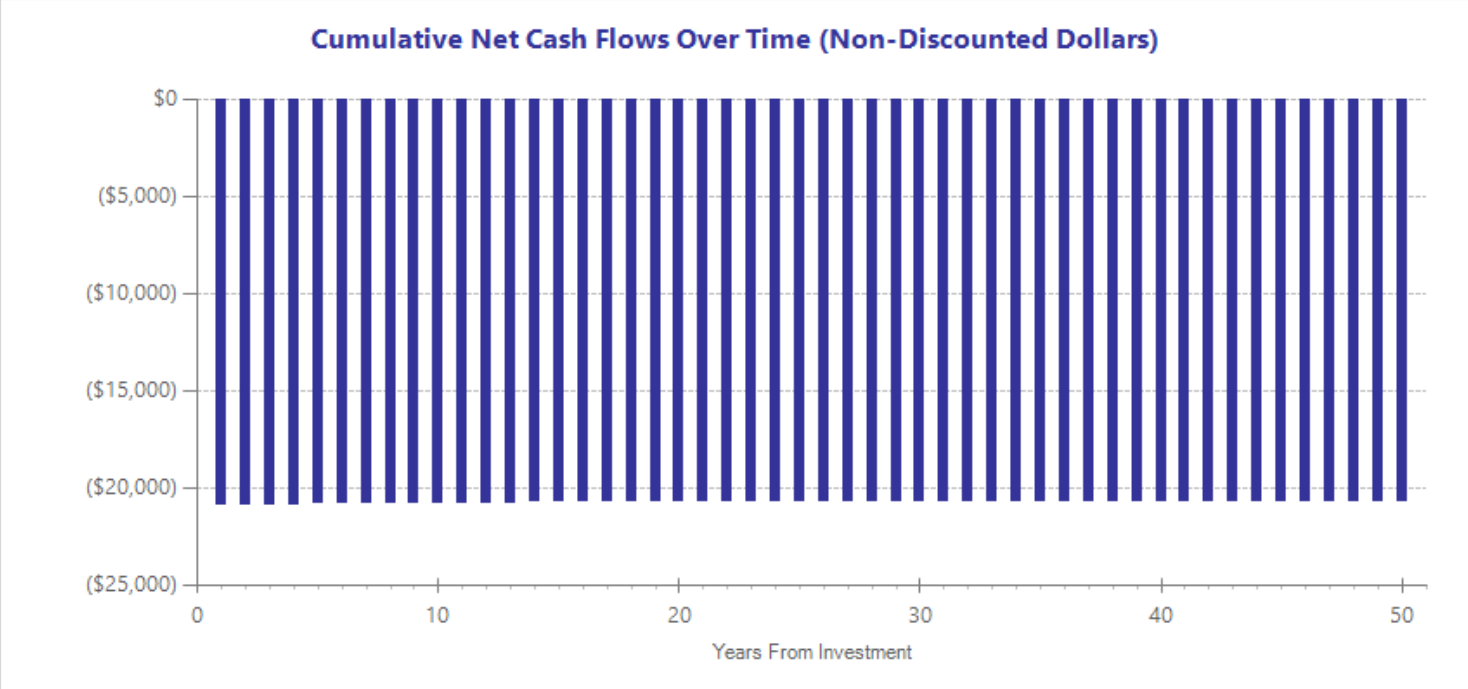
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$13,950	1	2009	Present value of net program costs (in 2013 dollars)	($14,944)
Comparison costs	$0	1	2009	Uncertainty (+ or - %)	10 %

Based annual cost of a program in Seattle described in Srebnik et al. (2013). Analysis of supported housing in New York (Culhane et al., 2002) indicated the average length of stay was 9 months, so we multiply the annual cost of the Seattle program by 0.75. Srebnik, D Connor, T., & Sylla, L. (2013). A pilot study of the impact of housing first-supported housing for intensive users of medical hospitalization and sobering services. American Journal of Public Health, 1039(2), 316-21. Culhane, DP, Metraux, S, & Hadley, T.(2002) Public service reductions associated with placement of persons with severe mental illness in supportive housing. Housing Policy Debate, 13(1), 107-163.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Hospitalization (psychiatric)	Primary	4	2727	-0.058	0.036	-0.058	0.028	40	n/a	n/a	41
Emergency department visits	Primary	5	570	-0.164	0.011	-0.164	0.064	40	n/a	n/a	41
Hospitalization (general)	Primary	7	2490	-0.129	0.016	-0.129	0.054	40	n/a	n/a	41
Illicit drug abuse or dependence	Primary	1	332	0.062	0.553	0.062	0.105	40	n/a	n/a	41
Alcohol abuse or dependence	Primary	2	478	-0.051	0.723	-0.052	0.144	40	n/a	n/a	41
Employment	Primary	3	514	0.192	0.183	0.192	0.144	40	n/a	n/a	41
Crime	Primary	8	3833	-0.083	0.077	-0.083	0.047	40	n/a	n/a	41
Primary care visits	Primary	3	733	0.157	0.003	0.157	0.052	40	n/a	n/a	41
Homelessness	Primary	10	4467	-0.505	0.001	-0.505	0.023	40	n/a	n/a	41

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Brief Alcohol Screening and Intervention of College Students (BASICS): A Harm Reduction Approach

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: College students recruited or referred are screened for hazardous drinking (not alcohol dependence.) Those reporting high rates of consumption receive one to two brief motivational sessions that include comparison of the students' alcohol consumption relative to their peers. Interventions are typically delivered by graduate students or counselors.

Benefit-Cost Summary

Program benefits	
Participants	$1,419
Taxpayers	$660
Other (1)	$112
Other (2)	$281
Total	$2,473
Costs	($71)
Benefits minus cost	$2,401

Summary statistics	
Benefit to cost ratio	$34.76
Benefits minus costs	$2,401
Probability of a positive net present value	74 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$30	$70	$15	$116
Labor market earnings (smoking)	($2)	($1)	$0	$0	($3)
Health care (smoking)	$0	$0	$0	$0	$0
Labor market earnings (problem alcohol use)	$1,401	$598	$0	$285	$2,284
Property loss (problem alcohol use)	$3	$0	$6	$0	$9
Health care (problem alcohol use)	$18	$33	$37	$17	$104
Adjustment for deadweight cost of program	$0	$0	$0	($36)	($36)
Totals	$1,419	$660	$112	$281	$2,473

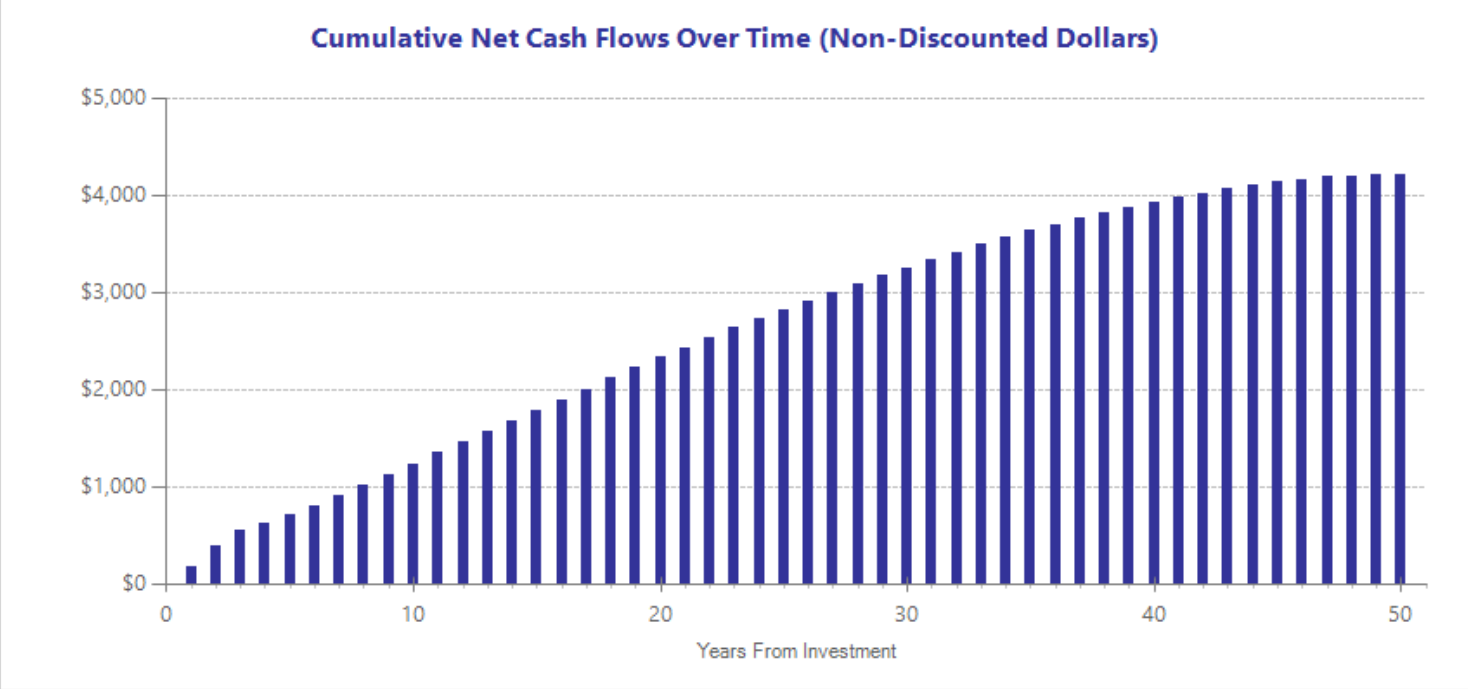
We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$72	1	2014	Present value of net program costs (in 2013 dollars)	($71)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	20 %

The average duration of the intervention in these studies was 1.5 hours. Assume 1) that 36% of screened students are eligible and agree to the intervention (per Carey et al., 2006); 2) that screening takes 30 minutes to administer the screen, score and identify those with hazardous drinking; that graduate students receive $25 per hour.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Problem alcohol use	Primary	19	3249	-0.167	0.001	-0.167	0.032	19	-0.023	0.048	22
Regular smoking	Primary	1	119	0.000	1.000	0.000	0.025	19	n/a	n/a	22
Cannabis use	Primary	1	119	0.000	1.000	0.000	0.025	19	n/a	n/a	22

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Brief Intervention in primary care

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Patients in primary are screened for "hazardous" alcohol use (not alcohol dependence). Those screening positive receive a brief intervention. The intervention, commonly delivered by the primary care provider, includes feedback on the patients' consumption compared to their peers and motivational interview to encourage reduction in consumption. Patients typically receive a single intervention lasting fifteen minutes to one hour.

Benefit-Cost Summary

Program benefits	
Participants	$4,564
Taxpayers	$2,028
Other (1)	$100
Other (2)	$551
Total	$7,243
Costs	($264)
Benefits minus cost	$6,978

Summary statistics	
Benefit to cost ratio	$27.43
Benefits minus costs	$6,978
Probability of a positive net present value	94 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (problem alcohol use)	$4,541	$1,937	$0	$637	$7,115
Property loss (problem alcohol use)	$8	$0	$14	$0	$22
Health care (problem alcohol use)	$15	$91	$86	$46	$238
Adjustment for deadweight cost of program	$0	$0	$0	($132)	($132)
Totals	$4,564	$2,028	$100	$551	$7,243

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

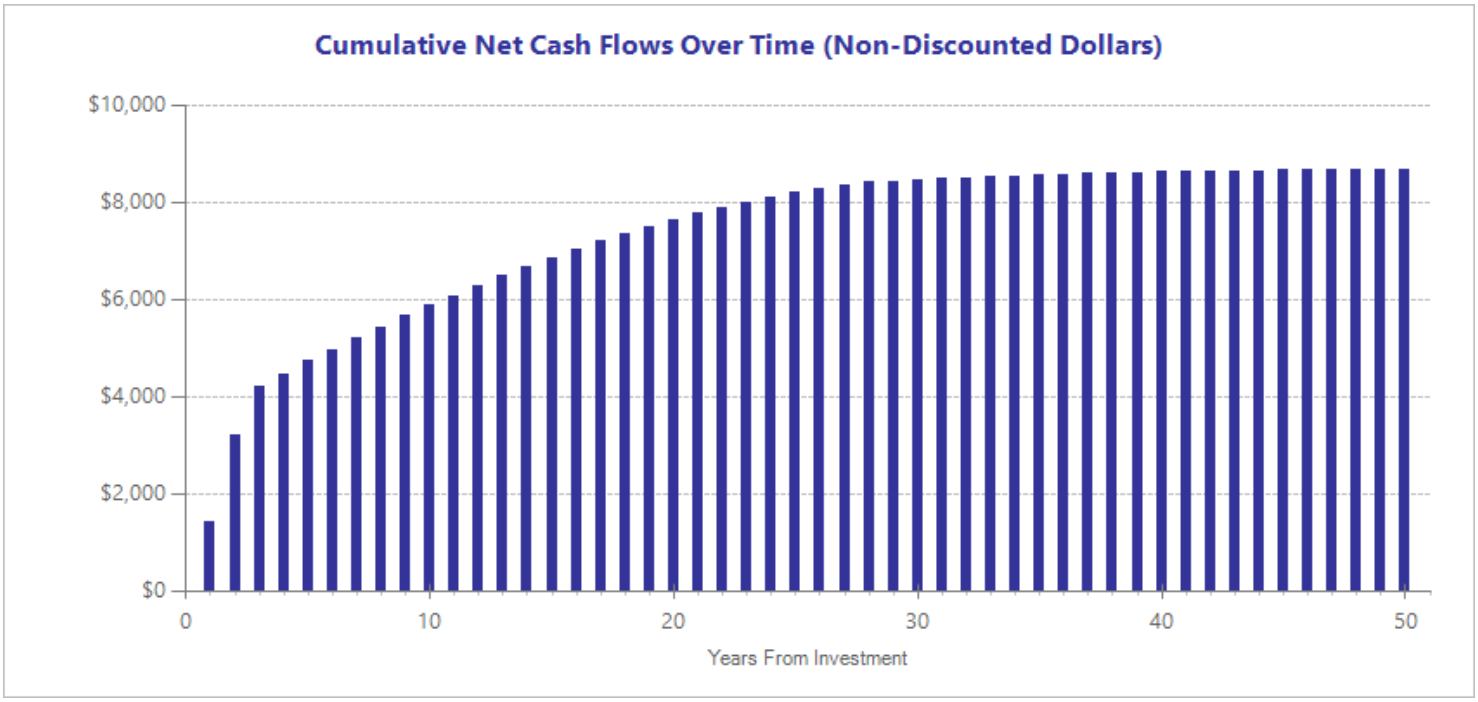
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$205	1	2000
Comparison costs	$0	1	2000

Summary statistics	
Present value of net program costs (in 2013 dollars)	($264)
Uncertainty (+ or - %)	10 %

Fleming, M.F., Mundt, M.P., French, M.T., Manwell, L.B., Stauffacher, E.A. & Barry, K.L. (2002). Brief Physician Advice for Problem Drinkers: Long-Term Efficacy and Benefit-Cost Analysis. Alcoholism: Clinical and Experimental Research, 26(1), 36-43.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	4	761	-0.235	0.018	-0.235	0.100	39	-0.032	0.150	41
Hospitalization (general)	Primary	2	652	-0.261	0.432	-0.261	0.332	39	n/a	n/a	41
Problem alcohol use	Primary	44	6609	-0.196	0.001	-0.196	0.025	39	-0.027	0.038	41
Drinking and driving	Primary	3	935	-0.175	0.157	-0.175	0.123	39	n/a	n/a	41

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Brief Intervention in emergency department (SBIRT)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Patients in emergency departments are screened for "hazardous" alcohol use (not alcohol dependence). Those screening positive receive a brief intervention, delivered by health care staff or other professional. The intervention includes feedback on the patients' consumption compared to their peers and motivational interview to encourage reduction in consumption. Patients typically receive a single intervention lasting 15 minutes to one hour. Patients meeting diagnostic criteria would be referred to chemical dependency treatment.

Benefit-Cost Summary

Program benefits	
Participants	$2,761
Taxpayers	$1,228
Other (1)	$59
Other (2)	$417
Total	$4,465
Costs	($420)
Benefits minus cost	$4,045

Summary statistics	
Benefit to cost ratio	$10.64
Benefits minus costs	$4,045
Probability of a positive net present value	78 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (problem alcohol use)	$2,748	$1,172	$0	$600	$4,520
Property loss (problem alcohol use)	$4	$0	$7	$0	$11
Health care (problem alcohol use)	$9	$56	$52	$28	$145
Adjustment for deadweight cost of program	$0	$0	$0	($210)	($210)
Totals	$2,761	$1,228	$59	$417	$4,465

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

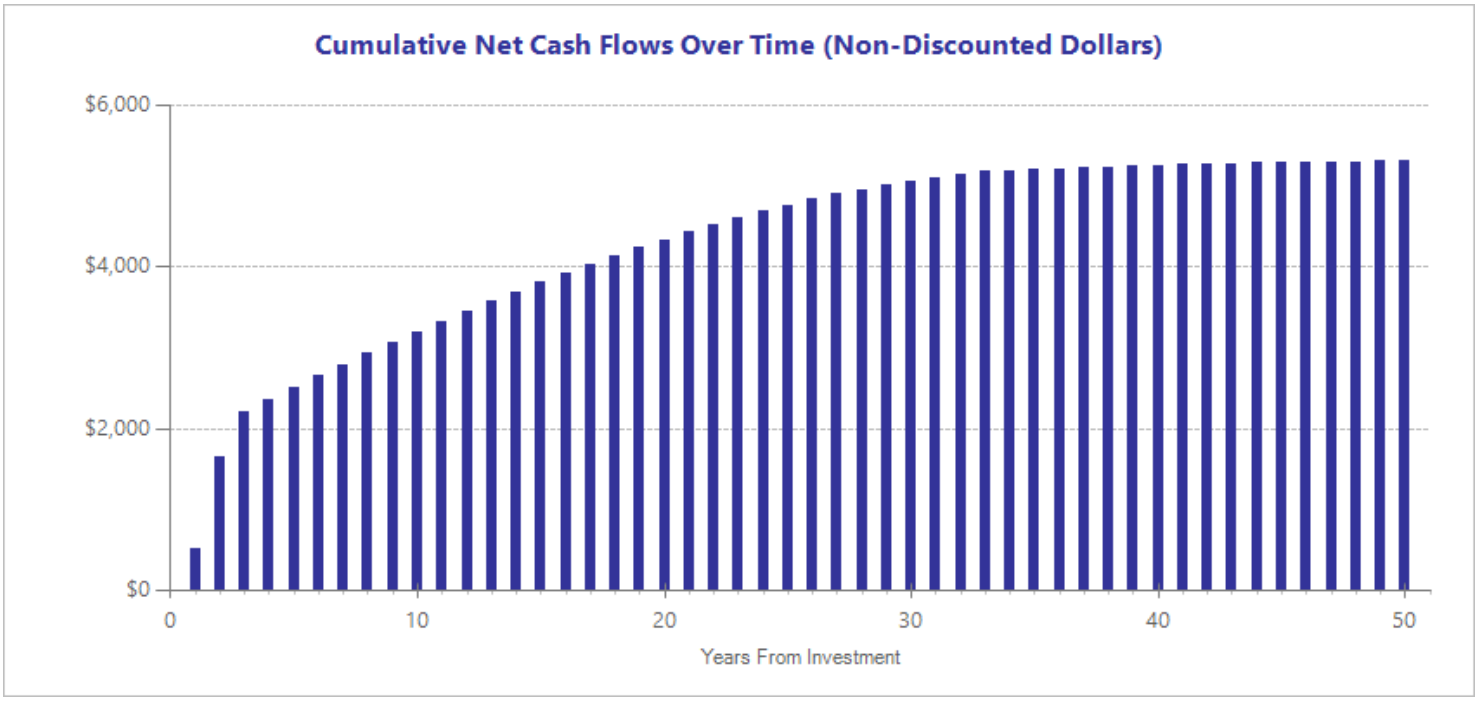
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$362	1	2005
Comparison costs	$0	1	2005

Summary statistics	
Present value of net program costs (in 2013 dollars)	($420)
Uncertainty (+ or - %)	10 %

According to multisite US study, of 7751 patients screened, 1132 were eligible and consented. [Academic ED SBIRT Research Collaborative. (2007). The impact of screening, brief intervention, and referral for treatment on emergency department patients' alcohol use. Annals of Emergency Medicine, 50, 6, 699-710] In Washington State, cost estimates from 2005 indicate $53 per patient screened.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Problem alcohol use	Primary	22	3630	-0.115	0.001	-0.115	0.029	34	-0.016	0.044	36
Emergency department visits	Primary	1	52	-0.317	0.322	-0.317	0.321	34	n/a	n/a	36
Drinking and driving	Primary	4	777	-0.158	0.048	-0.158	0.080	34	n/a	n/a	35
Injuries	Primary	1	122	-0.266	0.037	-0.266	0.127	34	n/a	n/a	35

Citations Used in the Meta-Analysis

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Brief Intervention in a medical hospital

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Inpatients in medical hospitals are screened for "hazardous" alcohol use (not alcohol dependence.) Those screening positive receive a brief intervention, delivered by health care staff or other professional. The intervention includes feedback on the patients' consumption compared to their peers and motivational interview to encourage reduction in consumption. Patients typically receive a single intervention lasting 15 minutes to one hours.

Benefit-Cost Summary

Program benefits	
Participants	$3,758
Taxpayers	$1,670
Other (1)	$83
Other (2)	$516
Total	$6,027
Costs	($156)
Benefits minus cost	$5,871

Summary statistics	
Benefit to cost ratio	$38.82
Benefits minus costs	$5,871
Probability of a positive net present value	75 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (problem alcohol use)	$3,738	$1,595	$0	$556	$5,889
Property loss (problem alcohol use)	$7	$0	$12	$0	$19
Health care (problem alcohol use)	$13	$75	$71	$38	$197
Adjustment for deadweight cost of program	$0	$0	$0	($78)	($78)
Totals	$3,758	$1,670	$83	$516	$6,027

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

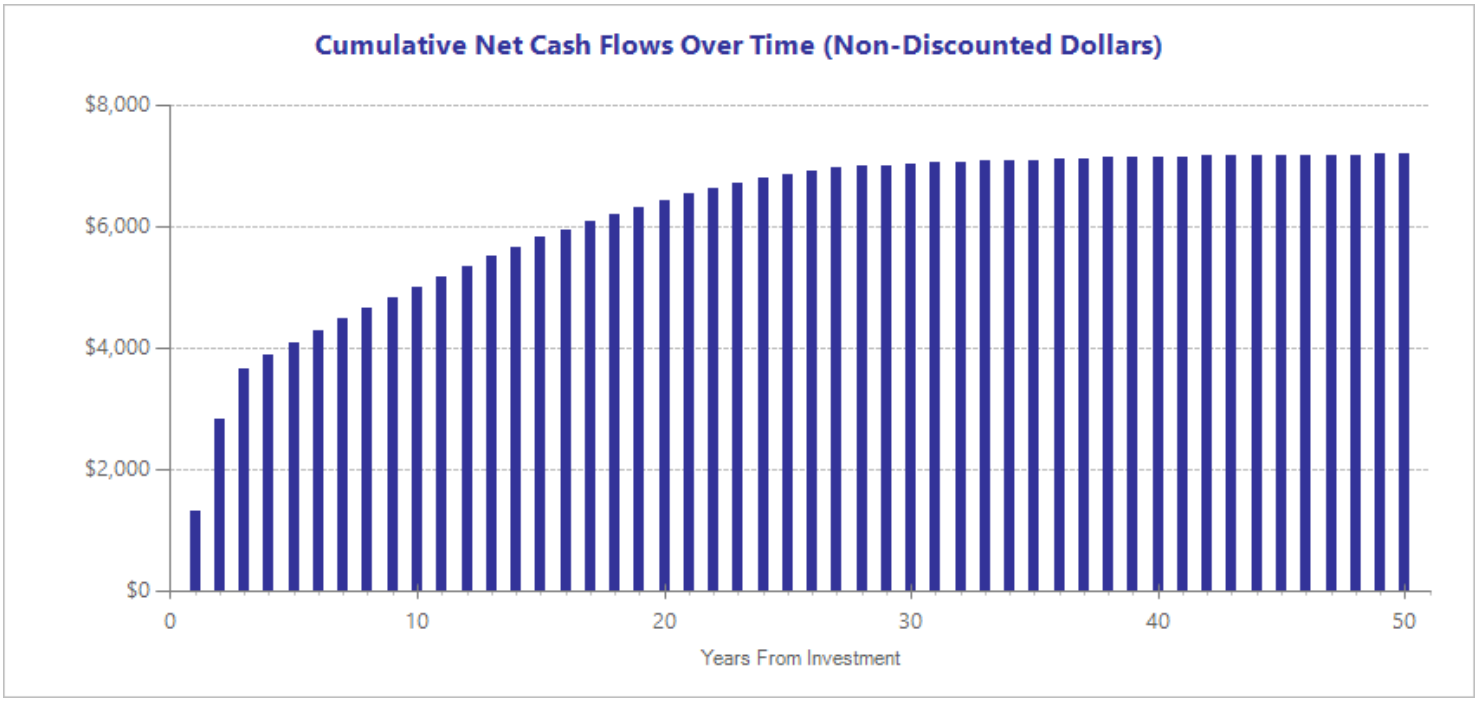
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$151	1	2011
Comparison costs	$0	1	2011

Summary statistics	
Present value of net program costs (in 2013 dollars)	($156)
Uncertainty (+ or - %)	15 %

The average duration of intervention in these studies was .65 hours. Assume 15 minutes to screen patients and 20% of screened patients meet eligibility requirements. Assume nurses conduct screens and intervention, use information from BLS for registered nurses in surgical medical hospitals in 2011.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Problem alcohol use	Primary	14	1345	-0.163	0.002	-0.163	0.052	40	-0.022	0.078	42
Death	Primary	1	59	-0.045	0.949	-0.045	0.701	40	n/a	n/a	41

Citations Used in the Meta-Analysis

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12-Step Facilitation Therapy

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: 12-Step Facilitation Therapy is a stand-alone program that encourages patients' active participation in 12-step programs such as Alcoholics Anonymous or Narcotics Anonymous. The intervention involves a brief, structured, and manual-driven approach, typically delivered in 12 to 15 individual sessions.

Benefit-Cost Summary

Program benefits	
Participants	$1,109
Taxpayers	$573
Other (1)	$219
Other (2)	$6,508
Total	$8,409
Costs	$319
Benefits minus cost	$8,728

Summary statistics	
Benefit to cost ratio	n/a
Benefits minus costs	$8,728
Probability of a positive net present value	66 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$56	$131	$29	$216
Property loss (alcohol abuse/dependence)	$8	$0	$15	$0	$23
Labor market earnings (illicit drug abuse/dependence)	$1,052	$449	$0	$6,285	$7,786
Health care (illicit drug abuse/dependence)	$49	$68	$73	$34	$224
Adjustment for deadweight cost of program	$0	$0	$0	$160	$160
Totals	$1,109	$573	$219	$6,508	$8,409

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

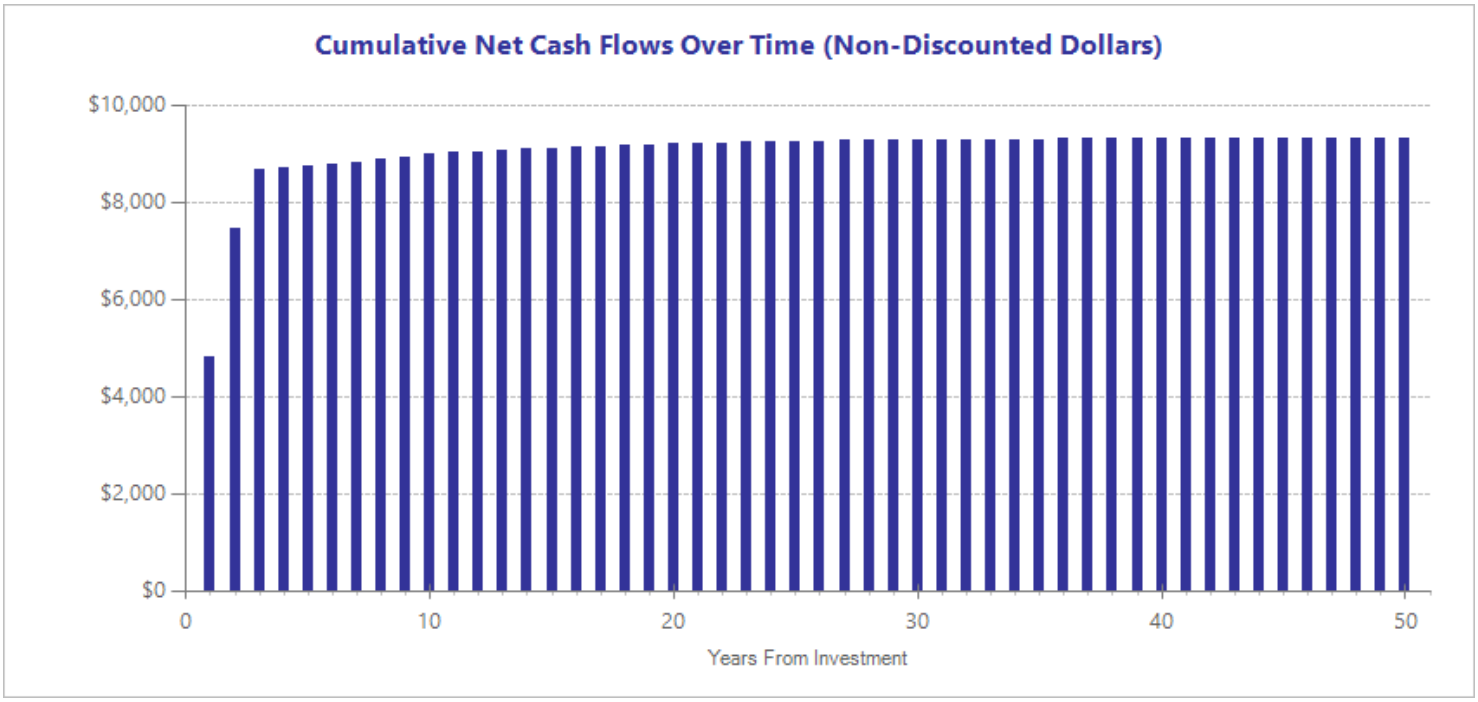
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$407	1	1993
Comparison costs	$924	1	2014

Summary statistics	
Present value of net program costs (in 2013 dollars)	$319
Uncertainty (+ or - %)	10 %

12-Step Facilitation Therapy costs based on Cisler, R., Holder, H.D., Longabaugh, R., Stout, R L., & Zweben, A. et al., (1998). Actual and estimated replication costs for alcohol treatment modalities: Case study from Project MATCH. Journal of Studies on Alcohol, 59(5), 503-12. Comparison group in largest studies received 12 individual hour-long sessions. DBHR Medicaid reimbursement rate for individual tx is $19.26 per 15 minutes.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol abuse or dependence	Primary	6	627	-0.330	0.013	-0.330	0.132	39	0.000	0.187	42
Illicit drug abuse or dependence	Primary	5	545	-0.374	0.002	-0.374	0.121	39	0.000	0.187	42

Citations Used in the Meta-Analysis

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Behavioral Self-Control Training (BSCT)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Behavioral Self-Control Training is a standalone treatment approach often used to pursue a goal of moderate or non-problematic drinking rather than complete abstinence, although abstinence goals are also permissible. This approach teaches self-monitoring, managing drinking speed and duration, identifying high-risk situations, goal setting, rewards for goal attainment, and coping skills. When used with a goal of moderate or controlled drinking, Behavioral Self-Control Training is contra-indicated for pregnant women, women trying to become pregnant, clients with medical or psychological problems worsened by drinking, clients who are mandated to remain abstinent, or in other situations where there is strong pressure for abstinence.

Benefit-Cost Summary

Program benefits	
Participants	($9,998)
Taxpayers	($4,422)
Other (1)	($332)
Other (2)	($2,415)
Total	($17,168)
Costs	($153)
Benefits minus cost	($17,321)

Summary statistics	
Benefit to cost ratio	($112.03)
Benefits minus costs	($17,321)
Probability of a positive net present value	23 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	($50)	($117)	($25)	($193)
Labor market earnings (alcohol abuse/dependence)	($9,892)	($4,219)	$0	($2,238)	($16,349)
Health care (alcohol abuse/dependence)	($81)	($152)	($167)	($76)	($476)
Property loss (alcohol abuse/dependence)	($25)	$0	($47)	$0	($73)
Adjustment for deadweight cost of program	$0	$0	$0	($77)	($77)
Totals	($9,998)	($4,422)	($332)	($2,415)	($17,168)

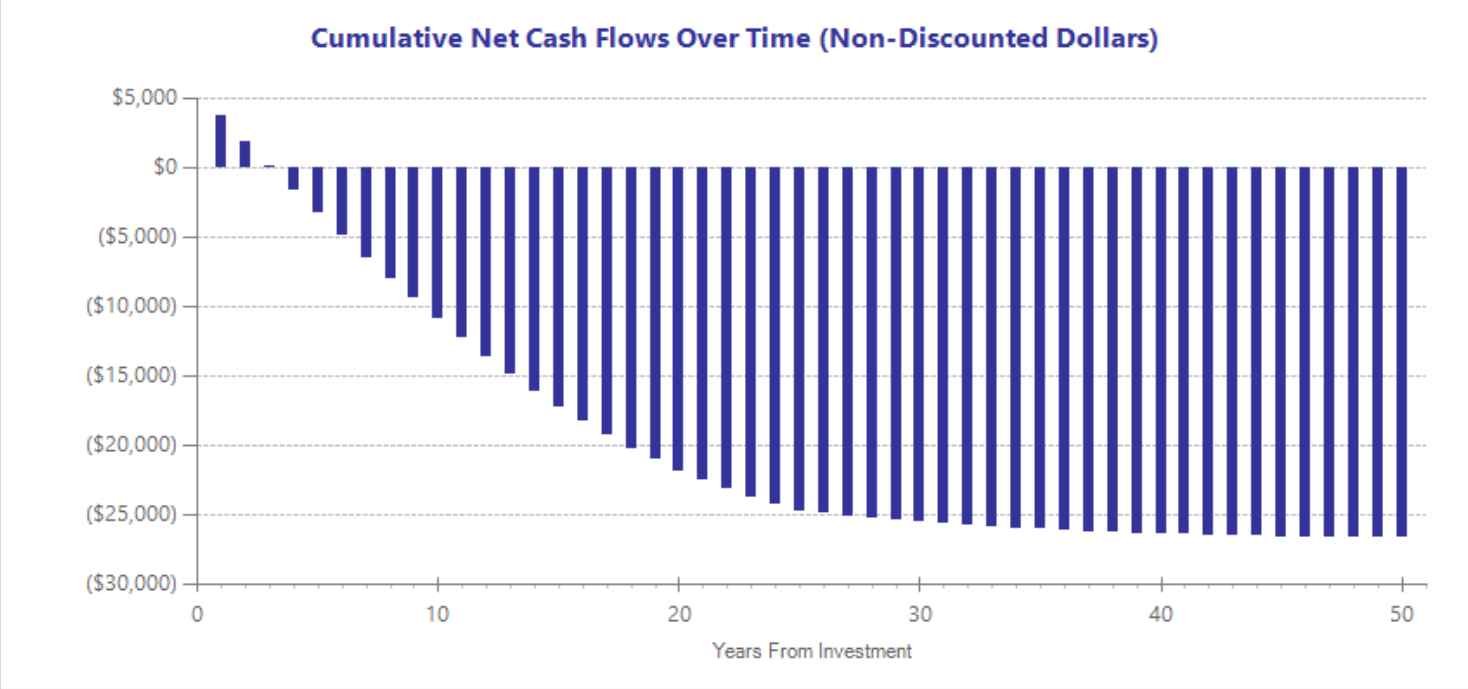
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$957	1	2013	Present value of net program costs (in 2013 dollars)	($153)
Comparison costs	$804	1	2013	Uncertainty (+ or - %)	10 %

The cost of treatment is the weighted average cost for studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rates for individual or group therapy times the weighted average of total hours of these therapies across the studies. Comparison group costs are computed in a similar manner based on treatment received in the studies (individual or group treatment as usual or no treatment).

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol abuse or dependence	Primary	12	333	-0.393	0.001	-0.393	0.161	41	0.165	0.181	42
Drinking and driving	Primary	1	20	-1.048	0.001	-1.048	0.337	41	n/a	n/a	42

Citations Used in the Meta-Analysis

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Brief Cognitive Behavioral Intervention for Amphetamine Users

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Brief Cognitive Behavioral Interventions for Amphetamine Users is a manualized, standalone treatment that consists of two to four individual weekly sessions of cognitive-behavioral therapy. Key approaches included in this intervention include motivational interviewing, coping skills, controlling thoughts, and relapse prevention. While the manual focuses on a four-session model, the developer indicates that practitioners may use a two-session model according to client needs.

Benefit-Cost Summary

Program benefits	
Participants	$1,958
Taxpayers	$1,047
Other (1)	$379
Other (2)	$6,938
Total	$10,322
Costs	($205)
Benefits minus cost	$10,117

Summary statistics	
Benefit to cost ratio	$50.60
Benefits minus costs	$10,117
Probability of a positive net present value	67 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$65	$150	$32	$248
Labor market earnings (illicit drug abuse/dependence)	$1,805	$770	$0	$6,902	$9,477
Health care (illicit drug abuse/dependence)	$153	$212	$229	$106	$700
Adjustment for deadweight cost of program	$0	$0	$0	($102)	($102)
Totals	$1,958	$1,047	$379	$6,938	$10,322

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

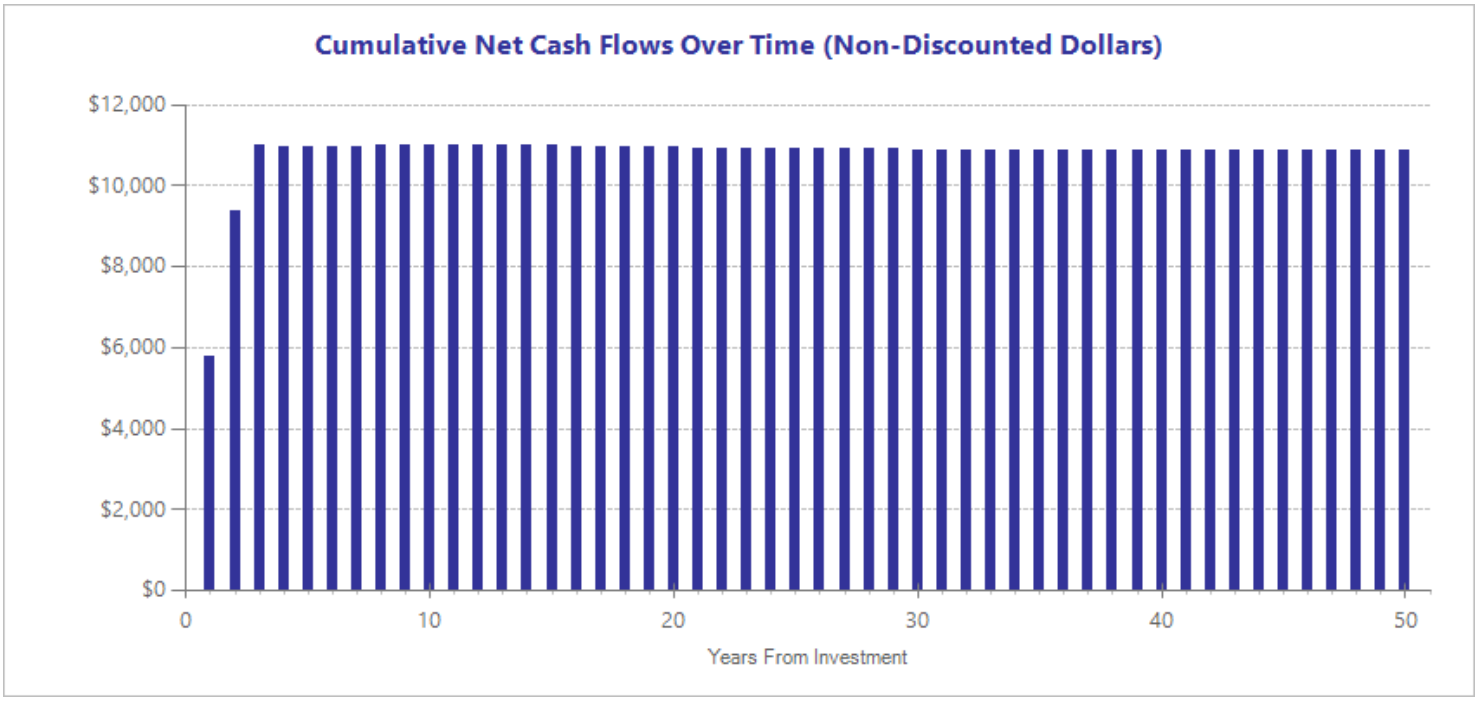
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$204	1	2013
Comparison costs	$0	1	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($205)
Uncertainty (+ or - %)	10 %

The cost of treatment is the weighted average cost for studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rates for individual outpatient therapy times the weighted average of total hours of outpatient individual therapy across the studies. Treatment group therapy costs are in addition to the costs of a self-help book provided to both the comparison and treated groups.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	2	172	-0.703	0.001	-0.703	0.193	30	0.000	0.187	33

Citations Used in the Meta-Analysis

Baker, A., Boggs, T.G., Lewin, T.J. (2001) Randomized controlled trial of brief cognitive-behavioural interventions among regular users of amphetamine. *Addiction 96*(9), 1279-1287.

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Brief Marijuana Dependence Counseling

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Brief Marijuana Dependence Counseling is a standalone treatment that combines motivational enhancement therapy (usually two sessions) and cognitive-behavioral therapy (usually seven sessions) as well as case management. Sessions are generally individual in nature and focus on motivations and readiness for change; building cognitive, behavioral, and emotional skills; and assisting the client with access to additional support services.

Benefit-Cost Summary

Program benefits	
Participants	$5,389
Taxpayers	$2,357
Other (1)	$80
Other (2)	($237)
Total	$7,588
Costs	($542)
Benefits minus cost	$7,047

Summary statistics	
Benefit to cost ratio	$14.03
Benefits minus costs	$7,047
Probability of a positive net present value	92 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (cannabis abuse/dependence)	$5,370	$2,291	$0	$0	$7,661
Health care (cannabis abuse/dependence)	$18	$66	$80	$33	$198
Adjustment for deadweight cost of program	$0	$0	$0	($270)	($270)
Totals	$5,389	$2,357	$80	($237)	$7,588

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

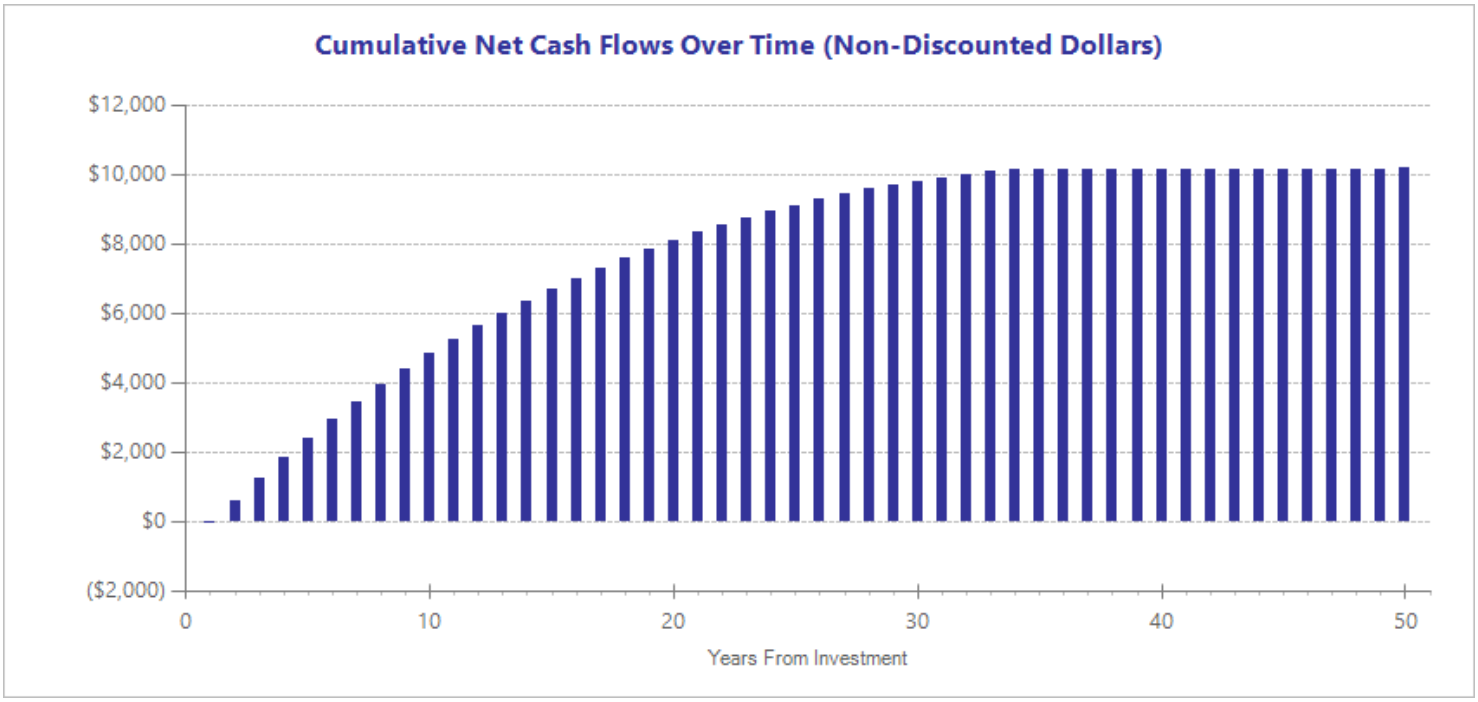
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$822	1	2013
Comparison costs	$280	1	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($542)
Uncertainty (+ or - %)	10 %

The cost of treatment is the weighted average cost for studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rates for individual and/or group outpatient therapy times the weighted average of total hours of outpatient individual and/or group therapy across the studies. Comparison group costs are computed in a similar manner based on treatment received in the studies (individual or group treatment as usual or no treatment).

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Cannabis abuse or dependence	Primary	8	506	-0.364	0.009	-0.364	0.138	32	-0.323	0.226	33

Citations Used in the Meta-Analysis

Budney, A J., Moore, B.A., Rocha, H.L., & Higgins, S.T. (2006). Clinical trial of abstinence-based vouchers and cognitive-behavioral therapy for cannabis dependence. *Journal of Consulting and Clinical Psychology, 74*(2), 307-316.

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Stephens, R.S., Roffman, R.A., & Curtin, L. (2000). Comparison of extended versus brief treatments for marijuana use. *Journal of Consulting and Clinical Psychology, 68*(5), 898-908.

Cognitive Behavior Coping Skills Therapy

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Cognitive-Behavioral Coping-Skills Therapy is a manualized, standalone treatment used to treat alcohol and/or drug abuse or dependence. This intervention emphasizes identifying high-risk situation that could lead to relapse such as social situations, depression, etc. and developing skills to cope those situations. Clients engage in problem solving, role, playing, and homework practice. The intervention is often provided in an individual therapy format but can be conducted in group formats as well.

Benefit-Cost Summary

Program benefits	
Participants	$4,724
Taxpayers	$2,287
Other (1)	$475
Other (2)	$41,383
Total	$48,869
Costs	($258)
Benefits minus cost	$48,611

Summary statistics	
Benefit to cost ratio	$189.66
Benefits minus costs	$48,611
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$45	$105	$23	$173
Property loss (alcohol abuse/dependence)	$7	$0	$12	$0	$19
Labor market earnings (illicit drug abuse/dependence)	$4,478	$1,910	$0	$41,323	$47,711
Health care (illicit drug abuse/dependence)	$240	$332	$358	$167	$1,096
Adjustment for deadweight cost of program	$0	$0	$0	($129)	($129)
Totals	$4,724	$2,287	$475	$41,383	$48,869

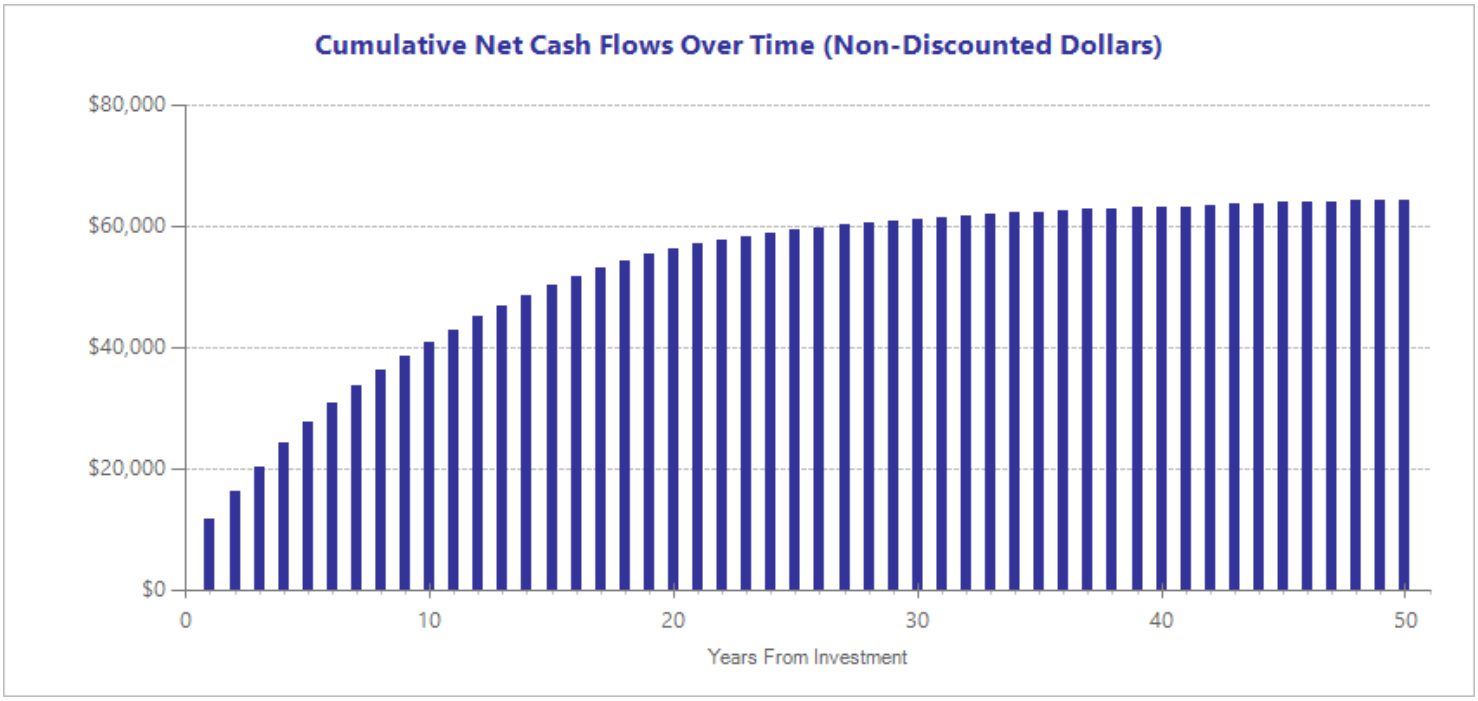
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$842	1	2013	Present value of net program costs (in 2013 dollars)	($258)
Comparison costs	$584	1	2013	Uncertainty (+ or - %)	10 %

The cost of treatment is the weighted average cost for studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rates for individual and group outpatient therapy times the weighted average of total hours of outpatient individual and group therapy across the studies. Comparison group costs are computed in a similar manner based on treatment received in the studies (individual or group treatment as usual or no treatment).

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	6	312	-0.218	0.021	-0.218	0.095	44	-0.494	0.223	45
Alcohol abuse or dependence	Primary	7	190	-0.229	0.060	-0.229	0.122	44	0.000	0.187	47
Post-traumatic stress	Primary	1	34	-0.269	0.276	-0.269	0.247	44	n/a	n/a	47
Employment	Primary	2	44	0.363	0.673	0.363	0.291	44	n/a	n/a	45

Citations Used in the Meta-Analysis

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Sanchez-Craig, M., & Walker, K. (1982). Teaching coping skills to chronic alcoholics in a coeducational halfway house: I. Assessment of programme effects. *British Journal of Addiction, 77*(1), 35-50.

Community Reinforcement Approach (CRA) with Vouchers

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: This intervention combines the Community Reinforcement Approach with contingency management. The Community Reinforcement Approach to therapy that is relatively intensive therapy that consists of four main topics: (1) minimizing contact with known antecedents to substance use and recognizing consequences of use, (2) counseling to find alternative activities, (3) employment counseling (if needed), (4) reciprocal relationship counseling if partner was not involved in substance use. Counseling generally occurs twice-weekly for first three months and once weekly for next three months. The contingency management portion of the intervention rewards clients with vouchers if they have negative urinalysis exams. These vouchers can be exchanged for prizes that range in value.

Benefit-Cost Summary

Program benefits	
Participants	$1,696
Taxpayers	$908
Other (1)	$331
Other (2)	$5,512
Total	$8,448
Costs	($1,170)
Benefits minus cost	$7,278

Summary statistics	
Benefit to cost ratio	$7.26
Benefits minus costs	$7,278
Probability of a positive net present value	62 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$57	$131	$28	$216
Labor market earnings (illicit drug abuse/dependence)	$1,585	$676	$0	$5,974	$8,235
Health care (illicit drug abuse/dependence)	$135	$187	$202	$94	$619
Labor market earnings (major depression)	($23)	($10)	$0	$0	($33)
Health care (major depression)	($1)	($2)	($2)	($1)	($6)
Adjustment for deadweight cost of program	$0	$0	$0	($583)	($583)
Totals	$1,696	$908	$331	$5,512	$8,448

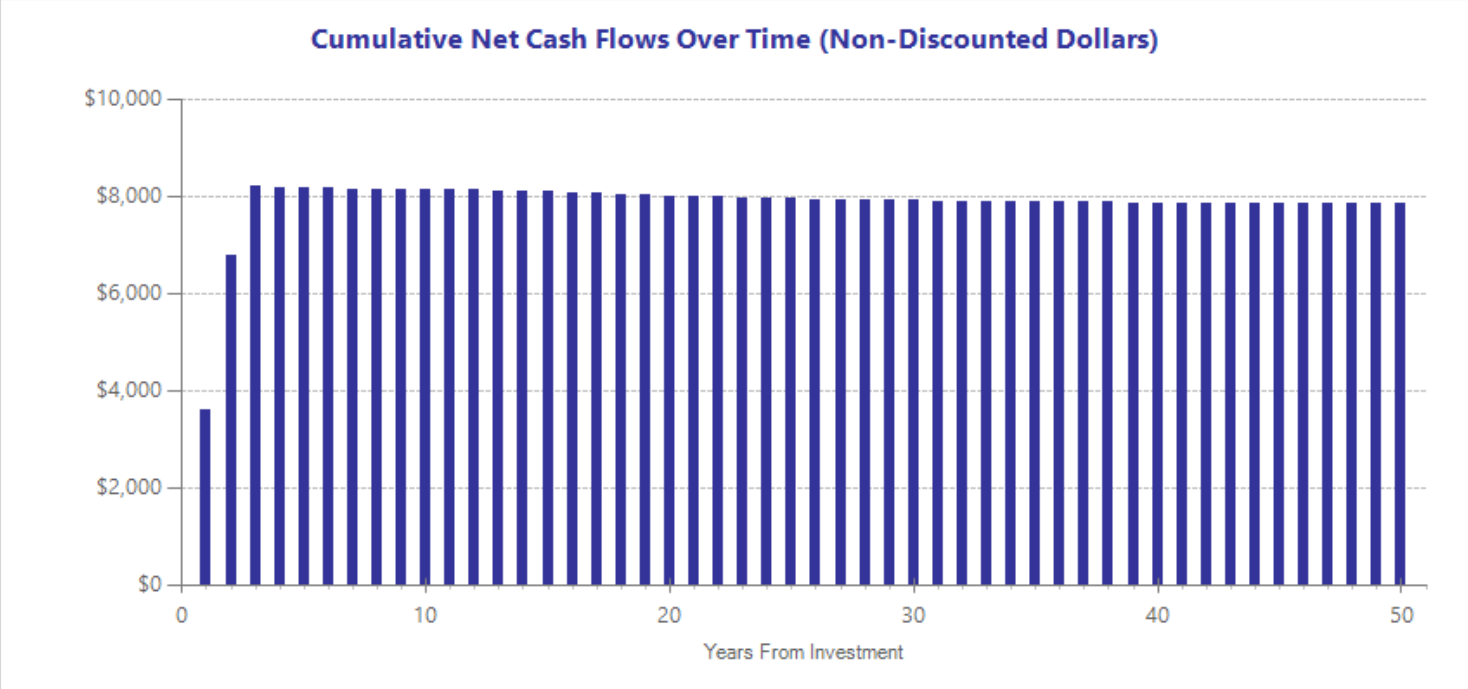
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$2,602	1	2013	Present value of net program costs (in 2013 dollars)	($1,170)
Comparison costs	$1,432	1	2013	Uncertainty (+ or - %)	20 %

The cost of treatment is the weighted average cost for studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rates for individual or group outpatient therapy times the weighted average of total hours of outpatient individual or group therapy across the studies. Treatment group costs also include the cost of the vouchers. These costs are estimated from the studies included in the analysis. We used the average voucher received when available and the maximum possible voucher when an average was not reported. Comparison group costs are computed in a similar manner based on treatment received in the studies (individual or group treatment as usual or no treatment).

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	8	248	-0.580	0.001	-0.580	0.129	30	0.000	0.187	33
Anxiety disorder	Primary	1	19	-0.641	0.173	-0.641	0.470	30	n/a	n/a	33
Major depressive disorder	Primary	1	19	0.002	0.996	0.002	0.472	30	n/a	n/a	33

Citations Used in the Meta-Analysis

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Contingency management (higher-cost) for substance abuse

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Contingency management is a supplement to counseling treatment that rewards participants for attending treatment and/or abstaining from substance use. The intervention reviewed here focused on those with drug and/or alcohol abuse or dependence (excluding marijuana dependence) where contingencies were provided for remaining abstinent. Two methods of contingency management were reviewed: (1) A voucher system were abstinence earned vouchers that were exchangeable for goods provided by the clinic or counseling center, and (2) a prize or raffle system where clients who remained abstinent could earn the opportunity to draw from a prize bowl. Higher-cost contingency management was determined by maximum voucher or maximum expected value of prizes possible. Based on a statistical analysis of contingency management studies, we determined that programs with a maximum value of vouchers or prizes greater than $500 (in 2012 dollars) represent higher-cost contingency management.

Benefit-Cost Summary

Program benefits	
Participants	$2,839
Taxpayers	$1,394
Other (1)	$318
Other (2)	$18,938
Total	$23,489
Costs	($554)
Benefits minus cost	$22,936

Summary statistics	
Benefit to cost ratio	$42.66
Benefits minus costs	$22,936
Probability of a positive net present value	79 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$37	$86	$19	$141
Property loss (alcohol abuse/dependence)	$2	$0	$3	$0	$5
Labor market earnings (illicit drug abuse/dependence)	$2,684	$1,145	$0	$19,091	$22,920
Health care (illicit drug abuse/dependence)	$153	$212	$229	$107	$701
Adjustment for deadweight cost of program	$0	$0	$0	($278)	($278)
Totals	$2,839	$1,394	$318	$18,938	$23,489

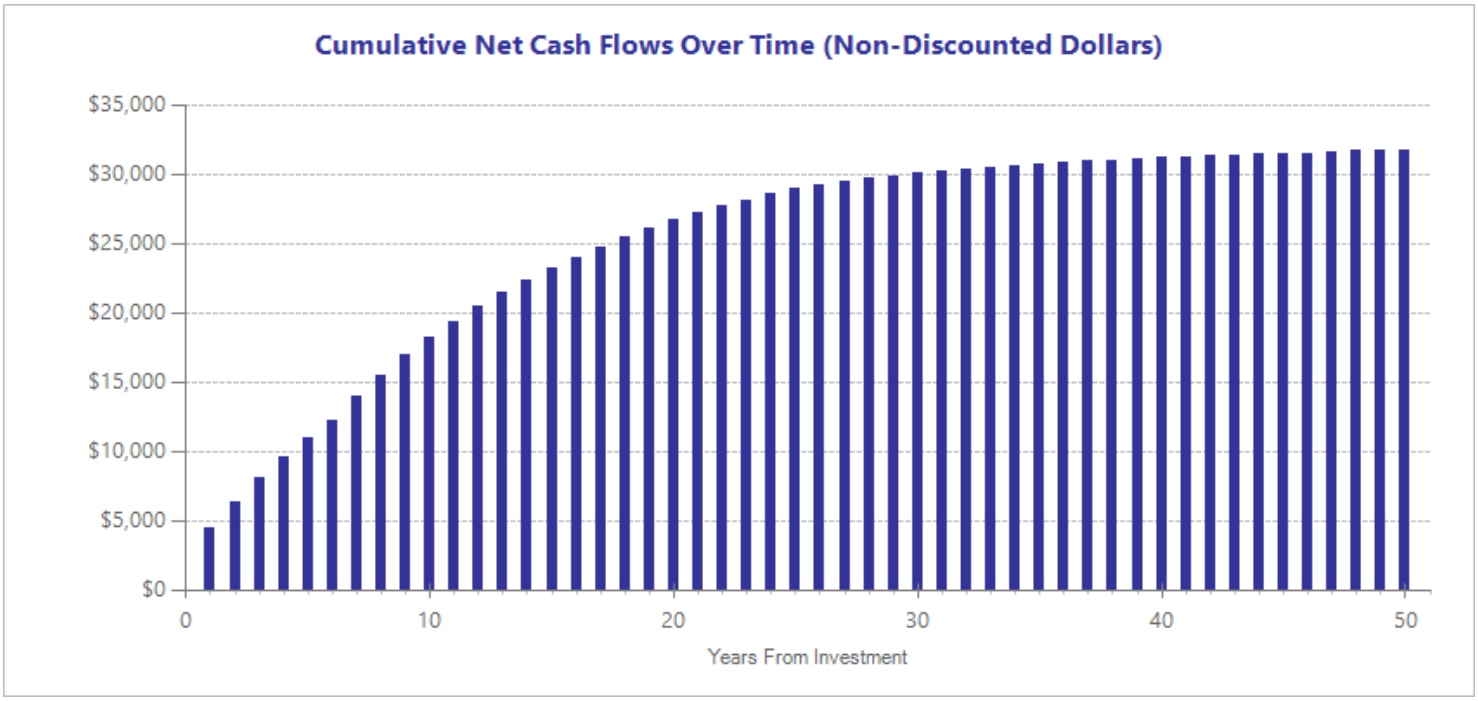
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$548	1	2012	Present value of net program costs (in 2013 dollars)	($554)
Comparison costs	$0	1	2012	Uncertainty (+ or - %)	20 %

We calculated the weighted average of the variable treatment and comparison group costs across studies estimating the cost-effectiveness of an incentive program with an average cost of greater than $500 in 2012 (Olmstead & Petry, 2009; Olmstead, Sindelar, & Petry, 2007; Olmstead et al., 2007). Costs of administering the incentive program include staff costs to inventory, shop, and restock prizes; material cost of items; counseling session costs; and toxicology screens. All staff costs include salary, benefits, and overhead. All costs are calculated from the clinic perspective. Note that because treatment group participants have higher retention rates than the control group, costs also reflect the increased number of counseling sessions attended and urinalysis tests performed for the treated group. Olmstead, T.A., & Petry, N.M. (2009). The cost-effectiveness of prize-based and voucher-based contingency management in a population of cocaine- or opioid-dependent outpatients. Drug and Alcohol Dependence, 102(1), 108-115. Olmstead, T.A., Sindelar, J.L., & Petry, N.M. (2007). Cost-effectiveness of prize-based incentives for stimulant abusers in outpatient psychosocial treatment programs. Drug and Alcohol Dependence, 87(2), 175-182. Olmstead, T.A., Sindelar, J.L., Easton, C.J., & Carroll, K.M. (2007). The cost-effectiveness of four treatments for marijuana dependence. Addiction, 102(9), 1443-1453.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	37	1323	-0.519	0.001	-0.519	0.060	39	-0.154	0.238	40
Cannabis use	Primary	1	19	-0.301	0.334	-0.301	0.312	39	0.000	0.125	40
Alcohol abuse or dependence	Primary	1	19	-0.096	0.758	-0.096	0.310	39	0.000	0.125	40

Citations Used in the Meta-Analysis

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Contingency management (higher-cost) for marijuana use

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Contingency management is a supplement to counseling treatment that rewards participants for attending treatment and/or abstaining from substance use. The intervention reviewed here focused on those with drug and/or alcohol abuse or dependence (excluding those with a primary diagnosis of marijuana dependence) where contingencies were provided for remaining abstinent. Two methods of contingency management were reviewed: (1) A voucher system were abstinence earned vouchers that were exchangeable for goods provided by the clinic or counseling center, and (2) a prize or raffle system where clients who remained abstinent could earn the opportunity to draw from a prize bowl. Higher-cost contingency management was determined by maximum voucher or maximum expected value of prizes possible. Based on statistical analysis of contingency management studies, we determined that programs with a maximum value of vouchers or prizes greater than $500 (in 2012 dollars) represent higher-cost contingency management.

Benefit-Cost Summary

Program benefits	
Participants	$5,934
Taxpayers	$2,603
Other (1)	$98
Other (2)	($238)
Total	$8,398
Costs	($554)
Benefits minus cost	$7,844

Summary statistics	
Benefit to cost ratio	$15.28
Benefits minus costs	$7,844
Probability of a positive net present value	79 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (cannabis abuse/dependence)	$5,912	$2,522	$0	$0	$8,433
Health care (cannabis abuse/dependence)	$23	$81	$98	$41	$243
Adjustment for deadweight cost of program	$0	$0	$0	($278)	($278)
Totals	$5,934	$2,603	$98	($238)	$8,398

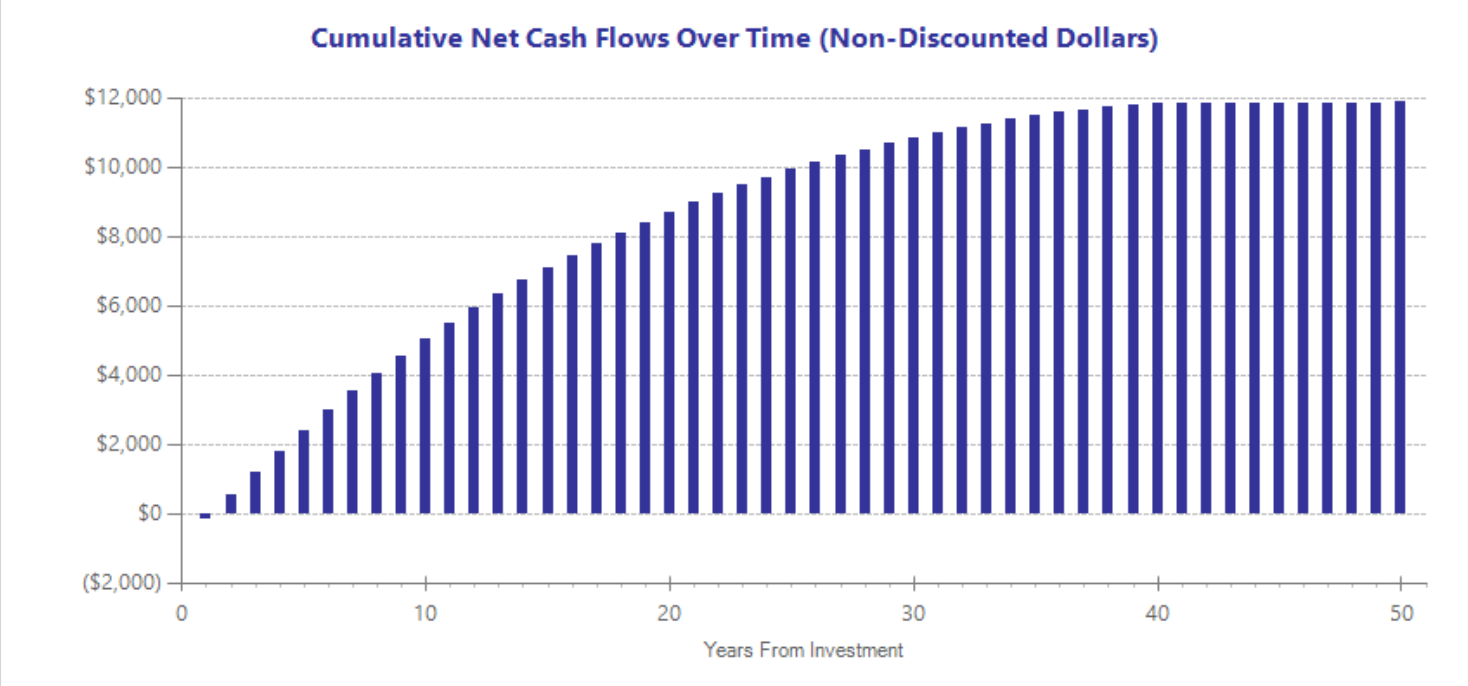
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$548	1	2012	Present value of net program costs (in 2013 dollars)	($554)
Comparison costs	$0	1	2012	Uncertainty (+ or - %)	20 %

We calculated the weighted average of the variable treatment and comparison group costs across studies estimating the cost-effectiveness of an incentive program with an average cost of greater than $500 in 2012 (Olmstead & Petry, 2009; Olmstead, Sindelar, & Petry, 2007; Olmstead et al., 2007). Costs of administering the incentive program include staff costs to inventory, shop, and restock prizes; material cost of items; counseling session costs; and toxicology screens. All staff costs include salary, benefits, and overhead. All costs are calculated from the clinic perspective. Note that because treatment group participants have higher retention rates than the control group, costs also reflect the increased number of counseling sessions attended and urinalysis tests performed for the treated group. Olmstead, T.A., & Petry, N.M. (2009). The cost-effectiveness of prize-based and voucher-based contingency management in a population of cocaine- or opioid-dependent outpatients. Drug and Alcohol Dependence, 102(1), 108-115. Olmstead, T.A., Sindelar, J.L., & Petry, N.M. (2007). Cost-effectiveness of prize-based incentives for stimulant abusers in outpatient psychosocial treatment programs. Drug and Alcohol Dependence, 87(2), 175-182.Olmstead, T.A., Sindelar, J.L., Easton, C.J., & Carroll, K.M. (2007). The cost-effectiveness of four treatments for marijuana dependence. Addiction, 102(9), 1443-1453.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Cannabis abuse or dependence	Primary	4	116	-0.354	0.021	-0.354	0.154	26	-0.325	0.412	27

Citations Used in the Meta-Analysis

Carroll, K.M., Easton, C.J., Nich, C., Hunkele, K.A., Neavins, T.M., Sinha, R., . . . Rounsaville, B.J. (2006). The use of contingency management and motivational/skills-building therapy to treat young adults with marijuana dependence. *Journal of Consulting and Clinical Psychology, 74*(5), 955-966.

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Contingency management (lower-cost) for substance abuse

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Contingency management is a supplement to counseling treatment that rewards participants for attending treatment and/or abstaining from substance use. The intervention reviewed here focused on those with drug and/or alcohol abuse or dependence (excluding those with a primary diagnosis of marijuana dependence) where contingencies were provided for remaining abstinent. Two methods of contingency management were reviewed: (1) A voucher system were abstinence earned vouchers that were exchangeable for goods provided by the clinic or counseling center, and (2) a prize or raffle system where clients who remained abstinent could earn the opportunity to draw from a prize bowl. Higher-cost contingency management was determined by maximum voucher or maximum expected value of prizes possible. Based on a statistical analysis of contingency management studies, we determined that programs with a maximum value of vouchers or prizes less than or equal to $500 (in 2012 dollars) represent lower-cost contingency management.

Benefit-Cost Summary

Program benefits	
Participants	$429
Taxpayers	$216
Other (1)	$62
Other (2)	$1,869
Total	$2,575
Costs	($242)
Benefits minus cost	$2,334

Summary statistics	
Benefit to cost ratio	$10.96
Benefits minus costs	$2,334
Probability of a positive net present value	60 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$11	$25	$5	$41
Property loss (alcohol abuse/dependence)	$1	$0	$2	$0	$2
Labor market earnings (illicit drug abuse/dependence)	$404	$172	$0	$1,968	$2,544
Health care (illicit drug abuse/dependence)	$24	$33	$36	$16	$109
Adjustment for deadweight cost of program	$0	$0	$0	($121)	($121)
Totals	$429	$216	$62	$1,869	$2,575

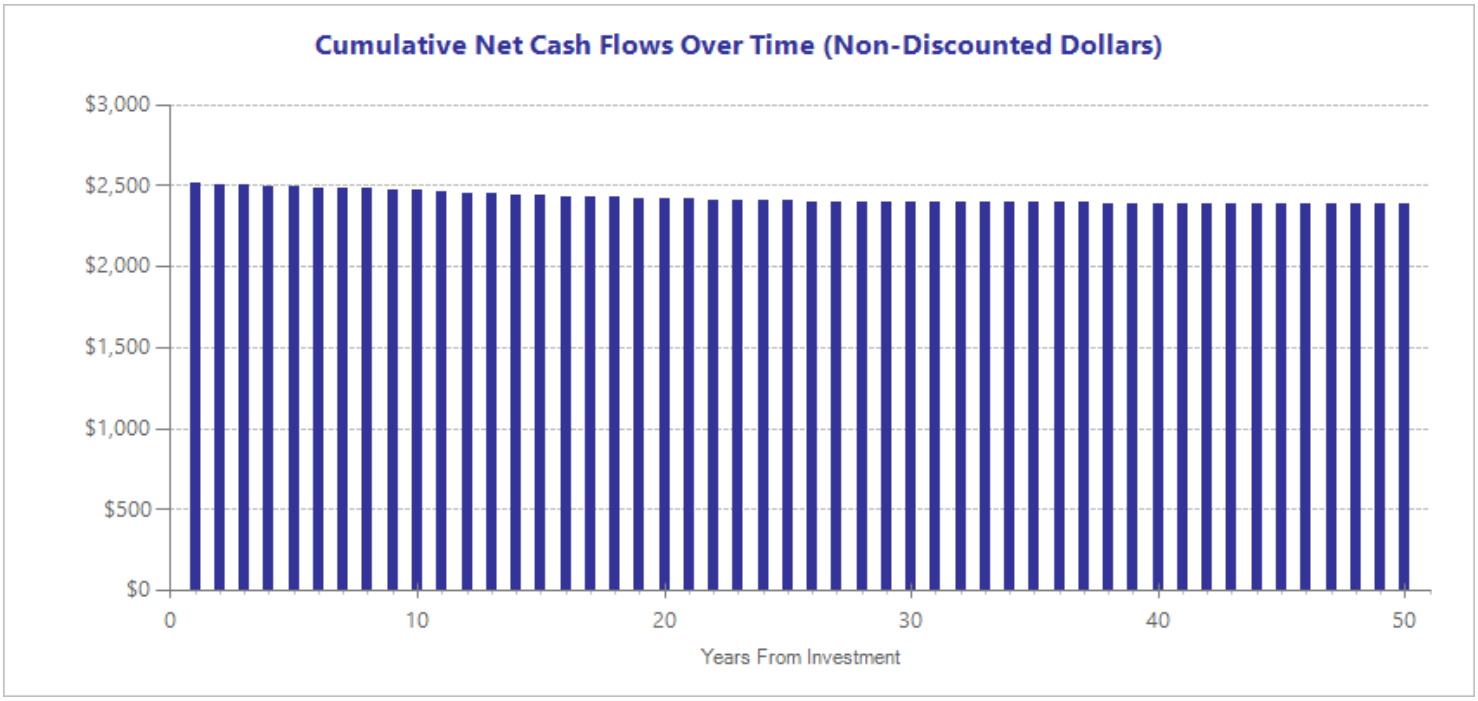
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$240	1	2012	Present value of net program costs (in 2013 dollars)	($242)
Comparison costs	$0	1	2012	Uncertainty (+ or - %)	40 %

We calculated the weighted average of the variable treatment and comparison group costs across studies estimating the cost-effectiveness of an incentive program with an average cost of less than $500 in 2012 (Sindelar, Olmstead, & Peirce, 2007; Sindelar, Elbel, & Petry, 2006; Hartz et al., 1999). Costs of administering the incentive program include staff costs to inventory, shop, and restock prizes; material cost of items; counseling session costs; and toxicology screens. All staff costs include salary, benefits, and overhead. All costs are calculated from the clinic perspective. Note that because treatment group participants have higher retention rates than the control group, costs also reflect the increased number of counseling sessions attended and urinalysis tests performed for the treated group. Hartz, D.T., Meek, P., Piotrowski, N.A., Tusel, D.J., Henke, C.J., Delucchi, K., Sees, K., Hall, S.M. (1999). A cost-effectiveness and cost-benefit analysis of contingency contracting-enhanced methadone detoxification treatment. The American Journal of Drug and Alcohol Abuse, 25(2), 207-218. Sindelar, J., Elbel, B., & Petry, N.M. (2007). What do we get for our money? Cost-effectiveness of adding contingency management. Addiction, 102(2), 309-316.Sindelar, J.L., Olmstead, T.A., & Peirce, J.M. (2007). Cost effectiveness of prize-based contingency management in methadone maintenance treatment programs. Addiction, 102(9), 1463-1471.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	29	1595	-0.278	0.001	-0.278	0.049	37	0.000	0.075	38
Cannabis use	Primary	3	319	-0.049	0.676	-0.049	0.118	37	0.000	0.075	38
Alcohol abuse or dependence	Primary	7	800	-0.290	0.092	-0.196	0.116	37	0.000	0.075	38

Citations Used in the Meta-Analysis

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Tracy, K., Babuscio, T., Nich, C., Kiluk, B., Carroll, K.M., Petry, N.M., & Rounsaville, B.J. (2007). Contingency Management to Reduce Substance Use in Individuals Who are Homeless with Co-Occurring Psychiatric Disorders. *The American Journal of Drug and Alcohol Abuse, 33*(2), 253-258.

Contingency management (lower-cost) for marijuana use

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Contingency management is a supplement to counseling treatment that rewards participants for attending treatment and/or abstaining from substance use. The intervention reviewed here focused on those with marijuana abuse or dependence where contingencies were provided for remaining abstinent. Two methods of contingency management were reviewed: (1) A voucher system were abstinence earned vouchers that were exchangeable for goods provided by the clinic or counseling center, and (2) a prize or raffle system where clients who remained abstinent could earn the opportunity to draw from a prize bowl. Higher-cost contingency management was determined by maximum voucher or maximum expected value of prizes possible. Based on a statistical analysis of contingency management studies, we determined that programs with a maximum value of vouchers or prizes less than or equal to $500 (in 2012 dollars) represent lower-cost contingency management.

Benefit-Cost Summary

Program benefits	
Participants	$337
Taxpayers	$146
Other (1)	$4
Other (2)	($120)
Total	$367
Costs	($243)
Benefits minus cost	$125

Summary statistics	
Benefit to cost ratio	$1.53
Benefits minus costs	$125
Probability of a positive net present value	51 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (cannabis abuse/dependence)	$336	$143	$0	$0	$479
Health care (cannabis abuse/dependence)	$1	$3	$4	$2	$9
Adjustment for deadweight cost of program	$0	$0	$0	($121)	($121)
Totals	$337	$146	$4	($120)	$367

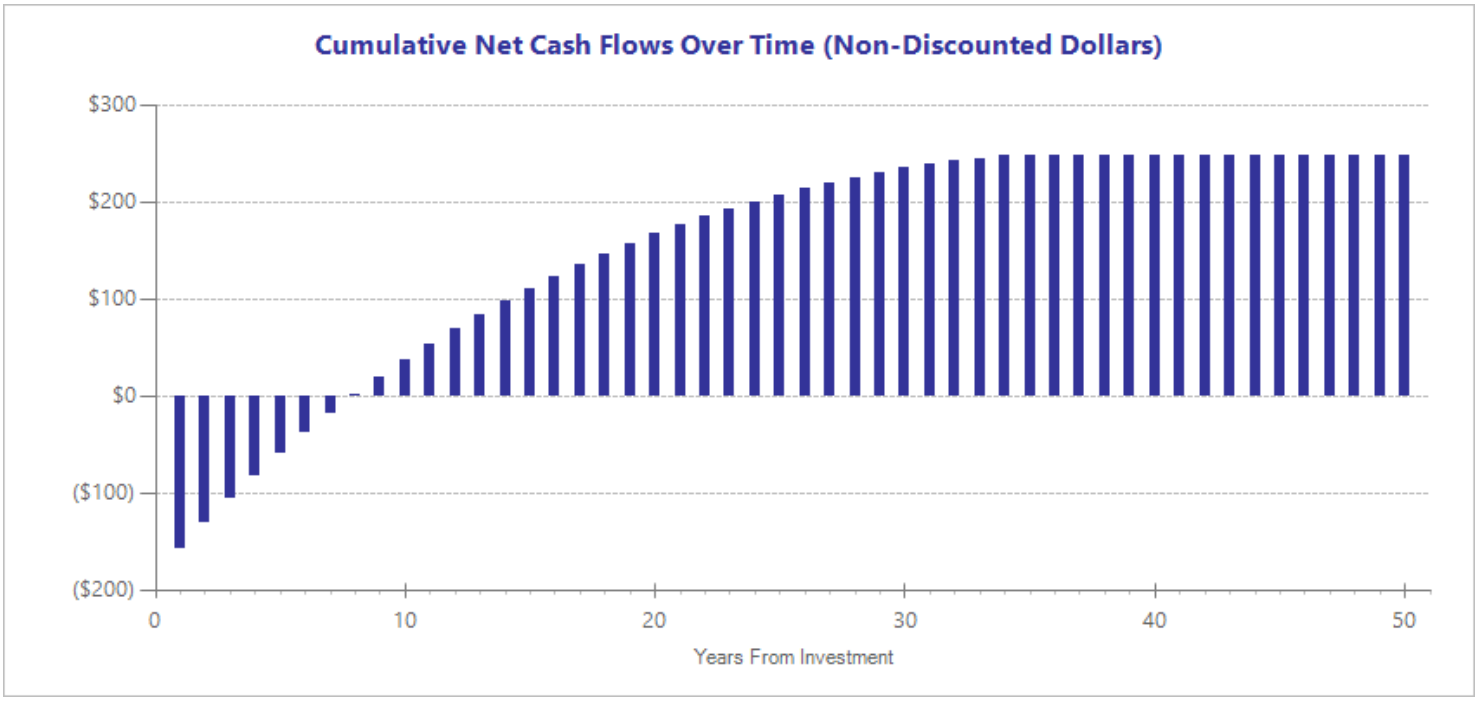
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$240	1	2012	Present value of net program costs (in 2013 dollars)	($243)
Comparison costs	$0	1	2012	Uncertainty (+ or - %)	40 %

We calculated the weighted average of the variable treatment and comparison group costs across studies estimating the cost-effectiveness of an incentive program with an average cost of less than $500 in 2012 (Sindelar, Olmstead, & Peirce, 2007; Sindelar, Elbel, & Petry, 2006; Hartz et al., 1999). Costs of administering the incentive program include staff costs to inventory, shop, and restock prizes; material cost of items; counseling session costs; and toxicology screens. All staff costs include salary, benefits, and overhead. All costs are calculated from the clinic perspective. Note that because treatment group participants have higher retention rates than the control group, costs also reflect the increased number of counseling sessions attended and urinalysis tests performed for the treated group. Hartz, D.T., Meek, P., Piotrowski, N.A., Tusel, D. J., Henke, C.J., Delucchi, K., Sees, K., Hall, S.M. (1999). A cost-effectiveness and cost-benefit analysis of contingency contracting-enhanced methadone detoxification treatment. The American Journal of Drug and Alcohol Abuse, 25(2), 207-218. Sindelar, J., Elbel, B., & Petry, N.M. (2007). What do we get for our money? Cost-effectiveness of adding contingency management. Addiction, 102(2), 309-316.Sindelar, J.L., Olmstead, T.A., & Peirce, J.M. (2007). Cost-effectiveness of prize-based contingency management in methadone maintenance treatment programs. Addiction, 102(9), 1463-1471.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Cannabis abuse or dependence	Primary	3	149	-0.086	0.673	-0.086	0.191	32	-0.007	0.259	33

Citations Used in the Meta-Analysis

Carroll, K.M., Nich, C., Lapaglia, D.M., Peters, E.N., Easton, C.J., & Petry, N.M. (2012). Combining cognitive behavioral therapy and contingency management to enhance their effects in treating cannabis dependence: less can be more, more or less. *Addiction, 107*(9), 1650-1659.

Litt, M.D., Kadden, R.M., Kabela-Cormier, E., & Petry, N.M. (2008). Coping skills training and contingency management treatments for marijuana dependence: exploring mechanisms of behavior change. *Addiction, 103*(4), 638-648.

Day treatment with abstinence contingencies and vouchers

Literature review updated May 2014.

Program Description: Day treatment with abstinence contingencies or vouchers is a standalone treatment that combines day treatment interventions with contingency management. This intervention was originally developed to treat homeless drug users. Day treatment consists of approximately five hours of primarily group activities including counseling, recreational activities, skills building, etc. as well as lunch. Contingencies were provided dependent on negative urinalysis results. These contingencies included housing and minimum wage employment. Other programs might also offer subsidies for utilities or vouchers for items such as personal hygiene products.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	1	69	-0.231	0.279	-0.231	0.213	36	0.000	0.187	39

Citations Used in the Meta-Analysis

Milby, J.B., Schumacher, J.E., Raczynski, J.M., Caldwell, E., Engle, M., Michael, M., Carr, J. (1996). Sufficient Conditions for Effective Treatment of Substance Abusing Homeless Persons. *Drug and Alcohol Dependence, 43*(1), 39-47.

Dialectical Behavior Therapy (DBT) for co-morbid substance abuse and serious mental illness

Literature review updated May 2014.

Program Description: Dialectical Behavior Therapy is a cognitive-behavioral treatment originally developed by Marsha Linehan at the University of Washington to treat those with severe mental disorders including chronically suicidal individuals often suffering from borderline personality disorder. DBT for Substance Abusers was developed by Dr. Linehan and colleagues to treat individuals with co-occurring substance use disorders and borderline personality disorder. DBT for Substance Abusers focuses on the following five main objectives: (1) motivating patients to change dysfunctional behaviors, (2) enhancing patient skills, (3) ensuring the new skills are used in daily life, (4) structuring the client's environment, and (5) training and consultation to improve the counselor's skills. For substance abusers, the primary target of the intervention is the substance abuse and specific goals include reducing abuse, alleviating withdrawal symptoms, reducing cravings, avoiding opportunities and triggers for substance abuse, creating a healthy environment and community.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	2	39	-0.024	0.946	-0.024	0.348	34	n/a	n/a	35
Psychiatric symptoms	Primary	1	27	-0.596	0.027	-0.596	0.270	34	n/a	n/a	35
Cannabis use	Primary	1	27	-0.090	0.732	-0.090	0.263	34	n/a	n/a	35
Alcohol abuse or dependence	Primary	1	27	0.149	0.573	0.149	0.264	34	n/a	n/a	35

Citations Used in the Meta-Analysis

Linehan, M.M., Schmidt, H., Dimeoff, L.A., Craft, J.C., Kanter, J. & Comtois, K.A. (1999). Dialectical Behavior Therapy for Patients With Borderline Personality Disorder and Drug-Dependence. *American Journal on Addictions, 8*(4), 279-292.

van den Bosch, L., Koeter, M., Stijnen, T., Verheul, R., & van den Brink, W. (2005). Sustained efficacy of dialectical behaviour therapy for borderline personality disorder. *Behaviour Research and Therapy, 43*(9), 1231-1241.

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Family Behavior Therapy (FBT)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Family Behavior Therapy is a standalone behavioral treatment based on the Community Reinforcement Approach aimed at reducing substance use. Participants attend sessions with at least one family member, typically a parent or cohabitating partner. The treatment consists of several parts including behavioral contracting, skills to reduce interaction with individuals and situations related to drug use, impulse and urge control, communication skills, and vocational or educational training. Our findings reflect only adults treated in the program and exclude results for adolescents.

Benefit-Cost Summary

Program benefits	
Participants	$2,758
Taxpayers	$1,461
Other (1)	$509
Other (2)	$8,930
Total	$13,659
Costs	($1,847)
Benefits minus cost	$11,812

Summary statistics	
Benefit to cost ratio	$7.40
Benefits minus costs	$11,812
Probability of a positive net present value	69 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$85	$197	$43	$325
Labor market earnings (illicit drug abuse/dependence)	$2,549	$1,087	$0	$9,668	$13,304
Health care (illicit drug abuse/dependence)	$209	$289	$312	$145	$954
Adjustment for deadweight cost of program	$0	$0	$0	($925)	($925)
Totals	$2,758	$1,461	$509	$8,930	$13,659

We created the two "other" categories to report results that do not fit neatly in the "participant" or "taxpayer" perspectives. In the "Other (1)" category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the "Other (2)" category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

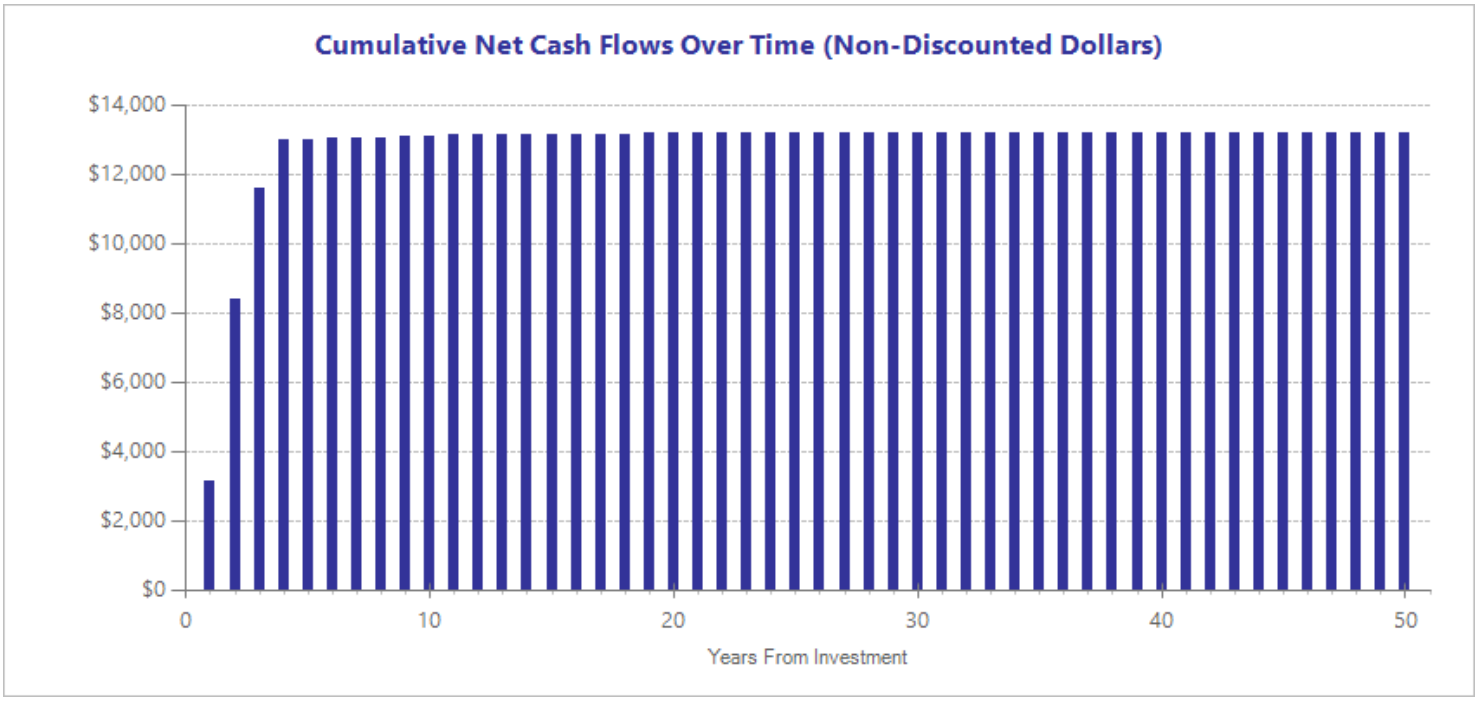
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$3,698	1	2013
Comparison costs	$1,851	1	2013

Summary statistics	
Present value of net program costs (in 2013 dollars)	($1,847)
Uncertainty (+ or - %)	10 %

The cost of treatment is based on this single study and includes one-hour of weekly individual counseling for 12 months estimated using Washington's current Medicaid hourly reimbursement rate for individual treatment. Comparison group costs incurred in this single study included the cost of a two-hour weekly group session for 12 months estimated using Washington's current Medicaid hourly reimbursement rate for group treatment.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	1	38	-0.670	0.008	-0.670	0.251	31	0.000	0.187	34

Citations Used in the Meta-Analysis

Azrin, N.H., McMahon, P.T., Donahue, B., Besalel, V., Lapinski, K.J., Kogan, E.S., Acierno, R.E., & Galloway, E. (1994). Behavior Therapy for Drug Abuse: A Controlled Treatment Outcome Study. *Behavioral Research and Therapy, 32*(8), 857-866.

Holistic Harm Reduction Program (HHRP+)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: The Holistic Harm Reduction Program (HHRP+), also called Holistic Health Recovery Program, is a manualized treatment for those with drug abuse or dependence who are HIV positive. The primary goals of HHRP+ are harm reduction, health promotion, and improving quality of life. These goals are achieved by providing the knowledge, motivation, and skills necessary to make choices that reduce harm to oneself and others. HHRP+ also addresses medical, emotional, social, and spiritual problems that can impede harm reduction. The treatment is generally provided in 12 group sessions. In the reviewed studies, HHRP+ was provided in addition to methadone treatment and standard counseling.

Benefit-Cost Summary

Program benefits	
Participants	$942
Taxpayers	$460
Other (1)	$103
Other (2)	$5,011
Total	$6,515
Costs	($791)
Benefits minus cost	$5,725

Summary statistics	
Benefit to cost ratio	$8.31
Benefits minus costs	$5,725
Probability of a positive net present value	60 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$17	$39	$8	$64
Labor market earnings (illicit drug abuse/dependence)	$899	$383	$0	$5,369	$6,651
Health care (illicit drug abuse/dependence)	$43	$60	$64	$30	$196
Adjustment for deadweight cost of program	$0	$0	$0	($396)	($396)
Totals	$942	$460	$103	$5,011	$6,515

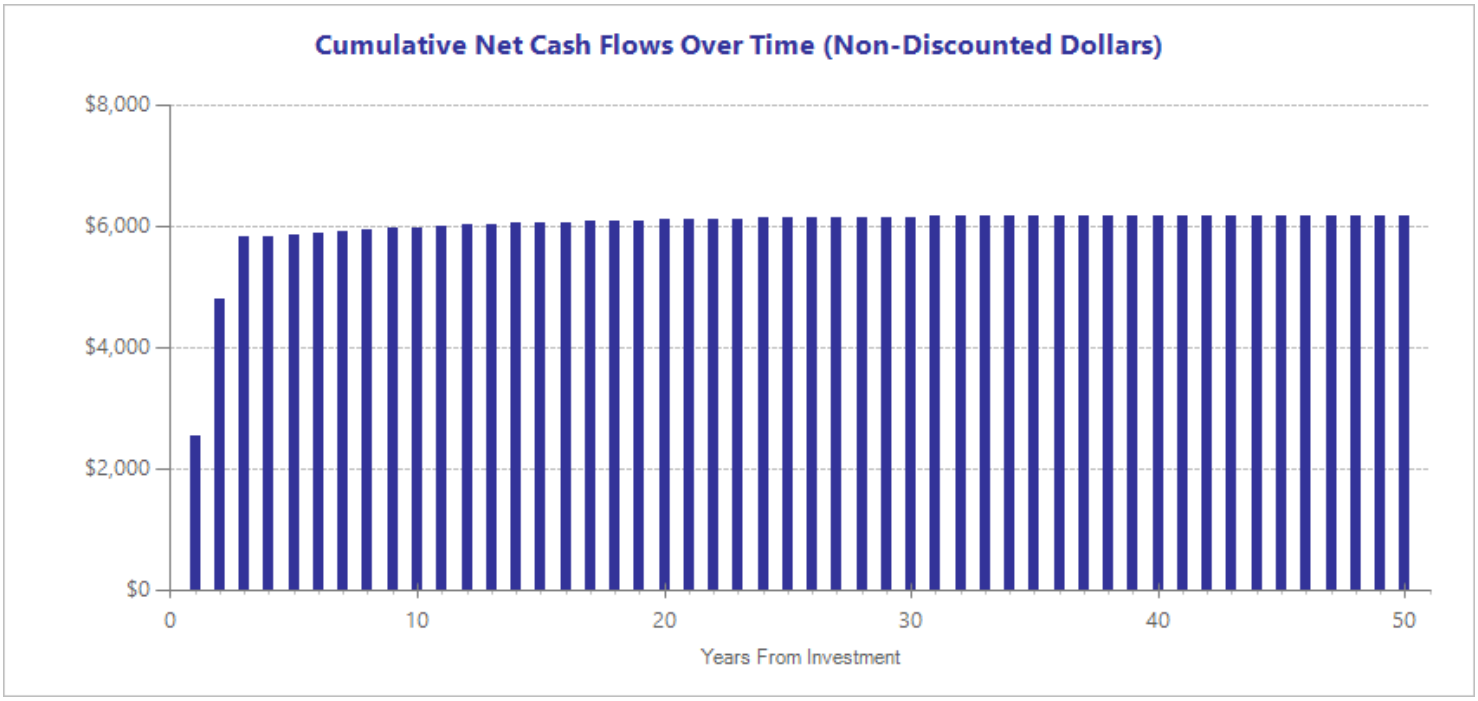
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$789	1	2013	Present value of net program costs (in 2013 dollars)	($791)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	25 %

The cost of treatment is the weighted average cost of the additional group therapy sessions provided in the studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rate for outpatient group therapy times the weighted average of total hours of outpatient group therapy across the studies. The costs of the intervention are in addition to the costs of methadone treatment and standard counseling provided to both the treated and comparison groups in the reviewed studies.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	2	153	-0.311	0.031	-0.311	0.144	39	0.000	0.187	42
STD risky behavior	Primary	2	153	-0.260	0.053	-0.260	0.134	39	n/a	n/a	40

Citations Used in the Meta-Analysis

Avants, S.K., Margolin, A., Usubiaga, M.H. & Doebrick, C. (2004). Targeting HIV-Related Outcomes With Intravenous Drug Users Maintained on Methadone: A Randomized Clinical Trial of a Harm Reduction Group Therapy. *Journal of Substance Abuse Treatment, 26*(2), 67-78.

Margolin, A., Avants, S.K., Warburton, L.A., Hawkins, K.A. & Shi, J. (2003). A Randomized Clinical Trial of a Manual-Guided Risk Reduction Intervention for HIV-Positive Injection Drug Users. *Health Psychology, 22*(2), 223-228.

Individual Drug Counseling Approach for the Treatment of Cocaine Addiction

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Individual drug counseling for the treatment of cocaine addiction is a manualized treatment that can be provided as a component of comprehensive outpatient therapy or as a standalone treatment. The manualized version was developed for use in the Collaborative Cocaine Treatment Study, where the individual counseling was provided in addition to group counseling. The individual drug counseling approach follows a 12-step philosophy and addresses the physical, emotional, spiritual, and interpersonal needs of the client. The model is generally applied in 36 individual sessions over 6 months with booster sessions as needed.

Benefit-Cost Summary

Program benefits	
Participants	$348
Taxpayers	$182
Other (1)	$62
Other (2)	$3,808
Total	$4,401
Costs	($2,311)
Benefits minus cost	$2,090

Summary statistics	
Benefit to cost ratio	$1.91
Benefits minus costs	$2,090
Probability of a positive net present value	54 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$11	$26	$6	$43
Labor market earnings (illicit drug abuse/dependence)	$669	$285	$0	$4,938	$5,892
Health care (illicit drug abuse/dependence)	$28	$38	$42	$19	$127
Labor market earnings (anxiety disorder)	($347)	($148)	$0	$0	($495)
Health care (anxiety disorder)	($2)	($5)	($6)	($2)	($14)
Adjustment for deadweight cost of program	$0	$0	$0	($1,152)	($1,152)
Totals	$348	$182	$62	$3,808	$4,401

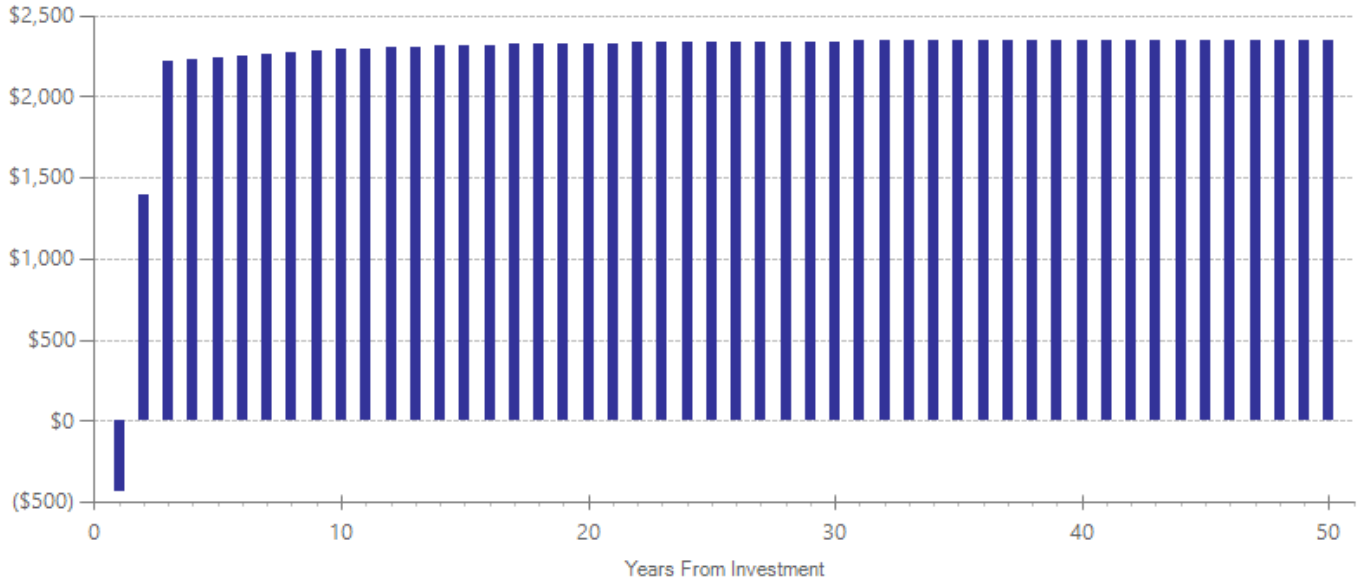
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$2,311	1	2013	Present value of net program costs (in 2013 dollars)	($2,311)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	10 %

The cost of treatment is based on the single study in the analysis and includes 36 individual 50-minute sessions estimated using Washington's current Medicaid hourly reimbursement rate for individual treatment. The costs of this intervention are in addition to group therapy provided to both the treated and comparison groups.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	1	121	-0.307	0.066	-0.307	0.167	45	0.000	0.187	48
Anxiety disorder	Primary	1	92	0.044	0.793	0.044	0.168	45	n/a	n/a	48
Major depressive disorder	Primary	1	92	-0.093	0.579	-0.093	0.169	45	n/a	n/a	48
Alcohol use	Primary	1	92	0.208	0.218	0.208	0.169	45	n/a	n/a	46
Psychiatric symptoms	Primary	1	92	-0.274	0.105	-0.274	0.169	45	n/a	n/a	46

Citations Used in the Meta-Analysis

Crits-Christoph, P., Siqueland, L., McCalmont, E., Frank, A., Blaine, J., Weiss, R.D., ..., Thase, M.E. (2001). Impact of Psychosocial Treatments on Associated Problems of Cocaine-Dependent Patients. *Journal of Consulting and Clinical Psychology, 69*(5), 825-830.

Crits-Christoph, P., Siqueland, L., Blaine, J., Frank, A., Luborsky, L., Onken, L.S., ..., Beck, A.T. (1999). Psychosocial treatments for cocaine dependence: National Institute on Drug Abuse Collaborative Cocaine Treatment Study. *Archives of General Psychiatry, 56*(6), 493-502.

Matrix Intensive Outpatient Model for the Treatment of Stimulant Abuse

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: The Matrix Intensive Outpatient Model (Matrix Model) is a manualized, standalone outpatient program for treating individuals with stimulant use disorders. The program includes individual, group, and family sessions and covers topics including skills training, relapse prevention, drug education, social support, and self-help groups. Treatment generally lasts four to six months and includes multiple individual and group sessions per week.

Benefit-Cost Summary

Program benefits	
Participants	$1,064
Taxpayers	$515
Other (1)	$107
Other (2)	$8,122
Total	$9,808
Costs	($1,244)
Benefits minus cost	$8,565

Summary statistics	
Benefit to cost ratio	$7.91
Benefits minus costs	$8,565
Probability of a positive net present value	62 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$16	$36	$8	$60
Labor market earnings (alcohol abuse/dependence)	($304)	($130)	$0	$0	($434)
Health care (alcohol abuse/dependence)	($2)	($3)	($4)	($2)	($11)
Property loss (alcohol abuse/dependence)	($1)	$0	($1)	$0	($2)
Labor market earnings (illicit drug abuse/dependence)	$1,320	$563	$0	$8,704	$10,588
Health care (illicit drug abuse/dependence)	$50	$70	$75	$34	$229
Adjustment for deadweight cost of program	$0	$0	$0	($622)	($622)
Totals	$1,064	$515	$107	$8,122	$9,808

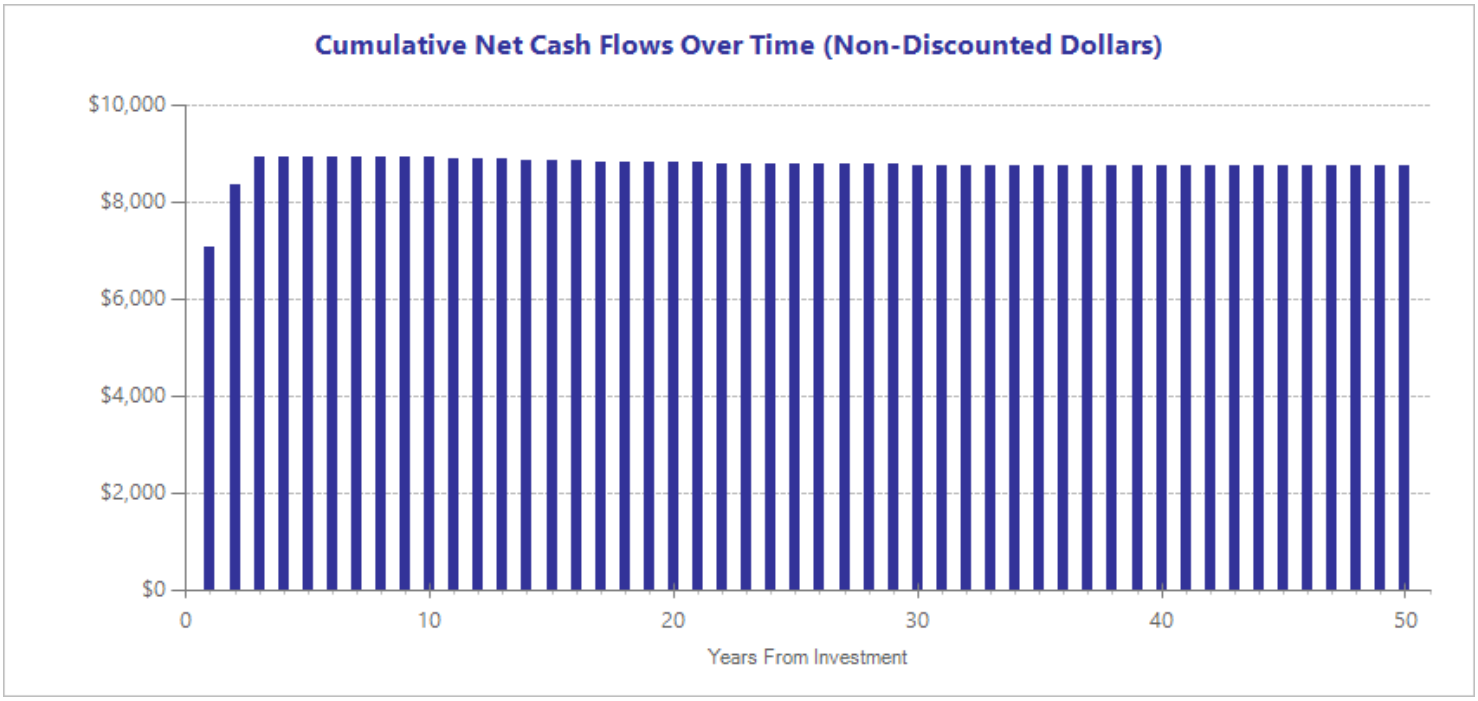
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$2,602	1	2013	Present value of net program costs (in 2013 dollars)	($1,244)
Comparison costs	$1,358	1	2013	Uncertainty (+ or - %)	20 %

The cost of treatment is the weighted average cost of the individual and group therapy sessions provided in the studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rate for outpatient individual and group therapy times the weighted average of the total hours of these therapies across the studies. Comparison group costs are computed in a similar manner based on treatment received in the studies (standard intensive outpatient treatment, standard group therapy, or no treatment).

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	4	342	-0.235	0.132	-0.235	0.156	34	0.000	0.187	37
Alcohol abuse or dependence	Primary	1	137	0.060	0.803	0.060	0.241	34	n/a	n/a	37
Employment	Primary	1	59	-0.146	0.703	-0.146	0.382	34	n/a	n/a	37
Homelessness	Primary	1	59	-0.071	0.877	-0.071	0.457	34	n/a	n/a	37

Citations Used in the Meta-Analysis

Rawson, R.A., Obert, J.L., McCann, M.J., & Mann, A.J. (1985). Cocaine Treatment Outcome: Cocaine Use Following Inpatient, Outpatient, and No Treatment. *NIDA Research Monograph,* 67, 271-277.

Rawson, R.A., Shoptaw, S.J., Obert, J.L., McCann, M.J., Hasson, A., & Marinelli-Casey, P.J. (1995). An Intensive Outpatient Approach for Cocaine Abuse Treatment: The Matrix Model. *Journal of Substance Abuse Treatment, 12*(2), 117-127.

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Rosenblum, A., Magura, S., Palij, M., Foote, J., Handelsman, L., & Stimmel, B. (1999). Enhanced treatment outcomes for cocaine-using methadone patients. *Drug and Alcohol Dependence, 54*(3), 207-218.

Motivational Enhancement Therapy (MET) (problem drinkers)

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Motivational Enhancement Therapy was designed as a stand-alone intervention, delivered in four individual sessions, to build motivation to change, strengthening commitment to change, developing a plan for change, and review of progress and motivation.

Benefit-Cost Summary

Program benefits	
Participants	$5,093
Taxpayers	$2,285
Other (1)	$252
Other (2)	$472
Total	$8,103
Costs	($330)
Benefits minus cost	$7,772

Summary statistics	
Benefit to cost ratio	$24.55
Benefits minus costs	$7,772
Probability of a positive net present value	62 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$74	$173	$37	$284
Labor market earnings (alcohol abuse/dependence)	$5,054	$2,156	$0	$573	$7,784
Health care (alcohol abuse/dependence)	$29	$55	$60	$28	$173
Property loss (alcohol abuse/dependence)	$10	$0	$18	$0	$28
Adjustment for deadweight cost of program	$0	$0	$0	($166)	($166)
Totals	$5,093	$2,285	$252	$472	$8,103

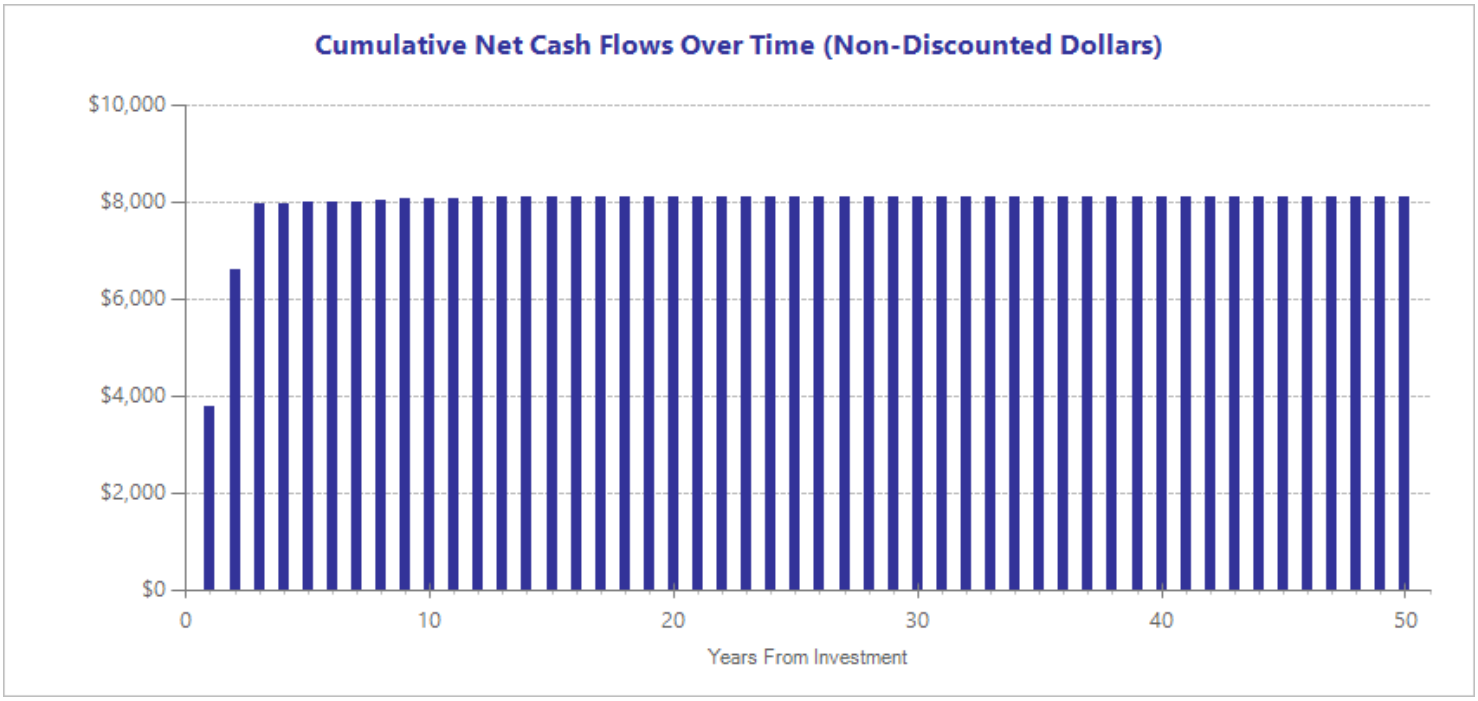
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$226	1	1993	Present value of net program costs (in 2013 dollars)	($330)
Comparison costs	$0	1	1993	Uncertainty (+ or - %)	10 %

Costs based on Cisler, R., Holder, H.D., Longabaugh, R., Stout, R.L., & Zweben, A.., 1998. Actual and estimated replication costs for alcohol treatment modalities: Case study from Project MATCH. Journal of Studies on Alcohol, 59(5), 503-12. In the single study used here, the comparison group received no treatment.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol abuse or dependence	Primary	1	42	-0.449	0.203	-0.449	0.353	38	0.000	0.187	41

Citations Used in the Meta-Analysis

Sellman, J.D., Sullivan, P.F., Dore, G.M., Adamson, S.J., & MacEwan, I. (2001). A randomized controlled trial of motivational enhancement therapy (MET) for mild to moderate alcohol dependence. *Journal of Studies on Alcohol, 62*(3), 389-396.

Motivational Interviewing to enhance treatment engagement

Benefit-cost estimates updated December 2014. Literature review updated December 2014.

Program Description: Motivational interviewing is a non-confrontational technique, used early in treatment, to help clients increase their motivation and commitment to change.

Benefit-Cost Summary

Program benefits	
Participants	$6,221
Taxpayers	$2,792
Other (1)	$159
Other (2)	$1,523
Total	$10,695
Costs	($260)
Benefits minus cost	$10,435

Summary statistics	
Benefit to cost ratio	$41.22
Benefits minus costs	$10,435
Probability of a positive net present value	66 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Labor market earnings (alcohol abuse/dependence)	$6,183	$2,637	$0	$1,577	$10,397
Property loss (alcohol abuse/dependence)	$11	$0	$20	$0	$32
Health care (illicit drug abuse/dependence)	$27	$155	$139	$76	$396
Adjustment for deadweight cost of program	$0	$0	$0	($130)	($130)
Totals	$6,221	$2,792	$159	$1,523	$10,695

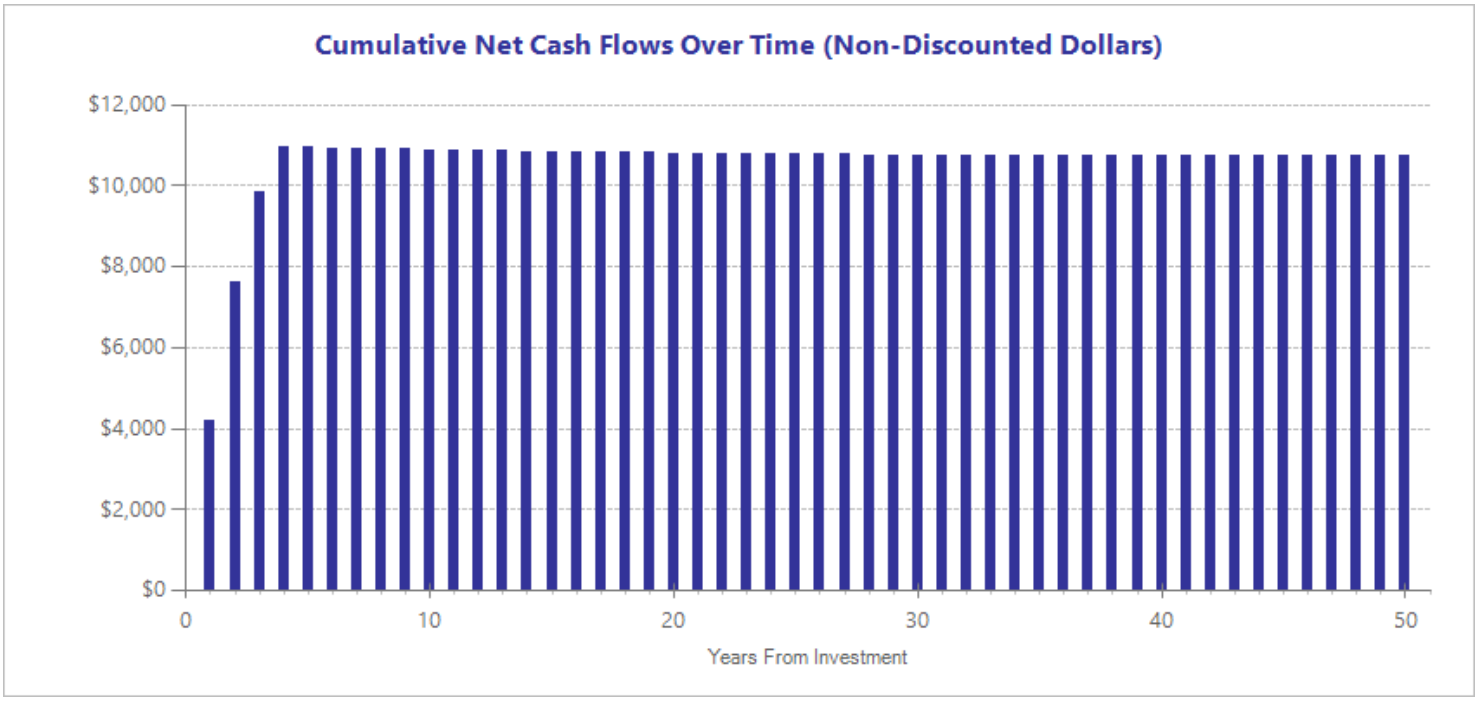
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$263	1	2014	Present value of net program costs (in 2013 dollars)	($260)
Comparison costs	$0	1	2014	Uncertainty (+ or - %)	10 %

The cost of treatment is the weighted average cost of the individual and group sessions provided in the studies included in the analysis, using rates for Medicaid clients paid by DSHS for substance abuse treatment in 2014. The costs of this intervention are in addition to other treatment clients might receive.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Engagement/Retention	Primary	19	1024	0.156	0.035	0.156	0.071	35	0.000	0.187	38
Alcohol abuse or dependence	Primary	4	238	-0.378	0.043	-0.378	0.187	35	0.000	0.187	38
Opioid drug abuse or dependence	Primary	1	52	-0.392	0.051	-0.392	0.201	35	0.000	0.187	38
Illicit drug abuse or dependence	Primary	9	650	-0.150	0.020	-0.150	0.064	35	0.000	0.187	38
Substance abuse	Primary	5	250	-0.083	0.428	-0.083	0.105	35	0.000	0.187	38

Citations Used in the Meta-Analysis

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Brown, J.M., & Miller, W.R. (1993). Impact of motivational interviewing on participation and outcome in residential alcoholism treatment. *Psychology of Addictive Behaviors, 7*(4), 211-218.

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Node-link mapping

Literature review updated May 2014.

Program Description: Node-link mapping is a manualized supplement or tool that can be used during counseling sessions. “Maps” are used as a means of visually representing a client's needs, problems, and solutions and act as a communication tool that provides an alternative way to facilitate discussion between client and counselor. These maps can also directly illustrate cause-and-effect patterns of drug use to facilitate problem solving.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	1	151	-0.078	0.579	-0.078	0.140	38	0.000	0.187	41

Citations Used in the Meta-Analysis

Dansereau, D.F., Joe, G.W., & Simpson, D.D. (1995). Attentional difficulties and the effectiveness of a visual representation strategy for counseling drug-addicted clients. *The International Journal of the Addictions, 30*(4), 371-386.

Parent-Child Assistance Program

Literature review updated May 2014.

Program Description: The Parent-Child Assistance Program provides home visits to new mothers of drug or alcohol-exposed infants. Visitors are paraprofessional client advocates with similar adverse life experiences as the mothers. Visits are weekly for the first six weeks after birth, then bi-weekly or more frequently as needed for up to three years.

Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Substance abuse	Primary	1	54	-0.128	0.698	-0.032	0.329	30	n/a	n/a	31
Out-of-home placement	Secondary	1	54	0.371	0.231	0.093	0.310	3	n/a	n/a	4
Test scores	Secondary	1	23	-0.091	0.753	-0.023	0.290	3	n/a	n/a	4

Citations Used in the Meta-Analysis

Ernst, CC., Grant, T.M., Streissguth, A.P., & Sampson, P.D. (1999). Intervention with high-risk alcohol and drug-abusing mothers: II. Three-year findings from the Seattle Model of Paraprofessional Advocacy. *Journal of Community Psychology, 27*(1), 19-38.

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Peer support for substance abuse

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: This analysis examined interventions provided by a peer specialist to individuals with substance abuse disorders. One study was included in this analysis. This study examined the impact of a brief motivational intervention provided by a peer specialist for individuals using heroin and cocaine. The study participant screened and identified at walk-in general health clinics.

Benefit-Cost Summary

Program benefits	
Participants	$1,016
Taxpayers	$503
Other (1)	$125
Other (2)	$3,745
Total	$5,389
Costs	($2,728)
Benefits minus cost	$2,661

Summary statistics	
Benefit to cost ratio	$2.00
Benefits minus costs	$2,661
Probability of a positive net present value	54 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$21	$48	$11	$80
Labor market earnings (illicit drug abuse/dependence)	$964	$411	$0	$5,069	$6,444
Health care (illicit drug abuse/dependence)	$51	$71	$77	$36	$235
Adjustment for deadweight cost of program	$0	$0	$0	($1,369)	($1,369)
Totals	$1,016	$503	$125	$3,745	$5,389

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

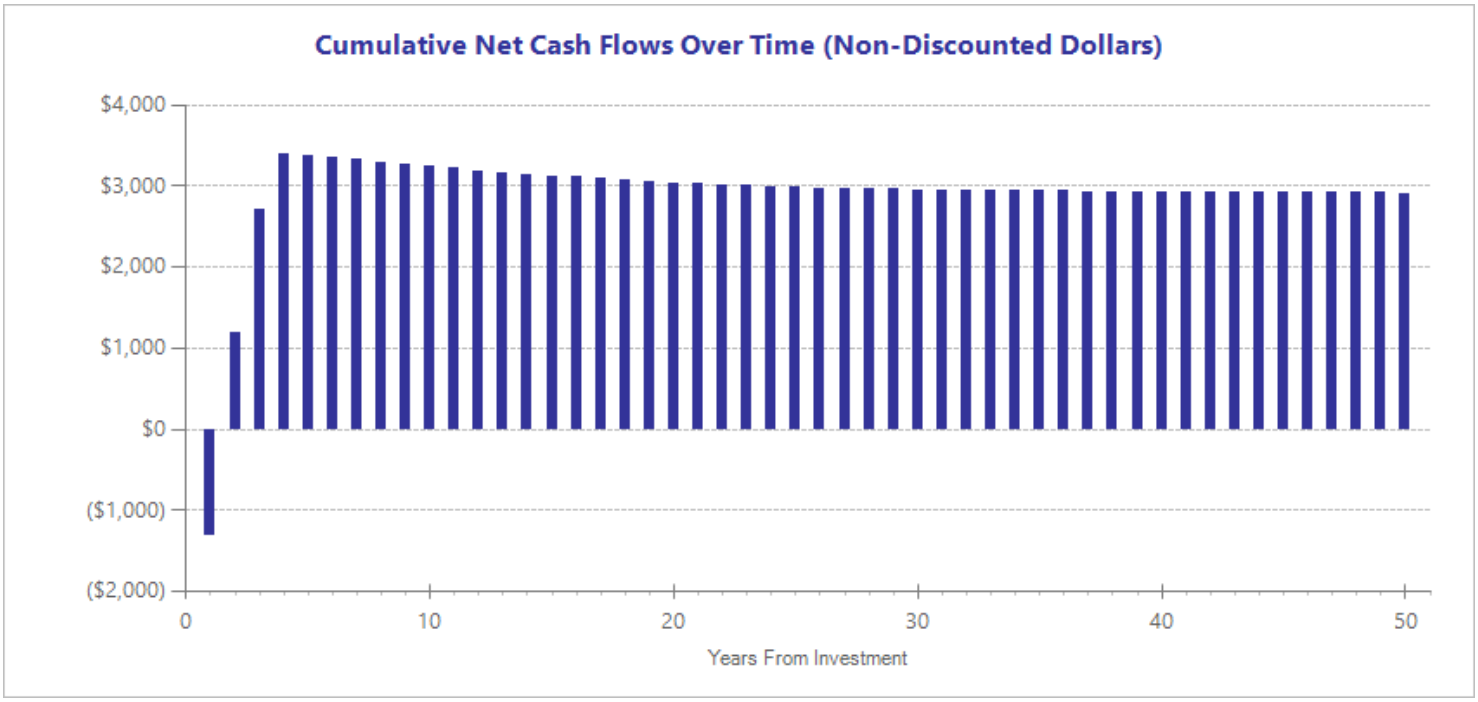
Detailed Cost Estimates

	Annual cost	Program duration	Year dollars
Program costs	$2,650	1	2011
Comparison costs	$0	1	2011

Summary statistics	
Present value of net program costs (in 2013 dollars)	($2,728)
Uncertainty (+ or - %)	20 %

The cost was estimated using the peer specialist reimbursement rate reported in Mercer (2013) Behavioral Health Data Book for the State of Washington For Rates Effective January 1, 2014 and included both the cost to provide the intervention to participants in the treatment arm and the cost to screen patients at the walk-in clinics.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	1	403	-0.245	0.041	-0.245	0.122	39	0.000	0.187	42

Citations Used in the Meta-Analysis

Bernstein, J., Bernstein, E., Tassiopoulos, K., Heeren, T., Levenson, S., & Hingson, R. (2005). Brief motivational intervention at a clinic visit reduces cocaine and heroin use. *Drug and Alcohol Dependence, 77*(1), 49-59.

Relapse Prevention Therapy

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: This intervention, developed by Marlatt & Gordon, uses a cognitive-behavioral approach to help patients anticipate problems and identify strategies to avoid using alcohol and drugs.

Benefit-Cost Summary

Program benefits	
Participants	$758
Taxpayers	$396
Other (1)	$166
Other (2)	$4,868
Total	$6,188
Costs	$0
Benefits minus cost	$6,188

Summary statistics	
Benefit to cost ratio	n/a
Benefits minus costs	$6,188
Probability of a positive net present value	58 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to: Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$45	$104	$22	$171
Property loss (alcohol abuse/dependence)	$7	$0	$13	$0	$20
Labor market earnings (illicit drug abuse/dependence)	$719	$307	$0	$4,823	$5,848
Health care (illicit drug abuse/dependence)	$33	$45	$49	$23	$149
Totals	$758	$396	$166	$4,868	$6,188

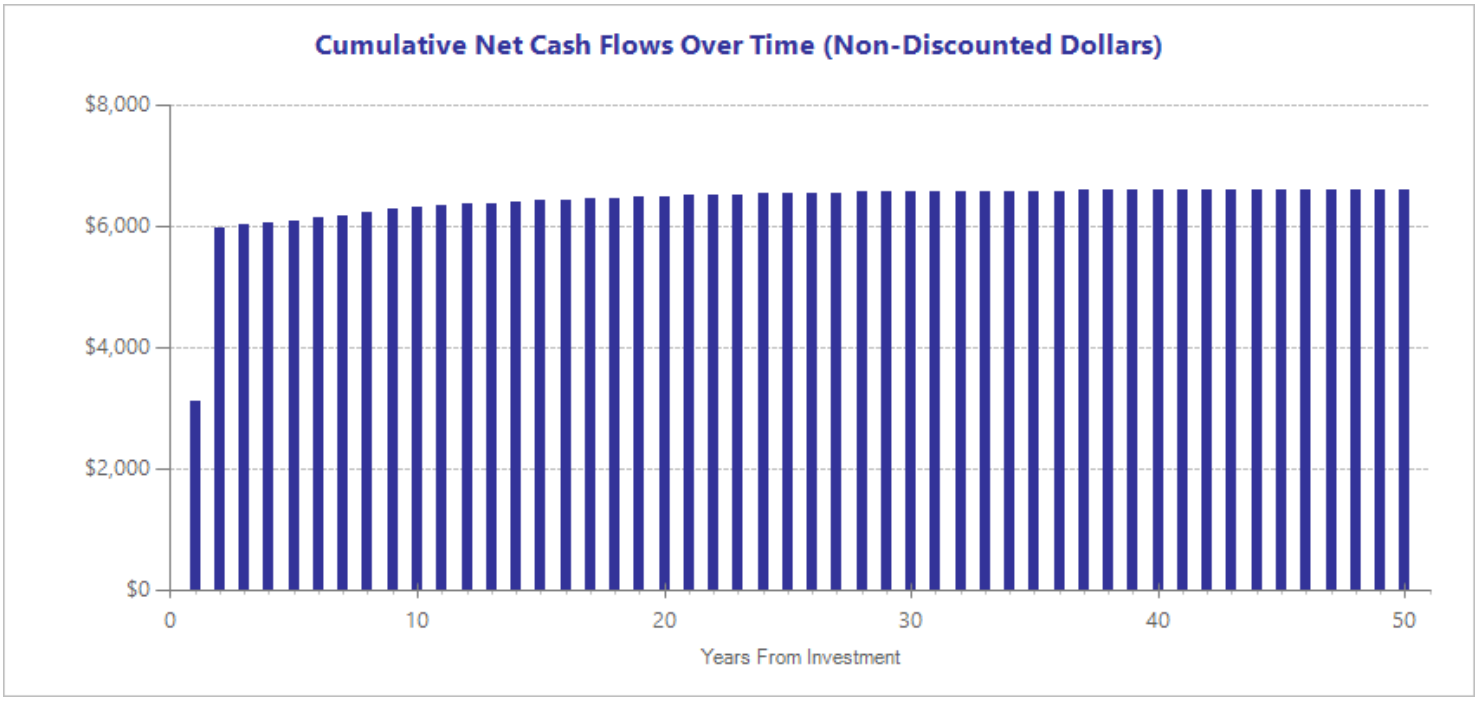
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,050	1	2014	Present value of net program costs (in 2013 dollars)	$0
Comparison costs	$1,050	1	2014	Uncertainty (+ or - %)	15 %

This is the weighted average cost of interventions reviewed for this meta-analysis, based on hours of individual and group counseling, reimbursed at Washington's 2014 Medicaid rates.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Alcohol abuse or dependence	Primary	4	156	-0.234	0.123	-0.234	0.153	41	-0.003	0.178	42
Illicit drug abuse or dependence	Primary	3	118	-0.217	0.451	-0.217	0.287	41	-0.003	0.178	42

Seeking Safety: A Psychotherapy for Trauma/PTSD and Substance Abuse

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Seeking Safety is a manualized, standalone therapy designed to treat comorbid trauma/PTSD and substance use disorders. Seeking Safety covers 25 topics, each independent of the others, and allows for flexible use (mixed settings, fewer topics, etc.). The five main principles of Seeking Safety are (1) safety in relationships, thinking, behavior, and emotions; (2) treating trauma/PTSD and substance abuse at the same time; (3) a focus on ideals; (4) four content areas: cognitive, behavioral, interpersonal, and case management; and (5) attention to clinician processes (e.g. clinician self-care).

Benefit-Cost Summary

Program benefits	
Participants	$1,333
Taxpayers	$605
Other (1)	$75
Other (2)	$11,177
Total	$13,191
Costs	($385)
Benefits minus cost	$12,806

Summary statistics	
Benefit to cost ratio	$34.31
Benefits minus costs	$12,806
Probability of a positive net present value	71 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$15	$34	$7	$56
Property loss (alcohol abuse/dependence)	$0	$0	$0	$0	$0
Labor market earnings (illicit drug abuse/dependence)	$1,382	$590	$0	$11,338	$13,310
Health care (illicit drug abuse/dependence)	$76	$105	$113	$52	$347
Labor market earnings (PTSD)	($106)	($45)	$0	$0	($152)
Health care (PTSD)	($19)	($59)	($72)	($29)	($179)
Adjustment for deadweight cost of program	$0	$0	$0	($192)	($192)
Totals	$1,333	$605	$75	$11,177	$13,191

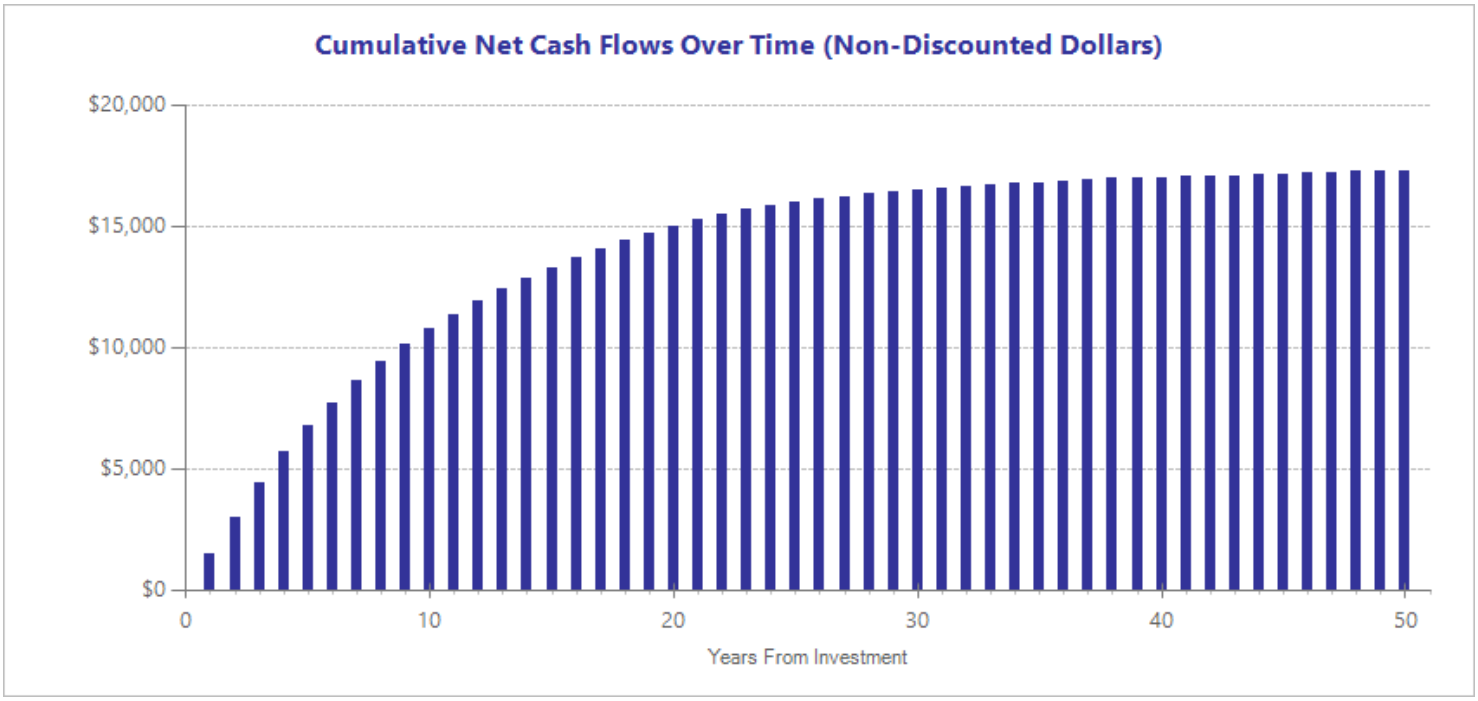
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$526	1	2013	Present value of net program costs (in 2013 dollars)	($385)
Comparison costs	$141	1	2013	Uncertainty (+ or - %)	10 %

The cost of treatment is the weighted average cost of the individual or group therapy sessions provided in the studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rate for outpatient individual and group therapy times the weighted average of the total hours of these therapies across the studies. Comparison group costs are computed in a similar manner based on treatment received in the studies (no treatment or standard group treatment).

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	5	346	-0.058	0.535	-0.058	0.093	41	-0.098	0.131	42
Post-traumatic stress	Primary	6	409	-0.211	0.039	-0.211	0.102	41	0.020	0.106	42
Alcohol abuse or dependence	Primary	2	72	0.009	0.957	0.009	0.175	41	0.000	0.187	44
Psychiatric symptoms	Primary	2	84	0.057	0.852	0.057	0.305	41	n/a	n/a	42

Citations Used in the Meta-Analysis

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Supportive-Expressive Psychotherapy for substance abuse

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Supportive-Expressive Psychotherapy is a manualized, time-limited psychotherapy originally developed for treating psychiatric disorders that has been adapted for use with individuals with heroin and cocaine addictions. In the studies reviewed for this analysis, clients also had co-morbid psychiatric disorders. SEP is generally provided in an individual format and includes two components: supportive techniques to allow patients to feel comfortable discussing experiences and an expressive component to help patient to understand problematic relationship patterns.

Benefit-Cost Summary

Program benefits	
Participants	$1,192
Taxpayers	$172
Other (1)	($760)
Other (2)	($3,519)
Total	($2,915)
Costs	($1,979)
Benefits minus cost	($4,894)

Summary statistics	
Benefit to cost ratio	($1.49)
Benefits minus costs	($4,894)
Probability of a positive net present value	43 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	($311)	($720)	($156)	($1,187)
Labor market earnings (employment)	$2,436	$1,039	$0	$0	$3,476
Property loss (alcohol abuse/dependence)	$1	$0	$1	$0	$1
Labor market earnings (illicit drug abuse/dependence)	($1,213)	($517)	$0	($2,358)	($4,088)
Health care (illicit drug abuse/dependence)	($35)	($48)	($52)	($23)	($158)
Health care (major depression)	$3	$9	$11	$4	$27
Adjustment for deadweight cost of program	$0	$0	$0	($987)	($987)
Totals	$1,192	$172	($760)	($3,519)	($2,915)

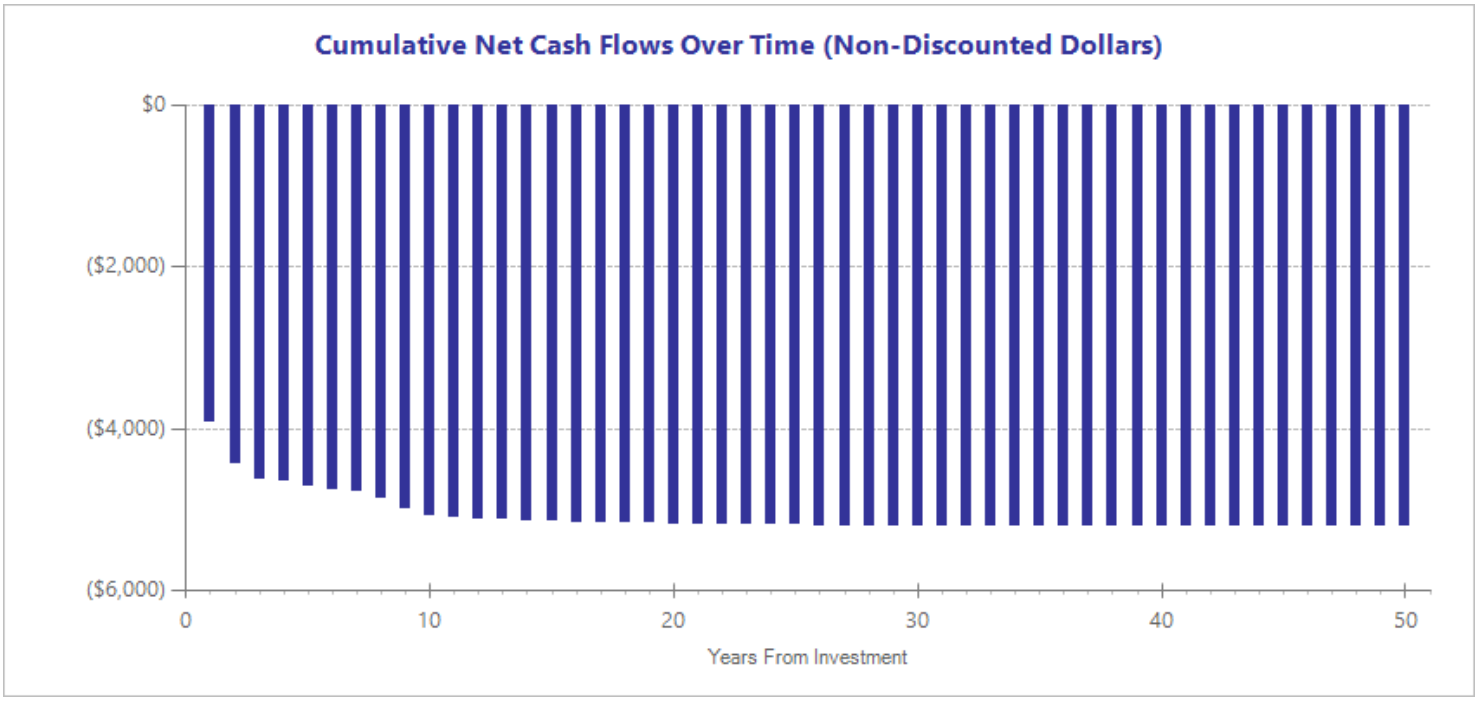
We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$1,979	1	2013	Present value of net program costs (in 2013 dollars)	($1,979)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	20 %

The cost of treatment is the weighted average cost of the individual sessions provided in the studies included in the analysis. We calculate this average cost using Washington's Medicaid hourly reimbursement rate for outpatient individual therapy times the weighted average of the total hours of therapy across the studies. The costs of this intervention are in addition to the individual drug counseling and methadone treatment provided to both the treated and comparison groups in the reviewed studies.

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 uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Illicit drug abuse or dependence	Primary	3	213	0.161	0.211	0.161	0.150	36	0.000	0.187	39
Alcohol abuse or dependence	Primary	3	176	-0.057	0.652	-0.057	0.126	36	n/a	n/a	39
Anxiety disorder	Primary	2	123	0.120	0.401	0.120	0.143	36	n/a	n/a	39
Major depressive disorder	Primary	3	180	-0.056	0.953	-0.056	0.242	36	n/a	n/a	39
Employment	Primary	2	89	0.364	0.138	0.364	0.245	36	n/a	n/a	39
Crime	Primary	2	89	0.157	0.611	0.157	0.309	36	n/a	n/a	39
Psychiatric symptoms	Primary	3	180	-0.146	0.497	-0.146	0.215	36	n/a	n/a	37

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Buprenorphine/Buprenorphine-Naloxone (Suboxone and Subutex) treatment

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Buprenorhpine/Buprenorphine-Naloxone is an opiate substitution treatment used to treat opioid dependence. It is generally provided in addition to counseling therapies. Buprenorhpine/Buprenorphine-Naloxone is a partial agonist that suppresses withdrawal symptoms and blocks the effects of opioids. Two versions of buprenorphine are used in the treatment of opioid dependence. Subutex consists of buprenorphine only while Suboxone is version of buprenorphine that combines buprenorphine and naloxone. The addition of naloxone reduces the probability of overdose and reduces misuse by producing severe withdrawal effects if taken any way except sublingually. Suboxone is generally given during the maintenance phase and many clinics will only provide take-home doses of Suboxone. Buprenorphine and Buprenorphine/Naloxone are alternatives to methadone treatments and, unlike methadone, can be prescribed in office-based settings by physicians that have completed a special training.

Benefit-Cost Summary

Program benefits	
Participants	$2,074
Taxpayers	$1,107
Other (1)	$398
Other (2)	$6,364
Total	$9,944
Costs	($4,485)
Benefits minus cost	$5,459

Summary statistics	
Benefit to cost ratio	$2.25
Benefits minus costs	$5,459
Probability of a positive net present value	90 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$60	$152	$30	$242
Labor market earnings (opioid drug abuse/dependence)	$1,937	$826	$0	$8,458	$11,221
Health care (opioid drug abuse/dependence)	$137	$221	$246	$110	$715
Adjustment for deadweight cost of program	$0	$0	$0	($2,234)	($2,234)
Totals	$2,074	$1,107	$398	$6,364	$9,944

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$4,431	1	2012	Present value of net program costs (in 2013 dollars)	($4,485)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	30 %

We estimate the costs of providing buprenorphine/buprenorphine-naloxone in addition to standard substance abuse treatment. Costs reflect the average of costs reported in numerous cost-effectiveness studies (Polsky et al., 2010; Rosenheck and Kosten, 2001; Schackman et al., 2012). Costs included vary by study but generally include costs of medication, dispensing, toxicology screens, and when available, costs of medical care related to methadone treatment, equipment, administration, and clinic space.

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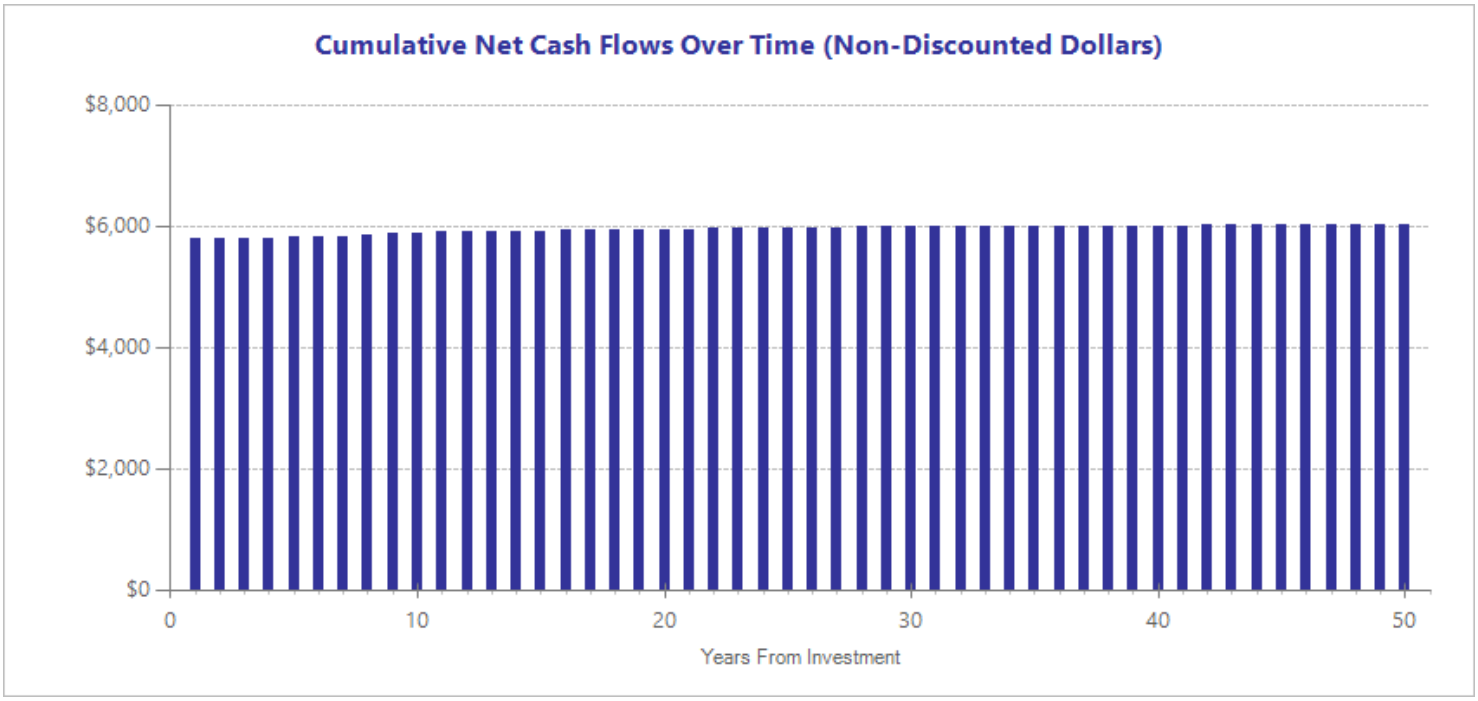
The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Opioid drug abuse or dependence	Primary	12	981	-0.575	0.003	-0.570	0.193	35	n/a	n/a	36
Psychiatric symptoms	Primary	1	51	-0.156	0.437	-0.156	0.201	35	n/a	n/a	36
Emergency department visits	Primary	1	46	-0.026	0.921	-0.026	0.264	35	n/a	n/a	36

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Methadone maintenance treatment

Benefit-cost estimates updated December 2014. Literature review updated May 2014.

Program Description: Methadone is an opiate substitution treatment used to treat opioid dependence. It is a synthetic opioid that blocks the effects of opiates, reduces withdrawal symptoms, and relieves cravings. Methadone is dispensed in outpatient clinics that specialize in methadone treatment and is often used in conjunction with behavioral counseling approaches.

Benefit-Cost Summary

Program benefits	
Participants	$2,622
Taxpayers	$1,664
Other (1)	$1,178
Other (2)	$9,138
Total	$14,603
Costs	($3,658)
Benefits minus cost	$10,944

Summary statistics	
Benefit to cost ratio	$4.02
Benefits minus costs	$10,944
Probability of a positive net present value	99 %

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2013). The economic discount rates and other relevant parameters are described in our technical documentation.

Detailed Monetary Benefit Estimates

Source of benefits	Benefits to				
	Participants	Taxpayers	Other (1)	Other (2)	Total benefits
From primary participant					
Crime	$0	$339	$866	$170	$1,376
Labor market earnings (opioid drug abuse/dependence)	$2,449	$1,044	$0	$10,656	$14,149
Health care (opioid drug abuse/dependence)	$174	$281	$312	$141	$907
Adjustment for deadweight cost of program	$0	$0	$0	($1,829)	($1,829)
Totals	$2,622	$1,664	$1,178	$9,138	$14,603

We created the two “other” categories to report results that do not fit neatly in the “participant” or “taxpayer” perspectives. In the “Other (1)” category we include the benefits of reductions in crime victimization and the economic spillover benefits of improvement in human capital outcomes. In the “Other (2)” category we include estimates of the net changes in the value of a statistical life and net changes in the deadweight costs of taxation.

Detailed Cost Estimates

	Annual cost	Program duration	Year dollars	Summary statistics	
Program costs	$3,613	1	2012	Present value of net program costs (in 2013 dollars)	($3,658)
Comparison costs	$0	1	2013	Uncertainty (+ or - %)	20 %

We estimate the costs of providing methadone in addition to standard substance abuse treatment. Costs reflect the average of costs reported in numerous cost-effectiveness studies (Rosenhack and Kosten, 2001; Jones et al., 2009; Nordlund et al., 2004; Masson et al, 2004). Costs included vary by study but generally include costs of medication, dispensing, toxicology screens, medical care related to methadone treatment, and when available, costs of equipment, administration, and clinic space. Jones, E.S., Moore, B.A., Sindelar, J.L., O'Connor, P.G., Schottenfeld, R.S., & Fiellin, D.A. (2009). Cost analysis of clinic and office-based treatment of opioid dependence: Results with methadone and buprenorphine in clinically stable patients. Drug and Alcohol Dependence, 99(1), 132-140.
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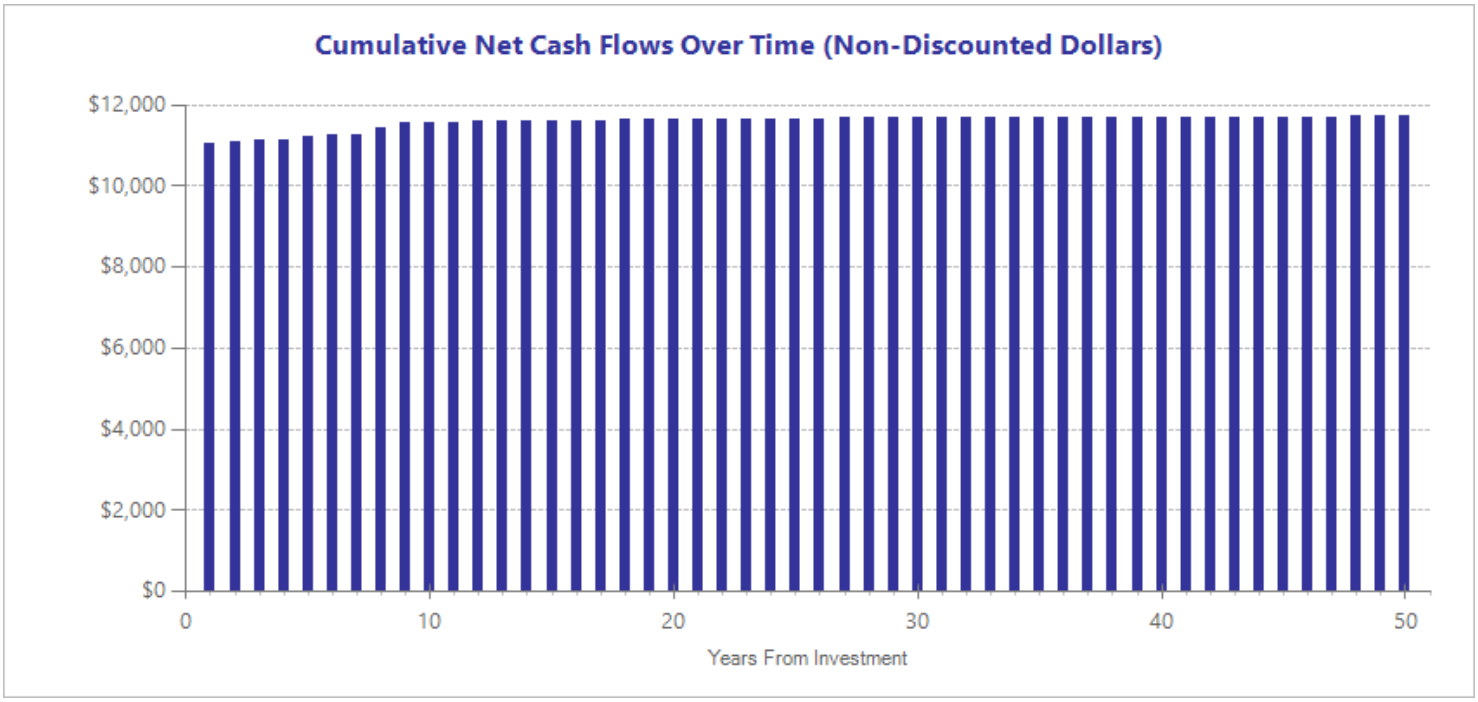
The figures shown are estimates of the costs to implement programs in Washington. The comparison group costs reflect either no treatment or treatment as usual, depending on how effect sizes were calculated in the meta analysis. The uncertainty range is used in Monte Carlo risk analysis, described in our technical documentation.



Meta-Analysis of Program Effects

Outcomes measured	Primary or secondary participant	No. of effect sizes	Treatment N	Unadjusted effect size (random effects model)		Adjusted effect sizes and standard errors used in the benefit-cost analysis					
						First time ES is estimated			Second time ES is estimated		
				ES	p-value	ES	SE	Age	ES	SE	Age
Opioid drug abuse or dependence	Primary	10	854	-0.785	0.001	-0.785	0.254	35	n/a	n/a	36
Hospitalization (general)	Primary	3	286	0.242	0.602	0.242	0.464	35	n/a	n/a	36
Crime	Primary	2	347	-0.505	0.001	-0.505	0.153	35	n/a	n/a	36
Alcohol use	Primary	2	155	-0.281	0.095	-0.281	0.250	35	n/a	n/a	36
Death	Primary	4	158	-0.258	0.142	-0.258	0.176	35	n/a	n/a	36
Cannabis use	Primary	1	21	-0.690	0.180	-0.690	0.514	35	n/a	n/a	36
Employment	Primary	1	71	-0.334	0.054	-0.334	0.174	35	n/a	n/a	36
STD risky behavior	Primary	3	492	-0.560	0.001	-0.560	0.243	35	n/a	n/a	36

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