Group prenatal care (compared to standard prenatal care)
Health Care: Maternal and Infant Health
Benefit-cost estimates updated December 2023. Literature review updated December 2016.

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

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

Program Description: Traditionally, prenatal care visits are conducted by an obstetrician or midwife in a clinical setting. Group prenatal care is an alternative strategy to deliver prenatal education and conduct clinical assessments in a non-clinical and group setting. Groups are typically led by an obstetrician or midwife and may also include a registered nurse or medical assistant as a second staff member. Five out of six studies included in this analysis use the CenteringPregnancy model of prenatal care, which includes ten sessions of education and clinical assessments in a group setting. On average, sessions are two hours long with groups of six to twelve women. One study in this analysis provided prenatal education in groups of six to eight and taught pregnant teens to conduct routine clinical measurements on their peers. In this analysis, individuals received group prenatal care for about seven months.

Benefit-Cost Summary Statistics Per Participant

Benefits to:

Taxpayers	$212		Benefit to cost ratio	n/a
Participants	$263		Benefits minus costs	$4,495
Others	$102		Chance the program will produce	
Indirect	$2,626		benefits greater than the costs	94%
Total benefits	$3,204			
Net program cost	$1,292			
Benefits minus cost	$4,495			

The estimates shown are present value, life cycle benefits and costs. All dollars are expressed in the base year chosen for this analysis (2022). The chance the benefits exceed the costs are derived from a Monte Carlo risk analysis. The details on this, as well as the economic discount rates and other relevant parameters are described in our Technical Documentation.

Meta-Analysis of Program Effects

Outcomes measured	Treatment age	Primary or secondary participant	No. of effect sizes	Treatment N	Adjusted effect sizes and standard errors used in the benefit-cost analysis						Unadjusted effect size (random effects model)	
					First time ES is estimated			Second time ES is estimated				
					ES	SE	Age	ES	SE	Age	ES	p-value
Cesarean sections	20	Primary	1	162	-0.048	0.150	20	0.000	0.000	21	-0.048	0.750
Postpartum depression[^]	20	Primary	2	785	0.000	0.057	20	n/a	n/a	n/a	0.000	1.000
Low birthweight birth[***]	20	Primary	4	1523	-0.084	0.070	20	0.000	0.000	21	-0.084	0.229
Preterm birth[***]	20	Primary	4	1989	-0.054	0.072	20	0.000	0.000	21	-0.054	0.453
Small for gestational age (SGA)[***]	20	Primary	2	1196	-0.176	0.080	20	0.000	0.000	21	-0.176	0.028
Low birthweight birth[***]	1	Secondary	4	1523	-0.084	0.070	1	0.000	0.000	2	-0.084	0.229
Preterm birth[***]	1	Secondary	4	1989	-0.054	0.072	1	0.000	0.000	2	-0.054	0.453
NICU admission	1	Secondary	3	1358	0.016	0.085	1	0.000	0.000	2	0.016	0.853
Small for gestational age (SGA)[***]	1	Secondary	2	1196	-0.176	0.080	1	0.000	0.000	2	-0.176	0.028

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

[***]We report this outcome twice: once for mothers (designated as the primary participant) and once for infants (designated as the secondary participant). We do this because the outcome is associated with costs and benefits for both mothers and infants, and the amount of the cost or benefit is different for mothers than it is for infants.

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

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

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

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

Detailed Monetary Benefit Estimates Per Participant

Affected outcome:	Resulting benefits:[1]	Benefits accrue to:				
		Taxpayers	Participants	Others[2]	Indirect[3]	Total
Cesarean sections	Health care associated with Cesarean sections	$30	$1	$30	$15	$76
	Subtotals	*$30*	*$1*	*$30*	*$15*	*$76*
From secondary participant						
Low birthweight birth	Infant mortality	$110	$259	$0	$1,929	$2,299
Low birthweight birth	Health care associated with low birthweight births	$107	$4	$107	$54	$272
NICU admission	Health care associated with NICU admissions	($35)	($1)	($35)	($18)	($89)
	Subtotals	*$182*	*$262*	*$72*	*$1,965*	*$2,482*
Program cost	Adjustment for deadweight cost of program	$0	$0	$0	$646	$646
Totals		$212	$263	$102	$2,626	$3,204

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

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

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

Detailed Annual Cost Estimates Per Participant

	Annual cost	Year dollars	Summary	
Program costs	$264	2015	Present value of net program costs (in 2022 dollars)	$1,292
Comparison costs	$1,348	2015	Cost range (+ or -)	20%

Treatment cost estimates for this program reflect costs compared to treatment as usual. Costs are based on a weighted average of per-participant costs from included studies with sufficient staffing and programming information. The per-participant cost for the intervention group was calculated by multiplying the average staff hours per participant by the staffing costs from each study. We estimated average staffing hours from Fausett (2014), Ickovics et al. (2016), and Kennedy et al. (2011). We estimated staff salaries using the mean hourly wage estimate for Washington State reported by the Bureau of Labor Statistics, and multiplied the hourly wage by 1.441 to account for employee benefits. Comparison group costs were estimated in a similar way, assuming women received twelve prenatal care visits (the recommended number of visits for an uncomplicated pregnancy of 39 weeks), and that visits were either staffed by an obstetrician or midwife (Guidelines for Perinatal Care. The American Academy of Pediatrics and the American College of Obstetrics and Gynecologists. 2012).

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

Benefits Minus Costs Over Time (Cumulative Discounted Dollars)
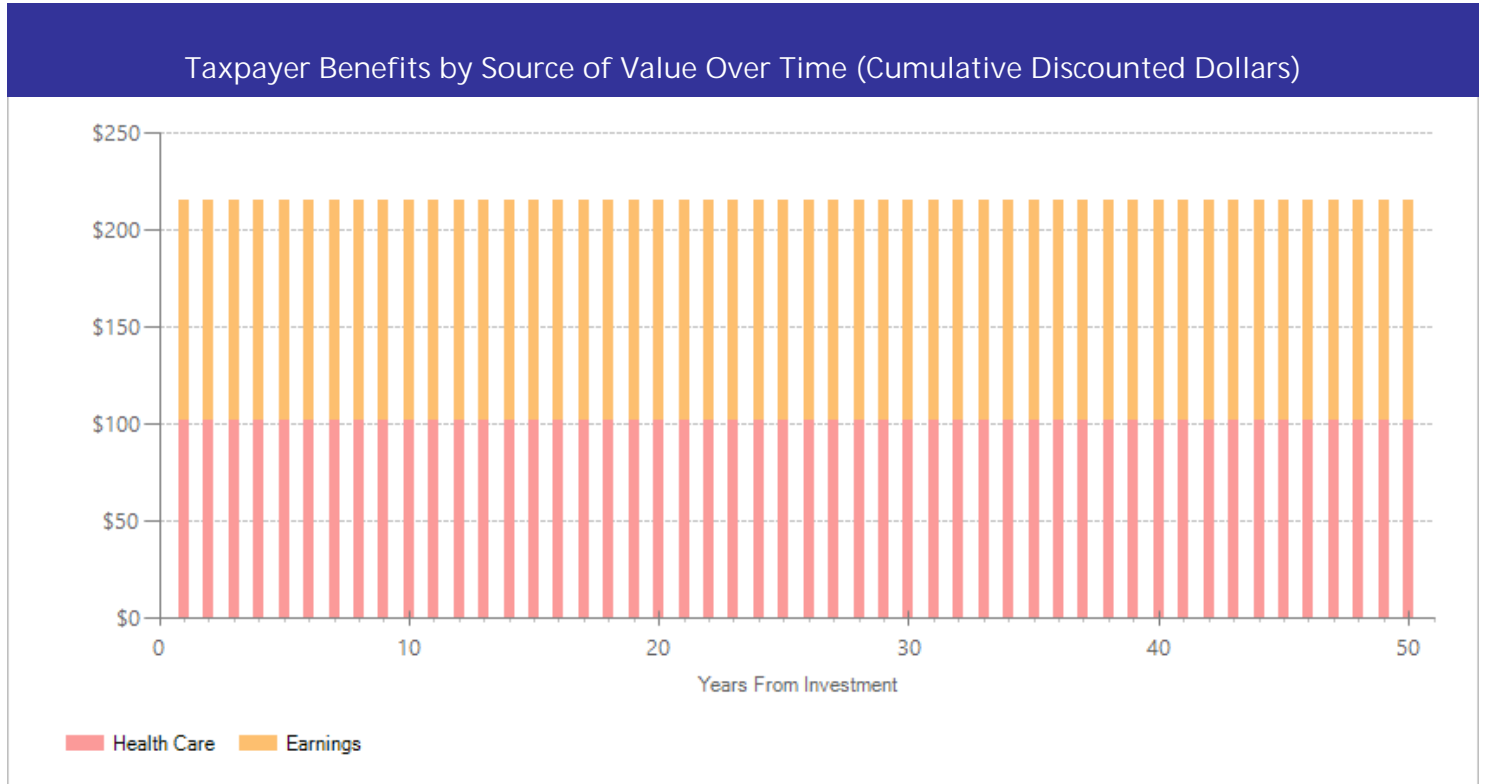

Cumulative net benefits
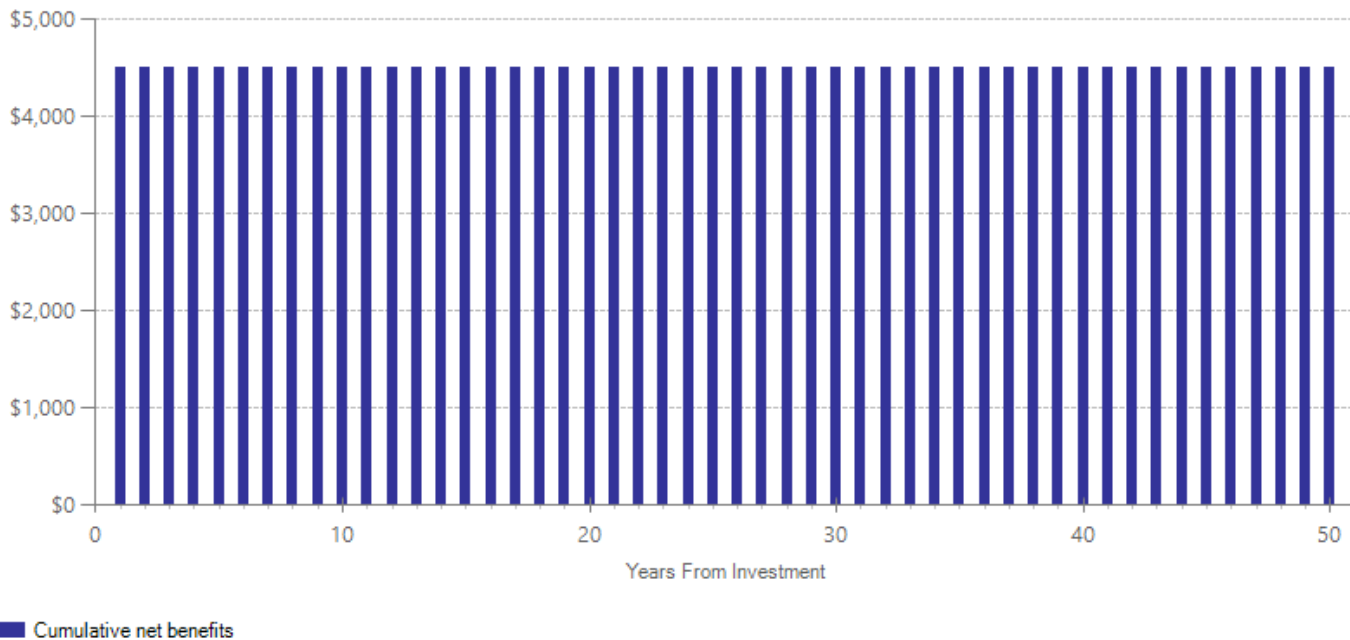
The graph above illustrates the estimated cumulative net benefits per-participant for the first fifty years beyond the initial investment in the program. We present these cash flows in discounted dollars. If the dollars are negative (bars below $0 line), the cumulative benefits do not outweigh the cost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

Benefits by Perspective Over Time (Cumulative Discounted Dollars)

Participant   Taxpayer   Others   Indirect
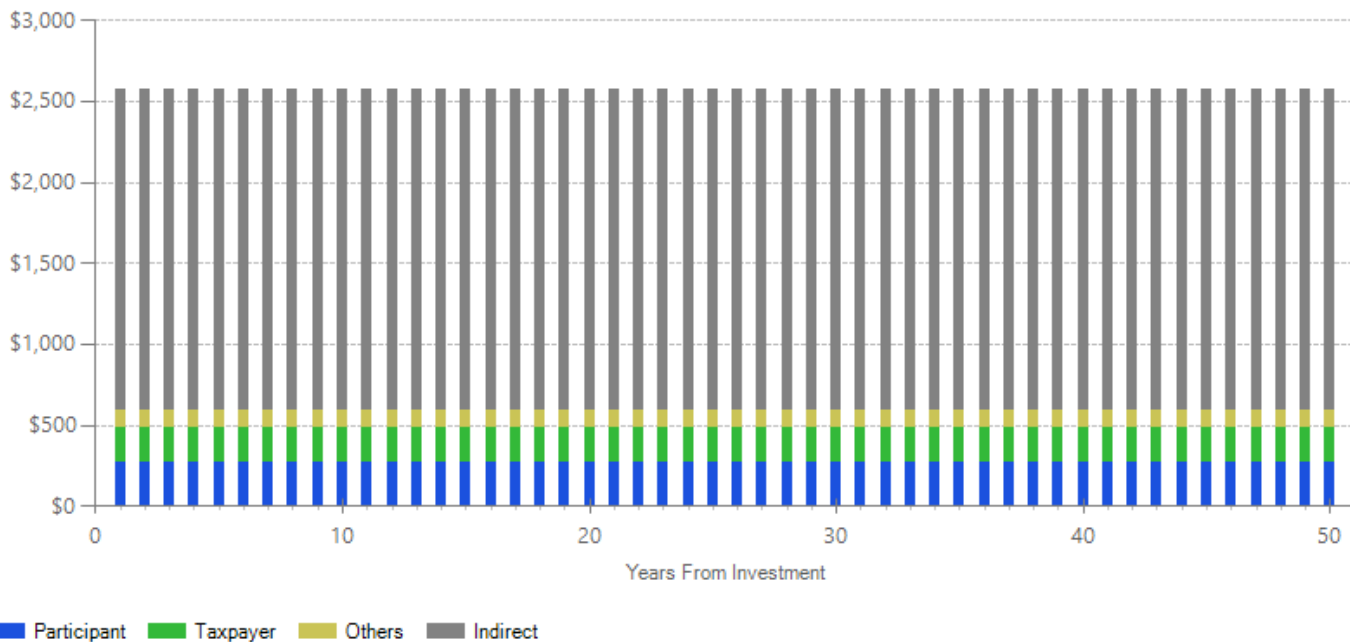
The graph above illustrates the breakdown of the estimated cumulative benefits (not including program costs) per-participant for the first fifty years beyond the initial investment in the program. These cash flows provide a breakdown of the classification of dollars over time into four perspectives: taxpayer, participant, others, and indirect. "Taxpayers" includes expected savings to government and expected increases in tax revenue. "Participants" includes expected increases in earnings and expenditures for items such as health care and college tuition. "Others" includes benefits to people other than taxpayers and participants. Depending on the program, it could include reductions in crime victimization, the economic benefits from a more educated workforce, and the benefits from employer-paid health insurance. "Indirect benefits" includes estimates of the changes in the value of a statistical life and changes in the deadweight costs of taxation. If a section of the bar is below the $0 line, the program is creating a negative benefit, meaning a loss of value from that perspective.

Taxpayer Benefits by Source of Value Over Time (Cumulative Discounted Dollars)

The graph above focuses on the subset of estimated cumulative benefits that accrue to taxpayers. The cash flows are divided into the source of the value.

Citations Used in the Meta-Analysis

Fausett, M.B. (2014). *Centering Pregnancy (CP): A Longitudinal Correlational Study Designed to Evaluate Maternal and Fetal Outcomes After Participation in CP.*

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Ickovics, J.R. (2007). Group prenatal care and perinatal outcomes: A randomized controlled trial. *Obstetrics and Gynecology, 111*(4), 993-994.

Ickovics, J.R., Earnshaw, V., Lewis, J.B., Kershaw, T.S., Magriples, U., Stasko, E., . . . Tobin, J.N. (2016). Cluster randomized controlled trial of group prenatal care: perinatal outcomes among adolescents in New York City health centers. *American Journal of Public Health, 106*(2), 359-365.

Ickovics, J.R., Reed, E., Magriples, U., Westdahl, C., Schindler, R.S., & Kershaw, T.S. (2011). Effects of group prenatal care on psychosocial risk in pregnancy: Results from a randomised controlled trial. *Psychology & Health, 26*(2), 235-250.

Kennedy, H.P., Farrell, T., Paden, R., Hill, S., Jolivet, R.R., Cooper, B.A., & Rising, S.S. (2011). A randomized clinical trial of group prenatal care in two military settings. *Military Medicine, 176*(10), 1169-77.

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