THE COMPARATIVE COSTS AND BENEFITS OF PROGRAMS TO REDUCE CRIME

A REVIEW OF NATIONAL RESEARCH FINDINGS WITH IMPLICATIONS FOR WASHINGTON STATE

Version 3.0

Steve Aos
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WASHINGTON STATE INSTITUTE FOR PUBLIC POLICY

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SECTION I: INTRODUCTION

This report describes the "bottom-line" economics of various programs that try to reduce criminal behavior. We identify the types of programs that can, as well as those that apparently cannot, reduce criminal offending in a cost-beneficial way. Among other uses, this information can assist decision-makers in allocating scarce public resources.

This research was prepared for the Washington State legislature. The legislature directed the Washington State Institute for Public Policy to evaluate the costs and benefits of certain criminal justice policies, violence prevention programs, and other efforts to decrease the criminal recidivism of juvenile and adult offenders, and certain at-risk behaviors of youth.[1]

The distinguishing characteristic of this report is its focus on economics. For a wide range of programs—from prevention programs designed for young children to correctional programs for juvenile and adult offenders—we examine whether a program's benefits are likely to outweigh its costs. Our estimates are based on a common methodological approach, allowing an "apples-to-apples" comparison of the economics of programs aimed at very different age groups. This approach is similar to a financial analysis an investment advisor might use to study rates of return on mutual funds, bonds, real estate, or other diverse investments. The focus is on the *comparative* economic bottom line.

We evaluate the economics of programs from two perspectives. First, there is the taxpayer question. For every dollar of taxpayer money spent on a program, can rates of future criminal activity be reduced to avoid at least that amount in downstream criminal justice costs? In other words, by spending a taxpayer dollar now on a program, will more than one taxpayer dollar be saved in the years ahead?

Second, in addition to the taxpayer's perspective, the costs incurred by crime victims are estimated. If a program can reduce rates of future criminal offending, not only will taxpayers receive benefits through lower future criminal justice costs, but there will be fewer crime victims as well. In our economic analyses, we estimate the benefits to both taxpayers and crime victims and present both figures.

As a first step in this project, the Institute systematically reviewed research in the United States and Canada, focusing on studies published in the last twenty years that used sound research methods. We looked for evaluations that measured whether a program reduced the criminality of participants relative to a comparison or control group. Many of the programs we reviewed are designed for youth or adults already in the juvenile or adult justice systems, where the goal is to reduce subsequent criminal activity. Other prevention programs seek to lower the chance that a young person will commit crimes in the first place.

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[1] RCW 13.40.500, RCW 70.190.050, and the 1999 Legislature's E2SSB 5421, SSB 5011, and E2SHB 1006.

For this review, we divide the research literature into five broad topic areas:

- Early Childhood Programs,
- Middle Childhood Programs,
- Adolescent (Non-Juvenile Offender) Programs,
- Juvenile Offender Programs, and
- Adult Offender Programs.

While we believe our review covers a substantial portion of the published evaluation research in these five areas, it is likely that we missed some studies. We built this literature review, however, so that as new evaluations are completed, or as relevant studies are uncovered, the information can be added to subsequent versions of this report. Thus, the "program inventory" in this report provides an initial, expandable base of information to assist Washington State policy makers and program designers.

At present, this review does not include the full range of criminal justice topics. We omit, for example, research on policing practices and the effect of deterrence and incapacitation in sentencing policies. As more research is undertaken both in Washington and elsewhere, our cost-benefit analysis can be extended to encompass these and other areas of interest to policy makers.

Our review concentrates on evaluations that measure a program's effects on criminality. Many, if not most, programs have additional or alternative goals. For example, the primary goals of some prevention programs are to reduce teen pregnancy, substance abuse, or dropping out of school. The principal goal of some adult offender programs is to maintain in-prison control of inmates. Although society, program participants, and taxpayers can benefit from changes in these and other behaviors, at present the Institute's analysis is restricted to measuring the costs and benefits of crime-related outcomes. Future work is planned to estimate non-crime related benefits.

Our analysis follows a three-step process for each program (or program area) we review:

1. We examine existing evaluations to gauge whether a particular program has been shown, somewhere in the United States or Canada, to be effective in lowering crime rates.[2] We also estimate how the program might be implemented in Washington's system.

2. We then estimate the value to Washington taxpayers of reducing crime (from Step 1) in terms of avoided downstream criminal justice costs. The value to crime victims is also estimated at this stage.

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[2] Bibliographies in the documents listed below were used as starting points for our review of programs. We then used the library and internet to search for additional program evaluations. All programs required a comparison group that received no or minimal treatment and a measure of criminal recidivism for the treatment and comparison group. (1) Belenko, Steven (1998). Research on Drug Courts: A Critical Review. NY: Columbia University, National Center of Addiction and Substance Abuse; (2) Cullen, F.T., J.P. Wright and B.K. Applegate. 1996. "Control in the Community: The Limits of Reform?" pp. 69-116 in A.T. Harland (ed.), *Choosing Correctional Options that work: Defining the Demand and Evaluating the Supply*. Thousand Oaks, CA: Sage; (3) Lipsey, Mark W. and David B. Wilson. 1998. "Effective Intervention for Serious Juvenile Offenders: A Synthesis of Research." Pp. 313-345 in Rolf Loeber and David P. Farrington (eds.), *Serious and Violent Juvenile Offenders*. Thousand Oaks, CA: Sage; (4) MacKenzie, Doris L., and Laura J. Hickman. 1998. "What Works in Corrections? An Examination of the Effectiveness of the Type of Rehabilitation Programs Offered by Washington State Department of Corrections," Olympia: Joint Legislative Audit and Review Committee; (5) Sherman, Lawrence W., Denise C. Gottfredson, Doris L. MacKenzie, John Eck, Peter Reuter and Shawn Bushway. 1997. Preventing Crime: *What Works, What Doesn't, What's Promising*. Washington, D.C.: National Institute of Justice.

3. Finally, we calculate an economic "bottom line" by subtracting the expected costs of a particular program from its projected benefits (from Step 2).

The Organization of this Report Section II summarizes our findings. In Section III, we describe the general format of the detailed cost-benefit reviews and discuss the methods we use to estimate costs and benefits. Section IV presents the detailed results for each program area we review. Finally, a technical appendix contains specific information on the Institute's model to estimate the costs and benefits of crime prevention and intervention programs.

SECTION II: SUMMARY OF THE FINDINGS

As discussed in the Introduction, the Institute reviewed the national research literature on a wide variety of programs that try to reduce criminal behavior. We analyzed published evaluations of these programs and then estimated whether or not the benefits from a program would exceed the costs in Washington. The goal of this research is to identify programs that can make economically sound contributions to Washington's criminal justice system.

Before discussing the findings of specific programs, we note our two overall conclusions.

1. SOME PREVENTION AND INTERVENTION PROGRAMS LOWER CRIMINALITY, SOME DO NOT.

✓ Our first finding is <u>not</u> that "prevention works" or that "intervention works." That is too general a statement since we found well-researched programs that failed to affect rates of criminality. Rather, *the main lesson is that some prevention or intervention programs work with certain groups of people in certain settings.* That is, some programs work and some do not. Selecting and successfully implementing the right programs for the right populations is the real challenge for policy makers and program administrators.

✓ In reviewing program evaluations, we found some successful interventions across the age spectrum. We found successful *prevention* programs for young children or youth, and we found successful *intervention* programs for juveniles and adults already in the criminal justice system.

✓ Programs with the most favorable outcomes often demonstrate success rates that many would consider modest. For example, we found that the most successful programs for adult offenders lower the chance of re-offending by 10 to 15 percent. An example can help put this number in perspective. In Washington State, about 50 percent of all adult offenders leaving prison are subsequently re-convicted for another felony offense within eight years from release.[3] A 10- to 15-percent reduction from a 50 percent starting point would result in a 43- to 45-percent recidivism rate—a significant, but not a huge, reduction in recidivism. Based on our economic analyses, however, we found that programs that can deliver—*at a reasonable cost*—even modest reductions in future criminality can have an attractive economic bottom line.

✓ In Washington, as in the rest of the United States, most programs designed to reduce crime have not been rigorously evaluated. Some programs may be working and could be expanded. Others may not be achieving their goals, yet continue to absorb scarce tax dollars that could be directed toward more effective programs. While evaluations are not cost-free, making decisions without objective information on effectiveness can result in inefficient resource allocation. Evaluating the costs and benefits of programs and policies should be a key part of the overall strategy.

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[3] The 50 percent felony recidivism rate is based on longitudinal analyses conducted by the Institute.

2. SOME PROGRAMS NOT ONLY WORK, THEY ALSO SAVE MORE MONEY THAN THEY COST.

✓ The Institute applied a cost-benefit analysis to the program evaluations we reviewed. The cost of crime to taxpayers (who pay for the criminal justice system) and crime victims (who suffer personal and property losses) is high. We found that reasonably priced programs that achieve even modest reductions in future crime rates yield positive economic returns.

✓ We found the largest and most consistent economic returns are for programs designed for juvenile offenders. Several of these interventions produce benefit-to-cost ratios in the order of five to ten dollars of taxpayer benefits for each dollar of taxpayer cost. Three of these programs are now being implemented by the juvenile courts in Washington State as a result of recent legislative and administrative actions.[4]

✓ We also found economically attractive prevention programs for young children and adolescents and, at the other end of the age spectrum, for adult offenders. A nurse home-visitation program, an anti-drug and anti-violence curriculum for grade schools in high-risk neighborhoods, and a mentoring program for high-risk adolescents can produce positive economic returns. For adult offenders, we found a few employment, education, drug treatment, and counseling programs that produce favorable returns.

✓ Not all of the economic findings, however, are positive. We found some programs that do not lower criminality and, thus, they have a negative economic bottom line. Resources spent on these programs would be better directed toward programs that yield positive returns.

✓ We also found programs that demonstrate some success in reducing the criminality of participants, but the cost of the programs is greater than any savings realized. The economics of crime prevention or intervention require not only program effectiveness, but the services must also be delivered economically. In this regard, crime prevention and intervention is like any business: in order to have a positive economic bottom line, not only does a product need to work and be successful, it also needs to be produced in a cost-efficient manner. In our review of the available options, not all programs passed these two tests.

✓ The crime-reduction benefits of some prevention programs take many years to be realized. Typically, prevention programs are designed for children or adolescents. Their benefits of reduced crime may not occur until the participants are teenagers or young adults. Therefore, research-proven prevention programs should be part of a *long-term* resource allocation strategy. Other intervention programs are designed for offenders already in their crime-prone years and their benefits are achieved in the near term. An overall criminal justice plan should develop an allocation of resources among these long-term and near-term prevention and intervention approaches.

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[4] The economics of the three programs—*Multi-systemic Therapy, Functional Family Therapy, and Aggression Replacement Training*—are described in this report.

✓ Because the research base for "what works" is limited, a degree of uncertainty must be applied to the economic estimates in this report. We believe that it would be a mistake to allocate all prevention and intervention dollars into one program. That is, like any investor, criminal justice decision-makers should avoid putting all of the eggs into one basket. We recommend that a "portfolio approach" be developed so that a reasonable balance is achieved between near-term and long-term resources, and between research-proven strategies and those that are promising but in need of research and development.

FINDINGS ABOUT SPECIFIC PROGRAMS

As discussed in the Introduction, we divide the research literature into five broad areas:
- Early Childhood Programs,
- Middle Childhood Programs,
- Adolescent (Non-Juvenile Offender) Programs,
- Juvenile Offender Programs, and
- Adult Offender Programs.

We will now summarize our findings for each area. The principal results of our economic analysis are displayed on Table 1. This table contains our comparative, "apples-to-apples," bottom-line findings. For each program, the interested reader can find the detailed calculations behind these summary statistics in Section IV of this report.

For each program, three key summary measures are reported on Table 1.

1. **The cost of the program, per participant.** This estimated cost is shown in the first column of Table 1.

2. **Taxpayer benefits.** Columns two and three provide our estimates of the crime-related benefits to taxpayers that a program can produce. Column two indicates the estimated *total* dollar amount of benefits—per program participant—a taxpayer is expected to receive in avoided downstream criminal justice costs. Column three divides the total taxpayer benefits (in column two) by the costs (in column one) to arrive at a benefit-to-cost ratio. Values in column three greater than $1.00 mean that, from a taxpayer's perspective, the crime-reducing benefits are greater than the costs.

3. **Taxpayer *and* crime victim benefits.** Columns four and five provide our estimates of the taxpayer benefits (from column two) AND the benefits to crime victims when a program lowers crime. Column four reports the *total* estimated taxpayer and victim benefits per program participant, while column five divides this sum by the program costs (from column one) to produce a benefit-to-cost ratio.

For several programs listed on Table 1, we report an "n/a" indicating that insufficient information was available at this time to allow reasonable estimates of cost and benefits.

Table 1
Summary of Key Economic Measures for Programs
(All Dollar Values are in 1998 Dollars)

	Estimated Program Cost Per Participant	Criminal Justice System Benefits (Taxpayer Cost Savings)		Criminal Justice System AND Crime Victim Benefits	
		Per Participant	Benefits Per Dollar of Cost	Per Participant	Benefits Per Dollar of Cost
	(1)	(2)	(3)	(4)	(5)
Early Childhood Programs					
Perry Pre-School	$13,938	$9,237	**$0.66**	$20,954	**$1.50**
Syracuse Family Development Research Program	$45,092	$8,613	**$0.19**	$15,487	**$0.34**
Nurse Home Visitation	$7,403	$6,155	**$0.83**	$11,369	**$1.54**
Middle Childhood Programs					
Seattle Social Development Project	$3,017	$2,704	**$0.90**	$5,399	**$1.79**
Adolescent (Non-Juvenile Offender) Programs					
Quantum Opportunities Program	$18,292	$1,582	**$0.09**	$2,290	**$0.13**
Big Brothers Big Sisters of America	$1,009	$1,313	**$1.30**	$2,143	**$2.12**
Juvenile Offender Programs					
Community-Based Programs					
Multi-Systemic Therapy	$4,540	$38,047	**$8.38**	$61,068	**$13.45**
Functional Family Therapy	$2,068	$14,167	**$6.85**	$22,739	**$10.99**
Aggression Replacement Training	$404	$7,896	**$19.57**	$12,674	**$31.40**
Adolescent Diversion Project	$1,509	$11,508	**$7.62**	$20,547	**$13.61**
Multidimensional Treatment Foster Care	$1,934	$27,202	**$14.07**	$43,661	**$22.58**
Juvenile Intensive Supervision (Probation)	$1,500	$1,347	**$0.90**	$2,235	**$1.49**
Juvenile Intensive Supervision (Parole)	n/a	n/a	**n/a**	n/a	**n/a**
Institutional-Based Programs					
Juvenile Boot Camps	-$1,964	($4,680)	**$0.42**	($7,511)	**$0.26**
Juvenile Institutional Treatment Services	n/a	n/a	**n/a**	n/a	**n/a**
Adult Offender Programs					
Community-Based Programs					
Job Counseling & Job Search for Inmates Leaving Prison	$539	$1,532	**$2.84**	$2,154	**$4.00**
Drug Courts	$2,000	$3,385	**$1.69**	$4,368	**$2.18**
Short-term Financial Assistance for Inmates Leaving Prison	$2,718	$2,080	**$0.77**	$2,924	**$1.08**
Subsidized Jobs for Inmates Leaving Prison	$10,089	$6,750	**$0.67**	$9,490	**$0.94**
Adult Intensive Supervision Programs	$3,345	$1,298	**$0.39**	$1,730	**$0.52**
Case Management Substance Abuse Programs	$2,144	($329)	**($0.15)**	($456)	**($0.21)**
Work Release Programs	$0	$0	**n/a**	$0	**n/a**
Community-Based Substance Abuse Treatment	n/a	n/a	**n/a**	n/a	**n/a**
In-Prison Programs					
Moral Reconation Therapy	$285	$2,330	**$8.17**	$3,275	**$11.48**
Reasoning and Rehabilitation	$296	$750	**$2.54**	$1,039	**$3.51**
In-Prison Vocational Education	$1,876	$4,316	**$2.30**	$6,068	**$3.23**
Adult Basic Education	$1,888	$3,220	**$1.71**	$4,528	**$2.40**
In-Prison Therapeutic Communities	$5,500	$4,202	**$0.76**	$5,908	**$1.07**
Sex Offender Treatment Programs	$6,435	$1,591	**$0.25**	$1,681	**$0.26**
Life Skills Programs	$809	$0	**$0.00**	$0	**$0.00**
Correctional Industries	n/a	$1,725	**n/a**	$2,426	**n/a**
In-Prison Non-residential Substance Abuse Treatment	n/a	n/a	**n/a**	n/a	**n/a**
Other Cognitive Behavioral Therapy	n/a	n/a	**n/a**	n/a	**n/a**

Note: An "n/a" means that the Institute was not able develop estimates because of insufficient information.

EARLY CHILDHOOD PROGRAMS

The Institute found three programs designed for very young children that have been evaluated for crime-related outcomes. All three found desirable effects on outcomes in addition to crime-related outcomes. For example, the Nurse Home Visitation program found significant effects on child abuse and neglect, subsequent pregnancies, welfare dependence, and behavior problems due to substance abuse, in addition to reduced criminal behavior by the mothers and their children. As mentioned in the Introduction, however, our economic analysis only measures the benefits associated with the crime-related effects of these programs. Thus, the estimates on Table 1 understate—to a degree—the total benefits that taxpayers or society might be able to achieve with these programs.[5]

The **Perry Pre-School** provided early childhood education to disadvantaged children to improve their later school and life performances. The goal was to overcome school failure associated with childhood poverty by promoting the intellectual, social, and physical development of young children. By increasing academic success, the program sought to improve employment opportunities and wages, decrease crime, teenage pregnancy, and welfare use. The program was aimed at low socio-economic families with children ages three and four. Perry Pre-school was a two-year intervention that operated 2.5 hours per day, five days per week, seven months per year, and included weekly home visitations by teachers. The school operated in the 1960s in Ypsilanti, Michigan. Its most recent evaluation reported on the life-outcomes of participants at age 27.

After reviewing the Perry Pre-school evaluation results, the Institute found an effect size of about -.26 for basic crime outcomes. Overall, taxpayers gain approximately $9,237 in subsequent criminal justice costs for each program participant. In 1998 dollars, the program cost $13,938 per child. Therefore, taxpayers receive $0.66 in criminal justice system benefits for every dollar spent. Crime victims save an average of $11,717 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.50 for every dollar spent.

The **Syracuse Family Development Research Program** (FDRP) was a five-year program in the early 1970s for low income, mostly single parent, families, providing pre-natal care, weekly home visits, parent training, child care, and nutrition. FDRP sought to bolster child and family functioning and interpersonal relationships. The intervention targeted African American, single-parent, low-income families to improve the children's cognitive and emotional functioning, foster children's positive outlooks, and decrease juvenile delinquency. The mothers were young (18 years on average), had little or no work history, and were in the last trimester of their first or second pregnancy.

After reviewing the evaluation of FDRP, the Institute found an effect size of about -.54 for basic crime outcomes. Overall, taxpayers gain approximately $8,613 in subsequent criminal justice costs for each program participant. In 1998 dollars, the program cost $45,092 per child. Therefore, taxpayers receive $0.19 in criminal justice system benefits for

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[5] The Perry PreSchool evaluation estimated that the crime-related benefits accounted for about 65 percent of the total benefits estimated in the evaluation. See, Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). *Significant Benefits: The High/Scope Perry Preschool Study through age 27.* Ypsilanti, MI: High/Scope Press, page 166.

every dollar spent. Crime victims save an average of $6,875 in costs for each program participant, for a combined taxpayer and crime victim benefit of $0.34 for every dollar spent.

The **Nurse Home Visitation** program consists of intensive and comprehensive home visitation by nurses during a woman's pregnancy and the first two years after birth. The goal is to promote the child's physical, cognitive, and social-emotional development, and to provide general support and instructive parenting skills to the parents. The program is designed to serve low-income, at-risk pregnant women bearing their first child. The program helps women plan future pregnancies, educational achievement, and participation in the work force. Typically, a nurse visitor is assigned to a family and works with that family through the duration of the program. Treatment begins during pregnancy, with an average of eight one-hour visits, and continues postpartum with visits diminishing in frequency.

The evaluation found successful outcomes when the program assisted unmarried, low income, higher-risk women. Follow-up at 15-years postpartum showed significant effects on child abuse and neglect, subsequent pregnancies, welfare dependence, behavior problems due to substance abuse, and criminal behavior by the mothers and their children. The Institute's cost-benefit analysis, calculated for this higher risk group, estimates the crime-related benefits from the program's effects on the nurse-visited mothers as well as their children.   Overall, taxpayers gain approximately $6,155 in subsequent criminal justice costs for each program participant. The program is estimated to cost $7,403 (in 1998 dollars) per program participant. Therefore, taxpayers receive $0.83 in criminal justice system benefits for every dollar spent. Crime victims save an average of $5,215 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.54 for every dollar spent.

MIDDLE CHILDHOOD PROGRAMS

The **Seattle Social Development Project** (SSDP) is a three-part intervention for teachers, parents, and students in grades 1 to 6. The focus is elementary schools in high crime urban areas. The intervention trains teachers to manage classrooms to promote bonding to school. SSDP also offers training to parents to promote bonding to family and school. It provides training to children designed to affect attitudes toward school, behavior in school, and academic achievement.

After reviewing the evaluation of SSDP, the Institute found an effect size of about -.23 for basic crime outcomes. Overall, taxpayers gain approximately $2,704 in subsequent criminal justice costs for each program participant. The program is estimated to cost $3,017 (in 1998 dollars) per program participant. Therefore, taxpayers receive $0.90 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, the program can "break even" if it achieves a 21.3 percent reduction in crime outcomes. Crime victims save an average of $2,695 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.79 for every dollar spent.

ADOLESCENT (NON-JUVENILE OFFENDER) PROGRAMS

The **Quantum Opportunities Program** (QOP) is designed to serve disadvantaged adolescents by providing education, service, and development activities, as well as financial

incentives from ninth grade through high school graduation. QOP is designed for adolescents from families receiving public assistance. Each participant is eligible to receive annually: 250 hours of education (participating in computer-assisted instruction, peer tutoring to enhance basic academic skills, etc.); 250 hours of development activities (participating in cultural enrichment and personal development, acquiring life/family skills, planning for college or advanced technical/vocational training, and job preparation); and 250 hours of service activities (participating in community service projects, helping with public events, and working as a volunteer in various agencies).

After reviewing the evaluation of QOP, the Institute found an effect size of about -.42 for basic crime outcomes. Overall, taxpayers gain approximately $1,582 in subsequent criminal justice costs for each program participant. In 1998 dollars, the program cost $18,292 per youth for the four years, including both operating and administrative costs. Therefore, taxpayers receive $0.09 in criminal justice system benefits for every dollar spent. Crime victims save an average of $707 in costs for each program participant, for a combined taxpayer and crime victim benefit of $0.13 for every dollar spent.

Big Brothers Big Sisters of America (BBBSA) is a mentoring program that links at-risk youth with volunteer adults. The mentors act as positive resources for youth who may otherwise lack such role models. Length of participation can vary from several months to several years. Contacts usually occur three times monthly, for four hours a visit. Adult mentors are trained to refer any ancillary needs (i.e. substance abuse treatment, or mental or physical health concerns) to program personnel for follow up.

The existing evaluation of BBBSA did not measure criminal outcomes directly (the question tested was the "number of times hit someone"). Therefore, the Institute lowered the estimated effect of BBBSA in its cost-benefit calculations (from an effect size of -.11 to -.05). Overall, taxpayers gain approximately $1,313 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per BBBSA participant is $1,009 (in 1998 dollars). Therefore, taxpayers receive $1.30 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, BBBSA program can "break even" if it achieves a 10.5 percent reduction in crime outcomes. Crime victims save an average of $830 in costs for each program participant, for a combined taxpayer and crime victim benefit of $2.12 for every dollar spent.

JUVENILE OFFENDER PROGRAMS

Multi-Systemic Therapy (MST) is an intensive home-based intervention for chronic, violent, or substance abusing juvenile offenders, ages 12 to 17. Trained therapists work with the youth and his or her family. The MST intervention is based on several factors, including an emphasis on addressing the known causes of delinquency. The treatment services are delivered in the youth's home, school, and community settings, with a strong focus on treatment adherence and program fidelity. Service duration averages 60 hours of contact over four months. Each MST therapist works in a team of four therapists and carries a caseload of four to six families.

The Institute's review of national research found that MST has been well evaluated in several settings. After reviewing the evaluations, the Institute found an average effect size of about -.68 for basic recidivism. Overall, taxpayers gain approximately $38,047 in subsequent criminal justice costs for each program participant. Based on the Institute's

estimates, a typical average cost per MST participant is about $4,540 (in 1998 dollars). Therefore, taxpayers receive $8.38 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, MST program can "break even" if it achieves a 10.2 percent reduction in recidivism. Crime victims save an average of $23,021 in costs for each program participant, for a combined taxpayer and crime victim benefit of $13.45 for every dollar spent.

Functional Family Therapy (FFT) targets youth, aged 11 to 18, with problems of delinquency, violence, and substance use. FFT focuses on altering interactions among family members and seeks to improve the functioning of the family unit. FFT is provided by individual therapists, typically in the home setting, and focuses on increasing family problem solving skills, enhancing emotional connection, and strengthening the parental ability to provide appropriate structure, guidance, and limits to their children. FFT generally requires 8 to 12 hours of direct service to youth and their families, and generally no more than 26 hours for the most severe problem situations.

The Institute's review of national research found that FFT has been evaluated in several trials. After reviewing the evaluations, and giving greater weight to the better studies, the Institute found an average effect size of about -.34 for basic recidivism. Overall, taxpayers gain approximately $14,167 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per FFT participant is $2,068 (in 1998 dollars). Therefore, taxpayers receive $6.85 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, FFT program can "break even" if it achieves a 7.3 percent reduction in recidivism. Crime victims save an average of $8,572 in costs for each program participant, for a combined taxpayer and crime victim benefit of $10.99 for every dollar spent.

Aggression Replacement Training (ART) is a cognitive-behavioral intervention that attempts to reduce the anti-social behavior, and increase the pro-social behavior, of juvenile offenders. ART has three components. In the anger control component, participants learn what triggers their anger and how to control their reactions. The "skill-streaming" behavioral component teaches a series of pro-social skills through modeling, role playing, and performance feedback. In the moral reasoning component, participants work through cognitive conflict through "dilemma" discussion groups. The program is run in groups of 8 to 10 juvenile offenders.

The Institute's review of ART research found a few evaluations of these programs. Using the Institute's weighting scheme to combine the study results, the evaluations have an average effect size of .26 for basic recidivism. Overall, taxpayers gain approximately $7,896 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, in 1998 dollars, the program costs $404 per participant. Therefore, taxpayers receive $19.57 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, ART program can "break even" if it achieves a 1.4 percent reduction in recidivism. Crime victims save an average of $4,778 in costs for each program participant, for a combined taxpayer and crime victim benefit of $31.40 for every dollar spent.

The **Adolescent Diversion Project** (ADP) serves 125 adolescent offenders a year diverted from the Ingham County Juvenile Court in Lansing, Michigan. The program stems from

researched experiments conducted in the 1970s and 1980s. ADP diverts youth from the juvenile court to prevent them from being labeled as "delinquent." ADP "change agents" (usually college students) work with youth in their environment to provide community resources and initiate behavioral change. Change agents are trained in a behavioral model (contracting with rewards written into actual contracts between youth and significant other person in youth's environment) and to become advocates for community resources. Youth and change agents are matched, whenever possible, on race and gender. The evaluation results are for males only.

After reviewing the ADP evaluations, the Institute found an average effect size of about -.57 for basic recidivism. Overall, taxpayers gain approximately $11,508 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, in 1998 dollars, the program costs $1,509 per participant. Therefore, taxpayers receive $7.62 in benefits for every dollar spent. From a taxpayer's perspective, ADP program can "break even" if it achieves a 10.1 percent reduction in recidivism. Crime victims save an average of $9,039 in costs for each program participant, for a combined taxpayer and crime victim benefit of $13.61 for every dollar spent.

Multidimensional Treatment Foster Care (MTFC) is an alternative to group residential placement for high-risk and chronic juvenile offenders. Youth are placed with two trained and supervised foster parents for six to 12 months, and the youth's parents participate in family therapy. Near the end of the child's stay, the youth and his or her parents participate in family therapy together. The intervention is intensive, with at most two, and usually one, youth placed in the foster family. Community families are recruited, trained, and closely supervised. MTFC-placed adolescents are given treatment and intensive supervision at home, in school, and in the community; clear and consistent limits with follow-through on consequences; positive reinforcement for appropriate behavior; a relationship with a mentoring adult; and separation from delinquent peers. MTFC training for community families emphasizes behavior management methods to provide the youth with a structured and therapeutic living environment.

After reviewing the evaluation of MTFC, the Institute found an effect size of about -.63 for basic recidivism. Overall, taxpayers gain approximately $27,202 in subsequent criminal justice costs for each program participant. A typical cost per MTFC participant (MTFC cost compared to regular group home cost) is $1,934, in 1998 dollars. Therefore, taxpayers receive $14.07 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, MTFC program can "break even" if it achieves a 4.3 percent reduction in recidivism. Crime victims save an average of $16,459 in costs for each program participant, for a combined taxpayer and crime victim benefit of $22.58 for every dollar spent.

Juvenile Intensive Supervision Programs (ISP) are designed for juvenile offenders serving a local sentence. The programs are characterized by more intense levels of supervision and surveillance than are exercised in routine juvenile court probation. The program features differ substantially across jurisdictions and in the type and risk levels of offenders participating in the programs. The Institute's review of the national research found several evaluations of ISPs for juvenile court populations. This research indicates only a slight effect in reducing recidivism.

After reviewing the evaluations and giving greater weight to the better studies, the Institute found an average effect size of about -.03 for basic recidivism. Overall, taxpayers gain

approximately $1,347 in subsequent criminal justice costs for each program participant. The Institute estimate's that lowering a juvenile court probation counselor's caseload from 50 to 20 adds a cost of about $1,500 per offender (in 1998 dollars) to regular court probation costs. Therefore, taxpayers receive $0.90 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, the programs can "break even" if they achieve a 4.0 percent reduction in recidivism. Crime victims save an average of $889 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.49 for every dollar spent.

The Institute has not completed its literature review of intensive supervision programs for juvenile offenders on *parole* from institutional settings. Therefore, a cost-benefit analysis has not been undertaken.

Boot Camps. The Office of Juvenile Justice and Delinquency Prevention (OJJDP) funded demonstration programs at three sites to develop prototypical camps and aftercare programs for male juveniles (Cleveland, Denver, and Mobile). According to OJJDP, the programs were intended to: serve as a cost-effective alternative to institutionalization; promote discipline through physical conditioning and teamwork; instill moral values and a work ethic; promote literacy and increase academic achievement; reduce drug and alcohol abuse; encourage participants to become productive law-abiding citizens; and ensure that offenders are held accountable for their actions. The three OJJDP studies, together with an evaluation of a California juvenile boot camp, found an average increase in the recidivism rates of boot camp participants compared to regular case processing.

After reviewing the boot camp evaluations, the Institute found an average effect size of about +.11 for basic recidivism. Overall, taxpayers lose approximately $4,680 in subsequent criminal justice costs for each program participant. The boot camps cost about $1,964 less than regular juvenile case processing, in 1998 dollars, but this lower cost is more than offset by future criminal justice system costs associated with the increased recidivism rates. Therefore, taxpayers receive $0.42 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, boot camps can "break even" if they achieve a 5.2 percent reduction in recidivism. Crime victims lose an average of $2,831 in costs for each program participant, for a combined taxpayer and crime victim benefit of $0.26 for every dollar spent.

The Institute has not completed its literature review of *treatment programs for juvenile offenders in institutional settings*. Therefore, a cost-benefit analysis has not been undertaken.

ADULT OFFENDER PROGRAMS

Job Counseling & Job Search for Inmates Leaving Prison Efforts to improve the labor market performance of ex-offenders are based on the theory that employed ex-offenders will be less likely to commit new crimes. One class of programs focuses on job search and employment counseling. In general, these programs attempt to link offenders with certain marketable skills to specific employers. The Institute found evaluations of five programs where a primary component was job search and counseling.

Overall, using the Institute's weighting scheme, the five evaluations have an average effect size of about -.04 for basic recidivism. Taxpayers gain approximately $1,532 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per participant is $539 (in 1998 dollars). Therefore, taxpayers receive $2.84 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, job counseling and search programs can "break even" if they achieve a 1.4 percent reduction in recidivism. Crime victims save an average of $622 in costs for each program participant, for a combined taxpayer and crime victim benefit of $4.00 for every dollar spent.

Drug Courts   First introduced in Dade County, Florida in 1989, a typical drug court targets non-violent offenders whose current involvement with the criminal justice system stems primarily from substance addiction. Defendants eligible for a drug court are identified soon after arrest and, if accepted, are referred to a treatment program. The court usually requires several contacts per week (often daily) with a treatment provider. Frequent urinalysis tests and regular status hearings with the drug court judge are key elements. Many drug courts require participants to maintain employment and honor financial obligations, including court fees and child support, as well as performing community service.

Most evaluations to date have relatively weak research designs, making it difficult to determine program effectiveness in reducing recidivism. After reviewing the evaluations, and giving greater weight to the better studies, the Institute found an average effect size of -.15 for basic recidivism. Overall, taxpayers gain approximately $3,385 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per participant is about $2,000 (in 1998 dollars). Therefore, taxpayers receive $1.69 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, drug court programs can "break even" if they achieve a 10.0 percent reduction in recidivism. Crime victims save an average of $983 in costs for each program participant for a combined taxpayer and crime victim benefit of $2.18 for every dollar spent.

Short-term Financial Assistance for Inmates Leaving Prison   One type of employment-related program operated in the late 1970s distributed income supplements (similar to unemployment insurance payments) to offenders after release from prison. The purpose was to lessen the need to commit crime for financial gain after release and prior to employment.

Two high quality research studies found conflicting results: one study (Berk) found no recidivism effect for the payments, while the other (Maller) found a relatively small effect. The Institute found an average effect size of -.07 for basic recidivism. Overall, taxpayers gain approximately $2,080 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average payment per offender is $2,718 (in 1998 dollars). Therefore, taxpayers receive $.77 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, short-term financial assistance programs can "break even" if they achieve a 9.1 percent reduction in recidivism. Crime victims save an average of $844 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.08 for every dollar spent.

Subsidized Jobs for Inmates Leaving Prison   If an inmate is provided a subsidized job after leaving prison, will he or she be less likely to commit new crimes? One study

examined data from the National Supported Work Demonstration Project (NSWDP), a large-scale federally funded project undertaken in the 1970s to answer this question. The research concluded that, overall, there was no effect on recidivism. The research then examined the separate effects on older and younger ex-offenders. The study found there was a significant effect on offenders over the age of 27, but no significant effect on younger adults.

The Institute found an average effect size of -.24 for basic recidivism based on the NSWDP for older (over 27 years old) adult offenders. Overall, taxpayers gain approximately $6,750 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, the cost of subsidized jobs per participant is $10,089 (in 1998 dollars). Therefore, taxpayers receive $.67 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, short-term financial assistance programs can "break even" if they achieve a 34.0 percent reduction in recidivism. Crime victims save an average of $2,740 in costs for each program participant, for a combined taxpayer and crime victim benefit of $.94 for every dollar spent.

Adult Intensive Supervision Programs   Adult intensive supervision programs (ISP) provide criminal sanctions that are a middle-ground between prison and community corrections and are characterized by more intense levels of supervision and surveillance than are found in routine probation and parole. The program features differ substantially across jurisdictions and in the type and risk levels of offenders participating in the programs. The Institute's review of the national research found a significant number of program evaluations. Many evaluations have strong research designs. These programs have demonstrated only a slight, or no effect in reducing recidivism.

After reviewing the evaluations and giving greater weight to the better studies, the Institute found an average effect size of about -.05 for basic recidivism. Overall, taxpayers gain approximately $1,298 in subsequent criminal justice costs for each program participant. Based on the data from 14 programs, a typical average cost per ISP participant is $3,345 (in 1998 dollars). Therefore, taxpayers receive $.39 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, ISP programs can "break even" if they achieve a 14.1 percent reduction in recidivism. Crime victims save an average of $433 in costs for each program participant, for a combined taxpayer and crime victim benefit of $.52 for every dollar spent.

Case Management Substance Abuse Programs   Offenders in the community are often referred to substance abuse treatment through a case management program, which provides a liaison between the criminal justice system and treatment programs. These programs usually assess offender needs and either provide or refer offenders to services. Community-based treatment usually involves outpatient drug-free treatment and, to a lesser extent, residential treatment.

The Institute's review of national research found a number of evaluations of these programs, many with strong research designs. Using the Institute's weighting scheme to combine the study results, the evaluations have an average positive effect size of .01 for recidivism, essentially no effect. Overall, taxpayers lose approximately $329 in subsequent criminal justice costs for each program participant. Based on available data from four programs (including treatment costs), a typical average cost per participant is $2,144 (in 1998 dollars). Therefore, taxpayers lose $.15 in criminal justice system benefits for every

dollar spent. From a taxpayer's perspective, programs can "break even" if they achieve a 8.4 percent reduction in recidivism. Crime victims lose an average of $127 in costs for each program participant, for a combined taxpayer and crime victim loss of $.21 for every dollar spent.

Work Release Programs   Work release programs permit selected prisoners nearing the end of their terms to work in the community, returning to prison or community residential facilities for the non-working hours. The programs are designed to prepare inmates to return to the community in a relatively controlled environment. Work release also allows inmates to earn income, reimburse the state for part of their confinement, build up savings for their eventual release, and acquire more positive living habits.

The only study we found on work release evaluated Washington's program. The study found no significant difference in recidivism rates between a group of inmates that participated in work release and those that did not, after about a 10-month follow-up. Re-arrest data were used to measure recidivism. The study also conducted a cost analysis and found no significant difference in program costs between the two groups.

Community-Based Substance Abuse Treatment   Community-based treatment for offenders usually involves outpatient drug-free treatment and, to a lesser extent, residential treatment, with a limited number of offenders participating in methadone maintenance programs. The Institute's review of the national research found few evaluations of community substance abuse treatment programs independent of case management programs. Given the scarcity of evaluations, the Institute has not attempted to estimate the cost and benefits for this program area.

Moral Reconation Therapy   Moral Reconation Therapy (MRT) is a cognitive-behavioral program designed for treatment-resistant populations. The program involves a step-by-step process designed to raise offenders from low to high levels of moral development in order to insulate them from criminal behavior. Since MRT is conducted by correctional staff in a group setting, the cost per participant is low.

The Institute's review of national research found that a few MRT programs have been evaluated, however, the existing evaluations have shortcomings.   After reviewing the evaluations, and giving greater weight to the better studies, the Institute found an average effect size of about -.08 for basic recidivism. Overall, taxpayers gain approximately $2,329 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per MRT participant is $285 (in 1998 dollars). Therefore, taxpayers receive $8.17 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, MRT programs can "break even" if they achieve a 1.0 percent reduction in recidivism. Crime victims save an average of $946 in costs for each program participant, for a combined taxpayer and crime victim benefit of $11.48 for every dollar spent.

Reasoning and Rehabilitation   Reasoning and Rehabilitation (R&R) is a program designed to teach social-cognitive skills to offenders. It is based on the premise that offenders lack the cognitive skills and attitudes essential for social competence and that acquiring such skills will better enable them to achieve success in legitimate pursuits and

withstand pressures toward criminal behavior. The central goals are to modify offenders' impulsive, rigid, and illogical thinking patterns in favor of thought before action and consideration of behavioral consequences. Since R&R is conducted by correctional staff in a group setting, the cost per participant is low.

The Institute's review of the national research found that a few R&R programs have been evaluated. The existing evaluations, however, have shortcomings. After reviewing the evaluations, the Institute found an average effect size of about -.03 for basic recidivism. Overall, taxpayers gain approximately $750 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per R&R participant is $296 (in 1998 dollars). Therefore, taxpayers receive $2.54 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, R&R programs can "break even" if they achieve a 1.2 percent reduction in recidivism. Crime victims save an average of $289 in costs for each program participant, for a combined taxpayer and crime victim benefit of $3.51 for every dollar spent.

In-Prison Vocational Education   Many adult offenders in the criminal justice system have poor job market skills and records. Vocational education to inmates is intended to improve the odds of post-prison employment and thereby decrease the chance of subsequent criminal activity. Vocational education can include, for example, improving work-related math skills for the automotive or construction trades. Some programs offer in-prison apprenticeships and an accreditation element that can make it easier for offenders to obtain trade licenses.

The Institute's review of the evaluation research found very few published studies that have measured the effect of this strategy on criminal recidivism. Moreover, most studies used fairly weak research designs, making it difficult to generalize the findings. Of the three evaluations that met minimum research quality standards, the Institute found a weighted-average effect size of about -.12 for basic recidivism. Overall, taxpayers gain approximately $4,316 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per participant for Washington's vocational education program is $1,876 (in 1998 dollars). Therefore, taxpayers receive $2.30 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, programs can "break even" if they achieve a 4.7 percent reduction in recidivism. Crime victims save an average of $1,752 in costs for each program participant, for a combined taxpayer and crime victim benefit of $3.23 for every dollar spent.

Adult Basic Education   A premise of adult basic education is that many inmates lack basic abilities in reading, writing, and mathematics and if these skills can be increased, offenders may have a better chance of avoiding criminal behavior when released from prison.

The Institute's review of the national research found that this question has not been extensively or rigorously evaluated. Only a handful of studies have been published, and most employ fairly weak research designs. Of the three evaluations that met minimum research quality standards, the Institute found a weighted-average effect size of about -.09 for basic recidivism. Overall, taxpayers gain approximately $3,220 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, the average cost per ABE participant in Washington's program is $1,888 (in 1998 dollars). Therefore, taxpayers receive $1.71 in benefits for every dollar spent. From a taxpayer's perspective,

programs can "break even" if they achieve a 4.8 percent reduction in recidivism. Crime victims save an average of $1,307 in costs for each program participant, for a combined taxpayer and crime victim benefit of $2.40 for every dollar spent.

In-Prison Therapeutic Communities   In-prison Therapeutic Community (TC) substance abuse programs are multifaceted residential programs coming out of a "self-help" tradition and involve a strong group orientation, with a focus on changing criminal thinking and behavior patterns in order to reduce future crime.

The Institute's review of the national research found that many in-prison TC programs have been evaluated, and a fair number employed fairly strong research designs for at least some program components. Using the Institute's weighting scheme to combine the study results, the evaluations have an average effect size of -.11 for basic recidivism. Overall, taxpayers gain approximately $4,202 in subsequent criminal justice costs for each program participant. Based on cost data from seven programs, the Institute's estimates a typical average cost per TC participant of about $5,500 (in 1998 dollars). Therefore, taxpayers receive $.76 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, TC programs can "break even" if they achieve a 13.9 percent reduction in recidivism. Crime victims save an average of $1,706 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.07 for every dollar spent.

Sex Offender Treatment Programs   Treatment of sex offenders includes traditional psychotherapies, insight therapy and cognitive behavioral therapy. The latter, an increasingly popular method, is targeted at reducing deviant arousal, increasing appropriate sexual desires, improving social skills and modifying distorted thinking. The treatment occurs both in-prison and in the community; this analysis involves in-prison programs only.

The Institute's review of the international research found that few sex offender programs have been evaluated, and fewer still have a strong research design. Using the Institute's weighting scheme to combine the three most robust in-prison studies, the evaluations have an average effect size of -.04 for basic recidivism. Overall, taxpayers gain approximately $1,591 in subsequent criminal justice costs for each program participant. The cost of sex offender programs, based on estimates for Washington State's program, is $6,435 per offender (in 1998 dollars).   Therefore, taxpayers receive $.25 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, sex offender treatment programs can "break even" only if they achieve at least a 26 percent reduction in recidivism. Crime victims save an average of $91 in costs for each program participant, for a combined taxpayer and crime victim benefit of $.26 for every dollar spent.

Life Skills Programs   Life skills programs teach offenders a variety of daily living skills. The topics covered include employment skills, money management, social skills, and personal health issues.

The Institute's review of the national research found that few life skills programs had been evaluated, and the ones with stronger research designs indicated no significant effect on recidivism. Using the Institute's weighting scheme to combine the results of these studies, the evaluations have an average effect size of .00 for recidivism, that is, no effect. The cost of a life skills program, based on available data from one program, is estimated at $809 per offender (in 1998 dollars). Since the programs are estimated to have no effect of

recidivism, there are $0.00 dollars in criminal justice system or crime victim benefits per dollar of program cost.

Correctional Industries   Few well-designed studies have examined the effect that correctional industry programs have on criminal recidivism. Of the two evaluations that met minimum research quality standards, the Institute found a weighted-average effect size of about -.05 for basic recidivism. The Institute was unable to complete its cost-benefit analysis of correctional industries programs because it is not clear how much money, if any, correctional industry programs cost taxpayers. In order to estimate the bottom line, a detailed cost study of Washington's Correctional Industries program would need to be undertaken.

In-Prison Non-residential Substance Abuse Treatment   A diverse collection of treatment interventions for substance abusing offenders have operated in prisons, including drug education, group and individual therapy, and relapse prevention. The programs are usually non-residential (that is, inmates receiving treatment are not housed in separate quarters), and the length of treatment ranges from several weeks to approximately six months.

The Institute's review of national research found that few of these programs have been evaluated, although they are probably the most common type of substance abuse treatment conducted in prison. Given the scarcity of evaluations, the Institute has not attempted to estimate the cost and benefits for this program area. An evaluation of Washington's in-prison substance abuse programs would help establish whether these programs cost-effectively reduce recidivism.

Other Cognitive Behavioral Therapy   The Institute found few cognitive behavioral program evaluations in the national research literature other than Moral Reconation Therapy and Reasoning and Rehabilitation (reported in a separate section). Two other programs were a residential program called "Cognitive Self-Change" and anger management programs. Given the scarcity of evaluations, the Institute did not attempt to estimate the cost and benefits for this program area.

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SECTION III: FORMAT AND CONTENT OF THE COST-BENEFIT REVIEWS

Section IV includes summary information—presented in standardized formats—for each program or program area we review. This section provides a general line-by-line description of the standardized cost-benefit tables in Section IV and covers the methods used to estimate the economics of each program. To aid in the following explanation, an example table from Section IV will be discussed—that for Adult Basic Education (ABE) programs for offenders in prison settings.

Line (1), Program Effectiveness Findings: Research-Based Effect Sizes

The first line on each of the standardized cost-benefit tables (in Section IV) summarizes the Institute's findings regarding program effectiveness—that is, the degree to which a program

Adult Basic Education: Findings

Line	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.09 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	48.7%	X	2.21	=	1.08
(4)	Percentage Change:*	-8.1%		0.0%		-8.1%
(5)	Reduction in Convictions per Program Participant:*					**-0.10**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.11**
	Taxpayer Costs for One Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$3,220**
(10)	Cost of the Program per Program Participant:					**-$1,888**
(11)	Net Gain (Loss) per Program Participant:					**$1,332**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$1.71**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-4.8%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$12,315
(15)	Crime Victim Benefits per Program Participant:***					**$1,307**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$4,528**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$2.40**

Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

has been shown to reduce the criminality of program participants. The Institute uses standard statistical methods to calculate the "effect sizes" of different programs. These research-based effect sizes are calculated from the published results of program evaluations.

When the Institute reviews an evaluation, we record four types of information on a program's effectiveness in reducing crime. Relative to a control or comparison group:

1. Did the program affect the percent of the population that offended?
2. Of those that offended, did the program change the average number of offenses?
3. Did the program affect the types (i.e. the seriousness) of offenses of those that offended?
4. Of those that offended, did the program change the timing of the offenses?

Almost all of the evaluations we review analyze and record information on the first effect. Far fewer evaluations report information on the second effect. Still fewer evaluations report information on the third effect and almost no evaluations study or report findings on the fourth effect.

Line (1) on the standardized cost-benefit tables shows information for the first and second effect sizes. The first is a yes/no measure of crime that asks a basic question: What is the difference in simple criminal behavior rates between treatment and control (or comparison) groups? The effect size calculation procedure used by the Institute follows Cohen's arcsine transformation of the difference between proportions.[6]

(1)
$$ES_p = 2 \times \text{asin} \sqrt{P_{exp}} - 2 \times \text{asin} \sqrt{P_{con}}$$

In this formula, ES_p is the estimated effect size for the difference between proportions from the research information; P_{exp} is the percentage of the population that offended (or re-offended) for the experimental or treatment group; and P_{con} is the percentage of the population that offended (or re-offended) for the control or comparison group.

On line (1) of the Adult Basic Education example, the bivariate effect size is illustrated. In this example the Institute has calculated an effect size of -.09 for typical Adult Basic Education programs. As will be discussed, this estimated effect size is based on research findings reviewed by the Institute. The effect size in equation (1) is the most commonly reported statistical measure for most program evaluations. In fact, most program evaluations only report the information necessary to calculate the effect size in equation (1).

The second effect size calculation, also shown on line (1), involves the mean differences in offenses *for those who offend (or re-offend)*. While the first effect size simply divides offenders and non-offenders, the second effect size measures the effect, if any, that a program has in lowering the average number of offenses *of those that offend*. Many program evaluations fail to analyze or report this information. When an evaluation does report the necessary information for this second effect size calculation, the Institute uses the procedure for Cohen's *d*, the difference between means.[7]

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[6] Cohen, Jacob, (1988), *Statistical Power Analysis for the Behavioral Sciences, Second Edition*. Hillsdale, New Jersey: Lawrence Erlbaum, Chapter 6.
[7] *Ibid.*, Chapter 2.

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$$ES_m = \frac{M_{exp} - M_{con}}{\sqrt{\dfrac{SD_{exp}^2 + SD_{con}^2}{2}}}$$

(2)

In this formula, ES_m is the estimated effect size for the difference between means from the research information; M_{exp} is the mean number of offenses for those who offend (or re-offend) for the experimental group; M_{con} is the mean number of offenses for those who offend (or re-offend) for the control group; SD_{exp} is the standard deviation of the mean number of offenses for those who offend (or re-offend) for the experimental group; and SD_{con} is the standard deviation of the mean number of offenses for those who offend (or re-offend) for the control group.

To continue the Adult Basic Education example, on line (1) the Institute has assumed no effect for ES_m. That is, in our review of the literature, we found no evidence that Adult Basic Education programs can lower the average number of re-offenses of those who re-offend. Perhaps Adult Basic Education programs can lower the average number of re-offenses, but we found no rigorous studies that evaluated this effect.

As noted, in addition to the two effect sizes shown on line (1), the Institute's cost-benefit model can also use two other findings from program evaluations when they are available. The first concerns the types of offenses and the second is the timing of the offenses. Since so few studies report information for these two factors, they are not reported on the standardized cost-benefit tables in Section IV.

For both of the effect sizes shown on line (1)— ES_p and ES_m —the Institute's conclusions are derived from the relevant evaluation literature. In the standardized formats in Section IV, citations are listed for each study reviewed to derive these estimates. In the ABE example, the Institute found eight published studies testing whether adult basic education programs can reduce future criminal recidivism. For each study, we collected information on what the program did; the quality of the research design and its execution; the effect sizes from the research results; the statistical significance of the findings; and other information including recidivism measures used, length of follow-up, and sample sizes.

To rate the research design and its execution, the Institute applies the 5-point scaling system developed by researchers at the University of Maryland.[8] Within each program area, we order the evaluations using this ranking. On the University of Maryland scale, a rating of:

- **5** indicates an evaluation with well-implemented random assignment to a treatment group and a control group that does not receive the treatment/program. The most confidence can be placed in level "5" studies.

- **4** requires an analysis of comparable treatment and comparison groups, controlling with rigorous statistical methods for factors other than participation that may influence

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[8] Sherman, L., Gottfredson, D., MacKenzie, D., Eck, J., Reuter, P., Bushway, S., (1997*), Preventing Crime, What Works, What Doesn't, What's Promising*, Washington: U.S. Department of Justice, Chapter 2.

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.15	S***	Harer, M.D. (1995). "Prison Education Program Participation and Recidivism: A Test of the Normalization Hypotheses." Federal Bureau of Prisons, Office of Research and Evaluation: Washington, DC. The research tested the effect of a variety of educational programs, including ABE, on offenders released from federal prison. Recidivism measure was arrest or parole revocation with a 3-year follow-up. Sample size: 619, total.
4	-0.09	S*	Harer, M.D. (1994). "Recidivism Among Federal Prisoners Released in 1987." Federal Bureau of Prisons, Office of Research and Evaluation: Washington, DC. Recidivism measure was arrest or parole revocation with a 3-year follow-up. Sample size 865, total.
3	-0.17	S**	Piehl, A. M., (1995). "Learning While Doing Time," John F. Kennedy School of Government, Harvard University: Cambridge, MA. The study tested whether the recidivism of male inmates in Wisconsin was reduced by those completing basic education in prison. Recidivism measure was readmission to prison with a 3-year follow-up. Sample size: 1,473, total.
2	N/A	N/A	Ohio Department of Rehabilitation and Correction (1995). "Evaluation of the Inpact of Correctional Education Programs on Recidivism." Dept. of Rehabilitation and Correction, October 1995. This research tested for the effect of a GED program only. Recidivism measure was reincarceration with a 2-year follow-up.
2	N/A	N/A	Walsh, A. (1985). "An Evaluation of the Effects of Adult Basic Education on Rearrest Rates Among Probationers." Journal of Offender Counseling, Services, and Rehabilitation, 9: 69-76. The study evaluated the effect of a GED program on male adult probationers. Recidivism measure was rearrest with a 3.5 year follow-up.
2	N/A	N/A	Porporino, F.J. & Robinson, R. (1992). "The Correctional Benefits of Education: A Follow-Up of Canadian Federal Offenders Participating in ABE." Journal of Correctional Education 43(2): 92-98. The study monitored the re-admissions of adult offenders who had been ABE participants. Recidivism measure was readmission to prison with a 1.1 year follow-up.
2	N/A	N/A	Adams K., Bennett, T., Flanagan, T.J., Marquart, J., Cuvelier, S., Fritsch, E.J., Gerber, J., Longmire, D., & Burton, V. (1994). "A Large-Scale Multidimensional Test of the Effect of Prison Education Programs on Offender Behavior." The Prison Journal 74: 433-449. This study examined the postrelease recidivism of inmates released from Texas prisons who received educational programming. Recidivism measure was reincarceration with a 2-year follow-up.
2	N/A	N/A	Stevens, R.D. (1986). "The Effect on Recidivism of Attaining the General Education Development Diploma." Journal of Offender Counseling, Services, and Rehabilitation (October): 3-9. The study examined males released from Georgia prison who participated in GED programs. Recidivism measure was reincarceration with a 2-year follow-up.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

outcomes. A level 4 study may also have a random assignment design that had problems in implementation.

- **3** involves a comparison between two or more groups, one that receives and one that does not receive the treatment/program. Level 3 studies often employ less rigorous statistical control procedures.

- **2** involves a comparison between two or more groups, one receiving and one not receiving the treatment/program, however, one group lacks comparability to the other.

- **1** involves a study where no comparison group is utilized. Instead, the relationship between a program and an outcome, i.e., recidivism, is analyzed.

We do not list programs rated as a "1" on the Maryland scale, because they do not include a comparison group and thus there is no context to judge program effectiveness. We also regard evaluations with a rating of 2 as highly problematic. While we list level 2 studies in our tables, we do not consider their findings in our cost-benefit calculations.

The University of Maryland scale is a useful and simple way to categorize studies, but it must be stressed that additional factors need to be considered in assessing the usefulness of a particular study. For example, even though two studies might each earn a level 5 rating, one study may have significantly more subjects or use a longer follow-up period for the recidivism measure. In the end, a degree of informed judgment is required to determine how much confidence to place in a particular evaluation.

Aggregating the Results of Several Studies: Weighting Assumptions. For a given program area, such as Adult Basic Education, the Institute considers the empirical findings from all studies with a rating of 3, 4, or 5. In developing an assumed effect size for a program area, such as the -.09 for the Adult Basic Education example, an explicit weighting is assigned to the results of individual studies of different quality. This weighting process means that a level 5 study has more influence on the overall score than does a level 3 or 4 study. The following are the weights the Institute assigned to studies of different quality:

- A level 5 study carries a weight of 1.0 (that is, there is no discounting of the study's evaluation outcomes).
- A level 4 study carries a weight of .75 (that is, we discount effect sizes by 25 percent).
- A level 3 study carries a weight of .50 (that is, we discount effect sizes by 50 percent).
- A level 2 study carries a weight of .00 (that is, we discount effect sizes by 100 percent).
- A level 1 study carries a weight of .00 (that is, we discount effect sizes by 100 percent).

As noted earlier, studies with a level 1 or 2 rating are not used in the cost-benefit analyses, hence their weights are zero. A level 3 study carries half the weight of a level 5 study and a level 4 study has three-quarters of the weight. These weights are subjective; they are based on the Institute's general impressions of the confidence that can be placed in the predictive power of studies of different quality. It might be possible to undertake a meta-analysis to refine, in a more empirical fashion, the relative effect that research quality, as measured with the Maryland scale, has on recidivism outcomes. That research has yet to be done.

For the Adult Basic Education example, the effect sizes for basic recidivism for the two level 4 studies receive a weight of .75 while the one level 3 study receives a weight of .5, producing a combined average effect size of -.09 for the three Adult Basic Education studies.

The Institute's cost-benefit model is designed so that the user can also supply effect size values on line (1) other than those calculated using the just-described mechanical process. The reasons for this "user-override" can vary. The user may determine that the quality of

the research design in the original evaluation study greatly limits the transferability of its conclusions, or that the particular outcome measured in the evaluation has only marginal usefulness to understanding how effective the program would be in Washington. This feature of the model allows the analyst to insert explicitly his or her own judgment into the calculation of expected program effectiveness. The sensitivity of program outcomes can also be tested with this modeling procedure.

Lines (2) through (5), Expected Criminal Behavior Effects

Line (2) on the standardized cost-benefit tables presents an estimate of the long-term criminal offense rates (that is, recidivism rates for programs aimed at offenders)—*without the program*. These rates vary for different populations. They reflect the Institute's best estimate of the long-term criminal behavior of different populations to which a particular program might be applied.

There are several sources for the information reported on line (2). For many programs targeted at juvenile or adult offenders, our estimates are calculated from multi-year recidivism studies of different populations in Washington. For example, the rates for adult offender populations are based on an analysis the Institute conducted of how often different types of offenders committed to the Washington Department of Corrections are re-convicted for new felony offenses in Washington. For the adult corrections population, the Institute's recidivism analysis tracked, for eight years, the entire cohort of those released from prison or placed on community supervision in 1990. The Institute has calculated similar recidivism statistics for different types of juvenile offender populations in Washington. The Appendix to this report lists the results of these recidivism studies.

From these longitudinal studies, the Institute calculates four types of information about recidivism that correspond to the four effect sizes discussed previously. The first is a simple bivariate split between those that re-offend, and those that do not. The second type of information is the average number of felony re-convictions of those who do re-offend. The third is a distribution on the type of felonies committed by the re-offenders. The Institute uses six categories of felonies in its cost-benefit model: homicide, sex offenses, robbery, aggravated assault, property offenses, and drug offenses.[9] The fourth type of recidivism information is the timing of the re-offenses over the multi-year follow-up period.

On line (2), two of the four recidivism measures from the Institute's analysis of Washington's adult corrections population are shown: the percent that re-offend and the average number of offenses of the re-offenders.[10] In the Adult Basic Education example, 53.0 percent of the population for whom the program might be applied can be expected to re-offend with a new felony conviction after an eight-year follow-up period. Line (2) also indicates that the re-offenders in this population can be expected to have an average of 2.21 new felony re-convictions during the eight-year follow up period.

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[9] These six categories of felony crime are the major crime categories used by the Washington Office of Financial Management.

[10] The other two recidivism parameters (the type of re-offense and the timing of the re-offenses) are used directly in the model to determine the value of lowering crime by one unit—see the discussion of Line (6) in this section. For the ABE program, the Institute's recidivism analysis was limited to all adult offenders released from prison in 1990 who were not sex offenders. Sex offenders were excluded because they would not typically be eligible for an ABE program.

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Line (3) applies the research-based effect sizes from line (1) to the re-offending statistics on line (2) to estimate the change in re-offending that can be expected with the program.[11] These calculations are the inverse of the arcsine transformation (for the bivariate offense measure, equation (1)) and the difference-in-means statistic (for the number of re-offenses for those who re-offend, equation (2)).

$$(3) \qquad P_{prog} = \sin\left(\text{asin}\sqrt{P_{base}} + \frac{ES_p}{2}\right)^2$$

In this formula, P_{prog} is the percentage of the population with the program expected to offend (or re-offend); P_{base} is the percentage of the relevant Washington population expected to offend (or re-offend) without the program; and $ES_{p,}$ from equation (1), is the effect size for the difference between proportions from the experimental research data.

$$(4) \qquad M_{prog} = ES_m \times SD_{base} + M_{base}$$

In this formula, M_{prog} is the mean number of offenses of those that offend (or re-offend) for the group given the program; ES_m, from equation (2), is the effect size for the difference between means from the experimental research data; M_{base} is the mean number of offenses (or re-offenses) of those that offend for the relevant Washington population for whom the program would be given; SD_{base} is the standard deviation of the mean number of offenses of those that offend (or re-offend) for the relevant Washington population for whom the program would be given.

In the Adult Basic Education example, the numbers on line (3) indicate that the bivariate recidivism rate would drop from 53.0 percent to 48.7 percent with the research-based -.09 effect size. And, since the Institute found a zero effect size for the mean number of re-offenses for the re-offenders, the average number of re-convictions per re-offender is expected to stay the same.

The two re-offense numbers on lines (2) and (3) are then multiplied to produce the expected number of offenses per program non-participant or participant—the third number shown on each line.

Line (4) reports the simple percentage change between the information on lines (2) and (3). Line (5) is the pre-adjustment difference between the expected number of offenses per program participant (from line (2) and line (3)).

Three Adjustments to line (5).   In lines (5a), (5b), and (5c), the Institute records three possible adjustments to the information on line (5). The first adjustment, on line (5a), is used in those situations when the offenses estimated on line (5) include non-felony criminal offenses. The Institute's cost-benefit model estimates the costs to taxpayers and crime victims of felony crime; our model does not estimate values for non-felony crime.

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[11] See, for example, Lipsey, M. W., & Wilson, D. B., (1998) "Effective Intervention for Serious Juvenile Offenders" in Loeber, R & Farrington, D. P., *Serious & Violent Juvenile Offenders, Risk Factors and Successful Interventions,* Thousand Oaks: Sage Publications, Chapter 13. Lipsey and Wilson demonstrate the application of effect sizes from experimental research to base recidivism rates for populations.

Occasionally, the information on line (5) will include felony and non-felony crime. In these instances, the adjustment on line (5a) is used to reduce the number of offenses on line (5) by estimating the proportion that are felonies. For the Adult Basic Education example, no adjustment is made (that is, the factor on line (5a) is 100 percent) since the units on line 5 are already estimated as felony re-convictions.

For other programs, however, adjustments are necessary. For example, the number on line (5) for the Perry Pre-School program is expressed as the total number of arrests that the program is able to reduce. In this case, the Perry Pre-School evaluation reported that 38 percent of the total number of arrests for both the treatment and control groups were felonies. Therefore, line (5a) for Perry Pre-School is 38 percent.

The second adjustment, recorded on line (5b), is used to extend the follow-up period for evaluating the stream of expected benefits. Different evaluations have different follow-up periods to measure program effects; most use a one- or two-year follow-up period while only a few use long-term follow ups. In evaluating the estimated costs and benefits of alternatives, however, it is important to estimate benefits over some defined period. In this way, the economics of one program can be compared directly to those of another. This is especially important for criminal justice interventions because, in general, money is spent up front on a program and then, to the degree the program works, benefits come over time as crime is avoided. It is necessary, therefore, to go beyond the usually short follow-up employed in most evaluations in order to capture a more reasonable estimate of long-term benefits to compare to the up-front costs.

In the cost-benefit model, the calculation of these extension factors involves a two-step process. First, uniform cut-off ages are selected for juvenile and adult programs. For all programs for youth, the extension cut-off age is set to 30 years of age. That is, based on the research record, any reduced crime that an intervention is expected to generate is extended to the age of 30. For adult offender programs the cut-off age is set at 50.

The second step involves applying a specific factor to the maximum age from the research findings, to the cut-off age for the extension period. In the cost-benefit model, these factors are based on either annual felony arrest probabilities by single year of age, or annual felony conviction probabilities by single year of age. These two distributions are calculated with state-wide Washington felony arrest and conviction data for 1996. The felony arrests or convictions for each year in these distributions are then divided by the corresponding Washington population in 1996. Cumulative distributions are then summed and the factor between any two ages were calculated.

For example, suppose the effects of a particular juvenile offender program are estimated to the age of 21. Then the model calculates the difference in the cumulative conviction curve between the ages of 21 and 30 (the cut-off age chosen for juvenile programs). The result is .616. This means that we would expect that the amount of offending by age 30—that has been exhibited by age 21—is 61.6 percent. This factor is then used (via division) to estimate the additional criminality that can be avoided between the ages of 21 and 30 for a researched program. Clearly it would be better to have actual longitudinal research data for the program rather than having to estimate the long-term effects. Most research studies, however, do not have the luxury of long-term follow-ups. It would also be a mistake to assume that all the benefits end after some short period of time. The method the Institute's cost-benefit model uses is meant to be a way to provide reasonable estimates of some of the future benefits.

The third adjustment, listed on line (5c), is a user-supplied value that provides the opportunity to reduce the overall expected effectiveness of an intervention. The main reason for this reduction is that many programs that are evaluated are experimental in nature. Often the programs are designed and evaluated by the same researcher, which may also limit the transferability of the results to a new setting. Whether or not small-scale programs can achieve the same results when brought up to a statewide scale is an open question. In these situations, quality control is a significant challenge. Therefore, the adjustment on line (5c) provides a way to scale down the overall reduction in the amount of crime that a program is expected to reduce. In the Adult Basic Education example, the expected effectiveness was not reduced since the evaluations, from which the effect sizes were calculated, were done on actual "real world" Adult Basic Education programs.

Line (5d) reports the adjusted number of criminal offenses, per person, expected with the program. The calculation takes the unadjusted finding in line (5), multiplies by line (5a), divides by line (5b), and multiplies by line (5c). In the Adult Basic Education example, the net effect of these three adjustments is to reduce the number of criminal offenses (per person) expected with the program from .10 in line (5) to .11 in line (5d).

Lines (6) through (8), Taxpayer Costs of <u>One</u> Felony Offense

Line (6) on the standardized cost-benefit tables reports the Institute's estimated value to taxpayers of lowering the level of crime by one unit. The value is an estimate of the marginal operating and capital costs of one felony offense, estimated over the long run, expressed in present-valued dollars.

The Institute's model computes values for three measures of felony offenses: self-reported offenses, arrests, and convictions. From a taxpayer's perspective there is a different value for each of these events since there is a different probability that taxpayer dollars will be incurred for each event. Taxpayer costs for convictions are higher since, at this stage of the system, expensive criminal justice resources are likely to be used. The taxpayer value of a felony arrest is smaller since only a portion of felony arrests result in convictions and the related criminal justice costs associated with convictions. Self-reported felony offenses have a smaller taxpayer value than either arrests or convictions because self-reported offenses have an even smaller chance of resulting in an arrest and a conviction. In evaluating a program with the Institute's cost-benefit model, information is used to determine the type of criminal offense that is being measured (self-reported offenses, arrests, or convictions) and the corresponding taxpayer value is then reported on line (6). A full description of the steps to calculate these three important values can be found in the Appendix to this report.

The value on line (6) reflects the estimated marginal costs at each step of Washington's criminal justice system. These costs are aggregated into one number based on the current sentencing laws and practices in Washington, and based on the re-offense probabilities from the recidivism analyses described for line (2), above. That is, if a person is re-convicted for one felony, the taxpayer costs of that event will depend on the probability that the conviction is for one of six types of felonies (homicide, sex offenses, robbery, aggravated assault, property offenses, or drug offenses). Additionally, because the value reported on line (6) is in present value terms, information is also used from the recidivism analysis on the timing of the expected re-offenses over the multi-year follow-up period. Again, the Appendix describes how these calculations are made.

Line (7) is a factor used by the Institute to be conservative in estimating taxpayer benefits. The premise behind the Institute's cost-benefit model is that if the number of criminal justice events are reduced (arrests or convictions), then incremental taxpayer costs for the criminal justice system will also be reduced. There is a strong reason to believe that this is the case. The state legislature and county commissioners tend to budget by workload measures. For example, when the average daily population of the Department of Corrections (DOC) changes, so too does the amount of money allocated to DOC by the legislature. The marginal cost estimate on line (6) is based on empirical evidence that criminal justice costs at all levels of the system do follow workloads. Since there is competition for scarce public funds in the budgetary process—between different areas of government as well as the alternative of lowering taxes—there is every reason to believe that the value on line (6) reasonably reflects what will happen to criminal justice costs when workload goes up, *or down*.

Some have noted, however, that criminal justice costs increase with workload increases but may not fall as fast (or at all) when workload decreases; that is, that the cost function is not symmetrical. While we have not found empirical support for this position, the marginal costs developed by the Institute (as summarized on line (6)), were estimated for time periods when criminal justice system costs were generally increasing. Additionally, some observers have noted that, for some offenses, if crime is reduced initially there may not be a permanent reduction in crime. An frequently-given example of this is drug sales. A program may be able to reduce the number of drug sellers but, as long as there is a continuing demand for drugs, other drug sellers will be enticed into the market. In these situations, the benefits to taxpayers of a program that reduces drug sellers will be diminished because new sellers will enter the market, be caught and sentenced at some rate, and can result in no net downward effect on criminal justice costs.

So while we believe that the criminal justice cost function is symmetrical, there are some reasons to believe that if a program reduces criminal justice workloads, budget-makers will not, or may not be able to, reduce costs by a commensurate amount. Thus, the factor on line (7) is an arbitrary percentage reduction in the taxpayer value of reducing crime. We think there is a good case for setting this factor at zero; that is, to make no arbitrary reduction in the value of reducing crime shown on line (6). But, as a conservative assumption, and to avoid the chance that taxpayer benefits could be overstated, the factor on line (7) is set to 25 percent. This conservative assumption means that only three-quarters of the estimated benefits (shown on line (6)) are forwarded to taxpayers when crime goes down.

For the Adult Basic Education example, another way of saying this is that when felony convictions go up by one, we have strong empirical support to conclude that criminal justice costs go up by $40,453, the amount shown on line (6). But, to be conservative, when felony convictions go down by one, we are only assuming that costs go down by $30,340 (the amount shown on line (8)).

Lines (9) through (13), Program Costs and Benefits, Taxpayer's Perspective

Line (9) on the standardized cost-benefit tables shows the estimated reduction in criminal justice system costs per program participant. These are the benefits that taxpayers can expect to see when a program works to the degree assumed. It is derived by multiplying the expected reduction in offenses per program participant (line (5)) times the criminal justice system costs avoided for one felony offense (line (8)).

Line (10) reports the estimated incremental cost—per program participant—of a program. A full description of the steps necessary to calculate this value can be found in the appendix to this report.

Line (11) is the expected net taxpayer gain (or loss) from the program. It is derived by subtracting line (10) from line (9).

Line (12) reports a commonly used benefit-cost ratio. The present value of the benefits per program participant on line (9) are divided by the present value of the costs on line (10). Thus a value of 1.0 on line (12) means that for every dollar taxpayers spend on the program, they get back one dollar in benefits. If the ratio is over 1.0, taxpayers get a net benefit. For example, a ratio of 1.75 means taxpayers receive $1.75 in benefits for every $1.00 in costs. A ratio less than 1.0 means the taxpayer is worse off. For example a ratio of .56 means for every dollar spent on the program by taxpayers, they only get 56 cents back.

For the Adult Basic Education program, the average cost per Adult Basic Education participant is estimated at $1,888. The reduction in subsequent crime produces expected taxpayer savings of about $3,220. Therefore, the taxpayer receives, on average, $1,322 in net benefits for each person that participates in the Adult Basic Education program. Another way of saying this is that for each dollar spent on Adult Basic Education, the taxpayer gets $1.71 in criminal justice system savings.

Line (13) calculates a break-even statistic. A useful feature of the Institute's model is that "reverse engineering" calculations are possible. A break-even level for a program can be estimated by determining the amount of crime that a program needs to reduce in order to break-even with taxpayers. This can be calculated by dividing the cost of the program by the product of the expected number of offenses per person in the non-program population and the cost avoided for one felony offense (line (10) / (line (2) X line (5a) X (1-line (5c) / line (5b) X line (8))).

In the Adult Basic Education example, the program cost on line (10) is $1,888 per program participant. The base population is expected to be re-convicted for 1.17 felonies per person, as shown on line (2), and the three adjustments on lines (5a), (5b), and (5c), are 100%, 89.8%, and 0%, respectively. The avoided criminal justice cost per reduced conviction is estimated at $30,340, shown on line (8). Therefore, in order for Adult Basic Education to break-even from a taxpayer's perspective, the program needs to achieve a 4.8 percent reduction the number of convictions (1,888 / (1.17 X 1 X (1-.0) / .898 X 30,340)). This is a useful number to know when designing a program; it helps set a threshold value for expected program success.

The Institute's cost-benefit model also calculates two additional financial statistics (not shown on the summary tables): the internal rate of return on investment, and the number of years its takes for the taxpayer's investment to be paid back. Both of these calculations are derived from the basic series of cash flows estimated in the model. The internal rate of return is calculated using Microsoft Excel 97's *IRR* function. The present value cost of the program is offset against the annual stream of benefits of reducing crime. Excel calculates the internal rate of return from this series of negative and positive cash flows. For the payback statistic, the annual discounted benefits are cumulated from year one forward. When the cumulative sum of benefits is greater than or equal to the cost of the program, the year in which the up-front cost is paid back is recorded.

Lines (14) through (17), Crime Victim Benefits

In addition to costs paid by taxpayers, many costs of crime are borne by victims. Some victims lose their lives. Others suffer direct, out-of-pocket, personal or property losses. Psychological consequences also occur to crime victims, including feeling less secure in society. The magnitude of victim costs is very difficult—and in some cases impossible—to quantify.

In recent years, however, national studies have taken significant steps in estimating crime victim costs. One U.S. Department of Justice study by Miller, Cohen, and Wiersema[12] divides crime victim costs into two types: a) *Monetary* costs which include medical and mental health care expenses, property damage and losses, and the reduction in future earnings incurred by crime victims; and b) *Quality of Life* cost estimates which place a dollar value on the pain and suffering of crime victims. In that study, the quality of life victim costs are computed from jury awards for pain, suffering, and lost quality of life; for murders, the victim quality of life value is estimated from the amount people spend to reduce risks of death. The quality of life victim cost calculations are controversial for use in setting public policy.[13]

In the Institute's analysis, victim costs from the Miller, Cohen, and Wiersema study are used as estimates of per-unit victim costs in Washington State. The victim cost estimates currently in the model are described in the Appendix to this report.

In keeping with the Miller, Cohen, and Wiersema study, victim costs in the Institute's cost-benefit model (see the Appendix) are subdivided into *Monetary* and *Quality of Life* estimates. When the Institute's cost-benefit model is used, we report only the monetary victim costs since they are usually regarded as a more conservative and less speculative estimate of victim costs. The addition of quality of life cost estimates would offer a more expansive definition of victim costs.

For the Adult Basic Education example, line (14) reports the monetary crime victim benefits of avoiding one felony conviction is estimated at $12,315 (see the Appendix for the derivation of this value). When this value is multiplied by the –0.11 reduced felonies per typical Adult Basic Education participant, the expected benefits are $1,307 in monetary crime victim benefits (line (15)). When these benefits are added to the taxpayer benefits of $3,220 (from line (9)), the cumulative benefit becomes $4,528, as shown on line (16). Dividing this value by the cost of the program (from line (10)) produces a total benefits per dollar cost ratio of $2.40, as reported on line (17).

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[12] Miller, Ted R., Mark A. Cohen, Brian Wiersema, *Victim Costs and Consequences: A New Look,* Research Report, Washington DC: National Institute of Justice, 1996.

[13] See, for example, Clear, Todd R., "The Cost of Crime—Or Are Prisons or Community Programs the Best Crime Prevention Investment?," *Community Corrections Report*, November/December 1996, Volume 4, No. 1.

SECTION IV: DETAILED ESTIMATES OF PROGRAM EFFECTIVENESS AND COSTS AND BENEFITS

This section presents the Institute's research findings on the effectiveness of programs in reducing recidivism as well as information on the costs and benefits of the programs. The results for each area are presented using a standardized format (Section III describes the format of the tables in this section).

Perry Pre-School: Findings

This program provided early childhood education to disadvantaged children to improve their later school and life performances. The goal was to overcome school failure associated with childhood poverty by promoting the intellectual, social, and physical development of young children. By increasing academic success, the program sought to improve employment opportunities and wages, decrease crime, teenage pregnancy, and welfare use. The program was aimed at low socio-economic families with children ages three and four. Perry Pre-school was a two-year intervention that operated 2.5 hours per day, five days per week, seven months per year, and included weekly home visitations by teachers. The Perry Pre-School operated in the 1960s in Ypsilanti, Michigan. Its most recent evaluation reported on the life-outcomes of participants at age 27.

After reviewing the evaluation of Perry Pre-School, the Institute found an effect size of about -.26 for basic crime outcomes. Overall, taxpayers gain approximately $9,237 in subsequent criminal justice costs for each program participant. In 1998 dollars, the program cost $13,938 per child. Therefore, taxpayers receive $0.66 in criminal justice system benefits for every dollar spent. Crime victims save an average of $11,717 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.50 for every dollar spent.

Line	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Arrested*	X	Of Those Arrested, the Average Number of Arrests*	=	Number of Arrests Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)*	- 0.26 ES		- 0.19 ES		
	Expected Felony Crime Effects					
(2)	Without the Program:*	69.2%	X	6.64	=	4.60
(3)	With the Program (from Effect Sizes):*	56.9%	X	4.18	=	2.38
(4)	Percentage Change:*	-17.8%		-37.1%		-48.3%
(5)	Reduction in Arrests per Program Participant:*					**-2.22**
(a)	Adjustment: felony arrests as percent of total arrests measured:*					38.0%
(b)	Adjustment: extension of follow-up period from age 27 to age 30:*					91.3%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony arrests per person:***					**-0.69**
	Taxpayer Costs for <u>One</u> Felony Arrest					
(6)	Criminal Justice System Costs for <u>One</u> Felony Arrest:**					$17,763
(7)	Adjustment: percentage reduction in the avoided costs of one felony arrest:					75%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Arrest:***					**$13,322**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$9,237**
(10)	Cost of the Program per Program Participant:					**-$13,938**
(11)	Net Gain (Loss) per Program Participant:					**-$4,701**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.66**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-72.8%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Arrest:**					$16,900
(15)	Crime Victim Benefits per Program Participant:***					**$11,717**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$20,954**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$1.50**

*Arrests by age 27. The adjustment in line 5(a) taken from the reported results in the Perry Pre-School evaluation at age 27. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	-0.20	S**	Schweinhart, L. J., Barnes, H. V., & Weikart, D. P. (1993). Significant Benefits: The High/Scope Perry Preschool Study through age 27. Ypsilanti, MI: High/Scope Press. The outcome measure is arrests. Sample size: 58 (T), 65 (C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Syracuse Family Development Research Program: Findings

The Syracuse Family Development Research Program (FDRP) was a five-year program in the early 1970s for low income, mostly single parent, families, providing pre-natal care, weekly home visits, parent training, child care, and nutrition. FDRP sought to bolster child and family functioning and interpersonal relationships. The intervention targeted African American, single-parent, low-income families to improve the children's cognitive and emotional functioning, foster children's positive outlooks, and decrease juvenile delinquency. The mothers were young (18 years on average), had little or no work history, and were in the last trimester of their first or second pregnancy.

After reviewing the evaluation of FDRP, the Institute found an effect size of about -.54 for basic crime outcomes. Overall, taxpayers gain approximately $8,613 in subsequent criminal justice costs for each program participant. In 1998 dollars, the program cost $45,092 per child. Therefore, taxpayers receive $0.19 in criminal justice system benefits for every dollar spent. Crime victims save an average of $6,875 in costs for each program participant, for a combined taxpayer and crime victim benefit of $0.34 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Adjudicated*	X	Of Those Who Offended, the Average Number of Adjudications*	=	Number of Adjudications Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)*	- 0.54 ES		- 0.35 ES		
	Expected Felony Crime Effects					
(2)	Without the Program:*	14.8%	X	1.25	=	0.19
(3)	With the Program (from Effect Sizes):*	1.5%	X	1.00	=	0.02
(4)	Percentage Change:*	-89.6%		-20.0%		-91.7%
(5)	Reduction in Adjudications per Program Participant:*					**-0.17**
(a)	Adjustment: felony adjudications as percent of total adjudications measured:*					60.0%
(b)	Adjustment: extension of follow-up period from age 15 to age 30:*					17.7%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.43**
	Taxpayer Costs for One Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$26,609
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					75%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction:***					**$19,956**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$8,613**
(10)	Cost of the Program per Program Participant:					**-$45,092**
(11)	Net Gain (Loss) per Program Participant:					-$36,480
(12)	Criminal Justice System Benefits per Dollar of Cost:***					$0.19
(13)	Percent Reduction in Offenses Needed to Break Even:***					-480.1%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$15,929
(15)	Crime Victim Benefits per Program Participant:***					**$6,875**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$15,487**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$0.34**

*Adjudications (i.e.convictions) by age 15. The adjustment in line (5a) taken from the reported evaluation results. The adjustment in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Syracuse Family Development Research Program (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
3	-0.54	S***	Lally, J. Ronald, Mangione, Peter L., Honig, Alice S. (1987). The Syracuse University Family Development Research Program, Long-Range Impact of an Early Intervention with Low-Income Children & Their Families. San Francisco: Far West Laboratory for Educational Research and Development. The outcome measure is adjudications in juvenile court. Sample size: 65 (T), 54 (C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Nurse Home Visitation: Findings

The Nurse Home Visitation program consists of intensive and comprehensive home visitation by nurses during a woman's pregnancy and the first two years after birth. The goal is to promote the child's physical, cognitive, and social-emotional development, and to provide general support and instructive parenting skills to the parents. The program is designed to serve low-income, at-risk pregnant women bearing their first child. (continued on the next page)

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		
	Program Effectiveness Findings: The Mothers	
(1)	Research-Based Effect Sizes (ES)*	**- 0.65 ES**
	Expected Crime Effects: The Mothers	
(2)	Without the program, the number of convictions per program participant, 15-year follow up*	0.69
(3)	With the program, the number of convictions per program participant, 15-year follow up*	0.13
(4)	Percentage change:	-81.2%
(5)	Reduction in convictions per program participant:	**-0.56**
(5a)	Adjustment: felony convictions as percent of total convictions:**	25.0%
(5b)	Adjustment: extension of follow-up period from age 33 to age 50:**	80.6%
(5c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*	25.0%
(5d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***	**-0.13**
	Taxpayer Costs in Washington for One Felony Conviction	
(6)	Criminal justice system costs for one felony conviction:***	$31,186
(7)	Adjustment to avoid overstating the costs of one felony conviction:**	25%
(8)	Criminal justice system costs avoided for one felony conviction:****	**$23,389**
	Program Effectiveness Findings: The Children	
(9)	Research-Based Effect Sizes (ES)*	**- 0.44 ES**
	Expected Crime Effects: The Children	
(10)	Without the program, the number of self-reported arrests per program participant by age 15*	0.45
(11)	With the program, the number of self-reported arrests per program participant by age 15*	0.20
(12)	Percentage change:	-55.6%
(13)	Reduction in arrests per program participant:	**-0.25**
(13a)	Adjustment: felony arrests as percent of total arrests:**	38.0%
(13b)	Adjustment: extension of follow-up period from age 15 to age 30:**	28.1%
(13c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*	25.0%
(13d)	Adjusted effect: the reduction in the expected number of felony arrests per person:***	**-0.25**
	Taxpayer Costs in Washington for One Felony Arrest	
(14)	Criminal justice system costs for one felony arrest:***	$16,318
(15)	Adjustment to avoid overstating the costs of one felony arrest:**	25%
(16)	Criminal justice system costs avoided for one felony arrest:****	**$12,238**
	Program Costs and Benefits (Mothers and Children), Taxpayer's Perspective	
(17)	Criminal justice system benefits per program participant:****	**$6,155**
(18)	Cost of the program per program participant:*	**-$7,403**
(19)	Net gain or loss per program participant:	**-$1,248**
(20)	Criminal justice system benefits per dollar of cost:****	**$0.83**
	Crime Victim Benefits	
(21)	Monetary (tangible) crime victim benefits for one felony conviction--the mothers:***	$9,879
(22)	Monetary (tangible) crime victim benefits for one felony arrest--the children:***	$15,465
(23)	Crime victim benefits per program participant:****	**$5,215**
(24)	Crime victim benefits plus criminal justice system benefits per program participant:****	**$11,369**
(25)	Criminal justice system and crime victim benefits per dollar of cost****	**$1.54**

*These are results from the experimental research; see the next page.

**Ratios estimated by the Institute.

***Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

****Line(5d)=line(5) X line(5a) / line(5b) X (1-line(5c)); line(8)=line(6) X (1-line(7)); line(13d)=line(13) X line(13a) / line(13b) X (1-line(13c));
line(16)=line(14) X (1-line(15)); line(17)=line(5d) X line(8) + line(13d) X line(16); line(20)=line(17) / line(18) X -1;
line(23)=line(21) X line(8) + line(22) X line(16); line(24)=line(17) + line(23); line(25)=line(24) / line(18) X -1.

The program helps women plan future pregnancies, educational achievement, and participation in the work force. Typically, a nurse visitor is assigned to a family and works with that family through the duration of the program. Treatment begins during pregnancy, with an average of eight one-hour visits, and continues postpartum with visits diminishing in frequency. The evaluation found successful outcomes when the program assisted unmarried, low income, higher-risk women. Follow-up at 15-years postpartum showed significant effects on child abuse and neglect, subsequent pregnancies, welfare dependence, behavior problems due to substance abuse, and criminal behavior by the mothers and their children. The Institute's cost-benefit analysis, calculated for this higher risk group, estimates the crime-related benefits from the program's effects on the nurse-visited mothers as well as their children.

Overall, taxpayers gain approximately $6,155 in subsequent criminal justice costs for each program participant. The program is estimated to cost $7,403 (in 1998 dollars) per program participant. Therefore, taxpayers receive $0.83 in criminal justice system benefits for every dollar spent. Crime victims save an average of $5,215 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.54 for every dollar spent.

Research Design	Indicative Effect Size	Stat. Sig.	**Studies Reviewed for Criminal Outcome Effects**
5	-0.44	S**	Olds, David L., Henderson Jr., Charles R, Cole, Robert, Eckenrode, John, et. al. (1998). "Long-term effects of nurse home visitation on children's criminal and antisocial behavior: 15-year follow-up of a randomized controlled trial." JAMA: Journal of the American Medical Association, 10/14/98, 280(14). This result is for self-reported arrests of 15-year-old children of unmarried, higher risk women. The means were .45 arrests per control group members and .20 arrests for the treatment group. Sample size: 38 (T), 62 (C).
5	-0.65	S***	Olds, David L., Eckenrode, John, et al. (1997). "Long-term effects of home visitation on maternal life course and child abuse and neglect." JAMA: Journal of the American Medical Association, 08/27/97, 278(8): 637. This result is for officially-reported convictions of unmarried, higher risk women. The means were .69 convictions per control group members and .13 convictions for the treatment group. Sample size: 38 (T), 62 (C).
-	-	-	Olds, D., Hill, P., Mihalic, S., & O'Brien, R. (1998). Blueprints for Violence Prevention, Book Seven: Prenatal and Infancy Home Visitation by Nurses. Boulder, CO: Center for the Study and Prevention of Violence. This Blueprint report describes the Nurse Home Visitation program and the evaluations of it.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Seattle Social Development Project: Findings

The Seattle Social Development Project (SSDP) is a three-part intervention for teachers, parents, and students in grades 1 to 6. The focus is elementary schools in high crime urban areas. The intervention trains teachers to manage classrooms to promote bonding to school. SSDP also offers training to parents to promote bonding to family and school. It provides training to children designed to affect attitudes toward school, behavior in school, and academic achievement.

After reviewing the evaluation of SSDP, the Institute found an effect size of about -.23 for basic crime outcomes. Overall, taxpayers gain approximately $2,704 in subsequent criminal justice costs for each program participant. The program is estimated to cost $3,017 (in 1998 dollars) per program participant. Therefore, taxpayers receive $0.90 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, the program can "break even" if it achieves a 21.3 percent reduction in crime outcomes. Crime victims save an average of $2,695 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.79 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population that Offended*	X	Of Those Who Offended, the Average Number of Offenses*	=	Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)*	- 0.23 ES		0.00 ES		
	Expected Felony Crime Effects					
(2)	Without the Program:*	59.7%	X	11.28	=	6.73
(3)	With the Program (from Effect Sizes):*	48.3%	X	11.28	=	5.45
(4)	Percentage Change:*	-19.1%		0.0%		-19.1%
(5)	Reduction in Offenses per Program Participant:*					**-1.29**
(a)	Adjustment: felonies as percent of total offenses measured:*					20.5%
(b)	Adjustment: extension of follow-up period from age 18 to age 30:*					54.0%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony offenses per person:***					**-0.49**
	Taxpayer Costs for One Self-Reported Felony Offense					
(6)	Criminal Justice System Costs for One Self-Reported Felony Offense:**					$7,387
(7)	Adjustment: percentage reduction in the avoided costs of one felony offense:					75%
(8)	Criminal Justice System Costs Avoided for One Self-Reported Felony Offense:***					**$5,540**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$2,704**
(10)	Cost of the Program per Program Participant:					**-$3,017**
(11)	Net Gain (Loss) per Program Participant:					**-$313**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.90**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-21.3%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Offense:**					$5,522
(15)	Crime Victim Benefits per Program Participant:***					**$2,695**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$5,399**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$1.79**

*Self-reported violent crime by age 18. Adjustments in lines (5a), (5b) and (5c) made by Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.23	S**	Hawkins, J. David, Catalano, Richard F., Kosterman, Rick, Abbott, Robert, Hill, Karl (1999). "Preventing Adolescent Health-Risk Behaviors by Strengthening Protection During Childhood." Archives of Pediatrics & Adolescent Medicine 153: 226-234. The outcome measure is self-reported lifetime violent delinquent acts. Sample size: 149 (T), 206 (C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the $p=.10$ level (S*); the $p=.05$ level (S**); the $p=.01$ level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Quantum Opportunities Program: Findings

The Quantum Opportunities Program (QOP) is designed to serve disadvantaged adolescents by providing education, service, and development activities, as well as financial incentives from ninth grade through high school graduation. QOP is designed for adolescents from families receiving public assistance. Each participant is eligible to receive annually: 250 hours of education (participating in computer-assisted instruction, peer tutoring to enhance basic academic skills, etc.); 250 hours of development activities (participating in cultural enrichment and personal development, acquiring life/family skills, planning for college or advanced technical/vocational training, and job preparation); and 250 hours of service activities (participating in community service projects, helping with public events, and working as a volunteer in various agencies).

After reviewing the evaluation of QOP, the Institute found an effect size of about -.42 for basic crime outcomes. Overall, taxpayers gain approximately $1,582 in subsequent criminal justice costs for each program participant. In 1998 dollars, the program cost $18,292 per youth for the four years, including both operating and administrative costs. Therefore, taxpayers receive $0.09 in criminal justice system benefits for every dollar spent. Crime victims save an average of $707 in costs for each program participant, for a combined taxpayer and crime victim benefit of $0.13 for every dollar spent.

	The Institute's Estimates of Program Effectiveness and Costs and Benefits				
	(All Dollar Values Expressed in 1998 Dollars)				
Line		Percent of the Population that Offended*	X	Of Those Who Offended, the Average Number of Offenses*	=	Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)*	- 0.42 ES		- 0.63 ES		
	Expected Felony Crime Effects					
(2)	Without the Program:*	16.0%	X	1.63	=	0.26
(3)	With the Program (from Effect Sizes):*	4.0%	X	1.00	=	0.04
(4)	Percentage Change:*	-75.0%		-38.5%		-84.6%
(5)	Reduction in Offenses per Program Participant:*					**-0.22**
(a)	Adjustment: felonies as percent of total offenses measured:*					25.0%
(b)	Adjustment: extension of follow-up period from age 20 to age 30:*					56.3%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.07**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$28,767
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					75%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction:***					**$21,575**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$1,582**
(10)	Cost of the Program per Program Participant:					**-$18,292**
(11)	Net Gain (Loss) per Program Participant:					**-$16,710**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.09**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-978.3%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$9,647
(15)	Crime Victim Benefits per Program Participant:***					**$707**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$2,290**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$0.13**

*Self-reported convictions by age 20. Adjustments in lines (5a), (5b) and (5c) estimated by the Institute.
**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.
***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1;
   line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.42	S**	Study results reported in: Lattimore, C.B., Mihalic, S.F., Grotpeter, J.K., & Taggart, R. (1998). Blueprints for Violence Prevention, Book Four: The Quantum Opportunities Program. Boulder, CO: Center for the Study and Prevention of Violence. This result is for the self-reported "percent ever convicted" in a two-year follow-up. Sample size: 56 (T), 44 (C).
4	-0.10	NS	Study results reported in: Lattimore, C.B., Mihalic, S.F., Grotpeter, J.K., & Taggart, R. (1998). Blueprints for Violence Prevention, Book Four: The Quantum Opportunities Program. Boulder, CO: Center for the Study and Prevention of Violence. This result is for the self-reported "percent ever arrested" in a two-year follow-up. Sample size: 56 (T), 44 (C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Big Brothers Big Sisters of America: Findings

Big Brothers Big Sisters of America (BBBSA) is a mentoring program that links at-risk youth with volunteer adults. The mentors act as positive resources for youth who may otherwise lack such role models. Length of participation can vary from several months to several years. Contacts usually occur three times monthly, for four hours a visit. Adult mentors are trained to refer any ancillary needs (i.e. substance abuse treatment, or mental or physical health concerns) to program personnel for follow up.

The existing evaluation of BBBSA did not measure criminal outcomes directly (the question tested was the "number of times hit someone"). Therefore, the Institute lowered the estimated effect of BBBSA in its cost-benefit calculations (from an effect size of -.11 to -.05). Overall, taxpayers gain approximately $1,313 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per BBBSA participant is $1,009 (in 1998 dollars). Therefore, taxpayers receive $1.30 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, BBBSA program can "break even" if it achieves a 10.5 percent reduction in crime outcomes. Crime victims save an average of $830 in costs for each program participant, for a combined taxpayer and crime victim benefit of $2.12 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.05 ES		- 0.05 ES		
	Expected Felony Crime Effects					
(2)	Without the Program:*	18.7%	X	1.95	=	0.37
(3)	With the Program (from Effect Sizes):*	16.8%	X	1.88	=	0.32
(4)	Percentage Change:*	-10.2%		-3.8%		-13.6%
(5)	Reduction in Offenses per Program Participant:*					**-0.05**
(a)	Adjustment: felonies as percent of total offenses measured:*					100.0%
(b)	Adjustment: extension of follow-up period from age 20 to age 30:*					56.3%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony offenses per person:***					**-0.07**
	Taxpayer Costs for One Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$26,409
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					75%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction:***					**$19,807**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$1,313**
(10)	Cost of the Program per Program Participant:					**-$1,009**
(11)	Net Gain (Loss) per Program Participant:					**$304**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$1.30**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-10.5%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$12,513
(15)	Crime Victim Benefits per Program Participant:***					**$830**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$2,143**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$2.12**

*Felony convictions by age 20, based on the Institute's 7-year recidivism study of juvenile offenders placed on diversion. Adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c)) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Big Brothers Big Sisters of America (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	-0.11	S**	Tierney, J. P., Grossman, J. B., with Resch, N. L. (1995). Making a Difference: An Impact Study of Big Brothers Big Sisters, Philadelphia: Public/Private Ventures. The effect size measured in this study is "the number of times a youth hit someone." 18-month follow-up. Sample size: 485 (T), 472 (C).
n/a	n/a	n/a	McGill, D.E., Mihalic, S.F., & Grotpeter, J. K. (1998). Blueprints for Violence Prevention, Book Two: Big Brothers Big Sisters of America. Boulder, CO: Center for the Study and Prevention of Violence.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Multi-Systemic Therapy: Findings

Multi-Systemic Therapy (MST) is an intensive home-based intervention for chronic, violent, or substance abusing juvenile offenders, ages 12 to 17. Trained therapists work with the youth and his or her family. The MST intervention is based on several factors, including an emphasis on addressing the known causes of delinquency. The treatment services are delivered in the youth's home, school, and community settings, with a strong focus on treatment adherence and program fidelity. Service duration averages 60 hours of contact over four months. Each MST therapist works in a team of four therapists and carries a caseload of four to six families.

The Institute's review of national research found that MST has been well-evaluated in several settings. After reviewing the evaluations, the Institute found an average effect size of about -.68 for basic recidivism. Overall, taxpayers gain approximately $38,047 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per MST participant is about $4,540 (in 1998 dollars). Therefore, taxpayers receive $8.38 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, MST program can "break even" if it achieves a 10.2 percent reduction in recidivism. Crime victims save an average of $23,021 in costs for each program participant, for a combined taxpayer and crime victim benefit of $13.45 for every dollar spent.

Line	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	=	Expected Number of Re-Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.68 ES		- 0.88 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	60.0%	X	2.93	=	1.76
(3)	With the Program (from Effect Sizes):*	26.9%	X	0.96	=	0.26
(4)	Percentage Change:*	-55.1%		-67.3%		-85.3%
(5)	Reduction in Convictions per Program Participant:*					**-1.50**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 30:*					66.7%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-1.69**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$30,014
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$22,510**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$38,047**
(10)	Cost of the Program per Program Participant:					**-$4,540**
(11)	Net Gain (Loss) per Program Participant:					**$33,507**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$8.38**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-10.2%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$13,620
(15)	Crime Victim Benefits per Program Participant:***					**$23,021**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$61,068**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$13.45**

*Felony re-convictions in Washington, 7-year follow-up. The adjustment in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Research Design	Indicative Effect Size	Stat. Sig.	**Studies Reviewed for Criminal Outcome Effects**
5	-0.45	S**	Henggeler, S. W., Melton, G. B., & Smith, L. A. (1992). "Family preservation using multisystemic therapy: An effective alternative to incarcerating serious juvenile offenders." Journal of Consulting and Clinical Psychology 60: 953-961. This is the 60-week follow-up of the evaluation of the Simpsonville, S.C. experiment. The outcome measure is arrests. Sample size: 43 (T), 41 (C).
5	-0.42	S**	Henggeler, S. W., Melton, G. B., Smith, L. A., Schoenwald, S. K., & Hanley, J. H. (1993). "Family preservation using multisystemic therapy: long-term follow-up to a clinical trial with serious juvenile offenders." Journal of Child and Family Studies 2(4): 283-293. This is the 2.4-year (120 week) follow-up of the evaluation of the Simpsonville, S.C. experiment. The outcome measure is arrests. Sample size: 43 (T), 41 (C).
5	-0.94	S***	Borduin, C.M., Mann, B.J., Cone, L.T., Henggeler, S.W., Fucci, B.R., Blaske, D.M., & Williams, R.A. (1995). "Multisystemic treatment of serious juvenile offenders: long-term prevention of criminality and violence." Journal of Consulting and Clinical Psychology 63(4): 569-578. This is the evaluation of the Columbia, MO. experiment: MST versus individual therapy, dropouts included. The outcome measure is arrests at four-year follow-up. Sample size: 92 (T), 84 (C).
5	-1.03	S***	Borduin, C.M., Mann, B.J., Cone, L.T., Henggeler, S.W., Fucci, B.R., Blaske, D.M., & Williams, R.A. (1995). Multisystemic treatment of serious juvenile offenders: long-term prevention of criminality and violence. Journal of Consulting and Clinical Psychology 63(4): 569-578. This is the evaluation of the Columbia, MO. Experiment: dropouts not included. The outcome measure is arrests at four-year follow-up. Sample size: 77 (T), 63 (C).
5	-0.13	NS	Henggeler, S. W., Melton, G. B., Brondino, M.J., Scherer, D.G., & Hanley, J.H. (In Press). "The Role of Treatment Fidelity." Journal of Consulting and Clinical Psychology. In this experiment, weekly consultations between the therapist and the MST expert were not conducted. The outcome measure is arrests at 1.7-year follow-up. Sample size: 82 (T), 73 (C).
			Henggeler, S.W., Mihalic, S.F., Rone, L.,Thomas, C., & Timmons-Mitchell, J. (1998). Blueprints for Violence Prevention, Book Six: Multisystemic Therapy. Boulder, CO: Center for the Study and Prevention of Violence.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Functional Family Therapy: Findings

Functional Family Therapy (FFT) targets youth, aged 11 to 18, with problems of delinquency, violence, and substance use. FFT focuses on altering interactions among family members and seeks to improve the functioning of the family unit. FFT is provided by individual therapists, typically in the home setting, and focuses on increasing family problem solving skills, enhancing emotional connection, and strengthening the parental ability to provide appropriate structure, guidance, and limits to their children. FFT generally requires 8 yo 12 hours of direct service to youth and their families, and generally no more than 26 hours for the most severe problem situations.

The Institute's review of national research found that FFT has been evaluated in several trials. After reviewing the evaluations, and giving greater weight to the better studies, the Institute found an average effect size of about -.34 for basic recidivism. Overall, taxpayers gain approximately $14,167 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per FFT participant is $2,068 (in 1998 dollars). Therefore, taxpayers receive $6.85 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, FFT program can "break even" if it achieves a 7.3 percent reduction in recidivism. Crime victims save an average of $8,572 in costs for each program participant, for a combined taxpayer and crime victim benefit of $10.99 for every dollar spent.

	The Institute's Estimates of Program Effectiveness and Costs and Benefits				
	(All Dollar Values Expressed in 1998 Dollars)				
Line		Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	= Expected Number of Re-Offenses Per Person
	Program Effectiveness Findings				
(1)	Research-Based Effect Sizes (ES)	- 0.34 ES		- 0.30 ES	
	Expected Felony Recidivism Effects				
(2)	Without the Program:*	45.8%	X	2.44	= 1.12
(3)	With the Program (from Effect Sizes):*	29.3%	X	1.90	= 0.56
(4)	Percentage Change:*	-36.0%		-22.0%	-50.1%
(5)	Reduction in Arrests per Program Participant:*				**-0.56**
(a)	Adjustment: felony convictions as percent of total convictions measured:*				100.0%
(b)	Adjustment: extension of follow-up period to age 30:*				66.7%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*				25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***				**-0.63**
	Taxpayer Costs for One Felony Conviction				
(6)	Criminal Justice System Costs for One Felony Conviction:**				$30,014
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:				25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***				**$22,510**
	Program Costs and Benefits, Taxpayer's Perspective				
(9)	Criminal Justice System Benefits per Program Participant:***				**$14,167**
(10)	Cost of the Program per Program Participant:				**-$2,068**
(11)	Net Gain (Loss) per Program Participant:				**$12,098**
(12)	Criminal Justice System Benefits per Dollar of Cost:***				**$6.85**
(13)	Percent Reduction in Offenses Needed to Break Even:***				-7.3%
	Crime Victim Benefits				
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**				$13,620
(15)	Crime Victim Benefits per Program Participant:***				**$8,572**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***				**$22,739**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***				**$10.99**

Felony re-convictions in Washington, 7-year follow-up. The adjustment in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.46	S**	Alexander, J. F., & Parsons, B. F. (1973). "Short Behavioral Intervention with Delinquent Families: Impact on Family Process and Recidivism." Journal of Abnormal Psychology 81(3): 219-225. The outcome measure is court referrals for criminal and statuts offenses at 6- to 18-month follow-up. Sample size: 46 (T), 46 (C).
4	-0.17	NS	Alexander, J. F., & Parsons, B. F. (1973). "Short Behavioral Intervention with Delinquent Families: Impact on Family Process and Recidivism." Journal of Abnormal Psychology 81(3): 219-225. The outcome measure is court referrals for criminal offenses at 6- to 18-month follow-up. Sample size: 46 (T), 40 (C).
4	-0.44	S***	Klein, N. C., Alexander, J. F., & Parsons, B. V. (1977). "Impact of family systems intervention on recidivism and sibling delinquency: A model of primary prevention and program evaluation." Journal of Consulting and Clinical Psychology 45: 469-474. This research is on the siblings of the Alexander (1973) study. The outcome measure is court referrals for criminal and status offenses at 2.5- to 3.5-years follow-up. Sample size: 46 (T), 10 (C).
3	-0.83	S***	Barton, C., Alexander, J. F., Waldron, H., Turner, C. W., & Warburton, J. (1985). "Generalizing treatment effects of functional family therapy: Three replications." American Journal of Family Therapy 13: 16-26. This result is for serious delinquents who had been incarcerated in a state training school. The outcome measure is charges with offenses at 16 months follow-up. Sample size: 30 (T), 44 (C).
3	-0.97	S***	Gordon, D., Arbuthnot, J., Gustafson, K., & McGreen, O. (1988). "Home-based behavioral-systems family therapy with disadvantaged juvenile delinquents." American Journal of Family Therapy 16: 243-255. Gordon, D., Graves, K., & Arbuthnot, J., (1995). "The effect of functional family therapy for delinquents on adult criminal behavior." Criminal Justice and Behavior 22(1): 60-73. This result, taken from the two studies, was the 60-month follow-up for both juvenile and adult felony offenses. The outcome measure is felony offenses at 60-months follow-up. Sample size: 23 (T), 20 (C).
3	-0.86	S**	Lantz, B.L. (1982). Preventing Adolescent Placement Through Functional Family Therapy and Tracking. Utah Department of Social Services, West Valley Social Services, District 2K, Kearns, UT 84118. Grant #CDP 1070 UT 83-0128020 87-6000-545-W. This was a random assignment evaluation of FFT for adolescents at risk for out-of-home placement due to serious delinqncy. The outcome measure is re-offenses at FFT termination. Sample size: 22 (T), 24 (C).
4	-0.64	S***	Hannson, K. (1998). Functional Family Therapy Replication in Sweden: Treatment Outcome with Juvenile Delinquents. Paper presented to the Eighth International Conference on treating addictive behaviors. Santa Fe, NM, February 1998. This is a random assignment evaluation of a FFT test for (mostly) male youth arrested by police in Lund Sweden for serious offenses. The outcome measure is re-offenses at two-year follow-up. Sample size: 45 (T), 50 (C).
			Alexander, J., Barton, C., Gordon, D., Grotpeter, J., Hansson, K., Harrison, R., Mears, S., Mihalic, S., Parsons, B., Pugh, C., Schulman, S., Waldron, H., & Sexton, T. (1998). Blueprints for Violence Prevention, Book Three: Functional Family Therapy. Boulder, CO: Center for the Study and Prevention of Violence.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Aggression Replacement Training: Findings

Aggression Replacement Training (ART) is a cognitive-behavioral intervention that attempts to reduce the anti-social behavior, and increase the pro-social behavior, of juvenile offenders. ART has three components. In the anger control component, participants learn what triggers their anger and how to control their reactions. The "skill-streaming" behavioral component teaches a series of prosocial skills through modeling, role playing, and performance feedback. In the moral reasoning component, participants work through cognitive conflict through "dilemma" discussion groups. The program is run in groups of 8 to 10 juvenile offenders.

The Institute's review of ART research found a few evaluations of these programs. Using the Institute's weighting scheme to combine the study results, the evaluations have an average effect size of .26 for basic recidivism. Overall, taxpayers gain approximately $7,896 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, in 1998 dollars, the program costs $404 per participant. Therefore, taxpayers receive $19.57 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, ART program can "break even" if it achieves a 1.4 percent reduction in recidivism. Crime victims save an average of $4,778 in costs for each program participant, for a combined taxpayer and crime victim benefit of $31.40 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits				
(All Dollar Values Expressed in 1998 Dollars)				
Line	Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	= Expected Number of Re-Offenses Per Person
Program Effectiveness Findings				
(1) Research-Based Effect Sizes (ES)	- 0.26 ES		0.00 ES	
Expected Felony Recidivism Effects				
(2) Without the Program:*	45.8%	X	2.44	= 1.12
(3) With the Program (from Effect Sizes):*	33.0%	X	2.44	= 0.80
(4) Percentage Change:*	-27.9%		0.0%	-27.9%
(5) Reduction in Arrests per Program Participant:*				**-0.31**
(a) Adjustment: felony convictions as percent of total convictions measured:*				100.0%
(b) Adjustment: extension of follow-up period to age 30:*				66.7%
(c) Adjustment: percentage reduction to reflect bringing experimental results up to scale:*				25.0%
(d) Adjusted effect: the reduction in the expected number of felony convictions per person:***				**-0.35**
Taxpayer Costs for <u>One</u> Felony Conviction				
(6) Criminal Justice System Costs for <u>One</u> Felony Conviction:**				$30,014
(7) Adjustment: percentage reduction in the avoided costs of one felony conviction:				25.0%
(8) Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***				**$22,510**
Program Costs and Benefits, Taxpayer's Perspective				
(9) Criminal Justice System Benefits per Program Participant:***				**$7,896**
(10) Cost of the Program per Program Participant:				**-$404**
(11) Net Gain (Loss) per Program Participant:				**$7,493**
(12) Criminal Justice System Benefits per Dollar of Cost:***				**$19.57**
(13) Percent Reduction in Offenses Needed to Break Even:***				-1.4%
Crime Victim Benefits				
(14) Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**				$13,620
(15) Crime Victim Benefits per Program Participant:***				**$4,778**
(16) Crime victim benefits plus criminal justice system benefits per program participant:***				**$12,674**
(17) Criminal justice system and crime victim benefits per dollar of cost:***				**$31.40**

*Felony re-convictions in Washington, 7-year follow-up. The adjustment in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c)) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Aggression Replacement Training (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
3	-0.63	S*	Goldstein, A. P., Glick, B. (1995). Agression Replacement Training for Delinquents, in Ross, R.R., Antonowicz, D.H., Dhaliwal, G.K., Going Straight, Effective Delinquency Prevention & Offender Rehabilitation, Ottawa: AIR Training Publications, Chapter 6. This effect was for ART delivered to the youth and his or her family. The recidivism measure was arrest at six-month follow-up. Sample sizes: 13(T), 32(C).
3	-0.27	NS	Goldstein, A. P., Glick, B. (1995). Agression Replacement Training for Delinquents, in Ross, R.R., Antonowicz, D.H., Dhaliwal, G.K., Going Straight, Effective Delinquency Prevention & Offender Rehabilitation, Ottawa: AIR Training Publications, Chapter 6. This effect was for ART delivered to the youth only. The recidivism measure was arrest at six-month follow-up. Sample sizes: 20(T), 32(C).
3	-0.87	S***	Goldstein, A. P., & Glick, B. (1994). The Prosocial Gang: Implementing Aggression Replacement Training. Thousand Oaks, CA: Sage. This effect was for ART delivered to the youth only. The recidivism measure was arrest at eight-month follow-up. Sample sizes: 38(T), 27(C).
3	-0.59	S*	Gibbs, J.C. (1995), EQUIP: A Peer-Group Treatment Program for Delinquents, in Ross, R.R., Antonowicz, D.H., Dhaliwal, G.K., Going Straight, Effective Delinquency Prevention & Offender Rehabilitation, Ottawa: AIR Training Publications, Chapter 8. This study tested an ART program delivered to juvenile felony offenders in a state institution. The recidivism measure was parole revocation/court contact, 12-month post release. Sample sizes: 20(T), 37(C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Adolescent Diversion Project: Findings

The Adolescent Diversion Project (ADP) serves 125 adolescent offenders a year diverted from the Ingham County Juvenile Court in Lansing, Michigan. The program stems from researched experiments conducted in the 1970s and 1980s. ADP diverts youth from the juvenile court to prevent them from being labeled as "delinquent." ADP "change agents" (usually college students) work with youth in their environment to provide community resources and initiate behavioral change. Change agents are trained in a behavioral model (contracting with rewards written into actual contracts between youth and significant other person in youth's environment) and to become advocates for community resources. Youth and change agents are matched, whenever possible, on race and gender. The evaluation results are for males only.

After reviewing the ADP evaluations, the Institute found an average effect size of about -.57 for basic recidivism. Overall, taxpayers gain approximately $11,508 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, in 1998 dollars, the program costs $1,509 per participant. Therefore, taxpayers receive $7.62 in benefits for every dollar spent. From a taxpayer's perspective, ADP program can "break even" if it achieves a 10.1 percent reduction in recidivism. Crime victims save an average of $9,039 in costs for each program participant, for a combined taxpayer and crime victim benefit of $13.61 for every dollar spent.

	The Institute's Estimates of Program Effectiveness and Costs and Benefits					
	(All Dollar Values Expressed in 1998 Dollars)					
Line		Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	=	Expected Number of Re-Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.57 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	25.0%	X	1.98	=	0.50
(3)	With the Program (from Effect Sizes):*	5.7%	X	1.98	=	0.11
(4)	Percentage Change:*	-77.3%		0.0%		-77.3%
(5)	Reduction in Arrests per Program Participant:*					**-0.38**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 30:*					61.6%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.62**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$24,664
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$18,498**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$11,508**
(10)	Cost of the Program per Program Participant:					**-$1,509**
(11)	Net Gain (Loss) per Program Participant:					**$9,999**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$7.62**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-10.1%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$14,529
(15)	Crime Victim Benefits per Program Participant:***					**$9,039**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$20,547**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$13.61**

Felony re-convictions in Washington, 7-year follow-up. The adjustment in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Adolescent Diversion Project (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-1.26	S***	Davidson, W. S. II, & Redner, R. (1988). The prevention of juvenile delinquency: Diversion from the juvenile justice system. In R. H. Price, E. L. Cowen, R. P. Lorion, & J. Ramos-McKay (Eds.), 14 Ounces of Prevention: A Casebook for Practitioners (pp. 123-137). Washington, D. C.: American Psychological Association. This result is for Phase 1 of the Davidson experiments. The outcome measure is re-arrests at two-year follow-up. Sample size: 49 (T), 24 (C).
4	-0.47	S**	Davidson, W. S. II, & Redner, R. (1988). The prevention of juvenile delinquency: Diversion from the juvenile justice system. In R. H. Price, E. L. Cowen, R. P. Lorion, & J. Ramos-McKay (Eds.), 14 Ounces of Prevention: A Casebook for Practitioners (pp. 123-137). Washington, D. C.: American Psychological Association. This result is for Phase 2 of the Davidson experiments, comparing original ADP to the treatment as usual group. The outcome measure is re-arrests at two-year follow-up. Sample size: 76 (T), 60 (C).
4	-0.77	S***	Davidson, W. S. II, & Redner, R. (1988). The prevention of juvenile delinquency: Diversion from the juvenile justice system. In R. H. Price, E. L. Cowen, R. P. Lorion, & J. Ramos-McKay (Eds.), 14 Ounces of Prevention: A Casebook for Practitioners (pp. 123-137). Washington, D. C.: American Psychological Association. This result is for Phase 3 of the Davidson experiments. The outcome measure is re-arrests at two-year follow-up. Sample size: 99 (T), 25 (C).
4	-0.51	S***	Davidson, W. S. II, & Redner, R. (1988). The prevention of juvenile delinquency: Diversion from the juvenile justice system. In R. H. Price, E. L. Cowen, R. P. Lorion, & J. Ramos-McKay (Eds.), 14 Ounces of Prevention: A Casebook for Practitioners (pp. 123-137). Washington, D. C.: American Psychological Association. This result is for Phase 4 of the Davidson experiments, comparing the ADP group to the juvenile court group. The outcome measure is re-arrests at one-year follow-up. Sample size: 136 (T), 124 (C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Multidimensional Treatment Foster Care: Findings

Multidimensional Treatment Foster Care (MTFC) is an alternative to group residential placement for high-risk and chronic juvenile offenders. Youth are placed with two trained and supervised foster parents for six to 12 months, and the youth's parents participate in family therapy. Near the end of the child's stay, the youth and his or her parents participate in family therapy together. The intervention is intensive, with at most two, and usually one, youth placed in the foster family. Community families are recruited, trained, and closely supervised. MTFC-placed adolescents are given treatment and intensive supervision at home, in school, and in the community; clear and consistent limits with follow-through on consequences; positive reinforcement for appropriate behavior; a relationship with a mentoring adult; and separation from delinquent peers. MTFC training for community families emphasizes behavior management methods to provide the youth with a structured and therapeutic living environment.

After reviewing the evaluation of MTFC, the Institute found an effect size of about -.63 for basic recidivism. Overall, taxpayers gain approximately $27,202 in subsequent criminal justice costs for each program participant. A typical cost per MTFC participant (MTFC cost compared to regular group home cost) is $1,934, in 1998 dollars. Therefore, taxpayers receive $14.07 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, MTFC program can "break even" if it achieves a 4.3 percent reduction in recidivism. Crime victims save an average of $16,459 in costs for each program participant, for a combined taxpayer and crime victim benefit of $22.58 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	=	Expected Number of Re-Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.63 ES		- 0.27 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	60.0%	X	2.93	=	1.76
(3)	With the Program (from Effect Sizes):*	29.4%	X	2.33	=	0.69
(4)	Percentage Change:*	-51.0%		-20.5%		-61.0%
(5)	Reduction in Arrests per Program Participant:*					**-1.07**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 30:*					66.7%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-1.21**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$30,014
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$22,510**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$27,202**
(10)	Cost of the Program per Program Participant:					**-$1,934**
(11)	Net Gain (Loss) per Program Participant:					**$25,268**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$14.07**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-4.3%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$13,620
(15)	Crime Victim Benefits per Program Participant:***					**$16,459**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$43,661**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$22.58**

Felony re-convictions in Washington, 7-year follow-up. The adjustment in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

****Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

Multidimensional Treatment Foster Care (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	**Studies Reviewed for Criminal Outcome Effects**
4	-0.72	S**	Chamberlain, P., Reid, J.B. (1998). "Comparison of Two Community Alternatives to Incarceration for Chronic Juvenile Offenders." Journal of Consulting and Clinical Psychology 66(4): 624-633. The outcome measure is criminal referrals (misdemeanor & felony) at one-year follow-up. Sample size: 37 (T), 42 (C).
			Chamberlain, P., & Mihalic, S.F. (1998). Blueprints for Violence Prevention, Book Eight: Multidimensional Treatment Foster Care. Boulder, CO: Center for the Study and Prevention of Violence.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Juvenile Intensive Supervision (Probation): Findings

Juvenile Intensive Supervision Programs (ISP) are designed for juvenile offenders serving a local sentence. The programs are characterized by more intense levels of supervision and surveillance than are exercised in routine juvenile court probation. The program features differ substantially across jurisdictions and in the type and risk levels of offenders participating in the programs.

The Institute's review of the national research found several evaluations of ISPs for juvenile court populations. This research indicates only a slight effect in reducing recidivism. After reviewing the evaluations and giving greater weight to the better studies, the Institute found an average effect size of about -.03 for basic recidivism. Overall, taxpayers gain approximately $1,347 in subsequent criminal justice costs for each program participant. The Institute estimate's that lowering a juvenile court probation counselor's caseload from 50 to 20 adds a cost of about $1,500 per offender (in 1998 dollars) to regular court probation costs. Therefore, taxpayers receive $0.90 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, the programs can "break even" if they achieve a 4.0 percent reduction in recidivism. Crime victims save an average of $889 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.49 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	=	Expected Number of Re-Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.03 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	45.8%	X	2.44	=	1.12
(3)	With the Program (from Effect Sizes):*	44.2%	X	2.44	=	1.08
(4)	Percentage Change:*	-3.6%		0.0%		-3.6%
(5)	Reduction in Arrests per Program Participant:*					**-0.04**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 30:*					61.6%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.07**
	Taxpayer Costs for Once Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$27,582
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$20,687**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$1,347**
(10)	Cost of the Program per Program Participant:					**-$1,500**
(11)	Net Gain (Loss) per Program Participant:					**-$153**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.90**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-4.0%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$13,650
(15)	Crime Victim Benefits per Program Participant:***					**$889**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$2,235**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$1.49**

*Felony re-convictions in Washington, 7-year follow-up. The adjustment in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

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Juvenile Intensive Supervision (Probation) (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	0.02	NS	Barton, W. H., & Butts, J. A. (1990). "Viable options: intensive supervision programs for juvenile delinquents." Crime and Delinquency 36(2): 238-256.
4	-0.08	NS	.Land, K. C. McCall, P. L., Williams, J.R. (1992). Intensive Supervision of Status Offenders: Evidence on Continuity of Treatment Effects for Juveniles and a "Hawthorne Effect" for Counselors, in McCord, J & Tremblay, R.E. (ed), Preventing Antisocial Behavior, Interventions from Birth through Adolescence, (New York: Guilford Press), Chapter 15.
4	-0.15	NS	Fagan, Jeffrey A. 1990. "Treatment and Reintegration of Violent Juvenile Offenders: Experimental Results." Justice Quarterly 7(2): 233-263.
3	0.00	0.00	Weibush, R.G. (1993). "Juvenile intensive supervision: the impact on felony offenders diverted from institutional placement." Crime and Delinquency 39(1): 68-89.
3	-0.60	S***	Orange County Probation Department, The 8% Problem: Chronic Juvenile Offender Recidivism, Orange County, CA: Orange County Probation Department Publications, March 1994.
3	0.03	NS	Elrod, H. Preston and Minor, Kevin. 1992. "Second Wave Evaluation of a Mulit-Faceted Intervention for Juvenile Court Probationers." International Journal of Offender Therapy and Comparative Criminology 36(3): 247-262.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Juvenile Intensive Supervision (Parole): Findings

The Institute has not completed its literature review of intensive supervision programs for juvenile offenders on parole from institutional settings. Therefore, a cost-benefit analysis has not been undertaken.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	=	Expected Number of Re-Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	n/a		n/a		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	45.8%	X	2.44	=	1.12
(3)	With the Program (from Effect Sizes):*	n/a	X	n/a	=	n/a
(4)	Percentage Change:*	n/a		n/a		n/a
(5)	Reduction in Arrests per Program Participant:*					**n/a**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 30:*					71.5%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**n/a**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$33,336
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$25,002**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**n/a**
(10)	Cost of the Program per Program Participant:					**n/a**
(11)	Net Gain (Loss) per Program Participant:					**n/a**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**n/a**
(13)	Percent Reduction in Offenses Needed to Break Even:***					n/a
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					n/a
(15)	Crime Victim Benefits per Program Participant:***					**n/a**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**n/a**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**n/a**

Felony re-convictions in Washington, 7-year follow-up. The adjustment in lines (5b) and (5c) estimated by the Institute.

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Juvenile Intensive Supervision (Parole) (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	-0.34	NS	Sontheimer, H., & Goodstein, L. (1993). "Evaluation of juvenile intensive aftercare probation: aftercare versus system response effects." Justice Quarterly 10: 197-227.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Juvenile Boot Camps: Findings

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) funded demonstration programs at three sites to develop prototypical camps and aftercare programs for male juveniles (Cleveland, Denver, and Mobile). According to OJJDP, the programs were intended to: serve as a cost-effective alternative to institutionalization; promote discipline through physical conditioning and teamwork; instill moral values and a work ethic; promote literacy and increase academic achievement; reduce drug and alcohol abuse; encourage participants to become productive law-abiding citizens; and ensure that offenders are held accountable for their actions. The three OJJDP studies, together with an evaluation of a California juvenile boot camp, found an average increase in the recidivism rates of boot camp participants compared to regular case processing.

After reviewing the boot camp evaluations, the Institute found an average effect size of about +.11 for basic recidivism. Overall, taxpayers lose approximately $4,680 in subsequent criminal justice costs for each program participant. The boot camps cost about $1,964 less than regular juvenile case processing, in 1998 dollars, but this lower cost is more than offset by future criminal justice system costs associated with the increased recidivism rates. Therefore, taxpayers receive $0.42 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, boot camps can "break even" if they achieve a 5.2 percent reduction in recidivism. Crime victims lose an average of $2,831 in costs for each program participant, for a combined taxpayer and crime victim benefit of $0.26 for every dollar spent.

Line	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	=	Expected Number of Re-Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	0.11 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	45.8%	X	2.44	=	1.12
(3)	With the Program (from Effect Sizes):*	51.5%	X	2.44	=	1.26
(4)	Percentage Change:*	12.4%		0.0%		12.4%
(5)	Reduction in Arrests per Program Participant:*					**0.14**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 30:*					66.7%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**0.21**
	Taxpayer Costs for One Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$30,014
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$22,510**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**-$4,680**
(10)	Cost of the Program per Program Participant:					**$1,964**
(11)	Net Gain (Loss) per Program Participant:					**-$2,716**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.42**
(13)	Percent Reduction in Offenses Needed to Break Even:***					5.2%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$13,620
(15)	Crime Victim Benefits per Program Participant:***					**-$2,831**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**-$7,511**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$0.26**

Felony re-convictions in Washington, 7-year follow-up. The adjustment in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c)) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Juvenile Boot Camps (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	0.46	S***	Peters, M., Thomas, D., & Zamberlan, C., (1997), Boot Camps for Juvenile Offenders, Office of Juvenile Justice and Delinquency Prevention. This is the result for the Cleveland experiment, which placed the most emphasis on treatment. The outcome measure is court-adjudicated new offenses (techincal violations excluded) with a 19- to 32-month follow-up. Sample size: 182 (T), 182 (C).
5	0.06	NS	Peters, M., Thomas, D., & Zamberlan, C., (1997), Boot Camps for Juvenile Offenders, Office of Juvenile Justice and Delinquency Prevention. This is the result for the Denver experiment, which placed the most emphasis on discipline and physical requirements. The outcome measure is court-adjudicated new offenses (techincal violations excluded) with a 19- to 32-month follow-up. Sample size: 124 (T), 124 (C).
5	-0.07	NS	Peters, M., Thomas, D., & Zamberlan, C., (1997), Boot Camps for Juvenile Offenders, Office of Juvenile Justice and Delinquency Prevention. This is the result for the Mobile experiment, which had the most balance between treatment and discipline. The outcome measure is court-adjudicated new offenses (techincal violations excluded) with a 19- to 32-month follow-up. Sample size: 187 (T), 187 (C).
5	0.07	NS	LEAD: A Boot Camp and Intensive Parole Program, The Final Impact Evaluation, State of California Department of Youth Authority (1997). This is the California experiment, combining a boot camp with treatment and intensive parole. Outcome measure is law violations (without minor violations), 12-month follow-up. Sample size: 313 (T), 243 (C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Juvenile Institutional Treatment Services: Findings

The Institute has not completed its literature review of treatment programs for juvenile offenders in institutional settings. Therefore, a cost-benefit analysis has not been undertaken.

Line	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Expected to Re-Offend	X	Of Those Who Re-Offend, the Average Number of Offenses	=	Expected Number of Re-Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	n/a		n/a		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	45.8%	X	2.44	=	1.12
(3)	With the Program (from Effect Sizes):*	n/a	X	n/a	=	n/a
(4)	Percentage Change:*	n/a		n/a		n/a
(5)	Reduction in Arrests per Program Participant:*					**n/a**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 30:*					66.7%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**n/a**
	Taxpayer Costs for One Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$33,336
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$25,002**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**n/a**
(10)	Cost of the Program per Program Participant:					n/a
(11)	Net Gain (Loss) per Program Participant:					**n/a**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**n/a**
(13)	Percent Reduction in Offenses Needed to Break Even:***					n/a
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					n/a
(15)	Crime Victim Benefits per Program Participant:***					**n/a**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**n/a**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**n/a**

*Felony re-convictions in Washington, 7-year follow-up. The adjustment in line (5b) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Juvenile Institutional Treatment Services (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.25	NS	Greenwood, P. W., Turner, S. (1993). "Evaluation of the Paint Creek center: a residential program for serious delinquents." Criminology. 31(2): 263-279.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Moral Reconation Therapy: Findings

Moral Reconation Therapy (MRT) is a cognitive-behavioral program designed for treatment-resistant populations. The program involves a step-by-step process designed to raise offenders from low to high levels of moral development in order to insulate them from criminal behavior. Since MRT is conducted by correctional staff in a group setting, the cost per participant is low.

The Institute's review of national research found that a few MRT programs have been evaluated, however, the existing evaluations have shortcomings. After reviewing the evaluations, and giving greater weight to the better studies, the Institute found an average effect size of about -.08 for basic recidivism. Overall, taxpayers gain approximately $2,329 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per MRT participant is $285 (in 1998 dollars). Therefore, taxpayers receive $8.17 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, MRT programs can "break even" if they achieve a 1.0 percent reduction in recidivism. Crime victims save an average of $946 in costs for each program participant, for a combined taxpayer and crime victim benefit of $11.48 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.08 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	48.8%	X	2.21	=	1.08
(4)	Percentage Change:*	-7.8%		0.0%		-7.8%
(5)	Reduction in Convictions per Program Participant:*					**-0.09**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.08**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$2,329**
(10)	Cost of the Program per Program Participant:					**-$285**
(11)	Net Gain (Loss) per Program Participant:					**$2,044**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$8.17**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-1.0%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$12,315
(15)	Crime Victim Benefits per Program Participant:***					**$946**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$3,275**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$11.48**

*Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Moral Reconation Therapy (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	0.28	NS	Miller, Marsha L. (1997). "Evaluation of the Life Skills Program." Division of Correctional Education, Department of Corrections, Delaware. Wilmington: Delaware. This is for the Gander Hill Correctional Institution, first program cycle. The outcome measure is pending charge or misdemeanor/felony conviction, one-year follow-up. Sample size: 28 (T), 25 (C).
4	-0.20	NS	Miller, Marsha L. (1997). "Evaluation of the Life Skills Program." Division of Correctional Education, Department of Corrections, Delaware. Wilmington, Delaware. This is for the Sussex Correctional Institution, first program cycle. The outcome measure is pending charge or misdemeanor/felony conviction, one-year follow-up. Sample size: 27 (T), 23 (C).
3	-0.30	S***	Little, G.L., Robinson, K.D., Burnette, K.D., & Swan, E.S. (1998). "Nine-Year Reincarceration Study on MRT-Treated Felony Offenders: Treated Offenders Show Significantly Lower Reincarceration," Cognitive Behavioral Treatment Review, 7(1):2-3. The outcome measure is reincarceration for misdemeanor and felony convictions, five-year follow-up. Sample size: 1,052 (T), 329 (C).
3	-0.36	S**	Little, G.L., Robinson, K.D., Burnette, K.D., & Swan, E.S. (1998). "Nine-Year Reincarceration Study on MRT-Treated Felony Offenders: Treated Offenders Show Significantly Lower Reincarceration," Cognitive Behavioral Treatment Review, 7(1):2-3. The outcome measure is reincarceration for misdemeanor and felony convictions, nin-year follow-up. Sample size: 70 (T), 82 (C).
2	N/A	N/A	Grandberry, G. (1998). "Moral Reconation Therapy Evaluation, Final Report." Olympia: Washington State Department of Corrections. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Miller, Marsha L. (1997). "Evaluation of the Life Skills Program." Division of Correctional Education, Department of Corrections, Delaware. Wilmington, Delaware. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Burnett, Walter. (1997). "Treating Post-Incarcerated Offenders with Moral Reconation Therapy: A One-Year Recidivism Study," Cognitive Behavioral Treatment Review 6(3/4):2. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Godwin, Greg, Stone, Sharon, and Hambrock, Kenneth. (1995). "Recidivism Study: Lake County, Florida Detention Center." Cognitive Behavioral Treatment Review 4(3):12. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Krueger, Sally. (1997). "Five-Year Recidivism Study of MRT-Treated Offenders in a County Jail," Cognitive Behavioral Treatment Review 6(3/4):3. The research design did not meet the necessary standards to report effect size.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the $p=.10$ level (S*); the $p=.05$ level (S**); the $p=.01$ level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Reasoning and Rehabilitation: Findings

Reasoning and Rehabilitation (R&R) is a program designed to teach social-cognitive skills to offenders. It is based on the premise that offenders lack the cognitive skills and attitudes essential for social competence and that acquiring such skills will better enable them to achieve success in legitimate pursuits and withstand pressures toward criminal behavior. The central goals are to modify offenders' impulsive, rigid, and illogical thinking patterns in favor of thought before action and consideration of behavioral consequences.

The Institute's review of the national research found that a few R&R programs have been evaluated, however, the existing evaluations have shortcomings. After reviewing the evaluations, the Institute found an average effect size of about -.03 for basic recidivism. Overall, taxpayers gain approximately $750 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per R&R participant is $296 (in 1998 dollars). Therefore, taxpayers receive $2.54 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, R&R programs can "break even" if they achieve a 1.2 percent reduction in recidivism. Crime victims save an average of $289 in costs for each program participant, for a combined taxpayer and crime victim benefit of $3.51 for every dollar spent.

Line	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.03 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	44.5%	X	2.19	=	0.97
(3)	With the Program (from Effect Sizes):*	43.2%	X	2.19	=	0.95
(4)	Percentage Change:*	-3.0%		0.0%		-3.0%
(5)	Reduction in Convictions per Program Participant:*					**-0.03**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.03**
	Taxpayer Costs for One Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$31,259
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$23,445**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$750**
(10)	Cost of the Program per Program Participant:					**-$296**
(11)	Net Gain (Loss) per Program Participant:					**$455**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$2.54**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-1.2%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$9,015
(15)	Crime Victim Benefits per Program Participant:***					**$289**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$1,039**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$3.51**

Felony re-convictions in Washington for non-sex offenders leaving prison or placed on community supervision, 8-year follow-up. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1;
   line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

Reasoning and Rehabilitation (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.08	NS	Robinson, D. (1995). "The Impact of Cognitive Skills Training on Post-Release Recidivism Among Canadian Federal Offenders." Research Report, Correctional Research and Development, Correctional Service Canada. Outcome measure is readmission for a new offense, 1-year follow-up. Sample size: 1,746 (T), 379 (C).
4	-0.16	S**	Robinson, D., (1995). "The Impact of Cognitive Skills Training on Post-Release Recidivism Among Canadian Federal Offenders." Research Report, Correctional Research and Development, Correctional Service Canada. These are the results for low-risk offenders. Outcome measure is readmission for a new offense, 1-year follow-up. Sample size: 838 (T), 173 (C).
4	-1.11	S***	Ross, R.R., Fabiano, E.A., & Ewles, C.D. (1988). "Reasoning and Rehabilitation." International Journal of Offender Therapy and Comparative Criminology, 32: 29-36. Outcome measure is readmission for a new offense, 9-month follow-up after admission to project. Sample size: 22 (T), 23 (C).
4	-0.07	NS	Johnson, G. and R.M. Hunter. (1995). "Evaluation of the Specialized Drug Offender Program," pp. 214-234 in Ross, R.R. and Ross, R.D., Thinking Straight: the Reasoning and Rehabilitation Program for Delinquency Prevention and Offender Rehabilitation. Ottawa: Air Training and Publications. Reasoning and rehabilitation program with intensive supervision compared to intensive supervision alone. The outcome measure is revocation; 8-month after intake average follow-up. Sample size: 98.
3	-0.40	NS	Porporino, F.J., Fabiano, E.A., & Robinson, D. (1991). "Focusing on Successful Reintegration: Cognitive Skills Training for Offenders." Research Report, Correctional Research and Development, Correctional Service Canada. Outcome measure is readmission for a new offense, 32-month follow-up. Sample size: 44 (T), 20 (C).
3	0.00	NS	Raynor, Peter, & Vanstone, M. (1996). "Reasoning and Rehabilitation in Britain: The Results of the Straight Thinking on Probation (STOP) Programme," International Journal of Offender Therapy and Comparative Criminology, 40(4): 272-284. Outcome measure is conviction, 24-month follow-up. Sample size: 107 (T), 164 (C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

In-Prison Vocational Education: Findings

Many adult offenders in the criminal justice system have poor job market skills and records. Vocational education to inmates is intended to improve the odds of post-prison employment and thereby decrease the chance of subsequent criminal activity. Vocational education can include, for example, improving work-related math skills for the automotive or construction trades. Some programs offer in-prison apprenticeships and an accreditation element that can make it easier for offenders to obtain trade licenses.

The Institute's review of the evaluation research found very few published studies that have measured the effect of this strategy on criminal recidivism. Moreover, most studies used fairly weak research designs, making it difficult to generalize the findings. Of the three evaluations that met minimum research quality standards, the Institute found a weighted-average effect size of about -.12 for basic recidivism. Overall, taxpayers gain approximately $4,316 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per participant for Washington's vocational education program is $1,876 (in 1998 dollars). Therefore, taxpayers receive $2.30 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, programs can "break even" if they achieve a 4.7 percent reduction in recidivism. Crime victims save an average of $1,752 in costs for each program participant, for a combined taxpayer and crime victim benefit of $3.23 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.12 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	47.2%	X	2.21	=	1.05
(4)	Percentage Change:*	-10.9%		0.0%		-10.9%
(5)	Reduction in Convictions per Program Participant:*					**-0.13**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.14**
	Taxpayer Costs for Once Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$4,316**
(10)	Cost of the Program per Program Participant:					**-$1,876**
(11)	Net Gain (Loss) per Program Participant:					**$2,440**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$2.30**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-4.7%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$12,315
(15)	Crime Victim Benefits per Program Participant:***					**$1,752**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$6,068**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$3.23**

*Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1;
  line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

In-Prison Vocational Education (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.20	S*	Lattimore, P.K., Witte, A.D., Baker, J.R., (1990). "Experimental Assessment of the Effect of Vocational Training on Youthful Property Offenders." Evaluation Review 14(2): 115-133. The program was for 18- to 22-year-old male property offenders. Recidivism measure was arrest with a 2-year follow-up. Sample size: 138 (T) and 109 (C).
3	-0.31	S**	Saylor, W.G., Gaes, G.G. (1996). "PREP: A Study of "Rehabilitating" Inmates Through Industrial Work Participation, and Vocational and Apprenticeship Training." Federal Bureau of Prisons: Washington, DC. This is for the effect of the vocational training program only. Recidivism measure was re-commitment to a federal prison for a new offense with a 9- to 12-year follow-up. Sample size: 7,000+, total.
3	0.10	NS	Downes, E.A., Monaco,K.R., & Schreiber, S.O. (1989). "Evaluating the Effects of Vocational Education on Inmates: A Research Model and Preliminary Results." The Yearbook of Correctional Education: 249-262. Recidivism measure was those "unsuccessful at completing parole." Sample size: 66(T), 66(C).
2	N/A	N/A	Ohio Department of Rehabilitation and Correction (1995). "Evaluation of the Impact of Correctional Education Programs on Recidivism." Dept. of Rehabilitation and Correction, October 1995. This research tests the effect of a vocational education program only. Recidivism measure was reincarceration with a 2-year follow-up.
2	N/A	N/A	Van Stelle, K.R., Lidbury, J.R., & Moberg, D.P. (1995). "Final Evaluation Report, Specialized Training and Employment Project (STEP)." Wisconsin Department of Corrections. Center for Health Policy and Program Evaluation. STEP provides vocational training in the institution, support during the transition to the community, and assistance in obtaining and maintaining employment after release. Recidivism measure was arrest with a 9-month follow-up.
2	N/A	N/A	Adams K., Bennett, T., Flanagan, T.J., Marquart, J., Cuvelier, S., Fritsch, E.J., Gerber, J., Longmire, D., & Burton, V. (1994). "A Large-Scale Multidimensional Test of the Effect of Prison Education Programs on Offender Behavior." The Prison Journal 74: 433-449. This study examined the postrelease recidivism of inmates released from Texas prisons who received vocational educational programming. Recidivism measure was reincarceration with a 2-year follow-up.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Adult Basic Education: Findings

A premise of adult basic education is that many inmates lack basic abilities in reading, writing, and mathematics and if these skills can be increased, offenders may have a better chance of avoiding criminal behavior when released from prison.

The Institute's review of the national research found that this question has not been extensively or rigorously evaluated. Only a handful of studies have been published, and most employ fairly weak research designs. Of the three evaluations that met minimum research quality standards, the Institute found a weighted-average effect size of about -.09 for basic recidivism. Overall, taxpayers gain approximately $3,220 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, the average cost per ABE participant in Washington's program is $1,888 (in 1998 dollars). Therefore, taxpayers receive $1.71 in benefits for every dollar spent. From a taxpayer's perspective, programs can "break even" if they achieve a 4.8 percent reduction in recidivism. Crime victims save an average of $1,307 in costs for each program participant, for a combined taxpayer and crime victim benefit of $2.40 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.09 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	48.7%	X	2.21	=	1.08
(4)	Percentage Change:*	-8.1%		0.0%		-8.1%
(5)	Reduction in Convictions per Program Participant:*					**-0.10**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.11**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$3,220**
(10)	Cost of the Program per Program Participant:					**-$1,888**
(11)	Net Gain (Loss) per Program Participant:					**$1,332**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$1.71**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-4.8%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$12,315
(15)	Crime Victim Benefits per Program Participant:***					**$1,307**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$4,528**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$2.40**

*Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Adult Basic Education (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.15	S***	Harer, M.D. (1995). "Prison Education Program Participation and Recidivism: A Test of the Normalization Hypotheses." Federal Bureau of Prisons, Office of Research and Evaluation: Washington, DC. The research tested the effect of a variety of educational programs, including ABE, on offenders released from federal prison. Recidivism measure was arrest or parole revocation with a 3-year follow-up. Sample size: 619, total.
4	-0.09	S*	Harer, M.D. (1994). "Recidivism Among Federal Prisoners Released in 1987." Federal Bureau of Prisons, Office of Research and Evaluation: Washington, DC. Recidivism measure was arrest or parole revocation with a 3-year follow-up. Sample size 865, total.
3	-0.17	S**	Piehl, A. M., (1995). "Learning While Doing Time," John F. Kennedy School of Government, Harvard University: Cambridge, MA. The study tested whether the recidivism of male inmates in Wisconsin was reduced by those completing basic education in prison. Recidivism measure was readmission to prison with a 3-year follow-up. Sample size: 1,473, total.
2	N/A	N/A	Ohio Department of Rehabilitation and Correction (1995). "Evaluation of the Inpact of Correctional Education Programs on Recidivism." Dept. of Rehabilitation and Correction, October 1995. This research tested for the effect of a GED program only. Recidivism measure was reincarceration with a 2-year follow-up.
2	N/A	N/A	Walsh, A. (1985). "An Evaluation of the Effects of Adult Basic Education on Rearrest Rates Among Probationers." Journal of Offender Counseling, Services, and Rehabilitation 9: 69-76. The study evaluated the effect of a GED program on male adult probationers. Recidivism measure was rearrest with a 3.5-year follow-up.
2	N/A	N/A	Porporino, F.J. & Robinson, R. (1992). "The Correctional Benefits of Education: A Follow-Up of Canadian Federal Offenders Participating in ABE." Journal of Correctional Education 43(2): 92-98. The study monitored the re-admissions of adult offenders who had been ABE participants. Recidivism measure was readmission to prison with a 1.1-year follow-up.
2	N/A	N/A	Adams K., Bennett, T., Flanagan, T.J., Marquart, J., Cuvelier, S., Fritsch, E.J., Gerber, J., Longmire, D., & Burton, V. (1994). "A Large-Scale Multidimensional Test of the Effect of Prison Education Programs on Offender Behavior." The Prison Journal 74: 433-449. This study examined the postrelease recidivism of inmates released from Texas prisons who received educational programming. Recidivism measure was reincarceration with a 2-year follow-up.
2	N/A	N/A	Stevens, R.D. (1986). "The Effect on Recidivism of Attaining the General Education Development Diploma." Journal of Offender Counseling, Services, and Rehabilitation (October): 3-9. The study examined males released from Georgia prison who participated in GED programs. Recidivism measure was reincarceration with a 2-year follow-up.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

In-Prison Therapeutic Communities: Findings

In-prison Therapeutic Community (TC) substance abuse programs are multifaceted residential programs coming out of a "self-help" tradition and involve a strong group orientation, with a focus on changing criminal thinking and behavior patterns in order to reduce future crime.

The Institute's review of the national research found that many in-prison TC programs have been evaluated, and a fair number employed fairly strong research designs for at least some program components. Using the Institute's weighting scheme to combine the study results, the evaluations have an average effect size of -.11 for basic recidivism. Overall, taxpayers gain approximately $4,202 in subsequent criminal justice costs for each program participant. Based on cost data from seven programs, the Institute's estimates a typical average cost per TC participant of about $5,500 (in 1998 dollars). Therefore, taxpayers receive $.76 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, TC programs can "break even" if they achieve a 13.9 percent reduction in recidivism. Crime victims save an average of $1,706 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.07 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.11 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	47.4%	X	2.21	=	1.05
(4)	Percentage Change:*	-10.6%		0.0%		-10.6%
(5)	Reduction in Convictions per Program Participant:*					**-0.12**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.14**
	Taxpayer Costs for One Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$4,202**
(10)	Cost of the Program per Program Participant:					**-$5,500**
(11)	Net Gain (Loss) per Program Participant:					**-$1,298**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.76**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-13.9%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$12,315
(15)	Crime Victim Benefits per Program Participant:***					**$1,706**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$5,908**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$1.07**

*Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	-0.22	S**	Inciardi, J.A., Martin, S.S., Butzin, C.A., Hooper, R.M., Harrison, L.D. (1997). "An Effective Model of Prison-Based Treatment for Drug-Involved Offenders." Journal of Drug Issues 27(2): 261-278. These results are for the Crest Program in a work-release setting. The outcome measure is self-reported arrest at 18 months. Sample size: 179 (T), 180 (C).
5	-0.13	NS	Martin, Steven S., Butzin, Clifford A., Saum, Christine A., and Inciardi, James A. (1998). "Drug Treatment for Offenders Works! But for How Long?" American Society of Criminology meeting, Washington, D.C. These results are for the Crest Program in a work-release setting. The outcome measure is arrest at 42 months. Sample size: 151 (T), 151 (C).
4	-0.36	S***	Pelissier, B., Gaes, G., Rhodes, W., Camp, S, O'Neil, J, Wallace, S., Saylor, W. (1998). "TRIAD Drug Treatment Evaluation Project Six-Month Interim Report." Federal Bureau of Prisons, Office of Research and Evaluation. The outcome measure is arrest, 6-month follow-up. Sample size: 899 (T), 967 (C).
3	-0.11	S*	Eisenberg, M. and Fabelo, T. (1992). "Evaluation of the Texas Correctional Substance Abuse Treatment Initiative: The Impact of Policy Research," Crime and Delinquency 42(2): 296-308. We have calculated a recidivism rate that includes all participants. The outcome measure is arrest, 1-year follow-up. Sample size: 672 (T), 395 (C).
3	-0.02	NS	Gransky, Laura A. and Jones, Roberg J. (1995). "Evaluation of the Post-Release Status of Substance Abuse Program Participants." Illinois Criminal Justice Authority Report. This is a program for female offenders. The outcome measure is return to prison, 2-year follow-up. Sample size: 168 (T), 247 (C).
3	0.15	NS	Office of Substance Abuse Programs, Department of Corrections, State of California. (1993.) "An Evaluation of Program Effectiveness for the Forever Free Program at the California Institution for Women," Frontera, CA, Sacramento, CA. This program was for female offenders; the outcome measure was return to custody, 6- to 14-month follow-up. Sample size: 196 (T), 110 (C).
3	0.04	NS	Oregon Department of Corrections. (1996). "Evaluation of the Powder River and Turning Point Alcohol and Drug Treatment Programs," Salem, OR. This is the Turning Point Program. We calculated a combined effect size for men and women. The outcome measure is conviction, 3-year follow-up. Sample size: 124 (T), 118 (C).
3	-0.04	NS	Oregon Department of Corrections. (1996). "Evaluation of the Powder River and Turning Point Alcohol and Drug Treatment Programs." Salem, OR. This is the Powder River Program for men. The outcome measure is conviction, 3-year follow-up. Sample size: 144 (T), 142 (C).
3	-0.33	S***	Wexler, H. K., Thomas, G., and Peters, J. (1997). "Prison Substance Abuse Treatment: Recidivism and Relapse." American Society of Criminology Annual Meeting, 1997. This is the Amity program for men at Donovan Prison. The outcome measure is reincarceration, 1-year follow-up. Sample size: 425 (T), 290 (C).
3	-0.49	S***	Wexler, H. K., Thomas, G., and Peters, J. (1997). "Prison Substance Abuse Treatment: Recidivism and Relapse." American Society of Criminology Annual Meeting, 1997. This is the Amity program for men at Donovan Prison. The outcome measure is reincarceration, 2-year follow-up. Sample size 178 (T), 85 (C).
3	-0.30	S**	Wexler, H.K., Falkin, G.P., Lipton, D.S., Rosenblum, A.B. (1992). "Outcome Evaluation of a Prison Therapeutic Community for Substance Abuse Treatment," pp. 156-174 in Carl G. Leukefeld and Frank M. Tims (eds.), Drug Abuse Treatment in Prisons and Jails, NIDA research Monograph 118, Rockville, MD: NIDA. These results are for males in the Stay n'Out Program. The outcome measure is arrest, 6-month average follow-up. Sample size: 435 (T), 159 (C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

In-Prison Therapeutic Communities (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
3	-0.15	NS	Wexler, H.K., Falkin, G.P., Lipton, D.S., Rosenblum, A.B. (1992). "Outcome Evaluation of a Prison Therapeutic Community for Substance Abuse Treatment," pp. 156-174 in Carl G. Leukefeld and Frank M. Tims (eds.), Drug Abuse Treatment in Prisons and Jails, NIDA research Monograph 118, Rockville, MD: NIDA. These results are for females in the Stay n' Out Program. The outcome measure is arrest, 6-month average follow-up. Sample size: 247 (T), 38 (C).
2	N/A	N/A	Field, G. (1985). "The Cornerstone Program: A Client Outcome Study," Federal Probation 49:50-55. This program was located in the Oregon State Hospital. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Hartmann, David J., Wolk, James L., Johnston, J. Scott, and Colyer, Corey J. (1997). "Recidivism and Substance Abuse Outcomes in a Prison-Based Therapeutic Community," Federal Probation 61:18-25. We did not calculate effect size as the results include program graduates only.
2	N/A	N/A	Inciardi, J.A., Martin, S.S., Butzin, C.A., Hooper, R.M., Harrison, L.D. (1997). "An Effective Model of Prison-Based Treatment for Drug-Involved Offenders." Journal of Drug Issues 27(2): 261-278. We did not calculate effect sizes for the Key or Key-Crest programs as the results include program graduates only.
2	N/A	N/A	Knight, K., Hiller, M. (1997). "Community-Based Substance Abuse Treatment: A 1-Year Outcome Evaluation of the Dallas County Judicial Treatment Center," Federal Probation 61(2): 61-68. We did not calculate effect size as the results include program graduates only.
2	N/A	N/A	Prendergast, M.L., Wellisch, J., and Wong, M.M. (1996). "Residential Treatment for Women Parolees following Prison-Based Drug Treatment: Treatment Experiences, Needs and Services, Outcomes." Prison Journal 76 (3):253-274. We did not calculate an effect size as the study includes program graduates only.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

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Sex Offender Treatment Programs: Findings

Treatment of sex offenders includes traditional psychotherapies, insight therapy and cognitive behavioral therapy. The latter, an increasingly popular method, is targeted at reducing deviant arousal, increasing appropriate sexual desires, improving social skills and modifying distorted thinking. The treatment occurs both in-prison and in the community; this analysis involves in-prison programs only.

The Institute's review of the international research found that few sex offender programs have been evaluated, and fewer still have a strong research design. Using the Institute's weighting scheme to combine the three most robust in-prison studies, the evaluations have an average effect size of -.04 for basic recidivism. Overall, taxpayers gain approximately $1,591 in subsequent criminal justice costs for each program participant. The cost of sex offender programs, based on estimates for Washington State's program, is $6,435 per offender (in 1998 dollars). Therefore, taxpayers receive $.25 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, sex offender treatment programs can "break even" only if they achieve at least a 26 percent reduction in recidivism. Crime victims save an average of $91 in costs for each program participant, for a combined taxpayer and crime victim benefit of only $.26 for every dollar spent.

Line		Percent of the Population Expected X to Offend		Of Those Who Offend, the Average = Number of Offenses		Expected Number of Offenses Per Person
	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)					
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.04 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	24.6%	X	1.50	=	0.37
(3)	With the Program (from Effect Sizes):*	23.1%	X	1.50	=	0.35
(4)	Percentage Change:*	-6.4%		0.0%		-6.4%
(5)	Reduction in Convictions per Program Participant:*					**-0.02**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.03**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$79,801
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$59,850**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$1,591**
(10)	Cost of the Program per Program Participant:					**-$6,435**
(11)	Net Gain (Loss) per Program Participant:					**-$4,844**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.25**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-26.0%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$3,409
(15)	Crime Victim Benefits per Program Participant:***					**$91**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$1,681**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$0.26**

*Felony re-convictions in Washington for sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Sex Offender Treatment Programs (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	-0.05	NS	Marques, Janice K. and Day, David M. (1997). "Sex Offender Treatment and Evaluation Project: 1997 Progress Report." Sacramento, CA: California Department of Mental Health. This is a prison-based program. Outcome measure is arrest for sex crimes with a 4.8-year follow-up. Sample size: 204 (T), 225 (C).
5	0.07	NS	Marques, Janice K. and Day, David M.. (1997). "Sex Offender Treatment and Evaluation Project: 1997 Progress Report." Sacramento, CA: California Department of Mental Health. This is a prison-based program. Outcome measure is arrest for non-sex violent crimes with a 4.8-year follow-up. Sample size: 204 (T), 225 (C).
5	0.21	NS	Romero, Joseph J. and Linda M. Williams. (1983). "Group Psychotherapy and Intensive Probation Supervision with Sex Offenders: A Comparative Study," Federal Probation 47:36-42. Since this is a community-based program, its costs and effects were not included in the summary; it is included here for informational purposes. Outcome measure is rearrests for sex offenses with a 10-year follow-up. Sample size: 143 (T), 83 (C).
3	-0.45	S***	Nicholaichuk, Terry and Arthur Gordon. (In Press). "Treatment Reduces Sexual Recidivism: Clearwater Outcome Data Summary." This is a prison-based program. Outcome measure is reconviction for sex-related felonies with a 5.9-year follow-up. Sample size: 296 (T), 283 (C).
3	-0.06	NS	Nicholaichuk, Terry and Arthur Gordon. (In Press). "Treatment Reduces Sexual Recidivism: Clearwater Outcome Data Summary." This is a prison-based program. Outcome measure is reconviction for non-sex felonies with a 5.9-year follow-up. Sample size: 296 (T), 283 (C).
3	0.23	NS	Hanson, R. Karl, R.A. Steffy and Rene Gauthier. (1993). "Long Term Recidivism of Child Molesters," Journal of Consulting and Clinical Psychology 61:646-652. This is an in-prison program for child molesters. Outcome measure is re-convictions for sexual or other violent offenses with a 20-year follow-up. Sample size: 106 (T), 60 (C).
2	N/A	N/A	Marshall, W.L. and Barbaree, H.E. (1988). "The Long-Term Evaluation of a Behavioral Treatment Program for Child Molesters," Behaviour Research and Therapy 26:499-511. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Rice, Marnie E. and Harris, Grant T. (1991). "Evaluation of an Institution-Based Treatment Program for Child Molesters," The Canadian Journal of Program Evaluation 6:111-129. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Huot, Stephen J. (1997). "Sex Offender Treatment and Recidivism: Research Summary." St. Paul, MN: Minnesota Department of Corrections. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	McGrath, Robert J., Hoke, Stephen E., and Vojtisek, John E. (1998). "Cognitive-Behavioral Treatment of Sex Offenders: A Treatment Comparison and Long-Term Follow-Up Study," Criminal Justice and Behavior 25:203-225. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Mander, Anthony M., et al. (1996). "Sex Offender Treatment Program: Initial Recidivism Study." Anchorage: Alaska Department of Corrections. The research design did not meet the necessary standards to report effect size.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Life Skills Programs: Findings

Life skills programs teach offenders a variety of daily living skills. The topics covered include employment skills, money management, social skills, and personal health issues.

The Institute's review of the national research found that few life skills programs had been evaluated, and the ones with stronger research designs indicated no significant effect on recidivism. Using the Institute's weighting scheme to combine the results of these studies, the evaluations have an average effect size of .00 for recidivism, that is, no effect. The cost of a life skills program, based on available data from one program, is estimated at $809 per offender (in 1998 dollars). Since the programs are estimated to have no effect of recidivism, there are $0.00 dollars in criminal justice system or crime victim benefits per dollar of program cost.

	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)		
Line	Percent of the Population Expected to Offend	X Of Those Who Offend, the Average Number of Offenses	= Expected Number of Offenses Per Person
	Program Effectiveness Findings		
(1)	Research-Based Effect Sizes (ES) 0.00 ES	0.00 ES	
	Expected Felony Recidivism Effects		
(2)	Without the Program:* 44.5%	X 2.19 =	0.97
(3)	With the Program (from Effect Sizes):* 44.5%	X 2.19 =	0.97
(4)	Percentage Change:* 0.0%	0.0%	0.0%
(5)	Reduction in Convictions per Program Participant:*		**0.00**
(a)	Adjustment: felony convictions as percent of total convictions measured:*		100.0%
(b)	Adjustment: extension of follow-up period to age 50:*		89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*		0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***		**0.00**
	Taxpayer Costs for One Felony Conviction		
(6)	Criminal Justice System Costs for One Felony Conviction:**		$31,259
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:		25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***		**$23,445**
	Program Costs and Benefits, Taxpayer's Perspective		
(9)	Criminal Justice System Benefits per Program Participant:***		**$0**
(10)	Cost of the Program per Program Participant:		**-$809**
(11)	Net Gain (Loss) per Program Participant:		**-$809**
(12)	Criminal Justice System Benefits per Dollar of Cost:***		**$0.00**
(13)	Percent Reduction in Offenses Needed to Break Even:***		-3.2%
	Crime Victim Benefits		
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**		$9,015
(15)	Crime Victim Benefits per Program Participant:***		**$0**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***		**$0**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***		**$0.00**

*Felony re-convictions in Washington for non-sex offenders leaving prison or placed on community supervision, 8-year follow-up. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Life Skills Programs (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	0.00	NS	Melton, Roni and Pennell, Susan. (1998). "Staying Out Successfully: An Evaluation of an In-custody Life Skills Training Program." San Diego, Calif: Association of Governments. The outcome measure is rearrest, 1-year follow-up. Sample size: 188 (T), 147 (C).
3	-0.45	NS	Ross, Robert R., Fabiano, Elizabeth A., and Ewles, Crystal D. (1988). "Reasoning and Rehabilitation," International Journal of Offender Therapy and Comparative Criminology 32:29-35. The outcome measure is reconviction; 9-month follow-up. Sample size: 17 (T), 23 (C).
2	N/A	N/A	Austin, T. (1997). Life Skills for Inmates: An Evaluation of Dauphin County Prison's LASER Program. Shippensburg, PA, Shippensburg University. We did not calculate effect size as the results include program graduates only.
2	N/A	N/A	Jolin, Annette, et al. (1997). "An Evaluation of the WICSW-Lifeskills Program for Women at the Columbia River Correctional Institution: Preliminary Results." Portland State University, College of Urban and Public Affairs. We did not calculate effect size as the results include program graduates only.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the $p=.10$ level (S*); the $p=.05$ level (S**); the $p=.01$ level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Correctional Industries: Findings

Few well-designed studies have examined the effect that correctional industry programs have on criminal recidivism. Of the two evaluations that met minimum research quality standards, the Institute found a weighted-average effect size of about -.05 for basic recidivism.

The Institute was unable to complete its cost-benefit analysis of correctional industries programs because it is not clear how much money, if any, correctional industry programs cost taxpayers. In order to estimate the bottom line, a detailed cost study of Washington's Correctional Industries program would need to be undertaken.

The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)					
Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	= Expected Number of Offenses Per Person
	Program Effectiveness Findings				
(1)	Research-Based Effect Sizes (ES)	- 0.05 ES		0.00 ES	
	Expected Felony Recidivism Effects				
(2)	Without the Program:*	53.0%	X	2.21	= 1.17
(3)	With the Program (from Effect Sizes):*	50.7%	X	2.21	= 1.12
(4)	Percentage Change:*	-4.4%		0.0%	-4.4%
(5)	Reduction in Convictions per Program Participant:*				**-0.05**
(a)	Adjustment: felony convictions as percent of total convictions measured:*				100.0%
(b)	Adjustment: extension of follow-up period to age 50:*				89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*				0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***				**-0.06**
	Taxpayer Costs for <u>One</u> Felony Conviction				
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**				$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:				25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***				**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective				
(9)	Criminal Justice System Benefits per Program Participant:***				**$1,725**
(10)	Cost of the Program per Program Participant:				**n/a**
(11)	Net Gain (Loss) per Program Participant:				**n/a**
(12)	Criminal Justice System Benefits per Dollar of Cost:***				**n/a**
(13)	Percent Reduction in Offenses Needed to Break Even:***				n/a
	Crime Victim Benefits				
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**				$12,315
(15)	Crime Victim Benefits per Program Participant:***				**$700**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***				**$2,426**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***				**n/a**

Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.05	NS	Maguire, K.E., Flanagan, T.J., & Thornberry, T.P. (1988). "Prison Labor and Recidivism." Journal of Quantitative Criminology 4(1): 3-18. This research estimated the effect of prison industry employment on post release recidivism among adult male offenders from seven maximum-security facilities in the New York State correctional system. The recidivism measure was felony arrests with a 2-year follow-up. Sample sizes: 399(T), 497(C).
3	-0.13	S	Saylor, W.G., Gaes, G.G. (1996). "PREP: A Study of "Rehabilitating" Inmates Through Industrial Work Participation, and Vocational and Apprenticeship Training." Federal Bureau of Prisons: Washington, DC. This is short-term follow up for the effect of the industrial work participation programs only. Recidivism measure was "revoked because of technical violation or re-arrest for new offense" with a 12-month follow-up. Sample size: 7,000+, total.
3	-0.24	S**	Saylor, W.G., Gaes, G.G. (1996). "PREP: A Study of "Rehabilitating" Inmates Through Industrial Work Participation, and Vocational and Apprenticeship Training." Federal Bureau of Prisons: Washington, DC. This is long-term follow up for the effect of the industrial work participation programs only. Recidivism measure was "re-committed to a federal facility" with an 8- to 12-year follow-up. Sample size: 7,000+, total.
2	N/A	N/A	Anderson, S.V. (1995). "Evaluation of the Impact of Participation in Ohio Penal Industries on Recidivism." Ohio Department of Rehabilitation and Correction, Office of Management Information Systems. The recidivism measure was reincarceration with a 2-year follow-up.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

In-Prison Non-residential Substance Abuse Treatment: Findings

A diverse collection of treatment interventions for substance abusing offenders have operated in prisons, including drug education, group and individual therapy, and relapse prevention. The programs are usually non-residential (that is, inmates receiving treatment are not housed in separate quarters), and the length of treatment ranges from several weeks to approximately six months.

The Institute's review of national research found that few of these programs have been evaluated, although they are probably the most common type of substance abuse treatment conducted in prison. Given the scarcity of evaluations, the Institute has not attempted to estimate the cost and benefits for this program area. An evaluation of Washington's in-prison substance abuse programs would help establish whether these programs cost-effectively reduce recidivism.

	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)				
Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses =	Expected Number of Offenses Per Person
	Program Effectiveness Findings				
(1)	Research-Based Effect Sizes (ES)	n/a		n/a	
	Expected Felony Recidivism Effects				
(2)	Without the Program:*	53.0%	X	2.21 =	1.17
(3)	With the Program (from Effect Sizes):*	n/a	X	n/a =	n/a
(4)	Percentage Change:*	n/a		n/a	n/a
(5)	Reduction in Convictions per Program Participant:*				**n/a**
(a)	Adjustment: felony convictions as percent of total convictions measured:*				100.0%
(b)	Adjustment: extension of follow-up period to age 50:*				89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*				0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***				**n/a**
	Taxpayer Costs for <u>One</u> Felony Conviction				
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**				$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:				25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***				**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective				
(9)	Criminal Justice System Benefits per Program Participant:***				**n/a**
(10)	Cost of the Program per Program Participant:				**n/a**
(11)	Net Gain (Loss) per Program Participant:				**n/a**
(12)	Criminal Justice System Benefits per Dollar of Cost:***				**n/a**
(13)	Percent Reduction in Offenses Needed to Break Even:***				n/a
	Crime Victim Benefits				
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**				n/a
(15)	Crime Victim Benefits per Program Participant:***				**n/a**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***				**n/a**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***				**n/a**

Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

In-Prison Non-residential Substance Abuse Treatment (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
3	-0.02	NS	Wexler, H.K., Falkin, G.P., Lipton, D.S., Rosenblum, A.B. (1992). "Outcome Evaluation of a Prison Therapeutic Community for Substance Abuse Treatment," pp. 156-174 in Carl G. Leukefeld and Frank M. Tims (eds.), Drug Abuse Treatment in Prisons and Jails, NIDA research Monograph 118, Rockville, MD: NIDA. This is a counseling program for males. The outcome measure is arrest, average of 6-months for follow-up. Sample size: 261 (T), 159 (C).
3	0.11	NS	Wexler, H.K., Falkin, G.P., Lipton, D.S., Rosenblum, A.B. (1992) "Outcome Evaluation of a Prison Therapeutic Community for Substance Abuse Treatment," pp. 156-174 in Carl G. Leukefeld and Frank M. Tims (eds.), Drug Abuse Treatment in Prisons and Jails, NIDA research Monograph 118, Rockville, MD: NIDA. This is a counseling program for females. The outcome measure is arrest, average of 6-months for follow-up. Sample size: 113 (T), 38 (C).
3	-0.59	S***	Finigan, Michael. (1997). "Evaluation of Three Oregon Pre-Release Day Treatment Substance Abuse Programs for Inmates." Prepared for Center for Substance Abuse Treatment. This is a program for female offenders. The outcome measure is arrest, follow-up period unspecified. Sample size: 155 (T), 56 (C).
2	N/A	N/A	Finigan, Michael. (1997). "Evaluation of Three Oregon Pre-Release Day Treatment Substance Abuse Programs for Inmates." Prepared for Center for Substance Abuse Treatment. We did not calculate an effect size as the results include program graduates
2	N/A	N/A	Washington State Department of Corrections, Division of Management and Budget, Planning and Research Section, "Substance Abuse Treatment Program Evaluation of Outcomes and Management Report." (April 1998). The research did not meet the necessary standards to calculate effect sizes.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Other Cognitive Behavioral Therapy: Findings

The Institute found few cognitive behavioral program evaluations in the national research literature other than Moral Reconation Therapy and Reasoning and Rehabilitation (reported in a separate section). Two other programs were a residential program called "Cognitive Self-Change" and anger management programs. Given the scarcity of evaluations, the Institute did not attempt to estimate the cost and benefits for this program area.

	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)		
Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	n/a		n/a		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	n/a	X	n/a	=	n/a
(4)	Percentage Change:*	n/a		n/a		n/a
(5)	Reduction in Convictions per Program Participant:*					**n/a**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**n/a**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**n/a**
(10)	Cost of the Program per Program Participant:					<u>**n/a**</u>
(11)	Net Gain (Loss) per Program Participant:					**n/a**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**n/a**
(13)	Percent Reduction in Offenses Needed to Break Even:***					n/a
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					n/a
(15)	Crime Victim Benefits per Program Participant:***					**n/a**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**n/a**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**n/a**

Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Other Cognitive Behavioral Therapy (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
3	-0.43	S**	Henning, K., R., & Frueh, B., C. (1996). "Cognitive-Behavioral Treatment of Incarcerated Offenders: An Evaluation of the Vermont Department of Corrections' Cognitive Self-Change Program." Criminal Justice and Behavior 23(4): 523-541. Outcome measure is new criminal charge or violation of conditions, 2-year follow-up. Sample size: 28 (T), 96 (C).
3	-0.59	S***	Henning, K., R., & Frueh, B., C. (1996). "Cognitive-Behavioral Treatment of Incarcerated Offenders: An Evaluation of the Vermont Department of Corrections' Cognitive Self-Change Program." Criminal Justice and Behavior 23(4): 523-541. Outcome measure is new criminal charge or violation of conditions, 2-year follow-up, using a survival anaysis. Sample size: 55 (T), 141 (C).
2	N/A	N/A	Marquis, Hugh A., Bourgon, Guy A., Armstrong, Barbara, and Jon Pfaff. (1996). "Reducing Recidivism Through Institutional Treatment Programs," Forum on Corrections Research 8(3). The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Hughes, Gareth V. (1993). "Anger Management Program Outcomes," Forum of Corrections Research 5(1). The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Motiuk, Larry, Smiley, Carson, and Blanchette, Kelley. (1996). "Intensive Programming for Violent Offenders: A Comparative Investigation," Forum on Correctional Research 8(3). The research design did not meet the necessary standards to report effect size.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Job Counseling & Job Search for Inmates Leaving Prison: Findings

Efforts to improve the labor market performance of ex-offenders are based on the theory that employed ex-offenders will be less likely to commit new crimes. One class of programs focuses on job search and employment counseling. In general, these programs attempt to link offenders with certain marketable skills to specific employers.

The Institute found evaluations of five programs where a primary component was job search and counseling. Overall, using the Institute's weighting scheme, the five evaluations have an average effect size of about -.04 for basic recidivism. Taxpayers gain approximately $1,532 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per participant is $539 (in 1998 dollars). Therefore, taxpayers receive $2.84 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, job counseling and search programs can "break even" if they achieve a 1.4 percent reduction in recidivism. Crime victims save an average of $622 in costs for each program participant, for a combined taxpayer and crime victim benefit of $4.00 for every dollar spent.

Line	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.04 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	51.0%	X	2.21	=	1.13
(4)	Percentage Change:*	-3.9%		0.0%		-3.9%
(5)	Reduction in Convictions per Program Participant:*					**-0.05**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.05**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$1,532**
(10)	Cost of the Program per Program Participant:					**-$539**
(11)	Net Gain (Loss) per Program Participant:					**$993**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$2.84**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-1.4%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$12,315
(15)	Crime Victim Benefits per Program Participant:***					**$622**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$2,154**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$4.00**

Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

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Job Counseling & Job Search for Inmates Leaving Prison (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	0.04	NS	Mallar, C.D., and Thornton, C (1978). "Transitional Aid for Released Prisoners: Evidence From the Life Experiment," The Journal of Human Resources, XIII(2), 208-236. This effect is for the job counseling element. The recidivism measure was arrests for property crimes (including robbery) with a 1-year follow-up. Sample sizes: 108(T), 108(C).
4	-0.12	S*	Milkman, R.H. (1985). "Employment Services for Ex-Offenders Field Test--Detailed Research Results," McLean, VA: Lazar Institute. The experiment tested whether post-prison intensive job counseling and placement sevices reduced recidivism. The recidivism measure was arrests with a 2-year follow-up. Sample sizes: 565(T), 412(C).
3	-0.18	S***	Menon, R., Blakely, C., Carmichael, D., & Snow, D. (1995). "Making a Dent in Recidivism Rates: Impact of Employment on Minority Ex-Offenders." In Thomas, G. E. (1995). Race and Ethnicity in America: Meeting the Challenge in the 21st Centrury, Washington, D.C.: Taylor and Francis, pp 279-293. See also, Finn, P. (1998). Texas' Project RIO (Re-Integration of Offenders), Washington, D.C.: U.S. Department of Justice, June 1998. This finding is for high-risk offenders. The program includes both in-prison vocational education and assistance, and in-community job search assistance. The recidivism measure was arrests with a 1-year follow-up. Sample sizes: 1,200 total.
3	-0.08	S***	Menon, R., Blakely, C., Carmichael, D., & Snow, D. (1995). "Making a Dent in Recidivism Rates: Impact of Employment on Minority Ex-Offenders." In Thomas, G. E. (1995). Race and Ethnicity in America: Meeting the Challenge in the 21st Centrury, Washington, D.C.: Taylor and Francis, pp 279-293. See also, Finn, P. (1998). Texas' Project RIO (Re-Integration of Offenders), Washington, D.C.: U.S. Department of Justice, June 1998. This finding is for low-risk offenders. The recidivism measure was arrests with a 1-year follow-up. Sample sizes: 1,200 total.
3	-0.21	NS	Clark, P., Hartter, S., Ford, E. (1992). "An Experiment in Employment of Offenders." Paper presented at the Annual Meeting of the American Society of Criminology. New Orleans, Louisiana. The program provided enhanced employment development services for offenders released from state prison. The recidivism measure was "being found guilty of misconduct violations" with a 6-month follow-up. Sample sizes: 30(T), 30(C).
3	-0.03	NS	Latessa, E.J., Travis, L.F. (1991). "Halfway House or Probation: A Comparison of Alternative Dispositions," Journal of Crime & Justice 14(1). This research compared adult offenders placed in a halfway house (with increased services), in lieu of probation. The recidivism measure was new crime convictions with a 3-year follow-up. Sample sizes: 132(T), 140(C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Drug Courts: Findings

First introduced in Dade County, Florida in 1989, a typical drug court targets non-violent offenders whose current involvement with the criminal justice system stems primarily from substance addiction. Defendants eligible for a drug court are identified soon after arrest and, if accepted, are referred to a treatment program. The court usually requires several contacts per week (often daily) with a treatment provider. Frequent urinalysis tests and regular status hearings with the drug court judge are key elements. Many drug courts require participants to maintain employment and honor financial obligations, including court fees and child support, as well as performing community service.

Most evaluations to date have relatively weak research designs, making it difficult to determine program effectiveness in reducing recidivism. After reviewing the evaluations, and giving greater weight to the better studies, the Institute found an average effect size of -.15 for basic recidivism. Overall, taxpayers gain approximately $3,385 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average cost per participant is about $2,000 (in 1998 dollars). Therefore, taxpayers receive $1.69 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, drug court programs can "break even" if they achieve a 10.0 percent reduction in recidivism. Crime victims save an average of $983 in costs for each program participant for a combined taxpayer and crime victim benefit of $2.18 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.15 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	43.5%	X	2.12	=	0.92
(3)	With the Program (from Effect Sizes):*	36.2%	X	2.12	=	0.77
(4)	Percentage Change:*	-16.9%		0.0%		-16.9%
(5)	Reduction in Convictions per Program Participant:*					**-0.16**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					100.0%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.16**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$29,083
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$21,812**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$3,385**
(10)	Cost of the Program per Program Participant:					**-$2,000**
(11)	Net Gain (Loss) per Program Participant:					$1,385
(12)	Criminal Justice System Benefits per Dollar of Cost:***					$1.69
(13)	Percent Reduction in Offenses Needed to Break Even:***					-10.0%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$6,331
(15)	Crime Victim Benefits per Program Participant:***					**$983**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$4,368**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$2.18**

*Felony re-convictions in Washington for drug offenders placed on community supervision, 8-year follow-up. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	-0.17	S**	Harrell, Adele (1998), "Drug Courts and the Role of Graduated Sanctions," National Institute of Justice Research Preview, August. This is an evaluation of Washington D.C.'s Drug Court.
4	-0.22	NA	Deschenes, Elizabeth Piper and Peter W. Greenwood. (1994). "Maricopa County's Drug Court: An Innovative Program for First-time Drug Offenders on Probation." Justice System Journal. 17(1): 99-115. Updated summary reported in: Belenko, Steven. (1998). Research on Drug Courts: a Critical Review, The Center on Addiction and Substance Abuse at Columbia University, June.
3	-0.10	NS	Gottfredson, Denise C., Kris Coblentz, and Michele A. Harmon (1996), "Baltimore City Drug Treatment Court Evaluation: A Short-term Evaluation of Baltimore City Drug Treatment Court Program," University of Maryland, Department of Criminology and Criminal Justice, June. Summary reported in: Belenko, Steven (1998), Research on Drug Courts: a Critical Review, The Center on Addiction and Substance Abuse at Columbia University, June.
2	-0.32	NA	Summary of research on the Dade County, Florida drug court as reported in Belenko, Steven (1998), Research on Drug Courts: a Critical Review, The Center on Addiction and Substance Abuse at Columbia University, June. Summary results also reported in GAO (1997), Drug Courts, Overview of Growth, Characteristics, and Results, United States General Accounting Office, July.
2	-0.18	NR	Bell, M. M. (1998), "King County Drug Court Evaluation," Final Report, Seattle, WA.
2	-0.06	NA	Summary of research on the Travis County, TX drug court as reported in Belenko, Steven (1998), Research on Drug Courts: a Critical Review, The Center on Addiction and Substance Abuse at Columbia University, June. Summary results also reported in GAO (1997), Drug Courts, Overview of Growth, Characteristics, and Results, United States General Accounting Office, July.
2	-0.10	NS	Granfield, Robert, Eby, Cynthia, Brewster, Thomas (1998), "An Examination of the Denver Drug Court: The Impact of a Treatment-Oriented Drug-Offender System," Law & Policy 20(2): 183-202.
2	-0.31	NA	Summary of research on the Multnomah County, OR drug court as reported in Belenko, Steven (1998), Research on Drug Courts: a Critical Review, The Center on Addiction and Substance Abuse at Columbia University, June. Summary results also reported in GAO (1997), Drug Courts, Overview of Growth, Characteristics, and Results, United States General Accounting Office, July.
2	-0.22	NA	Summary of research on the Oakland, CA drug court as reported in Belenko, Steven (1998), Research on Drug Courts: a Critical Review, The Center on Addiction and Substance Abuse at Columbia University, June. Summary results also reported in GAO (1997), Drug Courts, Overview of Growth, Characteristics, and Results, United States General Accounting Office, July.
2	-0.36	NS	Summary of research on the Wilmington, DE juvenile drug court as reported in Belenko, Steven (1998), Research on Drug Courts: a Critical Review, The Center on Addiction and Substance Abuse at Columbia University, June.
2	-0.47	NA	Summary of research on the Riverside County, CA drug court as reported in Belenko, Steven (1998), Research on Drug Courts: a Critical Review, The Center on Addiction and Substance Abuse at Columbia University, June.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Short-term Financial Assistance for Inmates Leaving Prison: Findings

One type of employment-related program operated in the late 1970s distributed income supplements (similar to unemployment insurance payments) to offenders after release from prison. The purpose was to lessen the need to commit crime for financial gain after release and prior to employment. Two high-quality research studies found conflicting results: one study (Berk) found no recidivism effect for the payments, while the other (Maller) found a relatively small effect.

The Institute found an average effect size of -.07 for basic recidivism. Overall, taxpayers gain approximately $2,080 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, a typical average payment per offender is $2,718 (in 1998 dollars). Therefore, taxpayers receive $.77 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, short-term financial assistance programs can "break even" if they achieve a 9.1 percent reduction in recidivism. Crime victims save an average of $844 in costs for each program participant, for a combined taxpayer and crime victim benefit of $1.08 for every dollar spent.

Line	**The Institute's Estimates of Program Effectiveness and Costs and Benefits** (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.07 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	49.3%	X	2.21	=	1.09
(4)	Percentage Change:*	-7.0%		0.0%		-7.0%
(5)	Reduction in Convictions per Program Participant:*					**-0.08**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.07**
	Taxpayer Costs for Once Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$2,080**
(10)	Cost of the Program per Program Participant:					**-$2,718**
(11)	Net Gain (Loss) per Program Participant:					**-$639**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.77**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-9.1%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$12,315
(15)	Crime Victim Benefits per Program Participant:***					**$844**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$2,924**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$1.08**

Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

Short-term Financial Assistance for Inmates Leaving Prison (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	0.00	NS	Berk, R.A., K.J. Lenihan, and Rossi, P.H. (1980). "Crime and Poverty: Some Experimental Evidence from Ex-Offenders." American Sociological Review. 45:766-786. The experiment (the TARP program) tested whether post-prison payments (unemployment insurance-type) and/or job placement services reduced recidivism. The recidivism measure was arrests with a 1-year follow-up. Sample sizes: 1,149(T), 401(C).
5	-0.15	S*	Mallar, C.D., and Thornton, C (1978). "Transitional Aid for Released Prisoners: Evidence From the Life Experiment," The Journal of Human Resources, XIII(2), 208-236. The experiment (the LIFE program) tested whether post-prison financial aid and/or job placement services reduced recidivism. This effect is for the financial aid element. The recidivism measure was arrests with a 1-year follow-up. Sample sizes: 108(T), 108(C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Subsidized Jobs for Inmates Leaving Prison: Findings

If an inmate is provided a subsidized job after leaving prison, will he or she be less likely to commit new crimes? One study examined data from the National Supported Work Demonstration Project (NSWDP), a large-scale federally funded project undertaken in the 1970s to answer this question. The research concluded that, overall, there was no effect on recidivism. The research then examined the separate effects on older and younger ex-offenders. The study found there was a significant effect on offenders over the age of 27, but no significant effect on younger adults.

The Institute found an average effect size of -.24 for basic recidivism based on the NSWDP for older (over 27 years old) adult offenders. Overall, taxpayers gain approximately $6,750 in subsequent criminal justice costs for each program participant. Based on the Institute's estimates, the cost of subsidized jobs per participant is $10,089 (in 1998 dollars). Therefore, taxpayers receive $.67 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, short-term financial assistance programs can "break even" if they achieve a 34.0 percent reduction in recidivism. Crime victims save an average of $2,740 in costs for each program participant, for a combined taxpayer and crime victim benefit of $.94 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.24 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	53.0%	X	2.21	=	1.17
(3)	With the Program (from Effect Sizes):*	41.0%	X	2.21	=	0.91
(4)	Percentage Change:*	-22.7%		0.0%		-22.7%
(5)	Reduction in Convictions per Program Participant:*					**-0.27**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					25.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.22**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$6,750**
(10)	Cost of the Program per Program Participant:					**-$10,089**
(11)	Net Gain (Loss) per Program Participant:					**-$3,339**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.67**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-34.0%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					$12,315
(15)	Crime Victim Benefits per Program Participant:***					**$2,740**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$9,490**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$0.94**

*Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Subsidized Jobs for Inmates Leaving Prison (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	-0.24	S**	Uggen, Christopher. (1996). "Estimating the "True Effect" of Work on Crime: A Dynamic Analysis of Supported Employment and Desistance." Unpublished paper. This result is for older adult (27+ years old) offenders in the National Supported Work Demonstration Project--a subsidized job program from the mid-1970s in seven US cities. Participants were assigned to work crews of eight to ten persons led by a supervisor who also acted as a counselor. Sample size: 509, total.
5	0.12	NS	Uggen, Christopher. (1996). "Estimating the "True Effect" of Work on Crime: A Dynamic Analysis of Supported Employment and Desistance." Unpublished paper. This result is for younger adult (less than 27 years old) offenders. The recidvism measure was self-reported arrests with a 3-year follow-up. Sample size: 1,032, total.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Adult Intensive Supervision Programs: Findings

Adult intensive supervision programs (ISP) provide criminal sanctions that are a middle-ground between prison and community corrections and are characterized by more intense levels of supervision and surveillance than are found in routine probation and parole. The program features differ substantially across jurisdictions and in the type and risk levels of offenders participating in the programs.

The Institute's review of the national research found a significant number of program evaluations. Many evaluations have strong research designs. These programs have demonstrated only a slight, or no effect in reducing recidivism. After reviewing the evaluations and giving greater weight to the better studies, the Institute found an average effect size of about -.05 for basic recidivism. Overall, taxpayers gain approximately $1,298 in subsequent criminal justice costs for each program participant. Based on the data from 14 programs, a typical average cost per ISP participant is $3,345 (in 1998 dollars). Therefore, taxpayers receive $.39 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, ISP programs can "break even" if they achieve a 14.1 percent reduction in recidivism. Crime victims save an average of $433 in costs for each program participant, for a combined taxpayer and crime victim benefit of $.52 for every dollar spent.

	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)				
Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	- 0.05 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	44.2%	X	2.22	=	0.98
(3)	With the Program (from Effect Sizes):*	41.8%	X	2.22	=	0.93
(4)	Percentage Change:*	-5.5%		0.0%		-5.5%
(5)	Reduction in Convictions per Program Participant:*					**-0.05**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**-0.06**
	Taxpayer Costs for Une Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$29,025
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$21,769**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**$1,298**
(10)	Cost of the Program per Program Participant:					**-$3,345**
(11)	Net Gain (Loss) per Program Participant:					-$2,048
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**$0.39**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-14.1%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$7,259
(15)	Crime Victim Benefits per Program Participant:***					**$433**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**$1,730**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**$0.52**

Felony re-convictions in WA for non-sex, non-person offenders leaving prison or placed on community supervision, 8-year follow-up. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line (10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

Adult Intensive Supervision Programs (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	0.08	NS	Petersilia, J, and Turner, S. (1993) "Intensive Probation and Parole." In Tonry, Michael (ed), Crime and Justice: A Review of Research. Chicago: University of Chicago Press, 281-335. This is a summary of ISP for 14 sites; some were probation, some were parole. The outcome measure is arrest, 1-year follow-up. Sample size: 1,812.
5	-0.01	NS	Petersilia, J, Turner, S., and Deschenes, E.P. (1992). "Intensive Supervision Programs for Drug Offenders." In Byrne, J.M., Lurigio, A.J. and Petersilia, J. (eds.), Smart Sentencing: The Emergency of Intermediate Sanctions. Newbury Park: Sage, 18-37. This is a summary for 7 sites involving drug offenders; some were on probation, some were on parole. The outcome measure is conviction, 1-year follow-up. Sample size: 281 (T), 268 (C).
5	0.15	S*	Petersilia, J, Turner, S., and Deschenes, E.P. (1992). "Intensive Supervision Programs for Drug Offenders." In Byrne, J.M., Lurigio, A.J. and Petersilia, J. (eds.), Smart Sentencing: The Emergency of Intermediate Sanctions. Newbury Park: Sage, 18-37. This is a summary for 7 sites involving drug offenders; some were on probation, some were on parole. The outcome measure is arrest, 1-year follow-up. Sample size: 281 (T), 268 (C).
5	-0.16	NS	Deschenes, E.P., Turner, S., and Petersilia, J. (1995). "A Dual Experiment in Intensive Community Supervision: Minnesota's Prison Diversion and Enhanced Supervised Release Programs." Prison Journal 75(3):330-357. The program is for parolees (ISR). The outcome measure is arrest, 1-year follow-up for ISR. Sample size: 81 (T), 95 (C).
5	0.00	NS	Deschenes, E.P., Turner, S., and Petersilia, J. (1995). "A Dual Experiment in Intensive Community Supervision: Minnesota's Prison Diversion and Enhanced Supervised Release Programs." Prison Journal 75(3):330-357. The program is for offenders diverted from prison (ICS). The outcome measure is arrest, 2-year follow-up. Sample size: 76 (T), 48 (C).
5	-0.03	NS	Latessa, Edward, Lawrence Travis, Betsy Fulton and Amy Stichman. (1988). "Evaluating the Prototypical ISP." NIJ Final Report. Division of Criminal Justice, University of Cincinnati. Program is for probationers. Outcome measure is arrest with an average of 7-months follow-up. Sample size: 210 (T), 191 (C).
3	0.10	NS	Smith, Linda G. and Akers, Ronald L. (1993). "A Comparison of Recidivism of Florida's Community Control and Prison: A Five-Year Survival Analysis," Journal of Research in Crime and Delinquency 30(3):267-292. Program is for offenders diverted from prison. Outcome measure is re-conviction with a 5-year follow-up. Sample size: 133 (T), 149 (C).
3	-0.29	S***	Pearson, F.S. (1987). "Final Report of Research on New Jersey's Intensive Supervision Program." New Brunswick, NJ: Institute for Criminological Research, Rutgers University. The program is for offenders diverted from prison, the outcome measure is convictions, 24-month follow-up. Sample size: 533 (T), 132 (C).
3	-0.12	NS	Byrne, J.M. and L. Kelly. (1989). "Restructuring Probation as an Intermediate Sanction: An Evaluation of the Massachusetts Intensive Probation Supervision Program." Final Report to the National Institute of Justice, Research Program on the Punishment and Control of Offenders. Washington, D.C.: National Institute of Justice. The program is for probationers. The outcome measure is reconviction for felonies, 1-year follow-up. Sample size: 221 (T), 196 (C).
3	-0.69	S***	Wisconsin Department of Health and Social Services, Office of Policy and Budget. (1989). "Reducing Criminal Risk: An Evaluation of the High Risk Offender Intensive Supervision Project." Madison, Wisconsin. Program was for probationers/parolees. Outcome measure is return to prison for new conviction at 12-month follow-up. Sample size: 64 (T), 56 (C).
2	N/A	N/A	Iowa Department of Corrections. (1988). Evaluation of Iowa's Intensive Supervision Program: Final Report. Des Moines, Iowa: Department of Corrections. The research design did not meet the necessary standards to report effect size.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Adult Intensive Supervision Programs (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
2	N/A	N/A	Latessa, Edward J. and Jill A. Gordon. (1994.) "Examining the Factors Related to Success or Failure With Felony Probationers: A Study of Intensive Supervision," 63-83 in Charles B. Fields (ed.), Innovative Trends and Specialized Strategies in Community Based Corrections. N.Y.: Garland. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Jolin, Annette and Stipak, Brian. (1992). "Drug Treatment and Electronically Monitored Home Confinement: An Evaluation of a Community-Based Sentencing Option," Crime and Delinquency 38: 158-170. The research design did not meet the necessary standards to report effect size.
2	N/A	N/A	Erwin, Billie S. (1987). "Turning Up the Heat on Probationers in Georgia," Federal Probation 50(2):17-24. The research design did not meet the necessary standards to report effect size.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

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Case Management Substance Abuse Programs: Findings

Offenders in the community are often referred to substance abuse treatment through a case management program, which operates as a liaison between the criminal justice system and community programs. These programs usually assess offender needs and either provide or refer offenders to services. Community-based treatment usually involves outpatient drug-free treatment and, to a lesser extent, residential treatment.

The Institute's review of national research found a number of evaluations of these programs, many with strong research designs. Using the Institute's weighting scheme to combine the study results, the evaluations have an average positive effect size of .01 for recidivism, essentially no effect. Overall, taxpayers lose approximately $329 in subsequent criminal justice costs for each program participant. Based on available data from four programs (including treatment costs), a typical average cost per participant is $2,144 (in 1998 dollars). Therefore, taxpayers lose $.15 in criminal justice system benefits for every dollar spent. From a taxpayer's perspective, programs can "break even" if they achieve a 8.4 percent reduction in recidivism. Crime victims lose an average of $127 in costs for each program participant, for a combined taxpayer and crime victim loss of $.21 for every dollar spent.

The Institute's Estimates of Program Effectiveness and Costs and Benefits
(All Dollar Values Expressed in 1998 Dollars)

Line		Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	0.01 ES		0.00 ES		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	44.5%	X	2.19	=	0.97
(3)	With the Program (from Effect Sizes):*	45.1%	X	2.19	=	0.99
(4)	Percentage Change:*	1.3%		0.0%		1.3%
(5)	Reduction in Convictions per Program Participant:*					**0.01**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**0.01**
	Taxpayer Costs for Ona Felony Conviction					
(6)	Criminal Justice System Costs for One Felony Conviction:**					$31,259
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***					**$23,445**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**-$329**
(10)	Cost of the Program per Program Participant:					**-$2,144**
(11)	Net Gain (Loss) per Program Participant:					**-$2,473**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**-$0.15**
(13)	Percent Reduction in Offenses Needed to Break Even:***					-8.4%
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**					$9,015
(15)	Crime Victim Benefits per Program Participant:***					**-$127**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**-$455**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**-$0.21**

*Felony re-convictions in Washington for non-sex offenders leaving prison or placed on community supervision, 8-year follow-up. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Case Management Substance Abuse Programs (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	0.33	S***	Anglin, M. Douglas, Douglas Longshore, Susan Turner, Duane McBride, James Inciardi, and Michael Prendergast. (1996). Studies of the Functioning and Effectiveness of TASC. Final report. Los Angeles: UCLA Drug Abuse Research Center. Portland, Oregon site. The outcome measure is arrest; six-month follow-up. Sample size: 212 (T), 181 (C).
5		NS	Anglin, M. Douglas, Douglas Longshore, Susan Turner, Duane McBride, James Inciardi, and Michael Prendergast. (1996). Studies of the Functioning and Effectiveness of TASC. Final report. Los Angeles: UCLA Drug Abuse Research Center. We did not have the necessary data to calculate effect size. Birmingham site. The outcome measure is arrest; six-month follow-up. Sample size: 258 (T), 213 (C).
5		NS	Anglin, M. Douglas, Douglas Longshore, Susan Turner, Duane McBride, James Inciardi, and Michael Prendergast. (1996). Studies of the Functioning and Effectiveness of TASC. Final report. Los Angeles: UCLA Drug Abuse Research Center. We did not have the necessary data to calculate effect size. Canton, Ohio site. The outcome measure is arrest; six-month follow-up. Sample size: 107 (T), 85 (C).
5		NS	Anglin, M. Douglas, Douglas Longshore, Susan Turner, Duane McBride, James Inciardi, and Michael Prendergast. (1996). Studies of the Functioning and Effectiveness of TASC. Final report. Los Angeles: UCLA Drug Abuse Research Center. We did not have the necessary data to calculate effect size. Chicago site. The outcome measure is arrest; six-month follow-up. Sample size: 285 (T), 202 (C).
5	0.17	NS	Buck, Janeen and Shelli Rossman, "Examining Early Outcomes of the Opportunity to Succeed Program: A Preliminary Analysis of the Follow-up Self Report Data." Consensus Meeting on Drug Treatment in the Criminal Justice System, ONDCP, Washington, DC (March 1998). The outcome measure is self-reported arrest, 1-year follow-up. Sample size: 159 (T), 133 (C).
5	-0.15	S*	Rhodes, W. and Gross, M. (1997). "Case Management Reduces Drug Use and Criminality Among Drug-Involved Arrestees: An Experimental Study of an HIV Prevention Intervention." Final report to the National Institute of Justice/National Institute on Drug Abuse. This is the Washington DC program. The outcome measure is arrest, 6-month follow-up. Sample size: 229 (T), 442 (C).
5	-0.16	NS	Nurco, David N., Thomas E. Hanlon, Richard W. Bateman and Timothy W. Kinlock. (1995). "Drug Abuse Treatment in the Context of Correctional Surveillance," Journal of Substance Abuse Treatment 12:19-27. The outcome measure is "negative parole outcome," the control group is assigned routine parole, 6-month follow-up. Sample size: 90 (T), 48 (C).
5	-0.04	NS	Nurco, David N., Thomas E. Hanlon, Richard W. Bateman and Timothy W. Kinlock. (1995). "Drug Abuse Treatment in the Context of Correctional Surveillance," Journal of Substance Abuse Treatment 12:19-27. The outcome measure is "negative parole outcome," the control group is assigned urine testing, 6-month follow-up. Sample size: 90 (T), 50 (C).
3	-0.08	NS	Owens, S., Klebe, K., Arens, S., Durham, R., Hughes, J., Moor, C., O'Keefe, M., Phillips, J., Sarno, J., Stommel, J. (1997). "The Effectiveness of Colorado's TASC Programs," Journal of Offender Rehabilitation 26:161-176. We have calculated a combined recidivism rate for two programs. The outcome measure is return to prison, 1-year follow-up. Sample size: 257 (T), 279 (C).
2	N/A	N/A	Van Stelle, K.R., Mauser, E., Moberg D.P. (1994). "Recidivism to the Criminal Justice System of Substance-Abusing Offenders Diverted into Treatment," Crime and Delinquency 40(2): 175-196. We did not calculate effect size as the results include TASC program graduates only.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.
"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.
"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Work Release Programs: Findings

Work release programs permit selected prisoners nearing the end of their terms to work in the community, returning to prison or community residential facilities for the non-working hours. The programs are designed to prepare inmates to return to the community in a relatively controlled environment. Work release also allows inmates to earn income, reimburse the state for part of their confinement, build up savings for their eventual release, and acquire more positive living habits.

The only study we found on work release evaluated Washington's program. The study found no significant difference in recidivism rates between a group of inmates that participated in work release and those that did not, after about a 10-month follow-up. Re-arrest data were used to measure recidivism. The study also conducted a cost analysis and found no significant difference in program costs between the two groups.

	The Institute's Estimates of Program Effectiveness and Costs and Benefits (All Dollar Values Expressed in 1998 Dollars)			
Line		Percent of the Population Expected to Offend	X Of Those Who Offend, the Average Number of Offenses =	Expected Number of Offenses Per Person
	Program Effectiveness Findings			
(1)	Research-Based Effect Sizes (ES)	0.00 ES	0.00 ES	
	Expected Felony Recidivism Effects			
(2)	Without the Program:*	53.0%	X 2.21 =	1.17
(3)	With the Program (from Effect Sizes):*	53.0%	X 2.21 =	1.17
(4)	Percentage Change:*	0.0%	0.0%	0.0%
(5)	Reduction in Convictions per Program Participant:*			**0.00**
(a)	Adjustment: felony convictions as percent of total convictions measured:*			100.0%
(b)	Adjustment: extension of follow-up period to age 50:*			89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*			0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***			**0.00**
	Taxpayer Costs for One Felony Conviction			
(6)	Criminal Justice System Costs for One Felony Conviction:**			$43,203
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:			25.0%
(8)	Criminal Justice System Costs Avoided for One Felony Conviction, Adjusted:***			**$32,402**
	Program Costs and Benefits, Taxpayer's Perspective			
(9)	Criminal Justice System Benefits per Program Participant:***			$0
(10)	Cost of the Program per Program Participant:			$0
(11)	Net Gain (Loss) per Program Participant:			$0
(12)	Criminal Justice System Benefits per Dollar of Cost:***			n/a
(13)	Percent Reduction in Offenses Needed to Break Even:***			0.0%
	Crime Victim Benefits			
(14)	Monetary (Tangible) Crime Victim Benefits for One Felony Conviction:**			$11,555
(15)	Crime Victim Benefits per Program Participant:***			$0
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***			$0
(17)	Criminal justice system and crime victim benefits per dollar of cost:***			n/a

Felony re-convictions in Washington for non-sex offenders leaving prison, 8 years after release. The adjustments in lines (5b) and (5c) estimated by the Institute.

**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.*

***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.*

Work Release Programs (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
4	-0.18	NS	Turner, S. M. & Petersilia, J. (1996). "Work Release in Washington: Effects on Recidivism and Corrections Costs." Prison Journal, 76(2): 138-164. This reasearch evaluated Washington's work release program. The recidivism measure was arrests with a 10-month follow-up. Sample sizes: 112(T), 106(C).

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

Community-Based Substance Abuse Treatment: Findings

Community-based treatment for offenders usually involves outpatient drug-free treatment and, to a lesser extent, residential treatment, with a limited number of offenders participating in methadone maintenance programs.

The Institute's review of the national research found few evaluations of community substance abuse treatment programs independent of case management programs. Given the scarcity of evaluations, the Institute has not attempted to estimate the cost and benefits for this program area.

Line	**The Institute's Estimates of Program Effectiveness and Costs and Benefits** (All Dollar Values Expressed in 1998 Dollars)	Percent of the Population Expected to Offend	X	Of Those Who Offend, the Average Number of Offenses	=	Expected Number of Offenses Per Person
	Program Effectiveness Findings					
(1)	Research-Based Effect Sizes (ES)	n/a		n/a		
	Expected Felony Recidivism Effects					
(2)	Without the Program:*	44.5%	X	2.19	=	0.97
(3)	With the Program (from Effect Sizes):*	n/a	X	n/a	=	n/a
(4)	Percentage Change:*	n/a		n/a		n/a
(5)	Reduction in Convictions per Program Participant:*					**n/a**
(a)	Adjustment: felony convictions as percent of total convictions measured:*					100.0%
(b)	Adjustment: extension of follow-up period to age 50:*					89.8%
(c)	Adjustment: percentage reduction to reflect bringing experimental results up to scale:*					0.0%
(d)	Adjusted effect: the reduction in the expected number of felony convictions per person:***					**n/a**
	Taxpayer Costs for <u>One</u> Felony Conviction					
(6)	Criminal Justice System Costs for <u>One</u> Felony Conviction:**					$40,453
(7)	Adjustment: percentage reduction in the avoided costs of one felony conviction:					25.0%
(8)	Criminal Justice System Costs Avoided for <u>One</u> Felony Conviction, Adjusted:***					**$30,340**
	Program Costs and Benefits, Taxpayer's Perspective					
(9)	Criminal Justice System Benefits per Program Participant:***					**n/a**
(10)	Cost of the Program per Program Participant:					**n/a**
(11)	Net Gain (Loss) per Program Participant:					**n/a**
(12)	Criminal Justice System Benefits per Dollar of Cost:***					**n/a**
(13)	Percent Reduction in Offenses Needed to Break Even:***					n/a
	Crime Victim Benefits					
(14)	Monetary (Tangible) Crime Victim Benefits for <u>One</u> Felony Conviction:**					n/a
(15)	Crime Victim Benefits per Program Participant:***					**n/a**
(16)	Crime victim benefits plus criminal justice system benefits per program participant:***					**n/a**
(17)	Criminal justice system and crime victim benefits per dollar of cost:***					**n/a**

*Felony re-convictions in Washington for non-sex offenders leaving prison or placed on community supervision, 8-year follow-up. The adjustments in lines (5b) and (5c) estimated by the Institute.
**Estimated with the Institute's model of the cost of felony offenses for Washington's criminal justice system and to crime victims.
***Line(5d)=line(5) X line(5a) X (1-line(5c)) / line (5b); line(8)=line(6) X (1-line(7)); line(9)=line(5d) X line(8); line(12)=line(9) / line(10) X -1; line(13)=line(10) / (line(2) X line(5a) X (1-line(5c) / line (5b) X line(8)); line(15)=line(14) X line(5d); line(17)=line(16) / line(10) X -1.

Community-Based Substance Abuse Treatment (Continued)

Research Design	Indicative Effect Size	Stat. Sig.	Studies Reviewed for Criminal Outcome Effects
5	0.11	NS	Latessa, E.J., and Moon, M.M. (1992). "The Effectiveness of Acupuncture in an Outpatient Drug Treatment Program," Journal of Contemporary Justice 8(4):317-331. The outcome measure is conviction, follow-up time is unclear. Sample size: 182 (T), 45 (C).
2	N/A	N/A	Vito, G.F. (1989). "The Kentucky Substance Abuse Program: A Private Program to Treat Probationers and Parolees," Federal Probation: 65-72. The research design did not meet the necessary standards to report effect size.

"Research Design" is measured on a 1 to 5 scale, with 5 representing a study in which the greatest confidence can be placed.

"Indicative Effect Size" measures the strength of the findings; the larger the number, the greater the effect on criminal outcomes.

"Stat. Sig." is whether the research results are statistically significant at the p=.10 level (S*); the p=.05 level (S**); the p=.01 level (S***); if significance was stated in the research but specific values not reported (S); if the reported result is not statistically significant (NS). The effect size and statistical significance of studies with a research quality rating of 1 or 2 are listed as not applicable (N/A) because so little predictive power can be placed in these studies.

TECHNICAL APPENDIX

Cost and Benefits:

Estimating the Value to Taxpayers and Crime Victims of Reducing Crime With Prevention and Intervention Programs

A Technical Description of the Cost-Benefit Model
Version 3.0

Contents

A1. Introduction

This Appendix describes the technical details of a cost-benefit model developed by the Washington State Institute for Public Policy. The purpose of the model is to provide economic information to the Washington State Legislature and executive agencies on prevention and rehabilitation programs and sentencing policies for Washington's criminal justice system.

A "model" is just an organized collection of information about a topic. The Institute's cost-benefit model organizes information on crime and how existing public policies and programs respond to crime in Washington State. The model uses this information to calculate the economics—that is, the expected costs and benefits—of choices available to policy makers. The goal, or "objective function," of the model is to evaluate and identify cost-effective approaches that can help minimize taxpayer and victim costs of crime.

General Structure of the Model

In its simplest form, the model computes costs and benefits by calculating three numbers:

1. the estimated value to taxpayers and crime victims of lowering the level of crime by one unit;

2. the estimated reduction in the amount of crime that a program can achieve; and

3. the cost of the program that can achieve the crime reduction.

This Appendix describes the first and third of these three elements; Section III in the main body of the report discusses the second element. With these three pieces of information, the cost-benefit model produces standard financial statistics (net present value, benefit/cost ratios, internal rate of return, break-even levels, and years to payback) on the net economic position of programs and policy alternatives. Computationally, the cost benefit model works from the following simple equation for determining the net economics of a program:

$$\begin{array}{ccccccc} \text{The Value of} & & \text{The Number of} & & \text{The Cost} & & \text{The Net Economic} \\ \text{Reducing Crime} & \mathbf{X} & \text{Units of Crime} & \mathbf{-} & \text{of the} & \mathbf{=} & \text{Position (i.e., the} \\ \text{by One Unit} & & \text{that a Program} & & \text{Program} & & \text{"Bottom Line") of the} \\ & & \text{Can Reduce} & & & & \text{Program} \end{array}$$

The values for these factors are marginal costs or benefits, estimated over the long run, and expressed in present-valued dollars. Sections A2, A3, and A4 of this Appendix describe the data sources and calculations for each of the components of this basic model. Section A5 describes the procedures to test the sensitivity of the model to key input variables and assumptions.

The model is a spreadsheet-based application that runs in Microsoft Excel 97 with Visual Basic for Applications. The sensitivity analysis, which employs a Monte Carlo simulation technique, uses Palisade's @*RISK* software.

A2. General Model Parameters

The Institute's cost benefit model uses a few general parameters. These model inputs are shown on Table A1. The first parameter is the year into which all dollar-denominated inputs are based. Typically, a year is chosen close to the current year. On Table A1, the base year is set to 1998.

Table A1 also contains information on the general price index used in the model to convert all dollar values into the base year chosen for the analysis. The Institute uses the Implicit Price Deflator for Personal Consumption Expenditures (IPD), although other price indices could be used. The IPD is convenient to use for analyses in Washington because it is forecast regularly by the Washington State Office of the Forecast Council, the official economic forecasting agency for Washington State government.

When an input to the model is denominated in another year's dollars, the model converts it to base year dollars. For example, the estimated annual marginal operating cost for the Department of Corrections is $18,400 per average daily population (from Table A3). As indicated on Table A3, this figure is estimated in 1995 dollars. When the cost model is run, the first step converts inputs to base year dollars by multiplying by the ratio of the IPD for 1998 to the IPD for year in which the costs are based. The Department of Corrections cost is then $19,289 (18,400 X 1.128/1.076) in 1998 dollars. In this manner, all dollar-denominated inputs to the model are expressed in base year dollars.

Table A1 contains three other model parameters: the assumed real discount rate, the assumed future general inflation rate, and the assumed nominal rate of tax-exempt capital financing. The model is designed so that the user can specify whether the analysis will be expressed in "nominal" or "real" terms. If "nominal" analysis is selected, a nominal rate of discount is calculated based on the user-supplied real discount rate and the assumed future general inflation rate. All future annual costs in the model are then escalated at the assumed rate of general inflation (plus any user-supplied real escalation rate, as shown on Table A3, for any particular resource), and then discounted by the nominal discount rate. If a "real" analysis is selected, only real escalation rates, if any, are applied to individual cost inputs and then the real discount rate is used to calculate present values. Whichever type of analysis is chosen, the cost-benefit analysis produces the same result.[14]

The most important user-supplied input on Table A1 is the annual real discount rate. This is the factor that reduces all future annual values in the model to present value. As used in this analysis, the real discount rate represents the relative general preference for owning or consuming a resource today versus owning or consuming the resource in the future. There are several competing theories about the choice of a discount rate for use in cost-benefit analyses.[15]

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[14] The model's ability to work in either nominal or real terms is for the convenience of the user; some analysts feel more comfortable working and reporting information in one mode or the other. There is no difference in the overall results of the analysis.
[15] For a discussion of these issues, see Boardman, A.E., Greenberg, D.H., Vining, A.R., & Weimer, D.L. (1996*). Cost-Benefit Analysis: Concepts and Practice,* New Jersey: Prentice Hall, Chapter 5.   See also, Brent, R.J., (1996), Applied Cost-Benefit Analysis, Cheltenham, UK: Edward Elgar, Chapter 11.

Table A1
General Model Parameters

Base Year Used in the Analysis

1998

Annual Discount and Interest Rates Used in the Analysis

Real Discount Rate	0.030
General Inflation Rate	0.030
Nominal Discount Rate[1]	0.061
Nominal Tax-Exempt Capital Cost	0.055

General Price Index Used in the Analysis

Year	Chain-Weighted Implicit Price Delfator for Personal Consumption Expenditures
1961	0.235
1962	0.237
1963	0.240
1964	0.243
1965	0.247
1966	0.253
1967	0.260
1968	0.270
1969	0.282
1970	0.295
1971	0.308
1972	0.319
1973	0.336
1974	0.371
1975	0.401
1976	0.423
1977	0.451
1978	0.484
1979	0.528
1980	0.585
1981	0.638
1982	0.674
1983	0.705
1984	0.731
1985	0.758
1986	0.780
1987	0.809
1988	0.843
1989	0.884
1990	0.929
1991	0.968
1992	1.000
1993	1.027
1994	1.051
1995	1.076
1996	1.097
1997	1.118
1998	1.128
1999	1.149
2000	1.177

(1) Nominal discount rate set to equal (1+real discount rate) X (1+general inflation rate)-1.

Source for Price Deflator: *Washington Economic and Revenue Forecast*, Office of Forecast Council, September 1998.

A3. Estimating the Value of Reducing One Criminal Offense

What is it worth to reduce a criminal offense? This is a central question in the Institute's cost-benefit model. The Institute approaches the question from two perspectives. First, there is some value to taxpayers if a criminal offense can be avoided. Second, there is some value to crime victims each time a criminal offense can be reduced. Unlike the market for other commodities, however, there is no convenient place to find the values of reducing crime by one unit. It is easy, for example, to find the current value of one unit of Microsoft stock; all one has to do is look in the newspaper or on the internet. There is no convenient market, however, to find the current value of reducing crime by one unit. This section of the paper describes the procedures used in the Institute's cost-benefit model to estimate that value.

A key element in the Institute's cost-benefit model is the estimation of the costs that crime imposes on taxpayers and crime victims. If crime can be reduced with effective programs or deterrence policies, then some of these costs can be avoided. Thus, calculating reasonable values for the incremental costs of crime plays a central role in estimating the benefit side of the Institute's cost-benefit model.

Many of the programs that the Institute analyzes with its cost-benefit model try to affect several behaviors in addition to preventing future criminal activity. For example, reducing teen pregnancy or substance abuse, improving academic performance, increasing employment, or maintaining in-prison control are often primary or secondary goals of programs. Although society, program participants, and taxpayers can benefit in many ways from changes in these behaviors, at present the Institute's analysis is restricted to measuring how a program affects crime-related costs. Future work is planned to expand the model to estimate non-crime related costs.

The Institute's cost-benefit model estimates life-cycle costs for six major types of felony crime and fourteen types of costs incurred as a result of crime, as shown in Table A2. These categories can be expanded or contracted to make the model more or less detailed. The fourteen types of costs estimated in the model reflect those paid by taxpayers in Washington and those incurred by crime victims. The following two sections describe these costs.

The Washington State Institute for Public Policy's
Cost-Benefit Model for the Criminal Justice System:
Types of Crimes and Resource Costs Analyzed

Six Types of Crime	**Fourteen Types of Resource Costs Incurred**
1. Murder/Manslaughter	1. Police and Sheriffs' Offices
2. Rape/ Sex Offenses	2. Superior Courts & County Prosecutors
3. Robbery	3. Juvenile Detention, with Local Sentence
4. Aggravated Assault	4. Juvenile Detention, with JRA Sentence
5. Felony Property Crimes	5. Juvenile Local Probation
6. Drug Offenses	6. Juvenile Rehabilitation, Institutions
	7. Juvenile Rehabilitation, Parole
	8. Adult Jail, with Local Sentence
	9. Adult Jail, with Prison Sentence
	10. State Community Supervision, Local Sentence
	11. Department of Corrections, Institutions
	12. Dept. of Corrections, Post-Prison Supervision
	13. Crime Victim Monetary Costs
	14. Crime Victim Quality of Life Costs

A3.1 Criminal Justice System Costs

In the Institute's cost-benefit model, the costs of the criminal justice system paid by taxpayers are estimated for each significant part of the publicly financed system in Washington. The costs of police and sheriffs, superior courts and county prosecutors, local juvenile detention services, local adult jails, state juvenile rehabilitation and state adult corrections are estimated separately in the Institute's analysis. Operating costs are estimated for each of these criminal justice system components, and annualized capital costs are estimated for the capital-intensive sectors.

The Institute's model uses estimates of *marginal* operating and capital costs of the criminal justice system. Marginal costs describe how the total cost of an operation changes as the unit of activity changes by a small amount. Marginal costs are different from average, or accounting, costs. Average costs are derived by simply dividing total costs by total workload in a given period of time. Some of those costs, however, are fixed and do not change when workload changes. Marginal costs reflect only those costs that go up or down as workload changes. Marginal costs are usually a better measure of these values than are average costs.[16]

The Institute's model defines marginal costs as those costs that change over the period of several years as a result of changes in workload measures. Some short-run costs must be changed instantly when a workload changes. For example, when one prisoner is added to

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[16] A few average cost figures are currently used in the model when marginal cost estimates can not be reasonably estimated.

the state adult corrections system, certain variable food and service costs increase immediately, but new corrections staff are not hired the next day. Over the course of a governmental budget cycle, however, new corrections staff are likely to be hired to handle the larger average daily population of the prison. In the Institute's analysis, these "longer-run" marginal costs have been estimated, rather than immediate, short-run marginal costs. These longer-run marginal costs reflect both the immediate short-run changes in expenditures, and those operating expenditures that change after governments make adjustments to staffing levels.

Table A3 summarizes the Institute's estimates for the per-unit marginal operating costs of the criminal justice system in Washington. Per-unit marginal capital cost estimates for key parts of the criminal justice system in Washington are shown on Table A4. Table A5 provides more detail on the equations developed to estimate per-unit marginal operating costs. The estimates for each component of the criminal justice system are discussed below.

Police and Sheriffs' Offices A cross-sectional regression model was estimated for the operating costs of county sheriffs' offices and local police departments in Washington. Expenditure data for each police jurisdiction (BARS code 521) was obtained from the Washington State Auditor.[17] Sub-categories excluded were Gambling enforcement (BARS 521.25) and DARE expenses (BARS 521.28). For the explanatory workload measures, two sets of data were included in the regression. Arrest data for each jurisdiction was obtained from the Washington Association of Sheriffs and Police Chiefs. The arrest data were categorized into three types: arrests for violent felonies (murder, rape, robbery, and aggravated assault), arrests for non-violent felonies, and arrests for misdemeanor offenses. The arrest data do not include traffic operations that consume a significant level of resources for police departments. To capture this effect, data from the Washington Office of the Administrator for the Courts was obtained on the number of traffic infraction filings in the local jurisdictions. All of these variables were entered in a log-log regression for pooled 1994 and 1995 data. The log-log form of the model was chosen because the relationship between the independent variable and the dependent variable is linear in natural logarithms. The results of the final equation are shown on Table A5. All of the variables are significant and the overall fit of equation is satisfactory. The sum of the four elasticities equals .86, a level that seems reasonable (a level less than 1.0 indicates a decreasing cost industry with regard to the scale variables measured, a condition that probably exists for policing services in Washington). The variables are also highly correlated which could indicate collinearity problems. Since all of the t-statistics are greater than 2, however, and since whatever multi-collinearity that existed in the 1994 and 1995 data is likely to exist in the future, the resulting coefficients can be used to provide reasonable estimates of marginal operating police and sheriff costs.[18]

Superior Courts and County Prosecutors The marginal operating costs for court processing expenses were estimated with expenditure data from the Washington State Auditor and workload data from the Washington Office of the Administrator for the Courts. A pooled cross-sectional regression analysis was performed on 1994 and 1995 data. The units of observation were the counties in Washington. Superior Court and Prosecutor

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[17] Expenditure data for several of the cost analyses used in the Institute's model were obtained from the Washington State Auditor's Office. The Audtor's Budgeting, Accounting, and Reporting System (BARS) classification of accounts was used for these analyses and the relevant BARS codes are listed in the section of the report.
[18] See Peter Kennedy, (1992), *A Guide to Econometrics, Third Edition*, Cambridge: The MIT Press, page 181.

expenses were regressed against four factors: the number of felony convictions for homicide; the sum of the number of convictions for robbery, sex offenses, and aggravated assault; the number of convictions for non-violent felonies; and the number on non-criminal superior court filings. These four factors appear to be reasonable proxies for the work activity of the courts. These estimates cover both juvenile and adult court processes.

The expense data from the State Auditor allow the segregation of some types of Superior Court expenditures. Expenditure data for district courts (BARS code 512.40), municipal courts (BARS code 512.50, these courts do not hear the felony cases modeled in the Institute's analysis), family court fees (BARS code 512.22), and law libraries (BARS code 512.70, which are not treated, accounting wise, uniformly by counties), were excluded from total superior court expenditures. The county prosecutor expenditure data from the State Auditor for years 1994 and 1995 were adjusted to remove the costs of the civil (BARS 515.22), consumer affairs (BARS 515.60), and child support enforcement (BARS 515.80) divisions of the county prosecutor offices.

Table A5 displays the regression results. The model was estimated in log-log form. The sum of the four elasticities equals .90, a level that seems reasonable. All of the variables are significant and the overall fit of equation is good. All dollars are expressed in 1995 dollars, using the implicit price deflator for personal consumption expenditures (see Table A1) to adjust the 1994 denominated dollars.

Local Adult Jails and Community Supervision   In the Institute's model of the criminal justice system in Washington, two type of users of local adult jails are analyzed: those convicted felons who serve both pre-sentence and post-sentence time at the local jail, and those felons who serve pre-sentence time at local jails and post-sentence time at a state institution. The Institute estimated local adult jail marginal operating costs for both of these events. From the State Auditor, local jail expenditure data for counties was collected for the years 1990 to 1995. These nominal annual dollar amounts were adjusted to 1995 dollars using the implicit price deflator for personal consumption expenditures (see Table A1). The Washington Association of Sheriffs and Police Chiefs collects annual data on the use of local jails in the state. The data for the expenses included all of the local jail expenditures (BARS 527) except local probation costs (BARS 527.40). The regression was estimated in log-log form.

Local Adult Jail capital costs for new beds were estimated from an analysis of the current cost estimates for a new 288 bed jail facility planned for Thurston County. Thurston County was also able to provide the Institute with a recent survey of comparative per-bed costs of other newly constructed jail facilities. The Thurston cost estimates are in line with the other recent actual experience. The cost estimates and financing assumptions are shown on Table A4. Total construction costs per bed were converted to an annual capital charge as shown on Table A4.

The annual operating costs of local community supervision of adult felons was obtained from a report published by the State of Washington Sentencing Guidelines Commission, *Criminal Justice in Washington State*, January 1995. This cost estimate represents the average, not the marginal, costs for "Level One" community supervision, custody, and placement.

Local Juvenile Detention and Supervision   The marginal operating costs for local juvenile detention and community supervision services were estimated in a manner very similar to the adult jail facilities and programs. The data sources, however, are different. In Washington, there is no regular, statewide, collection of information on the use of juvenile detention facilities. To get that information, the Institute conducted a survey of all juvenile courts in Washington asking for basic information on the average daily population, length of stay, and operating costs.[19] The results of this survey were used to estimate local juvenile detention costs. The result of the cross-sectional log-log regression is shown on Table A5.

Local Juvenile Detention Facility capital costs for new beds were estimated from an analysis of the current cost estimates for a new 80-bed detention facility planned for Thurston County. The new Thurston County facility will also include a family court in addition to the detention facility. The estimated capital costs for that court were removed from the total project costs to better reflect detention costs only. Thurston County also had comparative per-bed costs of other newly constructed detention facilities and the Thurston cost estimates are in line with other recent actual experience. The cost and financing factors are shown on Table A3. Total construction costs per bed were converted to an annual capital charge, also shown on Table A3.

The cost of local probation for juvenile offenders was also estimated with data from the Institute's survey of local juvenile courts in Washington. The cost used in the cost-benefit model is the average cost reported from that survey, not an estimated marginal cost.

State Juvenile Rehabilitation Administration (JRA)   State JRA marginal operating costs for JRA institutions were estimated with a time-series regression with data for fiscal years 1984 to 1996. Data on JRA's annual institutions operating expenditures were obtained from JRA and data on institutional average daily population were also obtained from JRA. The results of this regression are shown on Table A5.

JRA capital costs for new institutional beds were estimated from cost estimates provided by the House Appropriations Committee and JRA. The costs are estimates for construction of new facilities at an existing institution, not a new stand-alone facility. The cost and financing factors are shown on Table A4. Total construction costs per bed were converted to an annual capital charge also shown on Table A4.

The annual cost estimate for JRA parole services was taken from an analysis prepared by the Washington State Senate Ways and Means Committee in a report entitled *"Roundtable Discussion on Criminal Justice Funding Issues,"* January 28, 1997. The annual costs of parole are average, not marginal, costs.

State Department of Corrections (DOC)   State DOC operating costs were estimated in a similar fashion to those of JRA. A time-series regression for fiscal years 1984 to 1996 was estimated using DOC institutions operating expenses and the average daily population at the institutions. An additional variable, average daily population minus average institutional capacity was used to reflect the (generally) over-capacity conditions that are a part of typical historical operating conditions. Over the time period covered in the regression, average daily population averaged about 10 percent over capacity. When combined with the results

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[19] Washington State Institute for Public Policy, *Washington State Juvenile Courts: Workloads and Costs,* April 1997.

of the equation, an annual marginal operating cost of approximately $18,400 per ADP was obtained. Operating at capacity, rather than the historical ten percent over capacity level, would result in an annual marginal cost of about $20,500 per ADP.

DOC capital costs for new institutional beds were estimated. The cost and financing factors are shown on Table A4. Capital cost estimates were drawn from a recent report by the Joint Legislative Audit and Review Committee which described the costs of a new state 1,936 bed facility currently under construction. The total construction costs per bed were converted to an annual capital charge as shown on Table A4.

Post-prison community supervision cost estimates were obtained via a communication with staff at the Department of Corrections. These post-prison costs are average costs, not marginal costs.

Table A3
Estimates of Marginal Resource Operating Costs, Per Unit

Resource	Units Used In Cost Estimate	Costs, Per Unit, By Type of Felony Crime						Year in Which Unit Cost Estimates are Based	Annual Real Cost Escalation Rate
		Murder Manslaughter	Rape	Robbery	Aggravated Assault	Property	Drug		
State and Local Governmental Operating Costs Paid by Taxpayers									
Police and Sheriff's Offices[1]	$ Per Arrest	$12,551	$12,551	$12,551	$12,551	$1,890	$1,890	1995	0.0%
Superior Courts & County Prosecutors[1]	$ Per Conviction	$97,034	$18,399	$18,399	$18,399	$1,675	$1,675	1995	0.0%
Juvenile Detention, with Local Sentence[2]	Annual $ Per ADP	$30,300	$30,300	$30,300	$30,300	$30,300	$30,300	1995	0.0%
Juvenile Detention, with JRA Sentence[2]	Annual $ Per ADP	$30,300	$30,300	$30,300	$30,300	$30,300	$30,300	1995	0.0%
Juvenile Local Probation[2]	Annual $ Per ADP	$1,928	$1,928	$1,928	$1,928	$1,928	$1,928	1995	0.0%
Juvenile Rehabilitation, Institutions[1][3]	Annual $ Per ADP	$36,000	$36,000	$36,000	$36,000	$36,000	$36,000	1996	0.0%
Juvenile Rehabilitation, Parole[3]	Annual $ Per ADP	$8,000	$8,000	$8,000	$8,000	$8,000	$8,000	1996	0.0%
Adult Jail, with Local Sentence[1]	Annual $ Per ADP	$17,047	$17,047	$17,047	$17,047	$17,047	$17,047	1995	0.0%
Adult Community Supervision, Local Sentence[4][5]	Annual $ Per ADP	$2,688	$2,688	$2,688	$2,688	$2,688	$2,688	1994	0.0%
Department of Corrections, Institutions[1]	Annual $ Per ADP	$18,400	$18,400	$18,400	$18,400	$18,400	$18,400	1995	0.0%
Department of Corrections, Post-Prison Supervision[4][5]	Annual $ Per ADP	$2,688	$2,688	$2,688	$2,688	$2,688	$2,688	1994	0.0%
Costs Paid by Crime Victims									
Victim Costs--Monetary, Out of Pocket Costs[6]	$ Per Crime	$1,098,828	$6,649	$2,513	$1,559	$587	$0	1995	0.0%
Victim Costs--Quality of Life[6]	$ Per Crime	$2,038,965	$88,124	$6,221	$8,466	$0	$0	1995	0.0%

Sources and Notes:
(1) Costs estimated by the Washington State Institute for Public Policy using expenditure and workload data for jurisdictions in Washington, See Table 5.
(2) Washington State Institute for Public Policy, *Washington State Juvenile Courts: Workloads and Costs,* April 1997.
(3) Washington State Senate Ways and Means Committee, *Roundtable Discussion on Criminal Justice Funding Issues,* January 28, 1997, page 7.
(4) State of Washington Sentencing Guidelines Commission, *Criminal Justice in Washington State,* January 1995, page 39. This is for "Level One" community supervision, custody, and placement.
(5) Communication with staff at the Washington Deparment of Corrections.
(6) Communication with Ted Miller, National Public Services Research Institute. Victim costs per violent crime for Washington State in 9/95 dollars. Monetary victim costs include the categories of
   of medical spending, mental health payments, future earnings, and property damage, less public programs. Quality of life victim costs are computed from jury awards for pain, suffering,
   and lost quality of life; for murders, the victim quality of life value is estimated from the amount people spend to reduce risks of death. See, *Victim Costs and Consequences: A New Look,*
   U.S. Dept. of Justice, 1996.

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Table A4

Resource Capital Cost Estimates

Generic Capital Resource	Capital Costs of Resource					Financing Assumptions					Calculated Cost-Per-Unit Estimates	
	Units Used In Cost Estimate (see Sources Below)	Total Capital Costs (see Sources Below)	Year in Which Costs are Estimated	Capital Costs in Base Year Dollars	Capital Costs Per Unit in Base Year Dollars	Number of Years Over Which Capital is Financed	Nominal Tax-Exempt Financing Rate	Real Tax-Exempt Financing Rate	Levelized Annual Payment	Levelized Real Payment	Annual Nominal Capital Cost Per Unit, in Base Year Dollars	Annual Real Capital Cost Per Unit, in Base Year Dollars
Police Capital Expenditures[1]	322,233 arrests	$32,325,999	1992	$36,463,727	$113	5	5.50%	2.41%	$8,538,946	$7,828,380	$26	$24
Local Juvenile Detention Facility[2]	80 beds	$10,930,275	1995	$11,458,504	$143,231	20	5.50%	2.41%	$958,840	$728,796	$11,985	$9,110
State Juvenile Rehabilitation Facility[3]	64 beds	$4,635,000	1997	$4,676,458	$73,070	25	5.50%	2.41%	$348,627	$251,213	$5,447	$3,925
Local Adult Jail Facility[4]	288 beds	$11,248,200	1995	$11,791,793	$40,944	20	5.50%	2.41%	$986,729	$749,994	$3,426	$2,604
State Department of Corrections Facility[5]	1,936 beds	$191,485,235	1998	$191,485,235	$98,908	25	5.50%	2.41%	$14,275,100	$10,286,348	$7,374	$5,313

Sources for Capital Cost Estimates:
(1) U.S. Department of Justice, Bureau of Justice Statistics, *Justice Expenditure and Employment Extracts, 1992,* NCJ-148821.
(2) Based on the Thurston County Cost Model for a new 80 bed single story detention facility without a family court.
(3) Discussion with staff at the House Capital Budget Committee. The estimate assumes construction of a capital addition to an existing facility, not a new stand-alone facility.
(4) Based on cost estimates prepared for a new county minimum security facility in Thurston County.
(5) Legislative Budget Committee, *Department of Corrections Privatization Feasibility Study, Report 96-2,* pages A6-4 and A6-5.

Table A5
Procedures Used to Estimate Marginal Operating Costs

Resource	Procedure & Data Used to Estimate Marginal Operating Cost	Final Estimated Equation (t-statistics below the coefficients in equations)	Dependent Variable	Independent Variables
Police and Sheriff's Offices	Pooled cross-sectional regression for 1994 and 1995 for jursidictions in Washington; 1994 costs escalated to 1995 dollars with IPD.	$\ln(\text{Oper. Exp.}) = 9.55 + .212\ln(FVA) + .181\ln(nFVA) + .266\ln(nFA) + .203\ln(TR)$ (5.2) (4.2) (6.1) (9.2) R2Adj=.84 N=341	Data from the State Auditor include all Law Enforcement expenses except Gambling Enforcement and DARE subcategories.	Felony violent arrests (FVA), felony non-violent arrests (nFVA), non-felony arrests (nFA), and traffic infraction filings (TR). Arrest data from WASPC, traffic data from OAC.
Superior Courts & Prosecutors	Pooled cross-sectional regression for 1994 and 1995 for counties in Washington; 1994 costs escalated to 1995 dollars with IPD.	$\ln(\text{Oper. Exp.}) = 9.80 + .160*\ln(H) + .174*\ln(S+R+A) + .247*\ln(NVF) + .322(NCSCF)$ (2.65) (1.92) (2.22) (4.40) R2Adj=.94 N=74	All Superior Court expenditures except those for district court, family court fees, law library, and municipal court. All prosecutor costs except those for civil, traffic, consumer affairs, and child support enforcment. Data from the State Auditor.	Adult and juvenile convictions for homicide (H); sex offenses (S), robbery (R), aggravated assaults (A); non-violent felonies (NVF); and non criminal superior court filings (NCSCF). Data from OAC.
Local Juvenile Detention Facilities	Cross-sectional regression for 1995	$\ln(\text{Oper. Exp.}) = 10.38 + .987*\ln(ADP)$ (11.6) R2Adj=.89 N=18	Data from Washington State Institute for Public Policy survey of juvenile courts in Washington.	Data from Washington State Institute for Public Policy survey of juvenile courts in Washington.
Local Adult Jails	Pooled cross-sectional regression for 1990 to 1995. Pre-1995 costs escalated to 1995 with IPD.	$\ln(\text{Oper. Exp.}) = 9.938 + .9479*\ln(ADP)$ (52.3) R2Adj=.93, N=194	Data from the State Auditor include all operating expenses of local jails except probation and parole costs.	Jail average daily population data from the Washington Association of Sheriffs and Police Chiefs (WASPC).
Juvenile Rehabilitation, Institutions	Time series regression with annual data for 1984 to 1996. Model was run in log and non-log form with similar results. Dollars converted to 1996 dollars with IPD.	$\text{Inst. Oper. Exp.} = 9,863,961 + 35,974 * (\text{Institutional ADP})$ (6.58) R2Adj=.96, N=13	Data from the Juvenile Rehabilitation Administration include all instiutional operating expenses.	Data from the Juvenile Rehabilitation Administration for instiutional average daily population.
Dept. of Corrections, Institutions	Time series regression with annual data for 1984 to 1996. Dollars converted to 1995 dollars with IPD.	$\text{Inst. Oper. Exp.} = 57,299,937 + 20,447 * (\text{Inst. ADP}) -19,999*(\text{ADP-Capacity})$ (25.4) (-7.3) R2Adj=.98, N=13	Data from the Department of Corrections include all instiutional operating expenses.	Data from the DOC for all instiutional average daily population, and average daily population minus average institutional capacity.

A3.2 Crime Victim Costs

In addition to costs paid by taxpayers, many of the costs of crime are borne by victims. Some victims lose their lives. Others suffer direct, out-of-pocket, personal or property losses. Psychological consequences also occur to crime victims, including feeling less secure in society. The magnitude of victim costs is very difficult—and in some cases impossible—to quantify.

In recent years, however, national studies have taken significant steps in estimating crime victim costs. One US Department of Justice study by Miller, Cohen, and Wiersema divides crime victim costs into two types: a) *Monetary* costs which include medical and mental health care expenses, property damage and losses, and the reduction in future earnings incurred by crime victims; and b) *Quality of Life* cost estimates which place a dollar value on the pain and suffering of crime victims.[20] In that study, the quality of life victim costs are computed from jury awards for pain, suffering, and lost quality of life; for murders, the victim quality of life value is estimated from the amount people spend to reduce risks of death. The quality of life victim cost calculations are controversial for use in setting public policy.[21]

In the Institute's analysis, victim costs from the Miller, Cohen, and Wiersema study are used as estimates of per-unit victim costs in Washington State. The victim cost estimates currently in the model are shown on Table A3. In keeping with the Miller study, victim costs are subdivided into *Monetary* and *Quality of Life* estimates. When the Institute's cost-benefit model is used, monetary victim costs provide a more conservative estimate of victim costs, while the addition of quality of life cost estimates offer a more expansive definition of victim costs.

A3.3 The Criminal Justice System's Response to Crime in Washington

Not all crime is reported to, or acted upon by, the criminal justice system in Washington. When crimes are reported, however, the use of taxpayer financed resources begins. The degree to which those resources are used depends on the crime and the policies and practices governing the criminal justice system response. In the preceding two sections of this report, *per-unit* marginal cost estimates were discussed. This section discusses *how many units* of Washington's criminal justice system are used when crime happens.

In the Institute's model, whenever a crime occurs and is reported to, and acted upon by, local law enforcement, one "unit" of local police, court, and prosecutor resources are used. For example, when an arrest is made for a robbery, one unit of police, at $12,551 per unit (see Table A3), is consumed. Similarly, when a conviction for robbery is obtained in the courts, one unit of court and prosecutor resources, at $18,399 per unit (see Table A3), is used. In the analysis that produced these cost estimates, regressions were run on the total operating costs of police and courts against the recorded number of arrests and convictions, respectively. Not all police activity results in arrests and not all court cases result in convictions. The per unit cost estimates from the regression analyses impute these other costs to the actual number of arrests or convictions obtained. Suppose, for example, that

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[20] Miller, Ted R., Mark A. Cohen, Brian Wiersema, *Victim Costs and Consequences: A New Look,* Research Report, Washington DC: National Institute of Justice, 1996.

[21] See, for example, Clear, Todd R., "The Cost of Crime—Or Are Prisons or Community Programs the Best Crime Prevention Investment?," *Community Corrections Report*, November/December 1996, Volume 4, No. 1.

nine out of ten court cases for robbery result in conviction and the other case results in dropped charges. The regression estimate of marginal court costs per robbery conviction includes the costs of the ten cases spread over the nine convictions in this example. As will be shown later in this report, when a program demonstrates success in reducing the number of convictions, it can also be expected to reduce the total number of court cases, including those not resulting in conviction, in proportion to the actual case outcomes of Washington courts (the nine-out-of-ten ratio in the example).

Once a person is convicted for a criminal offense, sentencing policies and practices in Washington affect the use of different local and state criminal justice resources. The Institute's model of the criminal justice system incorporates these resource usage patterns. Tables A6 an A7 show how adult and juvenile criminal justice resources are used for the different types of crimes being studied in the Institute's analysis.

The first set of columns on Table A6 shows how the Institute's model separates adults sentenced to certain felony crimes into those who receive a sentence to a state prison and those who receive a local sentence. The information for this split comes from the Washington State Sentencing Guidelines Commission's analysis of actual sentences in fiscal year 1996. Table A6 also shows the average sentence received for those adults sentenced to a state prison. This information also comes from the Sentencing Guidelines Commission data. As a result of good-time reductions to some prison sentences, the average time actually served is often shorter than the original sentence. Table A6 shows the average prison length of stay, which is computed in the model by multiplying the sentence by a average percentage good-time reduction. The data on the average sentence reductions, by crime, are obtained from an analysis supplied by the Washington State Department of Corrections. The amount of post-prison supervision and the amount of pre-prison use of local jail facilities by prison-bound offenders, by type of crime, are shown on Table A6.

For those adults sentenced to local jail, the average jail sentence, including both pre- and post-sentence lengths, are shown on Table A6. The jail data are obtained from the Washington Association of Sheriffs and Police Chiefs' Jail Information Program. Finally, Table A6 also contains estimates on the average amount of community supervision time given to adults sentenced to local sanctions.

Juvenile sentencing information is shown on Table A7. The format is very similar to the adult sentencing data on Table A6, only the data sources are different. Under Washington's current laws, the age at which a youth is considered an adult varies for specific types of crimes. The first column on Table A7 contains information on the maximum age for juvenile court jurisdiction by type of crime. The actual determination of juvenile of adult court jurisdiction depends on several factors in addition to a person's age and his or her crime. The model uses the information on Table A7 as representative of the typical decisions made pursuant to current Washington State law.

The model uses data from the Washington Office of Financial Management to estimate the percent of all juvenile adjudications, by crime, that are committed to the Juvenile Rehabilitation Administration (JRA) and the number not committed to JRA, by crime. For those committed to JRA, Table A7 shows the average length of stay in years. The data for these length-of-stay estimates also come from the Office of Financial Management's forecasting model. Estimates of the average length of stay on juvenile parole in years are also shown on Table A7. Those juveniles committed to JRA spend, on average, some

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amount of pre-commitment time at local juvenile detention facilities. Table A7 contains these estimates. For those juveniles not committed to JRA, the average length of stay at local juvenile detention facilities and the average length of local probation was estimated from a survey of juvenile courts conducted by the Washington State Institute for Public Policy. These estimates are shown on Table A7.

When the juvenile data is updated in the future, one data source will change. Some of the functions performed by the Washington Office of Financial Management has been transferred to the newly-created Washington Caseload Forecasting Council.

Table A6
Adult Sentence and Resource Use Information

Crime	State Prison and Local Resource Use for Adult Felony Offenders, by Type of Crime							
	Sentence Outcome		Adults Sentenced to Prison				Adults Sentenced to Jail	
Crime	Percent Receiving Prison Sentence[1]	Percent Receiving Local Jail & Community Supervison Sentence[1]	Average Prison Sentence, In Years[1]	Average Prison Length of Stay, In Years[2]	Post-Prison Supervision, In Years[2],[3]	Average Jail Length of Stay (Prior to Prison), in Years[2]	Average Jail Length of Stay, in Years[1]	Average Community Supervision Length of Stay, In Years[2]
Murder/Manslaughter	95%	5%	19.0	16.1	2.9	0.70	0.53	1.00
Rape	59%	41%	7.7	6.7	3.0	0.44	0.43	2.00
Robbery	72%	28%	6.5	5.2	2.0	0.29	0.47	1.00
Aggravated Assault	31%	69%	4.3	3.5	2.0	0.30	0.35	1.00
Property	19%	81%	2.4	1.8	0.0	0.19	0.20	1.00
Drug	32%	68%	2.8	2.0	1.0	0.19	0.19	1.00

Sources and Notes:
(1) Estimates derived from *Statistical Summary of Adult Felony Sentencing, Fiscal Year 1996*, State of Washington Sentencing Guidelines Commission, Table 1.
(2) Estimates from information from the Washington State Department of Corrections.
(3) From *Adult Sentencing Manual 1996,* State of Washington Sentencing Guidelines Commission, page I-23.

Table A7
Juvenile Sentence and Resource Use Information

Crime	Jurisdiction	State Institution & Local Resource Use for Juvenile Felony Offenders, by Type of Crime						
		Outcome of Adjudication		Juveniles Committed to JRA			Juveniles Not Committed to JRA	
Crime	Last Age for Juvenile Court Jurisdiction	Percent Committed to JRA[1]	Percent Not Committed to JRA[1]	JRA Length of Stay, In Years[1]	Parole Length of Stay, In Years[2]	Detention Length of Stay, In Years[3]	Detention Length of Stay, in Years[3]	Probation Length of Stay, in Years[3]
Murder/Manslaughter	15	70%	30%	1.87	0.46	0.021	0.044	0.567
Rape	15	60%	40%	0.72	2.00	0.021	0.044	0.567
Robbery	15	64%	36%	1.22	0.31	0.021	0.044	0.567
Aggravated Assault	17	67%	33%	0.90	0.31	0.021	0.044	0.567
Property	17	9%	91%	0.40	0.23	0.021	0.044	0.567
Drug	17	27%	73%	0.51	0.23	0.021	0.044	0.567

Sources and Notes:
(1) From *Washington State Juvenile Rehabilitation Institutional Population Forecast*, Washington State Office of Financial Management.
(2) Estimates from information from the Washington State Juvenile Rehabilitation Administration.
(3) Washington State Institute for Public Policy, *Washington State Juvenile Courts: Workloads and Costs,* April 1997. Survey data were not
    collected by offense type, therefore average data for all offenses are used in this analysis.

A3.4 Scaling Factors to Align Crime, Arrest, and Conviction Units

In the model, the costs of different parts of the criminal justice system are estimated in different workload measures. Tables A3 and A4 indicate the units in which the resource costs have been estimated. Some of the cost elements are estimated in dollars per arrest while most costs are estimated in dollars per conviction. Victim costs are estimated in dollars per victimization. The costs estimated in dollars per average daily population are functionally the same as a dollar-per-conviction estimate, since a conviction generally must precede the use of prisons, probation, detention facilities, and jails.

When the overall cost-benefit model is used to evaluate the net economics of a particular program, the outcome evaluation describing the program may measure units that are different from those estimated for the per unit marginal costs on Tables A3 and A4. This will most often occur for the distinction between arrests and convictions. Not all arrests result in convictions, and the differences vary considerably by type of crime.

Significantly, some evaluations of programs are based on arrest outcomes, some are based on conviction outcomes, and others on the amount of self-reported crime. In the cost-benefit analysis, these units must be aligned to the units used in the cost model or else erroneous results will occur. For example, an evaluation study may conclude that a program is successful in lowering recidivism rates as measured by reductions in arrests. As noted, however, not all arrests result in convictions and many of the costs of the criminal justice system start only when a conviction takes place. For example, a program that lowers the average number of subsequent arrests by an average of 1.4 per program participant will result in 1.4 or fewer subsequent convictions (and all of the avoided costs associated with convictions). To adjust for this, scaling factors are calculated and used in the model.

There are two primary sources of information on the amount of publicly known crime in Washington: the police and the courts. In this regard, law enforcement agencies keep track of two things: the number of crimes reported to them and any arrests they subsequently make. The Washington Association of Sheriffs and Police Chiefs (WASPC) compiles these numbers annually from individual law enforcement agencies. The courts in Washington keep track of the number of criminal cases processed and the number of criminal convictions recorded. The Washington State Office of the Administrator for the Courts (OAC) keeps track of court activity statewide.

These two sources for "official" crime statistics tell only part of the crime story. The total amount of crime in Washington is, of course, unknown because many crimes are not reported to the police or adjudicated through the courts. There is some information, however, on the total amount of crime in society. The U.S. Department of Justice and the Bureau of the Census undertake the "National Crime Victimization Survey." This national survey, conducted annually since 1973, asks approximately 100,000 people 12 years old and older in 49,000 households about crimes they might have experienced during the previous six months.

Table A8 displays some of the principal information about crime used in the Institute's model from the two state sources and the national crime survey. Column (2) shows information from the National Crime Victimization Survey. Among other questions, the Census Bureau asks crime victims throughout the nation how often they report their

victimizations to police. For example, the 1996 survey indicates that about 53.9 percent of robbery victims report their victimizations to police. This information from the national survey of crime victims can be used with other data to help estimate the total number of serious crimes in Washington.

Columns (3) through (5) of Table A8 contain data and calculations made by the Institute on the number of crimes reported to, and arrests made by, the police in Washington. The data in column (3) show the number of crimes reported to police during 1996. The number of adult and juvenile arrests—as reported by the Washington Association of Sheriffs and Police Chiefs—are listed in column (4). The Institute made two adjustments to these data. First, WASPC's arrest data do not include arrest data from the city of Seattle. These numbers were obtained directly and were added to the totals reported on column (4). Second, in any given year, not all local law enforcement agencies report their arrest data to WASPC. For 1996, the Institute estimates that, after including the city of Seattle's arrest figures, 94 percent of the population in Washington was served by police agencies that reported their adult arrests to WASPC. For juvenile arrests, the Institute estimates that 83 percent of the Washington population was served by law enforcement agencies who reported to WASPC in 1996. The total arrest numbers in column (4) reflect these missing jurisdictions; statewide averages were imputed to the missing portions of the state.

Column (5) of Table A8 reports the total number of adult and juvenile offender convictions in the superior courts of Washington during 1996.

The Institute's cost-effectiveness model uses this information about crime, arrests, and court convictions to compute scaling factors. The relevant calculated ratios are shown on columns (6) to (8) of Table A8. The total number of crimes for the offenses considered in the Institute's model are estimated in column (6). This estimate is derived by dividing the number of crimes reported to the police in Washington by the proportion of crimes that, nationally, crime victims say they report to police. The cost-benefit model also uses a ratio of the number of crimes per court conviction by offense type and the number of arrests per court conviction.

It would be better to have individual-level data to estimate these scaling factors rather than using the aggregate-level data shown on Table A8. Future work by the Institute will seek to improve these scaling factor estimates. Nonetheless, it is reasonable to assume that if a program demonstrates success in lowering the number of convictions for particular types of offenses, the total number of arrests and crimes avoided will be greater. The current scaling method is an attempt to provide reasonable estimates for this.

The model contains "switches" that allow the user to disable this scaling process. In the above example, if the scaling switch was turned off, a conviction for a robbery offense would involve only one arrest (thus, only one unit of police costs, rather than the 2.29 units if the scaling switch is on) and only one victimization (thus, only one victimization cost rather than the 13.34 if the scaling switch is on). The effect of turning the scaling switch off is to lower the cost savings that are possible if convictions are reduced. In general, leaving the switches on probably produces a more accurate representation of the actual resources used when workload changes. As a conservative assumption to avoid overstating the benefits of crime prevention programs, the Institute usually turns the switches "off" and thereby disables counting multiple arrests and victimizations.

Table A8
Crime, Arrest, and Court Conviction Data
and Calculated Ratios

Crime	National Crime Victimization Survey[1]	Reported Crime and Arrest Data from the FBI and the Wasington Association of Sheriffs and Police Chiefs[2]		Court Conviction Data from the Office of the Administrator for the Courts[3]	Calculated Ratios		
	Proportion of Crimes Reported to Police, United States, 1996	Crimes Reported to Police, 1996	Estimated Total Number of Arrests, 1996	Total Felony Convictions	Estimated Number of Crimes[5] in WA, 1996	Crimes[6] Per Conviction	Arrests[7] per Conviction
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Murder/Manslaughter	n/a	255	253	269	255	0.95	0.94
Rape/Attempted Rape	30.7%	2,828	966	719	9,212	12.81	1.34
Robbery	53.9%	6,587	2,094	916	12,221	13.34	2.29
Aggravated Assault	54.6%	14,187	6,293	3,162	25,984	8.22	1.99
Property Crimes	34.8%	151,556	36,093	11,340	435,504	38.40	3.18
Drug Offenses	n/a	n/a	23,084	9,406	n/a	n/a	2.45

Sources and Notes:

(1) *National Crime Victimization Survey, Criminal Victimization 1996* , U.S. Department of Justice, November 1997.

(2) Crimes reported to police from the *Uniform Crime Reports,* FBI. Estimated total number of arrests from *Crime in Washington State, 1996 Annual Report,*
　　the Washinton Association of Sheriffs and Police Chiefs, including data supplied separately by the city of Seattle.
　　The raw data are adjusted for the non-reporting jurisdictions in the state by the Washington State Institute for Public Policy.
　　The rape category includes resorted "other sex offense" arrests. The property crime category includes 50% of reported larceny arrests

(3) From an analysis by the Institute of caseload data from the Office of the Administrator for the Courts for 1996.

(5) Column (6) = column(3)/column(2).

(6) Column (7) = column(6)/column(5).

(7) Column (8) = column(4)/column(5).

A3.5 Computational Routine for Calculating the "Base" Present Value Costs of Resources

The information from the preceding tables is combined to estimate the life-cycle costs associated with different crimes and different resources. The present-valued cost of a resource for a given type of offense is defined in the model as $PVCost_{ro}$. In this step in the overall cost-benefit model, the use of a resource starts in the first year and runs for the prescribed length of use of resource r for offense o (N_{ro}). Subsequent steps in the cost-benefit model, described later in this report, spread these "base" present-valued costs to the years in the future when it is estimated that offenses will occur for different types of populations.

If it is expected that real, inflation-adjusted, costs of resources will either rise or decline in the future, the costs for resource r can be escalated at an annual real escalation rate (Esc_r). There are only a few times when this value would be something other than zero; only in those situations when the real per unit cost of a resource was expected to grow or decline over the long run would the value for Esc_r be other than zero. The values for Esc_r currently in the model are shown on Table A3.

The base present value cost calculation is made with the following equation. The combined per unit operating and capital cost for resource r and offense o are converted to base year dollars. These costs are then escalated at a real growth rate and scaled as described above. The stream of costs run from time period 1 to the length of use of resource r and offense o. The cost steam is discounted to present value with the discount rate (Dis) chosen for the overall analysis.

(A1)
$$PVCost_{ro} = \sum_{t=1}^{N_{ro}} \frac{(OCost_{ro} \times \frac{IPD_{base}}{IPD_{rp}} + KCost_{ro} \times \frac{IPD_{base}}{IPD_{rk}}) \times (1 + Esc_r)^t \times Scale_{ro}}{(1 + Dis)^{t-1}}$$

where,

$PVCost_{ro}$	=	The present value costs for resource r and offense o for time periods 1 to the number of periods for resource r and offense o.
N_{ro}	=	The number of annual periods that resource r is used for offense o.
$OCost_{ro}$	=	The marginal operating cost of resource r and offense o, expressed in the year's dollars in which the resource cost is estimated.
IPD_{base}	=	The implicit price deflator for the year chosen as the base year for the overall analysis.
IPD_{rp}	=	The implicit price deflator for the year in which the operating cost p of resource r was estimated.
$KCost_{ro}$	=	The marginal capital cost of resource r and offense o, expressed in the year's dollars in which the resource cost is estimated.
IPD_{rk}	=	The implicit price deflator for the year in which the capital cost k of resource r was estimated.

| $Scale_{ro}$ | = | A scaling factor for resource r and offense o that corresponds to the program under review. |

| Esc_r | = | The annual rate of escalation in per unit costs for resource r. If the overall analysis is done in real terms, Esc_r will be the real escalation rate for a resource. If the overall analysis is done in nominal terms, Esc_r will be the general rate of inflation combined with any real escalation for a particular resource. |

| Dis | = | The discount rate used in the analysis. If the overall analysis is done in real terms, Dis will be the real discount rate. If the overall analysis is done in nominal terms, Dis will be the general rate of inflation combined with the real discount rate. |

As an example:

➢ if the annual cost per average daily population in a Department of Corrections institution for an offender committed for murder is $18,400 for operating costs in 1995 dollars (see Table A3) and $5,198 for capital costs in 1998 dollars (see Table A4), then, after converting these dollars to 1998 dollars (see Table A1), the combined cost per average daily population is $24,487 in 1998 dollars;

➢ and if no real rate of escalation is expected for the Department of Corrections resource ($Esc_r = 0$), see Table A3;

➢ and if the average length of stay for an offender convicted of murder is 16.1 years ($N_{ro} = 16.1$), see Table A6;

➢ and if the units of measurement in the analysis are convictions for offenses ($Scale_{ro} = 1$);

➢ and if the real discount rate used in the analysis is 3.0 percent ($Dis = .03$), see Table A1;

➢ then the expected base present value costs of the Department of Corrections institutions for the offense of murder is $309,088 ($PVCost_{ro} = \$309,088$).

This example means that, in base year 1998 dollars, taxpayers will pay $309,088 for the prison sentence of an adult murder conviction. This amount reflects a sentence that begins this year. This figure covers the life-cycle cost of only the prison resource associated with the murder conviction. Other criminal justice system costs also result from the murder conviction, including those incurred by police, courts and prosecutors, and adult local jail time while waiting for the state sentence.

Based on the inputs in the relevant tables in this report, the cost-benefit model computes base values for $PVCost_{ro}$ for each resource r and for each offense o in the model. Since the current model has fourteen separate resources and six offenses, $PVCost_{ro}$ is a matrix of 84 present-valued costs.

A3.6 Life-Cycle Offense Probabilities

The next step in the Institute's cost-benefit model applies two kinds of probabilities: one describes the chance that particular **types of offenses** will be committed by particular populations; the other describes **when in the future** particular offenses are likely to be committed.

Figure A1 displays a typical set of six lifetime offense curves. There is one curve for each of the six types of crime analyzed in the Institute's model. Each curve describes the estimated annual probability of a particular offense. The combined probabilities of the six curves (i.e., the combined areas under the six curves), is 100 percent. By definition, Figure A1 describes the expected criminal activity of someone who is going to commit one felony. The only question is the type of felony offense and when it is likely to occur.

Figure A1
For an Offender Convicted for One Felony:
The Annual Lifetime Probability of an Offense,
by Type of Crime and by Age of Offender
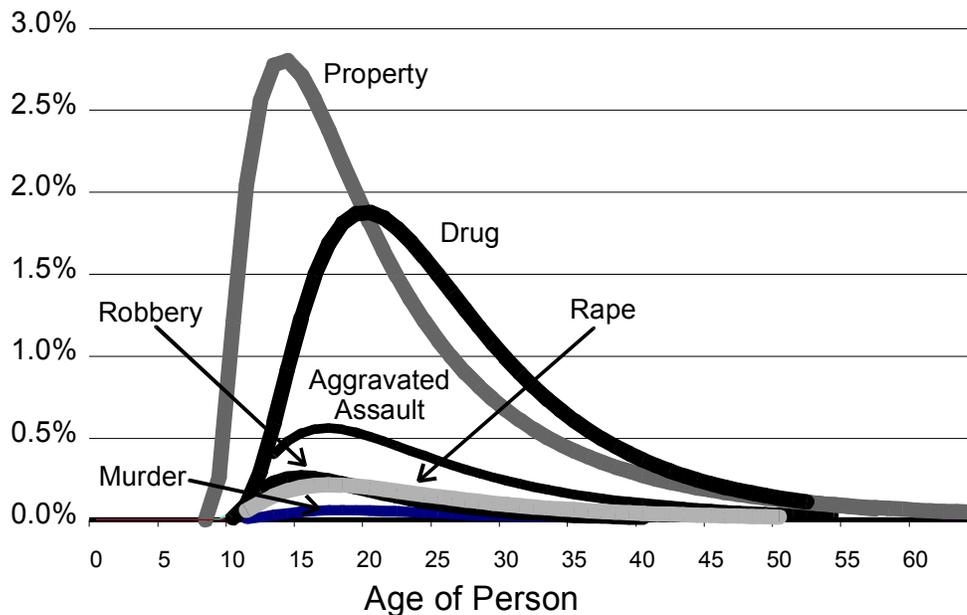
For the six curves shown on Figure A1, property and drug crimes have a much higher chance of occurring than murder or other violent crimes. Additionally, all of the crimes have a higher chance of occurring when people are younger rather than when they are older. These crime curves are typical for the general population of offenders, but they can be different for any particular population under study. For example, an intervention program targeted at drug offenders will have a set of curves that looks different than those for the general population of offenders represented by Figure A1. Similarly, violent offenders leaving prison will have different distributions than the curves for the general population. Each program studied with the Institute's cost-benefit model may be designed for a different population and, correspondingly, each analysis may use a set of crime curves that are unique to the population under study.

Thus, for any particular program analyzed with the cost-benefit model, estimates of the expected future probability density distribution of one offense—by the type of offense and by the age of the offender at the time of the offense—must be specified.

For those offenders who commit one felony offense sometime in the future, the chance that it will be an offense of a particular type is noted with:

(A2)
$$OffenseTypeDist_o$$

for o types of offenses. The model currently classifies six types of felony offenses: murder, sex offenses, robbery, aggravated assault, property offenses (the sum of burglary, felony, larceny, and auto theft offenses) and drug offenses. The sum of these probabilities is set to equal one.

(A3)
$$\sum_{o=1}^{O} OffenseTypeDist_o = 1.0$$

For example, for a given population targeted by an intervention program, the probabilities that an offender will commit one type of offense might be the estimates shown in the following table.

Example, Distribution of Offenses by Type ($OffenseTypeDist_o$)	
Murder	1.2%
Rape/Sex Offenses	3.1%
Robbery	9.2%
Aggravated Assault	13.7%
Property	15.3%
Drug	57.5%
Sum	100.0%

The table indicates that, for this population, of those who will commit a felony in the future, there is a 1.2 percent chance that it will be a murder, a 9.2 percent chance that it will be a robbery, and so on. These estimated probabilities will be different for any particular population under study. The distributions can be estimated from any of several sources of information, ranging from self-reported crime data, official arrest statistics, or offender-based court or institutional statistics.

Occasionally, the results of an outcome evaluation will contain longitudinal information about the types of offenses committed by treatment and non-treatment groups. More frequently, however, this type of information is not reported in evaluation research reports. In these situations, reasonable estimates can be made from longitudinal research conducted on populations in a jurisdiction. For example, the reported research results for an intervention program for high-risk juvenile offenders may not include long-run information

about the types of future offenses committed by treatment and non-treatment groups. This program, however, may have its most likely application for juvenile offenders on probation caseloads in Washington. From previous longitudinal research on juvenile probationers, reasonable estimates can be made about the types of future felony offenses these juveniles can be expected to commit. Those values would be used to estimate the $OffenseTypeDist_o$ distribution. Section A6 in this Appendix shows the results of the Institute's recidivism analyses for several Washington offender populations.

The next step is to estimate <u>when</u> the felony offense is likely to occur during the course of an offender's lifetime. In general, for a given population, the estimated lifetime offense curves will begin around the age of 10 and continue through the age of 65, or some other cut off point when the probability of offending is very low. The resulting age distribution is noted with:

(A4)
$$OffenseAgeDist_{oy}$$

for offense o and for year y in an offender's lifetime.

For any offense o, the sum of the annual probabilities is set to equal one.

(A5)
$$\sum_{y=10}^{65} OffenseAgeDist_{oy} = 1.0$$

These estimated probabilities will be different for particular population groups under study. Information ranging from self-reported crime data, official arrest statistics, or offender-based court or institutional statistics can be used to estimate the age distributions. Rarely will a program evaluation report this sort of information; it will almost always have to be inferred from other longitudinal research about the types of populations for which individual interventions are focused.

The Institute estimates the curves in equation (A4) with log-normal probability density distributions, although other forms of probability distributions can be specified in the model. In general, the Institute has found that log-normal distributions provide the best fit to actual longitudinal data on offense distributions by age of occurrence.[22] For example, the Institute has analyzed the long-run re-offense distributions of Washington's juvenile probation population, by type of offense. From this research, log-normal distributions were estimated that provide reasonable estimates of when a juvenile offender on probation, who re-commits a felony offense, is likely to re-offend with a new felony.

Since the purpose of the cost-benefit model is to estimate the <u>future</u> costs and benefits of programs or policies that prevent, incapacitate, or deter <u>future</u> crime, an adjustment must be made to the two distributions ($OffenseTypeDist_o$ and $OffenseAgeDist_{oy}$) in equations (A2) and (A4). The adjustment is necessary to account for the age of a typical participant in, say, a prevention or rehabilitation program. If, for example, a juvenile rehabilitation program is being evaluated for 15-year-olds, then some portion of the 15-year-old's expected lifetime crime distribution will have already occurred by the time he or she is 15 years old. The model adjusts for this first by summing the expected lifetime probabilities in the <u>remaining</u> years in the offender's lifetime and then by dividing by the total lifetime probability for a

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[22] Other criminal justice research has reached similar conclusions regarding the use of log-normal distributions for describing offense rates and criminal careers. See Spelman, William, (1994), *Criminal Incapacitation*, New York: Plenum Press, p. 119.

particular offense. By definition, this adjustment factor will always be less than or equal to one. A matrix of adjustments (*OffenseAdjust*$_o$), by offense *o*, is calculated as follows:

(A6)
$$OffenseAdjust_o = \frac{\sum_{y=P}^{Max} OffenseTypeDist_o \times OffenseAgeDist_{oy}}{\sum_{y=10}^{65} OffenseTypeDist_o \times OffenseAgeDist_{oy}}$$

(A7)
$$\sum_{o=1}^{O} OffenseAdjust_o <= 1.0$$

In this equation, *P* is the typical age of a program participant and *Max* is the maximum age measured with an evaluation, or with a multi-year recidivism study. Suppose that the cost-benefit model is used to evaluate the economics of a pre-school based prevention program with a typical age of a program participant at 3 years old (*P* = 3) and that the evaluation has tracked the population to age 27 (*Max* = 27). For 3-year-olds who grow up to become offenders, a substantial portion of their entire lifetime expected offense age distribution will be added up in calculating the adjustment factor (that is, *OffenseAdjust*$_o$ will be relatively close to 1.0). On the other hand, if the prevention program is aimed at 14 year olds (*P* = 14) and the study follows them to the age of 21, then a significant portion of the typical 14 year old's expected lifetime offense history will lie outside the measured time interval (*OffenseAdjust*$_o$ < 1.0).

These probability distributions and the adjustment factor are then combined to produce a probability distribution of <u>one</u> expected future offense (*OffenseDist*$_{oy}$) that ocurrs sometime between the age of program participation and the maximum age measured. This is the key distribution from which the model calculates the expected present value of future costs of <u>one</u> new offense.

(A8)
$$OffenseDist_{oy} = \frac{OffenseTypeDist_o \times OffenseAgeDist_{oy}}{OffenseAdjust_o}$$

The sum of this probability distribution of future offenses by offense type *o* and by year *y* is one since, by definition, the distribution applies to those who will commit at least one more felony offense. That is, the combined probabilities reflect the estimated likelihood of one future offense (from the typical age of a program participant to the maximum year measured) by the type of offense and when it is likely to occur.

(A9)
$$\sum_{o=1}^{O} \sum_{y=P}^{Max} OffenseDist_{oy} = 1.0$$

A3.7 Computational Routine for Calculating the Value of Reducing One Criminal Offense

Equation (A9) calculated distributions of one future felony offense by type and by year in an offender's life. Equation (A1) calculated the present value of a resource's cost, assuming its use began in the first year. In reality, costs will be incurred when an offense occurs, not necessarily in the first year of an offender's remaining life. Equation (A9) is used to estimate the length of time-to-offense (or re-offense) for those that will offend (or re-offend) at least once. The next step in the cost-benefit model distributes the base years costs calculated in equation (A1) to the offense distribution derived in Equation (A9). At this stage of the model, three additional factors are included in the model.

First, an annualized rate of decay (or growth) in expected future savings from a prevention, rehabilitation, incapacitation, or deterrence program or policy can be specified. If a program is being evaluated that has shown to achieve results with participants in the first few years after treatment, it may be assumed that some of the beneficial attributes of the program will begin to wear off as the participant ages. Alternatively, it can be hypothesized that the beneficial effects of a program will grow over time; the longer a person stays crime-free, the less the chance that he or she will engage in crime subsequently. The model allows for an exponential rate of decay (or growth) to be applied. Unless there is experimental or strong theoretical evidence to support a non-zero decay (or growth) factor, this value will usually be set to zero. An parameter (*Decayrate*) is estimated or assumed for each program the model evaluates and an array of decay factors (*Decay$_y$*) for each year *y* is calculated with this equation:

(A10)
$$Decay_y = (1 + Decayrate)^{y-1}$$

Second, if there is an assumed rate of escalation in the costs of a resource (see Table A3), then the model escalates the base year present valued costs to the year that the resource use begins. In equation (A11), below, $(1+Esc_r)^{y-P-1}$ provides this adjustment.

Third, for some offenses, a resource is used either at the state level or the local level. For example, of all adult robbery sentences in Washington in fiscal year 1996, 72 percent resulted in a sentence to a state prison, while 28 percent resulted in local jail sentences. In this step of the model, these "splits" between state and local resources for a given type of offense are accounted for with a variable (*StateLocal$_{ro}$*) for resource *r* and offense *o*. The state and local "splits" are shown on Table A6 for adult resources and Table A7 for juvenile resources.

All of these adjustments are combined in the following equation that creates a matrix of costs (*OffenseCost$_{roy}$*) for each resource *r,* by each offense type *o*, spread to each year *y*.

(A11)
$$OffenseCost_{roy} = OffenseDist_{oy} \times StateLocal_{ro} \times \left[PVCost_{ro} \times (1 + Esc_r)^{y-P-1} \right] \times Decay_y$$

In the next step, the costs identified in equation (A11) (*OffenseCost$_{roy}$*) are summed to present value for all resources, all offenses, and all years. The costs are present valued to

the age of the program participants, *P*. Thus if the program is designed to treat 12-year-olds, the clock starts running at twelve years. Any offense costs incurred when those twelve-year-olds are, say, 20-years-olds, are discounted eight years back to present value. If a pre-school program is designed for 4-year-olds, offenders who commit crimes when they are 20 years old will have the associated costs discounted 16 years to present value. In that way, the economics of programs that are aimed at diverse ages can be directly compared with each other. The following equation is used to sum the total expected future costs of one offense.

(A12)
$$TotalCost = \sum_{r=1}^{R} \sum_{o=1}^{O} \sum_{y=1}^{Max-P} \frac{OffenseCost_{roy}}{(1+Dis)^{y-1}}$$

When the model is used to study the costs and benefits of a program, the estimate for TotalCost is reported for three measures: taxpayer's total cost for one future offense; crime victim's monetary total cost of one future offense; and crime victim's quality of life total cost of one future offense. This separation is made so policy makers can either view the outcomes strictly from a taxpayer fiscal perspective, or more broadly from a perspective that includes crime victim costs.

A4. Estimating the Net Economics of a Program

The information generated in the previous sections of this paper, along with information about the cost of programs, is used to estimate the net economics for a program.

A4.1 Computational Routine for Estimating Program Costs

First, the net per unit costs of an intervention or program are estimated. This cost information is sometimes provided in an evaluation report. For example, an intervention may indicate that the cost of the experimental group was $4,000 per participant and the cost of the control group was $500 and that the program was less than one year in duration. These dollars might be expressed in a given years' dollars. Suppose they were reported in 1987 dollars in the research report. Calculating the net cost of the program would be accomplished with equation (A13).

$$(A13) \quad ProgramCost = \sum_{y=1}^{N_{exp}} \frac{ExperimentalCost_y \times \dfrac{IPD_{base}}{IPD_{ex}}}{(1+Dis)^{y-1}} - \sum_{y=1}^{N_{con}} \frac{ControlCost_y \times \dfrac{IPD_{base}}{IPD_{con}}}{(1+Dis)^{y-1}}$$

where,

ProgramCost	=	The net present value cost of the program, per program participant, in base year dollars.
ExperimentalCost$_y$	=	The reported or estimated annual cost of the treatment group, per program participant.
IPD$_{base}$	=	The implicit price deflator for the year chosen as the base year for the overall analysis, see Table A1.
IPD$_{ex}$	=	The implicit price deflator for the year in which the experimental group costs are reported or estimated, see Table A1.
ControlCost$_y$	=	The reported or estimated annual cost of the control group, per program participant.
IPD$_{con}$	=	The implicit price deflator for the year in which the control group costs are reported or estimated, see Table A1.
Dis	=	The discount rate used in the analysis. If the overall analysis is done in real terms, *Dis* will be the real discount rate. If the overall analysis is done in nominal terms, *Dis* will be the general rate of inflation combined with the real discount rate.
N$_{exp}$	=	The number of years the experimental group cost is incurred.
N$_{con}$	=	The number of years the control group cost is incurred.

In the example, since the program and control groups lasted less than a year, the net present value program cost would be the following:

$$\$4,880 = \$4,000 \times 1.128/.809 \text{ - } \$500 \times 1.128/.809$$

Often, research results fail to measure or report the cost of an intervention. Analysts conducting the research are often more interested in the outcomes of the programs, not in how much they cost. In those cases the values for *ExperimentalCost* and *ControlCost* in equation (A13) must be estimated. Usually a research report will describe how much treatment is given to the experimental and control groups. This is usually expressed in hours or weeks of treatment. The Institute has separately estimated current per unit costs of different types of service. These costs reflect market rates for different types of labor and services. The per unit costs can be multiplied by the workload figures from the research report to estimate the per participant costs for the experimental and control groups.

A4.2 Calculating the Net Economics of a Program

All of the information can now be combined to estimate the net economics of a program. Table A9 provides an illustration of the Adult Basic Education (ABE) program discussed in the main body of the report. The table is divided into two sections. The benefits and costs are listed separately for criminal justice costs paid by taxpayers and the costs incurred by crime victims.

The first four rows on Table A9 show the estimates for the expected costs associated with *one* future conviction. These are the numbers estimated in equation (A12) in this report. For the Adult Basic Education example, the first row shows the estimated taxpayer costs of each of the six types of felonies. For example, a murder is estimated to cost taxpayers $367,112 (in present value 1998 dollars) if committed by someone in the intended population for the Adult Basic Education intervention. The next row reprints the percentage distribution of one felony for the intended Adult Basic Education population. In the next row, the expected weighted average criminal justice costs associated with one future conviction is estimated to be $40,453 for the Adult Basic Education population.

The $40,453 value reflects the estimated marginal costs at each step of Washington's criminal justice system. The next line on Table A9 is a factor used by the Institute to be conservative in its estimates of taxpayer benefits. The premise behind the Institute's cost-benefit model is that if the number of criminal justice events are reduced (arrests or convictions), then incremental taxpayer costs for the criminal justice system will also be reduced. There is a strong reason to believe that this is the case. The state legislature and county commissioners tend to budget by workload measures. For example, when the average daily population of the Department of Corrections (DOC) changes, so too does the amount of money allocated to DOC by the legislature. The $40,453 marginal cost estimate is based on empirical evidence that criminal justice costs at all levels of the system do follow workloads. Since there is competition for scarce public funds in the budgetary process—between different areas of government as well as the alternative of lowering taxes—there is every reason to believe that this value reasonably reflects what will happen to criminal justice costs when workload goes up, *or down*.

Some have noted, however, that criminal justice costs go up with workload but may not fall as fast (or at all) when workload decreases; that is, that the cost function is not symmetrical. While we feel that there is not much empirical support for this position, the marginal costs developed by the Institute were estimated for time periods when criminal justice system costs were generally increasing. So while we believe that the criminal justice cost function is symmetrical, we do not know for sure that if a program reduces criminal justice workloads, budget-makers will reduce costs by a commensurate amount.

Thus the cost adjustment factor (the factor is .25 on table A9) is an arbitrary percentage reduction in the taxpayer value of reducing crime. We think there is a good case for setting this factor at zero; that is, to make no arbitrary reduction in the value of reducing crime. But, as a conservative assumption, and to avoid the chance that taxpayer benefits could be overstated, the factor is set to 25 percent. This conservative assumption means that only three-quarters of the estimated benefits (i.e. three-quarters of $40,453) are forwarded to taxpayers when crime goes down.

For the Adult Basic Education example, another way of saying this is that when felony convictions go up by one, we have strong empirical support to conclude that criminal justice costs go up by $40,453. But, to be conservative, when felony convictions go down by one, we are only assuming that costs go down by $30,340.

The next set of rows on Table A9 shows the change in the expected number of convictions per program participant. For the illustrative Adult Basic Education program, 0.095 felonies are expected to be reduced per average Adult Basic Education program participant, an 8.1 percent reduction.

Three Adjustments.   The next three lines list three adjustments the Institute makes. These adjustments are described in Section III of this report.

The next set of rows multiply the taxpayer costs of one subsequent felony conviction by the change in the adjusted number of felony convictions expected with the Adult Basic Education program. This yields an expected benefit of the change in convictions per program participant of $3,220 for the Adult Basic Education program. Subtracted from this product are the net program costs per participant as estimated with equation (A13). For Adult Basic Education, the net costs are estimated to be $1,888 per program participant.

After the $1,888 cost is subtracted, the bottom line for Adult Basic Education for taxpayers is, on average, a net gain of $1,332 for the average offender in the program. Per dollar of cost, the Adult Basic Education program is expected to produce $1.71 of taxpayer benefits.

As described in Section III of this report, a practical feature of the model structure is that "reverse engineering" calculations are possible. One of the most difficult parts of evaluation research is estimating how successful programs are likely to be in practice. It can take many years to track a program in order to estimate its effects on crime. Estimating costs is easier than evaluating program success rates. For example, for an early intervention program designed to keep truants from becoming criminal offenders, it is an arduous task to determine how effective the program will be in the long run. By changing the algebraic arrangement of the factors on Table A9, however, it is possible to solve for that factor and to assess the reasonableness of the result.

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The break-even level for a program is defined with the following equation:

$$BreakEven = \frac{ProgramCost}{(P_{base} \times M_{base} \times Adj) \times TotalCost_{cjs}} \times -1$$

In the ABE example shown on Table A9, *ProgramCost* is $1,888 per program participant. P_{base} is the percentage of the relevant Washington population expected to offend (or re-offend) without the program. M_{base} is the mean number of offenses (of those who re-offend) for the relevant Washington population for whom the ABE program would be given. *Adj* are the three adjustments discussed above.

$$-.048 = \frac{\$1,888}{(0.53 \times 2.21 \times 1 \times (1-.0) \div .898) \times \$30,340} \times -1$$

Therefore, in order for Adult Basic Education to break-even from a taxpayer's perspective, the program needs to achieve a 4.8 percent reduction the number of convictions.

The bottom two sections on Table A9 show estimates of the crime victim benefits associated with the expected effects of Adult Basic Education. In addition to costs paid by taxpayers, many of the costs of crime are borne by victims. Some victims lose their lives. Others suffer direct, out-of-pocket, personal or property losses. Psychological consequences also occur to crime victims, including feeling less secure in society. The magnitude of victim costs is very difficult—and in some cases impossible—to quantify.

In recent years, however, national studies have taken significant steps in estimating crime victim costs. One US Department of Justice study by Miller, Cohen, and Wiersema divides crime victim costs into two types: a) *Monetary* costs which include medical and mental health care expenses, property damage and losses, and the reduction in future earnings incurred by crime victims; and b) *Quality of Life* cost estimates which place a dollar value on the pain and suffering of crime victims.[23] In that study, the quality of life victim costs are computed from jury awards for pain, suffering, and lost quality of life; for murders, the victim quality of life value is estimated from the amount people spend to reduce risks of death. The quality of life victim cost calculations are controversial for use in setting public policy.[24]

In the Institute's analysis, victim costs from the Miller, Cohen, and Wiersema study are used as estimates of per-unit victim costs in Washington State.

In keeping with the Miller study, victim costs are subdivided into *Monetary* and *Quality of Life* estimates. When the Institute's cost-benefit model is used, monetary victim costs provide a more conservative estimate of victim costs, while the addition of quality of life cost estimates offer a more expansive definition of victim costs.

For the Adult Basic Education example, Table 9 reports that the monetary crime victim benefits of avoiding one felony conviction is estimated at $12,315. When this value is multiplied by the –0.11 reduced felonies per typical Adult Basic Education participant, the expected benefits are $1,307 in monetary crime victim benefits. When these benefits are

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[23] Miller, Ted R., Mark A. Cohen, Brian Wiersema, *Victim Costs and Consequences: A New Look,* Research Report, Washington DC: National Institute of Justice, 1996.

[24] See, for example, Clear, Todd R., "The Cost of Crime—Or Are Prisons or Community Programs the Best Crime Prevention Investment?," *Community Corrections Report*, November/December 1996, Volume 4, No. 1.

added to the taxpayer benefits of $3,220, the cumulative benefit becomes $4,528. Dividing this value by the cost of the program produces a total benefits per dollar cost ratio of $2.40.

Two additional financial statistics are also calculated for each program analyzed: the internal rate of return on investment, and the number of years its takes for the taxpayer's investment to be paid back (these statistics are not printed on Table A9). Both of these calculations are derived from the basic series of cash flows in equations (A11) and (A13). In the model, the internal rate of return is calculated using Microsoft Excel 97's *IRR* function. The present value cost of the program in equation (A13) is offset against the annual stream of benefits of reducing crime in equation (A11). Excel calculates the internal rate of return from this series of negative and positive cash flows. For the payback statistic, the annual discounted benefits in equation (A11) are cumulated from year one forward. When the cumulative sum of benefits is greater than or equal to the cost of the program in equation A13, the year in which the up-front cost is paid back is recorded.

Summary of Program Benefits and Costs
Adult Basic Education

	Total	Murder	Sex Offenses	Robbery	Aggravated Assault	Property	Drug
Taxpayer Costs							
Total present value cost of one felony, by type	-	($367,112)	($112,090)	($111,045)	($56,459)	($15,430)	($21,306)
Without the program, the distribution of one felony	100%	1.21%	3.06%	9.23%	13.67%	15.34%	57.50%
Total expected present value cost of one felony	($40,453)	($4,446)	($3,426)	($10,246)	($7,717)	($2,367)	($12,250)
Distribution if control group type of offense different		n/a	n/a	n/a	n/a	n/a	n/a
Adjustment to Cost	0.75						
Adjusted Cost	($30,340)						
Expected number of felonies per program participant before adjustment							
Without the program	1.173	0.014	0.036	0.108	0.160	0.180	0.675
With the program	1.078	0.013	0.033	0.099	0.147	0.165	0.620
Change as a result of the program	-0.095	-0.001	-0.003	-0.009	-0.013	-0.015	-0.055
Percentage Change	-8.1%						
Adjustment 1: (Felonies as Percent of Total)	100.0%						
Adjustment 2: (Extension of Follow-Up Period)	89.8%						
Adjustment 3: (percent reduction to bring upto scale	0.0%						
Without the program	1.306						
With the program	1.200						
Change as a result of the program	-0.106						
Percentage Change	-8.1%						
Expected CJS costs of the number of felonies per program participant							
Without the program	$39,624						
With the program	$36,404						
Expected benefits (costs) of the change in convictions, per program participant	**$3,220**						
Cost of the Program for the Treatment group	($1,888.16)						
Cost of the Program for the Control Group	$0.00						
Net Cost of the Program	($1,888.16)						
Net Cost/Benefit of the Program	**$1,332**						
Net gain per dollar of cost ($1.00 breaks even)	$1.71						
Percent reduction in offenses needed to break-even	4.8%						
Victim Monetary Costs							
Total present value cost of one felony, by type	n/a	($963,781)	($5,727)	($2,234)	($1,340)	($513)	$0
Total expected present value cost of one felony	($12,315)	($11,672)	($175)	($206)	($183)	($79)	$0
Expected Benefits (costs) of the change in convictions, per program participant	**$1,307**						
Cummulative Net Benefit	**$2,639**						

A5. Testing the Sensitivity of Input Data and Assumptions

The preceding sections of this Appendix describe a cost-benefit model that is "deterministic" in nature. That is, based on all of the inputs to the model, a single set of cost-benefit summary statistics are produced: the net present value of a program; its benefits/cost ratio; its internal rate of return; the break-even levels; and the number of years it takes to pay back the original investment.

Many of the inputs to the model are, however, uncertain to one degree or another. Because of this uncertainty, it is important to test how sensitive these "bottom line" conclusions are to changes in some of the key input assumptions.

The Institute does this by using a multi-variable simulation technique. The cost-benefit model uses a spreadsheet add-in—called "@RISK"—to estimate the uncertainty around several of the inputs to the model. The @RISK program performs a "monte carlo" simulation. In this type of procedure, the model computes all of the calculations described in this report—*after drawing randomly from user-defined probability distributions for each of the key input parameters.* The model performs these random draws many times (the user can select 500, 1000, 5000 or as many times as he or she wants), each time calculating different bottom-line cost-benefit statistics for an intervention. In the end, instead of having a single set of bottom-line values for a program, a probability distribution is formed. This allows an assessment of the riskiness and sensitivity of the key model inputs and, ultimately, the reasonableness of the results of the cost-benefit analysis. For example, instead of having one benefit-cost ratio of, say, $1.40 of benefits per dollar of cost, the model would produce two values: the expected value of $1.40 and a statement indicating the percent of the time that program's benefit cost ratio could be expected to fall below $1.00. With this additional information, the user can determine how risky the overall investment is, in addition to the expected bottom-line value.

The sensitivity analysis of the cost-benefit model will be described fully in a subsequent version of this report.

A6. Distributions of Criminal Recidivism in Washington's Offender Populations

As described in Section III of this report, the in its cost-benefit analyses, the Institute uses estimates of long-term criminal offense rates (that is, recidivism rates for programs aimed at offenders) for different populations. These rates reflect the Institute's best estimate of the long-term criminal behavior of different populations to which a particular program might be applied.

There are several sources for the information for these estimates. For many programs targeted at juvenile or adult offenders, our estimates are calculated from multi-year recidivism studies of different populations in Washington. For example, the rates for adult offender populations are based on an analysis the Institute conducted of how often different types of offenders committed to the Washington Department of Corrections are re-convicted for new felony offenses in Washington. For the adult corrections population, the Institute's recidivism analysis tracked, for eight years, the entire cohort of those released from prison or placed on community supervision in 1990. The Institute has calculated similar recidivism statistics for different types of juvenile offender populations in Washington. For the juvenile offender estimates, recidivism is tracked both while the juvenile is still a juvenile and when the juvenile might re-offend as an adult. Key statistics from these studies are recorded on the tables in this section.

From these longitudinal studies, the Institute calculates four types of information about recidivism that correspond to the four effect sizes discussed in Section III. The first is a simple bivariate split between those that re-offend, and those that do not. The second type of information is the average number of felony re-convictions of those who do re-offend. The third is a distribution on the type of felonies committed by the re-offenders. The Institute uses six categories of felonies in its cost-benefit model: homicide, sex offenses, robbery, aggravated assault, property offenses, and drug offenses.[25] The fourth type of recidivism information is the timing of the re-offenses over the multi-year follow-up period.

On the following tables, three of the four recidivism measures from the Institute's analyses are shown: the percent that re-offend (listed on the tables as the "Basic Recidivism Rate"), the average number of offenses of the re-offenders and all of those in the cohort (along with corresponding standard deviations), and the type of felony offenses for which re-offenders were convicted during the follow-up period.[26] On the following tables, these estimates are shown for various offender cohorts.

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[25] These six categories of felony crime are the major crime categories used by the Washington Office of Financial Management.

[26] The other recidivism parameter (the timing of the re-offenses) is used directly in the model to determine the value of lowering crime by one unit.

Results from Recidivism Studies of Various Populations in Washington

Recidivism Measure: New Felony Convictions in Washington

	WSIPP Recidivism Study (2-99) of Adults Leaving Prison in 1990 with an 8 Year Follow Up											
	Based on Most Serious Prior Offense						Based on the Instant Offense					
	Person Offense, Including Sex Offenses	Property Offense	Drug Offense	Sex Offense	All Offenses	All Non-Sex Offenses	Person Offense, Including Sex Offenses	Property Offense	Drug Offense	Sex Offense	All Offenses	All Non-Sex Offenses
Total Number in Study	899	932	750	467	3,048	2,581	664	1,024	942	418	3,048	2,630
Basic Recidivism Measures												
Basic Recidivism Rate	51.6%	62.6%	42.8%	27.6%	49.1%	53.0%	45.0%	63.3%	47.5%	24.6%	49.1%	53.0%
Mean Convictions for All in Group	1.11	1.51	0.83	0.47	1.07	1.17	0.91	1.54	0.96	0.37	1.07	1.18
Mean Convictions for Re-Offenders	2.14	2.42	1.94	1.71	2.17	2.21	2.02	2.44	2.03	1.50	2.17	2.22
Standard Deviation-All in Group	1.44	1.61	1.24	0.97	1.44	1.48	1.32	1.64	1.33	0.79	1.44	1.48
Standard Deviation-Re-offenders	1.35	1.40	1.20	1.15	1.34	1.35	1.28	1.43	1.24	0.92	1.34	1.36
Recidivism By Type of Recidivism Offense												
Murder	1.7%	0.9%	1.0%	0.0%	1.1%	1.2%	2.2%	1.0%	0.8%	0.0%	1.1%	1.2%
Rape/Sex	5.0%	2.6%	1.3%	45.8%	6.6%	3.1%	5.8%	3.9%	1.5%	52.5%	5.9%	3.4%
Robbery	12.9%	9.6%	4.2%	4.5%	8.8%	9.2%	16.7%	8.7%	5.0%	5.0%	9.0%	8.9%
Aggravated Assault	20.3%	12.7%	6.7%	21.3%	14.3%	13.7%	24.2%	14.2%	7.4%	19.2%	14.5%	13.7%
Property Offenses	10.9%	27.6%	4.0%	7.7%	14.7%	15.3%	7.2%	31.3%	5.3%	6.7%	18.2%	16.9%
Drug Offenses	49.1%	46.6%	82.9%	20.6%	54.5%	57.5%	43.7%	40.8%	80.2%	16.7%	51.3%	55.9%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

	WSIPP Recidivism Study (2-99) of Adults Placed on Community Supervision in 1990 with an 8 Year Follow Up											
	Based on Most Serious Prior Offense						Based on the Instant Offense					
Total Number in Study	1,430	4,935	2,181	238	8,784	8,546	996	5,093	2,559	136	8,784	8,648
Basic Recidivism Measures												
Basic Recidivism Rate	42.0%	42.8%	39.9%	38.2%	41.8%	41.9%	34.1%	42.9%	43.5%	25.7%	41.8%	42.1%
Mean Convictions for All in Group	0.85	0.98	0.81	0.74	0.91	0.91	0.66	0.96	0.92	0.44	0.91	0.92
Mean Convictions for Re-Offenders	2.03	2.28	2.03	1.92	2.17	2.18	1.95	2.25	2.12	1.71	2.17	2.18
Standard Deviation-All in Group	1.31	1.52	1.30	1.26	1.43	1.44	1.19	1.50	1.38	1.05	1.43	1.43
Standard Deviation-Re-offenders	1.30	1.56	1.32	1.37	1.46	1.47	1.28	1.54	1.36	1.45	1.46	1.46
Recidivism By Type of Recidivism Offense												
Murder	1.6%	0.6%	0.7%	1.8%	0.8%	0.8%	2.1%	0.8%	0.6%	0.0%	0.8%	0.8%
Rape/Sex	2.7%	1.8%	1.1%	21.0%	2.2%	1.8%	4.3%	2.2%	1.3%	20.3%	2.2%	2.1%
Robbery	4.7%	3.8%	2.3%	3.0%	3.6%	3.6%	5.1%	3.8%	2.7%	1.7%	3.6%	3.6%
Aggravated Assault	14.5%	8.1%	6.0%	12.6%	8.7%	8.6%	18.3%	8.5%	6.2%	20.3%	8.7%	8.6%
Property Offenses	40.6%	59.5%	19.6%	30.5%	46.8%	47.1%	35.9%	60.1%	23.5%	30.5%	46.8%	46.9%
Drug Offenses	36.0%	26.2%	70.4%	31.1%	38.0%	38.1%	34.3%	24.7%	65.7%	27.1%	38.0%	38.0%
Totals	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table A11
Results from Recidivism Studies of Various Populations in Washington
Recidivism Measure: New Felony Convictions in Washington

| | WSIPP Recidivism Study Results of Juvenile Offenders | | | | | | | | | |
| | Offenders in Juvenile Court | | | | Offenders Committed to the State Juvenile Rehabilitation Administration | | | | | |
	Offenders Place of Probation	Offenders Placed on Diversion	Estimated High Risk Offenders Place on Probation	Estimated Low Risk Offenders Placed on Probation	Person Offense, Including Sex Offenses	Property Offense	Drug Offense	Sex Offense	All Offenses	All Non-Sex Offenses
Total Number in Study	6,917	16,532	100	100	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Basic Recidivism Measures										
Basic Recidivism Rate	45.8%	18.7%	60.0%	25.0%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Mean Convictions for All in Group	1.12	0.37	1.76	0.50	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Mean Convictions for Re-Offenders	2.44	1.95	2.93	1.98	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Standard Deviation-All in Group	1.71	0.99	2.26	1.11	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Standard Deviation-Re-offenders	1.78	1.48	2.25	1.42	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Recidivism By Type of Recidivism Offense										
Murder	1.3%	1.4%	1.3%	1.4%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Rape/Sex	1.3%	0.7%	1.3%	0.7%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Robbery	7.2%	5.6%	7.2%	5.6%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Aggravated Assault	16.7%	13.5%	16.7%	13.5%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Property Offenses	55.0%	59.7%	55.0%	59.7%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Drug Offenses	18.4%	19.1%	18.4%	19.1%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Totals	100.0%	100.0%	100.0%	100.0%	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A