

**Utah Cost of Crime**

**Intensive Supervision  
(Juveniles):  
Technical Report**

**December 2012**



THE UNIVERSITY OF UTAH

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*Utah Criminal Justice Center*

COLLEGE OF SOCIAL WORK  
COLLEGE OF SOCIAL & BEHAVIORAL SCIENCES  
UTAH COMMISSION ON CRIMINAL AND JUVENILE JUSTICE  
S.J. QUINNEY COLLEGE OF LAW



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**Technical Report**

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While originally designed as a cost-saving mechanism for diverting adult offenders from institutional placements, intensive supervision programs (ISP) have also been implemented with juveniles. With juvenile offenders, ISPs explicitly attend to both the rehabilitative- and surveillance-oriented goals of the juvenile justice system (Armstrong, 1991). These programs typically provide treatment and services for both offenders and their families, target offenders' interactions in peer- and school-environments, and provide structure to monitor the goals of the court (Altschuler & Armstrong, 1991; Wiebush, Wagner, McNulty, Wang, & Le, 2005). In the 1990s, the United States Office of Juvenile Justice and Delinquency Prevention (OJJDP) created an intensive aftercare research and demonstration program to provide best practice guidelines for reintegrating high-risk, juvenile parolees into the community. Known as intensive aftercare programs (IAP), this model used increased supervision as one component of a structured, multi-dimensional intervention that included assessment, transition planning, case management, and graduated sanctions (Wiebush et al., 2005).

### **Prior Research**

Research on juvenile offenders provides inconclusive results on the effectiveness of intensive supervision as a strategy for deterring criminal and delinquent behavior (Drake, Aos, & Miller, 2009; Henggeler & Schoenwald, 2011; Lipsey, 2009; MacKenzie, 2006). In an analysis of intensive supervision for juveniles, MacKenzie (2006) combined nine (9) effect sizes and found no difference in recidivism rates for juveniles placed in ISPs when compared to regular supervision or secure placement. Drake, Aos, and Miller (2009) also found no difference in recidivism rates between juveniles in ISPs when compared to regular supervision (three (3) studies) or secure placements (five (5) studies). In contrast, an earlier study by the Washington State Institute for Public Policy (WSIPP) found that juvenile offenders on intensive supervision had significantly lower rates of recidivism than offenders on regular supervision (Aos et al., 2001). The WSIPP analyses found no difference in recidivism when comparing ISP to incarceration; however, given cost differences between community-based supervision and a secure placement, the authors concluded that intensive supervision was cost effective when compared to incarceration (Aos et al., 2001). Increasingly, research indicates that ISPs are effective despite, rather than because of, intensive surveillance strategies (Henggeler & Schoenwald, 2011). In a meta-analysis of more than 500 studies of interventions for juvenile offenders, Lipsey (2009) found that program effectiveness—in both community and secure settings—was primarily a function of program philosophy and treatment quality. Regardless of setting, programs that were grounded in therapeutic treatment philosophies were more effective than programs that were grounded in surveillance- and control-oriented philosophies. These findings suggest that disparities in the research on juvenile ISPs might be a function of differences in treatment and service delivery rather than the nature and intensity of supervision strategies (Lipsey, Howell, Kelly, Chapman, & Carver, 2010).

## **Methods**

### **Inclusion Criteria**

A systematic review was conducted, in accordance with the protocol outlined by PRISMA (Moher, Liberati, Tetzlaff, & Altman, 2009), to identify studies for inclusion in this meta-

analysis. The research team identified eligibility criteria for population, intervention, setting, outcome, and methodology (see Methods Report for complete explanation of the search strategy). The search was restricted to studies written in English and conducted between 1987 and 2011. Studies had to meet the following criteria to be eligible:

- a) Both the treatment group and the comparison/control group must consist of juvenile offenders (ages 12-22 and/or processed within the juvenile justice system). The treatment group must consist of offenders under some form of intensive supervision (either probation or parole). The comparison group must consist of offenders who are under some form of juvenile justice supervision (probation, parole, or residential placement).
- b) The study must evaluate a juvenile justice intervention. Primary prevention programs and programs serving non-court involved populations were excluded. Intensive supervision was defined as increased surveillance, which could include: smaller caseloads for probation/parole officers, more frequent contact with offenders, home confinement, Day Reporting Centers, and electronic monitoring. Intensive supervision programs that included a treatment component were included; however, the study authors had to explicitly identify the surveillance component as intensive. Studies that evaluated intensive treatment or case management programs, implemented within the context of regular supervision, were not eligible for inclusion.
- c) Interventions conducted within the context of any community-based placement were eligible.
- d) The study must include a measure of recidivism—which could be arrest, conviction, return to residential placement, supervision failure, or other measure of delinquency—as an outcome. Recidivism data from official sources was preferred, but studies using only self-report recidivism measures were also eligible. Offenses committed while the offender was in a secure facility were not included. For comparisons between regular probation and ISP, all offenses were included (both during and post-supervision). Non-criminal outcome measures—such as measures of treatment targets—were excluded from this analysis. The study must report quantitative results that could be used to calculate an effect size. Given the interest in recidivism, dichotomous data were preferred (e.g., odds ratios). If the study only included continuous measures, effect sizes were calculated and converted into odds-ratios (Lipsey & Wilson, 2001) using log odds (see Methods Report).
- e) Both experimental and quasi-experimental studies were eligible for inclusion. Quasi-experimental studies had to use matching or statistical methods to demonstrate equivalence between the intervention and comparison group. Treatment dropouts were not considered an appropriate comparison group. Comparison groups consisting of offenders who refused treatment were included only if the authors conducted analyses that demonstrated that the groups were similar.

### **Retrieving and Screening Studies**

The ISP search identified 1,933 citations, from which researchers pulled 116 studies for further evaluation. Full articles were screened by the research team, which resulted in 19

studies that met inclusion criteria. Twenty-percent (20%) of the full articles (k=22) were double-screened for inclusion; discrepancies between researchers were resolved through discussion. Six (6) studies evaluating intensive aftercare programs (IAP) were found and three (3) of those were subsequently excluded because intensive supervision was determined by the research team to be a small component of an intervention that included an extensive range of services and interventions (excluded studies: Deschenes, Greenwood, & Marshall, 1996; Sealock, Gottfredson, & Gallagher, 1997; Wiebush et al., 2005). The total sample for juvenile ISP is 16 studies, which represent 19 independent comparisons (see Appendix A). From this point forward, the term study refers to independent comparisons.

### **Extracting Data**

The authors developed a detailed code sheet and manual, which included variables related to study quality, program characteristics, participant characteristics, and treatment variables (see Methods Report for a full description of coding variables). One researcher coded all of the included studies and entered the data into an Excel spreadsheet. Ten percent (10%) of included studies were double-coded (k=2), by a second researcher; discrepancies in coding were resolved through discussion with the research team. To assess study quality, the researchers used a modified version of The Maryland Scale of Scientific Rigor (Aos et al., 2001; Gottfredson, MacKenzie, Reuter, & Bushway, 1997). Studies that received a rating lower than three (unmatched comparison group or no comparison group), out of five possible points, were excluded. Where studies reported multiple measures of recidivism, researchers selected the broadest measure (e.g., arrest over conviction and conviction over re-incarceration).

### **Analysis**

Data were coded into an Excel spreadsheet, which allowed researchers to calculate descriptive statistics for the full sample. The researchers then recoded variables, to condense data into comparable units wherein each study contributed only one effect size to each outcome measure, and entered those into *Comprehensive Meta-Analysis* (CMA, version 2). Using CMA, the researchers assessed heterogeneity using the *Q* and *I*-squared statistics (see Results section). The *Q* statistic is a test of the null hypothesis: a significant value ( $p < .05$ ) indicates that the variation between studies was greater than one would expect if the difference could be explained entirely by random error (Borenstein, Hedges, Higgins, & Rothstein, 2009). Because the *Q* statistic is not a precise measure of the magnitude of dispersion between studies, the researchers conducted additional analyses to quantify the proportion of variance that could be attributed to differences in study characteristics (e.g., setting, population, intervention). The *I*-squared statistic (values range from 0% to 100%) provides an estimate of how much of the variation between studies can be explained by random error: values near 0 indicate that all of the difference can be explained by random error. Values at 25%, 50% and 75% are, respectively, considered low, moderate, and large heterogeneity (Piquero & Weisburd, 2010). Given the range of study characteristics present in this sample, a random effects model, which assumes variability between studies (Piquero & Weisburd, 2010), was used to generate a summary effect size for each outcome measure. All data was coded and transformed into odds-ratios, with values above 1

indicating a negative treatment effect and values below 1 indicating a positive treatment effect (i.e., reduced recidivism rates for offenders who participated in treatment).

## Results

### Sample Characteristics

The majority of comparisons (k=17) were from studies conducted in the United States (U.S.) and were published in peer-reviewed journals (see Table 1). The majority of studies (k=13) were randomized control trials. The follow-up period ranged from six months to three years. All of the studies included a measure of new criminal or delinquent behavior. Two studies also included a measure of technical violations; however, those were not included in this analysis, which was focused on the costs of new crime. All of the studies evaluated treatment-oriented ISPs. Twelve (12) studies made comparisons between ISP and regular supervision, five (5) made comparisons between ISP and secure placements, and one compared different forms of ISP. Four of the studies evaluated samples of juvenile parolees; the remaining studies (k=15) were evaluations of probationers. Total sample size ranged from 40 to 1,688 and the entire sample describes 4,511 offenders in treatment groups and 3,456 offenders in comparison groups (see Appendix B).

**Table 1** Characteristics of studies included in meta-analysis (k=19)

Characteristics	Frequency	%
<b>Publication type</b>		
Peer-reviewed journal	10	52
Unpublished technical report	7	37
Book	2	11
<b>Sample location</b>		
U.S.	17	89
Canada	--	--
Other	2	11
<b>Methodological Quality</b>		
5: Random Control Trial (RCT)	13	69
4: High quality quasi-experimental <sup>1</sup>	1	5
3: Quasi-experimental with testing or matching	5	26

<sup>1</sup>Employs a quasi-experimental research design with a program and matched comparison group, controlling with instrumental variables or Heckman approach to modeling self-selection; May also include RCT with problems in implementation.

### Meta-analysis

Nineteen (19) comparisons were included in the meta-analysis, which included 13 studies comparing ISP to regular supervision, five (5) studies comparing ISP to a secure placement, and one (1) study comparing two forms of ISP. The omnibus analysis (k=19) showed a random effects mean odds-ratio of 0.89 (95% CI 0.81 to 0.97, p<0.05), which is a significant result that favored the intervention. The within groups *Q* test showed that the distribution



of the effect sizes was not significantly heterogeneous ( $Q=15.12$ ,  $df=16$ ,  $p=0.52$ ). One study (Pullen, 1996) compared two ISPs, which used different treatment models, and therefore functioned as an analysis of the type of treatment implemented within each ISP rather than an evaluation of intensive supervision. The results were not significant and the study was excluded from the following sub-group analyses.

**ISP compared to regular supervision.** General recidivism was examined in 13 studies in which intensive supervision was compared to regular probation or parole (see Appendix C). In eight (8) of those, results favored the intervention (one was significant at  $p<0.05$ ). The odds-ratios for general recidivism for intensive supervision as an enhancement to regular supervision ranged from 0.35 to 1.58. The random effects mean odds-ratio was 0.88 (95% CI of 0.80 to 0.97,  $p<0.01$ ), indicating a significant difference in recidivism between the intervention and comparison groups. The within groups  $Q$  test showed that the distribution of the effect sizes was not significantly heterogeneous ( $Q=8.40$ ,  $df=12$ ,  $p=0.75$ ). These results indicate that ISP for juvenile offenders is associated with significantly lower recidivism rates when compared to regular supervision.

**ISP compared to secure placement.** Recidivism was examined in five (5) studies in which intensive supervision was compared to a secure placement (see Appendix C). In three (3) of those, results favored the intervention (none were significant at  $p<0.05$ ). The odds-ratios for general recidivism ranged from 0.50 to 2.54. The random effects mean odds-ratio was 0.96 (95% CI 0.62 to 1.50,  $p=0.86$ ), indicating no significant difference between the intervention and comparison group. The within groups  $Q$  test showed that the distribution of the effect sizes was significantly heterogeneous ( $Q=6.73$ ,  $df=4$ ,  $p=0.15$ ,  $I^2=40.52$ ). These results indicate that ISPs are not associated with lower recidivism when compared to secure placements. Based on the variability of effects included in the analysis, it is likely that the mean odds-ratio is not representative of the true difference between ISPs and secure placement.

### **Limitations**

The strength of a meta-analysis rests on the comprehensiveness of the search strategy. While the research team sought to identify all eligible studies, the possibility exists, and is in fact likely, that those efforts failed to identify all the extant research on Intensive Supervision Programs (ISP) for juvenile offenders. In some cases, the researchers were unable to obtain studies that were identified as eligible evaluations. The studies included here reflect significant heterogeneity in terms of offenders, settings, program structure, implementation fidelity, and outcome measures. In particular, many of the IAP programs are highly structured interventions wherein intensive supervision is only a small component of a larger initiative. The effects of such interventions may in fact be attributable to other program components and not the intensity of supervision. While the research team excluded several studies because intensive supervision did not figure prominently in the intervention, such decisions may reflect the detail of the reporting process rather than actual program differences.

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### **Included Studies**

Note: The studies marked with an asterisk (\*) were included in the analyses. Studies without an asterisk are eligible but statistically dependent.

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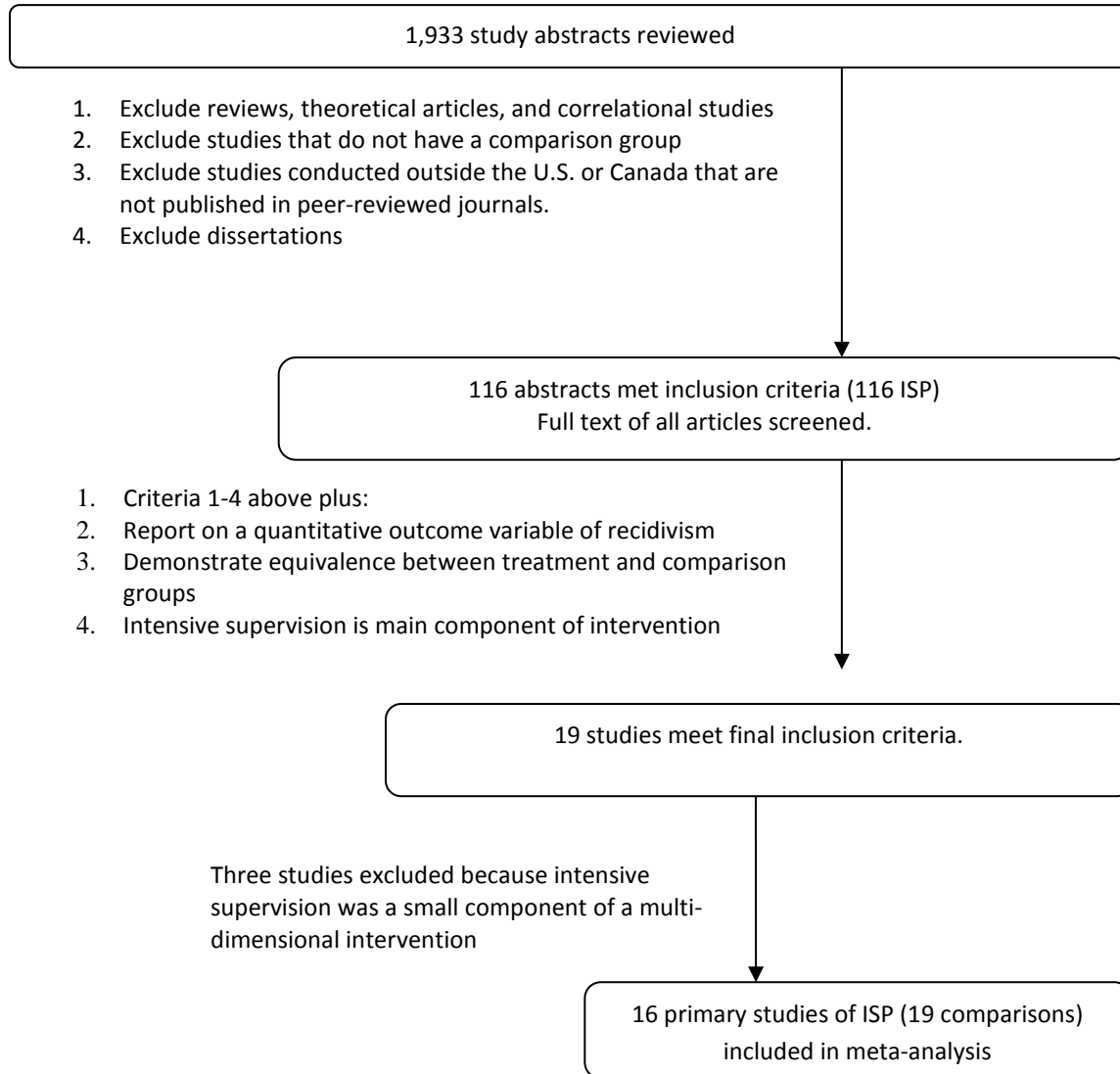
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## Appendix A: Search Results

Search: Title and Abstract  
Search Limiters: Date Range  
(1987-2011), English



## Appendix B: Included Studies

Author	Date	N in Each Group		Study Design	Compared to	General Recidivism	
		Intervention	Cg			Odds-Ratio	95% CI
Barnoski	2002	342	321	Convenience	Regular Supervision	1.07	0.73, 1.57
Barnoski	2003	1215	473	RCT	Regular Supervision	0.91	0.71, 1.15
Barton & Butts	1990	326	160	RCT	Secure Placement	1.37	0.98, 1.94
Brownlee et al.	1995a	45	21	Convenience	Secure Placement	0.65	0.18, 2.31
Brownlee et al.	1995b	95	81	Convenience	Secure Placement	1.24	0.50, 3.10
Elrod & Minor	1992	22	22	RCT	Regular Supervision	0.78	0.30, 2.01
Fagan	1990	39	37	RCT	Secure Placement	0.42	0.17, 1.06
Fagan et al.	1991	213	102	RCT	Regular Supervision	0.91	0.54, 1.53
Greenwood et al.	1993a	50	49	RCT	Regular Supervision	1.25	0.47, 3.35
Greenwood et al.	1993b	46	41	RCT	Regular Supervision	0.96	0.41, 2.23
Hennigan et al.	2010	914	920	RCT	Regular Supervision	0.82	0.71, 0.95
Land et al.	1990	49	57	RCT	Regular Supervision	0.58	0.23, 1.45
Lane et al.	2005	226	236	RCT	Regular Supervision	1.01	0.78, 1.31
NCCD	2001	450	121	RCT	Regular Supervision	0.99	0.71, 1.38
Pullen	1996	20	20	RCT	ISP	1.20	0.36, 4.00
Sontheimer et al.	1993	28	33	RCT	Regular Supervision	0.35	0.12, 1.03
Weibush	1993	85	76	Convenience	Secure Placement	0.91	0.40, 2.04
Wooldredge et al.	1994	240	588	Convenience	Regular Supervision	0.89	0.54, 1.46
Zhang et al.	2005	106	98	RCT	Regular Supervision	0.66	0.35, 1.25
<b>Total Sample = 7,967</b>							