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# Drug Treatment and Electronically Monitored Home Confinement: An Evaluation of a Community-Based Sentencing Option

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*The Intensive Drug Program represents an important innovation in developing sentencing options for offenders with substance abuse problems. By combining mandatory treatment for substance abuse with electronically monitored house arrest the program attempts to reduce criminal behavior and drug use. Statistical analysis of recidivism data and drug test results suggests the program is working. Community-based sentencing options that combine drug treatment with electronic monitoring therefore warrant further consideration as intermediate sentencing options for substance abusers.*

The steady increase in the use of imprisonment as a criminal sanction has put tremendous strain on the American penal system. The number of prisoners incarcerated in 1990 was the largest in 65 years of record keeping (Fyfe 1991). During that year, more than one million adults were kept in prisons or jails (Morris and Tonry 1990). Despite record prison construction, nearly 40 states are currently under court order to reduce overcrowding in their correctional facilities (Fyfe 1991).

Numbers, costs, humanitarian considerations, and the realization that "there is no way to build our way out of the current situation" (LaFraniere 1991, p. 31) has intensified the search for alternatives to imprisonment. Experts (Fyfe 1991; Petersilia and Turner 1990; Morris and Tonry 1990; Petersilia 1988; LaFraniere 1991) and the American public (Doble 1987) seem to agree that the time has come to develop a continuum of punishments ranging from warnings through diverse community-based punishments to incarceration. Despite the widespread agreement that intermediate punishments must be developed, "the path to that end is far from clear" (Morris and

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Tonry 1990, p. 9). Nonetheless, a number of jurisdictions across the country have made steps in that direction by developing a variety of intermediate community-based sanctions.

Intensive supervision probation (ISP) has been the most widely implemented of these sanctions. Its goal is to impose punishment that is less severe than prison but more severe than routine probation. Most ISP programs have low offender/probation officer ratios, close offender supervision, and strict enforcement of rule violations (Petersilia and Turner 1990). Frequently the surveillance method in such programs involves electronic monitoring.

The nation's first judicially approved, sustained electronic surveillance programs (ESPs) began in 1984-85. Since then, similar programs have sprung up across the country. Findings from early studies support ESP as a viable intermediate sanction (Baumer and Mendelsohn forthcoming; Hofer and Meierhoefer 1987; Petersilia and Turner 1990; Rogers and Jolin 1989). Offenders report finding electronically monitored house arrest more punitive than probation, but less punitive than jail (Beck and Klein-Saffran 1989). Escape rates and recidivism rates have been relatively low (Petersilia 1988), and evidence indicates that electronically monitored house arrest may work particularly well for certain kinds of offenders; for example, in some jurisdictions electronically enforced house arrest has become the preferred sanction for drunk drivers (Morris and Tonry 1990). However, methodological limitations of some studies (see Baumer and Mendelsohn forthcoming) leave unclear whether observed positive outcomes reflect program effects or other influences. Low escape and recidivism rates of ESP programs, for example, could result from selecting low risk offenders for participants in such programs (Petersilia and Turner 1990).

Early house arrest programs were almost exclusively oriented toward surveillance, and rehabilitation was "never an explicit goal" (Baumer and Mendelsohn forthcoming). Nonetheless, electronic surveillance programs have implicit rehabilitative features. They do not subject offenders to the criminogenic influences of a jail or prison, nor do they disrupt family ties, employment, or schooling. Moreover, they offer the potential for adding training, counseling, and other explicit rehabilitative features. Recent evidence indicates that the addition of rehabilitative measures may lead to positive changes in offender behavior. Reporting on three experimental studies of intensive supervision probation in California, Petersilia and Turner (1990, p. xii) note that increasing offender surveillance alone had little effect on arrest rates. However, combining supervision with counseling, employment, restitution, and community service resulted in lower recidivism rates (Andrews, Zinger, Hodge, Bonta, Gendreau, and Cullen 1990; Petersilia and Turner 1990).

Findings such as these have prompted suggestions to use community-based criminal justice programs for offenders in need of drug treatment (Anglin and Hser 1990; Baumer and Mendelsohn forthcoming; Morris and Tonry 1990; Petersilia and Turner 1990). Considering the close link between drug abuse and crime (Anglin and Hser 1990; Chaiken and Chaiken 1990; Inciardi 1986; Morris and Tonry 1990; Petersilia 1985; Sutherland and Cressey 1978; Wilson 1990), and the insufficiency of enforcement strategies alone to reduce recidivism in drug dependent offenders (Andrews et al. 1990; Fyfe 1991; Wilson 1990), a community-based correctional program that promises to reduce criminal behavior in drug dependent offenders has considerable appeal. According to Baumer and Mendelsohn (forthcoming), the rehabilitative effectiveness of such a program

rests in the ability to design and use electronic monitoring . . . to encourage a non-criminal lifestyle, and to facilitate internalization of these changes by the offenders. Such a design would include the refined use of electronic monitoring equipment as well as the extensive use of other program elements such as substance abuse treatment, drug/alcohol testing, graduated release, and intensive aftercare.

The Clackamas County, Oregon, Intensive Out-Patient Drug Program attempts to implement exactly this type of program.

### *DESCRIPTION OF INTENSIVE DRUG PROGRAM*

The stated purpose of the Intensive Drug Program (IDP) is to offer "an outpatient program that provides intensive substance abuse treatment and intensive supervision of clients in the community" (Clackamas County Community Corrections 1990, p. 14). Program goals include reducing substance abuse, stabilizing offenders' lives sufficiently to ensure program completion, and reducing recidivism (Clackamas County Community Corrections 1990). The target population consists of adult offenders whose substance abuse has led to failures in prior substance abuse programs or to probation/parole violations. The program intends to meet two basic needs of this offender group: (a) to provide them with structured living without incarceration, and (b) to treat their substance abuse problems. The general methods for meeting these needs are around-the-clock electronic surveillance, weekly treatment meetings, and drug and alcohol testing. Specific program components include an eight to one offender/counselor ratio, continuous signal and programmed contact electronic surveillance, two weekly drug treatment group sessions, one weekly life structuring group session,

attendance at a minimum of two weekly community self-help group meetings (e.g., Narcotics Anonymous, Alcoholics Anonymous, etc.), and routine as well as unscheduled drug and alcohol testing. Further, program participants must be employed or actively seeking employment, and must contribute financially to the program by paying a daily fee.

Delivering these services involves the combined effort of two Clackamas County agencies: the Community Corrections Division and the Mental Health Division. The program consists of 14 weeks of surveillance plus treatment, followed by 14 weeks of aftercare. During the first 14-week stage the offender moves through five levels of supervision/privileges, from most restrictive/no privileges to least restrictive/most privileges. The second 14-week stage has no electronic surveillance and involves less frequent, largely voluntary, attendance at treatment meetings. Rule violations result in a variety of consequences depending on the severity and nature of the violation. Consequences range from increasing the surveillance level and the frequency of drug tests, to loss of earned privileges, to ultimately returning the offender to jail.

## RESEARCH DESIGN

### *Overview*

This research uses both a quasi-experimental comparison group design and a nonexperimental one-group pretest posttest design. The measures of program outcomes include clients' recidivism, use of drugs, and successful completion of the program.<sup>1</sup> The analyses of recidivism and successful program completion use the comparison group design, whereas the analysis of drug use employs the pretest posttest design. The comparison group design offers greater internal validity, especially because matching and statistical controls aid in taking into account preexisting group differences. The weaker internal validity of the pretest posttest design precludes clear inferences about program effects, but offers the only feasible design for examining changes in clients' drug use while in the IDP program.<sup>2</sup>

### *Data Sources*

Recidivism data were obtained through the Oregon Law Enforcement Data System. Data on clients' demographic characteristics, convictions, termination status, employment status, and other characteristics came from the

Clackamas County Community Corrections Division's probation files. Finally, data on drug and alcohol use came from the State of Oregon Mental Health Division's Client Progress Management System.

### *Comparison Groups*

Comparison groups from two different programs were used in the analysis of recidivism rates. These programs, like the IDP, are administered by the Clackamas County Community Corrections Division. The first program, the ESP, involves home confinement and electronic monitoring, as does the IDP program. The second program, the Work Release Program (WR), requires clients to live in a residential center and therefore restricts clients more than the ESP and IDP programs. Neither the ESP nor the WR programs includes a treatment component, in contrast to the IDP program.

Because of the comparatively large number of clients in the ESP and WR programs, limited resources for data collection necessitated sampling from the comparison groups. The sampling was carried out using a stratified random sampling procedure that implemented matching based on clients' risk assessment scores.<sup>3</sup> The sampling resulted in 100 clients in each of the comparison groups (ESP, WR), compared to 70 clients in the treatment group (IDP).

Although the matching procedure limited some of the differences between the treatment and comparison groups, other differences remained. IDP clients had more serious offenses: 85% of IDP clients were sentenced for felonies, compared to 24% of ESP clients and 49% of WR clients. Almost half (42%) of IDP clients were sentenced for drug-related offenses, compared to 11% and 16% for ESP and WR clients, respectively. IDP clients also were on average younger, more often unmarried, and all were substance abusers.<sup>4</sup>

### *RESULTS*

Based on Mental Health Division records, the percentage of IDP clients using drugs dropped from 95% at entry to 32% at termination. Likewise, but less dramatically, the percentage using alcohol dropped from 46% to 20%. Of the IDP drug users 79% decreased their frequency of use, and 58% of the alcohol users decreased their frequency of use. At termination from the program, 59% of IDP clients were either abstinent or drug free.

IDP clients successfully completed the program less often than ESP clients, but more often than WR clients.<sup>5</sup> Not surprisingly, a higher percentage of IDP failures (38%) resulted from drug-related violations, compared to

**TABLE 1: Rearrest Statistics for IDP, ESP, and WR Programs**

<i>Statistic</i>	<i>IDP</i>	<i>ESP</i>	<i>WR</i>
<b>All clients</b>			
Mean number of rearrests	.92	.58	.59
Percentage rearrested	47	32	33
Percentage rearrested for substance abuse	20	13	17
Percentage rearrested for property crimes	25	5	16
Number of clients	64	98	96
<b>Successful clients</b>			
Mean number of rearrests	.53	.57	.67
Percentage rearrested	32	30	30
Percentage rearrested for substance abuse	9	11	21
Percentage rearrested for property crimes	21	4	15
Number of clients	34	74	33*

\*Excludes clients transferred to other programs.

failures for the ESP and WR programs (8% and 9%, respectively).<sup>6</sup> Comparing the three programs shows that the types of violations leading to failure closely reflect differences in the offender populations. Offenders with more drug problems (IDP) incurred more drug-related violations; offenders with more alcohol problems (ESP) incurred more alcohol-related violations; offenders serving sentences primarily unrelated to substance abuse (WR) incurred more violations unrelated to substance abuse.

The evaluation examined what types of IDP clients tended to succeed in the IDP program and found that older, married, and employed clients had higher success rates. This is consistent with findings of other researchers (e.g. Petersilia and Turner 1990). Also, clients with drug-related charges had higher success rates than those with either alcohol or nonsubstance abuse charges. Perhaps more surprising, clients with more serious charges (B and A felonies) had higher success rates than clients with less serious charges. These findings support the conclusions of Andrews et al. (1990, p. 374), based on an extensive review of correctional programs, that "the effects of treatment typically are found to be greater among higher risk cases than among lower risk cases."

Table 1 compares recidivism statistics for the three programs, first for all program clients and then for only those clients who successfully completed their program. Overall, IDP clients had higher rearrest rates and higher average number of rearrests than both ESP clients and WR clients,<sup>7</sup> but this difference disappears when we focus only on clients who successfully completed their program. Similarly, the overall slightly higher rearrest rate

**TABLE 2: Statistical Analysis of Rearrest Using Logistic Regression Analysis: IDP, ESP, and WR Programs**

<i>Predictors</i>	<i>All Clients</i>		<i>Successful Clients</i>	
	<i>Coefficient</i>	<i>t statistic</i>	<i>Coefficient</i>	<i>t statistic</i>
Constant	0.61	0.53	-1.04	-0.55
ESP	-0.39	-0.93	0.55	0.87
WR program	-0.31	-0.69	1.14	1.57
C felony	0.41	0.85	0.97	1.22
B felony	-0.06	-0.09	0.89	0.87
A felony	0.07	0.12	0.36	0.44
Drug-related offense	-0.34	-0.77	-0.95	-1.43
Alcohol-related offense	-0.12	-0.26	-0.54	-0.85
Risk assessment score	0.01	1.05	0.02	1.62
Substance abuser	-0.02	-0.05	1.24	1.52
Age	-0.04	-1.71	-0.05	-1.61
Married	-0.25	-0.63	-0.18	-0.35
Female	-0.64	-0.96	-0.29	-0.33
Employed at term.	-0.72	-1.62	-2.08	-1.97
Time at risk (months)	0.03	1.47	0.09	2.53
% Correctly predicted	64		72	
Number of clients	221		135	

NOTE: The "Coefficient" and "t statistic" columns show the coefficient and the associated t statistic from a logistic regression analysis of whether clients were rearrested.

for IDP clients for substance abuse disappears — indeed, reverses — when we focus on successful clients. IDP clients' rearrest rates for property crimes, however, stay higher than for the comparison groups. In short, these results strikingly show that the IDP program's higher overall recidivism rates largely disappear for clients who successfully completed their program.

In order to better take into account the differences in IDP clients compared to ESP and WR clients, we used the statistical technique of logistic regression (logit) analysis.<sup>8</sup> The dependent variable is client rearrest, and the independent variables include various client characteristics as well as variables indicating the program in which the client participated.<sup>9</sup> Table 2 presents the logistic regression analysis results, first for an analysis using all clients, and then for an analysis using only the successful clients.

Table 2 indicates that the analysis based on all clients shows higher recidivism for the IDP program compared to the ESP and WR programs. However, the analysis based only on successful clients finds lower recidivism for the IDP program.<sup>10</sup> Of the other predictors, the clearest findings are that



**TABLE 3: Estimated Probabilities of Rearrest Based on Logistic Regression Analysis: IDP, ESP, and WR Programs**

	<i>IDP</i>	<i>ESP</i>	<i>WR</i>
All clients	.46	.36	.38
Successful clients	.26	.37	.52

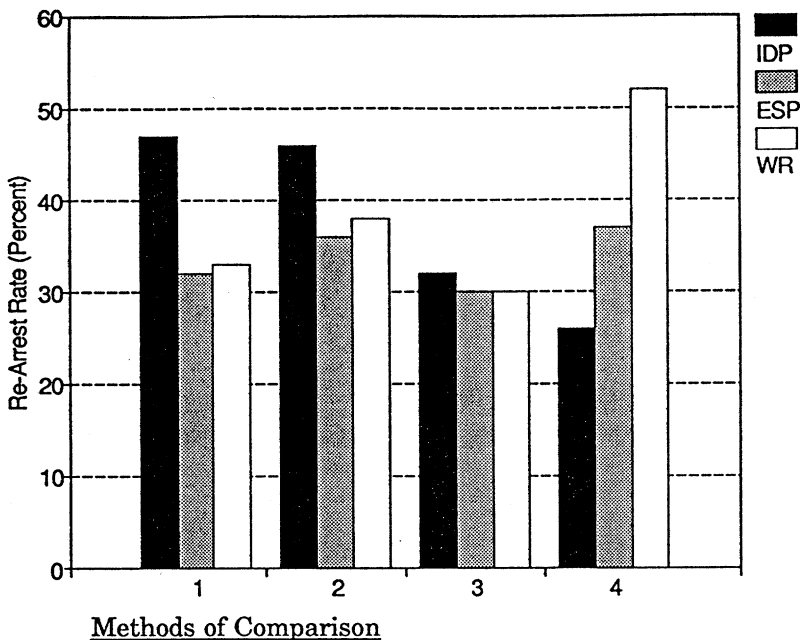
NOTE: Probabilities calculated from Table 2 logistic regression results for single, male substance abuser convicted of C felony drug-related offense, employed at program termination, and with average age, risk score, and time at risk of IDP clients.

more time at risk, lack of employment at program termination, and younger age all predict to higher recidivism.

Table 3 compares estimated rearrest probabilities, calculated for a typical type of client using the Table 2 results, for each of the three programs. Considering both successful and unsuccessful clients yields calculated rearrest probabilities of .43, .36, and .35 for the IDP, ESP, and WR programs, respectively. Considering only successful clients generates probabilities of .24, .34, and .42, respectively. In short, these results (Tables 2 and 3) make the IDP program look worse than the other programs if all clients are considered, but better if we focus only on clients who successfully complete the program.

Figure 1 summarizes the findings obtained from the different analyses of recidivism rates. Moving from the left side of the figure toward the right side shows that as differences in client characteristics are taken into account, and as the analysis focuses on clients who successfully completed their program, the IDP program compares progressively better. Because the research design uses preexisting groups with preexisting differences,<sup>11</sup> statistical controls are clearly desirable as a partial remedy for lack of experimental controls. Thus, some of the apparent program differences in comparison 1 (Figure 1) reflect preexisting client differences; comparison 2 therefore is preferred as having greater internal validity. Similarly, comparison 4 is preferred over comparison 3.

The more difficult interpretive question concerns whether to use all clients or focus only on successful clients—that is, whether to use comparison 2 (Figure 1) or comparison 4. Arguments can be made both ways. From a research design perspective, focusing only on successful clients could create differences between the treatment group and the comparison groups, potentially invalidating the comparisons. From a programmatic perspective, evaluating program effectiveness may require focusing on clients who received the full plan of treatment.



- Methods of Comparison
1. Rates for all clients (Table 1)
  2. Logistic estimates for all clients (Table 3)
  3. Rates for successful clients (Table 1)
  4. Logistic estimates for successful clients (Table 3)

Figure 1: Comparison of Rearrest Rates of IDP, ESP, and WR Programs Using Four Different Statistical Methods

For purpose of this analysis we feel that both programmatic and methodological considerations justify focusing on clients who successfully completed the program. First, given the IDP program's treatment component, program impact would theoretically only be expected for clients who completed the program.<sup>12</sup> Second, it appears unlikely in this case that distortions introduced by focusing on successful clients account for the observed results. The success rate for the IDP program was *lower* than the ESP program and *higher* than the WR program, implying that any distortions introduced in the IDP/ESP and IDP/WR comparisons would be in opposite directions. However, focusing on successful clients makes the IDP program look better vis-à-vis *both* the ESP and WR programs. Overall, we feel these results

provide some evidence that offenders will have lower rearrest rates if they go through the IDP program rather than the ESP or WR programs.

## *DISCUSSION*

The Intensive Out-Patient Drug Program represents an important innovation in developing sentencing options for offenders with substance abuse problems. This program uniquely combines electronically monitored house arrest with treatment for substance abuse. Although admittedly somewhat tentative, the findings from this study provide evidence that this approach works. Community-based sentencing options that combine electronic monitoring with drug treatment therefore warrant further consideration as intermediate sentencing options for substance abusers.

The IDP program provides drug treatment for offenders, whose criminal activity is related to substance abuse, based on the theory that reducing the demand for drugs will decrease criminal activity (Anglin and Hser 1990; Wilson 1990). Our findings indicate that three quarters of the IDP clients reduced their drug use during the program, and two thirds had no reported drug use at termination. This is consistent with other studies (Anglin and Hser 1990) and is hardly surprising because urine testing for drugs is part of the IDP program. IDP clients who successfully completed the program had recidivism rates equal to the comparison groups, even though the IDP clients were more serious offenders and drug users.<sup>13</sup> Statistically controlling for offender characteristics shows lower rearrest probabilities for the IDP program than for the other programs. Because the comparison programs did not include a treatment component, these findings suggest that recidivism may diminish if (a) offenders receive treatment specific to their substance abuse problem as part of their sentence, and if (b) those offenders remain in the program to completion.

Other research has reported that length of time in treatment programs predicts to positive outcomes for programs serving drug dependent offenders (Anglin and Hser 1990; Morris and Tonry 1990; Tonry 1990; Wilson 1990). Such a statistical finding could simply reflect a selection bias resulting from client attrition, not necessarily a program effect. In this research, however, we found a positive program effect for the IDP program based on statistical comparisons between successful IDP clients and successful clients from other programs. These comparisons provide evidence that the unique aspect of the IDP program—the combination of electronic surveillance with drug treatment—can lower recidivism rates.

However, as Anglin and Hser (1990, p. 396) have noted for drug programs in general, drop-out rates are high. Nearly one half of the IDP clients failed to complete the program. Therefore, lowering recidivism rates for clients who complete the program deals with only part of the problem. The other part of the problem requires increasing program completion. Two approaches for increasing program completion are (a) to select offenders based on characteristics that predict successful completion and (b) to enhance program features that keep offenders in the program.

This study found higher program completion rates for clients with more serious felony charges, clients with higher risk scores, and clients with drug rather than alcohol or nonsubstance abuse related offenses. Moreover, to the extent that treatment does work better for higher risk clients as reported by Andrews et al. (1990, p. 374), the positive relationship between risk and recidivism will diminish. These considerations indicate that offender selection is more complicated than early assumptions about risk and recidivism have led us to believe. Placing offenders into community-based treatment programs based solely on risk scores or offense seriousness may unnecessarily restrict the pool of offenders who might successfully complete and benefit from such programs.

The critical issues about how program procedures affect completion rates concern rule violations. Offenders who failed to complete the IDP program almost always failed due to rule violations, not commission of new crimes. For a program like IDP that combines coercive and treatment components, tension exists over how strictly to enforce the rules. The punitive element of the program may require strict enforcement, but less strict enforcement may help the treatment element of the program yield better results. Researchers agree that providing treatment in a coercive context facilitates retention in the program (Anglin and Hser 1990; Hubbard, Marsden, Cavanaugh, Rachal, and Ginzburg 1988; Wilson 1990), which in turn is positively related to recidivism (Anglin and Hser 1990; Morris and Tonry 1990; Tonry 1990; Wilson 1990), but overly strict enforcement may adversely affect retention and thus affect recidivism negatively. Striking a careful balance between coercion and treatment is therefore an important procedural issue for programs that offer treatment in a correctional setting.

Wilson (1990, p. 529) admonishes us not to underestimate the difficulties of reducing drug abuse, no matter what methods we use. Drug dependent offenders, in addition to having problems with addiction and with the criminal justice system, generally have a multitude of other problems as well (Anglin and Hser 1990; Chaiken and Chaiken 1990). However, community-based sentencing options that combine drug treatment with electronic monitoring may offer some help.

## NOTES

1. By successful program completion we mean that the client completed the first 14 weeks of the program involving electronic surveillance and mandatory drug treatment.
2. Comparable drug-use data were not available for the comparison groups.
3. See Jolin and Stipak (1991), Appendix A and Appendix C, for detailed descriptions of the matching procedure and the risk assessment scores. Copies of the Jolin and Stipak (1991) report are available from Terry Gassaway, Director, Clackamas County Community Corrections, 1024 Main St., Oregon City, OR 97045.
4. Only 87% and 77% of ESP and WR clients, respectively, were identified as substance abusers. Moreover, more of the ESP and WR substance abusers, compared to the IDP clients, were alcohol abusers rather than drug abusers.
5. The difference between IDP clients (54%) and ESP clients (76%) is highly statistically significant ( $p < .01$ ). The difference between IDP clients (54%) and WR clients (47%) is not statistically significant.
6. These differences are highly statistically significant ( $p < .01$ ).
7. The  $p$  values (two-tail) for the difference in IDP compared to ESP and WR arrest rates are .05 and .08, respectively. Thus, only the IDP/ESP difference is statistically significant, .05 level.
8. For an introduction to the statistical technique of logistic regression analysis see Hosmer and Lemeshow (1989).
9. Nominal-level predictors were entered using dummy variables, with one of the categories serving as the reference. The reference category for program type is the IDP program. The reference category for offense classification is A misdemeanor (two clients with C misdemeanors were discarded). The reference category for offense type is nonsubstance abuse.
10. The  $t$  statistics, however, indicate a low level of statistical significance for the estimated differences in programs. Only the WR program coefficient ( $p = .12$ ) for successful clients approaches the .1 significance level.
11. In the terminology of research design, this is a threat to internal validity referred to as selection.
12. The program logic of the IDP treatment component involves a series of steps through which clients progress, and clients who fail to complete the program do not progress through those steps.
13. The limitations of available data did not allow us to examine directly whether IDP clients with greater reduction in drug use had lower recidivism rates.

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