AN ABSTRACT OF THE THESIS OF

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Carol Saslow

Overcrowding is a serious problem in prisons and jails. Most people who are in prison and jail have substance abuse problems. Long-term, intensive, therapeutic community, substance abuse treatment in prison has proven effective in reducing arrests, amounts of incarceration and time until first arrest. Jails, with their shorter times of incarceration, make long-term treatment impossible and therapeutic communities or milieu therapy difficult. There are few substance abuse treatment programs in jails and even fewer outcome evaluations to determine effectiveness so it is not known if jail treatment is effective. Graduates of the Inmate Recovery Program (a short term, day treatment style, jail-based substance abuse treatment program) were compared four years before and up to five years after treatment with a nontreated control group and a treatment drop-out group. The IRP group had fewer arrests, less time incarcerated, a bigger

ABSTRACT (continued)

drop in rates of incarceration and a longer time lapse until first arrest than the drop-outs. The IRP group had less arrests, a longer time lapse until first arrest, a bigger drop in rate of incarceration and less incarceration in two out of five years than the control group. IRP produced a conservative net avoided cost of incarceration of $786,593.89 alone. This is equivalent to an average savings of $3,480.50 per client for the average three and a half years after treatment. Experiences prior to IRP also impacted treatment results. Subjects with fewer previous prison sentences; fewer prior arrests; less time incarcerated the year of treatment; more prior alcohol and drug related arrests; a job, or another legal source of income; who were older; and had more DUII arrests before treatment were associated with fewer arrests and less time incarcerated after treatment. This information may help improve future IRP performance. Therefore the Inmate Recovery Program has a variety of favorable impacts and appears to also be a cost-effective program.

Outcome Evaluation of Inmate Recovery Program:

Follow-Up Evaluations of a Jail-Based Substance Abuse

Treatment Program Over a Five Year Period

by

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Raymond W. Hughey, Author

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INTRODUCTION

Overcrowding in our prisons and jails is a serious problem. Drug and alcohol abuse is associated with criminal activity (Anglin and Speckhart, 1984; Wexler, Falkin, Lipton and Rosenblum, 1990). Over 70% of all arrestees sampled by the Drug Use Forecasting program tested positive for drug use (Peters, Kerns, Murin, Dolente and May, 1993). Successful completion of drug and alcohol treatment in correctional settings has been found to reduce legal problems (Field, 1989; Peters, et al. 1993; Rouse, 1991).

There are two general types of correctional facilities; prisons or jails. Prisons are either at the State or Federal level, generally have larger populations, are typically reserved for the more serious crimes and have longer sentences for their inmates. Jails are operated by the counties, are generally smaller, house many people awaiting sentencing and have shorter sentences.

Since there is evidence that drug and alcohol treatment can reduce legal problems there has been an increase in prison based treatment programs since the 1970's (Wexler, 1994; Rouse, 1991). These prison based programs have demonstrated

their effectiveness in reducing recidivism (Peters, et al. 1993; Rouse, 1991; Field, 1989).

Until recently there have been very few substance abuse treatment programs in jails. Prior to 1987 "only 28% of jails reported any type of drug or alcohol services to inmates and only 30 out of 1,700 surveyed had more than 10 hours of treatment" (Peters, et al. 1993). Peters, et al., go on to say the Bureau of Justice Assistance provided funding to establish two in-jail substance abuse treatment programs in 1987 and a third in 1988. Additional grants were offered through the Department of Justice in 1990 and Linn County Alcohol and Drug Treatment Program (LCADTP) was one of the recipients (Grant Number 92-007). LCADTP in cooperation with Linn County Sherrif's Department began Inmate Recovery Program (IRP) in January, 1991.

Since very few substance abuse treatment programs exist in jails, even fewer have been evaluated to see if they are effective. Peters, et al. (1993) evaluated the 1988 Bureau of Justice Grant program at Hillsborough County Jail in Tampa, Florida. The Hillsborough program decreased the numbers of rearrests, lengthened the time before first arrest and decreased time spent in jail. The follow-up period was only one year, however. The question of the cost effectiveness of treatment was not addressed. This study is the only one in the literature evaluating substance abuse in jail. Clearly there is a need for more jail-based residential substance

abuse treatment programs and for evaluations of these programs.

The present study seeks to answer three questions regarding the Inmate Recovery Program: 1) Was it effective in reducing recidivism?; 2) If it was effective in reducing recidivism then was it cost effective? and 3) How can it be more effective? Each section of the paper will be divided into three separate areas, each one addressing one of these areas. The sections will be titled: recidivism reduction effectiveness, cost effectiveness and increasing effectiveness.

RECIDIVISM REDUCTION EFFECTIVENESS

Recidivism can be measured several ways. Wexler, et al. (1990) measured recidivism by the percentage of positive parole discharges and percentage of the treatment group that had been rearrested and found that substance abuse treatment had a positive effect on both. Rouse (1991) tested recidivism by examining the percentage of positive discharges and whether the inmates were re-incarcerated. Field (1989 and 1990) used arrests, convictions, and prison incarcerations as measures of recidivism. County jail sentences of more than six months were treated as prison sentences by Field (1989). To get as comprehensive of a view of recidivism as possible this study will measure arrests, time incarcerated in prison and jail and time until first arrest.

There are three substance abuse treatment models currently in use in jails and prisons. These models are therapeutic communities, milieu or environmental therapy and a modified day treatment. Therapeutic communities consist of housing segregated from the general population, staff composed primarily of ex-addicts, a program which is highly structured, clients who assume the responsibility for maintaining the unit and levels of increasing responsibility and freedom for successful clients (Wexler, et al. 1990; Lipton, 1996). Wexler, et al. (1990) go on to define milieu or environmental treatment as also having segregated housing but the program is generally less structured, professional counselors are used and the clients have a less active role in their own treatment. In traditional day treatment counseling, the clients come in for therapy during the day and return to their living environment at night. In jail-based day treatment the clients are not released into the community they live in but are instead housed with the other inmates in general population. This is the only real difference between jail-based day treatment and standard day treatment. In day treatment, clients come to treatment from several hours per day to a only a few hours per week, professional staff are used and more of an educational model is employed.

The three models of treatment vary in levels of effectiveness in reducing recidivism. The most effective substance abuse treatment programs in jails and prisons

operate on a therapeutic community model (Wexler, et al. 1990; Field, 1989; Rouse, 1991). Wexler, et al. (1990) found that therapeutic communities had a higher rate of effectiveness in prison than milieu therapy or a day treatment model though both the therapeutic community and day treatment models were more effective than the nontreated control groups. IRP used the day treatment model; therefore it is expected that it will not have as much success in reducing recidivism as the other programs that did operate on either milieu or therapeutic community models.

Another variable to consider in substance abuse treatment is length of stay. Simpson (1979) found that for methadone treatment, the length of stay in treatment was significantly and positively associated with positive outcomes. Wexler, et al. (1990) found that in a prison setting the longer one stayed in treatment, up to a year, then the longer the time until first arrest and the higher the rate of successful completion of parole. Field (1989, 1990) also found that length of stay in prison treatment is positively related to outcome at the Cornerstones Program in Oregon. Finigan (1996) found that success on a number of variables was associated with length of treatment. Peters, et al. (1993) found positive legal outcomes in a jail substance abuse program that was only six weeks in length. In general, it appears that longer length of stay in treatment produces better outcomes in prison and jails. IRP is only five weeks in length and

therefore is expected to have correspondingly less effect in reducing recidivism.

An important consideration in evaluating recidivism effectiveness is selection of the control group. If a control group is selected that has characteristics common to it that contribute to increased recidivism then this would make the treatment appear to be more effective than it really is. Peters, et al. (1993), Field (1989), Finnigan (1996), Mecca (1994) all compared the treatment group with a group of people who had applied for treatment services, but for various reasons had not completed treatment. In no case was a study found that compared the treatment group with a control group who had not applied for treatment. There could be characteristics that are different for the people who dropped out of treatment that could cause increased criminal behavior. As a result the IRP subjects were compared to those who started and did not complete treatment and also to a control group who had not applied for treatment.

In the present study recidivism effectiveness will be measured in three main ways: numbers of arrests, percentage of time incarcerated and length of time until first arrest. Percentage of time incarcerated will include all time in Oregon prisons or Linn County Jail, but not other jails or prisons out of state.

The hypotheses of the present study related to recidivism effectiveness are: (1) IRP graduates will have significantly

fewer arrests after treatment (as measured by arrest per year averages and arrests in each year after treatment) compared to their own pretreatment rate and the Control and Noncompleter groups (2) IRP graduates will have significantly less percentage of time incarcerated than both their own pretreatment rate and the posttreatment rate of the Control and Noncompleter groups (3) IRP will have a significantly larger pre to posttreatment gain in decreased percentage of time incarcerated than both the Control and Noncompleter groups (4) IRP will have less percentage of time incarcerated in each of the five years following treatment than both the Control and Noncompleter groups (5) IRP graduates will have a significantly longer length of time after treatment before their first arrest than the Control and Noncompleter groups.

COST EFFECTIVENESS

There are a variety of factors that can be measured to evaluate cost effectiveness. Hubbard, Marsden, Rachal, Cavanaugh and Ginzburg (1989) found that drug abuse treatment was generally cost effective when they evaluated the costs and crime reducing effects of 41 drug abuse treatment programs. Mecca (1994) and Finigan (1996) evaluated the cost effectiveness of drug and alcohol treatment in reducing police protection, adjudications, corrections, victim losses, health care costs and lost wages. Both of these studies found that alcohol and drug treatment is effective in reducing costs on

all the measures used. Since the present study is limited in its resources, only the expense of incarceration will be computed to determine cost effectiveness.

The long term cost effectiveness of substance abuse treatment is important to consider. Mecca's (1994) study was only one year long. Finigan's (1996) study was three years long. Due to the short duration of these studies, it is possible that the gains of substance abuse treatment may diminish with time; therefore this study will have a five year follow-up phase.

Some types or lengths of treatment may be more cost effective than others. Holder, Longbaugh, Miller and Rubonis (1991) and Matthew (1992) have attempted to investigate the question of which type of treatment is most cost effective for alcoholism. These studies generally conclude that the less costly types of treatment are at least as effective and certainly less expensive. Howard's (1993) comment on Holder, et al. (1992) states that there may be some flaws in the conclusion that the less expensive treatment is the treatment of first choice. Certainly the findings by (Field, 1989; Peters, et al. 1993, Simpson, 1979; Wexler, et al. 1990) that the best length of stay in treatment is about nine months for prison settings would indicate that cheaper is not better. Mecca (1994) and Finigan (1996) found that the longer the length of stay in treatment the more successful the person was on a number of cost effectiveness variables and that

residential treatment had the greatest effectiveness. In short, there are many questions about which type of treatment is most cost effective. If IRP is effective in reducing recidivism, it is not known if it will be cost effective.

Cost effectiveness will be calculated by avoided costs, as in Mecca (1994) and Finigan (1996). Avoided costs are the expenses that would have accrued to Oregon State Department of Corrections and Linn County Jail due to increased amounts of incarceration if the treatment group had not completed IRP. The avoided costs will be determined simply by subtracting the cost of operating IRP from savings achieved due to decreased amounts of incarceration, if any. There are a number of other potential savings that will not be examined in-depth but will be briefly discussed.

The cost effectiveness hypothesis is that IRP will provide a net gain when cost of treatment is subtracted from avoided costs due to lower amounts of time incarcerated.

IMPROVING EFFECTIVENESS

When treatment dollars are scarce and there are more clients than can be served with available resources then it is important that the people who will get the most benefit out of the treatment be served first and that type of treatment be matched to the individual. Schucket, Schwei and Gold (1986) investigated the possibility of predicting the outcome of

treating alcoholics and found that it was generally very difficult to forecast success. They did find that individuals with Antisocial Personality Disorder (APD) had much poorer outcomes. Helzer and Prysbeck (1987) found that many types of psychopathology, including APD, are found more commonly in alcoholics than in the general population and are predictors of poor success in treatment.

As Schucket (1986) et al. found, APD is a strong predictor of treatment failure. Francis, First, Pincus, and Widiger (1994) in the <u>Diagnostic Criteria from DSM IV</u>, state that APD is characterized by repeated illegal behaviors and inconsistent work patterns. It is therefore expected that those subjects in IRP who have the most posttreatment arrests and amounts of incarceration will have a diagnosis of APD. It is also expected that before they enter IRP, those people with APD will have more arrests, earn less money, be more likely to be unemployed and have more incarceration especially in prison.

A full clinical assessment of psychopathology is done as part of a gradual process over the five weeks of treatment in IRP. By the end of IRP a great deal is known about the client but large quantities of time have been invested so then it is too late to help design treatment. It is expected that some pretreatment predictors of success (such as indicators of APD) in treatment can be discovered that will not take as long to determine, thereby increasing efficiency and cost

effectiveness. At the time of intake the client must fill out a questionnaire that gathers general demographic information, past history with treatment, medical history, job history and past criminal history. In addition, staff has access to a computer that contains the client's arrest and incarceration history. This information can be gathered and analyzed with a minimum of staff time to identify those clients who will benefit the most from IRP. Information from the intake questionnaires and their past criminal history will be analyzed to see if there are any pretreatment variables predictive of posttreatment recidivism.

Some clients may benefit more from certain types of treatment than others. The question of which type of client benefitted most and which profited least will be addressed. This may provide clues about which types of clients to treat in IRP and which ones to treat with other types and lengths of therapy.

DESCRIPTION OF THE PROGRAM

FUNDING

IRP began in January 1991 with full funding from the Department of Justice Grant Number 92-007. Justice Department funding supported IRP until Linn County began paying for it in July of 1993. IRP has been supported through Linn County General Funds since then.

STAFFING

Linn County Jail is a modern 110 bed facility staffed by corrections deputies from Linn County Sherrif's Department. No special training was provided to the corrections staff concerning substance abuse treatment. The corrections officers were not officially considered to be a part of the treatment team. IRP is staffed by two full-time masters level alcohol and drug therapists and one half-time jail coordinator from LCADTP. Each therapist carries half of the client case load, shares in educational presentation responsibilities and co-facilitates the therapy groups. The jail coordinator is a corrections deputy and is responsible for security issues, evaluating prospective clients for suitability to treatment in terms of their security level, arranging for Alcoholics Anonymous (AA) and Narcotics Anonymous (NA) volunteers to get into the jail for meetings and facilitating positive interactions between the therapists and Corrections Deputies.

TREATMENT DESCRIPTION

IRP was originally designed to be four weeks of treatment in jail followed by 11 months of outpatient treatment with LCADTP or another agency in the client's area of residence. After a year of operation, it was found that four weeks was an insufficient amount of time to cover all the education subjects desired. At the end of 1991 the jail-based portion of IRP was changed to its present length, five weeks or 25

working days. The outpatient length has fluctuated, depending upon client progress and individual counselor discretion. In the spring of 1995, new treatment policies were dictated by the Oregon State Department of Alcohol and Drug Treatment Program such that the length of outpatient treatment services is determined case by case dependent upon client progress.

Treatment activities other than AA or NA meetings occur only Monday through Friday during normal work week hours. There was generally one AA meeting each week and occasionally a NA meeting. IRP meets five hours per day five days per week for five weeks for a total of 125 hours of group treatment. In addition to group treatment there is one individual therapy session of 30 to 60 minutes for each client each week for a total of about three hours. There is a maximum of 12 clients in a group and only one group occurs at a time.

IRP groups are approximately one half educational and one half process oriented in nature. The education groups cover a diverse set of topics related to substance abuse and recovery including the disease concept, physical mechanisms of addiction, psychological mechanisms of addiction, medical aspects of drug abuse, relapse, the recovery processes, codependency, and information on quitting smoking.

There are a large number of homework assignments each client is expected to complete and, in most cases, to present to group. Each client completes a comprehensive drug and alcohol use history, an extensive assessment of the damage

done by their substance abuse, a description of their thinking errors associated with criminality and substance abuse, an assessment of their substance abusing triggers with planned coping strategies, a relapse prevention plan and a recovery plan for after jail. In addition there are several hundred pages of assigned reading in the <u>Alcoholics Anonymous Big Book</u>, <u>Narcotics Anonymous</u>, <u>Twelve Steps and Twelve Traditions</u> and others by special assignment.

Linn County Jail is a small facility so it was not built with plans for a substance abuse treatment program and budgetary limitations did not allow for building projects. As a result, IRP participants were housed with all other inmates in general housing. Efforts were made to segregate the IRP inmates from the rest of the inmates, however, these attempts did not last long for numerous reasons and eventually the treatment participants were spread throughout the various cell blocks.

IRP used a day treatment model of therapy. As mentioned earlier, corrections officers who were in charge of supervising the IRP clients during the 19 hours each day they were not in class received no special training concerning treatment. IRP participants lived in the various cell blocks with no special attention or rules that were different than the other inmates. It was suggested strongly that IRP members attempt to maintain their recovery efforts outside of group but this was not enforced unless an inmate became a

disciplinary problem with corrections staff and it came to the attention of IRP staff. In short, the conditions for a therapeutic community or milieu treatment were not established in IRP.

CLIENTS

All IRP subjects were incarcerated in Linn County Jail and had a medium security rating. Eighty two percent were either given early release from jail by their sentencing judge if they completed IRP or less commonly, ordered to complete as a condition of probation. The judges were the primary referral source to IRP, with input from defense attorneys, district attorneys and the clients themselves.

Though most subjects were not actually ordered by the court to complete IRP they had strong legal incentives to do so. Linn County judges frequently would sentence IRP clients to jail for periods of time (60 to 365 days) then offer early release upon successful completion of the program through a Bench Parole. Fifty seven percent of IRP graduates were released early on Bench Parole. Others had Driving Under the Influence of Intoxicants (DUII) charges that required successful completion of treatment in order to get their drivers license back. Others had parole or probation orders to complete some sort of alcohol and drug treatment and IRP fulfilled that requirement.

Reasonable assurance was needed that a subject would have enough time to complete IRP before they were allowed to enter. Typically no subjects were allowed into IRP unless they were already sentenced and had a minimum of 45 days left in jail. With reductions in time in jail due to working and not having behavior problems a 45 day sentence amounts to about 33 to 35 days of actual incarceration. It takes about 31 to 33 days to complete the five week IRP program. In some special cases inmates were allowed into IRP when they were not sentenced yet if there was reasonable assurance that they would be staying in Linn County Jail long enough to complete the program. In a few other special cases inmates who were either in IRP previously or were actively and positively involved in LCADTP outside of jail just prior to incarceration were allowed into the program even though they did not have quite enough time to complete the program.

No control group members were ordered by the courts to complete IRP. All control group members could have volunteered for and completed IRP if they had sufficient time in jail. Many people did apply for IRP and were not allowed into the program due to either not being sentenced yet or not having enough time remaining once they were sentenced. Some control group members no doubt fall into this category, but unfortunately records do not exist that would allow this information to be retrieved. Beginning in January, 1996, records have been kept for all those who apply for IRP.

METHODS

SUBJECTS

The IRP group includes 230 consecutive graduates of IRP from Jan. 22, 1991 (the beginning of the program) through Dec. 31, 1993. Eight subjects enrolled in IRP more than one time during this period. The first time the subjects graduated from the program they were counted in the 230 and subsequent re-entries into IRP were not counted in the total number. Two graduates of IRP were excluded from the study because they had committed serious crimes previous to treatment for which they were convicted while in Linn County Jail and have not been released from prison yet. Two other subjects were excluded because their charts and criminal history information could not be attained, leaving a total size of 226. All IRP group members were sentenced to at least 25 days in Linn County Jail.

Forty two subjects enrolled in IRP but did not graduate. These subjects were separated into two categories based on their previous Linn County Alcohol and Drug Treatment experience and their aftercare attendance records. Group one noncompleters (n=34) will be referred to simply as Noncompleters from now on. Some of this group completed enough time in IRP to graduate but did not fulfill other treatment obligations, others dropped out and others were

removed for disciplinary problems or failure to make adequate progress. Group two noncompleters (n=8) consisted of those who were released from jail with less than a week left to graduate due to expiration of their sentence even though they were making good progress in treatment. All Group Two Noncompleters had been enrolled in LCADTP just previous to IRP, received jail time for previous crimes, went through IRP and then went back to complete outpatient treatment. The Group Two Noncompleters were excluded from comparison due to the small number.

A matched Control group was chosen (n=134). All treatment group subjects had a history of alcohol and drug problems so the Control group was required to either have at least one alcohol or drug arrest or were enrolled in the LCADTP outpatient program. All IRP group subjects were incarcerated for a minimum of a 25 day sentence, and generally longer, so the control group members were required to have a minimum of a 25 day sentence. The Control and IRP subjects were also matched on being in Linn County Jail at the same time. Sentenced Inmate Lists were compiled for each month during the study. All non-IRP inmates on the Sentenced Inmate List who met the above qualifications for the Control group were placed in a pool. One Control group member was randomly chosen for each IRP group member based on them being in jail at the same time as each other.

The original intention was to have equal numbers in the Control and IRP groups but this became an impossible goal to attain. If a Control group member was chosen then they could not be selected again. Also all IRP treatment group members from 1991 to 1995 (nearly 400 inmates) were excluded from consideration. Linn County has a small population and a jail capacity of only 110, so the same people kept coming in and out of jail. Only 119 subjects could be found who were in Linn County Jail on a minimum of a 25 day sentence and had at least one alcohol or drug related conviction on their record. The Control group list was then checked to see how many subjects had been patients at LCADTP as this would be a strong indicator of substance abuse problems. Control group members who had no direct alcohol and drug arrests but who had been referred to treatment at LCADTP at least one time were included in the control group (n=15), making the total number in the group 134.

INFORMATION GATHERING PROCESSES

All IRP and Noncompleter group members had a treatment chart completed by their counselors that included demographic information, past alcohol and drug using history, past treatments, records of aftercare sessions attended, length of time in aftercare, and a treatment summary. Also in each chart is a State Client Progress Monitoring System (CPMS) form that contained more demographic information, drug of choice,

preferred method of ingestion, income source and amount of income.

Due to lack of time in this limited study the charts of the Control group members who had been clients of Linn County Alcohol and Drug Treatment Program were not examined. Instead the computer records at LCADTP were used to count numbers of times each Control group member had been a client at that agency. Linn County Jail computer records were also used to identify employment, age, gender, source of income and ethnicity for the Control group members.

To obtain information about criminal histories of the subjects, Law Enforcement Data System was used to print and Criminal Histories (CCHs) for each subject. The CCHs contained all arrest records and generally the length of time each person was incarcerated in the Oregon State Prison System. Each arrest typically had several charges. Some of these charges were generally dismissed, others were plea bargained and on some the subject pled to or was found guilty. Each of these "arrest events" were counted as one separate arrest, unless all charges were subsequently dropped. Some of the CCHs did not have the date the subject was released from prison. Linn County Parole and Probation was contacted and they retrieved the missing prison release date information on their computer system. Days spent in Linn County Jail were determined through Linn County Jail computer terminals.

The original plan was to compute the amount of time incarcerated for four years prior to treatment but Linn County Jail did not computerize their records until 1990. This made it impossible to get jail incarceration information more than one year before treatment for the 1991 group, two years before for the 1992 groups and three years before for the 1993 groups. Therefore, the 1991 group's percentage incarceration before treatment is generally based on only the year including and previous to treatment, the 1992 groups is generally for a two year period and the 1993 group's are generally for a three year period.

In an effort to get as much pretreatment incarceration history as possible, if any individual had a prison sentence within four years before the start of the study then for this person the time in prison was included in the study. The days in prison that fell within the four year span were determined and the days in Linn County Jail were added in. The total number of days incarcerated was then divided by four years (1460 days) to determine the overall percentage incarcerated. The Linn County Jail days served before the beginning of computer services were not included, so the overall percentage incarcerated for these individuals is somewhat underreported.

For those who had no rearrests, the number of days from the start of the study until the end (December 31, 1995) is listed as their time until first arrest. As a result, for all

groups, the actual time until first arrest would be somewhat higher than what is listed. The 1993 groups had less time from the beginning of the study until the end than the 1992 groups and the 1992 groups had less than the 1991 groups so the data reflect these limitations.

RESULTS

CHOICE OF STATISTICAL TESTS

The distribution of the data for all the important information related to recidivism was non-normal. The distribution of arrests and time incarcerated was skewed strongly towards the smaller amounts and had extreme variation. As a result, a Mann-Whitney U test which does not assume a normal distribution was employed for between group comparisons where the data was interval or ratio (Norusis, 1990). A Chi Square test was used for between group comparisons where the data was nominal (Norusis, 1990). For within groups comparisons with interval or ratio data a Wilcoxon Signed-Ranks Test was used (Norusis, 1990). A Kruskal-Wallis One-Way Analysis of Variance was used to determine the association between variables (Norusis, 1990).

RECIDIVISM REDUCTION EFFECTIVENESS

PRETREATMENT DIFFERENCES BETWEEN IRP, CONTROL AND NONCOMPLETERS

All 1991, 1992 and 1993 groups (IRP, Control and Noncompleters) were combined for recidivism comparisons. The groups were compared before treatment on 48 variables. IRP differed significantly from either the Control or the

Noncompleter group before treatment on the 15 variables listed Table 1. (For a list of the variables where there was no statistical difference between groups refer to Table 7, Appendix A, page 93).

IRP was compared to the Control group before treatment and the following statistically significant differences between the two groups were found: IRP had fewer subjects working for their living, greater numbers of people with no source of income, more people with previous treatment, a higher incarceration rate the year before treatment, fewer arrests the year before treatment and more subjects who attended and completed aftercare after treatment than the Control group. In sum, IRP differed from the Control group on seven pretreatment variables.

When IRP is compared to the Noncompleter group, the following significant results were discovered: The IRP group had less education, a higher percent had been referred to jail-based treatment, more subjects attended aftercare, had higher average number of aftercare sessions, had more months in aftercare and a higher percent completed aftercare than the Noncompleter subjects. In sum, IRP differed from the Noncompleter group on five pretreatment variables.

PRETREATMENT VARIABLES PREDICTIVE OF RECIDIVISM

All pretreatment variables were analyzed to see if any were predictive of posttreatment recidivism measures (for a more

complete discussion refer to the Pretreatment Variables Predictive of Posttreatment Incarcerations Rates section, page 45 and Tables 3 and 4 on pages 47 and 49 respectively).

The Control group had fewer pretreatment predictors of recidivism than IRP whereas the Noncompleter group had more than IRP. The Control group had fewer subjects unemployed with no source of income, a higher rate of employment and less time incarcerated the year before treatment than the IRP group. IRP had fewer arrests the year previous to treatment and more subjects completed aftercare than the Control group. The Noncompleter group had fewer subjects complete aftercare than IRP; this predicts more posttreatment arrests and more incarceration for the Noncompleters.

Summarizing the pretreatment predictors of post treatment recidivism: When compared to the Control group, IRP had three measures that predicted higher recidivism and the Control group had two. The Noncompleter group had one pre treatment variable that predicts more recidivism than IRP. Due to these differences, the groups were not the same before treatment. This predicts that IRP should have more posttreatment arrests and incarceration than the Control group. On the other hand, the Noncompleter group should have more posttreatment arrests and incarceration than IRP.

Table 2 shows the results of the posttreatment comparisons between IRP, Control and Noncompleter groups where statistical significance was achieved. For a complete list

TABLE 1 PRETREATMENT DIFFERENCES BETWEEN IRP, CONTROL AND NONCOMPLETERS

PRETREATMENT VARIABLE	IRP n=206	CONTROL n=134	NONCOMPLETER n=34
Education (GED = 12) (mean)	11.6	missing	12.1 z=2.4 p<.05
Employment status full time unemployed & looking unempl. & not looking (Chi Square)	23.5% 48.2% 17.3%	39.2% 34.6% 6.2% Phi=.242 p<.001	12.5% 40.6% 25% Phi=.133 (NS)
Income source wages Social Security SSI no income source missing (Chi Square)	32.7% 2.7% 5.3% 38.9% 10.6%	40.8% 1.5% 5.0% 32.8% 21.6% Phi=.25 p<.05	12.5% 6.3% 3.1% 37.5% 34.4% Phi=.188 (NS)
Court mandated to IRP (% yes) (Chi Square)	81%	0	18.8% Phi=.469 p<.001
Treatment before study (% who had treatment) (Chi Square)	72.6%	27.6% Phi=.17 P<.01	56.3% Phi=.042 (NS)
Arrests year previous to study mean	2.38	2.70 z=2.22 p<.05	2.75 z=1.81 (NS)
% of time incarcerated year before study, mean	29.96%	25.17% z=4.11 p<.001	25.38 z=.719 (NS)

All probabilities are from Mann-Whitney U or Chi Square tests. If the test is not identified it is Mann-Whitney U. Each probability (p) is two-tailed. In each case IRP was compared to the other two groups. The Control and Noncompleter groups were not compared to each other.

TABLE 1 continued   27

Overall arrests per year average before mean	1.52	1.54 z=.9004 (NS)	1.69 z=1.47 (NS)
% That attended after-care after IRP mean	71.2% n=199	0	25.0% n=22 z=.407 p<.001
Number of aftercare sessions attended for those who attended mean	13.4 n=172	0	2.8 n=24 z=4.96 p<.001
Length (months) of aftercare attendance mean	4.5 n=177	0	.5 n=23 z=5.51 p<.001
% That completed aftercare or other treatment after IRP, mean (Chi Square)	25.7% n=188	9.0% n=12 Phi=.51 p<.0001	3.1% n=27 Phi=.334 p<.0001
% With treatment after IRP aftercare mean, (Chi Square)	22.6% n=219	14.1% Phi=.436 p<.0001	28.1% Phi=.044 p=.783

All probabilities are from Mann-Whitney U or Chi Square tests. If the test is not identified it is Mann-Whitney. Each probability (p) is two-tailed. In each case IRP was tested against the other two groups but the Control and Noncompleter groups were not compared to each other.

TABLE 2 SIGNIFICANT POSTTREATMENT COMPARISONS

VARIABLES	IRP n=226	CONTROL n=134	NONCOMPLETER n=34
Total number arrests after IRP, mean	3.32	3.99 z=1.69 p<.05	5.41 z=2.60 p<.01
Total number of prison sentences after, mean	.41	.62 z=1.15 (NS)	.94 z=3.34 p<.001
Total alcohol and drug arrests, mean	.40	.58 z=.1.64 p=.05	.88 z=3.03 p<.01
New convictions after IRP, mean	1.73	2.19 z=2.23 p<.05	2.94 z=2.56 p<.01
Probation violations after IRP, mean	1.54	1.58 z=.248 (NS)	2.74 z=2.44 p<.01
Days until first arrest after IRP, mean	569.12	435.66 z=3.30 p<.001	328.59 z=3.38 p<.001
Arrests first year after IRP, mean	1.15	1.25 z=2.08 p<.05	1.88 z=2.85 p<.01
Arrests second year after IRP, mean	1.06	1.28 z=.923 (NS)	1.75 z=1.87 p<.05
Arrests third year after IRP, mean	.65	.60 z=.033 (NS)	1.06 z=1.99 p<.05
Arrest fourth year after IRP, mean	.27 n=150	.50 n=88 z=1.68 p<.05	.25 n=16 z=.4082 (NS)

Table Two continued on next page.

All tests are Mann-Whitney and all probabilities are one-tailed.

TABLE 2 continued   29

Arrests fifth year after IRP, mean	.17 n=81	.13 n=51 z=.253 (NS)	.38 n=10 z=.605 (NS)
% Of time incarcerated the year after IRP	7.17%	10.14% z=1.85 p<.05	15.02 z=2.30 p<.05
% Of time incarcerated second year after IRP, mean	10.07%	12.92% z=.659 (NS)	23.31% z=2.70 p<.01
% Of time incarcerated third year after IRP, mean	9.69% n=218	13.88% n=134 z=.885 (NS)	17.32% n=31 z=2.56 p<.01
% Of time incarcerated fourth year after IRP, mean	8.36% n=135	11.05% n=83 z=1.48 (NS)	32.68% n=15 z=2.54 p<.01
% Of time incarcerated fifth year after IRP, mean	10.70% n=67	15.03% n=41 z=2.42 p<.05	52.11% n=8 z=3.39 p<.001
Overall average % of time incarcerated after treatment, mean	9.62% n=226	12.26% z=1.22 (NS)	22.48% z=2.67 p<.01
Arrest per year rate after IRP	1.01	1.20 z=1.72 p<.05	1.69 z=2.82 p<.01
Pretreatment arrest average minus post-treatment average	.49	.34 z=.622 (NS)	0 z=1.97 p<.05
Pretreatment % incarcerated minus post-treatment incarceration	7.51	5.19 z=1.85 p<.05	-3.73 z=3.10 p<.001

All tests are Mann-Whitney U and probabilities are 1-tailed.

of all posttreatment results, refer to Appendix A, Table 8, pages 98.

HYPOTHESIS 1: POSTTREATMENT ARRESTS

Hypothesis number one is that IRP graduates will have significantly fewer arrests after treatment (as measured by arrest per year averages and arrests in each year after treatment) compared to their own pretreatment rate and compared to the posttreatment rates of the Control and Noncompleter groups.

The IRP group had significantly fewer posttreatment arrests per year than it had before treatment. The Noncompleter group had a no change from pretreatment arrest per year rate to posttreatment rate. The Control group had significantly fewer posttreatment arrests per year then it had before treatment.

IRP had a significantly smaller posttreatment arrest per year rate than the Noncompleter group and the Control group. IRP had a significantly greater pretreatment to posttreatment decrease in arrest rate than the Noncompleter group. IRP had a larger pretreatment to posttreatment decrease in arrests than the Control group, but not significantly so.

IRP had significantly fewer arrests in each of the first three years than the Noncompleter group. In the fourth and fifth year after treatment there was no significant difference

between IRP and the Noncompleter groups in arrests. IRP had significantly fewer arrests the first and fourth years than *the Control group. In the second, third and fifth years after treatment there was no statistical difference between IRP and the Control group on arrest per year rates.

In summary, IRP met the prediction that it would have fewer posttreatment arrests per year than its own pre treatment rates and that of both other groups. IRP had a larger drop in arrest per year rate than the Noncompleter group but not than the Control group. IRP had fewer arrests than the Noncompleters in three out of five years and fewer arrests than the Control group in two out of five years. The conditions for hypothesis 1 were only partly met.

HYPOTHESIS 2: POSTTREATMENT PERCENTAGE INCARCERATED

Hypothesis 2 states that IRP graduates will have significantly fewer overall percentage of time incarcerated than both their own pretreatment rate and the posttreatment rate of the Control and Noncompleter groups. IRP's post treatment percentage incarcerated rate was significantly fewer than its pretreatment incarceration rate. The Noncompleter group had more incarceration after treatment than it had before, though not significantly so. The Control group's posttreatment percentage incarceration rate was also significantly less than its pretreatment incarceration rate. IRP's overall posttreatment percentage incarceration rate was

not significantly less than the Control group's rate, but it was significantly less than that of the Noncompleter group.

In sum, IRP had less posttreatment incarceration than it had before treatment and less posttreatment incarceration than the Noncompleter group. IRP did not have significantly less posttreatment percentage of time incarcerated than the Control group. The conditions for hypothesis 2 were only partially met.

HYPOTHESIS 3: PRETREATMENT TO POSTTREATMENT CHANGE IN INCARCERATION RATES

Hypothesis 3 states that IRP will have a significantly larger pre to posttreatment decrease in percentage of time incarcerated then both the Control and Noncompleter groups. IRP had a significantly larger pre to posttreatment drop in percentage incarcerated than both the Control group and the Noncompleter group. Hypothesis 3 conditions were met.

HYPOTHESIS 4: PERCENTAGE OF INCARCERATION IN EACH YEAR AFTER TREATMENT

Hypothesis 4 states that IRP would have less percentage incarcerated each year after treatment than both the Control and Noncompleter groups. The first year after treatment IRP had significantly less incarceration than both the Noncompleter and the Control groups. The second year, third and fourth year after treatment Irp had significantly less incarceration than the Noncompleter group but not

significantly less than the Control group. In the fifth year after treatment IRP had significantly less incarceration than both the Noncompleter and the Control groups. In summary, IRP had significantly less percentage of time incarcerated in each year than the Noncompleter group and less than the Control group for two of the five years. The conditions of hypothesis 4 were only partially met.

HYPOTHESIS 5: LENGTH OF TIME UNTIL FIRST ARREST

Hypothesis 5 states that IRP graduates will have a significantly longer length of time after treatment before their first arrest than the Control and Noncompleter groups. IRP had a significantly longer time until first arrest than both the Noncompleter and Control Groups. In summary, there was strong support for hypothesis 5.

PERCENTAGE INCARCERATED AND ARREST PER YEAR COMPARISONS

There are some conflicting trends for all groups in posttreatment arrest and incarceration rates. Table 1, page 26, shows the pretreatment arrests and percentage of time incarcerated and Table 2, page 28, shows the posttreatment arrests and time incarcerated. The IRP, Control and Noncompleter groups all had a high percentage of time incarcerated the year before treatment. Each group's incarceration rate dropped to their lowest point the next year. The second year after treatment each group's rate of

incarceration generally began a slow increase with the last year being the highest rate for each group.

At the same time as the percentage incarceration rates are generally rising, the arrest per year rates are declining after treatment for all groups. The year before treatment was the highest rate. The arrest rates drop the first year after treatment and continue to drop until the end. The apparent contradiction of rising incarceration rates at the same time as falling arrest rates will be elaborated upon in the discussion section.

COST EFFECTIVENESS

GATHERING INFORMATION FOR COST EFFECTIVENESS

Incarceration information was gathered only for Oregon State Prison and Linn County. There were certainly incarcerations in Federal Prison, other states and other counties that are not accounted for. Approximately 75% of the subjects are Linn County residents so the major portion of incarceration should be reflected in the data gathered. Linn County Jail computers contain the incarceration information from only 1990 on. Therefore, to be consistent across all groups, the pretreatment incarceration rates go back one only year.

DETERMINING THE COST PER DAY

Jail figures are based on the price Linn County Jail charges other agencies or municipalities to house a person per day. The actual cost per day was not available, however the expenses should be close to the amount charged. Oregon State Prison figures are actual average costs for an inmate in all the prisons and may vary from site to site and person to person, Schubothe (1996).

LENGTH OF STUDY

Inmates enter and leave IRP and jail on a continuous basis. Some come into jail each day and some leave each day. Therefore, the time from release from jail to end of treatment varies from person to person. Years after treatment were calculated on an individual basis based on increments of 365 days from the time released from jail at time of the treatment. The last year is a fraction of a year in each case, varying from nearly 100 percent to almost zero. Each individual's days incarcerated during the last year of the study were calculated by determining the percentage of the time locked up during the fraction of the last year. This last year's percentage of incarceration was then multiplied by 365 to determine the rate as if it were a whole year.

The study began in January of 1991 and lasted until January of 1996, five years in all. Approximately one half of each group were released from jail by the middle of the year

they were included in the study. For the purposes of comparing the various groups, the average release time for each group is used (July 1 of each year). Therefore, the last year of each group is only from July 1 to December 31.

METHOD OF COST CALCULATION

There are at least two ways to determine cost effectiveness. The simplest way would be to just compute the difference between each group from when they left jail at the time of treatment until the end of the study. However, each of the groups had different rates of incarceration previous to treatment so it would be inaccurate to treat them equally. To treat them as equal would be similar to having all competitors line up side by side in their respective lanes on the track for a quarter mile race. The racers in the outer lanes have much further to travel to reach the finish line. To calculate the first year savings in incarceration, the year after treatment incarceration cost is subtracted from the year before's rate. This puts all groups in as equal a starting position as possible, similar to the staggered start in a race.

The groups all vary in size. The numbers in the groups will affect the cost of incarceration due to simple probability. To compensate, the scores of the smaller groups are standardized by multiplying by its reciprocal when

comparing to each other. This treats each group as if it has equal numbers to allow comparisons.

The next six pages are an exact account of the days in jail, days in prison, cost per day to house inmates, yearly summary of cost to house inmates and comparisons between IRP and the two other groups. If the reader is not interested in the details they may wish to turn to the section titled 1991, 1992 and 1993 OVERALL COST/BENEFIT ANALYSIS on page 44 for a summary of the cost/benefit analysis. Appendix C, starting on page 102 contains tables demonstrating all the costs and benefits for all the year groups.

YEAR BEFORE TREATMENT TO YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS OF 1991 GROUPS

Table 10 in Appendix C, page 102, shows the details of the year before treatment costs for all groups. It cost Linn County Jail $378,784.00 to house the 1991 IRP group members in the year previous to treatment (n=82, 6764 days multiplied by $56.00 per day). It cost the Oregon State Department Of Corrections $122,161.05 to house this group of people in the Oregon Prison System (2553 days multiplied by $47.85). Added together this makes a total of $500,945.05. Table 11 in Appendix C, page 103, shows the details of the year after treatment for all groups. The year after treatment the 1991 IRP group was housed in Linn county jail a total of 1184 days for a cost of $94.720.00 and in the Oregon State System a total of 828 days for a cost of $39,619.80. This is a total

incarceration cost of $134,339.80 for the year following treatment. When the total cost of incarceration for the year following treatment ($134,339.80) is subtracted from the cost to house these same inmates the year previous ($500,945.05) this results in a difference of $366,608.25. This can not counted as savings attributed to treatment benefits yet because the other two groups also had less incarceration the year after treatment than they did the year before. To get a more accurate estimation of the gain made due to treatment, all group rates of decrease in incarceration was computed and compared.

The 1991 Control Group (n=51) spent 4248 days in Linn County Jail the year before treatment ($216,648.00) plus 2012 days in prison ($96,274.20) for a total cost of $312,922.20. The 91 IRP Group had a size of 82 and the 91 Control had 51 subjects. To standardize these scores 82 is divided by 51 for a figure of 1.57. The control group's cost is multiplied by 1.57 for a total of $491,287.85 to standardize.

The year after treatment the 1991 Control Group spent 760 days in Linn County Jail at $80.00 per day ($60,800.00) and 2136 days in prison ($102,207.60) for a total cost of $163,007.60. Multiplied by 1.57 this results in a standardized cost of $255,921.93 which when subtracted from $491,287.85 leaves a difference of $235,365.92 When the 1991 Control Group is compared to the 1991 IRP Group, IRP had a gain of $131,242.33 more than the control group. <u>If the</u>

1991 IRP Group was incarcerated at the same rate as the 1991 Control Group it would have cost $131,242.33 more in the first year after treatment (1991/2).

The 1991 IRP Noncompleter Group (n=10) had 664 days in Linn County Jail in the year previous to treatment for a cost of $37,184.00 and 508 days in prison for an expense of $24,307.80 and total of $61,491.00. Multiplied by 8.2 to standardize, this results in a cost of $504,232.76. The year after treatment the IRP Noncompleters spent 101 days in Linn County Jail and no time in prison for a total cost of $5656.00. When multiplied by 8.2, this results in a standardized cost of $80,800.00, which when subtracted from $504,232.76 results in a difference of $423,432.76. If the 1991 IRP Group was incarcerated at the same rate as the 1991 IRP Noncompleter Group then it would have cost $56,824.51 less.

SECOND YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS OF 1991 GROUPS

The rest of the incarceration costs was calculated by simply comparing the expenses of each group with each other and not with past years. Table 12 in Appendix C, page 104, shows the figures for the second year after treatment for all groups.

The second year after treatment (1992/3), the IRP Group was incarcerated in Linn County Jail 715 days at $80.00 per day for a cost of $57,200.00 and 1755 days in prison at $48.96

per day for an expense of $85,924.80 and total of $143,124.80.
The 1991 Control Group was incarcerated in Linn County Jail
696 days ($55,680.00) and in the Oregon State Prison System
1593 days ($77,993.28) for a total cost of $133,673.28
(standardized: $209,867.05). The cost to incarcerate the
Control group ($209,867.05) was $66,742.25 more than the cost
for the IRP group ($143,124.80). If the 1991 IRP Group were
incarcerated at the same rate as the 1991 Control Group it
would cost $66,742.25 more in the 1992/1993 year.

In the second year after treatment the 1991 IRP
Noncompleter Group spent 223 days in Linn County Jail
($17,840.00) and 903 days in prison ($44,210.80) for a total
of $62,050.80 which when standardized, results in a total of
$508,816.56. If the 1991 IRP Group were incarcerated at the
same rate as the 1991 IRP Noncompleter Group then it would
have cost $356,691.76 more in the second year after treatment
(1992/3).

THIRD YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS FOR 1991 GROUPS

Table 13 in Appendix C, page 105, shows the third year
after treatment figures for all groups. The 1991 IRP group
spent 649 days ($80.00 per day) in Linn County Jail for a sum
of ($51,920.00) in the third year and 1100 days ($50.06 per
day) in prison ($55,066.00), with a total cost of $106,986.00.
The 1991 Control Group spent 518 days in Linn County Jail
($41,440.00) and 1959 days in prison ($98,067.54) for a total

of $139,507.54. This is a standardized score of $219,026.84.
The 1991 Control Group cost $112,040.84 more to incarcerate
the third year after treatment than the 1991 IRP Group.

In the third year after treatment the 1991 Noncompleter
group spent 240 days in Linn County Jail ($19,200.00) and 896
days in prison ($44,853.76) for a total   of $64,053.76,
(standardized: $525,240.83). If the 1991 IRP Group would have
been incarcerated at the same rate as the 1991 IRP
Noncompleter Group it would have cost $418,254.83 more.

FOURTH YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS OF 1991 GROUPS

Table 14 in Appendix C, page 106, shows the fourth year
after treatment figures for all groups. In the fourth year
after treatment the 1991 IRP Group was incarcerated in Linn
County Jail 633 days (n=79, $80.00 per day equals $50,640.00)
and 1595 days in prison ($51.22 per day equals $81,695.90) for
a total of $132,335.90. The 1991 Control Group (n=51) was
incarcerated in Linn County Jail 417 days ($33,360.00) and
1715 days in prison ($87,842.30) for a total of $121,202.30.
When standardized (multiplied by 1.55) the cost is
$187,863.57. If the 1991 IRP Group had the same rate of
incarceration as the 1991 Control Group it would have cost
$55,527.67 more to house them in the last half of 1994 and the
first half of 1995.

In the fourth year after treatment the 1991 Noncompleter Group was incarcerated 10 days in Linn County Jail ($800.00) and 1347 days in prison ($68,993.34). The standardized cost (7.9x) would be $551,367.39. If the 1991 IRP Group were incarcerated at the same rate as the 1991 IRP Noncompleter Group it would have cost $419,903.49 more.

FIFTH YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS OF 1991 GROUPS

Table 15 in Appendix C, page 107, shows the fifth year after treatment figures for all groups. In the fifth year after treatment, which is a half year, the 1991 IRP Group (n=79) was incarcerated 187 days ($80.00 per day) in Linn County Jail ($14,960.00) and 1152 days ($51.22 per day) in prison ($61,666.56) for a total cost of $76,626.56. The 1991 Control Group (n=51) was incarcerated 79 days in Linn County Jail ($6,320.00) and 1064 days in prison ($56,955.92) for a total of $63,275.02. The standardized cost is $98,077.68. If the 1991 IRP Group were incarcerated at the same rate as the 1991 Control group during the last half of 1995, it would have cost $21,451.12 more.

In the fifth year the 1991 IRP Noncompleter Group (n=8) was incarcerated no days in Linn County Jail and 492 days in prison for a total cost of $26,336.76. The standardized score is $218,595.11. If the 1991 IRP Group were incarcerated at the same rate as the 1991 IRP Noncompleter Group it would have cost $220,702.05 more.

OVERALL COST/BENEFIT ANALYSIS FOR 1991 GROUPS

Table 16 in Appendix C, page 108, shows the 1991 overall cost/benefit figures. Overall, the 1991 IRP Group would have cost $387,004.21 more during this period of time if they had been incarcerated at the same rate as the Control Group. IRP Group members were released from Linn County Jail on Bench Paroles before their sentence was completed as a reward for completion of treatment. The 1991 IRP Group had a total of 3174 days they were sentenced to serve but did not due to Bench Parole. At $56.00 per day in 1991 this is an additional savings of $177,744.00. This brings the total savings of IRP when compared to the Control Group to $457,300.21 for the period of time of the study.

When IRP is compared to the IRP Noncompleter Group, it would have cost $1,282,101.06 more to incarcerate IRP if they had the same rate as the Noncompleter Group. When the Bench Parole time is added in, this brings the total to $1,352,397.06. It would have cost Linn County Jail $1,352,397.06 more to house the IRP subjects during the length of the study if they were incarcerated at the same rate as the 1991 IRP Noncompleter Group.

COMPUTING THE 1992 AND 1993 COST/BENEFIT ANALYSIS

Tables 17 through 27 in Appendix C, pages 109-120, show all the 1992 and 1993 figures. The same logic and steps that were used to compute the cost and benefit of treatment for the

1991 groups was used to determine the cost and benefit for the 1992 and 1993 groups.

1991, 1992 AND 1993 OVERALL COST/BENEFIT ANALYSIS

This section discusses the overall avoided incarceration benefits benefit achieved when IRP is compared to the Control group. The avoided incarceration costs of 1991 IRP compared to 1991 Control ($457,300.21) is added to the avoided costs of the 1992 IRP group compared to the 1992 Control group ($360,373.30) and the avoided costs of the 1993 IRP group compared to the 1993 Control group (a loss of $31,0796.62) for a total avoided incarceration savings of $786,593.89. This amounts to an average savings of $3,480.50 per client. The average length of time a client was out of jail after treatment is about three and a half years. This would be an approximate average savings of $994.00 per person per year.

This section compares IRP to the Noncompleter group on total avoided incarceration costs. When the avoided cost of the 1991 IRP group compared to the 1991 Noncompleter group ($1,352,397.06) is added to the avoided cost of the 1992 IRP group compared to the 1992 Noncompleter group ($306,259.15) and the avoided cost of the 1993 IRP group compared to the 1993 Noncompleter group ($236,387.18) the total avoided incarceration savings are $1,922,043.30. This amounts to an average savings of $8,5046.16 per client. Computed on a

yearly basis, the savings would be approximately $2,430.00 per person per year.

IMPROVING EFFECTIVENESS

PRETREATMENT VARIABLES PREDICTIVE OF POSTTREATMENT RECIDIVISM RATES

Table 3 contains the pretreatment variables related to posttreatment incarceration rates for IRP graduates. Table 4 contains the pretreatment variables that are predictive of posttreatment arrests for IRP graduates.

It was predicted that the amount of income earned would be predictive of posttreatment arrests and incarceration, but in neither case was this true. However, a number of pretreatment variables were predictive of both fewer arrests and less time incarcerated after treatment. This category included being older than average, having more direct substance abuse arrests and more DUII arrests.

Several pretreatment variables were predictive of both more posttreatment arrests and time incarcerated. This category included more arrests, higher amounts of time incarcerated the year before treatment, higher numbers of prison sentences and being unemployed and looking for work.

Some pretreatment variables were predictive only of larger amounts of incarceration but not more arrests after treatment. This category included having a higher percentage

of time incarcerated in the second and third year before treatment, having methamphetamine as the drug of choice and using drugs intravenously.

Having no legal source of income before treatment was predictive of more posttreatment arrests but not of more time incarcerated.

AFTERCARE COMPLETION AS A PREDICTOR OF LESS RECIDIVISM

For IRP graduates, aftercare completion was associated with fewer posttreatment arrests and less time incarcerated. The IRP graduates were divided into two groups based on whether they completed aftercare or not. For 13 out-of-county IRP graduates no information had been received about their aftercare attendance so they were dropped from this comparison. Table 5 contains the most important significant posttreatment variables that the aftercare completers and the aftercare noncompleters differed on.

After treatment, the aftercare completers had fewer arrests, fewer new convictions fewer probation violations, longer time lapse until first arrest, fewer prison sentences, less time incarcerated and a larger difference in percentage incarcerated than the IRP aftercare noncompleters.

Since aftercare completion is so strongly predictive of reduced recidivism the question of which pretreatment measures predict aftercare completion was examined. The significant results are summarized in Table 6. Before treatment,

TABLE 3   PRETREATMENT   PREDICTORS   OF   POSTTREATMENT
INCARCERATION

PRETREATMENT VARIABLE   CHI SQUARE RESULTS   EXPLANATION

PRETREATMENT VARIABLE	CHI SQUARE RESULTS	EXPLANATION
% of time incarcerated year before	CS:106.44 p<.05	The more time incarcerated before, the more after.
% of time incarcerated 2 years before	CS:58.712 p<.05	The more time incarcerated 2 years before, the more after.
% of time incarcerated 3 years before	CS:95.629 p=.001	The more time incarcerated 3 years before, the more after.
Average % of time incarcer- ated before	CS:86.135 p<.05	The more overall time incarcerated before, the more after.
Number of pre- vious prison sentences	CS:52.299 p<.0001	The more previous prison sentences, the more time incarcerated after.
Previous alcohol and drug arrests	CS:48.378 p<.0001	The more previous alcohol and drug arrests, the less time incarcerated after.
Previous DUII arrests	CS:52.644 p<.0001	The more DUII arrests before, the less time incarcerated after.
Age	CS:94.751 p<.01	The older the person, the less time incarcerated after.
Arrests the year before treatment	CS:40.144 p<.0001	The more arrests the year before treatment, the more arrests after.
Arrests 2 years before treatment	CS:17.368 p<.01	The more arrests 2 years before, the more time incarcerated after.
Arrests 3 years before treatment	CS:14.541 p<.05	The more arrests 3 years before, the more time incarcerated after.

Table continued on next page.
CS means Chi Square. All statistical tests are Kruskal-Wallis
one-way analysis of variance.

Table 3 continued.   48

Arrests 4 years before treatment	CS:25.631 p<.01	The more arrests 4 years before, the more time incarcerated after.
Overall arrest average before treatment	CS:115.35 p<.001	The higher the previous arrest total, the more incarceration after
Drug of choice: meth-amphetamine	CS:26.149 p<.0001	If the drug of choice is methamphetamine then more time incarcerated after.
Method of ingestion: IV	CS:30.341 p<.0001	If drugs intravenously, they had more time incarcerated afterwards.
Unemployed and looking for work	CS:8.9245 p<.01	If the person was unemployed and looking for work before treatment they had more incarceration after.

TABLE 4 PRETREATMENT PREDICTORS OF POSTTREATMENT ARRESTS

PRETREATMENT VARIABLES CHI SQUARE RESULTS   EXPLANATION

Age	CS:85.374 p<.001	The older the person, the fewer arrests afterwards.
Arrests 1 year before	CS:43.880 p<.0001	The more arrests the year before, the more after.
Arrests 2 years before	CS:28.274 p<.001	The more arrests 2 years before, the more after.
Arrests 3 years before	CS:23.360 p<.01	The more arrests 3 years before, the more after.
Arrests 4 years before	CS:24.112 p<.01	The more arrests 4 years before, the more after.
Previous total number of arrests	CS:69.333 p<.001	The more total arrests before, the more after.
Number of prison sentences	CS:39.609 p<.0001	The more previous prison sentences before, the more arrests after.
Alcohol and drug arrests before	CS:30.216 p<.01	The more alcohol and drug arrests before, the fewer arrests after.
DUII arrests	CS:32.219 p<.01	The more DUII arrests before, the fewer arrests after.
% Incarcerated the year before	CS:4.1148 p<.0001	The more time incarcerated the year before, the more arrests afterwards.
Income source: no income source	CS:15.614 p<.05	If a person had no source of income before, they had more arrests afterwards.
Unemployed and looking for work	CS:10.028 p=.01	If a person was unemployed & looking for work they had more incarceration after.

All statistical tests are Kruskal-Wallis one-way analysis of variance. CS means Chi Square

TABLE 5 IRP AFTERCARE COMPLETERS COMPARED TO AFTERCARE
NONCOMPLETERS

	IRP COMPLETED AFTERCARE n=58	IRP DIDN'T COMPLETE AFTERCARE n=130
Total arrests after treatment	1.46	4.39 z=5.80 p<.001
Total number of prison sentences	.10	.59 z=4.63 p<.001
New convictions	1.05	2.19 z=3.73 p<.001
Probation violations	.39	2.13 z=6.44 p<.001
Days until first arrest	822.19	428.68 z=5.15 p<.0001
Total days incarcerated	30.39	158.05 z=6.24 p<.0001
Difference in percentage of time incarcerated	8.27	-.16 z=3.81 p<.001

All statistical tests were Mann-Whitney U and probabilities
are 2-tailed.

aftercare completers had fewer overall arrests, fewer arrests three years before treatment, fewer arrests four years before treatment, fewer prison sentences, more alcohol and drug arrests, more DUIIs and were older than the noncompleters.

COMPARISONS OF PRETREATMENT VARIABLES PREDICTIVE OF INCARCERATION, ARRESTS AND AFTERCARE COMPLETION

For the IRP group, summarizing the predictors of aftercare completion, arrests and percentage of time incarcerated after treatment, there are four main variables in common: (1) the more pretreatment arrests and prison sentences then the higher amount of posttreatment arrests, the greater the time incarcerated and smaller the likelihood of completing aftercare, (2) the more alcohol and drug arrests and especially DUIIs, then the fewer arrests and less incarceration after treatment and the more likely the completion of aftercare, (3) the older the person is, the more likely they are to complete aftercare and to have smaller posttreatment arrest and incarceration rates, (4) IRP aftercare completers had fewer arrests, less incarceration and longer time lapse until first arrest than the IRP aftercare noncompleters.

POSTTREATMENT SUBSTANCE ABUSE ARRESTS

No prediction was made concerning posttreatment alcohol and drug arrests but as IRP is primarily a substance abuse

treatment program this is an important consideration. If IRP is effective as a substance abuse treatment program then there should be a posttreatment decrease in these types of arrests. Table 2 on page 28 contains a complete list of all significant posttreatment results including substance abuse arrests.

There was no statistical difference in pretreatment alcohol and drug arrests between IRP and the other groups. After treatment, the IRP group had significantly fewer alcohol and drug arrests than the Noncompleter group. When IRP was compared to the Control group the results almost but do not quite reach significance.

TABLE 6 PRETREATMENT VARIABLES PREDICTIVE OF AFTERCARE COMPLETION

VARIABLE   Explanation

Arrests 3 years before IRP	CS:15.44 $p<.001$	The fewer the number of arrests 3 years before, the more likely the person would complete aftercare.
Previous total alcohol and drug arrests	CS:12.42 $p<.=001$	The more alcohol and drug related arrests, the more likely the person was to complete aftercare.
Number of arrests 4 years before	CS:7.63 $p<.01$	The fewer arrests 4 years before, the more likely to complete aftercare.
Total number of arrests before IRP	CS:7.18 $p<.01$	The fewer the total number of arrests, the more likely to complete aftercare.
Income source from wages	CS:9.646 $p<.01$	If a person made their income from wages they had a higher likelihood of completing aftercare.
Total number of prison sentences before IRP	CS:9.71 $p<.01$	The fewer prison sentences, the higher probability of completing aftercare.
Number of DUII convictions before IRP	CS:5.78 $p<.05$	The more DUII arrests before IRP, the more likely the person completed aftercare.
Age	CS:5.28 $p<.05$	The older the person, the more likely they completed aftercare.

All tests were Kruskal-Wallis one-way analysis of variance. CS means Chi Square.

DISCUSSION

RECIDIVISM REDUCTION EFFECTIVENESS

DISCUSSION OF VALIDITY OF COMPARISONS OF IRP TO CONTROL AND NONCOMPLETER GROUPS

First, the question of the validity of comparing IRP to the Noncompleter group is discussed first. The Noncompleters had fewer people complete aftercare than IRP. Aftercare completion is highly predictive of less recidivism. This means that it is expected that the Noncompleters will have more posttreatment recidivism than IRP. However, each IRP subject is strongly encouraged to attend aftercare. A great deal of IRP time is spent preparing the clients for entry into aftercare. It is suggested that one of the reasons that more IRP subjects completed aftercare is a direct result of the jail-based treatment effects. Since the IRP and Noncompleter groups did not significantly differ on any other pretreatment variable predictive of recidivism, they are quite similar groups.

The most difficult obstacle to comparing IRP and the Noncompleter groups is number of subjects. The Noncompleter group was sufficient in quantity the first three years but, by the fifth year only eight subjects were left. This makes any comparisons very tentative in the fifth year after treatment between IRP and Noncompleter groups. However, for at least

the first three years the Noncompleter group is sufficiently large for comparison.

Secondly, the question of the validity of comparing IRP to the Control group is discussed. Due to different data bases, the Control group was missing information on seven pretreatment variables. IRP and Noncompleter groups were compared on these seven variables and found to not differ significantly from each other. None of these seven variables were associated with posttreatment recidivism, so even if IRP and the Control group did differ significantly on these measures, it should not affect the results strongly. IRP had significantly more of three variables that predicted higher recidivism while the Control group had significantly more of two. However, one of the two variables that predict less recidivism for the IRP group is aftercare completion. As previously discussed, the in-jail treatment probably contributed strongly to the higher rate of aftercare completion. As a result, the Control group probably had two more pretreatment predictors of reduced recidivism compared to IRP. The Control group had a sufficient size (46) through the fifth year for accurate comparisons. However, the Control group would be predicted to have less recidivism than the IRP.

To be _very_ conservative, the Control group will be the primary comparison to determine the effects of jail-based treatment on recidivism. IRP will also be compared to the

Noncompleters for a more liberal estimate of the effects of jail-based treatment on reducing recidivism.

OVERALL POSTTREATMENT ARREST PER YEAR RATES

IRP had a significantly smaller overall posttreatment arrest per year rate than it had before treatment. The Noncompleter group had no change in their arrest per year rate. The Control group also had a significantly smaller overall posttreatment arrest rate than it had before. IRP's drop in overall arrest rate was significantly larger than the Noncompleter group but not than the Control group. It is clear that IRP had a strong effect on reducing arrests when compared with the Noncompleters.

IRP had significantly fewer total arrests after treatment then both the Control and the Noncompleter groups did. This is somewhat to be expected when IRP is compared to the Noncompleter group. The Control group would be predicted to have fewer arrests than IRP, however IRP had fewer then the Control did. This is substantial evidence that jail-based treatment is effective in reducing arrests.

Only in the first year after treatment did IRP have fewer arrests than both other groups. In the second and third year after treatment IRP had significantly fewer arrests than the Noncompleter group only. In the fourth year IRP had significantly fewer arrests than the Control but not than the Noncompleter group. In the second, third and fifth years there

was no significant difference between IRP and the Control group. It appears that IRP had a strong effect in reducing arrests in the first year. These benefits began to fade slowly with time until by the fifth year they had disappeared.

There could be many reasons for this fading of the effects of treatment on reducing arrest. One very possible reason might be due to the nature of substance abuse itself and typical recovery effort patterns. Many addicts will be highly motivated to pursue abstinence from substances just after a problem occurs, such as being in jail. These addicts will work a "strong recovery program" for a period of time, then as the memory of the problem fades so does their effort level. They will often return to substance abuse several months to a few years later. With the return to substance abuse comes further arrests. This could cause the initial strong decrease in arrest rates followed by a slow increase over time.

OVERALL INCARCERATION RATES

IRP's posttreatment incarceration rate was less than its own pretreatment incarceration rate however the same is true for the Control group. The Noncompleter group had a higher incarceration rate after treatment than they had before. IRP's overall posttreatment incarceration rate was significantly less than the Noncompleter group and was less than the Control but did not reach statistical significance.

Due to the Noncompleter group having fewer subjects complete aftercare than IRP it can not be determined for certain if jail-based treatment or aftercare completion is what caused the decreased posttreatment rate for IRP. The Control group had more pretreatment variables predicting less incarceration than IRP so these differences are quite possibly the reason why IRP did not achieve significance on these measures.

DECREASE IN INCARCERATION RATES AFTER TREATMENT

IRP had a significantly larger pre to posttreatment decrease in percentage of time incarcerated than both the Control and the Noncompleter groups. The Noncompleter group's rate of incarceration dropped the first year after treatment then began to raise at a high rate each year until the end of the study. Unfortunately, there were only eight people in this group in the last year so it becomes difficult to make definite conclusions in the later parts of the study.

The Control group's rate of incarceration dropped even though it did not have treatment in jail. There may have been many factors responsible for this (aging, changing sentencing strategies, alcohol and drug treatment other than IRP, etc). Since each group started with different pretreatment incarceration rates it does not give an accurate indication of the effects of treatment to compare these groups equally to each other afterwards. The additional drop in incarceration

rate obtained by IRP clearly demonstrates the positive effects of jail-based treatment.

INCARCERATION RATES BY YEAR AFTER TREATMENT

The first year after treatment IRP had less incarceration than both the Control and the Noncompleter groups. The second, third and fourth years after treatment IRP had a incarceration rate which was significantly less than the Noncompleter group and less than the Control group, but not significantly so. In the fifth year IRP had significantly less incarceration than both groups. Again, it is expected that IRP would have somewhat of a smaller rate of posttreatment incarceration than the Noncompleters due more of its subjects completing aftercare, so it not be stated with assurance that jail-based treatment caused all the difference in the rate. However, the Control group was expected to have fewer amounts of incarceration than IRP and the reverse actually occurred. This is strong evidence to support the effectiveness of jail-based day treatment in decreasing incarceration rates.

IRP treatment seemed to have a strong effect in decreasing incarceration the first year which gradually decreased in subsequent years. However, the reduced incarceration differences were still significant at the end of the study. This indicates that the effects of jail-based

treatment in reducing amounts of incarceration appears to last several years.

LENGTH OF TIME UNTIL FIRST ARREST AFTER TREATMENT

IRP had a strongly significantly longer time until first arrest than the Noncompleters and the Control Group. This indicates that IRP treatment had at least a powerful initial effect on reducing arrests.

DRUG AND ALCOHOL RELATED ARRESTS

IRP did not differ significantly from either of the groups before treatment on alcohol and drug arrests. After treatment IRP had significantly fewer alcohol and drug arrests than the Noncompleter group. IRP had fewer alcohol and drug arrests than the Control group but did not quite reach significance. It appears that generally IRP is effective in its primary mission, which is to reduce substance abuse arrests.

EFFECTS THAT OTHER TREATMENT MAY HAVE ON CONTROL GROUP RECIDIVISM

The Control groups' pre-jail and post-jail amount of substance abuse treatment is probably underreported. Table 1, page 26, shows substance abuse treatment other than at IRP. For the IRP and Noncompleter groups, information concerning previous therapy and treatment after the in-jail program was gathered from their LCADTP charts. These LCADTP treatment

charts contained information gained through personal interviews and questionnaires concerning treatment at other agencies in and out of County and State. For the Control group only the LCADTP computer was checked to see if a subject had been in that particular agency previously. In addition, eleven percent more Control group members lived out of county than did the IRP subjects. It would be expected that a person is more likely to go to treatment in the county they live in. It is strongly suspected that if the Control group members had been interviewed and filled out questionnaires concerning their past treatment, as did the other two groups, that it would have been learned that far more Control subjects had previous treatment and treatment after jail at agencies other than LCADTP.

IRP is not being compared to a nontreatment Control group. IRP is being compared to a Control group with an unknown but rather substantial quantity of treatment. Since the Control group had substantial amounts of treatment and IRP still had fewer arrests, fewer new convictions, a longer time until first arrest, a bigger drop in incarceration rate and fewer incarceration in some years this is even more evidence of the power of treatment in jails.

DECLINING ARREST RATES CONCURRENT WITH INCREASING INCARCERATION RATES; A CONTRADICTION?

For all groups the arrest per year rate declined dramatically near the end of the study while the percentage

incarceration rate increased. At first this may seem contradictory, but it appears that arrests per year and percentage of time incarcerated are measuring two related but also somewhat different things. There are many possible reasons for the different trends in arrest and incarceration rates that will be discussed in the next few paragraphs.

One reason for the difference between arrest and incarceration rates is that not all crimes have equal penalties from the law in terms of sentence lengths. A person could have a number of minor misdemeanors and have little or no incarceration yet one serious felony would result in several years in prison. Another reason is that when a person is incarcerated they can not, hopefully, get more new arrests. As a result, one could have a great deal of time incarcerated yet have a low arrest per year rate.

Another reason for the difference in arrest and incarceration rates may be due to common judicial practices of sentencing lightly at first offense and if the person continues to re-offend, giving increasingly severe incarceration penalties. This would result in more time incarcerated for fewer arrests as time goes on. When a person is incarcerated then they are not able to re-offend so their arrest rate would drop correspondingly as mentioned above.

Another related potential contributing factor to the low arrest but high incarceration rate may be a tendency to give a small sentence with probation initially. If the person does

not follow through with the terms of their probation then it is terminated. When probation is terminated, the amount of jail time is usually far longer then the original sentence.

Another factor that could influence the difference in arrest and percentage incarceration rates is that in September, 1994 two new judges went into office and two went out. Within a month of this time Linn County Jail population went from an average in the 70's to nearly 100 people and has stayed there since. Apparently, these new judges were giving substantially longer sentences for the same crime than the judges who retired. This is probably the biggest contributing factor to the rise in incarceration rates in the last year and a half of the study.

COST EFFECTIVENESS

DECIDING WHICH GROUP TO COMPARE IRP WITH

The question of which group to compare IRP with becomes critical in the issue of cost effectiveness. To determine the savings from treatment, the Noncompleter group (n=34) was divided up by the year they were in treatment. This puts the size of the groups as ten, eight and sixteen. This makes the size of these groups very small for making conclusions. (In the recidivism reduction effectiveness section, the Noncompleter group was not broken down by year group so it

kept its size throughout until the last two years of the study; thus, it was large enough to make safer comparisons). For this reason, the Control groups will be the primary comparison group. When comparing the groups, <u>the Control group will be the conservative estimate of savings and the Noncompleter group will be the liberal and perhaps less dependable estimate of savings.</u>

SUMMARY OF SAVINGS ATTRIBUTED TO IRP

If IRP had been incarcerated at the same rate as the Control group for the period of time of the study it would have cost $786,593.89 more to house them in jail or prison than it actually did. Of this figure, $528,944.00 was due to early release from jail due to Bench Parole. This leaves $257,649.89 saved in avoided costs from a smaller rate of incarceration after release from jail.

If IRP had been incarcerated at the same rate as the Noncompleter group for the period of the study, it would have cost $1,922,043.30 more to house them in jail or prison than it actually did. When the $528,944.00 for Bench Parole is subtracted this would leave a savings of $1,393,099.30 in avoided costs due to a smaller rate of incarceration after treatment.

THE DILEMMA OF THE COST OF OUTPATIENT TREATMENT

The cost of outpatient alcohol and drug treatment after jail has not been calculated. The Control, Noncompleter and IRP groups all had some outpatient treatment involvement but IRP had more. The IRP graduates who had the least posttreatment incarceration had more outpatient treatment attendance therefore more costs, so it is an important expenditure to calculate.

To accurately calculate the costs of outpatient treatment would involve going back through each chart counting each session attended, what type of session it was, the length of each session, how much the person paid themselves for this session, what type of payment arrangement the person had, determining what section of the program each person is in and how much was paid by the person's insurance or agency. This is a worthy endeavor that needs to be done at some point to get an accurate individual estimate of the cost/benefit ratio of outpatient treatment.

The number of sessions at LCADTP attended was not recorded for any of the groups before the start of the study. The number of outpatient sessions at LCADTP after the study began was not recorded for the Control group but it was for the Noncompleter and IRP groups. The number of any type of treatment except at LCADTP was generally not available for any groups. More Control group members lived out of Linn County than IRP group members or Noncompleter group members, so

Control would have more out-of-county treatment. The most difficult barrier was that LCADTP had not determined how much it costs to provide service for any group or individual session. In summary, there are too many unknowns to calculate the cost of outpatient treatment. This calculation of the cost of outpatient treatment will be left to another study.

OUT OF COUNTY CONTROL GROUP SUBJECTS

A complicating factor to consider is that the Control group had eleven percent more of its members living outside of Linn County than did the IRP group. The county one lives in would be the county that one is most likely to be arrested and incarcerated in. Since the Control group had more of its members living outside of the county it is highly probable that they had more days incarcerated in jails in these counties than IRP did. One can make nothing but an educated guess until the actual data is gathered, but if this is true then the savings for IRP would go up by 11%.

OTHER ECONOMIC BENEFITS FROM TREATMENT

Mecca (1994) found that there were savings due to alcohol and drug treatment in areas other than just the cost to house a person in jail including crime victim savings, police protection, court costs, parole & probation costs, theft costs, health care costs, lost wages and increased social service costs such as disability and welfare. Summing all the

benefits for all these areas, there was a benefit to cost ratio of about seven to one. The entire criminal justice system savings were about 35% of the total with cost of incarceration but a fraction of this 35%. Finigan (1996) measured the same information as Mecca (1994) and found that for every dollar spent in treatment there were avoided costs of $5.60 for a period of three years after treatment.

IRP paid for the cost of treatment and had a "profit" of $786,593.89 or $1,922,043.30, depending on which group it is compared to. The total cost of treatment for the three years was $331,676.00. This would be a profit of either $2.37 (conservative) or $5.76 (liberal) for each dollar spent for treatment for incarceration costs alone.

If the avoided incarceration costs were the sum total of the savings to the criminal justice system (and they are but a fraction) then at the most conservative, IRP had a savings of $736,142.52. The Bench Parole savings ($528,944.00) added to this would be a net of $1,265,086.00, at most conservative estimate. This amounts to a $3.59 return for each $1.00 invested in treatment. If the total avoided costs were actually known for IRP, they would probably be similar to those found by Finigan ($5.60 for each dollar invested). One can only speculate about the additional avoided costs to the taxpayers due to IRP treatment but the figures mentioned are certainly only a fraction of the overall total.

IRP also operated in 1994 and 1995. If these groups have similar cost effectiveness results as the 1991, 1992 and 1993 groups then the savings are larger yet.

IMPROVING EFFECTIVENESS

AFTERCARE GRADUATION

On all the recidivism measures, the IRP graduates who also completed aftercare did much better than those graduates who did not complete aftercare. The aftercare completers had fewer arrests, fewer prison sentences, fewer alcohol and drug arrests, fewer time incarcerated, greater drop in posttreatment arrest and incarceration rates and a longer time until first arrest than those IRP graduates who did not complete aftercare. One of the best things that could be done to reduce recidivism among IRP graduates would be to increase aftercare completion rates.

The aftercare completers differ in important ways from the aftercare noncompleters before they entered IRP, however. The aftercare completers had fewer arrests two and three years before, fewer prison sentences, more alcohol and drug crimes, more DUII's and were older than the noncompleters. These are all highly predictive of a smaller rate of recidivism after treatment regardless of aftercare attendance. The people differ on personal characteristics before treatment that likely at least partly determine whether they will attend

aftercare. Therefore it is impossible to extract the precise contribution that aftercare makes to reducing recidivism as this is at least partially a reflection of individual characteristics. All that can be concluded is that people who graduate from IRP and aftercare have a much greater chance of reduced recidivism than those who do not.

FACTORS PREDICTING RECIDIVISM

The IRP subjects who had a lower amount recidivism had several pretreatment variables that were different from those who had more recidivism. The subjects with less recidivism were older, were more likely to earn their income from a job, had fewer arrests, had fewer prison sentences, had more alcohol and drug arrests and more DUII arrests and if they were unemployed they had a legal source of income.

These pretreatment differences are likely linked to recidivism in the following ways: The high amount of substance abuse and DUII arrests is suggestive of a group of people whose primary problem is chemical dependency with alcohol being their drug of choice. They did not have as many arrests that were non-substance abuse related so this means that their criminality was often related to their drug or alcohol abuse. These subjects are also people who are generally working for their income or if they were not working, they had a pension or other legal means of income. This group of people were older than the average which

suggests that they were "maturing out" of their criminal activity. Livingston (1992) reports that nation-wide, arrest rates rise while people are in their teens and decrease as they get older. This is what is known as maturing out. In other words these people were not professional criminals but were at least marginally contributing members of society. The fact that this group of people went to the trouble to complete aftercare indicates a fairly high degree of responsibility and commitment.

Summarizing the people who were successful in reducing recidivism through IRP the following profile is typical: They were generally reasonably solid citizens who worked for their living or had another legal means of support. They did not make a habit of crime except when they drank or used drugs. They preferred alcohol and especially stayed away from intravenous drug use. They were older and getting tired of going to jail and more willing to do what it takes to stay out.

Before treatment, the people who had more recidivism in IRP had more arrests such as thefts, robberies and burglaries, had more overall arrests, had been to prison more, tended to abuse methamphetamine more frequently and to use drugs intravenously more. Those who did not have a legal source of income would be more likely to have illegal sources of income. In other words, these people were more heavily involved in crime as a way of life. They were not generally fairly solid

citizens who when they used drugs committed crimes but they tended to live a lifestyle of criminal activity.

The intravenous methamphetamine use can be interpreted at least two ways. It could be that the drug and method of use of the drug is so addictive that it totally overpowers the person when they become dependent upon it and causes them to commit all these crimes. Another, more likely scenario, is that those who are willing to abuse an illegal drug in such a dangerous manner are different before the drug use starts from those who only use legal or safer drugs. It is strongly suspected that those who use illegal drugs intravenously were more "risk-takers" and less concerned with societal norms all their lives.

The fact that the people who had more posttreatment recidivism had more prior arrests that were not directly connected to substance abuse is strongly indicative of the drug use not being their sole or even primary problem. These folks were committing criminal acts whether they were using drugs or not. The higher number of total arrests indicates that the criminal activity started at an early age, especially coupled with their younger average age as a group. The higher number of prison sentences before treatment is also indicative of a longer, more severe criminal history because prison sentences are generally reserved for the more serious crimes.

The risk-taking intravenous drug use, higher incidence of illegal drug use, earlier onset of criminal activity, high

amount of non-substance abuse arrests, high number of prison sentences and not having a legal means of support suggests that these people who had more recidivism after treatment may have more problems than just substance abuse. Francis (1994) in the Diagnostic Criteria from DSM-IV, lists repeatedly performing acts that are grounds for arrest, poor work history and reckless disregard for own safety as being three of the criteria for diagnosing Antisocial Personality Disorder (APD). The aftercare noncompleters tend to have more of these characteristics than the aftercare completers. At this point it is impossible to confirm but there is a strong possibility they may also have APD or at least more inclined towards it.

SOME CONCLUSIONS ABOUT IRP'S RECIDIVISM REDUCTION EFFECTIVENESS

IRP's primary purpose is to treat substance abuse. For those people whose primary problem is substance abuse, especially alcoholism, IRP was very effective in reducing recidivism. For those who were more criminal, the recidivism reduction efforts were not nearly as effective.

Cornerstones (Field, 1989) has had success with subjects who are in prison whereas IRP did not do well with this population. Cornerstones is a therapeutic community lasting nine to 12 months in length and is considerably more intense than IRP. County jail sentences are generally not long enough to have this length of program. Perhaps for the more APD clients the length and intensity of treatment could be

increased, as much as jail sentences would allow, and this would decrease recidivism more.

IRP had success with a modified day treatment style of therapy. However, milieu or therapeutic models outperformed traditional therapy in the other studies (Lipton, 1996; Wexler et al., 1990). As a result, it is believed that jail-based substance abuse treatment could substantially increase its recidivism reduction effectiveness by using either milieu or a therapeutic community model. Separate housing is a basic requirement for either therapeutic community or milieu therapy. In the current Linn County Jail structure and administration it is impossible to attain separate housing for the IRP inmates. To do so would decrease the jail's ability to house necessary numbers of inmates and its security. There are plans underway to build another jail facility in Linn County as well as other counties in the State. Each of these counties should consider the need for separate housing for alcohol and drug treatment programs that will likely be housed in them in the future.

THE JAIL-BASED DAY TREATMENT MODEL IS EFFECTIVE

IRP's jail-based day treatment model of therapy was effective in reducing recidivism on a number of variables and was quite cost-effective. This model of therapy has not previously been evaluated and shown to be effective in reducing recidivism in a prison or jail setting. This style

of day treatment is cheaper, more adaptable and generally easier to implement than therapeutic communities or milieu therapy. County jails have many barriers that prevent them from using the therapeutic community or milieu therapies. Demonstrating the effectiveness of this style of day treatment will allow many county jails Nation-wide to implement substance abuse treatment in their facilities and thereby save a great deal of money, reduce crime and help addicts and alcoholics caught in the web of addiction.

REDUCING THE JAIL TO PRISON PROGRESSION IN INCARCERATION

The typical pattern for many addicts is first getting into trouble as a juvenile and receiving very minor legal consequences. When the addict reaches age 18 and continues to offend, the judges will try probation, followed by county jail sentences and finally if all else fails they end up in prison. Day treatment in jails, or therapeutic community treatment when offered, offers an opportunity to break this pattern.

Many of these addicts are repeatedly referred to outpatient or residential substance abuse treatment programs before they go to prison. However, the typical pattern is that addicts do not follow through with these referrals. Up until now, prison has often been the first place where a criminal addict could be induced to actually participate in substance abuse treatment. These same addicts can be induced to participate in jail-based treatment before they end up in

prison. If there were more substance abuse treatment programs in jails, this escalating cycle of increasingly lengthy and expensive incarceration has an opportunity to be broken early.

It is true that many of the people who did best in IRP were older. Therefore they are not early in this cycle of increasing incarceration. However, some of those who are early in the cycle of increasing incarceration would benefit. The ones who would benefit the most would be those whose primary problem is substance abuse, as opposed to APD. For those who have a diagnosis of APD, a lengthier therapeutic treatment program in jail would be the best alternative.

CONCLUSIONS

RECIDIVISM REDUCTION EFFECTIVENESS

IRP was generally effective in reducing arrests, reducing time incarcerated and lengthening the time until first arrest. IRP was particularly effective in reducing arrests, reducing time incarcerated and lengthening the time until first arrest with people who were primarily alcoholic and who had fewer serious criminal histories. IRP was not as effective in reducing arrests for those clients who had more serious criminal histories and for whom substance abuse may have been secondary to Antisocial Personality Disorder.

COST EFFECTIVENESS

IRP paid for the cost of treatment and had a total conservative "profit" of $786,593.89 in avoided incarceration costs alone. This amounts to a savings of $3,480.50 per client for the average three and a half years after treatment or $994.00 per year per person. Though other savings were not determined in this study, other studies have shown economic benefits in a variety of other areas including adjudication, parole and probation, cost of crime, health care, income earned, welfare and other social services programs (Mecca, 1994 and Finigan, 1996). It is expected that the actual avoided costs from IRP far exceed the figure reported.

IMPROVING EFFECTIVENESS

IRP should continue to serve the older, employed or with another legal source of income, alcoholic client with many DUIIs and less serous criminal histories in the same manner as before. Longer, more intensive treatment that focuses more on the criminality should be considered for the clients with many arrests, more time incarcerated, more prison sentences, fewer substance abuse arrests and who abuse methamphetamine interveinously. More efforts should be devoted to improve aftercare attendance, as this is a strong predictor of success.

As Oregon changes its sentencing structure so that all people sentenced to less than a year will be in the local county jails instead of prisons there will be more inmates in jails for longer periods of time. New jails will be built to house these inmates that could provide segregated housing for those in substance abuse programs. This will allow the possibility of having longer, more intensive therapeutic community treatment services in jails.

RECOMMENDATIONS

POLICY RECOMMENDATIONS

<u>Now</u> is a critical time in Oregon Alcohol and Drug Treatment and Criminal Justice System history. Because of recent changes in sentencing there will be a large increase in the populations of our prisons. The Oregon State Department of Corrections has decided to have all inmates sentenced to less than a year in Oregon Prisons spend their time in the county jail where the sentencing occurred. To house all these extra people in the county jails, there will be many new jails built in the next year or two. These new jails need to be built with the capacity to provide substance abuse treatment. <u>At the very least these jails will need at least one large group room and two adjoining offices to provide day treatment style substance abuse therapy</u>. To have the type of treatment program that will reduce recidivism the most <u>it is recommended that these new jails be built with the capacity to provide separate housing</u> so that milieu or therapeutic community model therapy can be used. Planning ahead now could save a great deal of expenses later.

All jails, nation-wide, should strongly consider implementing jail-based substance abuse programs such as IRP. If the capacity for separate housing exists, then therapeutic community treatment would be the first choice. If the

existing jail facility or other constraints do not allow for separate housing then day-treatment therapy would be a viable alternative. Both alternatives promise to decrease crime, help addicts and save money.

FUTURE STUDIES

USE OF TREATMENT DROP-OUTS AS A CONTROL GROUP

There are many things that can affect arrest and incarceration rates other than substance abuse treatment. A short list of things that can affect arrest and incarceration rates are; sentencing guideline changes, judge's decisions, aging, space availability in jails or prison and changes in the amount or type of police coverage. As a result, it is critical that future studies use at least one control group in order to accurately determine recidivism changes.

In the present study the Noncompleter group had by far the highest posttreatment arrest and incarceration rates of the three groups. Other studies tend to use treatment drop-outs as their control group. There may be characteristics true of people who drop-out of treatment that contribute to increased recidivism. In the present study the IRP and Noncompleters differed on only one variable predictive of posttreatment recidivism, yet this (or more likely, other unmeasured variables) made a large difference in results. To make sure that the control groups and treatment groups are

equivalent before treatment, the previous arrest and incarceration history is essential and it needs to be comparable between the groups. When other studies have used treatment drop-outs to compare to treatment completers as the control group it is suspected that this magnifies the reported treatment effect. It is recommended that future studies use at least two control groups and at least one of them should not be treatment drop outs.

WAYS TO MEASURE RECIDIVISM

There are many ways to measure recidivism. The present study primarily measured recidivism by arrests, quantity of time incarcerated and length of time until first arrest. The number of alcohol and drug arrests was also addressed, though not as a central focus. Though there was a strong degree of association between these measures, there were also some definite differences. Of particular note was the decreasing arrest rate concurrent with increasing incarceration rate. If only incarceration rates or arrests were measured it would not give an accurate overall picture of recidivism. It is therefore recommended that future studies use as many measures of recidivism as possible, especially including incarceration and arrest rates.

Categorizing crimes such as Finigan did allows another way to measure success. In this study, only alcohol and drug arrests, DUIIs and probation violatons were categorized

differently from other convictions. There is a qualitative difference in crimes as well as a quantitative difference. Crimes could be rank ordered according to seriousness and pre to posttreatment results could be compared.

RECIDIVISM DATA COLLECTION ISSUES

Originally, this study intended to use CPMS data (as in Finigan, 1996). Upon reviewing data gathered from the CPMS forms it was determined that it was often inaccurate. Counselors generally did not change the posttreatment income, employment status, marital or educational status from the pretreatment figures even though several months to more than a year had gone by and certainly some changes had occurred. If there were inaccuracies on these portions of the CPMS forms then it is feared there may be other problems in other places. As a result, only the pretreatment CPMS data was used and this was not compared to posttreatment results. This made it impossible to measure many of the other indicators of success in treatment as others have done (Mecca, 1994 and Finigan, 1996).

Finigan (1996) used CPMS data for some of his treatment benefit analyses. If other counties had as high an error rate as was detected in Linn County, then Finigan's results may be affected. The errors detected by this study tended to minimize positive pre to posttreatment changes. If this trend

was true for the data collected by Finigan, then even more positive change occurred than is indicated by his study.

Due to rather strong fluctuations in incarceration and arrest rates from year to year it is essential to gather information several years before treatment and several years after treatment. Linn County Jail and other jails all should have computerized records going back several years now. This will allow more accurate pretreatment rates of incarceration to be calculated for future studies. Studies that only go back one year may be "distorting" the actual incarceration rates.

Future studies should include all jail and prison times. If jail time is not computed a large part of the total incarceration figure is missing. IRP had 35% of its incarceration in Linn County Jail alone, the Control group had 24% and the Noncompleter group had 20%. In the future, it is hoped that there will be a central information network where all State-wide county jail incarceration information is kept. This would make it feasible to determine all the county jail time for each subject. Currently, each county jail would have to be contacted for each subject for each arrest in that county, a monumental task.

COST EFFECTIVENESS DATA COLLECTION ISSUES

In determining the cost analysis portion of the study great difficulty was encountered due to not having the number

and type of outpatient treatment sessions for the Control group. Future studies should gather this information from treatment charts on all individuals to be compared. Other information that would be essential to know is the payment source for each person (self, private insurance, publicly funded insurance, other public funding, etc). The portion of costs that the client paid themselves is also needed. Additionally, the particular "program" the individual is in to is essential. The overall budget of LCADTP, as others presumably are, is divided up by programs (DUII, Adult, Adolescent, Alcohol, Drug, Prevention, Schools, etc).

When determining the cost of treatment to the individual the budget of the particular program they are in would be the starting point. Each program has quite different budgets and have different goals and tasks. First, the percentage of time spent providing group, individual and family therapy by all the counselors would be determined. Secondly, the budget of each program would be divided into the portions devoted to group, individual and family therapy. Thirdly, the cost per person of the average group would be determined by dividing the group portion of the program budget by the total number of groups attended that year. The same would be done for individual and family therapy. The number of group, individual and family therapy sessions each client attended would be then multiplied by the cost per person of the average group, individual or family therapy session to determine the

cost of treating them. The portion of their treatment that was paid for by themselves or private insurance could be then subtracted to calculate the cost to the State, County and Federal Agencies to treat this individual. This figure then could be used to calculate the cost of aftercare services which could be subtracted from the savings due to treatment at IRP.

Incorporating all of these recommendations would greatly enhance the accurateness and quality of future studies.

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APPENDICES

APPENDIX A   DESCRIPTION OF VARIABLES AND HOW INFORMATION WAS
GATHERED

Linn County Resident: the number listed is the percentage
from each group that were residents of Linn County, Oregon at
the time of the start of the study. This information was
gathered from the Linn County Jail (LCJ) computer in the case
of the Control group and from LCADTP chart records for the IRP
and Noncompleter groups.

Age was the person's age at the time of the start of the
study. This information was gathered from the LCJ computer in
the case of the Control group and from LCADTP chart records
for the IRP and Noncompleter groups.

Gender is the percent male of each group. This was
determined through the LCJ computer for the control and LCADTP
chart records for the IRP and Noncompleter groups.

Education, income, living arrangement, marital status,
employment status, income source, drug of choice, method of
ingestion, age at first use and stage of addiction were
determined by reviewing the CPMS form from LCADTP chart
records only and was for the time of the start of treatment.
This information was not available for the Control group
members.

Previous treatment was determined for the IRP and
Noncompleter groups by reviewing LCDATP charts and looking for
mention of previous treatment in the "Record Index" or
"Evaluation" sections. The charts are quite accurate as to
previous treatment at LCDAT but there was significant
counselor deviation in record keeping for out of county
treatment. There is probable under-reporting of previous
treatment for out of county subjects. For the Control group,
a computer name check was done to see if they had ever been a
client of LCADTP and how many times. No effort was made to
determine if the Control group members had been to treatment
out of County or at other agencies within the County. As a
result, there is probably substantially more under-reporting
of previous treatment for the Control group as compared to the
IRP and Noncompleter groups.

Number of previous treatments, type of treatment,
previous treatment completions and average number of previous
treatment completed were determined in the same manner as
previous treatment. The only people included were those who
had answered "yes" to previous treatment.   The only
information used was from LCADTP charts. As a result, the
numbers reported are likely underreported for all groups but
more so for the Control group.

Aftercare refers to alcohol and drug treatment
specifically   set up only for the IRP graduates on an
outpatient basis in their community after release from jail.
LCADTP chart records were the source of this information. For
the out of county subjects, some of the referring agencies
sent written reports indicating aftercare attendance, or lack

thereof and some did not. This explains why some of the data is missing. The variable percent completed aftercare lists 7.5% for the control group. This reflects the percent of the control group who completed LCADTP after their release from jail, not aftercare specifically.

Percent with other treatment means those who had treatment at LCADTP after their aftercare or in the case of the Control group, any treatment after release from jail. This figure is likely underreported for all groups, as it only reflects information found in LCADTP charts, not other agencies.

Treatment summary means the rating their counselor gave each subject at the time of completion of the treatment episode including IRP and aftercare. The rating is a five point scale with "5" being much better, "1" being much worse after treatment and "3" being no change. For the Control group, the treatment summary is missing in all cases as they did not participate in IRP aftercare.

Previous total arrests before study means the total number of "arrest events" on each subjects Criminal History (CCH) from the LEDS computer system. An interstate check was not run on any subjects so all could have additional arrests in other states that are not reflected in the study. The same is true for all other arrest related variables and days in prison, it only reflects data for the State of Oregon.

Previous total prison sentences means the total number of times the person was sent to any Oregon State Prison before the study as reflected by their CCH. If a subject was already in prison, went to court on other charges while there and was further sentenced to another prison sentence then this was counted as all one sentence.

Total number of alcohol and drug arrests was determined by CCH. The crimes in this category included: DUII (driving under the influence of intoxicants), MIP (minor in possession of alcoholic beverages), possession of drugs, sales of drugs, manufacturing of drugs, delivery of drugs or contributing to the delinquency of a minor through contributing alcohol/drugs. Though the person may have committed other crimes under the influence of drugs/alcohol or to obtain them, the arrest is not counted in this category unless the drug/alcohol crime is specifically mentioned on the CCH.

The arrests one year before, two years before, three years before and four years before refers to before the incarceration where the study began. The first year before was determined by seeing when the subject was released from LCJ on the study incarceration, counting back 365 days and computing all arrest events that occurred in that time frame. The second, third and fourth years were done in the same manner.

The days in Linn County Jail (LCJ) the year before, two years before and three years before was determined by reviewing the jail computer and counting days in jail for each

subject during these time periods. The jail computer does not list the time of day of arrest or release from jail, so fractions of days could not be computed. Therefore, it was difficult to get precise counts of the days in jail when the number of days was small. To standardize all the jail sentences, the day the subject was arrested and the day he or she were released were both counted as full days. For example if a person was arrested on July 19, 1993 and released on July 20, 1993 this would be counted as two days in LCJ. The subject could have been in jail only a few hours overnight or the full 48 hours and it would be counted the same. Only LCJ time was computed. There certainly were a large number of days that the subjects were incarcerated in other jails in Oregon that were not included in the study. The reason that an effort was not made to include the time in other jails was that there is no central data tracking system that keeps track of all jail time in Oregon. In order to gather this information a great deal of time and money would have to be expended which is beyond the scope of the present study. It is something to consider for future studies, however.

Prison days in years before were determined by reviewing the CCH of each subject, determining when they went to prison and when they were released (often on the CCH), computing the total days imprisoned and then seeing into which year segments these days in prison fell. Years before were determined the same as with arrests per year. Prison sentences often overlapped into more than one year and in this case the proportion in each year was computed.

Percentage incarcerated per year was determined by adding the total number of days in LCJ and prison for each year and dividing this by 365. The percentage incarcerated the year before was computed for all groups. The percentage incarcerated two years before was calculated for all 1992 and 1993 subjects, but generally not for 1991 subjects as the LCJ time was not available. The percentage incarcerated three years before was generally computed only for the 1993 subjects, as they were the only ones with LCJ time available for this year. For those individuals who had a prison sentence that was within four years of the treatment time then this prison sentence was included in the study. With this group, the percentage incarceration went back four years no matter which of the four years the prison sentence fell in.

AFTER TREATMENT VARIABLE DESCRIPTIONS

Total arrests was computed by counting the total number of arrest events on each person's CCH after release from jail during the study period.

Total prison sentences was determined by counting the number of prison sentences on the CCH of each person after release from jail during the study period.

Total alcohol and drug crimes was computed by reviewing each person's CCH and looking for the same category of arrests as on the pretreatment information.

New convictions were determined by reviewing the CCH of each person. If the arrest event or following court proceeding did not list at least one probation violation then it was counted as a new crime. As mentioned previously, most arrest events contained numerous crimes the person was arrested for. A summary of the court decisions is listed below the arrest event.

Probation violations were determined by reviewing the CCH as above. If probation violation was listed either in the arrest event or in the court decisions then it was counted as a probation violation. The most probation violations per arrest event was one.

First arrest was determined by examining the CCH of each person and counting the days until the first arrest event after release from jail when they were in IRP (for the Control group member, when they were included in the study) or until the end of the study. The 1991 groups had a year longer to measure the time to first arrest then the 1992 groups and two years longer than the 1993 groups. For those who did not have any arrests after treatment, the time to first arrest is computed as the end of the study so the actual time to first arrest is somewhat longer than listed.

Arrests first year after, second year after, third year after, fourth year after and fifth year after were computed the same way as the arrests before treatment. The 1991 groups are the only ones who were out of jail into their fifth year and the 1993 groups have only one, two and three years after.

Linn County Jail days for the various years was determined by counting the number of days in LCJ in each of the years following treatment on the jail computer. The computer records were available for each year so this data should be very accurate.

Days in prison for the various years was determined by examining the CCH of each person and counting the number of days in Oregon prisons that fell into the year categories.

Percent incarcerated one year after, two years after, three years after, four years after and five years after was computed by adding the total number of days in LCJ and prison during each of these years and dividing by 365. The 1993 groups are included in the first three years, 1992 groups in the first four years and only 1991 groups in the fifth year.

Linn County Jail total was calculated by adding all the days served in LCJ after the begin of the study.

Prison total was calculated by adding up all the days served in Oregon prisons since the begin of the study.

Total incarcerated was determined by adding total LCJ days and total prison days together since the start of the study.

Arrests per year was calculated by adding up all the arrest events since the start of the study and dividing by the years and fractions of years till the end of the study.

Difference in arrests per year was calculated by subtracting the posttreatment arrest per year average for each person from its pretreatment arrest per year average.

Difference in percentage was calculated by subtracting the percentage of time incarcerated after treatment from the percentage of time incarcerated before treatment.

TABLE 7 PRETREATMENT INFORMATION FOR IRP, CONTROL, NONCOMPLETER GROUPS

PRETREATMENT VARIABLE	IRP n=206	CONTROL n=134	NONCOMPLETER n=34
Linn County Resident (% yes) (Chi Square	75.2%	69.2% Phi=.069 (NS)	73.3% Phi=.014 (NS)
Age (mean) (Chi Square)	33.1	32.2 z=1.31 (NS)	34.6 z=.811 (NS)
Gender (% male) (Chi square)	83.2%	85.1%	75% Phi=.070 (NS)
Education (GED = 12) (mean)	11.6	missing	12.1 p<.05
Income ($ per month)	$338	missing	$274 z=.863 (NS)
Ethnicity (% Caucasian) (Chi Square)	89.4%	95.5% Phi=.113 (NS)	80.6% Phi=.177 (NS)
Living arrangements (% in own home) (% with parents) (% with friends) (Chi Square)	52.7% 27% 7.1%	missing	50% 12.5% 3.5% Phi=.098 (NS)
Marital status (% never married) (% married) (% divorced) (% separated) (Chi Square)	33.6% 18.6% 12.8% 17.7%	missing	15.6% 18.8% 21.9% 15.6% Phi=.149 (NS)

Table continued next page.

All statistical tests were Mann-Whitney U or Chi Square. If the test is not listed it is Mann-Whitney. All probabilities are two-tailed as listed. IRP was compared to the Control and Noncompleter groups. The Control and Noncompleter groups were not compared to each other.

Table 7 continued   94

Employment status (% full time) (% part time) % unemployed & looking) % unempl. & not looking (Chi Square)	23.5% 6.2% 48.2% 17.3%	39.2% missing 34.6% 6.2% Phi=.241 p<.001	12.5% 0 40.6% 25% Phi=.133 (NS)
Income source (% wages) (% Social Security) (% SSI) (% no income source) (missing) (Chi Square)	32.7% 2.7% 5.3% 38.9% 10.6%	40.8% 1.5% 5.0% 32.8% 21.6% Phi=.250 p<.05	12.5% 6.3% 3.1% 37.5% 34.4% Phi=.188 (NS)
Court mandated to Treatment, (% yes) (Chi Square)	81%	0	18.8% Phi=.469 p<.0001
Drug of choice (% alcohol) (% methamphetamine) (% marijuana) (% heroin) (Chi Square)	66.8% 20.8% 6.6% 3.1%	missing	59.4% 31.3% 0 3.1% Phi=.136 (NS)
Method of ingestion (%oral) (% smoking) (% inhalation) (% intravenous) (Chi Square)	69.9% 6.6% 6.2% 17.3%	missing	56.3% 6.6% 9.4% 25% Phi=.103 (NS)
Age at first use (mean)	14.5	missing	13.5 z=1.24 (NS)

Table continued next page.

All statistical tests were Mann-Whitney U or Chi Square. If the test is not listed it is Mann-Whitney. All probabilities are two-tailed as listed. IRP was compared to the Control and Noncompleter groups. The Control and Noncompleter groups were not compared to each other.

Table 7 continued   95

Stage of addiction (% early stage) (% middle stage) (% late stage) (Chi Square)	2.7% 36.3% 60.6%	missing	0 37.5% 53.1% Phi=.122 (NS)
Treatment before study (% who had treatment) (Chi square)	72.6%	27.6% Phi=.17 P<.01	56.3% Phi=.042 (NS)
Number of previous treatments for those who had treatment, mean (Chi Square)	1.4 n=216	1.76 n=31 Phi=.245 (NS)	1.4 n=21 Phi=.071 (NS)
Total number of arrests before treatment, mean	10.88	11.72 z=1.42 (NS)	12.47 z=1.36 (NS)
Total number of prison sentences before, mean	.65	.90 z=1.14 (NS)	1.32 z=1.61 (NS)
Total number of alcohol and drug arrests before, mean	3.16	3.23 z=.318 (NS)	3.09 z=.226 (NS)
Total DUII convictions before treatment, mean	2.48	2.13 z=1.58 (NS)	1.81 z=1.56 (NS)
Arrests the year before treatment, mean	2.38	2.70 z=2.22 p<.05	2.75 z=1.81 (NS)
Arrests 2 years before treatment, mean	1.13	.98 z=1.11 (NS)	1.78 z=1.10 (NS)
Arrests 3 years before treatment, mean	1.01	1.87 z=.728 (NS)	1.16 z=.911 (NS)

All statistical tests were Mann-Whitney U or Chi Square. If the test is not listed it is Mann-Whitney. All probabilities are two-tailed as listed. IRP was compared to the Control and Noncompleter groups. The Control and Noncompleter groups were not compared to each other.

Table 7 continued   96

Arrests 4 years before treatment, mean	.93	1.90 z=1.09 (NS)	1.13 z=1.03 (NS)
Days in LCJ the year before treatment, mean	76.42	69.07 z=4.90 p<.0001	59.31 z=2.09 p<.05
Days in LCJ 2 years before treatment, mean	7.85 n=142	7.57 n=83 z=1.57 (NS)	14.0 n=21 z=1.58 (NS)
Days in LCJ 3 years before treatment, mean	2.15 n=73	3.61 n=46 z=.141 (NS)	.53 n=15 z=.441 (NS)
Days in prison the year before treatment, mean	19.73	27.10 z=1.34 (NS)	36.31 z=2.23 p<.05
Days in prison 2 years before treatment, mean	26.17 n=161	29.05 n=96 z=.50 (NS)	12.0 n=26 z=1.04 (NS)
Days in prison 3 years before treatment, mean	31.07 n=101	42.28 n=69 z=1.13 (NS)	44.95 n=22 z=.915 (NS)
Days in prison 4 years before treatment, mean	33.04 n=101	92.68 n=31 z=.56 (NS)	59.32 n=11 z=.783 (NS)
Percent of time incarcerated the year before treatment, mean	29.96%	25.17% z=4.11 p<.0001	25.38 z=.213 (NS)
Percent of incarcerated 2 years before treatment, mean	6.95% n=145	8.15 n=133 z=.623 (NS)	5.01 n=22 z=.60 (NS)

Table continued next page.

All statistical tests were Mann-Whitney U or Chi Square. If the test is not listed it is Mann-Whitney. All probabilities are two-tailed as listed. IRP was compared to the Control and Noncompleter groups. The Control and Noncompleter groups were not compared to each other.

Table 7 continued 97

Percent of time incarcerated 3 years before treatment, mean	6.66% n=73	9.95 n=91 z=1.50 (NS)	10.43 n=16 z=.062 (NS)
Percent of time incarcerated 4 years before treatment, mean	60.95 n=15	58.16 n=14 z=.31 (NS)	59.58 n=6 z=.238 (NS)
Overall arrests per year average before treatment	1.52	1.54 z=.900 (NS)	1.69 z=.82 (NS)
Percent that attended aftercare after IRP (Chi Square)	71.2% n=199	0	25.0% n=22 Phi=.407 p<.0001
Number of aftercare sessions attended for those who attended, mean	13.4 n=172	0	2.8 n=24 z=4.96 p<.0001
Length (months) of aftercare attendance	4.5 n=177	0	.5 n=23 z=5.51 p<.0001
Percent that completed aftercare or other treatment after IRP, mean (Chi Square)	25.7% n=188	9.0% n=12 Phi=.51 p<.0001	3.1% n=27 Phi=.334 p<.0001
Average treatment summary rating	3.59 n=218	NA	3.11 n=28 z=.228 p<.05
Percent with treatment after IRP aftercare (Chi square)	22.6% n=219	14.1% Phi=.436 p<.0001	28.1% Phi=.044 (NS)

TABLE 8   POSTTREATMENT INFORMATION FOR IRP, CONTROL AND
NONCOMPLETERS

POSTTREATMENT VARIABLES	IRP n=226	CONTROL n=134	NONCOMPLETER n=34
Total number of arrests after IRP, mean	3.32	3.99 $z=1.69$ $p<.05$	5.41 $z=2.60$ $p<.01$
Total number of prison sentences after treatment, mean	.41	.62 $z=1.15$ (NS)	.94 $z=3.34$ $p<.001$
Total number of alcohol and drug arrests, mean	.40	.58 $z=.1.64$ $p<.06$	.88 $z=3.03$ $p<.01$
DUII convictions after IRP, mean	.18	.22 $z=1.32$ (NS)	.31 $z=1.58$ (NS)
New convictions after IRP, mean	1.73	2.19 $z=2.23$ $p<.05$	2.94 $z=2.56$ $p<.05$
Probation violations after IRP, mean	1.54	1.58 $z=.25$ (NS)	2.74 $z=2.44$ $p<.05$
Days until first arrest after IRP, mean	569.1	435.66 $z=3.30$ $p<.001$	328.59 $z=3.38$ $p<.001$
Arrests first year after IRP, mean	1.15	1.25 $z=2.078$ $p<.05$	1.88 $z=2.85$ $p<.01$
Arrests second year after IRP, mean	1.06	1.28 $z=.92$ (NS)	1.75 $z=1.87$ $p<.05$
Arrests third year after IRP, mean	.65	.60 $z=.033$ (NS)	1.06 $z=1.99$ $p<.05$

Table continued next page.

All tests are either Mann-Whitney U or Chi Square.   It is
Mann-Whitney if it is not identified. All probabilities are
one-tailed.

Table 8 continued   99

Arrests fourth year after IRP, mean	.27 n=150	.50 n=88 z=1.68 p<.05	.25 n=16 z=.41 (NS)
Arrests fifth year after IRP, mean	.17 n=81	.13 n=52 z=.253 (NS)	.38 n=10 z=.60 (NS)
Days in jail first year after IRP, mean	13.37	13.46 z=.897 (NS)	19.53 z=1.23 (NS)
Days in jail second year after IRP, mean	11.55	12.46 z=.923 (NS)	20.66 z=.514 p=.607
Days in jail third year after IRP, mean	10.37 n=217	7.72 z=.227 (NS)	9.56 z=.488 (NS)
Days in jail fourth year after IRP, mean	4.82 n=149	6.30 n=88 z=1.86 p<.05	5.88 n=16 z=.117 (NS)
Days in jail fifth year after IRP, mean	2.31 n=81	1.55 n=51 z=.685 (NS)	.50 n=10 z=.407 (NS)
Days in prison first year after IRP, mean	13.37	25.24 z=1.34 (NS)	33.16 z=1.61 p<.06
Days in prison second year after IRP, mean	25.94	37.93 z=.54 (NS)	65.09 z=3.34 p<.001
Days in prison third year after IRP, mean	17.56 n=217	31.19 z=1.13 (NS)	45.91 z=3.86 p<.001
Days in prisons fourth year after IRP, mean	14.72 n=149	27.14 n=87 z=.559 (NS)	63.18 n=22 z=2.18 p<.05

All tests are either Mann-Whitney U or Chi Square. It is Mann-Whitney if it is not identified. All probabilities are one-tailed.

Table 8 continued   100

Days in prison fifth year after IRP, mean	14.22 n=81	20.86 n=51 z=1.01 (NS)	32.80 n=15 z=2.16 p<.05
Percent of time incarcerated year after IRP, mean	7.17%	10.14% z=1.85 p<.05	15.02% z=2.30 p<.05
Percent of time incarcerated second year after IRP, mean	10.07	12.92% z=.659 (NS)	23.31% z=2.70 p<.01
Percent of time incarcerated third year after IRP, mean	9.69% n=218	13.88% n=134 z=.8848 (NS)	17.32% n=31 z=2.56 p<.01
Percent of time incarcerated in fourth year after IRP, mean	8.36% n=135	11.05% n=84 z=1.48 (NS)	32.68% n=15 z=2.54 p<.01
Percent of time incarcerated in fifth year after IRP, mean	10.7% n=67	15.03% n=41 z=1.83 p<.05	52.11% n=8 z=3.39 p<.001
Overall arrest per year average after IRP	1.01	1.20 z=1.72 p<.05	1.69 z=2.82 p<.01
Pre to posttreatment difference in arrest per year average	.49	.34 z=.622 (NS)	0 z=1.97 p<.05
Pre to posttreatment difference in percent incarcerated mean	7.51	5.19 z=1.86 p<.05	-3.73 z=3.10 p<.001

APPENDIX B POSTTREATMENT TIME INCARCERATED AND ARRESTS PER YEAR COMPARISONS

TABLE 9 POSTTREATMENT PERCENTAGE INCARCERATED AND ARRESTS PER YEAR COMPARISONS

VARIABLES	IRP n=226	CONTROL n=134	NONCOMPLETER n=34
Arrests the year previous to treatment	2.38	2.70	2.75
% Time incarcerated year before study, mean	29.96%	25.17%	25.38%
Arrests first year after IRP, mean	1.15	1.25	1.88
Average % of time incarcerated the year after IRP, mean	7.17	10.14	15.02
Arrests second year after IRP, mean	1.06	1.28	1.75
% Of time incarcerated second year after IRP, mean	10.07	12.92	23.31
Arrests third year after IRP, mean	.65 n=218	.60 n=134	1.06 n=31
% Of time incarcerated third year after IRP, mean	9.69 n=218	13.88 n=134	17.32 n=31
Arrests fourth year after IRP, mean	.27 n=150	.50 n=83	.25 n=16
% Of time incarcerated fourth year after IRP, mean	8.36 n=135	11.05 n=83	32.68 n=15
Arrests fifth year after IRP, mean	.17 n=81	.13 n=41	.38 n=10
% Of time incarcerated fifth year after IRP, mean	10.70% n=67	15.03 n=41	52.11 n=8

APPENDIX C   COST/BENEFIT ANALYSIS

TABLE 10 1991 YEAR BEFORE TREATMENT COST/BENEFIT ANALYSIS

(1990/1)	91 IRP	91 CONTROL	91 NONCOMPLETERS
NUMBER	82	51	10
DAYS IN JAIL	6764	4248	664
COST PER DAY FOR JAIL	$56.00	$56.00	$56.00
COST OF JAIL	$378,784.00	$216,648.00	$37,184.00
DAYS IN PRISON	2553	2012	508
PRISON COST/DAY	$47.85	$47.85	$47.85
COST OF PRISON	$122,161.05	$96,274.20	$24,307.80
TOTAL COST	$500,945.05	$312,922.20	$61,491.80
STANDARDIZED COST	(1.00X) $500,945.05	(1.57X) $491,287.85	(8.2X) $504,232.76
COST PER PERSON	$6,109	$6,136	$6,149

TABLE 11 1991 YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(1991/2)	91 IRP	91 CONTROL	91 IRP NONCOMPLETERS
NUMBER	82	51	10
DAYS JAIL	1184	760	101
JAIL COST/DAY	$80.00	$80.00	$80.00
COST FOR JAIL	$94,720.00	$60,800.00	$8,080.00
DAYS IN PRISON	828	2136	0
PRISON COST/DAY	$47.85	$47.85	$47.85
COST OF PRISON	$39,619.80	$102,207.60	0
TOTAL COST	$134,339.80	$163,007.60	$8080.00
STANDARDIZED COST	$134,339.80	(1.57x) $255,921.93	(8.2x) $80,800.00
DIFFERENCE IN COST	$366,608.25	$235,365.92	$423,432.76
SAVINGS/COST TO IRP		+$131,242.33	-$56,824.51
SAVINGS/LOSS PER CLIENT		$1,601	-$693

TABLE 12 1991 SECOND YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(1992/93) NUMBER	91 IRP 82	91 CONTROL 51	91 NONCOMPLETERS 10
DAYS IN JAIL	715	696	223
COST/DAY JAIL	$80.00	$80.00	$80.00
COST OF JAIL	$57,200.00	$55,680.00	$17,840.00
DAYS IN PRISON	1755	1593	903
COST/DAY PRISON	$48.96	$48.96	$48.96
COST OF PRISON	$85,924.80	$77,993.28	$44,210.80
TOTAL COST	$143,124.80	$133,673.28	$62,050.80
STANDARDIZED COST	(1.00X) $143,124.80	(1.57X) $209,867.05	(8.2X) $508,816.56
SAVINGS/LOSS TO IRP		+$66,742.25	+$356,691.76
SAVINGS/LOSS PER CLIENT		$814	$4,350

TABLE 13 1991 THIRD YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(1993/94)

NUMBER	91 IRP 82	91 CONTROL 51	91 NONCOMPLETERS 10
DAYS IN JAIL	649	518	240
COST/DAY JAIL	$80.00	$80.00	$80.00
COST OF JAIL	$51,920.00	$41,440.00	$19,200.00
DAYS IN PRISON	1100	1959	896
COST/DAY PRISON	$50.06	$50.06	$50.06
PRISON COST	$55,066.00	$98,067.54	$44,853.76
TOTAL COST	$106,986.00	$139,507.54	$64,053.76
STANDARDIZED COST	(1.00X) $106,986.00	(1.57X) $219,026.84	(8.2X) $525,240.83
SAVINGS/COST TO IRP		+$112,040.84	+$418.254.83
SAVINGS/LOSS PER CLIENT		$1,366	$5,101

TABLE 14 1991 FOURTH YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(1994/95)

NUMBER	91 IRP 79	91 CONTROL 51	91 NONCOMPLETERS 10
DAYS IN JAIL	633	417	10
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL COST	$50,640,00	$33,360.00	$800.00
DAYS IN PRISON	1595	1715	1347
PRISON COST/DAY	$51.22	$51.22	$51.22
PRISON COST	$81,695.90	$87,842.30	$68,993.34
TOTAL COST	$132,335.90	$121,202.30	$69,793.34
STANDARDIZED COST	(1.00X) $132,335.90	(1.55X) $187,863.57	(7.9X) $551,367.39
SAVINGS/COST TO IRP		+$55,527.67	+$419,903.49
SAVINGS/LOSS PER CLIENT		$703	$5,315

TABLE 15 1992 FIFTH YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(LAST HALF OF 1995)

	91 IRP	91 CONTROL	91 NONCOMPLETERS
NUMBER	79	51	8
DAYS IN JAIL	187	79	O
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL COST	$14,960.00	$6,320.00	0
DAYS IN PRISON	1152	1064	492
PRISON COST/DAY	$53.53	$53.53	$53.53
PRISON COST	$61,666.56	$56,955.92	$26,336.76
TOTAL COST	$76,626.56	$84,760.25	$26,336.76
STANDARDIZED COST	(1.00X) $76,626.56	(1.55X) $98,077.68	(8.38X) $220,702.05
SAVINGS/COST TO IRP		+$21,451.12	+$144,075.49
SAVINGS/LOSS PER CLIENT		$271	$1,824

TABLE 16 1991 OVERALL COST/BENEFIT ANALYSIS

		CONTROL	NONCOMPLETER
TOTAL IRP SAVINGS COMPARED TO OTHER GROUPS		+$387,004.21	+$1,282,101.06
DAYS LESS DUE TO BENCH PAROLE	3174	0	0
COST/DAY	$56.00		
BENCH PAROLE SAVINGS	$177,744.00	0	0
SAVINGS INCLUD- ING BENCH PAROLE		$564,748.21	$1,459,845.05
COST OF TREAT- MENT IN 1991	$107,448.00	-$107,448.00	-$107,448.00
NET SAVINGS/LOSS		+$457,300.21	+$1,352,397.06
SAVINGS/COST PER CLIENT		$5,577	$16,493
SAVINGS PER YEAR PER CLIENT		$1239	$3,665

TABLE 17 1992 YEAR BEFORE TREATMENT COST/BENEFIT ANALYSIS

(1991/92)

NUMBER	92 IRP 68	92 CONTROL 37	92 NONCOMPLETER 8
DAYS IN JAIL	5275	2597	499
COST/DAY OF JAIL	$56.00	$56.00	$56.00
COST OF JAIL	$295,400.00	$145,432.00	$27,944.00
DAYS IN PRISON	1036	1118	155
COST/DAY PRISON	$47.85	$47.85	$47.85
COST OF PRISON	$49,572.60	$53,496.30	$7,416.75
TOTAL COST	$344,972.60	$198,928.30	$35,360.75
STANDARDIZED TOTAL	(1.00x) $344,972.60	(1.84X) $366,028.07	(8.5X) $300,566.38
COST PER PERSON	$5,073	$5,376	$4,420

TABLE 18 1992 YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(1992/93)	92 IRP	92 CONTROL	92 NONCOMPLETERS
NUMBER	68	37	8
DAYS IN JAIL	503	405	130
COST/DAY	$80.00	$80.00	$80.00
COST OF JAIL	$40,240.00	$32,400.00	$10,400.00
DAYS IN PRISON	651	805	211
COST/DAY PRISON	$48.96	$48.96	$48.96
COST OF PRISON	$31,872.96	$39,412.80	$10,330.56
TOTAL COST	$72,112.96	$71,812.80	$20,730.56
STANDARDIZED COST	(1.00X) $72,112.96	(1.84X) $132,135.55	(8.5X) $176,209.76
DIFFERENCE FROM YEAR PREVIOUS	$272,859.64	$233,892.52	$124,356.62
IRP SAVINGS		$38,967.12	$148,503.02
SAVINGS/COST PER CLIENT		$573	$2184

TABLE 19 1992 SECOND YEAR AFTER TREATMENT COST/BENEFIT
ANALYSIS

(1993/94)	92 IRP	92 CONTROL	92 NONCOMPLETERS
NUMBER	68	37	8
JAIL DAYS	726	457	6
JAIL COST/DAY	$80.00	$80.00	$80.00
COST OF JAIL	$58,080.00	$36,560.00	$480.00
PRISON DAYS	1511	2485	362
PRISON COST/DAY	$50.06	$50.06	$50.06
PRISON COST	$75,640.66	$124,399.10	$18,121.72
TOTAL COST	$133,720.66	$160,959.10	$18,601.72
STANDARDIZED COST	(1.00X) $133,720.66	(1.84X) $296,164.74	(8.5X) $158,114.62
SAVINGS/COST TO IRP		+$162,444.08	+$24,393.96
SAVINGS/COST PER CLIENT		$2,389	$359

TABLE 20 1992 THIRD YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(1994/95)	92 IRP	92 CONTROL	92 NONCOMPLETERS
NUMBER	68	37	8
JAIL DAYS	938	133	34
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL COST	$75,040.00	$10,640.00	$2,720.00
PRISON DAYS	1332	1464	395
PRISON COST/DAY	$51.22	$51.22	$51.22
PRISON COST	$68,225.04	$74,986.08	$20,023.19
TOTAL COST	$143,265.04	$85,626.08	$22,951.90
STANDARDIZED COST	(1.00X) $143,265.04	(1.84X) $157,551.99	(8.5X) $195,091.15
SAVINGS/COST TO IRP		+$14,286.95	+$51,826.11
SAVINGS/COST PER CLIENT		$210	$762

TABLE 21 1992 FOURTH YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(LAST HALF OF 1995)	92 IRP	92 CONTROL	92 NONCOMPLETERS
NUMBER	67	37	8
JAIL DAYS	85	137	0
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL COST	$6,800.00	$10,960.00	0
PRISON DAYS	598	646	43
PRISON COST/DAY	$53.53	$53.53	$53.53
PRISON COST	$32,010.94	$34,580.38	$2,301.79
TOTAL COST	$38,810.94	$45,540.38	$2,301.79
STANDARDIZED COST	(1.00X) $38,810.94	(1.81X) $82,428.90	(8.38X) $19,289.00
SAVINGS/COST TO IRP		+$43,617.15	-$19,521.94
SAVINGS/COST PER CLIENT		$651	-$291

TABLE 22 1992 OVERALL COST/BENEFIT ANALYSIS

	92 IRP	92 CONTROL	92 NONCOMPLETER
SAVINGS/COST COMPARED TO BOTH OTHER GROUPS		+$259,315.30	+$205,201.15
BENCH PAROLE DAYS	2608	0	0
JAIL COST/DAYS	$80.00		
SAVINGS DUE TO BENCH PAROLE	$208,640.00	0	0
SAVINGS/COST OF IRP COMPARED TO CONTROL GROUPS		+$467,955.30	+$413,841.15
COST OF TREATMENT	$107,582.00	0	0
TOTAL COST/SAVINGS		+$360,373.30	+$306,259.15
SAVINGS/COST PER CLIENT		$5,300	$4,504
SAVINGS PER CLIENT PER YEAR		$1,514	$1287

TABLE 23 1993 YEAR BEFORE TREATMENT COST/BENEFIT ANALYSIS

(1992/93)	93 IRP	93 CONTROL	93 NONCOMPLETERS
NUMBER	76	46	16
JAIL DAYS	5265	2411	952
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL COSTS	$421,200.00	$192,880.00	$76,160.00
PRISON DAYS	871	502	499
PRISON COST/DAY	$48.96	$48.96	$48.96
PRISON COST	$42,644.16	$24,577.92	$24,431.04
TOTAL COST	$463,844.16	$217,457.92	$100,591.04
STANDARDIZED COST	(1.00X) $463,844.16	(1.65X) $358,805.57	(4.75X) $477,807.44
COST PER PERSON	$6,103	$4,727	$6,287

TABLE 24 1993 FIRST YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(1993/94)	93 IRP	93 CONTROL	93 NONCOMPLETER
NUMBER	76	46	16
JAIL DAYS	1334	639	402
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL COST	$106,720.00	$51,120.00	$32,160.00
PRISON DAYS	1542	441	850
PRISON COST/DAY	$50.06	$50.06	$50.06
PRISON COST	$77,192.52	$22,076.46	$42,551.00
TOTAL COST	$183,912.52	$73,196.46	$74,711.00
STANDARDIZED COST	(1.00X) $183,912.52	(1.65x) $120,774.16	(4.75X) $354,877.25
DIFFERENCE IN COST	$279,931.64	$238,031.41	$122,930.19
IRP SAVINGS/COST		+$41,900.23	+$157,001.45
SAVINGS/COST PER PERSON		$551	$2066

TABLE 25 1993 SECOND YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(1994/95) NUMBER	93 IRP 76	93 CONTROL 46	93 NONCOMPLETERS 16
JAIL DAYS	1170	516	438
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL COST	$93,600.00	$41,280.00	$35,040.00
PRISON DAYS	2596	1005	818
PRISON COST/DAY	$51.22	$51.22	$51.22
PRISON COST	$132,967.12	$51,476.10	$41,897.96
TOTAL COST	$226,567.12	$92,756.10	$76,937.96
STANDARDIZED COST	(1.00X) $226,567.12	(1.65X) $153,047.57	(4.75X) $365,455.31
SAVINGS/LOSS TO IRP		-$73,519.56	+$138,888.19
SAVINGS/COST PER CLIENT		-$967	$1,827

TABLE 26 1993 THIRD YEAR AFTER TREATMENT COST/BENEFIT ANALYSIS

(LAST HALF OF 1995) NUMBER	93 IRP 76	93 CONTROL 46	93 NONCOMPLETERS 16
JAIL DAYS	757	384	32
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL COST	$60,560.00	$30,720.00	$2,560.00
PRISON DAYS	1537	756	178
PRISON COST/DAY	$53.53	$53.53	$53.53
PRISON COST	$82,275.61	$40,468.68	$9,528.34
TOTAL COST	$142,835.61	$71,188.68	$12,088.34
STANDARDIZED COST	(1.00X) $142,835.61	(1.65X) $117,461.32	(4.75X) $57,419.15
SAVINGS/COST TO IRP		-$25,374.29	-$85,416.46
COST/SAVINGS PER CLIENT		-$334	$1,124

TABLE 27 1993 OVERALL COST/BENEFIT ANALYSIS

	93 IRP	93 CONTROL	93 NONCOMPLETERS
COMPARED TO OTHER GROUPS		-$56,993.62	+$210.473.18
BENCH PAROLE DAYS	1782	0	0
JAIL COST/DAY	$80.00	$80.00	$80.00
JAIL SAVINGS	$142,560.00	0	0
SAVINGS/COST COMPARED TO BOTH CONTROL GROUPS		-$85,566.38	+$353,033.18
COST OF TREATMENT	$116,646.00	0	0
TOTAL SAVINGS/COST COMPARED TO BOTH GROUPS		-$31,079.62	+$236,387.18
TOTAL COST/SAVINGS PER CLIENT		-$409	$3,110
COST/SAVINGS PER CLIENT PER YEAR	-$163		$1,244

TABLE 28 OVERALL 1991, 1992, 1993 COST/BENEFIT SUMMARY

	CONSERVATIVE	LIBERAL
1991 SAVINGS	+$457,300.21	+$1,352,397.06
1992 SAVINGS	+$360,373.30	+$306,259.15
1993 SAVINGS/COST:	-$31,079.62	+$236,387.18
TOTAL SAVINGS FOR IRP	$786,593.89	$1,922,043.30
AVERAGE SAVINGS PER CLIENT	$3,481	$8,505
APPROXIMATE AVERAGE SAVINGS PER CLIENT PER YEAR	$865	$2065

APPENDIX D   **IRP COMPARED TO CONTROL GROUP BY YEAR IN TREATMENT**

TABLE 29   IRP AND CONTROL PRETREATMENT INFORMATION BY YEAR

VARIABLES	91IRP n=82	92IRP n=68	93IRP n=76	91CONT n=51	92CONT n=37	93CONT n=46
Age (mean)	32.4	32.5	34.3	30.5 NS	32.30 NS	32.5 NS
Employment status full time	30.2%	22.1%	21.1%	40%	35.6%	51.4%
unemployed & looking	40.7%	52.9%	48.7%	40%	27.1%	37.8%
unemploy. & not looking Chi Square	12.8%	13.2%	19.7%	4.3% NS	5.1% NS	6.5% p<.05
Income source no source	42.7%	36.8%	36.8%	15.7%	27.1%	10.2%
wages	35.4%	35.3%	27.6%	40.0%	35.6%	51.5%
Soc. Sec.	1.2%	0	6.6%	1.4%	0	2.7%
Welfare	4.9%	2.9%	7.9%	miss.	miss.	miss.
SSI Chi Square	6.1%	4.45	5.3%	2.9% NS	5.1% NS	5.4% NS
Court Mandated Chi Square	69.5%	83.8%	90.8%	0 p<.001	0 p<.001	0 p<.001
Method of ingestion oral	68.3%	75%	67.1%	miss-ing	miss-ing	miss-ing
smoking	7.3%	4.4%	7.9%			
inhalation	7.3%	5.9%	5.3%			
intervein.	17.1%	14.7%	19.7%			
Age first use	14.2	14.6	14.7	miss-ing	miss-ing	miss-ing
Previous treatment (% yes) Chi Square	76.8%	76.5%	64.5%	24.3% p<.001	40.7% p<.001	28.6% p<.001

Table continued on next page.

All tests are Mann-Whitney U or Chi Square. The IRP group was compared to the Control group of the same year in each case.

Table 29 continued   122

Aftercare attendance %yes Chi Square	67.1%	86.8%	61.8%	0	0	0
# of aftercare sessions attended	13.1	16.8	10.4	0	0	0
Length of aftercare in months	4.2	6.6	2.9	0	0	0
% completed after-care or other treatment Chi Square	23.2% n=65	36.8% n=60	18.4% n=63	1.4% n=2 p<.001	13.6% n=15 p<.001	9.7% n=11 p<.001
Other treatment after aftercare Chi Square	23.2%	17.6% n=42	26.2% n=53	9.6% n=7 p<.01	23.7% n=15 p<.01	16.7% n=16 p<.001
Previous total arrests	11.02	10.79	10.82	10.54 NS	11.78 NS	10.60 NS
Previous # prison sentences	.67	.63	.64	.91 NS	.95 NS	.62 NS
Previous A&D arrests	3.31	3.65	2.57	3.03 NS	3.54 NS	2.85 NS
Previous DUII arrests	2.68	2.82	2.45	1.81 p<.01	2.58 NS	2.00 NS
Arrests year before	2.53	2.12	2.45	2.43 n.s.	2.78 p<.05	2.26 n.s.

All tests are Mann-Whitney U or Chi Square. The IRP group was
compared to the Control group of the same year in each case.

Table 29 continued   123

Arrests 2 years before	1.17	1.22	.99	1.09 n.s.	.90 n.s.	.61 n.s.
Arrests 3 years before	1.11	.82	1.08	1.19 n.s.	2.49	.99 n.s.
Arrests 4 years before	.95	.90	.93	2.47 n.s.	1.33 n.s.	.79 n.s.
Days is LCJ year before	82.49	77.57	68.79	61.86 p<.001	50.10 p<.001	38.66 p<.001
Days in LCJ 2 years before	NA	7.63 n=68	8.04 n=74	NA	6.19 n=59 n.s.	5.78 n=72 n.s.
Days in LCJ 3 years before	NA	NA	2.15 n=73	NA	NA	3.31 n=72 n.s.
Days in prison year before	31.13	15.24	11.46	34.87 n.s.	19.61 n.s.	11.60 n.s.
Days in prison 2 years before	116.3 n=19	12.34 n=68	15.74 n=75	92.95 n=19 n.s.	16.15 n=59 n.s.	5.90 n=72 n.s.
Days in prison 4 years before	75.17 n=18	61.60 n=10	85.50 n=16	64.00 n=19 n.s.	95.54 n=13 n.s.	106.91 n=11 n.s.
Arrests per year ave. before	1.56	1.32	1.65	1.55 n.s.	1.44 n.s.	1.20 n.s.
% incarcerated ave. before	25.43	14.22	10.68	21.09 p<.001	11.59 p<.001	7.27 p<.001

Table 29 continued   124

% incar-cerated year of treatment	30.33	24.96	22.13	25.14 p<.001	18.91 p<.001	13.74 p<.001
% incar-cerated 2 years before	NA	5.90	6.73	NA	6.13 n.s.	3.28 p<.05
% incarc-erated 3 years before	NA	NA	3.11 n=72	NA	NA	3.75 n=72

TABLE 30   IRP AND CONTROL POSTTREATMENT INFORMATION BY YEAR

VARIABLES	91IRP n=82	92IRP n=68	93IRP n=76	91CON n=51	92CON n=37	93CON n=46
Days till first arrest	710.1	614.7	378.2	522.0 p<.05	502.7 p<.05	418.6 NS
Total LCJ days	41.55	33.40	41.64	41.41 NS	23.20 NS	24.06 NS
Total prison days	78.10	60.15	76.20	144.06 NS	104.41 NS	61.97 p<.05
Total days incarcerated	119.7	93.56	117.8	185.46 NS	127.61 NS	61.97 NS
Arrests per year after	.84	.92	1.32	1.02 NS	.99 NS	1.19 NS
% incarcerated after	7.43	8.39	13.12	11.81 NS	10.87 NS	6.90 NS
Bench Parole days	42.53	38.35	23.45	0	0	0
Alcohol and drug arrests	.35	.51	.30	.67 p<.05	.54 NS	.42 NS
DUII arrests	.24	.21	.08	.27 NS	.17 NS	.13 NS
Arrests first year after	.91	.96	1.51	.87 NS	1.15 NS	1.32 NS
Arrests 2nd year after	.88	.96	1.36	1.07 NS	1.05 NS	1.15 NS
Arrests 3rd year after	.78	.71	.47	.86 NS	.61 NS	.38 NS

Table continued on next page.
All statistical tests were Mann-Whitney and probabilities are one-tailed.

Table 30 continued   126

Arrests 4th year after	.51	.22	NA	1.06 p<.05	.39 NS	NA
Arrests 5th year after	.46	NA	NA	.37 NS	NA	NA
Difference in arrest per year rate	.72	.38	.33	.52 NS	.45 NS	.01 NS
% incarc- erated 1st year	6.20%	4.61%	10.52	11.55% NS	7.14% NS	5.10% NS
% incarc- erated 2nd year	8.21%	8.73%	13.33	10.17 NS	14.32 NS	7.55 p<.05
% incarc- erated 3rd year	5.87% n=82	9.42% n=68	14.56 n=68	10.98% n=70 NS	8.61 n=58 NS	10.86 n=63 p<.05
% incarc- erated 4th year	8.45% n=79	8.22% n=56	NA	9.98% n=70 NS	9.98% n=49 NS	NA
% incarc- erated 5th year after	10.7% n=67	NA	NA	17.00 n=70 NS	NA	NA
Difference in % in- carcerated	18.04	8.28%	2.44%	9.28% p<.001	.73% p<.001	.37 NS

APPENDIX E   IRP COMPARED TO NONCOMPLETERS BY YEAR IN TREATMENT

TABLE 31   IRP AND NONCOMPLETER PRETREATMENT INFORMATION BY YEAR

VARIABLES	91IRP n=82	92IRP n=68	93IRP n=76	91NOCT n=10	92NOCT n=8	93NOCT n=16
Previous total arrests (mean)	11.02	10.7	10.82	16.30 n=10	12.38 n=8	9.63 n=16
Previous # prison sentences	.67	.63	.64	1.80 n=10	1.13 n=8	.94 n=16
Previous A&D arrests (mean)	3.31	3.65	2.57	3.30 n=10	3.25 n=8	3.06 n=16
Previous DUII arrests (mean)	2.68	2.82	2.45	2.70 n=10	2.13 n=8	1.25 n=16
Arrests year before (mean)	2.53	2.12	2.45	2.20 n=10	2.63 n=8	3.13 n=16
Arrests 2 years before	1.17	1.22	.99	2.30 n=10	1.88 n=8	1.56 n=16
Arrests 3 years before	1.11	.82	1.08	1.60 n=10	.88 n=8	.87 n=16
Arrests 4 years before	.95	.90	.93	1.90 n=10	.75 n=8	.69 n=16
Days is LCJ year before	82.49	77.57	68.79	66.40 n=10	62.62 n=8	59.66 n=16
Days in LCJ 2 years before	NA	7.63 n=68	8.04 n=74	NA	19.00 n=7	10.25 n=16
Days in LCJ 3 years before	NA	NA	2.15 n=73	NA	NA	.56 n=16
Days in prison year before	31.13	15.24	11.46	50.80 n=10	19.38 n=8	31.19 n=19

NOCT means Noncompleter. All tests were Mann-Whitney U or Chi Square.

Days in prison 2 years before	116.3 n=19	12.34 n=68	15.74 n=75	26.00 n=4	16.63 n=8	4.69 n=16
Days in prison 3 years before	84.48 n=18	97.4 n=10	8.82 n=73	56.0 n=4	103.3 n=3	28.44 n=16
Days in prison 4 years before	75.17 n=18	61.60 n=10	85.50 n=16	56.00 n=4	181.3 n=3	12.75 n=4
Arrests per year average before	1.56	1.32	1.65	1.93 n=10	1.53 n=8	1.58 n=16
% incarcerated ave. before	25.43	14.22	10.68	30.29 n=10	19.26 n=8	10.31 n=16
% incarcerated year of treatment	30.33	24.96	22.13	31.15 n=10	22.40 n=8	23.84 n=16
% incarcerated 2 years before	NA	5.90	6.73	NA	8.69 n=8	3.28 n=16
% incarcerated 3 years before	NA	NA	3.11 n=72	NA	NA	7.82 n=2

TABLE 32   IRP AND NONCOMPLETER POSTTREATMENT INFORMATION BY YEAR

VARIABLES	91IRP n=82	92IRP n=68	93IRP n=76	91NOCT n=10	92NOCT n=8	93NOCT n=16
Days till first arrest	710.1	614.7	378.2	409.7 n=10	265.75 n=8	293.56 n=16
Total LCJ days	41.55	33.40	41.64	57.70 n=10	21.25 n=8	54.50 n=16
Total prison days	78.10	60.15	76.20	370.0 n=10	126.38 n=8	115.38 n=16
Total days incarcer-ated	119.7	93.56	117.8	427.7 n=10	147.66 n=8	169.87 n=16
Arrests per year after	.84	.92	1.32	1.61 n=10	1.43 n=8	1.76 n=16
% incarcer-ated after	7.43	8.39	13.12	27.35 n=10	12.86 n=8	21.52 n=16
Bench Parole days	42.53	38.35	23.45	0	0	0
Alcohol & drug arrests	.35	.51	.30	1.10 n=10	.63 n=8	.81 n=16
DUII arrests	.24	.21	.08	.60 n=10	.25 n=8	.13 n=16
Arrests first year after	.91	.96	1.51	1.60 n=10	2.50 n=8	1.69 n=16
Arrests 2nd year after	.88	.96	1.36	1.40 n=10	.87 n=8	2.25 n=16
Arrests 3rd year after	.78	.71	.47	1.70 n=10	1.13 n=8	.50 n=16
Arrests 4th year after	.51	.22	NA	.70 n=10	.13 n=8	NA
Arrests 5th year after	.46	NA	NA	1.20 n=10	NA	NA

NOCT means Noncompleter

Table 32 continued   130

Difference in arrest per year rate	.72	.38	.33	.32 n=10	.10 n=8	-.18 n=16
% incarcerated 1st year	6.20%	4.61%	10.52	2.88 n=10	12.94 n=8	21.90 n=16
% incarcerated 2nd year	8.21%	8.73%	13.33	30.62 n=10	12.60 n=8	21.28 n=16
% incarcerated 3rd year	5.87% n=82	9.42% n=68	14.56 n=68	29.01 n=10	16.02 n=8	7.91 n=15
% incarcerated 4th year	8.45% n=79	8.22% n=56	NA	39.02 n=10	16.67 n=6	NA
% incarcerated 5th year after	10.7% n=67	NA	NA	52.11 n=8	NA	NA
Difference in % incarcerated	18.04	8.28%	-2.44	2.94 n=10	6.40 n=8	-11.21 n=21