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***Evaluation of Florida's Residential Drug Treatment
Program Prison Diversion Program, Final Report***

Final Report

NJ Grant 96-CE-VX-0010

Richard L. Linster, Visiting Fellow

To CSR 6/8/99 CAL

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I. Introduction¹

Between 1984 and 1989 felony drug arrests in Florida more than doubled, increasing from 38,000 to over 79,000 per year. In the fiscal year beginning July 1, 1989, over 16,000 prison admissions resulted from arrests and convictions in which the primary offense was a drug charge. At the same time the state's Control Release Authority, in its efforts to manage the size of the inmate population, were granting early release to drug offenders who were considered to be low risk. It was observed, however, that some of these releasees were admitted to prison three or four times in the course of a year.

The Community Corrections Partnership Act of 1991 was passed with the intention of revising and rationalizing the state's prison commitment policy following the experience of the crack cocaine epidemic. The act aimed at providing funding for substance abuse programs both within the community and within the prison system. A court-imposed requirement of drug treatment was regarded as a cost-effective option whereby a substantial fraction of drug-involved but non-violent offenders could be safely diverted from a prison sentence to one of supervision in the community. The Department of Corrections contracted with service providers for both residential and non-residential programs.

The residential programs began taking admissions on September 1, 1991. Residential programs "...involve a structured, live-in, non-hospital environment, focusing upon all aspects of substance abuse rehabilitation including ancillary services such as vocation and education programs." Initially, there were three residential treatment facilities designated as Secure (RES3). This number was increased to six over the next few years. A Secure program is defined as "a high

¹Except where otherwise noted, the information in this section is taken from the fiscal year 1995-96 Annual Report of the Bureau of Programs and Quality, Office of Community Corrections, Florida Department of Corrections.

intensity residential treatment program which limits access of the offender in and out of the facility. This treatment program is twelve to eighteen months in length, and it is appropriate for extreme substance abuse cases."²

In addition to these Secure programs, admission to a set of Non-Secure residential programs (RES1 and RES2) also began on September 1, 1991. A Non-Secure program is defined as "a six month medium intensity residential program, which consists of a two month intensive treatment component followed by a four month employment reentry component." Initially, the Department of Corrections funded 15 facilities of this type, increasing this number to 26 over the next few years.

Finally, throughout the state there exist a large number of non-residential treatment programs that are made available through contracts with local service providers. Non-residential treatment is regarded as "...the backbone and front-line intervention in the comprehensive community based substance abuse program." These programs provide "...therapeutic activities ... on a variety of intensity levels statewide (i.e. [drug] education classes, outpatient treatment, intensive outpatient treatment, and day or night treatment)."

A project to evaluate the outcomes achieved by these programs was undertaken jointly by the National Institute of Justice³ of the U.S. Department of Justice and the Florida Department of Corrections' Bureau of Research and Data Analysis. The focus of the study is an investigation of the relationship, if any, between drug treatment and success or failure of offenders on

²According to the report Probation and Parole Residential Programs, September 1, 1991 - June 30, 1996, prepared by the Department's Bureau of Planning, Research and Statistics, the average time to successful program completion was 351 days - marginally shorter than the original design.

³In part through support provided by grant 96-CE-VX-0010.

community supervision. The excellent management information system of the Florida DOC supplied the offender data on which the study is based. This allowed for testing of the influence of a number of variables in addition to the subjects' drug program assignments. But, of course, the use of management data complicates somewhat the problem of isolating the effects of drug treatment since the assignment of an offender to a particular program (or the decision not to require drug treatment) may to some extent be based on the court's *a priori* perception of his or her probability of failure on community supervision.

The next section of this report describes the process by which cases were selected for the study from the universe of admissions to community supervision over a five year period beginning in September, 1991. Section III presents the means of a set of variables describing each of the study's six treatment populations. These are the covariates used in logistic regression models to estimate an offender's probability of success or failure during a two year period following admission to supervision.

The model's parameter estimates are discussed in Section IV. Section V draws on the results of Section IV, placing them in the context of an evaluation of treatment effects. Here comparisons of expected treatment program results are made analytically, holding constant the risk-related characteristics of the populations assigned to the different programs.

Up to this point in the study the analyses are based on a simple "success or failure" outcome of admission to community supervision. In Section VI the definition of failure is refined somewhat to distinguish cases that fail due to a new offense from those due to other violations of supervision conditions.

The final section presents a brief summary of the results and a discussion of the inferences that might be drawn about the interactions between drug treatment and success on community

supervision.

II. Data Used in Models of Failure on Community Supervision

The original data files contain information on all offenders admitted to supervision in the community from July 1, 1991, through June 30, 1997.⁴ Categorization by drug treatment program was based on the assigned facility type as follows:

Secure = all cases admitted between 7/1/91 and 6/30/93 and coded SECURE or RES3.

Nonsec. = all cases admitted from 7/1/91 through 6/30/95 and coded Non-Secure, NSTB, RES1 or RES2.

Non-Res. 12 = Supervision admissions between 7/1/91 and 6/30/95 entering non-residential treatment programs coded NRES, DANT, PRC-Tier or TASC.

Non-Res. 34 = Cases like Non-Res. 12 but with supervision admissions between 7/1/93 and 6/30/95.

There were a very small number of cases admitted to other types of treatment (DTEX, for example) and a somewhat greater number of cases assigned to JAIL treatment. All such cases were excluded from the analyses of this study.⁵

If the treatment facility type was recorded as 0 or missing, the case was assigned to a "no

⁴Throughout this report the unit of observation is the admission to community supervision. Over the time period spanned by these data some offenders may have been admitted more than once. Each admission is here considered as a separate observation.

⁵Deleted cases were coded DTEX, EDUC, EMPL, JAILS, PRC, PSYC or YOPR.

treatment category.⁶ Within this category cases were defined as being "drug-involved" and, presumably, candidates for admission to drug treatment if their record showed any conviction for a drug offense or any prior court-ordered admission to drug treatment. Like admission to non-residential drug programs, the "drug-involved but no treatment" case records are stored in two cohort data files:

No Trt. 12 = "No treatment" cases admitted to supervision between 7/1/91 and 6/30/93.

No Trt. 34 = Similar cases admitted between 7/1/93 and 6/30/95.

Admission records include the type of community supervision to which a case was assigned. In this study the twenty-one defined categories have been collapsed into four: 1.) all prison release cases, 2.) probation cases supervised under the Community Control program, 3.) Drug Offender Probation cases and 4.) all regular felony or misdemeanor probation admissions.⁷ Pre-trial intervention cases were recoded as "missing values" and do not enter into the evaluation results.

Each supervision admission record contains a history of subsequent court actions which is complete through December 31, 1997. Failure on community supervision was defined in terms of the occurrence of at least one of the following events during a two year observation period following admission:

Revocation of the current probation sentence.

Return to prison with or without sentence revocation.

⁶In addition to facility type there are several other variables that would indicate admission to drug treatment -- e.g. a program admission date. Cases were assigned to a "no treatment" category only if these variables were all consistent with that conclusion. Cases with inconsistent codings were dropped.

⁷Community Control involves quasi-confinement of offenders to their homes with numerous monthly contacts by officers having restricted caseloads. Drug Offender probation is an intensive form of supervision of offenders with chronic substance abuse problems and convictions on drug offenses. This form of supervision is also administered by officers with restricted caseloads.

An addition to the current probation sentence but without revocation.

A new sentence to prison or probation after successful completion of the current sentence.

Cases not coded as failures by these criteria but with "abscond" or "pending violation" outcomes occurring within the two year window were dropped from the analyses as being neither failures nor successes as defined by the Department of Corrections.⁸

With supervision success defined in terms of survival for two years, cases with admission dates after June 30, 1995, were deleted from the study data. This cut-off date allows for a six month period to ensure that information about event occurring within the two year window (i.e. through June 30, 1997) had been entered into the system files.

One additional *a priori* criterion was applied in the selection of cases for analysis. Since the principal objective of the study is to determine the effects of admission to drug treatment on success or failure under community supervision, only those cases were retained for which the sequence of events was logically consistent with a test of those effects. That is, the date of admission to treatment must lie within the two year window following probation admission, and it must precede any recorded failure date. Thus, for example, cases in which failure on community supervision is indicated by an addition to the current sentence (but without revocation of that sentence) were excluded from the evaluation if admission to a drug treatment program followed the imposition of the sentence addition.⁹

⁸A small number of cases with relatively rare outcomes were also deleted: death, moved out of state, non-reporting or not available for supervision.

⁹In this study only the first failure was used in the definition of an admission outcome. When "failure" as defined above did not involve a revocation of the current sentence, it was in principle possible for a record to contain more than one failure date. Strictly speaking, then cases in which admission to a drug treatment program followed a "failure without revocation"

Analytic results in this study are based primarily on logistic regression -- a statistical determination of the influence that variables such as age or prior criminal record have on the probability that an individual will fail on probation. This is of interest here because the computer routine that estimates these probabilities will simply disregard cases in which the value of any of the case-characterizing independent variables is missing. As already noted, this feature of the model estimation program was deliberately used to exclude all pre-trial intervention cases. But in addition there is a fairly large number of cases for which the values of a subject's associated county-level demographic and environmental variables (population, crime rates, etc.) are missing.¹⁰

Table 1 below shows the number of cases surviving in the data bases after successive application of these criteria.

might be considered as a test of "no drug treatment." The number of such cases was so small relative to the "no treatment" categories that this minor data correction was simply ignored.

¹⁰The reason for this is not known. However, it might be noted that these are disproportionately prison release cases. For example among the 97,000 cases admitted to community supervision between July 1, 1991, and June 30, 1992, 17.9% were prison releases. But these cases make up 64.5% of the 9,650 cases with missing values for county-level variables.

Table 1
Numbers of Cases Surviving After Successive Application of Selection Criteria

	Secure	Non-Secure	Non-Res12	Non-Res34	No Trt12	No Trt34
Total Initial N¹¹	3,090	13,287	19,597	23,331	63,362	56,396
Prob. Adm. Before July 1, 1995	1,873	7,821	19,597	23,331	63,362	56,396
Delete non-relevant outcomes (abscond, etc.). Trt. Adm. date in 2 yr. window and before 1st failure date.	1,136 ¹²	6,215	17,279	20,297	61,476	53,521
Exclude pre-trial intervention cases.	1,134	6,151	16,766	19,245	59,592	49,150
Exclude missing county variable cases.	1,120	6,085	15,836	18,833	53,816	47,188
Exclude cases with other missing values.	1,100	5,968	15,514	18,557	52,495	46,308

¹¹These initial N values are counts of "drug-involved" cases as defined above. In total they represent 48.7% of all supervision admissions during the four year period from July 1, 1991, through June 30, 1995.

¹²Of the 1873 Secure treatment cases above, 350 were admitted to drug treatment only after the date of a first probation failure. The drug treatment program admission date is missing for an additional 275 cases. Of the 7821 non-secure program admissions before July 1, 1995, 1386 were admitted to treatment only after a first failure, after 2 years on probation without failure, or on an unspecified program admission date.

III. Comparison of Variable Means Across Treatment Programs

Table 2 below gives the means of variables characterizing the populations assigned to the different treatment groups and used in the analysis of two year failure rates.¹³

Overall, the primary conviction offense tends to be drug related. Of the total of 139,942 cases¹⁴ used in these analyses, 65.4% were convicted of a drug offense as the most serious charge. For 18.2% the primary charge was a property offense, followed by 11.5% convicted for a violent crime and 4.9% with other types of charges as the primary offense.

From Table 2 it is seen that cases with a drug offense as the most serious charge clearly dominate the populations not assigned to any drug treatment and, to a lesser extent, those populations admitted to non-residential treatment programs. Only for the Secure and Non-Secure residential programs do these drug cases make up less than one half of all admissions.

¹³For purposes of comparison with two year failure rates shown in the last row of Table 2, failures during the first year following admission to supervision are shown below:

First Year Supervision Failure Rates by Treatment Program Assignment					
Secure N=1243	Non-Sec. N=6624	Non-Res. 12 N=12990	Non-Res. 34 N=16361	No Trt. 12 N=49484	No Trt. 34 N=46472
.3805	.3326	.2570	.2771	.3582	.3988

¹⁴It should be kept in mind that these are all "drug-involved" cases, selected from the universe of all supervision admissions because of any conviction, current or prior, for a drug offense or because of current or prior admission to a drug treatment program.

Table 2
Variable Means by Treatment Population

	Secure N = 1100	Non-Sec. N = 5968	Non-Res. 12 N = 15,514	Non-Res. 34 N = 18,557	No Treat. 12 N = 52,495	No Treat. 34 N = 46,308
Current Conviction						
Prim. Off.						
Violence	.1664	.1520	.1908	.1844	.0855	.0887
Drugs	.3700	.4891	.5253	.5162	.7120	.7154
Property	.4254	.3190	.2319	.2266	.1598	.1488
Other	.0382	.0399	.0520	.0728	.0427	.0471
Felony 1	.0627	.0354	.0324	.0429	.0415	.0580
Felony 2/3	.9282	.9543	.9254	.9183	.9263	.9176
Misdem.	.0091	.0103	.0422	.0388	.0322	.0242
Additional Counts						
Any Drug Count	1.8164	1.2545	.9246	1.0599	.8223	.9567
Count	.4445	.5364	.5659	.5568	.7816	.7887
Type Superv.						
Drug Prob.	.1145	.2106	.0711	.0973	.0406	.0842
Comm. Ctrl.	.4982	.4176	.2449	.2305	.1945	.1845
Fel / Misd.						
Probation	.3591	.3492	.5865	.5709	.5465	.5249
Prison Rel.	.0282	.0226	.0975	.1013	.2184	.2064
Prison Term (Years)	.0267	.0236	.0526	.1140	.1115	.2122
Split Sent.	.0118	.0127	.0280	.0300	.0269	.0244
Supv. Sent. Lgth. (Yrs)	3.4368	2.8218	2.6160	2.5877	2.0062	2.0901
Prior Convictions Counts						
Violence	.4527	.4611	.2574	.3050	.2872	.3263
Property	2.0700	1.3961	.7623	.8091	.8223	.8809
Drugs	1.1900	1.1758	.5793	.7067	1.1150	1.2882
Other	.1736	.1825	.1159	.1269	.1421	.1682
(Total Counts)	(3.8863)	(3.2155)	(1.7149)	(1.9477)	(2.3666)	(2.666)
Last Conv.						
Violence	.1073	.1094	.0921	.1001	.0688	.0708
Property	.3336	.2542	.1735	.1726	.1452	.1419
Drugs	.2818	.3472	.2034	.2172	.3792	.4072
Other	.0227	.0335	.0280	.0305	.0287	.0298

Table 2
Variable Means by Treatment Population

	Secure N = 1100	Non-Sec. N = 5968	Non-Res. 12 N = 15,514	Non-Res. 34 N = 18,557	No Treat. 12 N = 52,495	No Treat. 34 N = 46,308
No priors	.2546	.2557	.5030	.4796	.3781	.3503
<u>Numb. Prior Sentences</u>						
To superv.	1.5627	1.5359	.8367	.9511	1.1943	1.3378
To prison	.6545	.6391	.4000	.4450	.7820	.7855
<u>Personal Char.</u>						
Female	.2727	.2095	.1824	.1761	.1803	.1786
Black	.3536	.4842	.4009	.4032	.5696	.5516
White	.6373	.5076	.5918	.5862	.4181	.4375
Other Race	.0091	.0082	.0073	.0106	.0123	.0109
Age	28.11	31.15	29.93	30.44	30.50	31.27
<u>Dept. Of Corr. Region</u>						
Reg 1	.0109	.0804	.1720	.1341	.0752	.0776
Reg 2	.0755	.1645	.1376	.1428	.1096	.0955
Reg 3	.1618	.1937	.1917	.2019	.1351	.1485
Reg 4	.2145	.3013	.0861	.1176	.3964	.3857
Reg 5	.5373	.2601	.4126	.4036	.2837	.2927
<u>County Crime and Demogr.</u>						
Viol. Crime (Per 1000)	11.25	11.77	11.61	10.90	12.11	11.41
Prop. Crime (Per 1000)	67.63	70.25	66.10	63.54	73.54	71.13
Clear. Rate	.2313	.2268	.2378	.2361	.2269	.2276
Population	661,000	722,000	514,300	546,100	812,400	813,000
% Black	11.90	14.81	13.12	13.25	14.35	14.71
% Hispanic	11.04	10.71	6.76	8.19	11.94	12.18
% White	75.92	73.69	78.83	76.98	73.10	72.66
Density per sq. mi.	9200	7300	7600	7700	8500	8700
Age 15-24	77,400	87,900	66,000	66,900	99,800	95,200
Age 25-44	198,800	223,200	159,200	166,300	253,100	249,300
<u>Failure Rate in 2 Years</u>	.6145	.5836	.4342	.4883	.5349	.5900

These differences in the composition of the primary offense classes between drug treatment population have significant implications for the analytic comparison of failure rates among treatment categories. However, because of the large differences in total counts of the four primary offense classes, they may convey an exaggerated sense of a policy tending to ignore drug offenses in requiring drug treatment as a condition of a supervision sentence. An intuitively rather different assessment of the sentencing policy in this regard may be gleaned by holding constant the primary conviction offense and, for each class of primary offense, examining the distribution of cases among the various treatment options.¹⁵ These results are shown in Table 3.

Table 3
Treatment Program Admissions by Primary Conviction Offense

Treat. Pgm.	Prim. = Viol.	Prim. = Prop.	Prim. = Drugs	Prim. = Other
Secure	.0114	.0184	.0044	.0061
Non-Secure	.0565	.0748	.0319	.0347
Non-Res. 12	.1842	.1413	.0890	.1176
Non-Res. 34	.2130	.1652	.1046	.1969
No Trt. 12	.2793	.3296	.4082	.3267
No Trt. 34	.2556	.2707	.3618	.3179

The entries in this table might be regarded as the conditional probabilities of a particular treatment program assignment, given the class of the primary conviction offense. For example, as shown in Table 2, 48.9% of all cases admitted to a Non-Secure residential drug treatment program had been convicted on a drug charge as the primary offense. But Table 3 shows that these residential program assignments represent only 3.63% (0.44% + 3.19%) of all drug-primary cases in the data. When compared across the primary offense classes, the distributions of cases over the various treatment options are rather more similar than might be inferred from

¹⁵In Table 2 above it is, of course, the assigned drug treatment that is being held constant.

the primary offense distributions shown by treatment program in Table 2. In particular, while Table 3 shows that no drug treatment was required for 77.0% (40.82% + 36.18%) of all drug-primary cases, this was also true for 53% of violent-primary, 60.0% of property-primary, and 64.5% of other-primary cases. The class of the primary conviction offense played some role in determining the drug treatment program assigned at sentencing, but it seems obvious that other factors were of equal or greater importance.

The fraction of current convictions on Class 1 felony charges, as well as the mean number of charges additional to the primary charge and the mean length of the supervision sentence, all indicate a comparatively higher level of seriousness of current convictions among offenders admitted to the Secure program and, to a lesser extent, the Non-Secure program as well. Obviously, however, the main conclusion here is that supervision admissions were overwhelmingly for Class 2 or Class 3 felony convictions with few Class 1 felony or, conversely, few misdemeanor conviction cases assigned to any of the six treatment groups.

In terms of the type of supervision to which the 139,942 cases of this study were sentenced, the majority (53.7%) were assigned to normal felony or misdemeanor probations, with 21.4% sentenced to Community Control and 7.4% to Drug Offender probation. Finally, 17.6% were released from prison to some form of supervision in the community. It should be noted here that the Drug Offender probation and the Community Control cases, the two most intensive of the supervision modes, make up over 60% of admissions to the two residential programs. For the remaining four treatment groups normal probation supervision cases are in the majority with prison release cases making up the second most populous class among cases not admitted to any drug treatment program.

Just as with the distribution of the primary conviction offenses among the treatment groups, the large differences in numbers of cases sentenced to different types of supervision make it difficult

to assess how cases of a given supervision type were distributed among the drug treatment options. These distributions are shown in Table 4.

Table 4
Treatment Program Assignment Given Type of Community Supervision

Treatment Pgm.	Felony or Misd. Probation	Community Control	Drug Offender Probation	Prison Release
Secure	.0053	.0184	.0122	.0013
Non-Secure	.0277	.0834	.1218	.0055
Non-Res. 12	.1210	.1272	.1069	.0615
Non-Res. 34	.1409	.1432	.1749	.0765
No Trt. 12	.3817	.3418	.2065	.4664
No Trt. 34	.3234	.2860	.3778	.3888

Among prison release cases only about 14% are recorded as being admitted to any drug treatment program, compared to about 29% of all normal probation supervision cases, 37% of Community Control sentences and 42% of Drug Offender probationers.

The means of variables that characterize the prior criminal histories of study subjects indicate that residential treatment program admissions tended to have slightly more extensive records. More interesting, perhaps, is the fact that about half of the admissions to non-residential programs have no record of a "last conviction" and, confirming this, no record of a prior admission to prison or supervision. In this population of "drug-involved" offenders, a typical case with no record of a prior Department of Corrections admission might then be a subject convicted for the first time in a state court on a felony drug charge or, perhaps, for another class of felony as the most serious charge but with at least one additional charge for a drug offense.

Although this is not a study of sentencing policy, the above results might justify a brief digression. It has already been noted that the chance of no sentenced assignment to drug

treatment is greatest for subjects for whom a drug offense was the most serious conviction charge leading to the current admission to community supervision. Table 5 gives the fractions of cases assigned to a particular drug treatment, given the nature of the primary offense of the most recent conviction prior to the current commitment.

Table 5
Treatment Program Admission by Most Recent Prior Primary Offense

Trt. Pgm.	Last = Viol.	Last = Prop.	Last = Drugs	Last = Other	No Prior
Secure	.011	.012	.006	.006	.005
Non-Secure	.060	.069	.043	.049	.028
Non-Res. 12	.131	.123	.065	.106	.143
Non-Res. 34	.170	.146	.083	.138	.163
No Trt. 12	.330	.347	.412	.366	.364
No Trt. 34	.300	.299	.390	.336	.297

In relative terms, drug offenders are by this statistic again the least likely to be required to enter a treatment program as a condition of probation. For reasons not explained in these data, among the "drug-involved" subjects of this study, drug law offenders would seem to be regarded as somewhat less likely than other probationers to benefit from treatment.

Females make up 18.13% of the 139,942 drug-involved cases admitted to supervision between July 1, 1991, and June 30, 1995, and used in these analyses. Proportionally, then, they are somewhat over-represented among admissions to the Secure treatment programs. In contrast, Blacks constitute 51.75% of these supervision admissions and, consequently, are somewhat under-represented in treatment program admissions -- especially admissions to the Secure program.

The five administrative regions into which the Department of Corrections divides the State differ

greatly in population and demographic composition.¹⁶ As previously noted with certain other variables, these differences can complicate the interpretation of means calculated separately for each treatment population. In Table 6 below the mean population and demographic statistics are shown by Region for the combined county estimates for calendar years 1993 and 1994.

Table 6
Demographic Estimates by Department Of Corrections Region

	Region 1	Region 2	Region 3	Region 4	Region 5
93/94 Pop. Estimate	1,087,000	1,883,000	2,235,000	4,702,000	3,803,000
% Black	18.5	17.6	11.2	17.6	9.1
% Hispanic	2.4	3.4	7.1	27.8	7.1
% Age 15-24	16.4	14.5	12.6	11.3	10.7
% Age 25-44	31.1	19.4	30.1	30.2	25.4

Table 7 shows the fraction of admissions to the various treatment options for each of the five regions.

Table 7
Treatment Program Admissions by Dept. Of Corrections Region

	Region 1	Region 2	Region 3	Region 4	Region 5
Secure	.001	.005	.008	.005	.013
Non-Secure	.037	.061	.052	.041	.035
Non-Res. 12	.202	.133	.135	.030	.144
Non-Res. 34	.189	.165	.170	.049	.168
No Trt. 12	.299	.359	.322	.471	.335
No Trt. 34	.272	.276	.312	.404	.305

Presumably, differences among the Regions are in part due to the actual geographic distribution

¹⁶Region 1 is located in the northwest panhandle of the state. Region 2 consists of the remaining block of Florida's northern-most counties. Region 3 is made up of a band of counties, south of Region 2 and stretching across the state. Region 4 then extends south along Florida's populous east coast and Region 5 along the west coast.

of treatment facilities throughout the state and in part a reflection of the variability in circuit courts' attitudes toward sentences requiring drug treatment. Perhaps the most striking feature of these statistics is the comparatively low probability of any treatment program admission among Region 4 supervision admissions (Ft. Lauderdale, Miami, Key West, ...).

These differences between treatment populations suggest that in some part the inter-program supervision failure rate discrepancies may be attributable to the differences in the mean "riskiness" of the subjects entering the various treatment programs, independent of, or perhaps interacting with, effects of the treatments themselves. For example, cases admitted to either of the residential programs have on average more extensive conviction records -- particularly for property crimes. The study, therefore, will next turn to the development of an analytic argument to disentangle the effects on recidivism rates of the "inherent risk" with which subjects entered their current supervision sentence from the differential effects of admission to drug treatment programs as conditions of those sentences.

It might again be noted that program admission is the intervention being evaluated here. Treatment program success measures (successful program completion, time in treatment, etc.) are not directly included in the analytic study of the supervision outcome primarily because of the ambiguity in the direction of causation and the impossibility of ruling out "third cause" explanations, simultaneously resulting in both treatment and supervision success. Conceptually, it is the treatment delivered by the program that in some manner induces in some clients a heightened motivation for supervision success and an increased ability to function productively in society. However, in highly varying degrees a motivation akin to this must exist in all subjects when they enter supervision. The available data provide no information about any change in individual success-related motivations that might somehow be induced through actual program participation.

IV. Statistical Models of Supervision Success or Failure

The variables whose population means are listed above were used in a set of logistic regressions, relating individual subject characteristics to the odds¹⁷ of successful completion of at least two years of supervision. Separate models were estimated for each of the six treatment populations. The results are shown in Table 8 below.¹⁸

In the form in which the results are given here, they estimate the ratio of odds of success of a pair of subjects, identical in all respects except for a difference of 1 on the variable in question¹⁹. Values greater than 1 indicate that odds of success increase with increasing values of the variable and, of course, values less than 1 imply increasing odds of failure with an increase in the variable value. For example, the odds of success of a subject whose primary conviction offense is categorized as violence are found to be greater than those of a subject convicted of a property offense as the most serious charge. This is estimated to be the case for all treatment programs but particularly so for admissions to the Secure program. Or, to take another example, offenders supervised under Drug Offender probation or under a Community Control program have odds of two year survival that are noticeably lower than those of similar subjects supervised under normal felony or misdemeanor probation -- especially so if such hypothetical subject pairs were not admitted to any drug treatment.

¹⁷The odds throughout this report are defined as the ratio of the probability of success to the probability of failure within two years of admission to supervision.

¹⁸Models' parameter values and other outputs of the estimation routine are given in the appendix.

¹⁹Mathematically, the results given in the table are $\exp(b_k)$, where b_k is the estimated coefficient of the k^{th} variable.

Table 8
Estimated Influence of Individual Variables on Two Year Supervision Success

Variable	Secure N = 1100	Non-Sec. N = 5968	Non-Res. 12 N = 15,514	Non-Res. 34 N = 18,557	No Treat. 12 N = 52,495	No Treat. 34 N = 46,308
Current Conviction						
Prim. Off.						
Violence	1.965	1.222	1.247	1.363	1.321	1.403
Drugs	.7717	1.297	1.272	1.166	1.402	1.473
Other	.5890	1.561	1.473	1.278	1.499	1.533
<i>Prop. = Ref.</i>						
Felony 1	1.899	1.290	.9941	.9453	1.324	1.206
Felony 2/3	1.877	1.255	.7335	.7467	.7400	.7021
<i>Misd. = Ref.</i>						
Additional Counts	1.027	.9633	.9647	.9587	.9732	.9773
Any Drug Count	1.177	.9161	1.026	1.149	1.319	1.257
Type Supery.						
Drug Prob.	.8298	.7503	.6920	.8494	.5058	.5253
Comm. Ctrl.	.8972	.8805	.7209	.7317	.5572	.5779
Prison Rel.	9.096	1.848	1.837	1.116	2.096	1.658
<i>Fel./Misd. Prob. = Ref.</i>						
Prison Term (Years)	.1063	.8549	.7175	.9317	.8000	1.019
Split Sent.	.2398	1.469	.8099	1.051	.9486	1.232
Supv. Sent. Lgth. (Yrs)	1.018	1.090	1.080	1.105	1.016	1.029
Prior Convictions						
Counts						
Violence	.9874	1.034	1.026	1.016	1.043	1.031
Property	1.026	1.005	1.001	.9873	1.005	.9935
Drugs	.9914	1.029	1.002	1.021	1.007	1.011
Other	1.006	1.141	.9785	.9689	1.072	.9826
Last Conv.						
Violence	.5767	.7765	.7883	.8001	.6974	.8349
Property	.8056	.8371	.8590	.8399	.7243	.8043
Drugs	1.128	.7545	.8179	.7090	.8618	.9737
Other	.9180	.6255	.8057	.8431	.8849	1.008
<i>No Priors = Ref.</i>						

Variable	Secure N = 1100	Non-Sec. N = 5968	Non-Res. 12 N = 15,514	Non-Res. 34 N = 18,557	No Treat. 12 N = 52,495	No Treat. 34 N = 46,308
Num. Prior Sentences						
To Prison	.8718	.7753	.7986	.8603	.7156	.7607
To Superv.	.9839	.9470	.9493	.9497	.9216	.9075
Personal Char.						
Female	.9730	1.131	1.188	1.345	1.010	.9767
Black	.8100	.8399	.5617	.5963	.4689	.5116
Other Race	.9759	.8249	.4261	.8238	.6312	.7304
<i>White=Ref.</i>						
Age	1.013	1.057	1.008	1.016	.9902	.9955
Ln (Age)	2.375	.5807	1.859	1.498	4.103	3.342
Dept. Of Corr. Region						
Reg. 1	.859	.9056	1.438	1.376	1.265	1.200
Reg. 2	1.917	1.230	1.698	1.237	1.446	1.535
Reg. 3	2.239	1.146	1.366	1.157	1.209	1.170
Reg. 4	.9048	1.234	1.124	1.334	.9906	1.232
<i>Reg. 5 = Ref.</i>						
County Crime and Demogr.						
Viol. Crime (Per 1000)	.9744	1.000	.9607	.9642	.9656	1.053
Prop. Crime (Per 1000)	1.020	.9962	1.003	1.001	1.001	.9870
Clear. Rate	.9858	.9900	1.013	1.002	1.009	1.000
Population (Per 1000)	1.006	1.002	1.000	1.001	1.000	1.002
% Black	.8852	1.050	1.012	1.040	1.027	1.008
% Hispanic	.9411	1.026	1.013	1.032	1.024	1.005
% White	.9213	1.030	1.005	1.027	1.013	1.003
Density 1000/sq. mi.	.9779	.9954	1.014	1.010	1.003	.9937
Age 15-24 (Per 1000)	.9828	1.013	1.000	1.009	1.000	1.002
Age 25-44 (Per 1000)	.9876	.9900	.9991	.9949	.9986	.9947

Current Conviction Variables.

Among the variables describing the current conviction, cases in which the primary charge was a property offense clearly pose the greatest failure risks among all treatment populations except for those admitted to a Secure facility. The results for the Secure program might suggest a reversal of this conclusion for Drug or Other offense cases but the finding is too weak to be considered statistically significant²⁰.

The seriousness of the conviction offense is indicated by the misdemeanor or felony class designation. It would appear that felony offenders admitted to one of the residential treatment programs have better prospects of probation success than do misdemeanants. However, the numbers of misdemeanor cases entering the Secure or Non-Secure programs are really too small to provide a reliable test and the results shown here again lack statistical significance. In contrast, misdemeanants do have significantly greater prospects of probation success than otherwise identical Class 2 or Class 3 felony offenders when admitted to non-residential treatment or to supervision without drug treatment.

Like misdemeanor cases, the representation in these data of the very serious Class 1 felony cases is quite small. The results indicate that cases of this type, admitted to a supervision program probation without drug treatment, have significantly better prospects of two year supervision success than do otherwise identical misdemeanor cases and even greater success odds when compared with those of hypothetically identical Class 2 or 3 felony cases.

This last result provides an illustration of the caution that should be exercised in accepting a too

²⁰Throughout this discussion of model results, "statistical significance" of coefficients is defined by a t-test result with probability less than or equal to .10. In the case of the relatively small Secure program population, many of the model coefficients do not reach this significance level. Conversely, for the very large No Treatment populations, almost all results are found to be significant by this test.

literal interpretation of "all-other-things-being-equal" conclusions. It must be presumed that Class 1 felony cases admitted to probation rather than sentenced to prison are not a random selection among all such cases but rather have some characteristics that persuaded the court that supervision in the community was warranted. It cannot be determined from these data whether the relative success of these cases is to be attributed to such pre-existing characteristics or to the effects of community supervision -- or to both.

Finally, among the variables describing the current conviction, the odds of probation success are found to decrease very slowly with an increase in the number of conviction counts²¹. This result is found to be significant and substantially uniform across all treatment populations -- again except for those admitted to the Secure program.

More curious, perhaps, is the result associated with the drug count flag (1 = Any Drug Count). Among the very large numbers of probation cases not entering a drug treatment program, those not currently charged with any drug offense pose a greater risk than otherwise identical offenders with at least one drug charge among the current conviction offenses. As already discussed in connection with the table of means, this result seems to derive from the fact that in these data offenders with no prior record tend to have at least one drug offense among current conviction charges²². For example, among the 52,495 cases making up the "No Treatment 12" population, 18,268 -- almost 35% -- had no record of a prior admission to supervision or to prison. However, among these first convictions there was at least one current conviction on a drug charge in 16,289 cases -- 89.2%. The point is that, in a population selected on the basis of being "drug involved," the drug flag variable selects all cases with a current drug charge

²¹The maximum number of counts allowed in these data in addition to the primary charge is 9.

²²Recall that the population of all cases under study here is made up only of those supervision admissions with records that define the case as "drug involved."

conviction and thereby necessarily includes some presumably low risk cases with short or non-existent prior criminal records.

Type of Supervision Variables.

As already noted, the odds of probation failure are found to be substantially greater for subjects supervised under Drug Offender probation or Community Control than for similar subjects supervised under the normal felony or misdemeanor probation routines²³. The reason for this is not clear. Offenders sentenced under these programs are presumably selected at least in part because the courts regard them as high recidivism risks. But it might also be argued that the probability of a probation officer's discovery of a serious violation depends on the frequency and intensity with which a case is supervised.

In these models cases supervised under prison release programs are characterized by two variables: an indicator (Prison Release) that distinguishes these cases from those assigned to other types of supervision and a continuous variable (Prison Term), specifying the length of time served in prison under the current conviction. The conclusion from the model results is that the odds of successful completion of at least two years of supervision are better for prison release cases than for similar cases under other types of supervision; but this relative advantage decreases somewhat with increasing years in prison prior to release.

There are a total of 24,584 prison release cases among the subjects of this study. Of these, 85.6% were not admitted to drug treatment and 13.8% entered non-residential programs. The fraction of the more than 24,000 cases admitted to supervision in the two year interval July 1, 1991, through June 30, 1993, was slightly greater than that for the subsequent two years: 53%

²³The results for the Secure program are not statistically significant but are obviously consistent with the findings for other treatment populations.

vs. 47% of the prison release total. Further, the mean time already served by the earlier cohort was just over six months compared to a mean of 1 year found for the later cohort. This suggests, perhaps, that the selection of prison inmates for release during the earlier period was based on a larger population pool of relatively low risk cases than were available for the later cohort. This comparative interpretation would also be consistent with model result differences obtained for the two cohorts.

Split sentences are fairly rare among these populations and findings regarding their influence on supervision success or failure are inconclusive. Finally, the results for all treatment programs indicate a very slow increase in odds favorable to success with increasing length of the supervision sentence²⁴. Perhaps this reflects a "rational choice" deterrent effect in terms of the greater cost of revocation to the offender serving the longer supervision sentence.

Prior Conviction Variables.

A summary of each subject's offending history is provided by the number of prior convictions on charges classed as violence, property, drugs or other. In the models estimated here, these counts are apparently unrelated to the success or failure outcome. In contrast, variables simply characterizing the primary charge at the most recent prior conviction have model coefficients that are almost all significant and are quite strongly related to failure. This latter result is hardly surprising since the odds of failure are being compared here with those of an otherwise identical subject with no prior conviction history²⁵.

²⁴In this study supervision sentence lengths were arbitrarily truncated at 50 years. There were a small number of cases with specified sentences greater than 50 years and a few life sentences with special codings. All such cases were assigned a sentence length of 50.

²⁵More precisely, a comparison might be made between an offender with exactly 1 prior conviction on a single charge and a subject with no prior record. The odds ratio is then the product of the appropriate "Counts" and "Last Conviction" results. Since the "Counts" results are all close to 1, such a "correction" has no effect on the qualitative conclusions.

The extent of an individual's prior criminal history is also captured in these data by the number of his or her prior prison and supervision sentences. Unlike the measure provided by numbers of prior conviction charges, a count of previous sentences is found to be a significant predictor of risk. As might be expected, the failure risk is relatively greater, given a prior prison sentence, than it is for a supervision sentence.

Personal Characteristic Variables.

Female offenders are found to be moderately better supervision risks than males with similar records but only for those cases admitted to Non-Secure or Non-Resident treatment programs.

Across all study populations race and supervision outcome are correlated. The odds of success for Whites are estimated to be significantly greater than those for similar subjects of other races.

In these models a subject's age and its logarithm were both included to test for an approximate age of maximum risk over the 15 to 85 year range of ages found in these data²⁶. The results, however, indicate a risk distribution that decreases monotonically with increasing age -- a fairly rapid decrease among the younger group with a long, thin tail characterizing the decreasing failure odds of the group of older offenders. For example, for a pair of hypothetical subjects from the "No Treatment 12" population, identical in all respects except that one is 25, the other 50, the not very surprising model result indicates that the odds favoring two year supervision success of the older subject are almost double those of the younger.

Population and Environment Variables.

Among the model variables that describe where the probationer was living rather than giving information about the individual himself, the results for the Department of Corrections

²⁶A few subjects with recorded ages outside this range were excluded from the analyses.

administrative regions are particularly striking. They indicate relatively little difference in the odds of success among Regions 1 through 4 but generally greater odds of failure associated with Region 5 admissions. The extent to which this reflects differences by region of the state in recidivistic behavior of the supervised population as opposed to regional differences in the implementation of revocation policies and procedures (or both) cannot be determined from these data.

V. Evaluating the Effects of Drug Treatment on Community Supervision Success

Every evaluation is in some sense an attempt to compare outcomes actually observed with outcomes that might have been expected under specified but different conditions. With a classical, experimental research design, subjects would be randomly assigned to the various treatment options. Given a large number of cases, the treatment populations could then be regarded as interchangeable on average and any differences in group outcomes would be directly attributable to differences in the treatments.

In the present study treatment program admissions were obviously not randomly assigned. Instead, program assignments tended on average to differ on factors that are potentially related to supervision failure risk. As a consequence, inter-program differences in observed failure rates cannot *a priori* be attributed solely to differences in the effectiveness of the treatments offered by these programs.

The logistic models discussed in the previous section provide one way by which estimated treatment effects may be disentangled from risk-related population differences. The set of coefficients of each of the six models are regarded as a basis for estimating an individual's probability of supervision failure within two years, given his or her vector of "explanatory" variables and a treatment program assignment -- either actual or hypothetical. For any one of the treatment assignments, the expected failure rate of an arbitrarily selected group of subjects is then simply that group's average failure probability, estimated from the model for the treatment of interest. In particular, this provides an analytic method for comparing the failure rate observed for the population assigned to one treatment with the rate that would be expected had they been assigned to a different treatment -- for example, a comparison of failures observed among admissions to a Secure program with the rate expected had these same subjects been admitted to a Non-Secure program.

The results of these calculations are given in Table 9.

Table 9
Expected Two Year Failure Rates²⁷

Treatment Program Actually Assigned	Hypothetical Program Assignment					
	Secure	Non-Secure	Non-Res. 12	Non-Res. 34	No Treat. 12	No Treat. 34
Secure N = 1100	.6146	.6159	.5058	.5505	.6463	.6950
Non-Secure N = 5968	.6019	.5836	.4927	.5327	.6166	.6625
Non-Res. 12 N = 15,514	.5927	.5568	.4342	.4876	.5274	.5795
Non-Res. 34 N = 18,557	.5974	.5568	.4354	.4883	.5271	.5793
No Treat. 12 N = 52,495	.5809	.5632	.4625	.5195	.5349	.5932
No Treat. 34 N = 53,521	.5919	.5642	.4613	.5137	.5304	.5900

In each column the entries reflect differences in expected outcomes that must be ascribed to differences in the populations actually assigned to the various treatments; the hypothetical treatment assignment is here being held constant. For example, in the "Secure" column and the "No Treat. 12" row, the result .5809 is the estimated fraction of the 91/92 cohort not admitted to any drug treatment that would be expected to fail had they been admitted to a Secure program. The mean risk is slightly greater among the "No Treat. 34" group where the expected failure rate under Secure program conditions is estimated to be .5919.

Under any of the hypothetical treatments the offenders actually assigned to the Secure program

²⁷Entries on the main diagonal of this table are equal to failure rates actually observed.

are as a group consistently estimated to be at greatest risk of supervision failure within two years. This is shown by comparing the entries in the "Secure" row with the corresponding entries in a row characterizing any other treatment population. In terms of risk the Secure population is closely followed by the group assigned to Non-Secure programs. The groups admitted to Non-Residential programs or not admitted to drug treatment are quite similar to one another in the risk levels estimated under any of the hypothetical treatment assignments.

The range of expected failure rates varies somewhat with the population and the hypothetical program assignment. In particular, it is noteworthy that, under Secure program conditions, the differences in overall characteristics of the six treatment populations would produce expected failure rates ranging only from 0.58 to 0.61. This is in contrast to the results for the offender groups not admitted to a drug treatment program, "No Treatment 12" and "No Treatment 34," where the ranges of expected fail rates are 0.52 to 0.65 and 0.58 to 0.70, respectively. The implication is that differences between subjects as measured by variables used in the models are of relatively less importance to the supervision outcome, given admission to a Secure program.

The entries in each row of this table address the question: "Given a particular group of offenders, what failure rates would be expected under each of the six treatment programs?" For example, about 61% of the group actually admitted to a Secure program failed within two years. Their failure rate would have been about the same under a Non-Secure program assignment but would be expected to be significantly lower under Non-Residential treatment. Had this high risk group not been assigned to any drug treatment, however, the expected number of supervision failures would have been even greater than the 61% observed. The results are qualitatively similar for the somewhat lower risk group admitted to a Non-Secure program. Finally, it is estimated that offenders admitted to Non-Residential programs would have had about a 10% greater expected failure rate than that observed if sentenced to supervision without any condition of drug treatment (0.43 vs. 0.53 and 0.49 vs. 0.58 for the 91/92 and 93/94 cohorts, respectively) but an

expected fail rate even greater than the "No Treatment" rate had this group been assigned to the Secure program.

In interpreting these results the nature of a "failure event" must be kept in mind. A failure presumably involves not only the commission of a new offense or a serious rule violation but also the chance that the offense is discovered by authorities and subsequently sanctioned by a court. Conceivably, some of the differences in either observed or hypothetical failure rates are attributable to differences in the probabilities of official detection or sanctioning of new offenses and misbehaviors rather than to differences in misbehavior rates *per se*. In particular, one might speculate that serious failure to comply with treatment program requirements is more likely to be observed and reported to probation authorities when such non-compliance occurs among offenders admitted to a residential program than it would among subjects of non-residential programs. We will return to this question in a later section.

The entries in Table 9 also reflect a significant change in policy between the 91/92 and the 93/94 cohorts. Comparing the two rows of results for the Non-Residential groups or for the two cohorts not admitted to drug treatment, we find remarkably little difference in the pairs of expected failure rates. However, comparisons of column pairs show that the models consistently imply hypothetical failure rates for all treatment populations that are about 5% higher for a 93/94 cohort than they are for admissions during the two years covered by the 91/92 data.

Over this four year period, prison sentences decreased from 38% to 26% of all Department of Corrections admissions defined in this study as "drug-involved." One result, of course, was a substantial increase in the numbers of cases being sentenced to supervision in the community. The marginal increase in the overall likelihood of revocation was perhaps a reaction to this growth in the supervised population

A simple summary of the effects of drug treatment program admissions on two year supervision outcomes is afforded by the difference between the numbers of failures expected under the appropriate "No Treatment" model with the numbers actually observed for the various programs -- that is, the estimated number of supervision failures "saved" through admission to drug treatment. These estimates are shown in Table 10.

Table 10
Estimated Numbers of Supervision Failures Averted

Drug Program	7/1/91 - 6/30/93	7/1/93 - 6/30/95	Total	% of All Trt. Pgm. Admissions	% of Exp. "No Trt." Failures
Secure	16	61	77	7.0	10.2
Non-Secure	95	269	364	6.1	9.5
Non-Residential	1446	1687	3133	9.2	16.5
All Programs	1557	2017	3574	9.0	15.2

For example, in the two years following July 1, 1991, the data on which these analyses are based contain 15,514 cases of admission to Non-Residential programs. From Table 9, we find that 6736 (= 15,514 x .4342) were actually observed to fail on supervision within two years. It is estimated from the statistical models, however, that, if none of these cases had been admitted to any drug treatment program, the number of failures would have been 8182 (= 15,514 x .5274). From this it is inferred that about 1446 cases of supervision failure were averted.

The last two columns of this table normalize these estimated numbers of failures averted by taking into account the programs' very different population sizes. The column headed "% of Treatment Program Admissions" expresses the estimated reduction in each program's failure rate averaged over the four years of data used in this study. The quantitative interpretation here is quite straightforward. For example, it is estimated that, overall, 9.0 supervision failures were averted for every 100 subjects admitted to one of the treatment programs. Qualitatively,

however, whether these reductions in failure rates should be characterized as large or small obviously depends on the rate expected in the absence of treatment. The last column expresses results in terms of a percent of the number of failures expected, given no drug treatment assignment for these cases. For example, then, considering all Secure program admissions, it is estimated that the observed failure rate was about 7% lower than what would have been expected for this group in the absence of any treatment. This reduction in the population failure rate represents about a 10% reduction in the total number of failures expected, had there been no admissions to treatment.

VI. Supervision Failures Due to Reoffending vs. Technical Violation

The results reported in the previous section are based on comparisons of effects of admission to different classes of drug treatment programs as a part of a supervision sentence. As shown in Table 11 below, rates of successful completion of treatment programs vary greatly.

Table 11
Treatment Program Result vs. Supervision Outcome

Trt. Program	Trt. Pgm. Result ²⁸	2 Year Supervision Outcome	
		% Success	% Fail
Secure N = 1100	Succeed n = 319 (32.8%)	77.7	22.3
	Fail n = 655 (67.2%)	19.4	80.6
Non-Secure N = 5968	Succeed n = 3147 (58.3%)	57.7	42.3
	Fail n = 2250 (41.7%)	18.7	81.3
Non-Residential 12 N = 15514	Succeed n = 8503 (60.7%)	67.4	32.6
	Fail n = 5498 (39.3%)	40.0	60.0
Non-Residential 34 N = 18557	Succeed n = 8360 (48.9%)	68.8	31.2
	Fail n = 8738 (51.1%)	33.9	66.1

²⁸"Succeed" here means successful completion of a program. Within each treatment program there are also a relatively few cases terminated by transfer or for administrative reasons and a very few cases without a termination code. These cases are counted in the N's for the treatment program admissions but are excluded from the Succeed/Fail statistics shown in the table.

About a third of the offenders sentenced to the longer term Secure residential program were determined to have successfully completed the treatment (32.8%) In contrast, successful program completion rates were almost twice as great among cases admitted to Non-Residential programs during the first two years covered by this study (60.7%). Success rates for Non-Residential programs, however, were rather sharply reduced over the following two years (48.9%). Presumably, this could be an effect associated with the increase of about 3000 cases admitted to Non-Residential treatment during this latter two year period.

As shown in Table 11, there is a relation for all programs between success or failure in treatment and two year success or failure on probation. This raises a question of the independence of the events leading to treatment program and supervision program failures. By Department of Corrections policy, supervision failure is defined only in terms of a court's decision – most commonly, the end result of a process that is formally initiated by a probation officer's filing of a revocation petition. For some unknown fraction of cases a subject's failure to observe conditions set by the drug treatment program to which he was assigned must have led directly to revocation on grounds of a "technical" violation.

Two rather obvious reasons why supervision failures on technical violations might be different for probationers admitted to treatment programs than for those not required to participate in treatment are 1.) the treatment conditions constitute an additional element of failure risk to which the "No Treatment" populations are not subjected; and 2.) it is possible that probation officers' surveillance of treatment program participants is qualitatively or quantitatively different from that given to probationers not admitted to drug treatment.

The data allow for a somewhat less speculative approach to an examination of inter-program differences in rates of technical vs. new offense supervision failures. Throughout these analyses the failure event has been defined as the earliest occurrence of one of the following:

- 1.) a transfer to prison (sometimes without a revocation of the current supervision sentence);
- 2.) a revocation of the current sentence and "loss" to the supervision rolls as the final "outcome" of the current admission;
- 3.) an addition to the current supervision sentence without revocation of probation; or
- 4.) a recommitment to prison or probation on a new conviction that occurs after successful completion of the current supervision sentence but within the two year observation window following the original admission to supervision.

For the first type of these failure events a coded variable designates as "new offense" those cases for which this is the reason for the transfer to prison. The record for the second type of failure specifies the basis for revocation of a supervision sentence either as "technical" or as "felony/misdemeanor." The record for the third and fourth types of failures specify the date and nature of the new conviction offense. Thus, in each case a reasonable inference can be made whether a supervision failure (as defined in these analyses) is due to the commission (and adjudication) of a new offense or whether it can be ascribed to another type of violation. The results by treatment program type are given in Table 12 below.

"New offense" supervision failures as a fraction of all admissions are remarkably similar for the Residential and Non-Residential programs (about 15 or 16 percent). But the "New Offense" failure rate is significantly higher among subjects not admitted to any treatment (22 to 24 percent). This leads to the conclusion that, whatever the mechanism (rehabilitation, deterrence or incapacitation) treatment programs do on average have some real effect in reducing the return to criminal behavior as measured by new offense violations -- at least in the short run (2 years).

Table 12
"New Offense" vs. "Other Violation" Supervision Failures by Treatment Program

Trt. Pgm.	% All Admissions (n = supervision failures)		% Supervision Failures	
	New Offense	Other Viol.	New Offense	Other Viol.
Secure N = 1100 sup. fail. = 676	15.7 (172)	45.8 (504)	25.4	74.6
Non-Secure N = 5968 sup. fail. = 3483	15.2 (906)	43.2 (2577)	26.0	74.0
Non-Res.12 N = 15,514 sup. fail = 6736	14.9 (2311)	28.5 (4425)	34.3	65.7
Non-Res.34 N = 18,557 sup. fail. = 9062	16.2 (3008)	32.6 (6054)	33.2	66.8
No Trt.12 N = 52,495 sup.fail. = 28,079	22.1 (11,589)	31.4 (16,490)	41.3	58.7
No Trt.34 N = 46,308 sup.fail. = 27,320	24.3 (11,271)	34.7 (16,049)	41.3	58.7

Failures based on other forms of violations of supervision condition are shown in the second column of Table 12. Here the failing fractions of all admissions to both of the residential programs (43 to 46 percent) are considerably greater than those found in non-residential programs or among subjects not admitted to any drug treatment (29 to 35 percent). This result is consistent with the hypothesis of increased risk of failure through technical violation that is induced either by the additional requirements imposed on the probationer sentenced to a residential program or by a heightened level of supervision made possible by his or her residence in a program facility.

For convenience the final two columns of Table 12 simply show the breakdown of supervision failures into "new offense" or "other violation" classes.

The Table 12 results are purely empirical. That is, they simply report outcomes observed in the data without taking into account mean inter-program differences in populations and without setting them into the evaluation context of what supervision outcomes would have been expected under different program assignments. Suppose, then, we assume that, in the absence of any treatment program admissions, the ratio of failure classes would have remained fixed at the 41.3% "new offense" vs. 58.7% "other violation" split actually observed for both the 91/92 and 93/94 cohorts not admitted to any drug program.²⁹ We might then use the results reported in Table 9 above to estimate separately the numbers of "new offense" and "other violation" supervision failures that would have been expected if no drug treatment had been required of any offenders. The results, broken down by type of program, are shown in Table 13 below.

Over the four years of supervision admission data used in these analyses, there were a total of 19,957 supervision failures among the 41,139 cases admitted to one of the treatment programs. Of these, 6,397 were classed as "new offense" and 13,560 as "other violation" supervision failures. Thus, among every 100 offenders admitted to some type of drug treatment as a condition of community supervision, there were about 16 "new offense" and 33 "other violation"³⁰ failures within two years of admission to community supervision.

²⁹The net expected failure rate of any group of individuals is still estimated by their risk-related characteristics. The assumption of a fixed ratio of "new offense" to "other violation" failures amounts to an assumption that this ratio is, to a good approximation, determined by an interaction between the conditions of the various treatment programs and the probation supervision procedures rather than by the risk characteristics of the supervised population.

³⁰More precisely, the observed failure rates were 15.55 "new offense" and 32.96 "other violation" per 100 program admissions.

Table 13
Expected Supervision Failures if No Drug Treatment Program Admissions

Treatment Program Assigned	Expected Fails. If All to No Trt.		Expected - Observed		Exp. Fails. Per 100 Admissions if No Trt.	
	New Offense	Other Violation	New Offense	Other Violation	New Off.	Oth. Viol.
Secure N = 1100	311	442	139	-62	.28	40
Non-Secure N = 5968	1589	2258	683	-319	27	38
Non-Res.12 N = 15,514	3379	4803	1068	378	22	31
Non-Res.34 N = 18,557	4439	6310	1431	256	24	34
All Programs N = 41,139	9718	13,813	3321	253	24	34
All Cases N = 139,942	32,578	46,352	3321	253	23	33

As previously discussed in connection with the results shown in Table 10, there would have been an estimated additional 3574 supervision failures if no treatment had been required of any of these subjects. Of this total of 23,531 supervision failures expected among this population in the absence of any drug treatment, we assume (as in Table 12) that there would have been an estimated 9718 "new offense" failures (41.3% of all failures) and 13,813 "other violation" failures (58.7%). This amounts to expected failure rates of about 24 "new offense" and 34 "other violation" per 100 supervision admissions. These estimates should be compared with the corresponding overall failure rates of 16 and 33 per 100 admissions that were actually observed. The implication of this comparison is that treatment program admissions were responsible for reducing by about 1/3 the total number of "new offense" failures that would have been expected among the population admitted to drug programs although they had little net effect on the number of "other violation" failures. At least over the short term these treatment programs

would appear to have public safety consequences that are not insignificant.

The right hand columns of Table 13 give for each of the treatment program populations the estimated failure rates that would have been expected in the absence of any treatment. Here, differences between programs are to be ascribed to mean differences in the risk characteristics of the subjects assigned to the various treatments.

The net estimated effects of particular program admissions are shown in the two columns under the heading "Expected - Observed." Inter-program comparisons here are complicated by the great differences in numbers of program admissions. Table 13.1, therefore, shows the observed and expected failure rates already given in Tables 12 and 13; but in the last two columns expresses the estimated effect due to treatment program admission as a fraction of the number of failures that would have been expected in the absence of these programs.

Table 13.1
Treatment Effects in Terms of Expected Differences in Supervision Failures

Treatment Program	Supervision Failures per 100 Program Admissions				(Expected - Observed) as Fraction of No. Expected	
	New Offense		Other Violation		New Offense	Other Viol.
	Observed	Expected if No Trt.	Observed	Expected if No Trt.		
Secure	15.7	28	45.8	40	.45	-.14
Non-Secure	15.2	27	43.2	38	.43	-.14
Non-Res. 12	14.9	22	28.5	31	.32	.08
Non-Res. 34	16.2	24	32.6	34	.32	.04
No Treat. 12	22.1	N/A	31.4	N/A	N/A	N/A
No Treat. 34	24.3	N/A	34.7	N/A	N/A	N/A

For example, it is estimated that admission to a Secure program reduced the number of "new offense" failures by about 12 per 100 admissions -- i.e. from an expected rate of 28 to the observed rate of about 16 per 100. For these longer term residential programs the effect on "other violation" failure rates was an increase of about 6 per 100 admissions. Table 13 shows that, among the 1100 cases admitted to a Secure treatment program, an estimated 311 "new offense" failures would have been expected under "no treatment" conditions. In fact, the observed number of these failures was 139 less -- a reduction of 45% of the number expected. Similarly, Secure program admissions resulted in an increase of about 14% in the number of "other violation" failures over the 442 expected in the absence of treatment.

The difference in the estimated results achieved by residential as opposed to non-residential treatment is most succinctly shown by the estimated fractional changes in the expected numbers of failures. For the two residential programs the reduction in expected numbers of "new offense" failures is about 10% greater than the reduction estimated for non-residential program admissions. Program admission effects on numbers of "other violation" failures are smaller in magnitude and, as might be anticipated, in opposite directions: increases for residential programs and marginal decreases for non-residential.

Tables 13 and 13.1 provide an estimate of what was achieved by requiring some form of drug treatment for 29% of all "drug involved" admissions to supervision. In what follows, Tables 14.1 through 14.3 again use the findings of Tables 9 and 12 to estimate what the failure outcomes might have been, but here under an assumption that all 140,000 "drug involved" offenders of this study were admitted to a particular one of the treatment programs. Such an assumption is clearly unrealistic, not only because of the resources required by such a hypothetical sentencing policy but also because it implausibly assumes that the treatment and supervision mechanisms would remain essentially unchanged under such a massive increase in treatment program admissions. Nevertheless, the results are instructive for what they have to say

qualitatively about the outcome limits, given the supervision and revocation conditions current at the time of this study's data.

Table 14.1
Estimated Results if All Admitted to Secure Programs

Treatment Program	Supervision Failures per 100 Program Admissions				(Expected - Observed) as Fraction of No. Observed	
	New Offense		Other Violation		New Offense	Other Viol.
	Observed	Expected if to Secure	Observed	Expected if to Secure		
Secure	15.7	N/A	45.8	N/A	N/A	N/A
Non-Secure	15.2	15	43.2	45	.01	.04
Non-Res. 12	14.9	15	28.5	44	.01	.55
Non-Res. 34	16.2	15	32.6	45	-.06	.37
No Treat. 12	22.1	15	31.4	43	-.33	.38
No Treat. 34	24.3	15	34.7	44	-.38	.27
All Cases	20.9	15	32.9	44	-.28	.33

Table 14.2
Estimated Results if All Admitted to Non-Secure Programs

Treatment Program	Supervision Failures per 100 Program Admissions				(Expected - Observed) as Fraction of No. Observed	
	New Offense		Other Violation		New Offense	Other Viol.
	Observed	Expected if to Non-Sec.	Observed	Expected if to Non-Sec.		
Secure	15.7	16	45.8	46	.02	-.01
Non-Secure	15.2	N/A	43.2	N/A	N/A	N/A
Non-Res. 12	14.9	14	28.5	41	-.03	.44
Non-Res. 34	16.2	14	32.6	41	-.11	.26
No Treat. 12	22.1	15	31.4	43	-.34	.33
No Treat. 34	24.3	15	34.7	42	-.40	.20
All Cases	20.9	15	32.9	42	-.30	.27

Table 14.3
Estimated Results if All Admitted to Non-Residential Programs

Treatment Program	Supervision Failures per 100 Program Admissions				(Expected - Observed) as Fraction of No. Observed	
	New Offense		Other Violation		New Offense	Other Viol.
	Observed	Expected if to Non-Res.	Observed	Expected if to Non-Res.		
Secure	15.7	18	45.8	36	.16	-.22
Non-Secure	15.2	17	43.2	34	.14	-.20
Non-Res. 12	14.9	N/A	28.5	N/A	N/A	N/A
Non-Res. 34	16.2	N/A	32.6	N/A	N/A	N/A
No Trt. 12	22.1	16	31.4	30	-.28	-.03
No Trt. 34	24.3	17	34.7	34	-.30	-.01
All Cases	20.9	16	32.9	32	-.22	-.03

Perhaps the most remarkable result contained in these tables is the relatively small difference in numbers of "new offense" failures that would be achieved hypothetically by residential program admissions among the population actually sentenced to non-residential programs (Tables 14.1 and 14.2). For the 91/92 cohort the estimated effect would be near 0 while for the 93/94 cohort it would lie somewhere in the range of 6% to 11%. Stated otherwise, for these subjects the expected numbers of "new offense" failures under residential program conditions are not much different from the numbers observed under non-residential conditions. This result derives from the failure-related characteristics of the population admitted to non-residential programs. In particular, it does not imply a general equivalence of effectiveness of residential and non-residential programs. For example, the estimated "new offense" reduction effects of residential program admission on the "no treatment" populations are substantially greater than for non-residential admissions (Tables 14.1 and 14.2). Furthermore, "new offense" failures among the population actually admitted to residential programs would increase by an estimated 14% to 16% had these subjects simply been admitted to non-residential programs (Table 14.3).

The estimated effects of these hypothetical program assignments on the numbers of "other violation" failures are what might have been anticipated: very substantial increases associated with residential program admissions but little difference between the non-residential and "no treatment" populations in this regard.

VII. Summary and Discussion

The principal result shown in this study is that the requirement of drug treatment as a condition of a community supervision sentence can increase probation success rates of "drug-involved" offenders -- at least over a two year observation period. Expressed in terms of a reduction in the rate expected in the absence of treatment, the net effect of all programs amounts to about 9 failures averted for every 100 admissions. This difference in rates represents a reduction of about 15 percent in the expected number of failures. (See Table 10.)

If differences from the expected "new offense" and "other violation" failure rates are estimated separately, the reductions achieved by all programs per 100 admissions amount to about 8 and 1, respectively. In terms of numbers of failures, however, this translates into a substantial reduction of about 34% from the "new offense" failures that would have been expected in the absence of any program admissions. The net estimated effect on expected counts of "other violation" failures is very small. In part this is due to the fact that residential treatment program admissions tend to increase these types of failures but decrease their number among groups admitted to non-residential programs. (See Tables 13 and 13.1.)

In the mean the offender populations assigned to the various treatment program differed somewhat on characteristics related to the probability of success or failure on community supervision -- in particular, on variables related to prior criminal histories. (See Tables 2 and 8.) As a group those subjects selected for admission to non-residential treatment were lower failure risks than either the residential program admissions or the population not entering drug treatment. Similarly, supervision admissions during the period July 1, 1991, through June 30, 1993, were on average lower failure risks than offenders admitted between July 1, 1993, and June 30, 1995.

The logistic regression methods used in this study were designed to "control" for these population differences. Some such analytic method is essential in drawing evaluative inferences from the information in offender records since the effect of treatment program assignment on supervision outcome necessarily implies an estimate of what would have happened in the absence of treatment.

The logit models can also be used to estimate the relative effectiveness of the various treatment programs. (See Tables 14.1, 14.2 and 14.3.) The two residential programs, Secure and Non-Secure, appear to be about equal, both in terms of their estimated effects on the expected numbers of "new offense" and "other violation" failures. Compared to non-residential programs, admission of the "No Treatment" populations to residential treatment would be more effective in reducing the numbers of "new offenses" but would entail a very substantial increase in "other violation" failures. When applied to the lower mean risk population actually entering one of the non-residential programs, residential treatment would have had little or no additional impact on the numbers of "new offenses." But, again, it is estimated that there would have been significant increases in "other violation" failures -- especially under Secure program conditions.

The findings of this study are derived from analyses of offender records already contained in the Department of Corrections' management information system. This allowed for economy in the creation of a working data base but limited somewhat the kinds of questions that could be addressed. In particular, this is essentially a "black box" evaluation in that a subject's treatment is described simply in terms of a nominal admission to a particular program. More detailed case information could lead to a more discriminating understanding of who benefits from the different treatments and the nature of the treatment mechanisms that produce those benefits. This in turn might suggest policy refinements that would improve the efficiency in the use of drug treatment resources. Continued research is certainly recommended. But in the meantime the conclusion of the present study is that the drug treatment policy initiated in 1991 for

offenders sentenced to community supervision has been ~~un~~ambiguously successful. Questions that remain have to do with improving the overall effectiveness of these programs.

Appendix

Results of the Logit Model Estimations

CASES PROCESSED BY LOGIT:

1100 cases were kept out of 1136 in file.

DEPENDENT CATEGORIES ARE DESIGNATED AS:

- 0 - SUCCEED
- 1 - FAIL

DISTRIBUTION AMONG OUTCOME CATEGORIES FOR FAIL2VAL

	SUCCEED	FAIL
PROPORTION	0.3855	0.6145

DESCRIPTIVE STATISTICS (N=1100):

	Mean	Std Dev	Minimum	Maximum
PRI_VIOL	0.1664	0.3724	0.0000	1.0000
PRI_DRUG	0.3700	0.4828	0.0000	1.0000
PRI_OTH	0.0382	0.1916	0.0000	1.0000
FELONY1	0.0627	0.2425	0.0000	1.0000
FELONY23	0.9282	0.2582	0.0000	1.0000
ADD_CNTS	1.8164	2.2805	0.0000	9.0000
DRUGFLAG	0.4445	0.4969	0.0000	1.0000
DRUGPROB	0.1145	0.3185	0.0000	1.0000
COM_CNTL	0.4982	0.5000	0.0000	1.0000
PRIS_REL	0.0282	0.1655	0.0000	1.0000
PRISTERM	0.0267	0.2005	0.0000	3.5537
SPLIT2	0.0118	0.1081	0.0000	1.0000
SENTLGTH	3.4368	3.5114	0.0713	50.0000
VIOLOFF	0.4527	1.1911	0.0000	12.0000
PROPOFF	2.0700	5.5501	0.0000	125.0000
DRUGOFF	1.1900	2.5221	0.0000	44.0000
OTHEROFF	0.1736	0.5892	0.0000	5.0000
LST_VIOL	0.1073	0.3095	0.0000	1.0000
LST_PROP	0.3336	0.4715	0.0000	1.0000
LST_DRUG	0.2818	0.4499	0.0000	1.0000
LST_OTH	0.0227	0.1490	0.0000	1.0000
NUMBSUP	1.5627	1.3891	0.0000	7.0000
NUMBPRIS	0.6545	1.1081	0.0000	7.0000
FEMALE	0.2727	0.4454	0.0000	1.0000
BLACK	0.3536	0.4781	0.0000	1.0000
OTH_RACE	0.0091	0.0949	0.0000	1.0000
AGE	28.1117	7.6108	16.2656	58.3354
LN_AGE	3.3010	0.2633	2.7891	4.0662
REG1	0.0109	0.1039	0.0000	1.0000
REG2	0.0755	0.2641	0.0000	1.0000
REG3	0.1618	0.3683	0.0000	1.0000
REG4	0.2145	0.4105	0.0000	1.0000
VICOUNT	11.2460	4.2580	0.7500	22.2844
NVICOUNT	67.6252	19.4794	0.9167	111.4054

CLEAR	23.1332	6.3612	11.1000	100.0000
POPULAT	661.0200	535.1773	9.0000	2038.0000
BLACKPOP	11.8984	5.5140	2.0408	44.4444
HISPPOP	11.0441	13.1134	1.0378	54.6691
WHITEPOP	75.9152	15.7884	26.2216	95.4320
DENSITY	9.2133	9.8401	0.1100	31.2900
AGE15_24	77.4028	67.5460	1.0750	267.7910
AGE25_44	198.7556	168.6976	2.0840	621.0400

ESTIMATES FROM LOGIT ANALYSIS OF VARIABLE: FAIL2VAL

Convergence after 5 iterations.
Tolerance of 0.0000 achieved after 0.05 minutes.

Variable	Comparison	Logit Estimate	Std Error	t-value	2-tailed Prob	Exp Estimate
CONSTANT	0/1	3.16366	7.4436	0.43	0.671	23.6571
PRI_VIOL	0/1	0.67563	0.2263	2.99	0.003	1.9653
PRI_DRUG	0/1	-0.25919	0.2921	-0.89	0.375	0.7717
PRI_OTH	0/1	-0.52932	0.4287	-1.23	0.217	0.5890
FELONY1	0/1	0.64138	0.8065	0.80	0.426	1.8991
FELONY23	0/1	0.62941	0.7561	0.83	0.405	1.8765
ADD_CNTS	0/1	0.02640	0.0347	0.76	0.447	1.0268
DRUGFLAG	0/1	0.16259	0.2630	0.62	0.537	1.1766
DRUGPROB	0/1	-0.18657	0.2335	-0.80	0.424	0.8298
COM_CNTL	0/1	-0.10842	0.1619	-0.67	0.503	0.8972
PRIS_REL	0/1	2.20782	0.8390	2.63	0.008	9.0958
PRISTERM	0/1	-2.24190	0.9925	-2.26	0.024	0.1063
SPLIT2	0/1	-1.42789	0.8354	-1.71	0.087	0.2398
SENTLGTH	0/1	0.01762	0.0197	0.89	0.372	1.0178
VILOFF	0/1	-0.01266	0.0775	-0.16	0.870	0.9874
PROPOFF	0/1	0.02553	0.0178	1.43	0.153	1.0259
DRUGOFF	0/1	-0.00862	0.0327	-0.26	0.792	0.9914
OTHEROFF	0/1	0.00552	0.1419	0.04	0.969	1.0055
LST_VIOL	0/1	-0.55048	0.3126	-1.76	0.078	0.5767
LST_PROP	0/1	-0.21611	0.2332	-0.93	0.354	0.8056
LST_DRUG	0/1	0.12010	0.2415	0.50	0.619	1.1276
LST_OTH	0/1	-0.08559	0.6019	-0.14	0.887	0.9180
NUMBSUP	0/1	-0.01624	0.0815	-0.20	0.842	0.9839
NUMBPRIS	0/1	-0.13718	0.0873	-1.57	0.116	0.8718
FEMALE	0/1	-0.02735	0.1566	-0.17	0.861	0.9730
BLACK	0/1	-0.21068	0.1540	-1.37	0.171	0.8100
OTH_RACE	0/1	-0.02438	0.6709	-0.04	0.971	0.9759
AGE	0/1	0.01250	0.0641	0.19	0.845	1.0126
LN_AGE	0/1	0.86502	1.8902	0.46	0.647	2.3751
REG1	0/1	1.35032	0.7152	1.89	0.059	3.8587
REG2	0/1	0.65067	0.3651	1.78	0.075	1.9168
REG3	0/1	0.80610	0.2934	2.75	0.006	2.2392
REG4	0/1	-0.10007	0.3686	-0.27	0.786	0.9048
VICOUNT	0/1	-0.02591	0.0520	-0.50	0.618	0.9744
NVICOUNT	0/1	0.01996	0.0116	1.72	0.085	1.0202
CLEAR	0/1	-0.01435	0.0176	-0.81	0.415	0.9858
POPULAT	0/1	0.00627	0.0024	2.63	0.009	1.0063
BLACKPOP	0/1	-0.12189	0.0724	-1.68	0.092	0.8852
HISPPOP	0/1	-0.06075	0.0598	-1.02	0.310	0.9411
WHITEPOP	0/1	-0.08201	0.0603	-1.36	0.174	0.9213
DENSITY	0/1	-0.02231	0.0164	-1.36	0.174	0.9779
AGE15_24	0/1	-0.01731	0.0154	-1.12	0.261	0.9999

AGE25_44	0/1	-0.01252	0.0072	-1.73	0.084	0.9876
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MEASURES OF FIT:

Likelihood Ratio Chi-square:	92.5063
with 42 d.f., prob=0.000	
-2 Log Likelihood for full model:	1374.1707
-2 Log likelihood for restricted model:	1466.6770
Percent Correctly Predicted:	64.3636

Data Set: nonsec_2

CASES PROCESSED BY LOGIT:

5968 cases were kept out of 6215 in file.

DEPENDENT CATEGORIES ARE DESIGNATED AS:

- 0 - SUCCEED
- 1 - FAIL

DISTRIBUTION AMONG OUTCOME CATEGORIES FOR FAIL2VAL

	SUCCEED	FAIL
PROPORTION	0.4164	0.5836

DESCRIPTIVE STATISTICS (N=5968):

	Mean	Std Dev	Minimum	Maximum
PRI_VIOL	0.1520	0.3590	0.0000	1.0000
PRI_DRUG	0.4891	0.4999	0.0000	1.0000
PRI_OTH	0.0399	0.1957	0.0000	1.0000
FELONY1	0.0354	0.1847	0.0000	1.0000
FELONY23	0.9543	0.2089	0.0000	1.0000
ADD_CNTS	1.2545	1.8592	0.0000	9.0000
DRUGFLAG	0.5364	0.4987	0.0000	1.0000
DRUGPROB	0.2106	0.4078	0.0000	1.0000
COM_CNTL	0.4176	0.4932	0.0000	1.0000
PRIS_REL	0.0226	0.1487	0.0000	1.0000
PRISTERM	0.0236	0.1909	0.0000	2.8638
SPLIT2	0.0127	0.1121	0.0000	1.0000
SENTLGTH	2.8218	2.5540	0.0110	50.0000
VIOLOFF	0.4611	1.2162	0.0000	24.0000
PROPOFF	1.3961	3.1896	0.0000	80.0000
DRUGOFF	1.1758	2.0982	0.0000	52.0000
OTHEROFF	0.1825	0.6360	0.0000	15.0000
LST_VIOL	0.1094	0.3122	0.0000	1.0000
LST_PROP	0.2542	0.4354	0.0000	1.0000
LST_DRUG	0.3472	0.4761	0.0000	1.0000
LST_OTH	0.0335	0.1800	0.0000	1.0000
NUMBSUP	1.5359	1.4065	0.0000	8.0000
NUMBPRIS	0.6391	1.1297	0.0000	8.0000
FEMALE	0.2095	0.4069	0.0000	1.0000
BLACK	0.4842	0.4998	0.0000	1.0000
OTH_RACE	0.0082	0.0902	0.0000	1.0000
AGE	31.1507	7.4586	15.9097	79.0363
LN_AGE	3.4105	0.2389	2.7669	4.3699
REG1	0.0804	0.2720	0.0000	1.0000
REG2	0.1645	0.3708	0.0000	1.0000
REG3	0.1937	0.3952	0.0000	1.0000
REG4	0.3013	0.4588	0.0000	1.0000
VICOUNT	11.7686	4.3334	0.7273	22.2844
NVICOUNT	70.2512	19.7691	0.9167	111.4054

CLEAR	22.6790	5.6657	5.1000	100.0000
POPULAT	721.9925	524.5941	8.0000	2038.0000
BLACKPOP	14.8061	6.4190	2.0202	60.0000
HISPPOP	10.7146	12.7627	0.6357	54.6691
WHITEPOP	73.6865	14.9664	26.2216	98.5081
DENSITY	7.3195	6.2478	0.1100	31.2900
AGE15_24	87.8623	64.3542	0.9820	267.7910
AGE25_44	223.2119	164.8183	1.9720	621.0400

ESTIMATES FROM LOGIT ANALYSIS OF VARIABLE: FAIL2VAL

Convergence after 3 iterations.
Tolerance of 0.0000 achieved after 0.17 minutes.

Variable	Comparison	Logit Estimate	Std Error	t-value	2-tailed Prob	Exp Estimate
CONSTANT	0/1	-3.18332	2.7585	-1.15	0.248	0.0414
PRI_VIOL	0/1	0.20014	0.0998	2.01	0.045	1.2216
PRI_DRUG	0/1	0.26028	0.1486	1.75	0.080	1.2973
PRI_OTH	0/1	0.44543	0.1587	2.81	0.005	1.5612
FELONY1	0/1	0.25462	0.3158	0.81	0.420	1.2900
FELONY23	0/1	0.22719	0.2761	0.82	0.411	1.2551
ADD_CNTS	0/1	-0.03735	0.0176	-2.13	0.033	0.9633
DRUGFLAG	0/1	-0.08759	0.1390	-0.63	0.529	0.9161
DRUGPROB	0/1	-0.28733	0.0797	-3.61	0.000	0.7503
COM_CNTL	0/1	-0.12725	0.0713	-1.78	0.074	0.8805
PRIS_REL	0/1	0.61433	0.3194	1.92	0.054	1.8484
PRISTERM	0/1	-0.15673	0.2452	-0.64	0.523	0.8549
SPLIT2	0/1	0.38425	0.2542	1.51	0.131	1.4685
SENTLGTH	0/1	0.08634	0.0136	6.33	0.000	1.0902
VILOFF	0/1	0.03341	0.0292	1.14	0.252	1.0340
PROPOFF	0/1	0.00538	0.0114	0.47	0.639	1.0054
DRUGOFF	0/1	0.02842	0.0191	1.49	0.136	1.0288
OTHEROFF	0/1	0.13198	0.0507	2.60	0.009	1.1411
LST_VIOL	0/1	-0.25290	0.1277	-1.98	0.048	0.7765
LST_PROP	0/1	-0.17777	0.1008	-1.76	0.078	0.8371
LST_DRUG	0/1	-0.28164	0.0993	-2.84	0.005	0.7545
LST_OTH	0/1	-0.46924	0.1898	-2.47	0.013	0.6255
NUMBSUP	0/1	-0.05450	0.0343	-1.59	0.112	0.9470
NUMBPRIS	0/1	-0.25452	0.0375	-6.79	0.000	0.7753
FEMALE	0/1	0.12322	0.0681	1.81	0.070	1.1311
BLACK	0/1	-0.17451	0.0587	-2.97	0.003	0.8399
OTH_RACE	0/1	-0.19255	0.3027	-0.64	0.525	0.8249
AGE	0/1	0.05568	0.0243	2.29	0.022	1.0573
LN_AGE	0/1	-0.54358	0.7601	-0.72	0.475	0.5807
REG1	0/1	-0.09914	0.1558	-0.64	0.525	0.9056
REG2	0/1	0.20659	0.1146	1.80	0.071	1.2295
REG3	0/1	0.13608	0.1073	1.27	0.205	1.1458
REG4	0/1	0.21043	0.1368	1.54	0.124	1.2342
VICOUNT	0/1	0.00026	0.0183	0.01	0.988	1.0003
NVICOUNT	0/1	-0.00377	0.0040	-0.94	0.348	0.9962
CLEAR	0/1	-0.01003	0.0067	-1.49	0.136	0.9900
POPULAT	0/1	0.00179	0.0008	2.19	0.029	1.0018
BLACKPOP	0/1	0.04890	0.0228	2.14	0.032	1.0501
HISPPOP	0/1	0.02517	0.0202	1.24	0.213	1.0255
WHITEPOP	0/1	0.02946	0.0209	1.41	0.160	1.0299
DENSITY	0/1	-0.00460	0.0074	-0.62	0.535	0.9954
AGE15_24	0/1	0.01242	0.0056	2.22	0.027	1.0125

AGE25_44	0/1	-0.01001	0.0031	-3.25	0.001	0.9900
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MEASURES OF FIT:

Likelihood Ratio Chi-square:	403.9489
with 42 d.f., prob=0.000	
-2 Log Likelihood for full model:	7701.7785
-2 Log likelihood for restricted model:	8105.7273
Percent Correctly Predicted:	62.3324

Data Set: nres12_2

CASES PROCESSED BY LOGIT:

15514 cases were kept out of 17279 in file.

DEPENDENT CATEGORIES ARE DESIGNATED AS:

0 - SUCCEED
1 - FAIL

DISTRIBUTION AMONG OUTCOME CATEGORIES FOR FAIL2VAL

	SUCCEED	FAIL
PROPORTION	0.5658	0.4342

DESCRIPTIVE STATISTICS (N=15514):

	Mean	Std Dev	Minimum	Maximum
PRI_VIOL	0.1908	0.3929	0.0000	1.0000
PRI_DRUG	0.5253	0.4994	0.0000	1.0000
PRI_OTH	0.0520	0.2221	0.0000	1.0000
FELONY1	0.0324	0.1771	0.0000	1.0000
FELONY23	0.9254	0.2627	0.0000	1.0000
ADD_CNTS	0.9246	1.5012	0.0000	9.0000
DRUGFLAG	0.5659	0.4956	0.0000	1.0000
DRUGPROB	0.0711	0.2570	0.0000	1.0000
COM_CNTL	0.2449	0.4300	0.0000	1.0000
PRIS_REL	0.0975	0.2967	0.0000	1.0000
PRIS_TERM	0.0526	0.2045	0.0000	2.3162
SPLIT2	0.0280	0.1651	0.0000	1.0000
SENTLGTH	2.6160	2.1391	0.0027	50.0000
VIOLOFF	0.2574	0.7982	0.0000	22.0000
PROPOFF	0.7623	2.6026	0.0000	85.0000
DRUGOFF	0.5793	1.4215	0.0000	28.0000
OTHEROFF	0.1159	1.6794	0.0000	201.0000
LST_VIOL	0.0921	0.2892	0.0000	1.0000
LST_PROP	0.1735	0.3787	0.0000	1.0000
LST_DRUG	0.2034	0.4025	0.0000	1.0000
LST_OTH	0.0280	0.1651	0.0000	1.0000
NUMBSUP	0.8367	1.0962	0.0000	8.0000
NUMBPRIS	0.4000	0.8385	0.0000	6.0000
FEMALE	0.1824	0.3861	0.0000	1.0000
BLACK	0.4009	0.4901	0.0000	1.0000
OTH_RACE	0.0073	0.0850	0.0000	1.0000
AGE	29.9255	8.4969	15.6824	78.8884
LN_AGE	3.3611	0.2718	2.7525	4.3680
REG1	0.1720	0.3774	0.0000	1.0000
REG2	0.1376	0.3444	0.0000	1.0000
REG3	0.1917	0.3936	0.0000	1.0000
REG4	0.0861	0.2805	0.0000	1.0000
VICOUNT	11.6127	4.3832	0.5455	22.2844
NVICOUNT	66.1005	19.3058	0.9167	111.4054

CLEAR	23.7769	5.9467	8.8000	119.1000
POPULAT	514.3018	350.0509	6.0000	2014.0000
BLACKPOP	13.1198	6.7905	2.0202	58.1395
HISPPOP	6.7599	6.1855	0.6200	54.6691
WHITEPOP	78.8305	9.6585	26.5340	96.4458
DENSITY	7.6210	8.5278	0.0700	30.8700
AGE15_24	66.0458	45.0072	0.8990	267.7910
AGE25_44	159.2327	113.1115	1.8970	621.0400

ESTIMATES FROM LOGIT ANALYSIS OF VARIABLE: FAIL2VAL

Convergence after 5 iterations.

Tolerance of 0.0000 achieved after 0.65 minutes.

Variable	Comparison	Logit Estimate	Std Error	t-value	2-tailed Prob	Exp Estimate
CONSTANT	0/1	-2.58032	1.8757	-1.38	0.169	0.0757
PRI_VIOL	0/1	0.22083	0.0579	3.82	0.000	1.2471
PRI_DRUG	0/1	0.24079	0.0945	2.55	0.011	1.2722
PRI_OTH	0/1	0.38750	0.0888	4.36	0.000	1.4733
FELONY1	0/1	-0.00589	0.1370	-0.04	0.966	0.9941
FELONY23	0/1	-0.30997	0.0928	-3.34	0.001	0.7335
ADD_CNTS	0/1	-0.03598	0.0128	-2.81	0.005	0.9647
DRUGFLAG	0/1	0.02530	0.0899	0.28	0.778	1.0256
DRUGPROB	0/1	-0.36821	0.0696	-5.29	0.000	0.6920
COM_CNTR	0/1	-0.32727	0.0463	-7.06	0.000	0.7209
PRIS_REL	0/1	0.60821	0.1024	5.94	0.000	1.8371
PRISTERM	0/1	-0.33199	0.1356	-2.45	0.014	0.7175
SPLIT2	0/1	-0.21079	0.1092	-1.93	0.054	0.8099
SENTLGTH	0/1	0.07686	0.0099	7.76	0.000	1.0799
VIOLOFF	0/1	0.02571	0.0295	0.87	0.383	1.0260
PROPOFF	0/1	0.00092	0.0079	0.12	0.907	1.0009
DRUGOFF	0/1	0.00228	0.0177	0.13	0.897	1.0023
OTHEROFF	0/1	-0.02173	0.0355	-0.61	0.540	0.9785
LST_VIOL	0/1	-0.23792	0.0850	-2.80	0.005	0.7883
LST_PROP	0/1	-0.15203	0.0665	-2.29	0.022	0.8590
LST_DRUG	0/1	-0.20107	0.0659	-3.05	0.002	0.8179
LST_OTH	0/1	-0.21602	0.1244	-1.74	0.083	0.8057
NUMBSUP	0/1	-0.05207	0.0291	-1.79	0.074	0.9493
NUMBPRIS	0/1	-0.22488	0.0343	-6.56	0.000	0.7986
FEMALE	0/1	0.17210	0.0450	3.83	0.000	1.1878
BLACK	0/1	-0.57687	0.0375	-15.39	0.000	0.5617
OTH_RACE	0/1	-0.85315	0.2011	-4.24	0.000	0.4261
AGE	0/1	0.00805	0.0123	0.66	0.512	1.0081
LN_AGE	0/1	0.61989	0.3821	1.62	0.105	1.8587
REG1	0/1	0.36317	0.0792	4.59	0.000	1.4379
REG2	0/1	0.52968	0.0726	7.30	0.000	1.6984
REG3	0/1	0.31207	0.0610	5.11	0.000	1.3663
REG4	0/1	0.11648	0.0945	1.23	0.218	1.1235
VICOUNT	0/1	-0.04008	0.0112	-3.57	0.000	0.9607
NVICOUNT	0/1	0.00292	0.0023	1.27	0.203	1.0029
CLEAR	0/1	0.01276	0.0043	3.00	0.003	1.0128
POPULAT	0/1	0.00031	0.0006	0.50	0.614	1.0003
BLACKPOP	0/1	0.01208	0.0180	0.67	0.501	1.0122
HISPPOP	0/1	0.01291	0.0170	0.76	0.448	1.0130
WHITEPOP	0/1	0.00458	0.0168	0.27	0.785	1.0046
DENSITY	0/1	0.01392	0.0041	3.41	0.001	1.0140
AGE15_24	0/1	-0.00019	0.0045	-0.04	0.966	0.9998

AGE25_44

0/1

-0.00088

0.0026

-0.34

0.735

0.9991

MEASURES OF FIT:

Likelihood Ratio Chi-square: 1310.1114
with 42 d.f., prob=0.000
-2 Log Likelihood for full model: 19927.3035
-2 Log likelihood for restricted model: 21237.4150
Percent Correctly Predicted: 63.4137

Data Set: nres34_2

CASES PROCESSED BY LOGIT:

18557 cases were kept out of 20297 in file.

DEPENDENT CATEGORIES ARE DESIGNATED AS:

0 - SUCCEED
1 - FAIL

DISTRIBUTION AMONG OUTCOME CATEGORIES FOR FAIL2VAL

	SUCCEED	FAIL
PROPORTION	0.5117	0.4883

DESCRIPTIVE STATISTICS (N=18557):

	Mean	Std Dev	Minimum	Maximum
PRI_VIOL	0.1844	0.3878	0.0000	1.0000
PRI_DRUG	0.5162	0.4997	0.0000	1.0000
PRI_OTH	0.0728	0.2598	0.0000	1.0000
FELONY1	0.0429	0.2027	0.0000	1.0000
FELONY23	0.9183	0.2739	0.0000	1.0000
ADD_CNTS	1.0599	1.6408	0.0000	9.0000
DRUGFLAG	0.5568	0.4968	0.0000	1.0000
DRUGPROB	0.0973	0.2964	0.0000	1.0000
COM_CNTL	0.2305	0.4212	0.0000	1.0000
PRIS_REL	0.1013	0.3017	0.0000	1.0000
PRISTERM	0.1140	0.4476	0.0000	4.3751
SPLIT2	0.0300	0.1706	0.0000	1.0000
SENTLGTH	2.5877	2.0135	0.0027	50.0000
VIOLOFF	0.3050	0.9549	0.0000	41.0000
PROPOFF	0.8091	2.3401	0.0000	62.0000
DRUGOFF	0.7067	1.6566	0.0000	30.0000
OTHEROFF	0.1269	0.5125	0.0000	12.0000
LST_VIOL	0.1001	0.3002	0.0000	1.0000
LST_PROP	0.1726	0.3779	0.0000	1.0000
LST_DRUG	0.2172	0.4123	0.0000	1.0000
LST_OTH	0.0305	0.1720	0.0000	1.0000
NUMBSUP	0.9511	1.2202	0.0000	9.0000
NUMBPRIS	0.4450	0.9292	0.0000	7.0000
FEMALE	0.1761	0.3809	0.0000	1.0000
BLACK	0.4032	0.4905	0.0000	1.0000
OTH_RACE	0.0106	0.1025	0.0000	1.0000
AGE	30.4435	8.8938	15.0445	81.1444
LN_AGE	3.3753	0.2833	2.7110	4.3962
REG1	0.1341	0.3408	0.0000	1.0000
REG2	0.1428	0.3499	0.0000	1.0000
REG3	0.2019	0.4014	0.0000	1.0000
REG4	0.1176	0.3222	0.0000	1.0000
VICOUNT	10.8982	4.1253	0.5714	22.2844
NVICOUNT	63.5365	19.5825	1.1667	111.4054

CLEAR	23.6073	6.0223	4.9000	119.1000
POPULAT	546.0808	411.2633	6.0000	2038.0000
BLACKPOP	13.2499	6.6307	2.0202	60.0000
HISPPOP	8.1904	8.8323	0.6551	54.6691
WHITEPOP	76.9838	11.8601	26.2216	98.5081
DENSITY	7.7146	8.5394	0.0700	31.2900
AGE15_24	66.8672	51.0087	0.9510	267.7910
AGE25_44	166.2517	129.9139	1.8970	621.0400

ESTIMATES FROM LOGIT ANALYSIS OF VARIABLE: FAIL2VAL

Convergence after 4 iterations.
Tolerance of 0.0000 achieved after 0.64 minutes.

Variable	Comparison	Logit Estimate	Std Error	t-value	2-tailed Prob	Exp Estimate
CONSTANT	0/1	-4.16278	1.3082	-3.18	0.001	0.0156
PRI_VIOL	0/1	0.30966	0.0536	5.78	0.000	1.3630
PRI_DRUG	0/1	0.15351	0.0883	1.74	0.082	1.1659
PRI_OTH	0/1	0.24494	0.0749	3.27	0.001	1.2775
FELONY1	0/1	-0.05628	0.1210	-0.47	0.642	0.9453
FELONY23	0/1	-0.29213	0.0912	-3.20	0.001	0.7467
ADD_CNTS	0/1	-0.04214	0.0110	-3.83	0.000	0.9587
DRUGFLAG	0/1	0.13857	0.0831	1.67	0.095	1.1486
DRUGPROB	0/1	-0.16317	0.0555	-2.94	0.003	0.8494
COM_CNTL	0/1	-0.31245	0.0434	-7.19	0.000	0.7317
PRIS_REL	0/1	0.11010	0.0875	1.26	0.208	1.1164
PRISTERM	0/1	-0.07073	0.0553	-1.28	0.201	0.9317
SPLIT2	0/1	0.04951	0.0978	0.51	0.613	1.0508
SENTLGTH	0/1	0.09967	0.0095	10.51	0.000	1.1048
VIOLOFF	0/1	0.01573	0.0210	0.75	0.454	1.0159
PROPOFF	0/1	-0.01276	0.0091	-1.40	0.160	0.9873
DRUGOFF	0/1	0.02093	0.0141	1.48	0.139	1.0212
OTHEROFF	0/1	-0.03161	0.0368	-0.86	0.390	0.9689
LST_VIOL	0/1	-0.22302	0.0725	-3.08	0.002	0.8001
LST_PROP	0/1	-0.17446	0.0601	-2.91	0.004	0.8399
LST_DRUG	0/1	-0.34396	0.0586	-5.87	0.000	0.7090
LST_OTH	0/1	-0.17071	0.1121	-1.52	0.128	0.8431
NUMBSUP	0/1	-0.05165	0.0250	-2.07	0.039	0.9497
NUMBPRIS	0/1	-0.15051	0.0290	-5.20	0.000	0.8603
FEMALE	0/1	0.29645	0.0411	7.20	0.000	1.3451
BLACK	0/1	-0.51696	0.0338	-15.27	0.000	0.5963
OTH_RACE	0/1	-0.19389	0.1499	-1.29	0.196	0.8238
AGE	0/1	0.01601	0.0108	1.48	0.139	1.0161
LN AGE	0/1	0.40423	0.3398	1.19	0.234	1.4982
REG1	0/1	0.31890	0.0767	4.16	0.000	1.3756
REG2	0/1	0.21259	0.0628	3.39	0.001	1.2369
REG3	0/1	0.14597	0.0598	2.44	0.015	1.1572
REG4	0/1	0.28822	0.0819	3.52	0.000	1.3340
VICOUNT	0/1	-0.03643	0.0102	-3.56	0.000	0.9642
NVICOUNT	0/1	0.00051	0.0021	0.24	0.807	1.0005
CLEAR	0/1	0.00181	0.0034	0.54	0.591	1.0018
POPULAT	0/1	0.00049	0.0005	1.01	0.313	1.0005
BLACKPOP	0/1	0.03897	0.0116	3.35	0.001	1.0397
HISPPOP	0/1	0.03175	0.0104	3.05	0.002	1.0323
WHITEPOP	0/1	0.02621	0.0102	2.58	0.010	1.0266
DENSITY	0/1	0.01016	0.0035	2.91	0.004	1.0102
AGE15_24	0/1	0.00842	0.0032	2.66	0.008	1.0085

