

**A Preliminary Outcome Evaluation of North Dakota's
Juvenile Drug Court – Recidivism Analysis**

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Executive Summary

This report summarizes findings from an outcome evaluation of North Dakota's Juvenile Drug Court. Two drug courts were implemented in North Dakota in May of 2000. The sites chosen included the East Central Judicial District and the Northeast Central Judicial District. Recidivism information summarized in this report is used to determine the effectiveness of the juvenile drug court over and above traditional methods of sanctioning and treating drug abusing juveniles. In so doing, this evaluation asks the principal question of whether recidivism rates among juvenile drug court participants significantly differ from 1) rates of substance using juveniles in the period prior to juvenile drug court, and 2) rates among substance abusing juveniles who received standard conditions of probation and treatment.

After a period of one year, there were 42 juveniles enrolled in drug court. As of May 1, 2001, there were 11 drug court graduates, 20 current participants, and 11 juveniles who had their drug court status revoked. Males comprised the majority of participants. Roughly one-third of the participants were classified as ethnic minorities with American Indians forming the largest minority group. Compared to drug court participants nationally, these juveniles were slightly older than average upon entry into drug court, had more stable family living situations, and were more likely to be enrolled in school.

Of the 42 participants, 32 met the criteria of being in drug court for at least two months. These 32 juveniles formed the recidivism analysis group. After one year, the recidivism rate for these juveniles was 16%. The recidivism rate for the court simultaneous comparison group was 57% for the same period. There were no differences between the two groups regarding length of time from the most recent referral to recidivism.

Comparing drug court participants with juveniles referred to the court from 1995-97, the data show that drug court participants had a significantly lower recidivism rate than the following groups: 1) juveniles whose first referral was for an alcohol offense, 2) juveniles whose first referral was for a controlled substance violation, 3) juveniles from the East Central and Northeast Central Judicial Districts whose first referral was for a controlled substance violation, and 4) juveniles whose court history was similar to drug court participants (3+ substance use referrals/6 prior referrals). Further, the length of time between referrals was much shorter for non-drug court participants than for drug court participants.

Based on this preliminary recidivism analysis, it would be prudent to continue the juvenile drug court. While we do not know how or why drug court reduces the probability of recidivism, it is apparent that drug court effectively prevents juveniles from reappearing in juvenile court. A forthcoming study will examine the costs and benefits of drug court in North Dakota

Introduction

Background

As a result of a year and-a-half planning process, a juvenile drug court (JDC) was implemented in the East Central Judicial District (hereafter EC) and Northeast Central Judicial District (hereafter NEC), beginning May 1, 2000. The planning effort began with a statewide Juvenile Drug Court Study Committee in the fall of 1998, commissioned by the Juvenile Justice Policy Board. This committee was chaired by Justice Mary Muehlen Maring and consisted of representatives from juvenile court, law enforcement, the Department of Public Instruction, the Department of Human Services, the Division of Juvenile Services, the Department of Corrections, and the Turtle Mountain Adult and Juvenile Drug Courts.

The Study Committee recommended that a juvenile drug court be planned and implemented in North Dakota. Following this recommendation, the North Dakota Supreme Court applied for and received a planning grant from the Office of Justice, Drug Courts Program Office. This grant facilitated training for a juvenile drug court team. This second planning and implementation team was comprised of representatives from the schools, juvenile court, treatment agencies, the state court administrator's office, academia, the judiciary, public defenders office, and the state's attorney's office. A project coordinator assisted Justice Maring in coordinating the meetings and workshops for the drug court planning committee. Planning team members attended a number of federally planned and sponsored workshops throughout the year in order to properly implement the juvenile drug court. In addition, staff from both judicial districts observed and interacted with a mentor court in Las Cruces, New Mexico in February of 2001.

On May 1 2000, the first juveniles appeared in drug court. In the EC Judicial District, participation in drug court was initially voluntary. After receiving participation refusals from at least half of all eligible juveniles, the EC district began court-ordering juveniles into the program in February of 2001. In the NEC Judicial District, juveniles were court-ordered into the program. In both judicial districts, the drug court process/model was explained to each juvenile and his/her guardian(s). Juveniles participating in drug court signed a juvenile drug court contract, a consent for disclosure of confidential substance abuse information, and a confidentiality notification of alcohol and drug abuse patient records agreement.

In October of 2000, a juvenile drug court process evaluation was completed, delineating strengths and weaknesses of the current model. This document contained a series of recommendations for fortifying the drug court process. Some of these recommendations were quickly implemented such as hiring a drug court coordinator for the EC district. Others may take some time to implement such as reviewing and possibly implementing alternative drug therapies.

It is important to acknowledge that the following evaluation is ongoing. The one-year period was selected as an appropriate time period by which to determine the

effectiveness of drug court. Data gathered several months from now however, may temper some of the findings and possibly recommendations of this report.

Structure of the North Dakota Juvenile Drug Court

The JDC was structured similarly to other JDC models. The JDC team is composed of a judge, treatment provider, school representative, probation officer, Drug Court Coordinator (NEC), defense counsel, and states' attorney. In the EC district, the school resource officer routinely participated in staffings beginning in December of 2000.

In the EC court, three paths were established to allow juveniles to progress after meeting certain JDC requirement criteria. It was estimated that a juvenile meeting all JDC requirements could graduate from drug court after roughly 6-9 months. The NEC district required participants to move through four paths, spending roughly 7-10 months in drug court after meeting all criteria for graduation. Sanctions and incentives were established to motivate juveniles. Each path carried different expectations.

Juveniles were required to attend school while school was in session or complete summer school requirements. Juveniles who dropped out of school were encouraged by the judge to pursue a GED. Those who had dropped out were required to discuss their employment progress with the judge. Juveniles were required to undergo random drug/alcohol screens and maintain contact 1-2 times per week with their probation officer. Community service was ordered as part of participation in drug court. Finally, JDC participants were required to meet with treatment providers to establish and follow a treatment plan (e.g., individual therapy).

It was decided that the JDC staff would hold weekly meetings to staff JDC cases. At staffing, new cases were scrutinized and discussed and established cases reviewed. Review hearings were then held immediately following staffing.

Currently, both courts maintain a drug court coordinator whose chief task involves information processing. The coordinators are responsible for providing the drug court teams with sufficient information regarding the progress of drug court participants. In so doing, they are responsible for maintaining adequate files and ensuring that proper services are rendered to participants.

Selection Process/Criteria

The JDC planning team established eligibility criteria for drug court (targeting). These guidelines are consistent with those recommended by federal authorities. In order to be eligible for drug court, juveniles had to meet the criteria below:

1. Referring offense may be either drug or non-drug related.
2. Juvenile must be between the ages of 14 and 18.

3. No prior violent felony level adjudications or pending petitions alleging violent felony level delinquent acts.
4. No dangerous anti-social behavior as determined by the Juvenile Drug team.
5. No previous referral to JDC.
6. No prior or pending charges of selling and/or manufacturing controlled substances.
7. Admission to the offense and/or a court order to the program.
8. An assessment must be completed indicating a drug and/or alcohol abuse problem.
9. The JDC team has some flexibility as to who is eligible depending on their age, drug and/or alcohol history and nature of their prior convictions, to enter the JDC program.

JDC is a post petition/post adjudication program with the option of dismissing the charges in the petition after the participant successfully completes the JDC program.

Research Design

A quasi-experimental design was chosen to evaluate the effectiveness of the JDC program. JDC participants comprised the experimental group. In order to meet criteria for inclusion in the recidivism analysis, JDC participants were required to have participated in JDC for at least two months prior to May 1, 2001. Those not meeting the criteria were included in information regarding characteristics of JDC participants but were not included in the recidivism analysis. A court order signed by each of the participating JDC judges facilitated access to JDC files.

Two comparison groups were used to assess whether drug court was more effective than traditional probation and treatment. The first group included juveniles referred to North Dakota's juvenile court system from 1995-97. In 1999, a recidivism study was conducted to assess the effectiveness of juvenile court dispositions. During this period, there were over 16,000 juveniles referred to juvenile court for a variety of offenses. From this data we can estimate recidivism rates for the following groups: 1) juveniles whose first referral to juvenile court was for substance use (alcohol or drugs), and 2) juveniles whose court history roughly resembled those of JDC participants.

A second comparison group included a court simultaneous group of juveniles referred to the South Central Judicial District (SC) and the East Central Judicial District. The SC juvenile court consented to participate in the project as part of the research evaluation. In so doing, the evaluator requested a court order from the district judge and was allowed access to juvenile court files. A copy of the JDC selection criteria was forwarded to the SC staff and described to them. Court services officers then selected juveniles for inclusion in the comparison group who met JDC eligibility criteria. These juveniles were tracked for one year. Because the EC District Drug Court was initially voluntary, a number of juveniles opted not to participate in the program who met JDC eligibility criteria. These juveniles were included as part of the comparison group with the SC district juveniles. A total of 28 juveniles were then tracked as part of the comparison group in both judicial districts.

Records were tracked while participants and non-participants were both minors and adults. During the course of the study, some juveniles turned 18. The respective state's attorney's offices facilitated tracking information on those who turned 18 during the course of the study. Thus, we have both juvenile and adult records on subjects.

Characteristics of JDC participants

This outcome evaluation is restricted to examining cases processed in juvenile drug court from May 1, 2000 to May 1, 2001. Recidivism data will be reported *only* for juveniles whose first appearance in drug court preceded March 1, 2001. However, summary characteristics will be reported for all juveniles who appeared in juvenile drug court. Table 1 below shows that 32 juveniles met the criteria for inclusion in the recidivism analysis. An additional 10 juveniles were admitted to JDC following March 1, 2001.

Table 1. Number of Juvenile Drug Court Participants.

	Number
Juveniles appearing in Juvenile Drug Court – May 1, 2000 – May 1, 2001	42
Juveniles appearing in Juvenile Drug Court who entered prior to February 29, 2001 – Recidivism Analysis Group	32

Table 2 displays current information on the 42 participants in the program. Of the 42 participants, 11 graduated from the program, 21 are current participants, and 10 had their drug court status revoked due to non-compliance with the program or were charged with a new offense. This amounts to a retention rate of 74%. Nationally, the retention rate for drug courts reporting more than 20 participants in the program is 67% (N = 56). Consequently, the retention rate in the North Dakota drug court program is slightly higher than the national mean.

Table 2. Status of Juvenile Drug Court Participants as of May 1, 2001.

	Number	Percentage
Total Enrollment	42	
Current Participants	20	48%
Graduates	11	26%
Revoked	11	26%

Table 3 displays information on the 42 JDC participants in North Dakota and shows how these characteristics compare with the most recent Juvenile Drug Court Activity Update from the OJP Drug Court Clearinghouse and Technical Assistance Project (American University, 2000).¹ Regarding gender, twenty-nine or 69% of North

Dakota's participants were male and 13 or 31% were female. Nationally, juvenile drug courts report a higher percent participation rate among males at 83%.

Table 3. Characteristics of Juvenile Drug Court Participants, North Dakota and Nationally.

Characteristic	North Dakota Drug Court Participants Number / %	National Drug Court Participants Number / %
Gender		
Male	29 / 69%	6,225 / 83%
Female	13 / 31%	1,275 / 17%
Racial/Ethnic Background		
Caucasian	27 / 66%	3,675 / 49%
American Indian	9 / 22%	75 / 1%
Hispanic	4 / 10%	1,725 / 23%
African American	0 / 0	1,800 / 24%
Asian	1 / 2%	75 / 1%
Other	0 / 0	165 / 2%
Age at time of JDC		
10-11	0 / 0	150 / 2%
12-13	0 / 0	225 / 3%
14-15	10 / 25%	2,850 / 38%
16-17	29 / 72%	4,275 / 57%
18	1 / 3%	0 / 0
Family Status at Time of Program Entry		
Living w/ both parents	18 / 46%	1,950 / 26%
Living w/ one parent	16 / 51%	4,725 / 63%
Other arrangement	1 / 3%	825 / 11%
Parental Status		
Participants w/ children	2 / 5%	487 / 6%
Participants w/ no children	40 / 95%	7,013 / 94%
Drug of Choice		
Alcohol	22 / 55%	NA
Marijuana	18 / 45%	NA
Educational Status at Program Entry		
Enrolled in school	36 / 95%	5,850 / 78%
Mainstream	25 / 66%	3,525 / 47%
Alternative	10 / 26%	2,325 / 31%
Home schooled	1 / 3%	Not reported
Not enrolled in school	2 / 5%	1,425 / 19%

Note: Some numbers may not add up to N = 42 for ND Juvenile Drug Court Participants due to missing values.

Racial/ethnic background records show that roughly two-thirds of North Dakota's participants were Caucasian and almost one-third qualified as ethnic minorities. Despite the high percentage of ethnic minorities, this rate is still 17% lower than the ethnic minority participation rate nationally. In addition, the ethnic minority composition rates differ for the two groups. The largest ethnic minority participation rate in North Dakota is among American Indians while the highest rate nationally is among Hispanics and African Americans.

At the time of entry into drug court, almost all of the North Dakota participants were between the ages of 14-17. This is somewhat consistent with the national pattern, although it appears that nationally, juveniles are entering drug court in larger numbers at younger ages than North Dakota youth.

Regarding family status at time of entry, almost half of the North Dakota participants were residing in a two-parent family. Nationally, one-fourth of participants were residing in a two-parent family. Consequently, North Dakota participants were much more likely than participants nationally to reside in a two-parent family. Several participants in North Dakota were also parents of a child. The five percent parenting rate is comparable to the rate reported nationally.

The drug of choice as identified by treatment history was alcohol for 55% of participants and marijuana for 45% of participants. While similar data was not available for comparisons nationally, we can surmise based on the drug court workshops and visit to the mentor court that North Dakota drug court participants were less likely than national drug court participants to have problems with more illicit substances (e.g., cocaine, methamphetamine).

Finally, 95% of North Dakota participants were enrolled in school at the time of program entry. This compares to a national figure of 78%. Among school enrollees, a slightly higher percentage of JDC participants nationally were enrolled in an alternative school than North Dakota participants (31% vs. 26%).

Table 4 displays referral court history information for participants. For the 39 participants for whom court histories were available, the average age at which participants were first referred to juvenile court was 13.7 years. This number ranged from a low of 9 to a high of 16. Drug court participants averaged 5.7 referrals per child so on average participants were referred roughly 1 ½ times per year from the time of their first juvenile court contact. Referrals ranged from a low of 1 to a high of 15. On the whole, it appears that North Dakota's Drug Court participants have deeper court histories than participants nationally. The American University report showed that 61% of participants nationally had two or fewer contacts with the justice system compared with only 7% of North Dakota's participants.

Table 4. Court History Information – Referrals.

Average Age at First Referral	Age Range for First Referral	Average Number of Referrals/Child	Range for Referrals
13.7	9.0 – 16.4	5.7	1 - 15

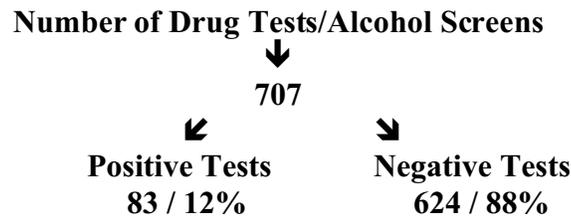
Table 5 shows the type of charges based on these referrals. By far, the most common charge appearing in the participant’s court history was a substance use related charge. Breaking down the substance use charges further shows that for every controlled substance violation charge, there were two minor in possession-consumption charges in participant’s court histories. Unruly referrals comprised the next most common category. These charges included mainly curfew violations and truancy. One should note that there were some crimes against person referrals among JDC participants. All of these incidents were charged out as misdemeanors so they were not in violation of the violent conduct guidelines established by the Office of Justice Programs.

Table 5. Court History Information - Charges.

Nature of Charge	# of Total Charges	% of all Charges
Substance Use Related (e.g., MIP-MIC, Controlled Substance Possession)	133	43.3
Unruly (e.g., Curfew, Truancy)	90	29.3
Property Crime (e.g., Theft, Criminal Mischief)	55	17.9
Violent Crime (Misdemeanor) (e.g., simple assault)	15	4.9
Traffic (e.g., Driving w/o a license)	8	2.6
Other (e.g., hindering)	6	1.9

Drug testing information is shown in Figure 1. Drug court participants had regularly ordered and randomly administered drug tests and alcohol screens in compliance with federal recommendations. These tests were administered by a tracker from one of the social service agencies. In addition, participants had baseline tests performed by their treatment provider and sent to a laboratory for analysis. After one year, there were 707 drug tests administered to participants. Of these, 624 were negative (88%) and 83 were positive (12%). It should be noted that a positive drug test is not necessarily an indicator of further use but may instead reflect the continuing presence of marijuana traces in the juveniles for up to one month. A few comparison sites were available in the journal of the National Drug Court Institute Review. Sites in Fairfield County, Ohio and Las Cruces, New Mexico reported 22% and 34% positive drug tests, respectively. Consequently, participants in the North Dakota Drug Court appear to be recording a higher level of negative drug tests than youth in other courts.

Figure 1. Drug Test/Alcohol Screen Information.



Recidivism Analysis

Court Simultaneous Recidivism Comparison

The most common outcome measure in juvenile court program evaluation is typically recidivism. While there are a variety of recidivism measures employed, for purposes of this study recidivism is defined as a subsequent arrest following admission to drug court classified as a Class B Misdemeanor or higher. Thus, infractions and noncriminal violations are discounted in the recidivism analysis.

For the comparison group (SC and EC districts), we employed the same recidivism measure. Since juveniles in the comparison group were not part of a drug court program, their recidivism time clock began following their last juvenile court referral and ended one year following that referral. For instance, a juvenile referred on April 19, 2000 was monitored from that date until April 19, 2001. Any referral classified as a Class B Misdemeanor or higher during that time period counted as a referral.

Table 6 shows the bi-variate contingency analysis in which group membership is treated as the factor (predictor) and recidivism is treated as the outcome measure. For JDC participants, 5 out of 32 or roughly 16% of juveniles admitted to drug court recidivated. For the comparison group, 16 out of 28, or 57% were referred to juvenile

court on additional charges following their inception date into the study. The accompanying statistics in the table show a chi-square value of 11.7 with a probability level of .001. This means that the probability that group membership and recidivism are not associated is roughly 1 out of 1,000 with a study of this magnitude. This probability represents the degree to which the measured association in the table is a result of error or bias. In this case, the chances of this association resulting from error is 1 out of 1,000. Thus, we are confident that the bi-variate association observed represents a genuine association. Being part of juvenile drug court reduces the probability of recidivism over and above traditional probation and treatment.

Recidivism rates reported by other juvenile drug courts over a comparable period of time demonstrate slightly higher rates than that recorded in the North Dakota Drug Court. The Fairfield, Ohio site reported that 21% of their drug court participants were reconvicted on new charges during the first year of operation. A site in Ogden, Utah reported a recidivism rate of 30% after one year of tracking. Consequently, these rates were slightly higher than the rate recorded in North Dakota.

Table 6. Recidivism Rate for Drug Court Participants and Comparison Group.

Group	Number	Number Recidivating	Percent Recidivating	Chi-Square	Probability
Juvenile Drug Court Group	32	5	15.6	11.7	.001
Comparison Group	28	16	57.1		

The bi-variate analysis cannot tell us whether the measured association is due to other uncontrolled factors. Consequently, it is important to examine this association while controlling for any differences between the two groups that could affect the recidivism outcome. For instance, it could be that the lower recidivism rate for the drug court group is due to a higher percentage of females in that group. Other factors that could be contributing to the differences include age, age at first referral, number of prior referrals, ethnic background, and family living status.

Because our recidivism measure is a binary (two categories) variable, logistic regression procedure was employed. Logistic regression is a multi-variate procedure that enables us to predict the log odds of an outcome on the basis of predictive factors. In this case, whether juveniles would reappear or not in juvenile court on subsequent charges. Here, our principle question is: does group membership (JDC vs. comparison group) contribute to the log odds of recidivism over and above other characteristics of offenders (e.g., gender, number of priors)?

To facilitate this analysis, variables were entered into the equation in three steps. First, the juvenile’s demographic background was entered (See Step 1 in Table 7). Here, we entered gender, racial/ethnic status, family status, and age. Of these variables, the only variable that significantly predicted recidivism was gender. Specifically, males had

a higher rate of recidivism than females. In step 2, characteristics about the juvenile's court history were entered. To assess whether adding the juvenile's court history predicted recidivism over and above the characteristics entered in step 1, we use the difference in the $-2 \log$ likelihood ratio from step 1 to step 2. This difference is $L_1 = 54.4 - L_2 = 51.8 = 2.6$ with 3 degrees of freedom. The critical value for rejection of the hypothesis that there are no differences between the groups is 7.81. Consequently, because our value is smaller than the critical value, we must accept the null hypothesis and conclude that adding the court history information does not contribute significantly to our recidivism prediction. At step 3, we add the group variable (drug court vs. comparison). The $-2 \log$ likelihood ratio here is 40.5 with 9 degrees of freedom. Subtracting this likelihood ratio value from model 1 gives us $L_1 = 54.4 - 40.5 = 13.9$ with 4 degrees of freedom. The critical value for rejection of the null hypothesis is 9.49. Because our value is larger than the critical value, we reject the hypothesis of no difference and conclude that adding the group variable improves significantly upon our recidivism prediction over and above *gender* (the significant factor in step 1). The difference between the $-2 \log$ likelihood ratio between step 3 and step 2 is also significant ($L_2 = 51.8 - 40.5 = 11.3$ with 1 degree of freedom. Here the critical value is 3.84. Thus, we reject the null hypothesis and conclude that knowing which group a juvenile is in significantly contributes to predicting recidivism over and above court history.

Table 7. Logistic Regression of Recidivism on Various Predictors.

Step	-2 Log Likelihood Ratio / df	Coefficient	Standard Error
1. Gender	54.4 / 5	-1.96 *	.87
Racial /Ethnic Status		-.732	.81
Family Status		1.86	.66
Age at start of study		-.414	.354
2. Gender	51.8 / 8	-2.14 *	.992
Racial/Ethnic Status		-.633	.850
Family Status		.237	.697
Age at start of study		-.984	1.71
Age at 1 st Referral		.296	.294
Number of Referrals		.121	.166
3. Gender	40.5 / 9	-3.51 *	1.44
Racial/Ethnic Status		-.205	1.09
Family Status		.688	.902
Age at start of study		-1.75	1.03
Age at 1 st Referral		.616	.364
Number of Referrals		.386	.219
Group Membership		2.98 **	1.10

* probability < .05

** probability < .01

A closer look at step 3 shows that being in the *comparison group* significantly elevates a juvenile's odds of recidivating over and above being in the juvenile drug court group. This is given by the positive coefficient with the comparison group coded 1 and the drug court group functioning as the reference category. Another way of examining this effect is to look at the proportional difference in recidivism between the groups. This is done by taking the coefficient (2.985) and multiplying it by the outcome variable's (recidivism) variance (.2314). This yields a figure of .691. This means that not being in the juvenile drug court group increases the chances of recidivating by 69% relative to being in the juvenile drug court group. Thus, we can conclude that holding all else constant, being in drug court suppresses the recidivism rate by roughly 69% over standard treatment and probation.

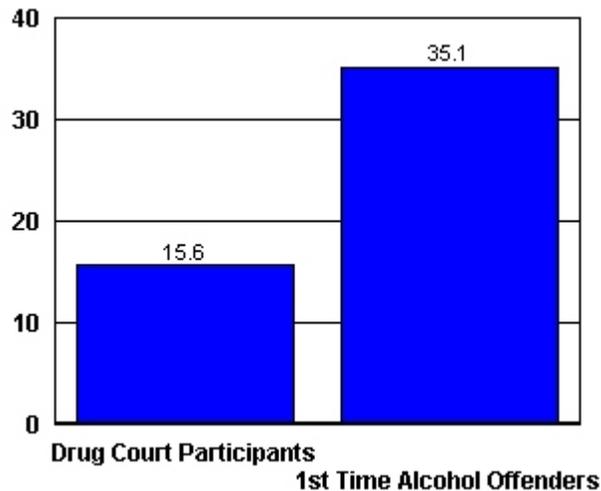
A related question is whether being in drug court delays offending for those who reappear over and above the comparison group rate. An analysis of the number of days from referral to subsequent reappearance yielded little difference between the two groups. The average amount of time from referral to reappearance for drug court participants was 230 days or roughly 7 ½ months. For the comparison group, the average amount of time from referral to reappearance was 243 days. So on average, while the comparison group had a higher probability of recidivating than drug court participants, the former group took slightly longer to recidivate than drug court participants.

Historical Comparison Group

A second comparison group was available based on a previous juvenile court recidivism study conducted in 1999. This data set constitutes a compilation of all juvenile referrals in North Dakota from 1995-97. As a result, we can estimate the recidivism rate for substance use violators in the state during that time period and compare it to the recidivism rate for the drug court group.

Figure 2 shows the recidivism rate for juveniles in North Dakota whose first referral was for an alcohol-related offense during 1995-97 and contrasts that rate with the 16% recidivism rate recorded for the drug court group. Among the 16,299 juveniles referred to juvenile court during that period, 2,016 first referrals were for an alcohol related offense. Of these, 708 juveniles subsequently reappeared in juvenile court for a recidivism rate of 35%. Consequently, the recidivism rate for juvenile drug court participants was 19% lower than the rate recorded by 1st time alcohol violators. To determine whether these rates depart significantly from chance, z-scores were calculated for the test between two proportions.² A two-tailed test using the 95% confidence interval was chosen. The observed difference of 19% between the two groups yields a z-score of 2.29 which is outside the two-tailed rejection region of 1.96. Consequently, we can conclude that the rate of recidivism for drug court participants differs significantly from the rate recorded for 1st time alcohol violators in North Dakota.

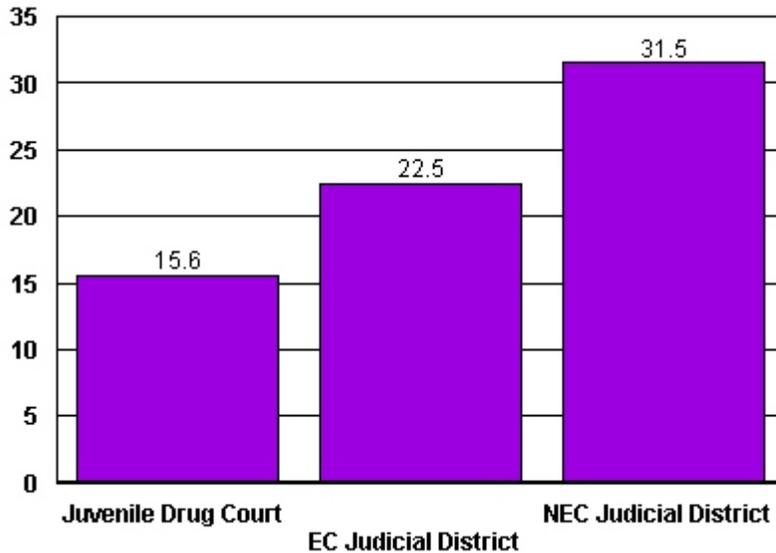
Figure 2. Recidivism Rates for Juvenile Drug Court Participants and 1st Referral



Alcohol Violators (1995-97).

Figure 3 compares the recidivism rates for juveniles whose first referral from 1995-97 was for an alcohol-related offense from the *EC and NEC Judicial Districts* and compares that to the drug court recidivism rate. For the EC Judicial District, there were 591 juveniles whose first juvenile court referral was for an alcohol-related offense. Of these, 133 or 22% of them reappeared in juvenile court on subsequent charges. For the NEC Judicial District, there were 355 first referral alcohol offenders. Of these, 112 or 31% reappeared on additional charges. This makes the drug court recidivism rate 6.5% lower than the rate recorded in the EC Judicial District and 15.5% lower than the rate recorded by the NEC Judicial District. We again assessed whether these differences departed from chance using z-scores. The difference involving drug court participants and the EC Judicial District yielded a z-score of .916 which was not significant at the .05 level. This means that the 6.5% difference in recidivism could have been due to chance. The z-score involving the comparison between drug court participants and the NEC Judicial District was 1.87 which was not significant at the .05 level but was significant at a more relaxed alpha level of $p < .10$. Thus, we can conclude that the difference between the 15.6% and 31.5% recidivism rate was likely due to chance using the 95% confidence interval but was significant at the 90% confidence interval.

Figure 3. Recidivism Rates for Juvenile Drug Court Participants and 1st Referral Alcohol Violators, EC Judicial District and NEC Judicial District (1995-97)



Another comparison facilitated by previous juvenile court data is whether there are differences in recidivism rates between JDC participants and juveniles whose first referral was for a controlled substance violation. Here we compare the 16% recidivism rate of drug court participants with the statewide recidivism rate for juveniles whose first juvenile court referral was for either possession of a controlled substance or possession of drug paraphernalia. There were a total of 341 juveniles who met this criteria during the 3-year period. Figure 4 shows that almost half of these juveniles reappeared on subsequent charges. This makes the drug court recidivism rate roughly 33% lower than the rate for 1st offense controlled substance violators. The difference between these proportions yields a z-score of 3.50. A z-score in this range is significant at the $p < .001$ level. This means that there is less than a 1 in 1,000 probability that the 33% difference between the groups is due to chance.

Figure 4. Recidivism Rates for Juvenile Drug Court Participants and 1st Referral Controlled Substance Violators (1995-97).

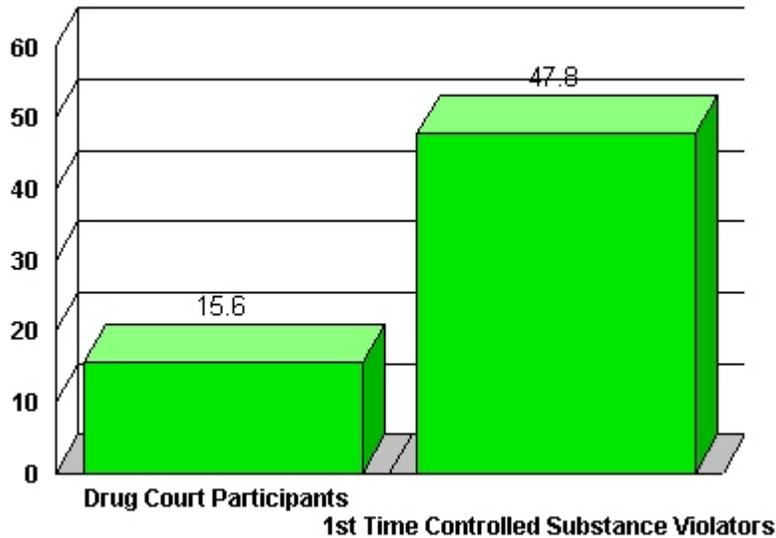
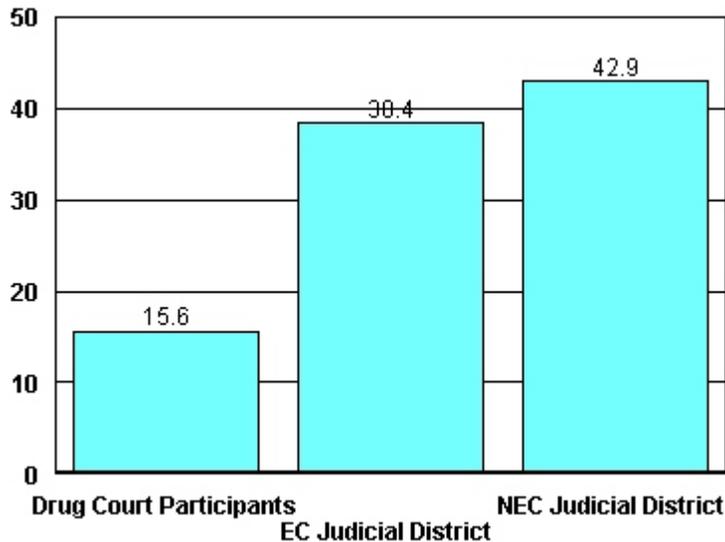


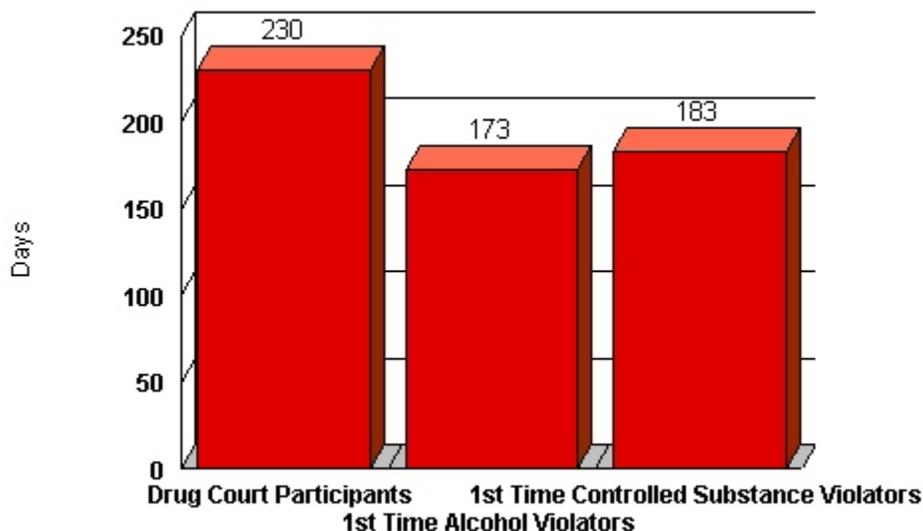
Figure 5 displays the recidivism rates for 1st time controlled substance violators in the *EC and NEC Judicial Districts* and compares this to the drug court rate. For the *EC Judicial District*, there were 112 juveniles whose first appearance in juvenile court was on a controlled substance charge during the period from 1995-97. Of these, 43 or 38% of them reappeared on subsequent charges. For the *NEC Judicial District*, there were 35 juveniles whose first referral was for a controlled substance violation. Of these, 15 of them reappeared for a recidivism rate of 43%. Consequently, recidivism rates are markedly lower among juvenile drug court participants than the rates recorded in these drug court districts prior to the inception of drug court. Z-scores were again calculated to assess whether these proportional differences departed from chance. For the drug court – *EC Judicial District* comparison, the z-score was 2.41 which was significant at the $p < .05$ level. The z-score for the drug court – *NEC Judicial District* comparison was 2.43 which was also significant at the $p < .05$ level. This means that the probability that a difference of this size was due to chance was less than 5 in 100.

Figure 5. Recidivism Rates for Juvenile Drug Court Participants and 1st Referral Controlled Substance Violators from the EC and NEC Judicial Districts, 1995-97.



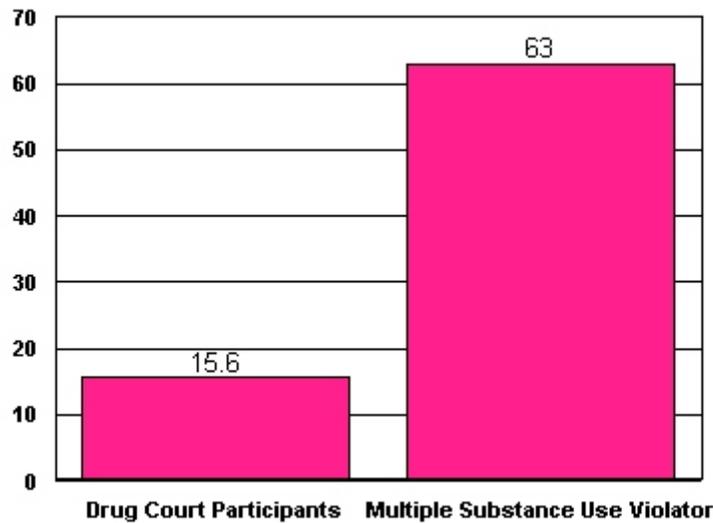
Because the time frame in this analysis was two years longer for the comparison group than for the drug court group, it is important to examine the time from referral to reappearance. For instance, it is possible that the higher reappearance rate among juveniles referred during 1995-97 was attributable to the longer tracking period for them. Consequently, Figure 6 shows the average length of time (in days) from referral to reappearance for drug court participants and compares that rate to the statewide rate for 1st referral alcohol and controlled substance violators. For drug court participants, the average from referral to reappearance was 230 days, or roughly 7 ½ months. For 1st time alcohol and controlled substance violators in the state, the average amount of time from referral to reappearance was 173 days for alcohol violators and 183 days for controlled substance violators. This translates to a recidivism time frame of 5.7 months for alcohol violators and a little more than 6 months for controlled substance violators. Consequently, not only are drug court participants less likely to recidivate than these groups, but the time from referral to reappearance was longer as well.

Figure 6. Average number of days from referral to reappearance for Drug Court Participants and 1st Referral Alcohol and Controlled Substance Violators.



Because 1st time offenders may differ in important ways from *substance abusers*, it is important to assess recidivism differences using a more conservative strategy. Regrettably, we do not know which juveniles referred to court from 1995-97 would have been eligible for drug court. We can however, derive comparisons using juveniles whose court histories resembled those of drug court participants. To that end, we examined the court histories of juveniles who recorded at least *three* substance use referrals and averaged *six* referrals. This court history pattern statistically resembles our drug court group which averaged 3.1 substance use referrals and 5.7 total referrals. The question we are addressing in this analysis is this: are there recidivism differences between drug court participants and juveniles whose court history resembles drug court participants? In many ways, the comparison juveniles mirror the drug court participants. They seem to have had problems controlling use of an illegal substance and many of them had 4-8 referrals. It was not uncommon to find 4-6 substance use referrals as well among this group. According to the data, there were 146 juveniles who met this criteria over the 3-year period. Of these juveniles, 92 were subsequently referred following their *third* substance use referral, for a recidivism rate of 63.0%. The z-score for this difference was 4.87 which was significant at the $p < .001$ level. This means that there is less than a 1 in 1,000 probability that the 47% difference is due to chance.

Figure 7. Recidivism Rate for Drug Court Participants and Juveniles who had at least Three Substance Use Related Referrals (1995-97).



An examination of the number of days from their second substance use referral to their next referral showed that on average, it took the comparison juveniles 77 days to subsequently reappear in juvenile court on new charges. Compared to the drug court rate of 230 days, we can surmise that it takes drug court participants 153 more days or roughly 5 more months to recidivate than multiple substance use violators in North Dakota. Consequently, the recidivism time window is much shorter for the comparison group than drug court participants.

Drug Court Completers vs. Non-Completers

As of May 1, 2001, there were 11 drug court participants who completed (graduated) the program and 11 who did not complete the program. The latter had their drug court status revoked for non-compliance with program objectives. An examination of the differences between these two groups is important because it could shed some light on how or why drug court might be effective for some youth and not others.

Table 8 displays the relevant data for each of these groups. Because the numbers are small, small differences between the groups will appear as larger percentage differences. The data show that there are only a few noteworthy differences between the

groups. First, drug court non-completers are slightly more likely to have marijuana as a drug of choice than completers. Second, drug court non-completers tend to start their delinquent careers earlier than graduates. Third, partly because they initiate their delinquent careers earlier, non-completers have a larger number of prior referrals. They average about 1 ½ more referrals than graduates. Finally, the time between referrals is shorter for non-completers by roughly 23 days or slightly less than one month. While these differences are not large, they tend to signal some patterns of success/failure that the drug court screening team might wish to use in selecting drug court participants in the future.

Table 8. Differences between Drug Court Completers and Non-Completers.

	Completers (Graduates) (N =11) N / %	Non-Completers (N = 11) N / %
Gender		
Males	6 / 54%	8 / 73%
Females	5 / 45%	3 / 27%
Racial/Ethnic Status		
White	7 / 64%	6 / 54%
Ethnic Minority	4 / 36%	5 / 46%
Family Status		
Living w/ 1 parent	5 / 45%	6 / 55%
Living w/ 2 parents	6 / 55%	4 / 36%
Other	0	1 / 9%
School Status		
In-school	10 / 91%	10 / 91%
Not in school	1 / 9%	1 / 9%
Type of School attending		
Mainstream	8 / 73%	7 / 64%
Alternative	2 / 18%	2 / 18%
Other	0	1 / 9%
None	1 / 9%	1 / 9%
Drug of Choice		
Alcohol	8 / 73%	6 / 54%
Marijuana	3 / 27%	5 / 45%
Average age at first referral	14.6	13.7
Average number of prior referrals (including drug court charges)	4.8	6.3
Average number of days between prior referrals	210	189

Conclusions

The data show that juvenile drug court is relatively effective in reducing the probability of recidivism over and above standard treatment and probation. For virtually all comparisons, drug court participants recorded a significantly lower recidivism rate than juveniles not enrolled in drug court. When recidivating, the length of time between referral and recidivism is longer as well for drug court participants relative to non-drug court juveniles. Consequently, drug court prevents further offenses from occurring and delays offending for those who recidivate.

Several limitations of this outcome evaluation deserve remarks. First, the small N's for the drug court (N = 32) and court simultaneous comparison groups (N = 28) temper more forceful conclusions. Second, the historical comparison group of juveniles may not all meet our criteria of substance abuse, facilitating somewhat of an apples and oranges comparison. To address this limitation, we examined only those cases in which a juvenile's court history appeared to match those of JDC participants. To meet this criteria a juvenile must have had at least 3 prior referrals on substance use-related charges and had at least 4 total referrals. It can be surmised that these juveniles would likely satisfy a substance abuse diagnosis. Nevertheless, without further assessment information, it is difficult to surmise whether these juveniles would indicate a drug and/or alcohol abuse problem.

Compared with drug court's nationally, North Dakota's drug court participants are both similar and different in important ways. First, we have a slightly lower rate of ethnic minority participants than drug courts in other jurisdictions. Among ethnic minority participants in North Dakota, the majority are American Indians compared with Hispanic and African American youth nationally. Secondly, juvenile drug court participants nationally appear to be abusing harder substances than juveniles in North Dakota. In some jurisdictions outside of North Dakota, the drug of choice is marijuana and it is not uncommon to see high rates of cocaine, heroin, and methamphetamine abuse. Among North Dakota participants, we are seeing only small levels of illicit substance abuse outside of marijuana. This could account for the greater degree of positive drug tests in other jurisdictions. Third, the recidivism rate among North Dakota drug court participants appears to be somewhat lower than rates reported in other jurisdictions. Whether this is a function of differences in the characteristics of drug court participants is not clear. We also do not know whether this pattern is unique to the programs and services afforded juveniles in drug court as opposed to other programs. For instance, it could be that the recidivism rate among North Dakota juveniles is lower than the national norm, regardless of the nature of the program or services afforded juveniles. In any event, we can report that drug court participants appear to be cleaner, more sober, and more offense free than youth participating in drug court programs nationally.

Recommendations

1. On the basis of these findings, it is recommended that the juvenile drug court be continued in the EC and NEC Judicial Districts.
2. It may be worth exploring the possible expansion of drug courts to other jurisdictions, particularly those that serve rural areas.
3. Because we know little about post-drug court behavior, it is recommended that drug court participants be followed for at least 6 months following their graduation from drug court.
4. If the number of drug court participants increase in the next year, it is recommended that sub-group analyses be conducted to determine the characteristics of drug court participants that influence recidivism (e.g., gender, ethnic status).

Notes

1. Office of Justice Programs Drug Court Clearinghouse and Technical Assistance Project, American University, Washington, DC (2000).
2. The formula for the difference between two proportions can be found in Le (1998), *Applied Categorical Data Analysis*. New York: John Wiley & Sons.