St. Mary's County Juvenile Drug Court Outcome and Cost Evaluation

Submitted to:

Gray Barton
Executive Director
Office of Problem-Solving Courts
2011-D Commerce Park Drive
Annapolis, MD 21401

Submitted by:

NPC Research
Portland, Oregon

January 2010

4380 SW Macadam Ave., Suite 530
Portland, OR 97239
(503) 243-2436
www.npcresearch.com

St. Mary's County Juvenile Drug Court Outcome and Cost Evaluation

Management Team

Juliette R. Mackin, Ph.D., Principal Investigator

Lisa M. Lucas, B.A., & Callie H. Lambarth, M.S.W., Outcome Study Coordinators

Mark S. Waller, B.A., & Theresa Herrera Allen, Ph.D., Cost Analysts

Shannon M. Carey, Ph.D., & Michael W. Finigan, Ph.D.,

Consultants on Drug Court Research

For questions about this report or project, please contact Juliette Mackin at (503) 243-2436 x 114 or mackin@npcresearch.com.

January 2010

NPC RESEARCH

Informing policy, improving programs

ACKNOWLEDGEMENTS

This report is made possible by the good work, support, and participation of many people and organizations, including:

- Frank Broccolina, Maryland State Court Administrator
- Gray Barton, Executive Director, and Jennifer Moore, Deputy Director, Maryland Office of Problem Solving Courts
- Hon. Jamey H. Hueston, Chair of the Judicial Conference Committee on Problem Solving Courts, for sharing with us her experiences and historical perspective as a drug court judge in Baltimore City
- Hon. Kathleen G. Cox, Chair of the Drug Court Oversight Committee
- Hon. Karen H. Abrams**,** County Administrative Judge, St. Mary's County Circuit Court
- Hon. Michael Stamm, presiding Judge for St. Mary's County Juvenile Drug Court
- Pete Cucinotta, St. Mary's County Juvenile Drug Court Coordinator, and the staff at the St. Mary's County Juvenile Drug Court
- Joseph Stanalonis, Senior Assistant States Attorney, St. Mary's County Office of State's Attorney
- Elizabeth White, Public School Liaison., St. Mary's County Public Schools
- Dan Schaidt, St. Mary's County Supervisor, Maryland Dept. of Juvenile Services
- Bill Stevens, Case Manager, Maryland Department of Juvenile Services
- Veronica Gonzalez, Addictions Counselor and Lisa Jones, Walden-Sierra, Inc.
- Rob Prince, Outpatient Addictions Supervisor, Walden-Sierra, Inc.
- Emory Johnson, Senior Deputy Sheriff, Captain Deborah Diedrich and Amber Mick, St. Mary's County Detention Center, St. Mary's County Sheriff's Office
- Rob Martin, Administrative Assistant, Maryland Department of Juvenile Services
- Maryland Department of Juvenile Services: Donald W. DeVore, Secretary, Mary Abraham, Staff, State Advisory Board for Juvenile Services, John Irvine, Director, Office of Strategic Analysis, Lakshmi Iyengar, Acting Director, Research & Evaluation, Falguni Patel, DP Programmer Lead Analyst, Research & Evaluation, Sydney White, Director of Preventive Programs, Michael A. DiBattista, Chief Financial Officer, Budget & Finance
- John Colmers, Secretary, Maryland Department of Health and Mental Hygiene; Kathleen Rebbert-Franklin, LCSW-C, Deputy Director, Maryland Alcohol and Drug Abuse Administration; Gay Hutchen, IRB Administrator, Maryland Department of Health and Mental Hygiene
- Thomas Cargiulo, Administration Director, Mr. Chad Basham, Database Administrator, and Dr. Bill Rusinko, Research Director, Maryland Alcohol and Drug Abuse Administration

- Robert Gibson, Director, Planning and Statistics; Tom Stough, Chief of Statistics; Ravi Bhayankar, DP Program Manager, Boyce Williams, Analyst, Department of Public Safety & Correctional Services
- Mary Hutchins, Security Administrator/Project Analyst; Administrative Office of the Courts/JIS
- Rita Butler, Janet Bridger and Kathleen Lester, Institute for Governmental Service and Research, University of Maryland
- Jennifer Aborn, Jeremiah Raining Bird, Bob Linhares, Judy Weller, Tiana Jacobson, and Charley Korns, NPC Research Staff

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

EXECUTIVE SUMMARY

What Are Drug Courts?

Juvenile drug courts are intensive interventions that involve coordination of multiple agencies and professional practitioners applying a variety of areas of expertise, intensive case management and supervision, and frequent judicial reviews. The purpose of drug courts is to guide offenders, identified as abusing substances, into treatment that will reduce drug use and criminality, and consequently improving the quality of life for participants and their families. In the typical drug court program, participants are closely supervised by a judge who is supported by a team of agency representatives that operate outside of their traditional, sometimes adversarial roles. Benefits to society take the form of reductions in crime committed by drug court participants, resulting in reduced costs to taxpayers and increased public safety.

How Was This Study Conducted?

NPC Research, under contract with the Administrative Office of the Courts of the State of Maryland, conducted an outcome and cost study of the St. Mary's County Juvenile Drug Court (JDC) program.

St. Mary's County Juvenile Drug Court Program Description

St. Mary's County Juvenile Drug Court (JDC) was formed in 2003 in response to the increase in youth abuse of alcohol, marijuana, and cocaine and juvenile arrests involving drug charges. The program admitted its first participant in February 2004 and since that time has served over 100 participants.

The JDC program has four phases that can be completed by participants in a period as short as 12 months. For the 80 drug court participants included in this study who had since exited the program, either successfully or unsuccessfully, the average number of days in the program was 341 (approximately 11 months). Graduates spent an average of 358 days in the program (almost 12 months), whereas non-graduates spent an average of 310 days in the program (approximately 10 months).

Throughout the program, participants attend drug court hearings evaluating their progress, supervision meetings with a case manager, and group and individual counseling sessions. Their family members are also included in the program and offered services as needed. The program requires that the youth submit to drug testing, attend school or another educational or occupational activity, and complete a community project. The JDC uses incentives and sanctions to encourage positive behaviors. Youth must have been abstinent for a minimum of 120 consecutive days and complete all program requirements, including restitution, to graduate; at which time the youth is eligible to expunge the case from his/her court records.

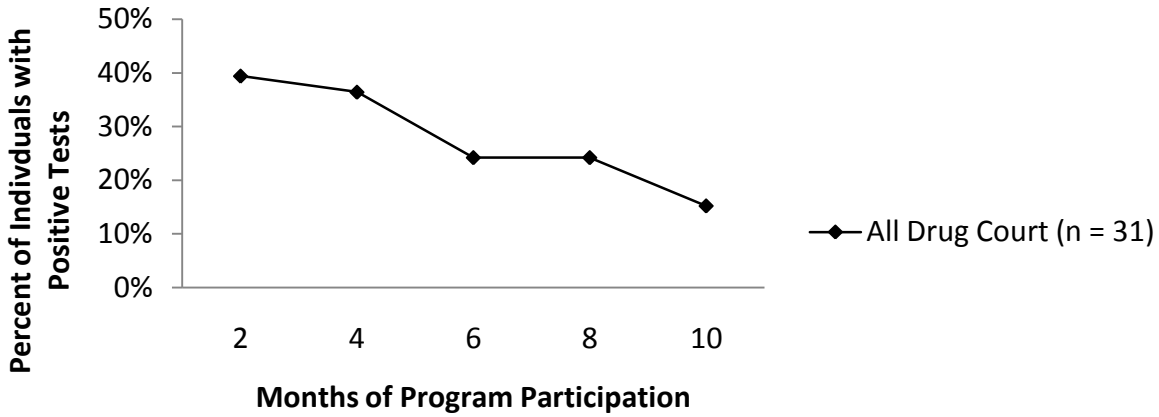
Three key policy questions of interest to program practitioners, researchers, and policymakers about drug courts were addressed in this study.

1. Does the JDC Reduce Substance Abuse Among Program Participants?

YES: JDC participants showed reductions in drug use following entrance into the program.

Figure A shows the proportions of program participants with a positive urine analysis (UA) test in each 2-month period, for individuals receiving 10 months or more of program services. The rate of substance use among program participants declined over time, demonstrating that involvement in the JDC reduced substance use.

Figure A. Percent of JDC Participants with a Positive UA Test Over Time



2. Does the JDC Program Reduce Recidivism in the Juvenile Justice System?

YES: JDC participants had a decreased re-arrest rate from 75% at pre-JDC to 52% post-JDC admission.

This difference is statistically significant. In addition, this recidivism rate is better than the recidivism rates for youth released from committed care facilities (51% of whom re-offend within the first year after release).

Figure B shows the recidivism rate (the percentage of youth re-arrested) using a 24-month pre-post comparison. The pre time period includes the 2 years leading up to the eligible arrest, which is compared to the post time period that begins at program start date or equivalent for the comparison group. There was a significant decrease in the recidivism rate among JDC participants and gradates from pre to post.

Although there is a significantly lower re-arrest rate among program graduates compared to the comparison group, when all program participants are included the difference is not statistically significant, probably due to the small numbers of youth available for this study.

Figure B. Juvenile Arrest Rates 2 Years Before and 2 Years After Program Start

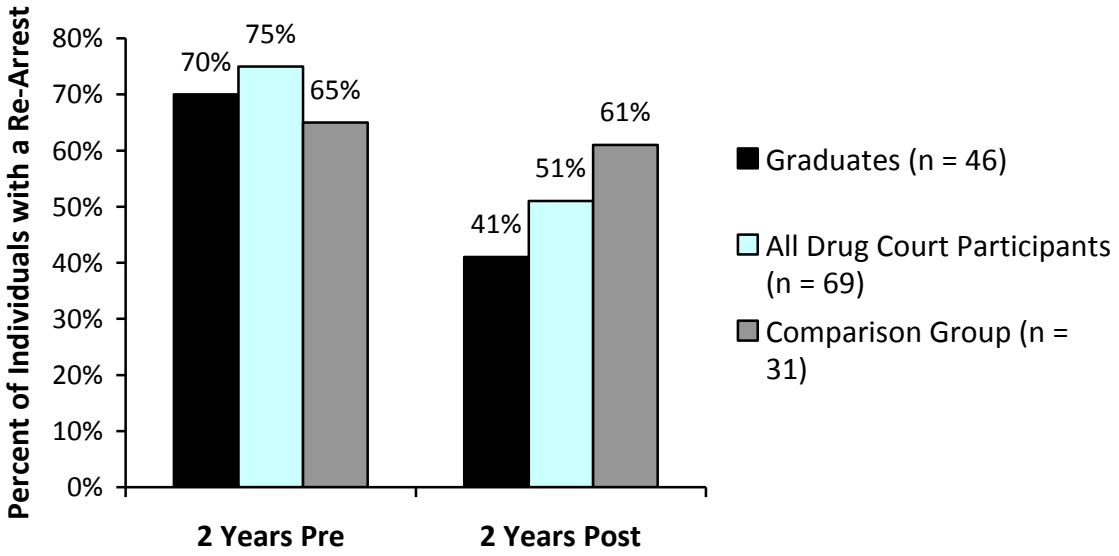
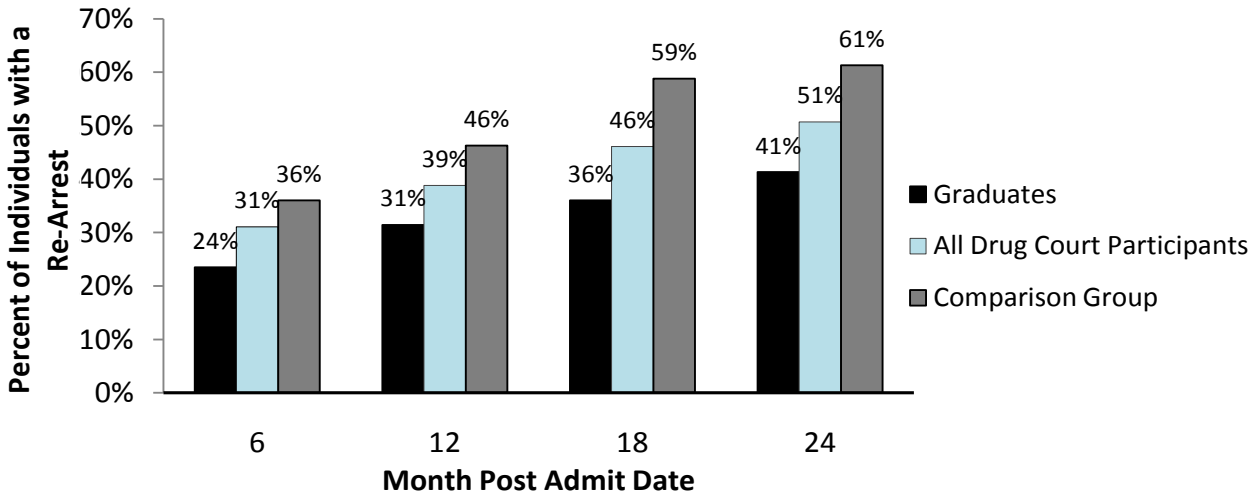


Figure C shows the percentage of youth re-arrested, grouped by their amount of available follow-up time, for the program graduates, all JDC participants and a matched comparison group of juvenile offenders who were eligible for the program but did not participate. St. Mary's County Juvenile Drug Court participants were less likely to be re-arrested than the comparison group youth (though not significantly). However, the pattern creates a promising impression and may be an indication of reduced recidivism that was unable to be detected statistically due to the small amount of follow-up time for the study and the limited number of youth in each group.

Figure C. Juvenile Re-Arrest Rate Over Time[1]



[1] Sample sizes: Graduates with 6 months n = 51, 12 months n = 51, 18 months n = 50, and 24 months n = 46; All JDC participants with 6 months n = 90, 12 months n = 85, 18 months n = 76, and 24 months n = 69, Comparison group with 6 months n = 50, 12 months n = 41, 18 months n = 34, and 24 months n = 31.

In the 12 months following entry to the program, 39% of all JDC participants and 31% of graduates were re-arrested, while 46% of the comparison group members were re-arrested. At the 24-month time period, the pattern continued, with 51% of all program participants having been re-arrested and 41% of graduates, compared to 61% of comparison group individuals.

Youth in the JDC participate as an alternative to placement in a committed care facility. In Maryland, "51% of youth are re-arrested within 1 year of discharge from a residential program, and 72% of youth are re-arrested within 3 years of discharge."[2]

3. Does the JDC Result in Savings of Taxpayer Dollars?

YES: Outcome costs for JDC participants showed substantive savings, when factored against the comparison group.

Overall, the JDC results in cost savings and a return on taxpayer investment in the program. The program investment costs are $33,768 per JDC participant. When DJS residential placements (e.g., detention) are excluded, the program investment cost is $17,060 per participant. When program costs are divided by the average number of days in the program, the cost per day per participant for the JDC program is $99.09 ($50.06 when DJS placement costs are excluded), which is lower than the per day cost of every type of out-of-community DJS placement (detention, residential, and shelter care). If the program made a policy decision to use fewer detention or residential placements, and use that money for an additional caseworker or other less costly types of supervision, the program costs would be reduced and participant outcomes may be improved.

The cost due to recidivism over 18 months from program entry was $16,271 per JDC participant compared to $19,233 per comparison individual, resulting in a **savings of $2,962 per participant** (regardless of whether they graduate). The majority of the cost in outcomes for JDC participants over the 18 months from JDC entry was due to time in DJS placements ($10,516), mostly for participants who were unsuccessful in completing the program. Graduates had an even greater savings than non-graduates, at $3,492 per person.

In sum, the JDC program had a cost savings of $2,962 per participant over 18 months, so there is a clear benefit to the taxpayer in terms of juvenile justice related costs in choosing the JDC process over traditional court processing.

Recommendations for Program Improvement

The St. Mary's County Juvenile Drug Court program demonstrates promise in reducing negative youth behaviors, in particular decreases in substance use. The small number of youth who had 24 months of time after program entry and difficulties finding an appropriate comparison group limited this study's ability to find significant differences in recidivism rates; however, future studies may be able to demonstrate positive recidivism outcomes. The program may want to assess its use of detention, as it is a high-cost sanction, and discuss whether there are alternative sanctions that could be utilized with equivalent effectiveness. The program's use of resident and shelter care facilities increased the program's costs; however, the use of these resources may indicate that the JDC program helps youth access services more readily than traditional court services do, which could be viewed as a benefit to participating youth.

[2] Maryland Office of the Attorney General, Juvenile Justice Monitoring Unit, *Quarterly Report And Individual Facility Updates,* Second Quarter, April 1 – June 30, 2008, p. 6.

INTRODUCTION-BACKGROUND

The Drug Court Model

In the last 20 years, one of the most dramatic developments in the movement to reduce substance abuse among criminal justice population in the United States has been the spread of drug courts across the country. The first drug court was implemented in Florida in 1989. As of May 2009, there were 2,037 adult and juvenile drug courts active in all 50 states, the District of Columbia, Northern Mariana Islands, Puerto Rico, and Guam with another 214 being planned (Office of National Drug Court Policy, 2009).

Drug courts are designed to guide offenders, identified as having substance abuse issues, into treatment that will reduce drug dependence and improve the quality of life for them and their families. Benefits to society often take the form of reductions in crime committed by drug court participants, resulting in reduced costs to taxpayers and increased public safety.

In the typical drug court program, participants are closely supervised by a judge who is supported by a team of state and local agency representatives who operate outside of their traditional roles. The team typically includes a drug court coordinator, addiction treatment providers, prosecuting attorneys, defense attorneys, law enforcement officers, and parole and probation officers, who work together to provide needed services to drug court participants. Prosecuting attorneys and defense attorneys hold their usual adversarial positions in abeyance to support the treatment and supervision needs of program participants. Drug court programs can be viewed as blending resources, expertise, and interests of a variety of state and local jurisdictions and agencies.

Drug courts have been shown to be effective in reducing recidivism (GAO, 2005) and in reducing taxpayer costs due to positive outcomes for drug court participants (Carey & Finigan, 2004; Carey, Finigan, Waller, Lucas, & Crumpton, 2005). Some drug courts have even been shown to cost less to operate than processing offenders through traditional "business-as-usual" court processes (Carey & Finigan, 2004; Crumpton, Brekhus, Weller, & Finigan, 2004a & 2004b; Finigan, Carey, & Cox, 2007).

In 2001, NPC Research, under contract with the Administrative Office of the Courts of the State of Maryland, began cost studies of adult and juvenile drug courts across the state. The results presented in this report include the costs associated with the St. Mary's County Juvenile Drug Court program and the outcomes of participants as compared to a sample of matched individuals who received traditional court processing.

Process Description: St. Mary's County Juvenile Drug Court

ST. MARY'S COUNTY, MARYLAND

St. Mary's County Juvenile Drug Court (JDC) was formed in response to the increase in juvenile arrests involving drug charges in the Southern region of Maryland. St. Mary's County has a population of 101,578 with 26% of those residents under age 18 (U.S. Census Bureau, 2008 estimate). At the time of the program's formation, the county's youth were abusing alcohol, marijuana, and cocaine more than any other substances and they tended to abuse multiple drugs.

BACKGROUND AND TEAM

Planning for St. Mary's County Juvenile Drug Court began in 2003. The first participant was admitted in February 2004. The drug court coordinator oversees juvenile and adult drug courts in St. Mary's County. His position is supervised by the Drug Court Judge. The drug court team also includes an assistant state's attorney, a public defender, a representative from the Sheriff's Department, a Department of Juvenile Services (DJS) case manager, a public school representative, and an addictions counselor from Walden-Sierra Substance Abuse Treatment Program. In addition to these members, a social worker from DJS is available to work with the participants and their families.

ELIGIBILITY & DRUG COURT ENTRY

Participants in the JDC program must be under 18 years old at the time of their violation and have no history of violent offenses or drug trafficking. Typically, participants are referred to the drug court by their DJS case manager who has received an arrest report from the Sheriff's Office indicating that the youth may be a suitable candidate for the program. DJS then performs a department intake interview and, if the prospective participant appears to be eligible, forwards his/her information to the State's Attorney's Office. The DJS case manager conducts a mental health screening and contacts the treatment provider to schedule a substance abuse screening. The referral then goes to the drug court coordinator, who discusses admission with the entire team. During this time period, the youth is counseled by the public defender. After counseling, if the youth feels the program is his/her best option, a court date is set where the judge records the youth's admission to the drug court program.

DRUG COURT PROGRAM PHASES

The JDC program has four phases which can be completed by participants in a period as short as 12 months.

Phase Requirements

Phase 1 lasts a minimum of 30 days with attendance at drug court hearings required twice each month. In this phase, the youth must meet with the DJS case manager on a weekly basis. Depending on the outcomes of assessments performed by Walden Sierra, participants will attend inpatient or outpatient counseling 1 to 3 times each week. Group and individual counseling are required. Family members attend an orientation and parent skills trainings as deemed necessary by the treatment team. A minimum of two drug tests is conducted each week and testing methods include urinalysis, breathalyzer, patch, and swab testing. Participants must attend school, be working on their GED, or employed throughout Phase 1. All participants must work on a community project throughout all four phases.

Phase 2 lasts a minimum of 3 months. Participants continue attending court sessions twice each month. They must also meet with the DJS case manager on a weekly basis. Scheduled drug testing takes place one time per week and a random breathalyzer is administered each week. Treatment counseling also continues in the same manner as Phase 1. Pro-social classes for the family may continue, based on the judge's decision. Additionally, a curfew may be put in place, where it is seen as necessary. Participants must continue to work toward education or employment goals.

Phase 3 lasts at least 4 months, during which time the required attendance at drug court hearings is decreased to once per month. Drug testing is also reduced to one time each week. Visits with the DJS case manager are required 2 times each month and substance abuse treatment counseling

continues as in Phase 2. Curfew, family counseling, and school/employment requirements are the same as in Phase 2 and participants must have a minimum of 60 days clean to advance to the final phase.

Phase 4 lasts a minimum of 4 months and most of the requirements are tailored to meet the remaining needs of the youth and his/her family at this point. Drug testing continues but is decreased to 2 times per month. Treatment counseling sessions continue as they had in Phases 2 and 3. Community projects must be completed, restitution must be paid in full, and the youth must be abstinent from drug use for a minimum of 120 consecutive days in order to advance to graduation.

INCENTIVES AND SANCTIONS

JDC participants are rewarded for advancing to the next phase and achieving program goals. Incentives are recommended by any team member and discussed by the team. Incentives are written in the Participant Handbook and include verbal praise, decreased reporting, decreased curfew restrictions, tickets to community events, and gift cards.

Sanctions are also part of the program and are handed down for unacceptable behavior. Participants are given a list of potential sanctions when they start the program. Possible sanctions include essays, community service, increased reporting and/or testing, electronic monitoring, and movement back to the previous phase. Community projects are assigned by program staff and required of every participant, although community service hours are used only as a sanction. The team strives to individualize all sanctions and uses a grid which indicates the level of a sanction (e.g., low, medium, or high). Other than the judge, the case manager is permitted to administer incentives and sanctions between team meetings.

GRADUATION

Graduation indicates that all program requirements have been met and that participants have been abstinent consecutively for a minimum of 120 days. Successful completion of the program means that the youth is eligible to expunge the case from his/her court records.

OUTCOME/IMPACT EVALUATION

Outcome Evaluation Methods

RESEARCH STRATEGY

The primary criminal justice system outcome of interest to drug court programs is the juvenile justice and criminal justice recidivism of participants after beginning, or completing, the programs. Re-arrests are defined in this study as any new juvenile arrest after program entry; this study does not include non-criminal events, such as traffic citations.

This study examines outcomes over a 2-year period for program participants and a matched comparison group. NPC Research staff identified a sample of JDC participants who entered the program between February 2004 and September 2008. This time frame included all JDC participants since the program's inception and allowed for the availability of at least 6 months of recidivism data post-program entry for all sample participants. Although it is generally advisable to leave out participants in the first 6 months to a year of program implementation (due to typical program adjustments when starting out) that was not feasible for this study due to the small number of participants. Many of the outcome results present data for different groups of youth who had 6, 12, 18 and 24 months of available follow-up time, with the 6-month group being the largest and the 24-month group being the smallest. The shorter follow-up period has the advantage of larger numbers but the disadvantage of representing time that most youth were still in the program. The longer follow-up periods allow for more time to see program impact but the group sizes become too small in some cases to be able to measure significant differences between the program and comparison groups. The cost study section of this report uses the 18-month follow-up period to balance the need for a large enough group but also enough time to include post program time.

Graduation rates were calculated for the JDC by dividing the number of participants who graduated by the total number who exited the program, for those participants who had enough opportunity to have completed the program. The graduation rate does not include active participants.

Differences in demographics and criminal history between JDC graduates and non-graduates were examined to determine if there were indications that specific groups would need additional attention from the program to increase successful outcomes.

OUTCOME/IMPACT STUDY QUESTIONS

The outcome evaluation was designed to address the following study questions:

1. Does the JDC reduce substance abuse among program participants?
2. Does the JDC program reduce recidivism in the juvenile justice system?
3. To what extent are participants successful in completing the JDC program?
4. What participant and program characteristics predict successful outcomes (i.e., program completion, decreased recidivism)?

DATA COLLECTION AND SOURCES

NPC staff members adapted procedures developed in previous drug court evaluation projects for data collection, management, and analysis of these data. The data collected included juvenile supervision, juvenile court cases, juvenile detention placements, juvenile arrests, days spent in

adult prison and local adult jail [drug court group only], adult criminal justice histories in the form of arrest records [drug court group only], local adult court case information [drug court group only], substance abuse treatment services and program data from multiple sources.[3] Once data were obtained for the participant and comparison groups, the data were compiled, cleaned and moved into SPSS 15.0 for statistical analysis. The evaluation team employed univariate and multivariate statistical analyses using SPSS, which are described in more detail in the data analysis section. The majority of the data necessary for the outcome evaluation were gathered from the administrative databases described below and in presented in Table 1.

St. Mary's County Juvenile Drug Court

Data were provided by the JDC office that included names, demographic information, program acceptance status, time spent in JDC, and discharge status for JDC participants only.

Department of Juvenile Services, ASSIST

Data on juvenile supervision, court cases, detention placements and juvenile arrests were provided for the JDC and comparison youth by the Department of Juvenile Services from their ASSIST database.

Maryland Department of Public Safety & Correctional Services

The Maryland Department of Public Safety & Correctional Services (DPSCS) provided data for JDC participants from their management information system that stores Maryland adult criminal justice information in the OBSCIS I & II and Criminal Justice Information System (CJIS) systems, including arrest information, charges, prison and local jail stays and probation and parole episode information.

Maryland Judicial Information System

The Maryland Administrative Office of the Courts provided data from their JIS system on court cases heard in St. Mary's County for JDC participants.

Substance Abuse Management Information System (SAMIS)

Substance abuse treatment data for the JDC participants were obtained from administrative records at the Maryland Alcohol and Drug Abuse Administration (ADAA). These records included dates of treatment episodes, level of care for services provided (e.g., individual counseling session, intensive outpatient session, detoxification) and drug testing conducted by treatment facilities.

HIDTA (High Intensity Drug Trafficking Area) Automated Tracking System (HATS) is operated by the University of Maryland, Institute for Governmental Services and Research. Exports from the HATS data system provided urinalysis test results and participant program information from April 2004 to September 2007 for JDC participants.

Statewide Maryland Automated Record Tracking (SMART) operated by the University of Maryland, Institute for Governmental Services and Research

Data were extracted from SMART, a client tracking system for state agencies and private treatment providers, for JDC participants. These data include the results of urinalysis tests, dates of court hearings, and contacts with probation officers for youth in the program from September 2007 to June 2009.

[3]All data were gathered for this study with appropriate Institutional Review Board approval, including HIPAA waivers. Memoranda of Understanding (MOUs) with individual data sources were also obtained as needed.

Table 1. Data Sources

Database	Source	Example of Variables
JDC Program Coordinator's List of Participants	Program Coordinator	Acceptance status, time spent in JDC, discharge status.
ASSIST	Maryland Department of Juvenile Services (DJS)	Time spent in juvenile placements (residential, detention, shelter care); time spent on juvenile probation, # alleged/formal offenses, juvenile court cases
Offender Based State Correctional Information System (OBSCIS II) [electronic data]	Maryland Department of Public Safety & Correctional Services (DPSCS)	Demographics, prison data
Criminal Justice Information System (CJIS) [electronic data]	Maryland Department of Public Safety & Correctional Services (DPSCS)	Adult arrest history, arrest charges
Judicial Information Systems (JIS) [electronic data]	Maryland Judiciary, on behalf of the State court systems (including the Motor Vehicle Administration and DPSCS	District Court case management (e.g., case dates)
Maryland Judiciary Case Search (online electronic data)	Maryland Judiciary	DTC court hearing information for Circuit Court cases
Substance Abuse Management Information System (SAMIS)	Maryland Department of Health and Mental Hygiene (DHMH); Alcohol and Drug Abuse Administration (ADAA)	Number of treatment episodes; time spent in treatment; level of care, drug of choice

SAMPLE SELECTION

Drug Court Participant Group

This study examines outcomes over a 2-year period for program participants. All JDC participants who entered the program from February 2004 to September 2008 were selected for this study. JDC participant information was obtained from a list kept by the JDC Program Coordinator. The number of JDC participants in this study's cohort is presented in Table 2 by the year of their admission.

Table 2. St. Mary's JDC Admissions by Year

Year	Admissions
2004	12
2005	25
2006	28
2007	14
2008	11
Total	**90**

Comparison Group

The youth in the study sample were not randomly assigned to drug court and control groups due to the desire of the program to serve all eligible participants who opted to participate and the interest in having a larger group of youth served to measure recidivism. A comparison group was selected from a group of similar, eligible youth in the county who were not served by the program for various reasons, e.g., they had not been identified as a potential participant at the time of an arrest, they had not been referred to the program, or they had opted out of the program. The comparison group for this study was chosen using the eligibility criteria used by the program to select its participants: potential participants must have been under 18 years old at the time of their violation and have had no history of violent offenses or drug trafficking. Selection of comparison group potentials was also based on the additional criteria that all were residents of St. Mary's County and all were under a high or intensive level of juvenile supervision during the time period. These criteria were established in consultation with the JDC coordinator in accordance with the program eligibility criteria; the JDC team described their program participants as juveniles who would generally be under high supervision.

Based on the selection criteria, information on potential comparison group individuals was provided by the Department of Juvenile Services in the form of de-identified data on 91 juvenile offenders on high or intensive-level supervision between January 2004 and September 2008 in St. Mary's County. Forty-three youth were removed from this list of 91 potentials after being identified as JDC participants by DJS staff.

Following this initial selection process, youth on moderate-level supervision were added to the group of 48 remaining potentials in an attempt to gather sufficient numbers of potential comparison group participants to show meaningful results. This second request totaled 244 potential comparison group individuals who were supervised in St. Mary's County.

With a total of 292 comparison group potentials, these individuals were identified as having an eligible charge in their juvenile arrest history that matched the juvenile arrest histories of the JDC youth. These eligible charges for program entry and comparison group matching included:

1. Drug Charges: Controlled Dangerous Substance (CDS) – Possession, Possession of Drug Paraphernalia, CDS – Distribution, CDS (Marijuana) - Manufacture or Distribution with Intent to Distribute

2. Alcohol and Tobacco-related charges: Tobacco Violation, Driving While Intoxicated, Driving While Impaired
3. Malicious Destruction of Property
4. Assault 2nd Degree/Battery
5. Theft – Misdemeanor or Felony
6. Burglary 1st Degree
7. Trespassing

Youth in the potential comparison group were included in the final comparison group for analysis only if they had ever been arrested on at least one of the JDC eligible charges; this arrest was coded as their "eligible arrest" and was used to determine a point in time from which "prior" arrests were counted, as well as an equivalent point of program entry to determine when subsequent arrests would be counted. Youth in the potential comparison group were then eliminated if they were found to have had an ineligible charge, i.e., a charge of a serious or violent nature, in their juvenile arrest histories.

The JDC program participants and comparison group potentials were then matched on demographic variables, type of charge for the eligible arrest (drug, property, person or other) and prior criminal history. All comparison group individuals were chosen based on their status as a juvenile on moderate, high or intensive level supervision with DJS in St. Mary's County during the study time period. This extensive matching process eliminated most of the potential comparison group individuals. During the matching process, those juveniles for whom data were missing, or were outliers on any of the matching characteristics, were deleted.

The potential comparison group individuals were matched to the JDC group individuals on the following characteristics:

1. Gender
2. Race/Ethnicity
3. Age at index arrest
4. Total number of all juvenile arrests in 2 years prior to "eligible" arrest
5. Total number of juvenile drug arrests in 2 years to "eligible" arrest
6. Total number of juvenile property arrests in 2 years to "eligible" arrest
7. Total number of juvenile person arrests in 2 years to "eligible" arrest
8. Total number of other juvenile arrests in 2 years to "eligible" arrest
9. Drug charge present in 2 years to "eligible" arrest
10. Property charge present in 2 years to "eligible" arrest
11. Person charge present in 2 years to "eligible" arrest
12. Other charge present in 2 years to "eligible" arrest
13. Drug charge present on "eligible" arrest
14. Property charge present on "eligible" arrest
15. Person charge present on "eligible" arrest
16. Other charge present on "eligible" arrest

The comparison group potentials were matched and reached statistical equivalence to the JDC group on all of these characteristics ($p > .05$). The value ranges for these characteristics that are continuous variables, e.g., number of arrests, were also similar between JDC and comparison groups. The final sample for this study included 90 drug court participants and 50 comparison juveniles.

DATA ANALYSES

Once the comparison group was selected and all data were gathered on all study participants, the data were compiled, cleaned, and imported into SPSS 15.0 for statistical analysis. The evaluation team is trained in a variety of univariate and multivariate statistical analyses using SPSS. The analyses used to answer specific questions were:

1. Does the JDC reduce substance abuse among program participants?

The dates of positive drug tests (urinalyses or UAs) for JDC participants were obtained from the program through the HATS and SMART systems. To determine whether there was a reduction in drug use, the number of individuals who were tested over 10 months while in the program was coded as being tested and testing positive (yes/no) during each 2-month time period from program start.

In addition, the 2-year means for re-arrests with drug charges were calculated for JDC and comparison groups. Univariate analysis of variance was performed to compare the mean number of re-arrests for all JDC participants with the comparison group. The means comparing the JDC to the comparison groups were adjusted for differences between the groups on gender, age at eligible arrest, race/ethnicity, number of prior arrests, type of prior arrests present, type of eligible arrests present, and time at risk to re-offend. Time at risk was calculated by summing the total amount of days the juvenile was in detention, residential treatment, or shelter during each follow-up period and then subtracted that number from the total possible time during the follow-up period, resulting in the total amount of time in each follow-up period that the youth was potentially in the community to re-offend.

The non-adjusted means for graduates within each group are included for reference but should not be compared directly with the comparison group as the comparison group includes an unknown number of individuals who, had they participated in drug court, may have been discharged from the program and are therefore not equivalent to drug court graduates.

2. Does the JDC program reduce recidivism in the juvenile justice system?

Chi-square analyses were used to identify any significant differences in arrest rates for juveniles between the 2 years before and the 2 years after the youth's program start date.

Univariate analysis of variance was performed to compare the mean number of re-arrests for JDC and comparison groups. The means comparing the JDC and comparison groups were adjusted for any differences between the groups on gender, age at eligible arrest, race/ethnicity, number of prior arrests, type of prior arrests present, type of eligible arrests present, and time at risk to re-offend. Time at risk was calculated by summing the total amount of days the juvenile was in detention, residential treatment, or shelter during each follow-up period and then subtracted that number from the total possible time during the follow-up period, resulting in the total amount of time in each follow-up period that the youth was potentially in the community to re-offend.

The non-adjusted means for graduates within each group are included for reference but should not be compared directly with the comparison group as the comparison group includes an un-

known number of individuals who, had they participated in drug court, may have been discharged from the program and are therefore not equivalent to drug court graduates.

Crosstabs were run to examine differences in recidivism rates, i.e., the percentage of youth re-arrested, between JDC and comparison groups. Chi-square analyses were used to identify any significant differences in re-arrest rates between JDC and comparison groups.

3. To what extent are participants successful in completing the JDC program and within the intended time period?

To measure the programs' level of success at graduating participants, graduation rates and average lengths of stay were calculated. Graduation rates were calculated by dividing the number of participants who were no longer active in the JDC program by the number of graduates, i.e., participants who completed the program successfully. Average length of stay was calculated at the mean number of days between the program start date and program end date for each participant to determine if, on average, participants graduate within the intended time period.

4. What participant and program characteristics predict successful outcomes, i.e., program completion and decreased recidivism?

Graduates and non-graduates from the JDC were compared on demographic characteristics and number of arrests during the 2 years prior to program entry to determine whether any characteristics predicted program graduation or recidivism. In order to best determine which demographic characteristics were related to graduation, Chi-square and independent samples t-tests were performed to identify which factors were significantly associated with program success.

Participant characteristics were also examined in relation to subsequent re-arrests following program entry. Chi-square and independent samples t-test were performed to identify which factors were significantly associated with recidivism. Logistic regression was also used, including all variables of interest in the model, to determine if any characteristics were significantly related to being re-arrested above and beyond other characteristics.

Ultimately, the JDC and comparison groups were examined through data provided by DJS from their ASSIST database for a period up to 2 years from the date of JDC program entry or equivalent. For the comparison group, an equivalent "start date" was calculated by adding 87 days, which was the median number of days from their eligible case arrest to JDC program entry that had been calculated from the JDC participants, to the eligible arrest date. The evaluation team utilized the ASSIST data to determine whether there was a difference in juvenile arrest rates before and after program participation; and whether there was a difference in juvenile re-arrests, placements, and other outcomes of interest between the JDC and comparison groups.

All individuals who were studied for the outcomes report had at least 6 months of follow-up time, which included 90 JDC participants (51 graduates, 29 non-graduates, and 10 active participants) and 50 comparison group individuals.

LIMITATIONS OF THIS STUDY

Findings from this study should be interpreted with caution due to the following limitations:

Differences between the comparison group and JDC group, and small comparison group size: The youth in the study sample were not randomly assigned to drug court and control groups due to the desire of the program to serve all eligible participants who opted to participate and the interest in having a larger group of youth served to measure recidivism. Attempts made to create

a comparison group sample from data provided by the Department of Juvenile Services proved challenging. Difficulties in identifying juveniles who were appropriate matches to the JDC individuals stemmed from a lack of potential comparison group youth available during this time period in the county who met the minimum program eligibility criteria. These criteria state that potential participants must: be under 18 years old at the time of their violation, be St. Mary's County residents, be under intensive or high juvenile supervision and have no prior history of violent or drug trafficking charges. Youth were eliminated from the initially already inadequately small list of potential comparison group individuals due to not meeting one or more of these criteria, because their overall criminal histories did not match the drug court youth or it was not possible to show that they had a drug condition.

Based on selection criteria (all youth on intensive or high supervision from 2004 to present from St. Mary's County), information on potential comparison group individuals was provided by the Department of Juvenile Services in the form of de-identified ASSIST data on 91 juvenile offenders. Additional youth under moderate supervision were needed to add numbers to this group. While all of the drug court youth were believed to be coded by DJS as on an intensive or high level of supervision, 55% of the potential matched comparison group youth were on a moderate level of supervision.[4] Furthermore, ASSIST data were only available from 2002–present, making it impossible to choose a comparison group from potentially eligible youth who offended prior to the program's inception.

In addition, DJS was able to provide only de-identified juvenile justice data on the potential comparison group youth, which did not include names. It was not possible to determine if the individuals in the comparison group had a substance abuse problem indicated other than through drug charges present in their priors or eligible arrest. This further reduced the list of potential individuals.

The program also reports that the drug court participants served during the first year of the program were youth who had been unsuccessful under community-based supervision and were facing residential placements. Drug court was offered as a last resort service before placement. The drug court program was expected to serve all youth who were in this situation, eliminating the opportunity for comparative youth during this time period. The potential comparison group that was identified that matched the drug court group on criminal history and demographic characteristics did not match on pre-program placements. The drug court participant group had a higher rate of days in detention (21 on average compared to 8) prior to participating in the drug court program than the potential comparison group had in the equivalent period.

Unavailable data: Despite having agreements already in place with DJS based on previous work, DJS was unwilling to release the names of the comparison group individuals. As a result, treatment data and adult criminal justice data, e.g., adult re-arrests during the outcome period, could not be matched with the comparison group. In addition, there was no method of collecting information that comparison group individuals had a substance abuse problem indicated.

Short follow-up time period: Because of the small JDC sample size, it was necessary to include JDC participants through the middle of 2008, which resulted in a follow-up time period for some JDC participants of only 6 months. Many JDC study participants were still receiving JDC services at the time of the study. In addition, 6 months is a relatively brief period of time to observe outcomes of interest.

[4] DJS supervision level data were not available consistently for the JDC youth therefore direct comparisons with the potential comparison group individuals were not possible. Supervision level data are coded (in order of intensity, from highest) as "intensive," "high," and "moderate."

Start-up participants were included in the participant sample: JDC participants who received services during the implementation of the JDC program were included to increase sample sizes. Typically, participants in drug court programs during the first 6 to 12 months post program startup are excluded in order to avoid introducing biases based on implementation factors, including lower fidelity to the intended program model, lack of staff experience with the program, and staff turnover.

A future study of the potential impacts of the St. Mary's County JDC program is suggested, given the limitations of the current study. An increased follow-up time period, larger sample sizes that would increase statistical power and allow participants who were in the program during the first year of JDC to be omitted, as well as obtaining data that were more complete would provide additional information about the impact of this program.

Outcome Evaluation Results

DESCRIPTION OF THE SAMPLES

Table 3 provides demographic information for JDC and comparison groups. Independent samples t-tests and chi-square analyses showed no significant differences between JDC and comparison groups on the characteristics listed in this table.

Table 3. JDC and Comparison Group Characteristics

	All JDC Participants N = 90	Comparison Group N = 50
Gender		
Male	78%	88%
Female	22%	12%
Ethnicity		
Caucasian	80%	78%
Non-Caucasian	20%	22%
Mean age at eligible arrest date	16 years	16 years
Median	16 years	16 years
Range	13 – 17 years	14 – 17 years
Type of charge at eligible arrest		
Drug-related	62%	62%
Property-related	33%	32%
Person-related	10%	16%
'Other'	27%	18%
Average number of total arrests in the 2 years prior to the arrest leading to program participation	1.58 (range 0 – 7)	1.64 (range 0 – 6)
Average number of drug arrests in the 2 years prior to the arrest leading to program participation	.64 (range 0 – 5)	.50 (range 0 – 3)

Data from the ADAA were available for 77 of the 90 JDC participants on treatment services they received. In addition to treatment services, these data included drug of choice, mental health problems, tobacco use, family income, health insurance information, and living situation status.

Substance Use Status

As shown in Table 4, the most common, primary drug of choice among JDC participants was marijuana (62%). The next most common drug of choice was cocaine (10%), followed by opiates (6%). Alcohol was the most common, secondary drug of choice for 47% of JDC participants. The average age at first substance use was 12.5. Most JDC participants (70%) reported to their treatment provider that they had used tobacco in the last 30 days.

Table 4. Primary Drug of Choice

Primary Substance	Number of JDC Youth (N = 68)
Marijuana	42
Cocaine	7
Opiates (not including heroin)	4
Alcohol	3
Crack	2
All Others[5]	10

Mental Health History

More than half of the JDC group (58%) admitted to the program, were identified as having a current mental health problem, based on treatment data.

Family Income and Health Insurance

Of JDC participants who had family income information available from treatment data, more than half (53%) reported a family income of less than $30,000 per year. In addition, one third of JDC youth were listed as homeless (33%).

Most JDC participants received some publicly funded substance abuse treatment services (97%), though about one-third (30%) had the means to pay for some costs through private insurance or family self-pay.

[5] 'All Others' include heroin, non-prescription methadone, oxycodone, hallucinogens, other amphetamines, other sedatives or hypnotics, and 'other.'

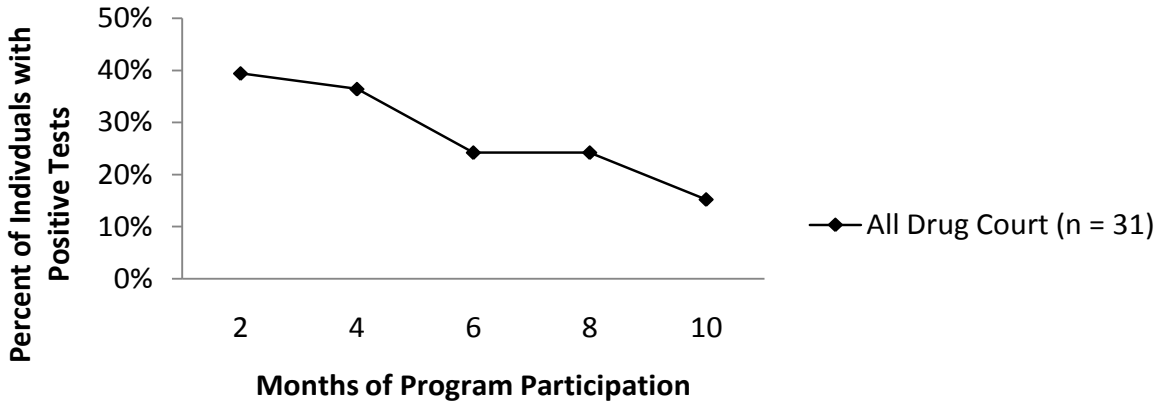
POLICY QUESTION #1: DOES PARTICIPATION IN THE DRUG COURT PROGRAM REDUCE SUBSTANCE USE?

<u>YES:</u> JDC participants showed reductions in drug use following entrance into the program.

Drug Testing

Figure 1 shows the percentage of program participants with a positive urine analysis (UA) test in each 2-month period for individuals receiving 10 months or more of program services, regardless of graduation status. The rate of substance use, as measured by positive drug tests among program participants, declined over time, implying that involvement in the JDC reduces substance use.

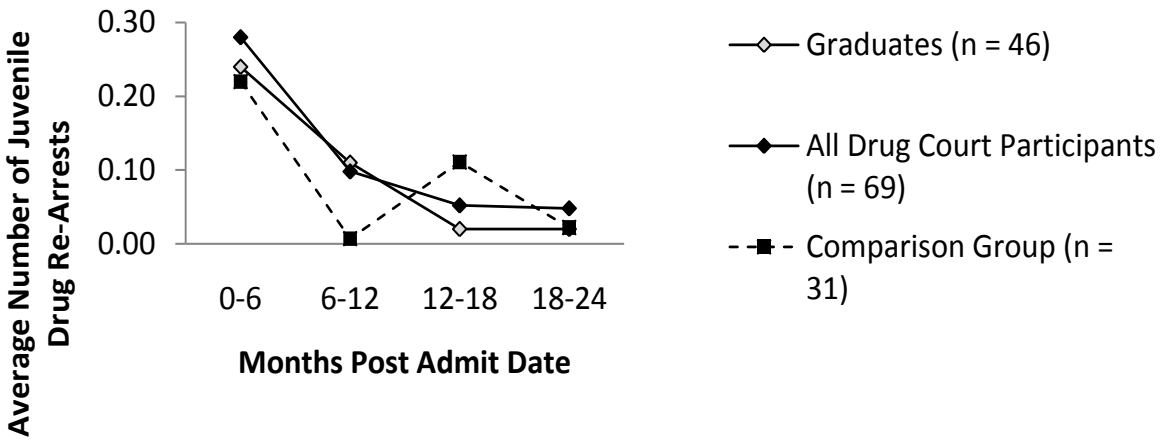
Figure 1. Percent of JDC Participants with a Positive UA Test Over Time



Drug-related Offenses

Figure 2 displays the mean number of drug re-arrests in the JDC and comparison groups during discrete, 6-month periods over 24 months after program entry. An examination of JDC and comparison group individuals showed that JDC participants had a steady decrease in number of drug re-arrests over 24 months, demonstrating a clear improvement over time. In contrast, the comparison group showed erratic decreases and increases over time, with no clear pattern of improvement. This is further evidence of reductions in drug use for program participants.

Figure 2. Average Number of Drug Re-Arrests Over Time



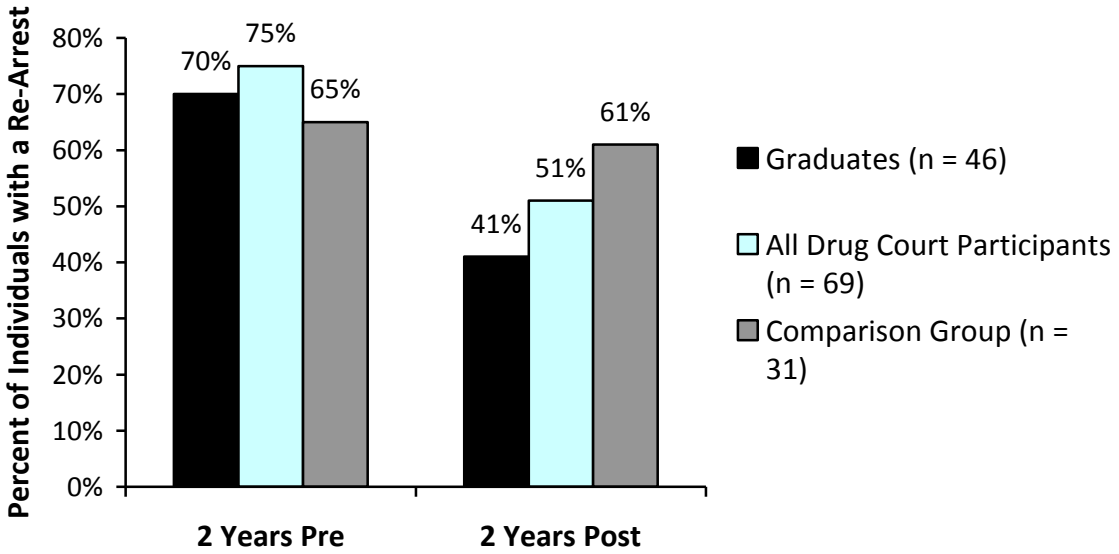
POLICY QUESTION #2: DOES PARTICIPATION IN THE DRUG COURT PROGRAM REDUCE RECIDIVISM?

<u>YES:</u> There is a pattern of lower recidivism rates and lower numbers of re-arrests for program participants.

Juvenile Justice Recidivism Rate

Figure 3 shows the recidivism rate, the percentage of youth re-arrested, using a 24-month pre-post comparison. The pre time period includes the 2 years leading up to the eligible arrest, which is compared to the post time period which begins at program start date or equivalent for the comparison group.

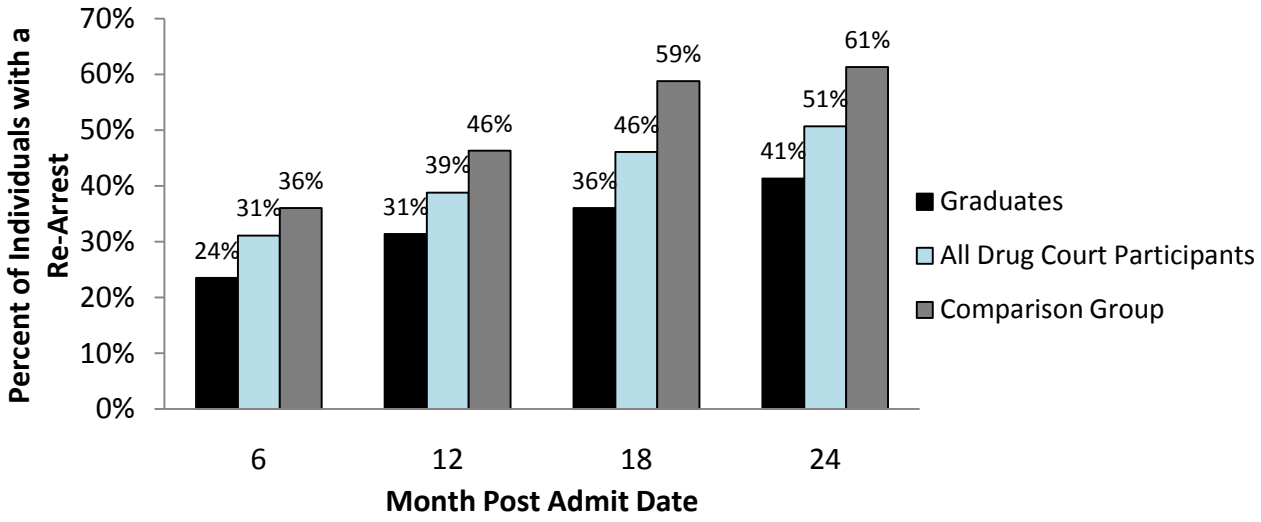
Figure 3. Juvenile Arrest Rates 2 Years Before and 2 Years After Program Start



The percentage of youth arrested in the JDC group in the 2 years post program start was significantly less than the percentage re-arrested pre-program, regardless of graduation status. In contrast, the percent of youth re-arrested in the comparison group decreased only slightly, and not significantly. This indicates that the JDC program is effectively reducing recidivism for its participants.

As shown in Figure 4, the recidivism rate for JDC participants is lower than the comparison group at every time period, regardless of graduation status. Although these differences were not statistically significant, this is most likely due to the small sample size. There is a good possibility that a larger sample would have shown a significant difference.

Figure 4. Juvenile Re-Arrest Rate Over Time by Group[6]



In the 12 months following entry to the program, 39% of all JDC participants and 31% of graduates were re-arrested, while 46% of the comparison group was re-arrested. At the 24-month time period, the pattern continued, with 51% of all JDC participants having been re-arrested and 41% of graduates, compared to 61% of the comparison group.

Number of Juvenile Re-Arrests

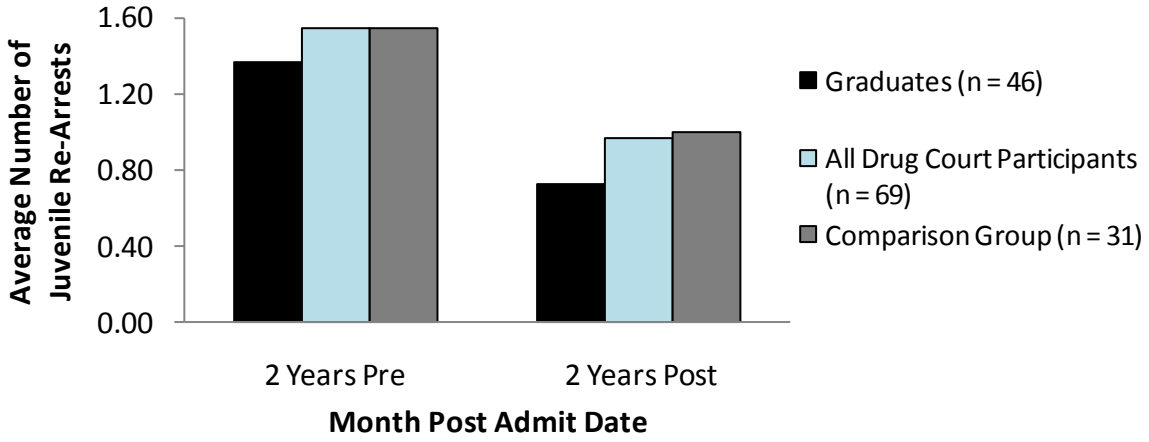
An analysis of the *number* of re-arrests per youth shows a similar pattern as the re-arrest rate in Figures 3 and 4.

The mean number of total juvenile re-arrests is compared through a 24-month pre-post comparison as shown in Figure 5. The pre time period includes the 2 years leading up to the eligible ar-

[6] Sample sizes: Graduates with 6 months n = 51, 12 months n = 51, 18 months n = 50, and 24 months n = 46; All JDC participants with 6 months n = 90, 12 months n = 85, 18 months n = 76, and 24 months n = 69; Comparison group with 6 months n = 50, 12 months n = 41, 18 months n = 34, and 24 months n = 31.
The mean number of re-arrests was adjusted to control for differences between JDC and comparison groups on gender, race/ethnicity, age at eligible arrest, prior arrest history, and time at risk to re-offend (that is, the time the youth was NOT in a detention facility or other residential placement). These results differ somewhat from the mean number of re-arrests reported in the Cost Section of this report, which adjusted for differences between groups on demographic characteristics and prior arrest history but not for time at risk to re-offend as actual incarceration days are included in the costs.

rest, which is compared to the post time period which begins at JDC start date or equivalent for the comparison group.

Figure 5. Number of Juvenile Re-Arrests[7] 2-Years Pre and 2-Years Post Program by Group



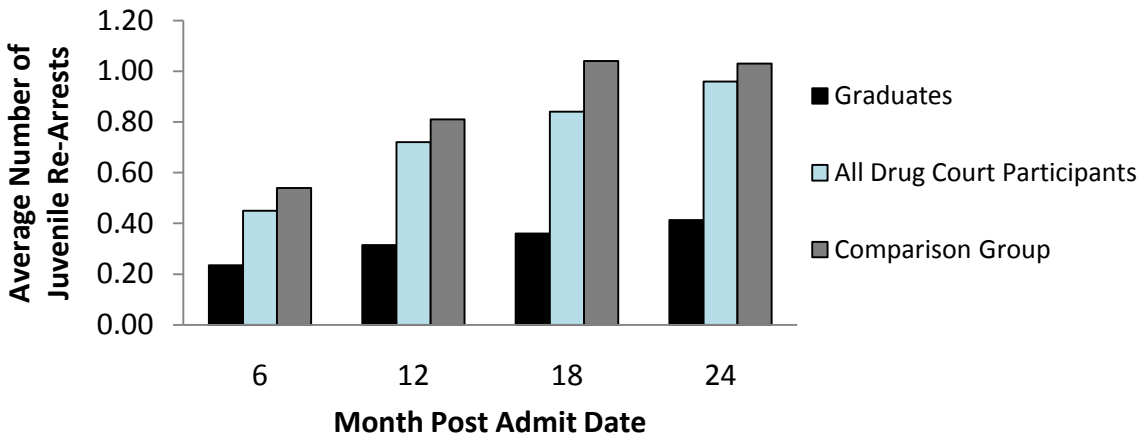
The JDC participants were re-arrested significantly less often in the 24 months post program than in the 24 months pre-program. This may indicate an effect from the program on reducing the number of re-arrests among JDC participants. However, the comparison group was also re-arrested significantly less often in the post period than in the pre-period, which makes the interpretation of this result more ambiguous. Because data on adult criminal history contacts was not available for the comparison group, it is possible that the reductions in re-offending after program start was the result of youth aging out of the juvenile justice system (that is, subsequent arrests showing up in the adult system instead).

Figure 6 shows the mean number of juvenile re-arrests over time for JDC graduates, all JDC participants, and the comparison group. JDC participants showed a lower number of re-arrests at every time period. Although this difference was not statistically significant, the pattern of lower re-arrests among the JDC group is a promising indicator of reduced number of re-arrests over time.[8]

[7] The average number of re-arrests presented in this figure was not adjusted for any differences between groups as the comparison being made in this analysis is between the same groups before and after program participation. Therefore these means are actual, unadjusted means and are slightly different from the adjusted means presented earlier in the recidivism section as well as those presented in the cost section later in this report.

[8] The mean number of re-arrests was adjusted to control for differences between JDC and comparison groups on gender, race/ethnicity, age at eligible arrest, prior arrest history, and total time at risk for re-offending. These results differ somewhat from the mean number of re-arrests reported in the Cost Section of this report, which are adjusted for differences between groups on demographic characteristics and prior arrest history but not for time at risk to re-offend because the cost calculations include time incarcerated.

Figure 6. Cumulative Number of Juvenile Re-Arrests Over Time by Group



Chronic Offenders

Chronic offenders were defined as those youth who had three or more arrests in the 24-month follow-up period. Among those individuals who had a full 24 months of follow-up time, the proportion of JDC and comparison groups that had three or more subsequent arrests (10% for each group) were statistically equivalent. The mean number of re-arrests for all JDC individuals with chronic subsequent arrests was 4.0 compared to a mean of 3.3 for the comparison group chronic re-offenders.

Detention Stays

As noted in the limitations section, the JDC participants had significantly more days in detention prior to drug court participation than the comparison group during the equivalent period. However, during the follow-up periods, JDC participants did not differ significantly from the comparison group in the average number of days in detention, though actual means were higher for the JDC group at each time point, which translates into higher costs (see cost study section later in this report). For example, after 12 months, the JDC participants had an average of 19 days in detention compared to an average of 13 for the comparison group members. Graduates consistently had significantly fewer days in detention than the non-graduates.

Adult Criminal Justice Recidivism (Drug Court Group Only)

In addition to the data provided by the Department of Juvenile Services, data were also obtained for JDC participants who later came into contact with the adult criminal justice system.[9] NPC worked to collect these records from the Maryland Department of Public Safety and Correctional Services (DPSCS) and St. Mary's County Sheriff's Office/Detention Center. DPSCS provided records of prison admissions and statewide arrest records. The St. Mary's County Detention Center provided entry and release dates for jail time served.

Adult criminal justice outcomes (arrests, district and circuit court cases, and jail and prison time) were examined for the 2 years after JDC entry. Examination of the data showed that most JDC youth (84%) became adults during the study's time frame.

[9] Because names for the comparison group were not provided by DJS, we were unable to match the comparison group individuals to the adult data system.

Of the individuals (n = 61) who became adults during the outcomes period (2 years), 26% (n = 16) were arrested in the adult system during the 2 years after their JDC entry date. Of the 16 individuals who had been arrested, 38% were arrested more than once, 83% had a district court case and 63% had a circuit court case. Sixty-nine percent of these 16 individuals had spent some time in the St. Mary's County Detention Center and just one of the JDC participants had served time in state prison.

Among those who graduated from the JDC program and also turned 18 within the outcomes period (n = 39), 28% had an arrest in the adult system; 3 of these 11 participants were arrested as adults more than once during the 2 years post program entry. Of graduates who had been arrested as adults, 2 had district court cases, 7 had circuit court cases, and 6 spent time at the detention center.

These data show that a similar percentage of all participants were re-arrested as adults, whether or not they graduated, indicating that the drug court program may have a positive effect on participants, even if they did not successfully complete the program.

Drug Court Participants in the First Year of the Program

The drug court program served 15 youth in its first 12 months. The results for this cohort were comparable to the remaining youth in this study. The re-arrest rates and average number of re-arrests were the same.

POLICY QUESTION #3: DO PARTICIPANTS OF THE JDC PROGRAM COMPLETE THE PROGRAM SUCCESSFULLY?

<u>YES:</u> JDC participants are successful in completing the JDC program and complete within the intended time period.

During the study period, the overall graduation rate for the JDC was 64%.[10] In addition, the average time for graduates to complete the program was 12 months, which is exactly the intended program length.

However, a point of interest is that the graduation rate was high early in the program's history (75% in 2004) but has decreased in each of the 4 years of the study time period as shown in Table 5. This decrease may reflect changes over time in program policies regarding criteria for exiting—or responses to—unsuccessful youth. The JDC program may want to examine the portion of their services that focuses on keeping youth engaged in the program and determine if further assistance is needed to ensure that the youth and their families have what they need to enable them to successfully participate in required activities, e.g., transportation, child care, etc.

[10] The national average graduation rate for adult drug court programs is around 50% (Belenko, 2001); however, there is not yet a published average for juvenile drug court programs. However, using the adult standard shows that this program is well above-average in helping participants successfully complete the program.

Table 5. Number of JDC Graduates in Study Sample by Year

Admission Year	Number Graduated (N = 50)	Number Discharged (N = 27)	Graduation Rate
2004	9	3	75%
2005	17	8	68%
2006	18	10	64%
2007	6	6	50%
Total	**50**	**27**	**65%**

* Note: most of the youth in entering the program in 2008 were still in service at the time the data for this study were collected, so there are not enough youth to calculate an accurate graduation rate for this year.

POLICY QUESTION #4: WHAT PREDICTS PARTICIPANT SUCCESS?

Which characteristics of drug court participants are associated with positive drug court program outcomes, e.g., graduation and reduced recidivism?

Graduation

NPC examined the characteristics of JDC participants who successfully completed the program (graduates) and those who were "terminated" or left the program for non-compliance before completing (non-graduates). Differences between these two groups can illustrate the characteristics of the participants who are likely to have success in JDC and the characteristics of the participants who may need additional or specialized services to succeed.

Characteristics of graduates and non-graduates were compared and are presented in Table 6. A significantly larger proportion of graduates were female compared to non-graduates. Finally, although only significant at the level of a trend ($p < .10$), graduates had a lower mean number of drug arrests prior to JDC entry compared to non-graduates.

Table 6. Characteristics of JDC Graduates and Non-Graduates

	JDC Graduates N = 51	JDC Non-Graduates N = 29	Significantly Different?[11] ($p < .05$)
Gender			
Female	33%	10%	**Yes**
Ethnicity			
Non-White	18%	31%	No
Mean age in years, at eligible arrest date	16	16	No
Mean length of stay in JDC in days	358	310	No
Mean number of days at risk for re-offending during the program	333	242	**Yes**
Average number of total arrests in the 2 years prior to the arrest leading to program participation	1.43	1.83	No
Average number of drug arrests in the 2 years prior to the arrest leading to program participation	.51	.86	**Trend**
Average number of property arrests in the 2 years prior to the arrest leading to program participation	.57	.52	No
Average number of person arrests in the 2 years prior to the arrest leading to program participation	.24	.34	No

When JDC participant characteristics were examined together in relation to graduation status in a logistic regression analysis, gender and time at risk for re-offending were significant predictors of graduation above and beyond other characteristics: graduates were more likely to be female and have more time in the community, i.e., spend less time in detention, residential, and shelter facilities.

Recidivism

Participant characteristics and arrest history were also examined in relation to whether or not participants were re-arrested in the 2 years following JDC entry. These analyses include JDC participants who had 24 months of follow-up time post JDC entry. The results are shown in Table 7.

[11] Yes indicates $p < .05$, No indicates $p > .10$, Trend indicates $p > .05$ and $p < .10$.

Table 7. Demographic and Criminal Justice History-Related Variables That Predict Recidivism at 24 Months

	Participants who were re-arrested were more likely to be:	Significant Predictor of Recidivism at 24 Months?[12] ($p < .05$)
Gender		No
Ethnicity		No
Mean age at eligible arrest date	Younger at program entry	**Yes**
Mean length of stay in JDC program		No
Time at risk to re-offend		No
Program status at exit	Non-graduates	**Yes**
Average number of total arrests in the 2 years prior to the arrest leading to program participation		No
Average number of drug arrests in the 2 years prior to the arrest leading to program participation		No
Average number of property arrests in the 2 years prior to the arrest leading to program participation		No
Average number of person arrests in the 2 years prior to the arrest leading to program participation		No

As shown in Table 7, JDC participants were more likely to have been re-arrested within 24 months of program entry if they were younger at the time of their eligible arrest and if they did not graduate.

When these factors were entered into a logistic regression model, and each variable was controlled for, age at eligible arrest remained a significant predictor, above and beyond the other characteristics but graduation status did not. Further two characteristics were marginally significant above and beyond the other characteristics at the level of a trend ($p < .10$), indicating that individuals who had more total priors, but fewer drug priors were more likely to recidivate by 24 months.

The results of this analysis show that age and prior criminal history are predictors of program success. Specifically, older and less criminal participants are more likely to graduate and less likely to recidivate. These findings are consistent with the criminal justice literature in general in predicting risk for re-arrest. It may be difficult for the program to adjust services to address these

[12] Yes indicates $p < .05$, No indicates $p > .10$, Trend indicates $p > .05$ and $p < .10$.

two characteristics, however, it could be useful for the program to determine if the services provided are developmentally appropriate for the range of participant ages and possibly introduce educational classes around changing criminal thinking to address particularly those participants that have a more significant criminal history.

OUTCOME SUMMARY

Overall, outcomes for JDC participants are quite positive. After participation in the program, regardless of whether they graduate, JDC participants had fewer positive drug tests over time and were re-arrested on drug charges less often after program participation than before, and less often than the comparison group of similar individuals who did not participate, indicating a reduction in drug use due to program participation.

Further, JDC participants had lower recidivism than the comparison group, measured both by the recidivism rate and the average number of re-arrests per person. When the re-arrest rate was examined using a 24-month pre-post model, JDC participants were re-arrested significantly less often post program compared to pre-program. In contrast, there was no significant reduction in the pre-post analysis for the comparison group, indicating that the reduced recidivism rate for the JDC group was due to program participation. A pre-post test on the *number* of re-arrests for each group showed a significant reduction in arrests for both drug court participants and the comparison group during the post period, which suggests that the lack of adult system data may be masking any differences for youth who age out of the juvenile justice system during the follow-up period.

The graduation rate for the program was 65%. In addition, an examination of the characteristics of those who graduated from the program compared to those who did not graduate showed that JDC graduates were more likely to be female, stay in the program longer, have fewer prior arrests and have fewer prior drug arrests than non-graduates. Also, participants who were older and had fewer prior arrests were less likely to recidivate.

In sum, the results of this study indicate that the JDC program is successful in its main goals of reducing participant drug use and reducing participant recidivism.

COST EVALUATION

The St. Mary's County Juvenile Drug Court cost evaluation was designed to address the following study questions:

1. How much does the JDC program cost?
2. What is the 18-month cost impact on the juvenile justice system of sending offenders through JDC or traditional court processing?
3. What is the cost to the juvenile justice system of the time between the eligible arrest and JDC program entry (in terms of arrests and juvenile detention)?

Cost Evaluation Methodology

COST EVALUATION DESIGN

Transactional and Institutional Cost Analysis

The cost approach utilized by NPC is called Transactional and Institutional Cost Analysis (TICA). The TICA approach views an individual's interaction with publicly funded agencies as a set of *transactions* in which the individual utilizes resources contributed by multiple agencies and jurisdictions. Transactions are those points within a system where resources are consumed and/or change hands. In the case of drug courts, when a participant appears in court, resources such as judge time, state's attorney time, defense attorney time, and court facilities are used. When a program participant has a drug test, urine cups are used. Court appearances and drug tests are transactions. In addition, the TICA approach recognizes that these transactions take place within multiple organizations and institutions that work together to create the program of interest. These organizations and institutions contribute to the cost of each transaction that occurs for program participants. TICA is an intuitively appropriate approach to conducting cost assessment in an environment such as a drug court, which involves complex interactions among multiple taxpayer-funded organizations.

Cost to the Taxpayer

In order to maximize the study's benefit to policymakers, a "cost-to-taxpayer" approach was used for this evaluation. This focus helps define which cost data should be collected (costs and avoided costs involving public funds) and which cost data should be omitted from the analyses (e.g., costs to the individual participating in the program). The core of the cost-to-taxpayer approach in calculating benefits (avoided costs) for drug court specifically is the fact that untreated substance abuse will cost various tax-dollar funded systems public funds that could be avoided or diminished if substance abuse were treated. In this approach, costs that result from untreated substance abuse are used in calculating the benefits of substance abuse treatment.

Opportunity Resources

NPC's cost approach looks at publicly funded costs as "opportunity resources." The concept of *opportunity cost* from economics relates to the cost of doing an activity instead of doing something else. The term *opportunity resource* as it is applied in TICA describes resources that are now available for a given use because they have not been consumed for an alternative activity. For example, if substance abuse treatment reduces the number of times that a client is subsequently in-

carcerated, the local Sheriff may see no change in his or her budget, but an opportunity resource will be available to the Sheriff in the form of a jail bed that can now be filled by another person.

COST EVALUATION METHODS

The current cost evaluation builds on the outcome evaluation performed by NPC on the St. Mary's County Juvenile Drug Court. The costs to the juvenile justice system (cost-to-taxpayer) in St. Mary's County incurred by participants in Drug Court are presented. In addition, the specific program costs are calculated separately in order to determine the per-participant and per-agency costs of the St. Mary's County Juvenile Drug Court program.

TICA Methodology

The TICA methodology as it has been applied in the analysis of the St. Mary's County Juvenile Drug Court is based upon six distinct steps. Table 8 lists each of these steps and the tasks involved.

Steps 1 through 3 were performed through analysis of court and JDC documents, including review of this program's process evaluation report (conducted by another organization) and through interviews with key stakeholders. Step 4 was performed in the outcome evaluation. Step 5 was performed through interviews with Drug Court and non-drug court staff and with agency finance officers. Step 6 involved calculating the cost of each transaction and multiplying this cost by the number of transactions. All the transactional costs for each individual are added to determine the overall cost per individual. This information was generally reported as an average cost per individual. In addition, the TICA approach has made it possible to calculate the cost for Drug Court processing for each agency.

This evaluation utilized a previously conducted process evaluation and interviews with program staff to identify the specific program transactions to include in this study. Cost data were collected through interviews with Drug Court staff and jurisdiction and agency contacts with knowledge of jurisdiction and agency budgets and other financial documents, as well as from budgets either found online or provided by jurisdiction and agency staff.

The costs to the juvenile justice system outside of the Drug Court program costs consist of those due to new juvenile criminal arrests, juvenile court cases, juvenile probation, shelter care, residential care, and juvenile detention. Program costs include drug court sessions, case management, group and individual treatment sessions, family counseling, intensive outpatient treatment, detoxification, alcohol monitoring, drug tests, juvenile detention, shelter care, and residential care.

Table 8. The Six Steps of TICA

	Description	Tasks
Step 1:	Determine flow/process (i.e., how clients move through the system)	• Site visit • Interviews with key stakeholders (agency and program staff)
Step 2:	Identify the transactions that occur within this flow (i.e., where clients interact with the system)	• Analysis of process information gained in Step 1
Step 3:	Identify the agencies involved in each transaction (e.g., court, treatment, police)	• Analysis of process information gained in Step 1
Step 4:	Determine the resources used by each agency for each transaction (e.g., amount of judge time per transaction, amount of attorney time per transaction, number of transactions)	• Interviews with program key informants using cost guide. • Administrative data collection of number of transactions (e.g., number of court appearances, number of treatment sessions, number of drug tests).
Step 5:	Determine the cost of the resources used by each agency for each transaction	• Interviews with budget and finance officers • Document review of agency budgets and other financial paperwork
Step 6:	Calculate cost results (e.g., cost per transaction, total cost of the program per participant)	• Support and overhead costs (as a percentage of direct costs) are added to the direct costs of each transaction to determine the cost per transaction • The transaction cost is multiplied by the average number of transactions for program participants to determine the total average cost per transaction type • These total average costs per transaction type are added to determine the program and outcome costs.

Cost Evaluation Results

Juvenile drug courts are intensive interventions that involve coordination of multiple agencies and professional practitioners applying a variety of areas of expertise, intensive case management and supervision, and frequent judicial reviews. Drug courts are typically made possible through the application and coordination of resources drawn from multiple agencies located in more than one jurisdictional organization. Although the amount of staff time and other resources (buildings, materials and supplies and operating equipment) made available by a number of public organizations represents substantial public costs, research in drug courts demonstrates that due to decreased future system impacts (less frequent re-offending, for example), this investment frequently results in substantial future savings. In addition, drug courts can provide cost-effective intensive treatment and supervision in a community-based setting rather than relying on next

steps in the continuum of services such as residential placements. This report tests whether this pattern holds for the St. Mary's County JDC program.

As described above, the Transactional and Institutional Cost Analysis (TICA) approach was used to calculate the costs of each of the transactions that occurred while participants were engaged in the program. Program transactions calculated in this analysis include drug court sessions, case management, group and individual treatment sessions, family counseling, intensive outpatient treatment, detoxification, alcohol monitoring, drug tests, juvenile detention, shelter care, and residential care. The costs for this study were calculated to include taxpayer costs only. All cost results provided in this report are based on fiscal year 2009 dollars.

COST EVALUATION QUESTION #1: PROGRAM COSTS

How much does the JDC program cost?

Program Transactions

A ***Drug Court Session***, for the majority of drug courts, is one of the most staff and resource intensive program transactions. In the St. Mary's County Juvenile Drug Court, these sessions include representatives from:

- Circuit Court of Maryland (Judge, Court Reporter, and Drug Court Coordinator);
- St. Mary's County State's Attorney's Office (State's Attorney);
- Maryland Office of the Public Defender (Public Defender);
- St. Mary's County Sheriff's Office (Deputy Sheriff);
- Maryland Department of Juvenile Services (Case Manager, Supervisor, Administrative Assistant);
- Walden Sierra (Substance Abuse Supervisor, Addictions Counselor);
- Mental Health Authority (Mental Health Coordinator);
- St. Mary's County Public Schools (Public School Representative).

The cost of a ***Drug Court Appearance*** (the time during a session when a single program participant interacts with the Judge) is calculated based on the average amount of court time (in minutes) each participant interacts with the judge during the Drug Court session. This includes the direct costs of each Drug Court Team member present, the time Team members spend preparing for the session, the agency support costs, and jurisdictional overhead costs. The average cost for a single Drug Court appearance is **$421.24** per participant.

Case Management is based on the amount of staff time dedicated to case management activities during a regular work week and is then translated into a total cost for case management per participant per day.[13] The agencies involved in case management for the St. Mary's County Juvenile JDC program are the Circuit Court, Sheriff's Office, State's Attorney's Office, Office of the Public Defender, Walden Sierra, St. Mary's Public Schools, Department of Juvenile Services, and the Mental Health Authority. The daily cost of case management in this program is **$23.01** per participant.

[13] Case management includes meeting with participants, evaluations, phone calls, referring out for other help, answering questions, reviewing referrals, consulting, making community service connections, assessments, documentation, file maintenance, and residential referrals.

Drug Treatment Sessions are provided by Walden Sierra, a private treatment agency affiliated with St. Mary's County. Individual, group, and intensive outpatient treatment (IOP) services are paid for by the Maryland Alcohol and Drug Abuse Administration (ADAA). Individual treatment per participant is **$69.00** per individual participant per session. Group treatment is **$39.00** per participant per session. Intensive outpatient treatment is **$39.00** per participant per day. JDC participants are charged co-pays on a sliding scale for individual, group, and IOP treatment, but these payments were not taken into account in this cost analysis because data on actual payments was not available. Participants also pay the full cost of detoxification and family counseling, so these treatment services were not included in the cost analysis.

Drug Tests are performed by DJS, Walden Sierra, and other team members as needed. The cost per DJS urinalysis (UA) is **$5.70** and the cost per Walden Sierra UA is **$12.50** (4-panel tests at Walden Sierra are $10.00 and 10-panel tests are $15.00). Because UA data did not show which tests were 4-panel and which were 10-panel, an average of the two was used for this analysis). UAs at Walden Sierra are paid for by the Maryland Office of Problem Solving Courts (OPSC). Alcohol SCRAM monitoring is also used by the program and monitored by the Program Coordinator. The cost per day of SCRAM monitoring is **$5.25**. OPSC also pays for participant SCRAM monitoring.

Juvenile detention, residential care, and shelter care are provided at multiple DJS owned and operated state facilities. Juvenile detention at the Cheltenham Youth Facility is $440.00 per day, detention at the Thomas J. S. Waxter Children's Center is $478.00 per day, and juvenile detention days at other state facilities cost an average of $459.00 per day. Residential care costs $379.00 per day at the William Donald Schaefer House, $259.00 per day at the Meadow Mountain Youth Center, and an average of $319.00 per day at other residential facilities. Juvenile shelter care costs $440.00 per day at the Cheltenham Youth Facility and at other shelter care facilities. A representative from DJS provided NPC with all DJS facility costs.

Program Costs

Table 9 provides the unit cost per transaction, the average number of JDC transactions per participant, and the average cost per participant for each type of transaction. The average cost per participant is the product of the unit cost multiplied by the average number of program transactions per participant. The sum of these transactions is the total per participant cost of the program. The table includes the average for JDC graduates (n = 51) and for all JDC participants (n = 80), regardless of completion status. It is important to include participants who were discharged as well as those who graduated as all participants use program resources, whether they graduate or not.

Table 9. Average JDC Program Costs per Participant

Transaction	Tran-saction unit cost	Average number of transactions per JDC graduate	Average cost per JDC graduate N = 51	Average number of transactions per JDC participant	Average cost per JDC participant N = 80
Drug Court Appearances	$421.24	12.75	**$5,371**	13.00	**$5,476**
Case Management	$23.01	358.37 Days[14]	**$8,246**	340.79 Days	**$7,842**
Individual Treatment Sessions	$69.00	9.49	**$655**	8.64	**$596**
Group Treatment Sessions	$39.00	18.31	**$714**	17.83	**$695**
Intensive Outpatient Treatment Days	$39.00	46.47	**$1,812**	50.64	**$1,975**
Alcohol SCRAM Days	$5.25	10.84	**$57**	19.27	**$101**
DJS UA Tests	$5.70	6.96	**$40**	8.41	**$48**
Walden Sierra UA Tests	$12.50	24.65	**$308**	26.13	**$327**
Cheltenham Detention Days	$440.00	3.41	**$1,500**	7.84	**$3,450**
Waxter Detention Days	$478.00	1.49	**$712**	1.6	**$765**
Other Detention Days	$459.00	11.55	**$5,301**	15.08	**$6,922**
Schaefer Residential Days	$379.00	0.00	**$0**	1.06	**$402**
Meadow Mt. Residential Days	$259.00	3.06	**$793**	7.44	**$1,927**
Other Residential Days	$319.00	2.53	**$807**	3.06	**$976**
Cheltenham Shelter Days	$440.00	0.35	**$154**	1.50	**$660**
Other Shelter Days	$440.00	4.75	**$2,090**	3.65	**$1,606**
Total JDC			**$28,560**		**$33,768**

Note: Average costs per participant have been rounded to the nearest whole dollar amount.

[14] The average cost per participant for case management is calculated based on the average number of days participants spent in the JDC program.

On average, the total cost per participant in JDC is **$33,768**. Note that the two most expensive areas of cost for the program are detention days ($11,137) and case management ($7,842). The case management result is commensurate with the drug court model, which emphasizes high supervision, but the JDC may want to examine its use of detention or the practice of keeping youth in the program even when they are sent to longer-length placements (33% of total program costs). The next highest cost is for drug court appearances ($5,476).

Youth With Extended Detention Stays

By design, this drug court program retains participants regardless of the youth's degree of success. Therefore, some program youth have accumulated a large number of detention days, which created a concern for JDC staff because these costs are included in the program costs described above. For purposes of illustration of the impact of extended detention stays, additional calculations are provided here. There were 9 youth who had 11 detention placements during their drug court participation of greater than 90 days. In total, these 11 episodes accumulated 515 days of excess detention stay (defined here as the number of days over 90), for a total cost of $236,385, or $2,955 per person on average for the total sample of drug court youth. If the cost of this extended detention was removed, the program cost per person would be $30,813 instead of $33,768.

Program Costs per Agency

Another useful way to examine program costs is to break them down by agency. Table 10 shows the JDC program cost per participant by agency.

Table 10. Average JDC Cost per Participant by Agency

Agency	Average Cost per JDC Graduate N = 51	Average Cost per JDC Participant N = 80
St. Mary's County Circuit Court	$2,170	$2,177
St. Mary's County State's Attorney's Office	$800	$785
St. Mary's County Sheriff's Office	$4,397	$4,249
St. Mary's County Public Schools	$1,033	$1,000
Mental Health Authority	$143	$142
Walden Sierra	$1,764	$1,703
Maryland Office of the Public Defender	$922	$905
Maryland Department of Juvenile Services	$13,786	$19,111
Maryland Office of Problem Solving Courts	$365	$428
Maryland Alcohol and Drug Abuse Administration	$3,181	$3,266
Total[15]	**$28,561**	**$33,766**

[15] Totals in this row may not match the totals in the outcome costs by transaction table due to rounding.

Because the DJS provides case management, drug testing, juvenile detention, residential, and shelter care to JDC participants, it shoulders 57% of the total JDC program costs. Due to the case management conducted by the Deputy Sheriff, the Sheriff's Office incurs the next largest expense for the JDC, followed by the ADAA and its support of drug treatment services.

The other agencies involved in the JDC program (Circuit Court, State's Attorney, Office of Public Defender, Mental Health Authority, Walden Sierra, OPSC, and the St. Mary's County Public Schools) incur their costs primarily through staff attendance at St. Mary's County JDC sessions, conducting case management or drug testing.

Local Versus State Costs for the JDC Program

State policy leaders and administrators may find it useful to examine programs costs by jurisdiction (state or local/county). The majority of JDC program costs accrue to the State of Maryland (70% or $23,710 per participant), mainly due to the DJS placement services (detention, residential, and shelter care). The local or St. Mary's County portion of costs are 30% of total program costs per participant, or $10,056.

Costs per Day Compared to Other Program Options

Maryland Department of Juvenile Services (DJS) per diem costs for juvenile placements are shown in Table 11, along with the cost per day of the Juvenile Drug Court (calculated by dividing the average program cost per participant by the average number of days participants spent in the JDC program). Two costs per day are shown for the JDC, one that includes DJS placements (such as detention and residential treatment) that occur while participants are in the program, and one without DJS placements.

This cost comparison makes it clear that while the JDC is more expensive than juvenile probation ($99 per day vs. $25 per day) because of the added treatment component, it is still much less expensive to keep youth in the community when possible than any other DJS placements such as detention, youth shelter or residential treatment.

Table 11. Average Cost per Day by Juvenile Placement

Juvenile Placement	Cost per Day
St. Mary's County Juvenile Drug Court (including Placement Days)	$99
St. Mary's County Juvenile Drug Court (not including Placement Days)	$50
Juvenile Probation	$25
Juvenile Detention (Baltimore City Juvenile Justice Center)	$316
Juvenile Detention (Charles H. Hickey, Jr. School)	$549
Juvenile Detention (J. DeWeese Carter Center)	$351
Juvenile Detention (Lower Eastern Shore Children's Center)	$443
Juvenile Detention (Thomas J. S. Waxter Children's Center)	$478
Juvenile Detention (Alfred D. Noyes Children's Center)	$416
Juvenile Detention/Youth Shelter (Cheltenham Youth Facility)	$440
Youth Shelter (Maryland Youth Residence Center)	$491
Residential Treatment (William Donald Schaefer House)	$379
Residential Treatment (Victor Cullen Center)	$499
Residential Treatment (Meadow Mountain Youth Center)	$259
Youth Center (Western Maryland Children's Center)	$405
Youth Center (Backbone Mountain Youth Center)	$259
Youth Center (Green Ridge Regional Youth Center)	$214
Youth Center (Savage Mountain Youth Center)	$259

COST EVALUATION QUESTION #2: OUTCOME/RECIDIVISM COSTS

What is the 18-month cost impact on the juvenile justice system of sending offenders through JDC or traditional court processing?

As described in the cost methodology section of this report, the Transactional and Institutional Cost Analysis (TICA) approach was used to calculate the costs of each of the criminal justice system outcome transactions that occurred for JDC and comparison group participants. Transactions are those points within a system where resources are consumed and/or change hands. Outcome transactions for which costs were calculated in this analysis included re-arrests, subsequent court cases, detention time, residential and shelter care placement time, and juvenile probation time. Only costs to the taxpayer were calculated in this study. All cost results represented in this report are based on fiscal year 2009 dollars or updated to fiscal year 2009 dollars using the Consumer Price Index.

Outcome Cost Data

The outcome statistics reflect data through April 2009. There were 110 individuals for whom at least 18 months of outcome data were available (76 JDC participants and 34 comparison group members). This follow-up period was selected to allow a large enough group of JDC youth to be representative of the program, as well as to allow more robust cost numbers through use of as long a follow-up period as possible (with as many youth as possible having at least some time during the follow-up period that represented time after program involvement). All JDC participants in the cohorts included in these analyses had exited the program (graduated or were unsuccessful at completing the program).

Outcome costs were calculated for 18 months after JDC program entry. The outcome costs discussed below do not represent the entire cost to the criminal justice system. Rather, the outcome costs include the transactions for which NPC's research team was able to obtain outcome data and cost information. However, we believe that the costs represented capture the majority of system costs. Outcome costs were calculated using information from the St. Mary's County Sheriff's Office, the Maryland Circuit Court in St. Mary's County, the St. Mary's County State's Attorney's Office, the Maryland Office of Public Defender in St. Mary's County, the Maryland Department of Juvenile Services in St. Mary's County, and the Maryland State Operating Budget (FY 2009).

The methods of calculation were carefully considered to ensure that all direct costs, support costs and overhead costs were included as specified in the TICA methodology followed by NPC. It should be noted that, since NPC accounts for all jurisdictional and agency institutional commitments involved in the support of agency operations, the costs that appear in NPC's analysis typically will not correspond with agency operating budgets.

Outcome Transactions

Juvenile Arrests for St. Mary's County are conducted by multiple law enforcement agencies. However, the St. Mary's County Sheriff's Office is the primary arresting agency and the agency used for this outcome cost analysis. Other arresting agencies include Maryland State Police and the Department of Natural Resources Police. The average cost of a single arrest conducted by the St. Mary's County Sheriff's Office is **$218.63**.

Juvenile Court Cases include all court cases, including those cases that are reviewed and rejected by the St. Mary's County State's Attorney's Office, as well as those cases that result in arraignment and are adjudicated. Court case costs are shared among the Maryland Circuit Court, the St. Mary's County State's Attorney's Office, and the Maryland Office of the Public Defender. The average cost of a juvenile court case is **$5,072.72**.

Juvenile Probation is provided by the Maryland Department of Juvenile Services. A representative of DJS provided NPC's researchers with the cost of juvenile supervision, which was identified as **$25.06** per day.

Shelter Care is funded by the Maryland Department of Juvenile Services. Facilities providing shelter care are state-owned and operated facilities. The cost of shelter care is **$440.00** per person per day at Cheltenham Youth Facility, which was used as a proxy for all other shelter care facilities that participants in this cost analysis attended.

Residential Care is funded by the Maryland Department of Juvenile Services. Residential care is **$379.00** per person per day at the William Donald Schaefer House and **$259.00** per person per day at the Meadow Mountain Youth Center. The average cost of residential at these two facilities

is **$319.00** per person per day, which was used as a proxy for other residential facilities that participants in this cost analysis attended.

Juvenile Detention is provided by the Maryland Department of Juvenile Services. Detention facilities are state-owned and operated facilities. These facilities include the Cheltenham Youth Facility (for boys) and the Thomas J. S. Waxter Children's Center (for girls). Juvenile detention is **$440.00** per person per day at the Cheltenham Youth Facility and **$478.00** per person per day at Waxter Children's Center. The St. Mary's County juveniles in this analysis also attended other detention facilities throughout the state. The average cost of Cheltenham Youth Facility and Waxter Children's Center—**$459.00**—was used as a proxy for other detention facilities.

NPC's researchers were not able to acquire the individual level **adult** outcome data for the comparison group sample required to assess the impact of the Baltimore County Juvenile JDC on adult criminal justice system costs. As a result, no adult costs are included in this analysis**.**

Outcomes and Outcome Cost Consequences

Table 12 presents the average number of juvenile justice system outcome events (e.g., the average number of juvenile re-arrests, the average number of juvenile probation days, etc.) incurred per participant for St. Mary's County JDC graduates, all participants (both graduated and non-graduates combined), and the comparison group for 18 months after entry date (or equivalent date for the comparison group).

Table 12. Average Number of Outcome Transactions per JDC and Comparison Group Member (Including JDC Graduates) Over 18 Months

Transaction	JDC Graduates N = 50	All JDC Participants N = 76	JDC Comparison Group N = 34
Juvenile Arrests	0.62	0.87	0.97
Juvenile Court Cases	0.10	0.24	0.38
Juvenile Probation Days	76.22	173.49	217.17
Cheltenham Detention Days	1.08	6.73	2.10
Waxter Detention Days	0.42	0.41	0.42
Other Detention Days	0.00	4.81	13.79
Schaefer Residential Days	0.00	0.00	6.26
Meadow Mountain Residential Days	0.04	13.26	0.00
Other Residential Days	0.02	2.43	2.06
Cheltenham Shelter Days	0.17	0.59	2.65
Other Shelter Days	0.39	1.55	0.00

As can be seen in this table, JDC participants have fewer re-arrests, juvenile court cases, juvenile probation days, detention days and shelter care days than members of the comparison group. Residential days are the only outcome transaction for which JDC participants show a higher rate

than the comparison group. From these results an interpretation can be reasonably asserted that participation in JDC is associated with less severe juvenile recidivism activity.

Graduates of the JDC show smaller numbers than all drug court participants and comparison group members across every transaction. It is also clear from Table 12 that participants who ultimately are discharged from the program are responsible for the majority of the consumption of juvenile justice system services during the outcome time period, especially in terms of detention and residential care.

Outcome Cost Results

Table 13 demonstrates the costs associated with the outcomes described above for all JDC participants, JDC graduates, and the comparison sample.

Table 13. Juvenile Justice System Outcome Costs per JDC and Comparison Group Member (Including JDC Graduates) Over 18 Months

Transaction	Transaction Unit Cost	JDC Graduates N = 50	All JDC Participants N = 76	JDC Comparison Group N = 34
Juvenile Arrests	$218.63	$136	$190	$212
Juvenile Court Cases	$5,072.72	$507	$1,217	$1,928
Juvenile Probation Days	$25.06	$1,910	$4,348	$5,442
Cheltenham Detention Days	$440.00	$475	$2,961	$924
Waxter Detention Days	$478.00	$201	$196	$201
Other Detention Days	$459.00	$0	$2,208	$6,330
Schaefer Residential Days	$379.00	$0	$0	$2,373
Meadow Mountain Residential Days	$259.00	$10	$3,434	$0
Other Residential Days	$319.00	$6	$775	$657
Cheltenham Shelter Days	$440.00	$75	$260	$1,166
Other Shelter Days	$440.00	$172	$682	$0
Total		**$3,492**	**$16,271**	**$19,233**

Note: Average costs per participant have been rounded to the nearest whole dollar amount.

Table 13 reveals that JDC participants cost less for every transaction except residential, due to less severe juvenile justice recidivism. The cost for detention ($5,365) is the most expensive transaction for JDC participants, followed by juvenile probation ($4,348) and residential care ($4,209). If the use of detention and residential care had been less for the JDC participants (and especially the JDC participants who did not successfully graduate), the overall cost savings due to program participation would have been substantially greater.

The total average cost savings after 18 months is $**2,962** per JDC participant, regardless of whether or not the participant graduates. If the JDC program continues in their current capacity of serving a cohort of 25 participants annually, this savings of $1,975 per participant per year

($2,962 divided by 1.5) results in a yearly savings of **$49,375** per cohort year**,** which can then continue to be multiplied by the number of years the program remains in operation and by the number of cohorts over time. This savings continues to grow for participants every year after program entry. If savings continue at the same rate, after 10 years the savings *per cohort* will total **$493,750**.

Another interesting point of analysis involves the graduates. We have previously introduced the idea of considering this group from an epidemiological perspective—this is the group that has received the designed "dosage" and term of treatment for the therapeutic intervention under consideration. From this perspective the difference in average total cost between this group and the comparison group of $15,741 after 18 months is an immediate return on the therapeutic investment in the graduate group. However, it is important to remember that the graduates are not directly comparable to the comparison group as they are the most successful participants.

Outcome Costs by Agency

As was noted above in our discussion regarding the attractiveness of the TICA approach to program cost analysis, in this study NPC was able to identify the juvenile justice outcome costs on an agency-by-agency basis. In Table 14 we present the outcome costs by agency.

Table 14. Juvenile Justice System Outcome Costs by Agency JDC and Comparison Group Member (Including JDC Graduates) Over 18 Months

Jurisdiction/Agency	JDC Graduates N = 50	All JDC Participants N = 76	JDC Comparison Group N = 34	Difference (Benefit)
St. Mary's County Circuit Court	$138	$330	$523	$193
St. Mary's County State's Attorney's Office	$258	$619	$981	$362
St. Mary's County Sheriff's Office	$136	$190	$212	$22
Maryland Office of the Public Defender	$111	$268	$424	$156
Maryland Department of Juvenile Services	$2,849	$14,864	$17,092	$2,228
Total[16]	**$3,492**	**$16,271**	**$19,232**	**$2,961**

Note: Average agency costs per participant have been rounded to the nearest whole dollar amount.

Similar to many of the drug court studies in which NPC has been involved, greater outcome savings associated with JDC participants accrue to some agencies than others:

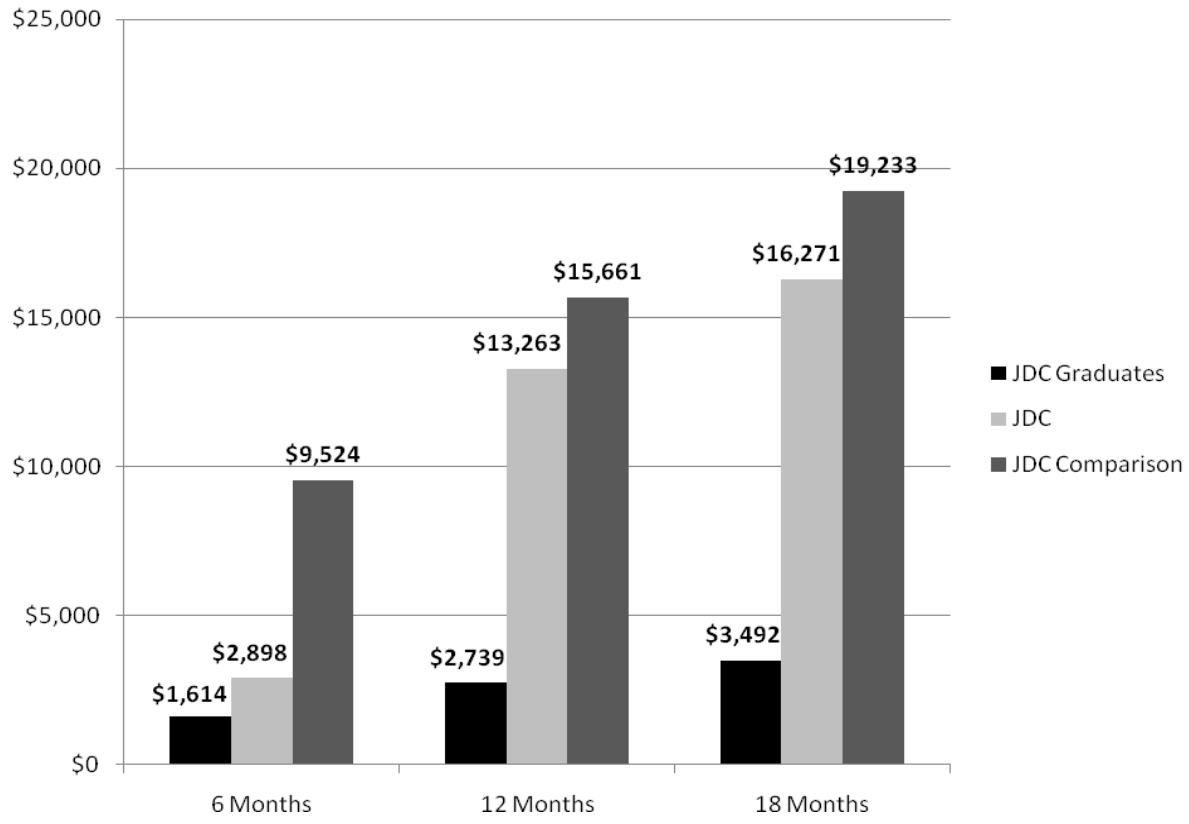
- 10% in outcome costs savings was shown for the St. Mary's County Sheriff's Office, due to fewer juvenile re-arrests;
- 13% in outcome costs savings was shown for DJS, due to fewer placements for JDC participants than for comparison group juveniles;
- 37% in outcome costs savings was demonstrated for the Circuit Court, State's Attorney's Office, and Office of the Public Defender.

[16] Totals in this row may not match the totals in the outcome costs by transaction table due to rounding.

A focus on JDC graduate outcome costs illuminates even more dramatic agency-specific outcome cost impacts. Due to low rates of recidivism, JDC graduates show outcome costs of $3,492 ($12,779 less than all JDC participants and $15,740 less than the comparison group) after 18 months.

Figure 7 displays a graph of the cumulative outcome costs over the 18 months post-JDC entry (or the equivalent for the comparison group). Note that these results by 6 month periods are not the same participants over time, but represent those different cohorts of participants who had at least 6, 12, and 18 months of follow-up time, respectively.

Figure 7. Juvenile Justice Recidivism Cost Consequences per JDC and Comparison Group Member (Including JDC Graduates) Over 18 Months



COST EVALUATION QUESTION #3: COST OF TIME BETWEEN ARREST AND JDC PROGRAM ENTRY

What is the impact on the juvenile justice system of the time between the eligible arrest and JDC program entry (in terms of arrests and detention)?

Key Component #3 of the Key Components of Drug Courts is about identifying eligible individuals quickly and promptly placing them in the drug court program. A shorter time between arrest and program entry helps ensure prompt treatment while also placing the offender in a highly supervised, community-based environment where he or she is less likely to be re-arrested and therefore less likely to be using other juvenile criminal justice resources. The longer the time between arrest and program entry, the greater the opportunity for offenders to re-offend before entering treatment. This gap leads to the question, what is the impact in terms of re-arrests and detention in the time between arrest and entry into the JDC program for participants? These two areas were selected to highlight this question because detention is the primary cost incurred by

the program and arrests are representative of the public safety impact of individuals in the community committing additional crimes.

This section describes the juvenile criminal justice costs for arrests and detention experienced by JDC participants between the time of the JDC eligible arrest and JDC program entry. Both transactions were described in the outcome costs section above. Costs were calculated from the time of the program eligible arrest to program entry (an average of 101 days for JDC participants and 94 days for JDC graduates).

Costs Between Arrest and JDC Entry

Table 15 represents the costs of re-arrests and detention time per person for JDC graduates and all JDC participants (graduates and non-graduates combined) from the program eligible arrest to program entry.

Table 15. Re-arrest and Detention Costs per JDC Member (Including JDC Graduates) From Arrest to Program Entry

Transaction	Transaction Unit Cost	Average Number of Transactions per JDC graduate	Average Cost per JDC Graduate N = 51	Average Number of Transactions per JDC Participant	Average Cost per JDC Participant N = 90
Arrests	$218.63	0.00	$0	0.00	$0
Cheltenham Detention Days	$440.00	1.00	$440	1.47	$647
Waxter Detention Days	$478.00	0.75	$359	0.73	$349
Other Detention Days	$459.00	10.35	$4,751	8.06	$3,700
Total			**$5,550**		**$4,696**

Note: Average costs per participant have been rounded to the nearest whole dollar amount.

As can be seen in Table 15, there are substantial costs accruing to the juvenile justice system from the time of the JDC eligible arrest through entry into the JDC program ($4,696 for all JDC participants and $5,550 for JDC graduates). It should be noted that these costs only include arrests and detention time during the time from the JDC eligible arrest to entry into the JDC (an average of 101 days for JDC participants and 94 days for JDC graduates). Other criminal justice costs, such as court cases and juvenile probation days are also most likely accruing. These costs emphasize that the sooner the JDC gets offenders into the program, the more criminal justice system costs can be minimized.

COST EVALUATION SUMMARY

Overall, the JDC results in cost savings and a return on taxpayer investment in the program. The program investment costs are $33,768 per JDC participant. When DJS placements are excluded, the program investment cost is $17,060 per participant. When program costs are divided by the average number of days in the program, the cost per day per participant for the JDC program is

$99.09 ($50.06 when DJS placement costs are excluded), which is lower than the per day cost of every type of DJS placement (detention, residential, and shelter care). If the program made a policy decision to suspend or revoke program participation of youth who are sent to longer term placements, the program costs would be reduced and those placement costs would only be attributed to the outcomes equation.

The cost due to recidivism over 18 months from program entry was $16,271 per JDC participant compared to $19,233 per comparison individual, resulting in a savings of $2,962 per participant (regardless of whether they graduate). The majority of the cost in outcomes for JDC participants over the 18 months from JDC entry was due to time in DJS placements ($10,516), mostly for participants who were unsuccessful in completing the program.

In sum, the JDC program had a cost savings of $2,962 per participant over 18 months, so there is a clear benefit to the taxpayer in terms of juvenile justice related costs in choosing the JDC process over traditional court processing.

DISCUSSION-SUMMARY OF FINDINGS

This study of the St. Mary's County Juvenile Drug Court program shows preliminary outcomes that are very positive for drug court participants, compared to youth who had similar demographic characteristics and criminal histories but who did not participate in drug court. JDC youth had significant reductions in substance use and offending over time. Some of these results were not statistically significant, due to small numbers in both drug court and comparison groups for the follow-up periods of interest. However, the trends in re-arrest rates and average numbers of new arrests look promising for the drug court program participants. In addition, JDC participants cost the juvenile justice system less money after program participation than youth in the comparison group who experienced traditional court processing. Youth who graduate from the program cost the juvenile system substantially less than program participants overall, mostly due to their low rates of recidivism and their less use of detention and other out-of-home placements.

The main cost that drives the difference between graduates and non-graduates (and comparison group members) is placement—longer term stays in detention and residential treatment programs. It is important to pay close attention to the use of detention compared to the use of needed treatment/therapeutic settings, as the youth with greater detention stays did not appear to gain benefits (reduced recidivism or increased program graduation) due to the extensive use of this sanction. The program has had policies of admitting youth who need intensive services and who have not previously been successful under community supervision. Some of these youth, while otherwise heading to placement, have been able to avoid these placements due to the support of the drug court program. Perhaps one comparison to consider is the cost that would have accrued if there had been no drug court alternative and thus all drug court participants had been sent to placement instead. Additionally, the program has chosen to retain in the program youth even after they have been sent to placement, which could be seen as artificially inflating program costs. One consideration might be to revoke participation after a specified number of detention days have accumulated. In this study, the cost of detention were the largest single cost, and while a small proportion of youth (11%) had extended detention stays, they did affect the per person cost of the program overall as well as the program's outcome costs. The program may want to discuss its policy of retaining youth regardless of placement durations while in the program and the cost implications of this decision balanced with the potential benefits.

Another important discussion for program staff to engage in is the distinction between substance use that represents a treatment need [e.g., using substances as a coping mechanism because the youth has not learned healthier tools], which requires increased treatment and other supports, from substance use as an acting-out or rebellious behavior [e.g., partying with friends because the youth thinks he or she can get away with it] that are best addressed with incentives and sanctions. Once the program ensures it has implemented distinctions between sanctions and treatment responses, then the program can hold other discussions about program policies regarding use of detention as a sanction and how to address unsuccessful participation.

This program may also want to review the services available for participating youth, to make sure that the intensity of services matches the need as indicated by the substance abuse assessment and juvenile justice risk assessment. In addition, the program should ensure that all youth have access to aftercare and transitional services, to maximize their chance for success after the end of treatment and program participation.

A review of program policies and practices will benefit the program as it continues to serve very high-risk and high-need youth in the future.

REFERENCES

Belenko, S. (2001). Research on Drug Courts: A Critical Review, 2001 Update. New York: National Center on Addiction and Substance Abuse.

Carey, S. M., & Finigan, M. W. (2004). A detailed cost analysis in a mature drug court setting: Cost-benefit evaluation of the Multnomah County Drug Court. *Journal of Contemporary Criminal Justice, 20*(3), 292-338.

Carey, S. M., Finigan, M. W., Waller, M., Lucas, L., & Crumpton, D. (2005). *California drug courts: A methodology for determining costs and avoided costs, Phase II: Testing the methodology, final report.* Submitted to the California Administrative Office of the Courts, November 2004. Submitted to the USDOJ Bureau of Justice Assistance in May 2005.

Crumpton, D., Brekhus, J., Weller, J. M., & Finigan, M. W. (2004a). *Cost analysis of Anne Arundel County, Maryland Drug Treatment Court.* Report to the State of Maryland Judiciary, Administrative Office of the Courts and Baltimore Substance Abuse Systems, Inc.

Crumpton, D., Brekhus, J., Weller, J. M., & Finigan, M. W. (2004b). *Cost analysis of Baltimore City, Maryland Drug Treatment Court.* Report to the State of Maryland Judiciary, Administrative Office of the Courts and Baltimore Substance Abuse Systems, Inc.

Finigan, M. W., Carey, S. M., & Cox, A. (2007). *The Impact of Mature Drug Court Over 10 Years of Operation: Recidivism and Costs.* Submitted to the U.S. Department of Justice, National Institute of Justice. http://www.npcresearch.com/Files/10yr_STOP_Court_Analysis_Final_Report.pdf

Government Accountability Office (2005). *Adult drug courts: Evidence indicates recidivism reductions and mixed results for other outcomes.* Retrieved October 2006, from http://www.gao.gov/new.items/d05219.pdf, February 2005 Report.

Office of National Drug Court Policy (2009). *Drug Courts*. Retrieved September 2009, from http://www.whitehousedrugpolicy.gov/enforce/drugcourt.html