

# Anne Arundel County Juvenile Treatment 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](http://www.npcresearch.com)



# Anne Arundel County Juvenile Treatment Court Outcome and Cost Evaluation

## *Management Team*

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

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

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

Shannon M. Carey, Ph.D., Consultant on Treatment Court Research

Michael W. Finigan, Ph.D., Consultant on Treatment Court Research

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

January 2010

---



*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
- Hon. Kathleen G. Cox, Chair of the Drug Court Oversight Committee
- Hon. Pamela North, Associate Judge, Circuit Court of Anne Arundel County, Presiding Judge for Anne Arundel County Juvenile Treatment Court
- Robert Wallace, Court Administration, Circuit Court of Anne Arundel County
- Paula Fish, Anne Arundel County Treatment Court Administrator and Juvenile Treatment Court Coordinator, and the staff at the Anne Arundel County Juvenile Treatment Court
- Susan Thomas, Court Clerk, Circuit Court of Anne Arundel County
- Judy Feldt, Anne Arundel County Office of State's Attorney
- Kimber Watts, Deputy District Public Defender, Office of the Public Defender
- Janis Renzi and Robin Walters, Maryland Department of Juvenile Services
- Ana Johnsen and Alfred Blackstone Juvenile Counselor, Circuit Court of Anne Arundel County
- 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, and Charley Korn, NPC Research Staff



## TABLE OF CONTENTS

EXECUTIVE SUMMARY.....	I
INTRODUCTION-BACKGROUND .....	1
The Treatment Court Model .....	1
Process Description: Anne Arundel County Juvenile Treatment Court .....	1
Anne Arundel County, Maryland .....	1
Background, Treatment Court Team, Steering Committee .....	2
Eligibility and Treatment Court Entry .....	2
Treatment Court Program Phases and Requirements .....	3
Incentives and Sanctions.....	3
Graduation and Unsuccessful Completions .....	4
OUTCOME-IMPACT EVALUATION.....	5
Outcome Evaluation Methods .....	5
Research Strategy.....	5
Outcome-Impact Study Questions .....	5
Data Collection and Sources .....	5
Sample Selection.....	7
Data Analyses .....	10
Limitations of this Study.....	11
Outcome Evaluation Results.....	12
Description of the Samples .....	12
Policy Question #1: Does participation in the Treatment Court program reduce substance use?.....	13
Policy Question #2: Does participation in the Treatment Court program reduce recidivism?.....	15
Policy Question #3: Do participants of the JTC program complete the program successfully? .....	19
Policy Question #4: What predicts participant success?.....	20
Outcome Summary .....	22
COST EVALUATION .....	23
Cost Evaluation Methodology .....	23
Cost Evaluation Design.....	23
Cost Evaluation Methods.....	24
Cost Evaluation Results .....	25
Cost Evaluation Question #1: Program Costs.....	26
Cost Evaluation Question #2: Outcome/Recidivism Costs .....	29
Cost Evaluation Question #3: Cost of Time between Arrest and JTC Program Entry.....	34
Cost Summary.....	35
DISCUSSION/SUMMARY OF FINDINGS .....	37
REFERENCES .....	39

LIST OF TABLES

Table 1. Data Sources ..... 7

Table 2. Anne Arundel County JTC Admissions by Year ..... 8

Table 3. JTC and Comparison Group Characteristics ..... 12

Table 4. Primary Drug of Choice..... 13

Table 5. Number of JTC Graduates in Study Sample by Year ..... 19

Table 6. Characteristics of JTC Graduates and Non-Graduates ..... 20

Table 7. Demographic and Criminal Justice History-Related Variables That Predict  
Recidivism at 24 Months ..... 21

Table 8. The Six Steps of TICA ..... 25

Table 9. Average JTC Program Costs per Participant ..... 28

Table 10. Average JTC Cost per Participant by Agency ..... 29

Table 11. Average Number of Outcome Transactions per JTC and Comparison Group  
Member (Including JTC Graduates) Over 24 Months ..... 31

Table 12. Juvenile Justice System Outcome Costs per JTC and Comparison Group  
Member (Including JTC Graduates) Over 24 Months ..... 32

Table 13. Juvenile Justice System Outcome Costs by Agency per JTC and Comparison  
Group Member (Including JTC Graduates) Over 24 Months ..... 33

Table 14. Re-arrest and Detention Costs per JTC Member (Including JTC Graduates)  
From Arrest to Program Entry ..... 35

LIST OF FIGURES

Figure 1. Percent of JTC Participants with a Positive UA Test Over Time ..... 14

Figure 2. Mean Number of Drug Re-arrests Over Time..... 14

Figure 3. Juvenile Arrest Rates 2-Years Pre and 2-Years Post Program by Group ..... 15

Figure 4. Juvenile Re-Arrest Rate Over Time by Group ..... 16

Figure 5. Mean Number of Juvenile Re-Arrests 2-Years Pre and 2-Years Post Program  
by Group ..... 17

Figure 6. Cumulative Number of Juvenile Re-Arrests Over Time by Group..... 18

Figure 7. Juvenile Justice Recidivism Cost Consequences per Person: JTC Participants  
and Comparison Group Members (Including JTC Graduates) Over 24 Months ..... 34

## EXECUTIVE SUMMARY

### What are Treatment Courts?

Juvenile treatment 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 treatment 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 treatment 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 treatment 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 Anne Arundel County Juvenile Treatment Court (JTC) program.

### Anne Arundel County Juvenile Treatment Court Program Description



Anne Arundel County Juvenile Treatment Court (JTC) was formed in 2003 after a pilot period in 2002. The program admitted its first participant in October 2003 and as of February 2009 has served 185 participants.

The JTC program has three phases that can be completed by participants in a period as short as 10 months. For the 154 treatment 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 316 (approximately 10 months). Graduates spent an average of 317 days in the program, whereas non-graduates spent an average of 314 days in the program.

Throughout the program, participants attend treatment court hearings evaluating their progress (with a parent/guardian) and group and individual counseling sessions. The program requires that the youth submit to drug testing, attend school or another educational or occupational activity, and complete community service hours. The JTC uses incentives and sanctions to encourage positive behaviors. Youth must have been abstinent for a minimum of 60 consecutive days and complete all program requirements to graduate.

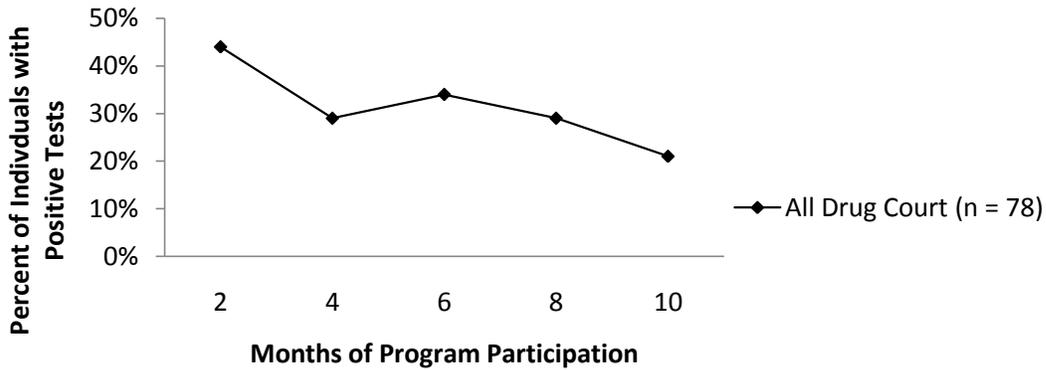
Three key policy questions of interest to program practitioners, researchers, and policymakers about treatment courts were addressed in this study.

#### 1. Does the JTC reduce substance abuse among program participants?

**YES: JTC 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 JTC reduced substance use.

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



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

**YES:** JTC participants showed reductions in recidivism following entrance into the program.

There is a statistically significant re-arrest rate difference between pre-post JTC participation for JTC participants. The analysis shows the re-arrest rate decreased from 90% at pre-JTC to 53% 2 years post-JTC admission.

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 JTC participants and graduates from pre to post.

**Figure B. Juvenile Arrest Rates 2 Years Before and 2 Years After JTC Start Date**

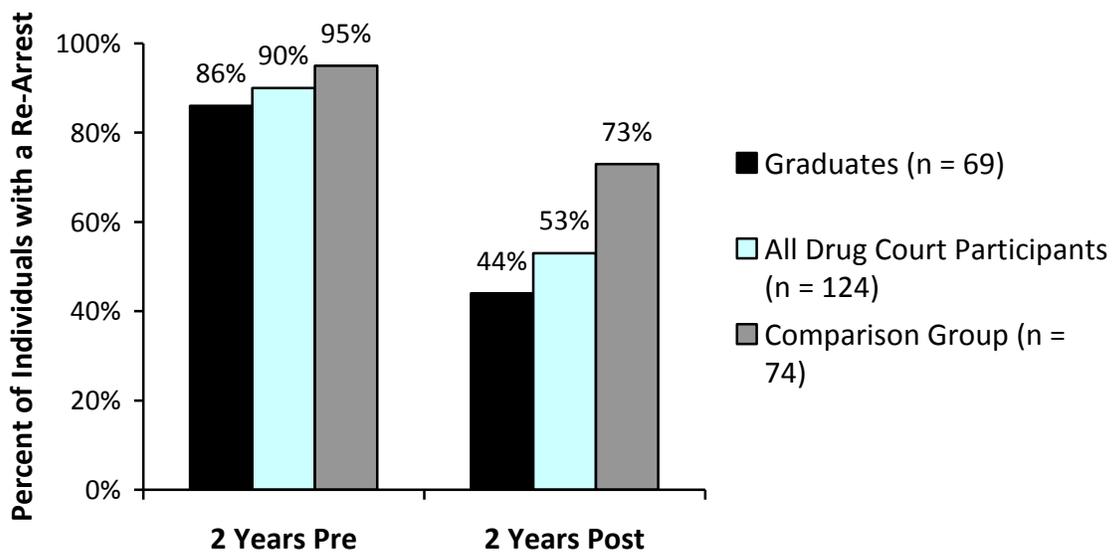
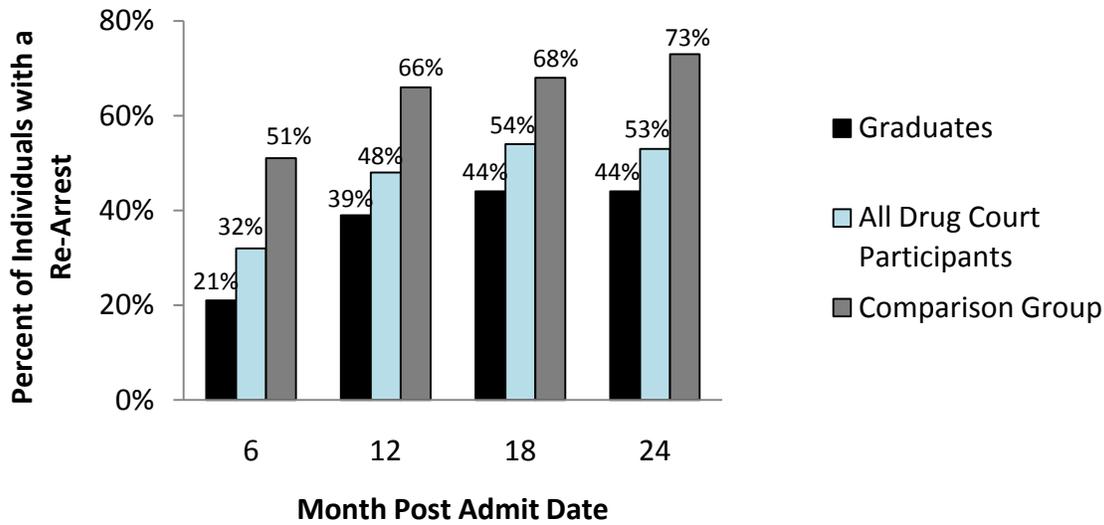


Figure C shows the percentage of youth re-arrested, grouped by their amount of available follow-up time, for the program graduates, all JTC participants, and a matched comparison group of juvenile offenders who were eligible for the program but did not participate. Anne Arundel County Juvenile Treatment 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 limited number of youth in each group.

Figure C. Juvenile Re-Arrest Rate by Group Over Time<sup>1</sup>



In the 12 months following entry to the program, 48% of all JTC participants and 39% of graduates were re-arrested, while 66% of the comparison group members were re-arrested. At the 24-months time period, the pattern continued, with 53% of all program participants having been re-arrested and 44% of graduates and compared to 73% of comparison group individuals.

### 3. Does the JTC result in savings of taxpayer dollars?

**NO: Outcome costs did not vary significantly for JTC participants compared to similar youth who received traditional court processing.**

The program investment costs are \$27,234 per JTC participant (\$26,432 per graduate). When DJS placements are excluded, the program investment cost is \$22,155 per participant. When program costs are divided by the average number of days in the program, the cost per day per participant for the JTC program is \$86.22.

The cost due to recidivism over 24 months from program entry was \$23,595 per JTC participant compared to \$23,423 per comparison individual. The vast majority of the cost in outcomes for JTC participants over the 24 months from JTC entry was due to time in detention (\$16,167), mostly for participants who were unsuccessful in completing the program. If the program made a policy decision to use fewer detention or residential placements, and use that money for an addi-

<sup>1</sup> Sample sizes: Graduates with 6 months n = 88, 12 months n = 87, 18 months n = 78, and 24 months n = 69; All JTC participants with 6 months n = 168, 12 months n = 157, 18 months n = 141, and 24 months n = 124; Comparison group with 6 months n = 102, 12 months n = 95, 18 months n = 83, and 24 months n = 74.

tional caseworker or other less costly types of supervision, the program costs would be reduced and participant outcomes may be improved.

### **Recommendations for Program Improvement**

The Anne Arundel County Juvenile Treatment Court program demonstrates promise in reducing negative youth behaviors, in particular decreases in substance use. Reductions in recidivism also look promising for the JTC participants. 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. In addition, the program should ensure that it is differentiating behavioral from treatment issues, so that treatment issues receive treatment responses (e.g., increased sessions and supports), while behavioral issues are responded to with other skill-building services, incentives, and sanctions. 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 JTC program helps youth access services more readily than traditional court services do, which could be viewed as a benefit to participating youth. The program should assess community needs and ensure that it is operating at a capacity that meets this need.

## INTRODUCTION-BACKGROUND

### The Treatment Court Model

In the last 20 years, one of the most dramatic developments in the movement to reduce substance abuse among the United States criminal justice population has been the spread of treatment courts across the country. The first treatment court was implemented in Florida in 1989. As of May 2009, there were 2,037 adult and juvenile treatment 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).

Treatment 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 treatment court participants, resulting in reduced costs to taxpayers and increased public safety.

In the typical treatment 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 treatment 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 treatment court participants. Prosecuting attorneys and defense attorneys hold their usual adversarial positions in abeyance to support the treatment and supervision needs of program participants. Treatment court programs can be viewed as blending resources, expertise, and interests of a variety of state and local jurisdictions and agencies.

Treatment courts have been shown to be effective in reducing recidivism (GAO, 2005) and in reducing taxpayer costs due to positive outcomes for treatment court participants (Carey & Finigan, 2004; Carey, Finigan, Waller, Lucas, & Crumpton, 2005). Some treatment 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 treatment courts across the state. The results presented in this report include the costs associated with the Anne Arundel County Juvenile Treatment Court program, and the outcomes of participants as compared to a sample of matched individuals who received traditional court processing.

### Process Description: Anne Arundel County Juvenile Treatment Court

#### ANNE ARUNDEL COUNTY, MARYLAND

Anne Arundel County is located in the center of the state of Maryland. It lies west of the Chesapeake Bay and is considered a suburb of Baltimore City and Washington, DC. Annapolis is the county seat of Anne Arundel County, as well as the state capital, and has a population of 36,524 according to the 2008 Census estimate.<sup>2</sup> The population of Anne Arundel County is estimated at 512,790, with 76% of the population aged 18 or older and a median age of 38. Anne Arundel

---

<sup>2</sup> Demographic data were retrieved from the U.S. Census Bureau at [www.census.gov](http://www.census.gov) in July 2009.

County's racial/ethnic composition, according to the 2007 Census estimate, is 79% White and 15% Black; 4% of the population identifies as Hispanic, and 2% are other ethnicities. The median household income is \$80,158; with 5% of persons living below poverty level. The county's unemployment rate is 6% according to the U. S. Department of Labor.<sup>3</sup> The main industries of employment are educational services, health care, and social assistance.

## **BACKGROUND, TREATMENT COURT TEAM, STEERING COMMITTEE**

The first Anne Arundel County Juvenile Treatment Court (JTC) session took place on October 2003, following a pilot period beginning March 2002. As of February 2009, the program has served 185 youth. Team members include the Treatment Court Programs Administrator, State's Attorney, Public Defender, presiding Treatment (Circuit) Court Judge, Juvenile Treatment Court Coordinator, 3 Juvenile Treatment Court Counselors, Department of Juvenile Services (DJS) Supervisor, and a DJS Case manager. The Anne Arundel County Criminal Justice Coordinating Council is the Steering Committee for the AACJDTC.

The program's goals are to 1) reduce substance abuse among juvenile offenders, 2) reduce delinquent conduct/reduce recidivism among Juvenile Treatment Court participants, 3) increase the level of individual functioning among Treatment Court participants, and 4) increase the level of family functioning among all Juvenile Treatment Court participants and their families.

## **ELIGIBILITY AND TREATMENT COURT ENTRY**

The JTC is intended to serve juveniles with nonviolent property or drug charges where there is "a reasonable assumption" that the behavior is connected to ongoing, chronic, habitual substance use; particularly those youth who were not successful in previous treatment attempts and/or had financial or other barriers to accessing treatment.

Following an arrest, juveniles are referred to the Intake office of the Department of Juvenile Services (DJS) and those eligible for the treatment court program are identified based on the following criteria: 1) an eligible charge and an indication that current substance abuse contributed to the current offense, 2) disposition of the case would have a severe enough sentence to warrant JTC participation,<sup>4</sup> 3) the offender has significant family/school problems, and 4) the offender and family must be willing to participate in intensive treatment and related services as determined by the JTC. The DJS Intake Supervisor performs an initial criminal justice screening, and potential participants receive a substance abuse screening by Department of Health assessors at DJS Intake who then make recommendations to the DJS Intake worker (the Department of Health assessors may conduct additional clinical screenings).<sup>5</sup> The DJS intake supervisor forwards the case to the State's Attorney's Office (SAO) where it is reviewed. The SAO notifies the Coordinator if the juvenile is eligible for JTC. The Coordinator then reviews the case and the program's resources, and meets with the family. At that point the Coordinator either refers the case to the Judge to be considered for JTC or it is returned to the SAO for prosecution. A therap-

---

<sup>3</sup> Information was retrieved from [www.bls.gov](http://www.bls.gov) and represents data for April 2009 that was not seasonally adjusted.

<sup>4</sup> This means that the charge could result in some sentence or probation that would cause the defense attorney to advise the client to try drug court. Even if a juvenile meets substance abuse and legal criteria, if they are likely to only be sentenced to a short period of probation or to be fined or given community service, they would likely be advised by counsel that they should go ahead and be sentenced, rather than commit to the treatment court program.

<sup>5</sup> Assessment instruments include (but are not limited to) bio/psycho/social interview, strength-based questionnaire, POSIT (Problem-Oriented Screening Instrument for Teenagers), and a parent/guardian questionnaire.

ist visits the juvenile's home for additional assessment information and to clarify that the juvenile is appropriate for the program<sup>6</sup> before he/she enters the program.

In addition to the above process, juveniles who are on probation with DJS may be referred to the JTC by a Case Manager. The Coordinator then contacts the family, and a therapist visits the home for additional assessment. If the juvenile is found to be inappropriate for the drug treatment program, the probation officer is notified in writing by the Coordinator.

### **TREATMENT COURT PROGRAM PHASES AND REQUIREMENTS<sup>7</sup>**

The JTC has three phases, lasting a minimum of 5 months. Most participants remain in the program approximately 10 months.

#### ***Phase Requirements***

Phase 1, "Laying the Foundation," lasts a minimum of 30 to 45 days. During this phase, participants develop and begin to implement a treatment plan, attend treatment court reviews twice per month with a parent/guardian, attend school or GED classes, and attend MRT (Moral Reconciliation Therapy) group meetings. Participants must comply with a 5 p.m. curfew for the first 2 weeks of the program or until the first clean drug test. In order to advance to the next phase, participants must have a minimum of 30 days clean time (no drugs or alcohol).

Phase 2, "Renovations," lasts 3 to 12 months, with at least 60 days clean time. During Phase 2, participants must attend school or GED classes, maintain employment (if not a full-time student), complete Individualized Treatment goals, participate in individual and family counseling, complete MRT group, attend treatment court reviews twice per month (may be changed to once per month after exhibiting positive behaviors), complete 20 hours of community service/prosocial activity, and exhibit "an appropriate and positive attitude."

Phase 3, "Maintaining your House," lasts a minimum of 30 to 60 days, with 60 consecutive days' clean time. Participants must attend school or GED classes, maintain employment (if not a full-time student), complete discharge paperwork, and complete a "Reflections" essay.

In addition to the above requirements, a participant may be required to take part in Adventure Therapy, complete the Insights Photojournalism program, and/or participate in Greenscape.<sup>8</sup>

### **INCENTIVES AND SANCTIONS**

JTC participants are rewarded for making progress. Rewards include encouragement and praise from the Judge and the Team, gift cards and other gifts, less frequent court appearances, decreased drug testing, modified curfew, and release from probation (upon graduation).

Participants are sanctioned if they do not meet the requirements of the JTC. Negative behaviors that are sanctioned include having a positive drug or alcohol test; tampering with drug tests; not complying with the JTC rules; and unexcused absences or tardiness from school, work, or coun-

---

<sup>6</sup> The therapist looks for information about whether the family and child will be able to meet the requirements of the treatment court program, such as mental health issues or family supervision issues, and also assesses whether there are any safety issues which would impact home visiting.

<sup>7</sup> From the Circuit Court for Anne Arundel County Juvenile Treatment Court Policies and Procedures Manual, April 2006.

<sup>8</sup> Greenscape is an annual community event, during which volunteers improve parks, school grounds, and other areas.

seling. Sanctions include increased number of drug tests, essay-writing assignments, community service hours, book reports, curfew restrictions, length of phase extensions, increased court appearances, participation in a support group, attendance at an adult violation of probation hearing, community detention (with or without electronic monitoring), time in a juvenile facility, or revocation of program participation (termination).

### **GRADUATION AND UNSUCCESSFUL COMPLETIONS**

In order to graduate from the JTC, participants must complete all program requirements, including MRT, community service, and other requirements; have 60 continuous clean days; fully participate in meeting Treatment Plan goals; have a positive recommendation for graduation from the JTC team; and have the approval of the JDTC Judge. When all of the above requirements are met, the Judge will enter a “not delinquent” finding and probation is completed.

Participants who commit a violent crime or exhibit violent or threatening behavior, who cannot participate fully in the program because of mental illness, who are not engaged in treatment and complying with the JDTC requirements, or who continue delinquent activity while in JTC may be terminated from the program. Upon unsuccessful completion of the JTC program, an individual returns to juvenile court and faces possible punishment for the original offense.

# OUTCOME-IMPACT EVALUATION

## Outcome Evaluation Methods

### RESEARCH STRATEGY

The primary criminal justice system outcome of interest to treatment 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 and 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 JTC participants who entered the program between March 2002 and September 2008. This time frame included all JTC 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.

Graduation rates were calculated for the JTC by dividing the number of participants who graduated by the total number who exited the program during the study time period. The graduation rate does not include active participants.

Differences in demographics and criminal history between JTC 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 JTC reduce substance abuse among program participants?
2. Does the JTC program reduce recidivism in the juvenile justice system?
3. To what extent are participants successful in completing the JTC 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 treatment 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 [treatment court group only], adult criminal justice histories in the form of arrest records [treatment court group only], local adult court case information [treatment court group only], substance abuse treatment services and program data from multiple sources.<sup>9</sup> Once data were obtained for the participant and comparison groups, the data were

---

<sup>9</sup>All data were gathered for this study with appropriate Institutional Review Board approval, including HIPAA waivers. Memorandums of Understanding (MOUs) with individual data sources were also obtained as needed.

compiled, cleaned and moved into SPSS 15.0 for statistical analysis. The evaluation team employed univariate and multivariate statistical analyses using SPSS, which is 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.

*Anne Arundel County Juvenile Treatment Court Database*

Data were provided by the JTC office from their Microsoft Access database that included names, demographic information, program acceptance status, time spent in JTC, and discharge status for JTC participants only, program participation events such as urinalysis testing dates and results and the dates of court hearings.

*ASSIST, Department of Juvenile Services*

Data on juvenile supervision, court cases, detention placements and juvenile arrests were provided for the JTC and comparison groups 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 JTC 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 Anne Arundel County for JTC participants.

*Substance Abuse Management Information System (SAMIS)*

Substance abuse treatment data for the JTC 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.

**Table 1. Data Sources**

<b>Database</b>	<b>Source</b>	<b>Example of Variables</b>
JTC Program Database	Program Coordinator	Acceptance status, time spent in JTC, discharge status, UA test dates and results and court hearing dates.
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**

### *Treatment Court Participant Group*

This study examines outcomes over a 2-year period for program participants and a matched comparison group. All JTC participants who entered the program from March 2002 to September 2008 were selected for this study. JTC participant information was obtained from a list kept by the JTC Program Coordinator. The number of JTC participants in this study's cohort is presented in Table 2 by the year of their admission.

**Table 2. Anne Arundel County JTC Admissions by Year**

<b>Year</b>	<b>Admissions</b>
2002	20
2003	17
2004	20
2005	15
2006	37
2007	34
2008	25
<b>Total</b>	<b>168</b>

*Comparison Group*

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 Anne Arundel County and all were under a moderate, high or intensive level of juvenile supervision during the time period. These criteria were established in consultation with the JTC coordinator in accordance with the program eligibility criteria; the JTC 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 633 juvenile offenders on moderate, high or intensive-level supervision between January 2004 and September 2008 in Anne Arundel County. These individuals were identified as having an eligible charge in their juvenile arrest history that matched the juvenile arrest histories of the JTC 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 JTC 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 JTC 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 Anne Arundel 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 JTC 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 JTC 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 JTC and comparison groups. The final sample included 168 treatment court participants and 102 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 JTC reduce substance abuse among program participants?

The dates of positive drug tests (urinalyses or UAs) for JTC participants were obtained from the program. To determine whether there was a reduction in drug use, the number of individuals who were tested over 10 months while in the program were 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 JTC and comparison groups. Univariate analysis of variance was performed to compare the mean number of re-arrests for all JTC participants with the comparison group. The means comparing the JTC 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 of opportunity to re-offend. Time of opportunity 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 treatment court, may have been discharged from the program and are therefore not equivalent to treatment court graduates.

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

Univariate analysis of variance was performed to compare the mean number of re-arrests for JTC and comparison groups. The means comparing the JTC 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 of opportunity to re-offend. Time of opportunity 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 treatment court, may have been discharged from the program and are therefore not equivalent to treatment court graduates.

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

3. To what extent are participants successful in completing the JTC 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 JTC 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 JTC 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 JTC 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 JTC program entry or equivalent. For the comparison group, an equivalent "start date" was calculated by adding 93 days, which was the median number of days from their eligible case arrest to JTC program entry that had been calculated from the JTC participants, to the eligible arrest date. The evaluation team utilized the ASSIST data to determine whether there was a difference in juvenile re-arrests, placements, and other outcomes of interest between the JTC and comparison groups.

All individuals who were studied for the outcomes report had at least 6 months of follow-up time, which included 168 JTC participants (88 graduates, 66 non-graduates, and 14 active participants) and 102 comparison group individuals.

#### LIMITATIONS OF THIS STUDY

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

**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.

**Start-up participants were included in the participant sample:** JTC participants who received services during the implementation of the JTC program were included to increase sample sizes. Typically, participants in treatment 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 Anne Arundel County JTC 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 JTC 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 JTC and comparison groups. Independent samples t-tests and chi-square analyses showed no significant differences between JTC and comparison groups on the characteristics listed in this table.

**Table 3. JTC and Comparison Group Characteristics**

	All JTC Participants N = 168	Comparison Group N = 102
Gender		
Male	86%	89%
Female	14%	11%
Ethnicity		
Caucasian	71%	64%
Non-Caucasian	29%	36%
Mean age at eligible arrest date	16 years	16 years
Median	16 years	16 years
Range	12 – 17 years	12 – 17 years
Type of charge at eligible arrest		
Drug-related	61%	58%
Property-related	33%	33%
Person-related	16%	23%
‘Other’	17%	23%
Average number of <u>total</u> arrests in the 2 years prior to the arrest leading to program participation	2.53 (range 0 – 8)	2.48 (range 0 – 8)
Average number of <u>drug</u> arrests in the 2 years prior to the arrest leading to program participation	0.97 (range 0 – 4)	0.80 (range 0 – 4)

Data from the ADAA were available for 55 of the 168 JTC 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 JTC participants was marijuana (62%). The next most common drug of choice was heroin (10%). Alcohol is the most common secondary drug of choice for 33% of JTC participants. The average age at first substance use was 13. Most JTC participants (75%) reported to their treatment provider that they had used tobacco in the last 30 days.

**Table 4. Primary Drug of Choice**

<b>Primary Substance</b>	<b>Number of JTC Youth (N = 55)</b>
Marijuana	34
Heroin	6
All Others <sup>10</sup>	15

### *Mental Health History*

Nearly half of the JTC group (47%) admitted to the program, were identified as having a current mental health problem, based on treatment data.

### *Family Income and Health Insurance*

Of JTC participants who had family income information available from treatment data, most (78%) reported a family income of less than \$40,000 per year. In addition, two JTC youth were listed as homeless.

Most JTC participants received some publicly funded substance abuse treatment services (67%), though about two-third (62%) had the means to pay for some costs through private insurance or family self-pay.

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

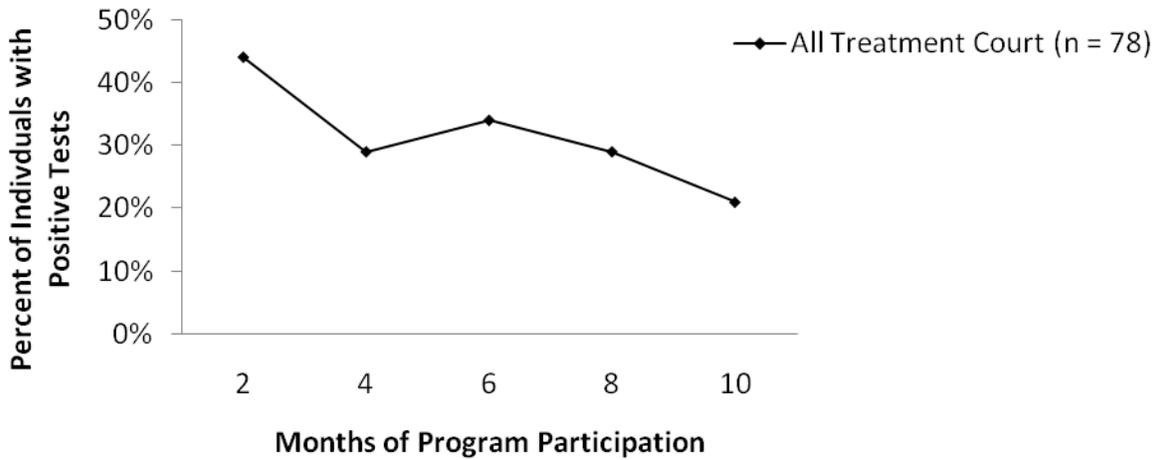
**YES: JTC participants showed reductions in drug use following entrance into the program.**

### *Drug Testing*

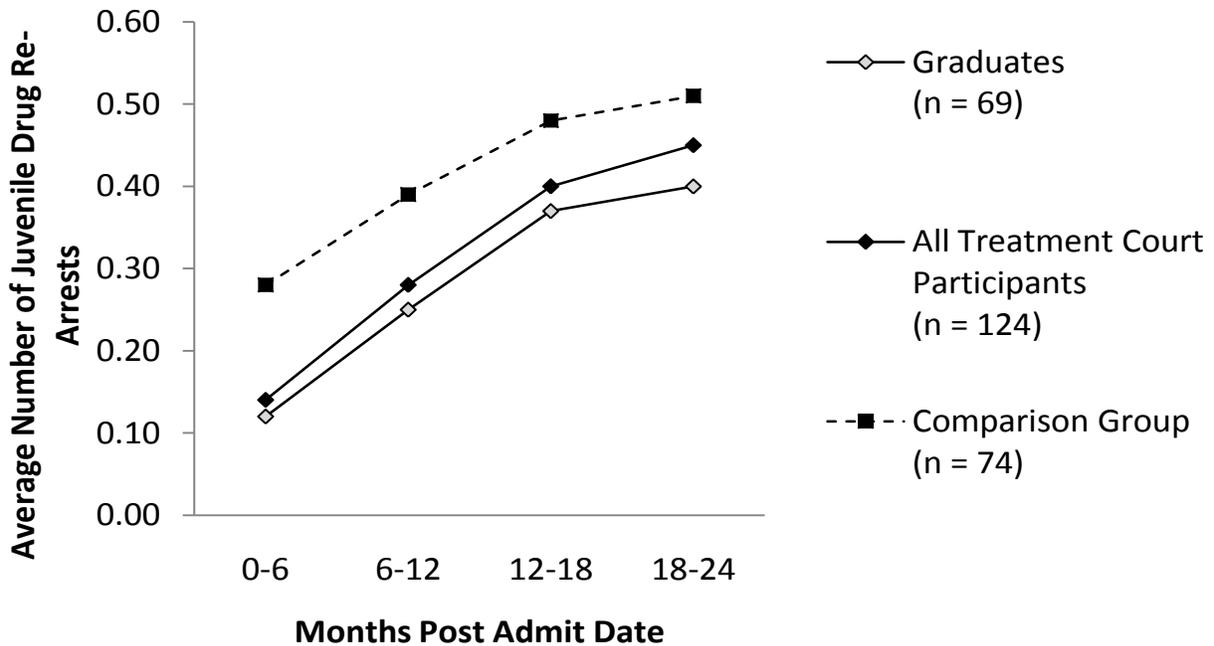
Figure 1 shows the percentage of program participants with a positive urine analysis (UA) test in each 2-month period for individuals receiving 10 months or more of program services, regardless of graduation status. The rate of substance use, as measured by positive drug tests among program participants,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

<sup>10</sup> “All Others” include crack and other cocaine, oxycodone, other opiates, PCP and “other.”

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



**Figure 2. Mean Number of Drug Re-arrests Over Time**



*Drug-Related Offenses*

Figure 2 displays the cumulative mean number of drug re-arrests per person during discrete, 6-month periods over 24 months after program entry among the JTC and comparison groups (this analysis includes only program participants who had 24 months of available follow-up time). There was a significant difference between the JTC and comparison group during the first 6 months post JTC entry or equivalent ( $p < .05$ ), indicating the program had a notable impact on youth behavior during this early period. Over time, all groups accumulated new drug arrests, but by 24 months the Treatment Court group maintained a lower cumulative average than the comparison group. However, the rate of new drug arrests becomes comparable after the 6-month time period (in the new periods, there are not differences between the rates

of additional drug arrests). When looking at the percent of participants over time who had a drug re-arrest, the pattern is similar to the group's number of re-arrests. There was a significant difference in the proportions of JTC and comparison groups who had any drug re-arrest present during the first 6 months after program entry.

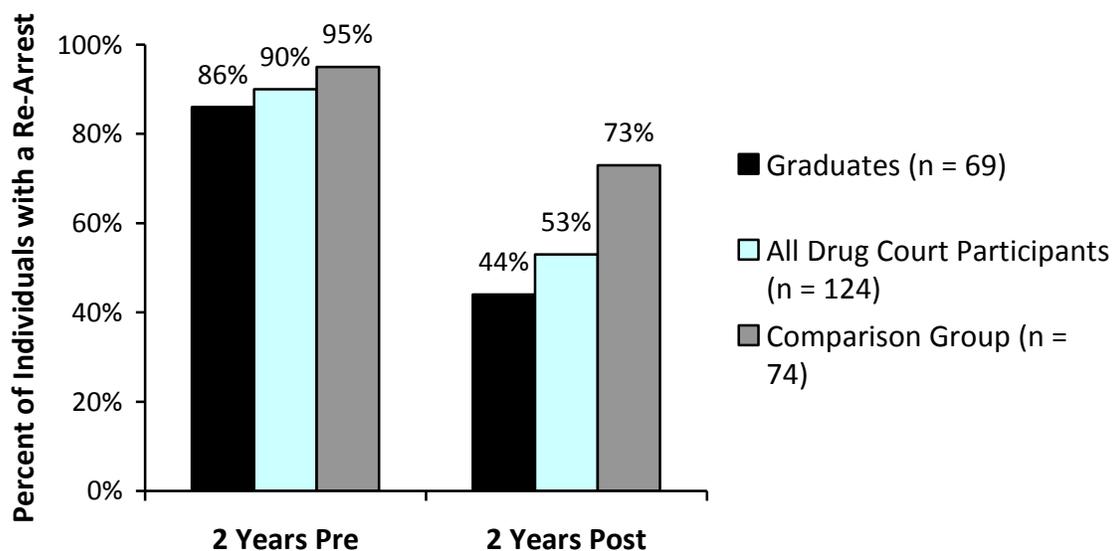
**POLICY QUESTION #2: DOES PARTICIPATION IN THE TREATMENT COURT PROGRAM REDUCE RECIDIVISM?**

**YES: 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.

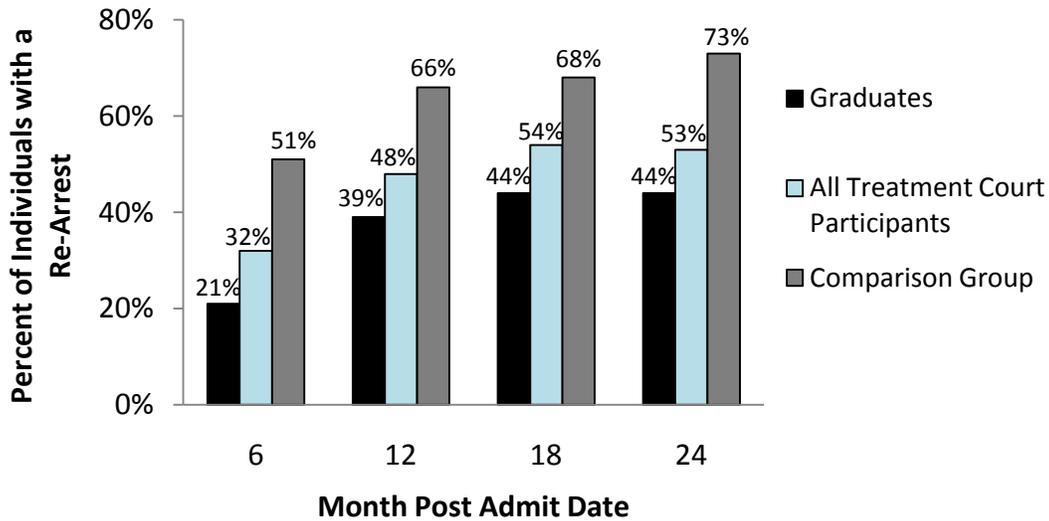
**Figure 3. Juvenile Arrest Rates 2 Years Before and 2 Years After JTC Start Date**



The percentage of youth arrested in the JTC group in the 2 years post program start was significantly less than the percentage re-arrested pre-program, regardless of graduation status. Similarly, the percent of youth re-arrested in the comparison group also decreased significantly. Further, although the arrest rates of JTC and comparison groups were statistically equivalent at pre-program, the JTC group had a significantly smaller proportion with re-arrests at post, compared to the comparison group. This indicates that the JTC program is effectively reducing recidivism for its participants.

As shown in Figure 4, the recidivism rate for JTC participants is significantly lower than the comparison group at every time period, regardless of graduation status.

**Figure 4. Juvenile Re-Arrest Rate Over Time by Group<sup>11</sup>**



In the 24 months following entry to the program, 53% of all JTC participants and only 44% of graduates were re-arrested, while 73% of the comparison group was re-arrested.

**Number of Juvenile Re-Arrests**

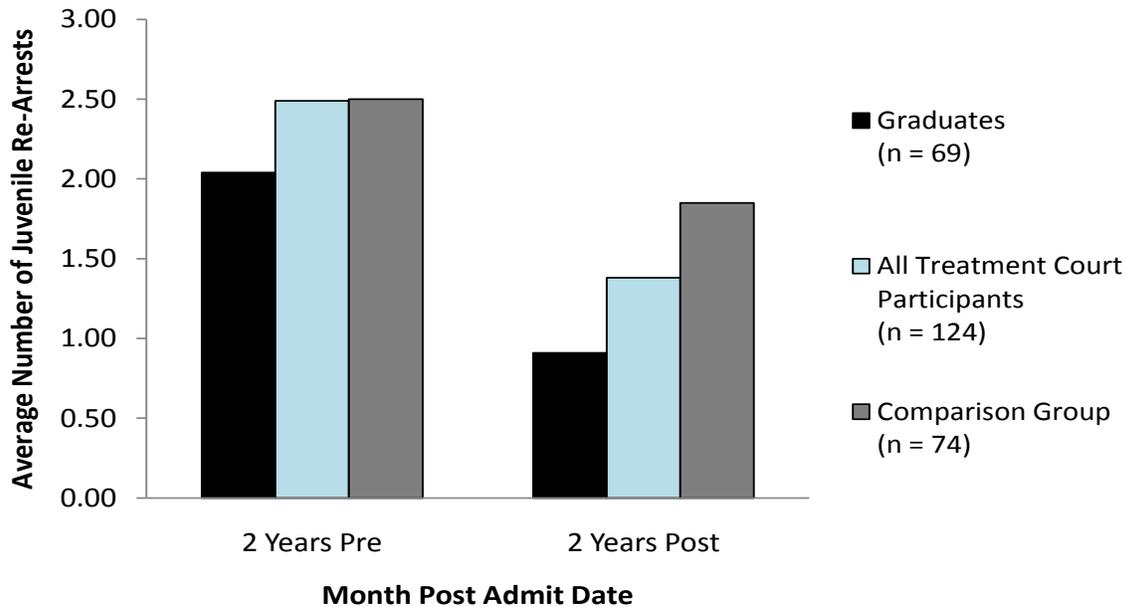
An analysis of the *number* of re-arrests per youth shows a similar pattern as the re-arrest rate in Figures 3 and 4, above.

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

<sup>11</sup> Sample sizes: Graduates with 6 months n = 88, 12 months n = 87, 18 months n = 78, and 24 months n = 69; All JTC participants with 6 months n = 168, 12 months n = 157, 18 months n = 141, and 24 months n = 124; Comparison group with 6 months n = 102, 12 months n = 95, 18 months n = 83, and 24 months n = 74.

The mean number of re-arrests was adjusted to control for differences between JTC and comparison groups on gender, race/ethnicity, age at eligible arrest, prior arrest history, and time of opportunity for re-offending (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 of opportunity as actual incarceration days are included in the costs.

**Figure 5. Mean Number of Juvenile Re-Arrests 2-Years Pre and 2-Years Post Program by Group**



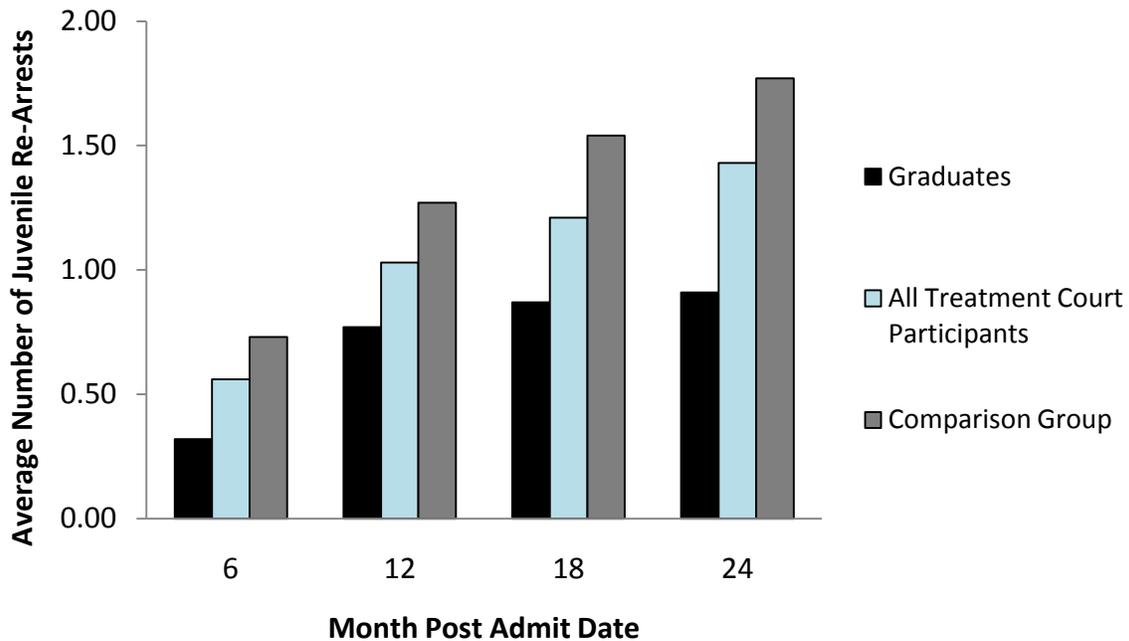
The JTC participants were re-arrested significantly less often in the 24 months post program than in the 24 months pre-program. This may indicate an effect from the program on reducing the number of re-arrests among JTC participants.

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). However, the difference between the JTC participants and the comparison group 2 years post program is not significant.

Figure 6 shows the mean number of juvenile re-arrests over time for JTC graduates, all JTC participants, and the comparison group. JTC participants showed a lower number of re-arrests at every time period compared to the comparison group, although these differences were not significant.<sup>12</sup> However, although these differences were not statistically significant, the pattern of lower re-arrests among the JTC group is a promising indicator of reduced number of re-arrests over time.

<sup>12</sup> The mean number of re-arrests was adjusted to control for differences between JTC and comparison groups on gender, race/ethnicity, age at eligible arrest, prior arrest history, and time of opportunity for re-offending (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 of opportunity as actual incarceration days are included in the costs.

Figure 6. Cumulative Number of Juvenile Re-Arrests Over Time by Group<sup>13</sup>



#### *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 JTC and comparison groups that had 3 or more subsequent arrests were statistically different (19% of JTC participants and 31% of the comparison group). However, the mean number of re-arrests at 24 months for all JTC individuals with chronic subsequent arrests was 4.8 compared to a mean of 4.1 for the comparison group chronic re-offenders.

#### *Adult Criminal Justice Recidivism (treatment court group only)*

In addition to the data provided by the Department of Juvenile Services, data were also obtained for JTC participants who later came into contact with the adult criminal justice system.<sup>14</sup> NPC collected these records from the Maryland Department of Public Safety and Correctional Services (DPSCS) and Anne Arundel County Sheriff’s Office/Detention Center. DPSCS provided records of prison admissions and statewide arrest records. The Anne Arundel County Detention Center provided entry and release dates for jail time served.

Adult criminal justice outcomes were examined for the 2 years after JTC entry. Examination of the data showed that most JTC youth (90%) became adults during the study’s time frame. Adult data, including arrests, district and circuit court cases and jail and prison time could be analyzed for the JTC group only.

<sup>13</sup> Sample sizes: Graduates with 6 months n = 88, 12 months n = 87, 18 months n = 78, and 24 months n = 69; All JTC participants with 6 months n = 168, 12 months n = 157, 18 months n = 141, and 24 months n = 124; Comparison group with 6 months n = 102, 12 months n = 95, 18 months n = 83, and 24 months n = 74.

<sup>14</sup> 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 = 153) who became adults during the outcomes period (2 years), 30% (n = 42) were arrested in the adult system during the 2 years after their JTC entry date. Of the 42 individuals who had been arrested, 49% were arrested more than once, 91% had a district court case and 40% had a circuit court case. Twenty-six percent of these 42 individuals had spent some time in the Anne Arundel County Detention Center and two of the JTC participants had served time in state prison.

Among those who graduated from the JTC program and also turned 18 within the outcomes period (n = 81), 22% had an arrest in the adult system; 6 of these 17 participants were arrested as adults more than once during the 2 years post program entry. Of graduates who had been arrested as adults, 4 had district court cases, 8 had circuit court cases, and 10 spent time at the detention center and one served time in prison.

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

**YES: JTC participants are successful in completing the JTC program and complete within the intended time period.**

During the study period, the overall graduation rate for the JTC was 55%.<sup>15</sup> In addition, the average time for graduates to complete the program was 10 months, which is the intended program length.

The program has seen, in general, improving graduate rates over time (except for 1 year with a very high graduation rate), as shown in Table 5. The JTC 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 and other practical supports.

**Table 5. Number of JTC Graduates in Study Sample by Year**

Admission Year	Number Graduated (N = 88)	Number Discharged (N = 66)	Graduation Rate
2002	9	11	45%
2003	8	9	47%
2004	11	9	55%
2005	12	3	80%
2006	20	17	54%
2007	18	14	56%
<b>Total</b>	<b>78</b>	<b>63</b>	<b>55%</b>

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.

<sup>15</sup> The national average graduation rate for adult treatment court programs is around 50% (Belenko, 2001); however, there is not yet a published average for juvenile treatment court programs. However, using the adult standard shows that this program is above-average in helping participants successfully complete the program.

#### POLICY QUESTION #4: WHAT PREDICTS PARTICIPANT SUCCESS?

*Which characteristics of Treatment Court participants are associated with positive program outcomes, e.g., graduation and reduced recidivism?*

##### Graduation

NPC examined the characteristics of JTC 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 JTC 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. Graduates had a significantly fewer total arrests, drug arrests, and person arrests in the 2 years prior to the eligible case arrest. Further, graduates had a larger proportion of females and smaller proportion of non-Caucasian participants, at the level of a trend ( $p < .10$ ).

**Table 6. Characteristics of JTC Graduates and Non-Graduates**

	JTC Graduates N = 88	JTC Non- Graduates N = 66	Significantly Different? <sup>16</sup> ( $p < .05$ )
Gender			
Female	19%	9%	<b>Trend</b>
Ethnicity			
Non-Caucasian	22%	35%	<b>Trend</b>
Mean age in years, at eligible arrest date	16	16	No
Mean length of stay in JTC in days	317	314	No
Mean number of days of opportunity (risk) for offending during the program	276	265	No
Average number of <u>total</u> arrests in the 2 years prior to the arrest leading to program participation	2.08	2.95	<b>Yes</b>
Average number of <u>drug</u> arrests in the 2 years prior to the arrest leading to program participation	.77	1.15	<b>Yes</b>
Average number of <u>property</u> arrests in the 2 years prior to the arrest leading to program participation	.81	1.08	No
Average number of <u>person</u> arrests in the 2 years prior to the arrest leading to program participation	.34	.70	<b>Yes</b>

<sup>16</sup> Yes indicates  $p < .05$ , No indicates  $p > .05$ , Trend indicates  $p > .05$  and  $p < .10$ .

When JTC participant characteristics were examined together in relation to graduation status in a logistic regression analysis, only one characteristic was significant at the level of a trend, above and beyond the others: prior number of drug arrests. Graduates were more likely to have fewer prior drug arrests compared to non-graduates. It appears that this program is more effective for youth with less involved criminal and substance abuse histories.

### *Recidivism*

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

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

	<b>Participants who were re-arrested were more likely to:</b>	<b>Significant Predictor of Recidivism at 24 Months?<sup>17</sup></b> ( $p < .05$ )
Gender	Be male	<b>Trend</b>
Ethnicity		No
Mean age at eligible arrest date	Be younger at program entry	<b>Yes</b>
Mean length of stay in JTC program	Have more time in the program	<b>Yes</b>
Time at risk for offending	Have less time in the community during the program	<b>Yes</b>
Program status at exit	Be a non-graduate	<b>Yes</b>
Average number of <u>total</u> arrests in the 2 years prior to the arrest leading to program participation		No
Average number of <u>drug</u> arrests in the 2 years prior to the arrest leading to program participation		No
Average number of <u>property</u> arrests in the 2 years prior to the arrest leading to program participation	Have more property priors	<b>Yes</b>
Average number of <u>person</u> arrests in the 2 years prior to the arrest leading to program participation		No

As shown in Table 7, JTC 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, spend *more* time in the program, have less time in the community during the program, be a non-graduate, and have more property priors in the 24 months before their eligible arrest. Further, although only significant at the level of a trend, JTC participants were more likely to have been male. This last result is not surprising given that males are more likely to be arrested in general (as evidenced by their greater proportions in the juvenile justice system overall and in this program in particular).

<sup>17</sup> Yes indicates  $p < .05$ , No indicates  $p > .05$ , Trend indicates  $p > .05$  and  $p < .10$ .

When these factors were entered into a logistic regression model, and each variable was controlled for, two characteristics remained significant predictors above and beyond the other characteristics: age at eligible arrest and time of opportunity during the program. JTC participants were more likely to recidivate at 24 months if they were younger at their eligible arrest and if they spent less time in the community during the JTC program.

The results of this analysis show that age and time at risk are predictors of recidivism. Specifically, older participants and those who have less time in the community are less likely to re-offend. It may be difficult for the program to adjust services to address age of youth; however, it could be useful for the program to determine if the services provided are developmentally appropriate for the range of participant ages. In addition, it is not surprising that time in the community translates into greater rates of offending, though the program should look carefully at the risk level of participants and ensure that the level of supervision is adequate to prevent criminal behavior even while the youth is in the community.

### OUTCOME SUMMARY

Overall, outcomes for JTC participants are quite positive. After participation in the program, regardless of whether they graduate, JTC participants had fewer positive drug tests over time and were re-arrested on drug charges during the first 6 months post JTC entry less often than the comparison group of similar individuals who did not participate, indicating a reduction in drug use due to program participation.

Further, JTC participants had lower recidivism than the comparison group, measured both by the recidivism rate and the average number of re-arrests per person. Additionally, JTC participants were re-arrested less often in the 24 months post program compared to the 24 months pre-program, indicating possible program effects. A pre-post test on the *number* of re-arrests for each group showed a significant reduction in arrests for both treatment court participants and the comparison group during the post period; it is possible 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. In addition, JTC participants had significantly more days in detention during the 18 months after the start of their program participation than members of the comparison group, though the difference was not significant at 24 months.

The graduation rate for the program was 55%. In addition, an examination of the characteristics of those who graduated from the program compared to those who did not graduate showed that JTC graduates were significantly more likely to have fewer total arrests and fewer drug arrests in the 2 years prior to the arrest leading to program participation. Further, trends suggest that graduates may more likely be female and Caucasian. Also, participants who were older and had less time at risk were less likely to re-offend.

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

## COST EVALUATION

The Anne Arundel County Juvenile Treatment Court cost evaluation was designed to address the following study questions:

1. How much does the JTC program cost?
2. What is the 24-month cost impact on the juvenile justice system of sending offenders through JTC or traditional court processing?
3. What is the impact on the juvenile justice system of the time between the eligible arrest and JTC 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 treatment 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 treatment 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 treatment 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 incarcerated, 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 Anne Arundel County Juvenile Treatment Court. The costs to the juvenile justice system (cost-to-taxpayer) in Anne Arundel County incurred by participants in Treatment Court are compared with the costs incurred by those who were similar to but did not enter Treatment Court. In addition, the specific program costs are calculated separately in order to determine the per-participant costs of the Anne Arundel County Juvenile Treatment Court program.

### *TICA Methodology*

The TICA methodology as it has been applied in the analysis of the Anne Arundel County Juvenile Treatment 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 JTC 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 Treatment Court and non-treatment 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 Treatment 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 Treatment 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 Treatment 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 treatment court sessions, case management, group and individual treatment sessions, family counseling, intensive outpatient treatment, drug tests, juvenile probation, juvenile detention, shelter care, and residential care.

**Table 8. The Six Steps of TICA**

	<b>Description</b>	<b>Tasks</b>
<b>Step 1:</b>	Determine flow/process (i.e., how clients move through the system)	<ul style="list-style-type: none"> <li>• Site visit</li> <li>• Interviews with key stakeholders (agency and program staff)</li> </ul>
<b>Step 2:</b>	Identify the transactions that occur within this flow (i.e., where clients interact with the system)	<ul style="list-style-type: none"> <li>• Analysis of process information gained in Step 1</li> </ul>
<b>Step 3:</b>	Identify the agencies involved in each transaction (e.g., court, treatment, police)	<ul style="list-style-type: none"> <li>• Analysis of process information gained in Step 1</li> </ul>
<b>Step 4:</b>	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)	<ul style="list-style-type: none"> <li>• Interviews with program key informants using cost guide.</li> <li>• Administrative data collection of number of transactions (e.g., number of court appearances, number of treatment sessions, number of drug tests).</li> </ul>
<b>Step 5:</b>	Determine the cost of the resources used by each agency for each transaction	<ul style="list-style-type: none"> <li>• Interviews with budget and finance officers</li> <li>• Document review of agency budgets and other financial paperwork</li> </ul>
<b>Step 6:</b>	Calculate cost results (e.g., cost per transaction, total cost of the program per participant)	<ul style="list-style-type: none"> <li>• 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</li> <li>• The transaction cost is multiplied by the average number of transactions for program participants to determine the total average cost per transaction type</li> <li>• These total average costs per transaction type are added to determine the program and outcome costs.</li> </ul>

### Cost Evaluation Results

Juvenile treatment 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. Treatment 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 treatment 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, treatment 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 Anne Arundel County JTC program.

As described in the methodology section, 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 treatment court sessions, case management, group and individual treatment sessions, family counseling, intensive outpatient treatment, drug tests, juvenile probation, 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 JTC program cost?*

#### *Program Transactions*

A ***Treatment Court Session***, for the majority of treatment courts, is one of the most staff and resource intensive program transactions. In the Anne Arundel County Juvenile Treatment Court, these sessions include representatives from:

- Circuit Court of Maryland (Judge, Court Clerk, Counselors, Program Manager, and Treatment Court Coordinator);
- Anne Arundel County State’s Attorney’s Office (State’s Attorney);
- Maryland Office of the Public Defender (Public Defender);
- Maryland Department of Juvenile Services (Case Managers).

The cost of a ***Treatment 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 Treatment Court session. This includes the direct costs of each Treatment 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 Treatment Court appearance is **\$386.16** 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.<sup>18</sup> The agencies involved in case management for the Anne Arundel County Juvenile JTC program are the Circuit Court and Department of Juvenile Services. The daily cost of case management in this program is **\$17.08** per participant.

***Drug Treatment Sessions*** include group, individual, intensive outpatient, and family counseling sessions. Treatment costs are determined on a sliding scale measure, depending on the parent’s level of insurance for the participant. Participants’ parents pay for all treatment (90% have insurance). The remaining parents are encouraged to apply for MCHIP, the medical assistance program for families. Because this analysis only covers costs to taxpayers and the vast majority of JTC treatment costs are born by participants’ insurance, drug treatment sessions will not be included in program costs.

---

<sup>18</sup> 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 Tests** are performed by DJS and cost \$6.50 per test. However, JTC participants are charged the full cost of all drug tests so they will not be considered in this analysis of program costs.

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

**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 **\$206.63** at Morningstar. Other residential stays cost an average of **\$281.54** per day. A proxy of the average cost of shelters in the area was used to come up with a cost of **\$440.00** per day. Treatment court participants did not stay in residential facilities or shelters during their time in program. Therefore, they are not listed in Table 9 below.

#### **Program Costs**

Table 9 provides the unit cost per transaction described above, the average number of JTC 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 JTC graduates (N = 88) and for all JTC participants (N = 154), 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 JTC Program Costs per Participant**

Transaction	Transaction unit cost	Average number of transactions per JTC graduate	Average cost per JTC graduate N = 88	Average number of transactions per JTC participant	Average cost per JTC participant N = 154
Treatment Court Appearances	\$386.16	44.25	\$17,088	40.51	\$15,643
Case Management	\$17.08	316.97 Days <sup>19</sup>	\$5,414	315.88 Days	\$5,395
Juvenile Probation Days	\$25.06	41.08	\$1,029	44.56	\$1,117
Cheltenham Detention Days	\$440.00	2.31	\$1,016	3.95	\$1,738
Waxter Detention Days	\$478.00	.15	\$72	.19	\$91
Other Detention Days	\$459.00	3.95	\$1,813	7.08	\$3,250
<b>Total JTC</b>			<b>\$26,432</b>		<b>\$27,234</b>

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

On average, the total cost per participant in JTC is **\$27,234**. Note that the two most expensive areas of cost for the program are treatment court appearances (\$15,643) and case management (\$5,395). This is not surprising given that intensive court supervision and case management are commensurate with the treatment court model.

*Program Costs per Agency*

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

<sup>19</sup> The average cost per participant for case management is calculated based on the average number of days participants spent in the JTC program.

**Table 10. Average JTC Cost per Participant by Agency**

<b>Agency</b>	<b>Average Cost per JTC Graduate N = 88</b>	<b>Average Cost per JTC Participant N = 154</b>
Anne Arundel County Circuit Court	\$14,636	\$13,686
Anne Arundel County State's Attorney's Office	\$340	\$311
Maryland Office of the Public Defender	\$895	\$819
Maryland Department of Juvenile Services	\$10,561	\$12,418
<b>Total<sup>20</sup></b>	<b>\$26,432</b>	<b>\$27,234</b>

Due to the case management conducted by Circuit Court counselors and the Circuit Court employees' attendance at Treatment Court sessions, expenses for the Circuit Court (\$13,686) are 50% of the total JTC program costs. Because its case managers attend treatment court sessions and provide case management, along with providing juvenile detention to JTC participants, DJS shoulders 46% of the total JTC program costs (\$12,418). The other agencies involved in the JTC program (State's Attorney and the Office of Public Defender) incur their costs primarily through staff attendance at Anne Arundel County JTC sessions.

#### *Local versus State Costs for the JTC Program*

State policy leaders and administrators may find it useful to examine programs costs by jurisdiction (state or local/county). The portion of JDC program costs accruing to the State of Maryland is 49% or \$13,237 per participant. The local or Anne Arundel County portion of costs is 51% of total program costs per participant, or \$13,997.

## **COST EVALUATION QUESTION #2: OUTCOME/RECIDIVISM COSTS**

### ***What is the 24-month cost impact on the juvenile justice system of sending offenders through JTC 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 JTC 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 198 individuals for whom at least 24 months of outcome data were available (124 Treatment Court participants and 74 com-

<sup>20</sup> Totals in this row may not match the totals in the outcome costs by transaction table due to rounding.

parison group members). All Treatment Court 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 24 months after Treatment Court entry (or an approximate start date for comparison group members). 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 Maryland Circuit Court in Anne Arundel County, the Anne Arundel County State's Attorney's Office, the Maryland Office of Public Defender in Anne Arundel County, the Maryland Department of Juvenile Services in Anne Arundel 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 Anne Arundel County are conducted by multiple law enforcement agencies. However, the Anne Arundel Police Department is the primary arresting agency and the agency used for this outcome cost analysis. The average cost of a single arrest conducted by the Anne Arundel County Police Department (calculated using information provided by a representative of the department) is **\$187.68**.

**Juvenile Court Cases** include all court cases, including those cases that are reviewed and rejected by the Anne Arundel 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 Anne Arundel County State's Attorney's Office, and the Maryland Office of the Public Defender. The average cost of a juvenile court case is **\$3,310.21**.

**Juvenile Probation** is provided by DJS. A representative of DJS provided NPC's researchers with the average 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 and **\$206.63** at Morningstar. The average cost of residential at these three facilities is **\$281.54** 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 Anne Arundel 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 outcome data for the comparison group sample required to assess the impact of the Anne Arundel County Juvenile JTC on adult criminal justice system costs. As a result, these costs are not included in this analysis.

*Outcomes and Outcome Cost Consequences*

Table 11 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 Anne Arundel County JTC graduates, all participants (both graduated and non-graduates combined), and the comparison group for 24 months after entry date (or equivalent date for the comparison group).

**Table 11. Average Number of Outcome Transactions per JTC and Comparison Group Member (Including JTC Graduates) Over 24 Months**

<b>Transaction</b>	<b>JTC Graduates N = 69</b>	<b>All JTC Participants N = 124</b>	<b>Comparison Group N = 74</b>
Juvenile Arrests	.91	1.45	1.73
Juvenile Court Cases	.32	.58	.55
Juvenile Probation Days	3.55	101.29	183.56
Cheltenham Detention Days	1.98	10.22	10.81
Waxter Detention Days	.40	1.58	0
Other Detention Days	8.68	23.78	17.88
Schaefer Residential Days	1.33	.71	1.33
Meadow Mountain Residential Days	0	5.01	0
Morningstar Residential Days	0	2.13	0
Other Residential Days	0	2.22	11.40
Other Shelter Days	0	.15	0

As can be seen in this table, JTC participants have fewer re-arrests, juvenile probation days and residential care days than members of the comparison group. JTC participants had more detention days and slightly more juvenile court cases and shelter days than members of the comparison group.

Graduates of the JTC show smaller numbers than all drug court participants and comparison group members across every transaction. It is also clear from Table 11 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 juvenile probation, detention and residential care.

### Outcome Cost Results

Table 12 demonstrates the costs associated with the outcomes described above for all JTC participants, JTC graduates, and the comparison sample.

**Table 12. Juvenile Justice System Outcome Costs per JTC and Comparison Group Member (Including JTC Graduates) Over 24 Months**

Transaction	Transaction Unit Cost	JTC Graduates N = 69	All JTC Participants N = 124	JTC Comparison Group N = 74
Juvenile Arrests	\$187.68	\$171	\$272	\$325
Juvenile Court Cases	\$3,310.21	\$1,059	\$1,920	\$1,821
Juvenile Probation Days	\$25.06	\$89	\$2,538	\$4,600
Cheltenham Detention Days	\$440.00	\$871	\$4,497	\$4,756
Waxter Detention Days	\$478.00	\$191	\$755	\$0
Other Detention Days	\$459.00	\$3,984	\$10,915	\$8,207
Schaefer Residential Days	\$379.00	\$504	\$269	\$504
Meadow Mountain Residential Days	\$259.00	\$0	\$1,298	\$0
Morningstar Residential Days	\$206.63	\$0	\$440	\$0
Other Residential Days	\$279.86	\$0	\$625	\$3,210
Other Shelter Days	\$440.00	\$0	\$66	\$0
<b>Total</b>		<b>\$6,869</b>	<b>\$23,595</b>	<b>\$23,423</b>

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

It is clear from Table 12 that the outcome cost for the overall JTC group (\$23,595 per participant) is roughly equivalent to that of the comparison group (\$23,423 per comparison group member). The total outcome cost per JTC graduate (\$6,869) is 71% lower than that of the comparison group.

A closer look at the outcome cost results offers several interesting points of analysis. When DJS placements (detention, residential, and shelter care) are excluded from the analysis, the outcome costs per JTC participant (\$4,730) is lower than that of the comparison group (\$6,746). If we consider that one of the primary operating objectives of JTC program is to apply a higher than “business as usual” level of surveillance to participants, resulting in more supervision and detention consequences, this higher cost is reasonable and predictable. If we were to control for the cost difference on these dimensions, the total average cost of the comparison group would be 30% higher than the JTC group.

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 \$16,554 after 24 months is a dramatic 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 13 we present the outcome costs by agency.

**Table 13. Juvenile Justice System Outcome Costs by Agency per JTC and Comparison Group Member (Including JTC Graduates) Over 24 Months**

Jurisdiction/Agency	JTC Graduates N = 69	All JTC Participants N = 124	JTC Comparison Group N = 74	Difference (Benefit)
Anne Arundel County Circuit Court	\$287	\$520	\$493	-\$27
Anne Arundel County State’s Attorney’s Office	\$416	\$754	\$715	-\$39
Anne Arundel County Police Department	\$171	\$272	\$325	\$53
Maryland Office of the Public Defender	\$357	\$647	\$613	-\$34
Maryland Department of Juvenile Services	\$5,639	\$21,403	\$21,277	-\$126
<b>Total<sup>21</sup></b>	<b>\$6,870</b>	<b>\$23,596</b>	<b>\$23,423</b>	<b>-\$173</b>

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

Similar to many of the treatment court studies in which NPC has been involved, outcome savings associated with JTC participants accrue to some agencies and not to others:

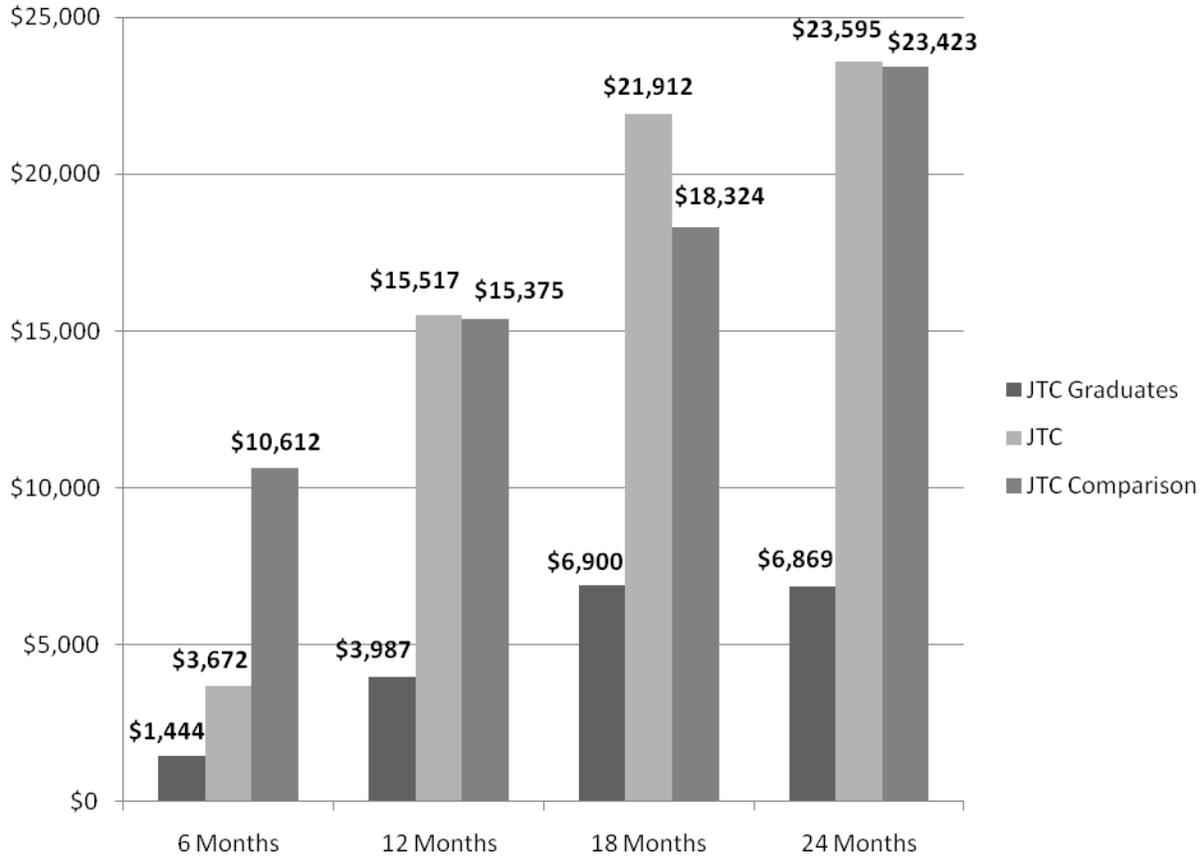
- 16% in outcome costs savings was demonstrated for the Anne Arundel Police Department;
- 5% in outcome cost loss was shown for the Circuit Court, State’s Attorney’s Office, and Office of the Public Defender;
- 1% in outcome cost loss was shown for DJS, due to more detention for JTC participants than for comparison group juveniles.

A focus on JTC graduate outcome costs illuminates even more dramatic agency-specific outcome cost impacts. The largest impact is associated with DJS. After only 24 months the graduates had experienced \$15,638 less in DJS outcome costs as had the comparison group. This can be interpreted as a 73% savings for the agency that is involved in more outcome costs than any other juvenile agency included in this study.

Figure 7 displays a graph of the cumulative outcome costs over the 24 months post-JTC 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, 18 and 24 months of follow-up time, respectively.

<sup>21</sup> Totals in this row may not match the totals in the outcome costs by transaction table due to rounding.

**Figure 7. Juvenile Justice Recidivism Cost Consequences per Person: JTC Participants and Comparison Group Members (Including JTC Graduates) Over 24 Months**



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

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

Key Component #3 of the Key Components of Treatment Courts is about identifying eligible individuals quickly and promptly placing them in the treatment 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 JTC 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 JTC participants between the time of the JTC eligible arrest and JTC 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 JTC participants and 104 days for JTC graduates).

*Costs Between Arrest and JTC Entry*

Table 14 represents the costs of re-arrests and detention time per person for JTC graduates and all JTC participants (graduates and non-graduates combined) from the program eligible arrest to program entry.

**Table 14. Re-arrest and Detention Costs per JTC Member (Including JTC Graduates) From Arrest to Program Entry**

Transaction	Transaction Unit Cost	Average Number of Transactions per JTC graduate	Average Cost per JTC Graduate N = 88	Average Number of Transactions per JTC Participant	Average Cost per JTC Participant N = 168
Arrests	\$187.68	0	\$0	0	\$0
Cheltenham Detention Days	\$440.00	.57	\$251	1.86	\$818
Waxter Detention Days	\$478.00	.11	\$53	.26	\$124
Other Detention Days	\$459.00	1.02	\$468	2.26	\$1,037
<b>Total</b>			<b>\$772</b>		<b>\$1,979</b>

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

As can be seen in Table 14, there are costs accruing to the juvenile justice system from the time of the JTC eligible arrest through entry into the JTC program (\$1,979 for all JTC participants and \$772 for JTC graduates). It should be noted that these costs only include arrests and detention time during the time from the JTC eligible arrest to entry into the JTC (an average of 101 days for JTC participants and 104 days for JTC 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 JTC gets offenders into the program, the more criminal justice system costs can be minimized.

**COST SUMMARY**

The program investment costs are \$27,234 per JTC participant. When DJS placements are excluded, the program investment cost is \$22,155 per participant. When program costs are divided by the average number of days in the program, the cost per day per participant for the JTC program is \$86.22. 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 24 months from program entry was \$23,595 per JTC participant compared to \$23,423 per comparison individual. The vast majority of the cost in outcomes for JTC participants over the 24 months from JTC entry was due to time in detention (\$16,167), mostly for participants who were unsuccessful in completing the program.



## DISCUSSION/SUMMARY OF FINDINGS

This study of the Anne Arundel County Juvenile Treatment Court program shows preliminary outcomes that are positive for Treatment Court participants, compared to youth who had similar demographic characteristics and criminal histories but who did not participate in Treatment Court. Some of these results were not statistically significant, probably due to small numbers in both JTC and comparison groups for the follow-up periods of interest. In addition, because of the lack of available data on adult arrests, the follow-up periods for many youth were limited because of their ages. However, the trends in re-arrest rates and average numbers of new arrests look promising for the JTC program participants.

The costs of this program and the outcome costs attributed to JTC participants are slightly higher than the comparison group members, on average (though graduates per person cost the system less than the average comparison group member). The main cost that drives the difference between program and comparison groups is placement—longer-term stays in detention and treatment programs.

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.

In addition, assess community needs for this program and ensure that the program is operating at a capacity that meets this need. Strategic planning for the program should be pursued on a cooperative basis among stakeholders to address obstacles to increasing the program's capacity to provide additionally needed services.



---

## 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. M., & 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.npresearch.com/Files/10yr\\_STOP\\_Court\\_Analysis\\_Final\\_Report.pdf](http://www.npresearch.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>