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## Cost Analysis of Anne Arundel County, Maryland Drug Court

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- Anne Arundel County Health Department
- Anne Arundel County Police Department
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Court of Maryland, Anne Arundel County; Janet Ward, Anne Arundel County Drug Court Coordinator; Gray Barton, Executive Director, Maryland Drug Treatment Court Commission; and, Caroline Cooper, Associate Director, Justice Programs Office, American University.

## Executive Summary

The drug court alternative model of adjudication is designed to impact the linkage between substance abuse problems and criminal behavior. This is done by using the supervision of a drug court judge to assure that drug court program participants complete effective treatment programs, and avoid the use of drugs and criminal behavior. Since the drug court model is relatively new to local criminal justice practice (the first drug court opened in Miami, FL in 1989), two obvious questions are raised by policy analysts and policy makers considering this radical departure from “business as usual” adjudication: *How can the effectiveness of drug courts be assessed? What are the financial costs and benefits of drug courts?*

Since research has demonstrated the importance of completion of substance abuse treatment to the realization of desirable societal effects (such as substance abuse cessation, reduced criminal behavior and improved employment/income outcomes<sup>1</sup>), an initial indicator of the success of a drug court program is the rate of program participant graduation (completion of treatment) that it realizes. A second indicator of the success of a drug court program is the criminal recidivism record of individuals who have participated in the program. Drug courts have been promoted as a more rational use of scarce public resources for the adjudication of individuals whose criminal behavior is connected to their drug abuse problems. Therefore, a third – and for many policy makers the most important – indicator of drug court success is the result of rigorous cost-benefit analysis of the drug court’s financial impact on criminal justice and other systems of public services.

Using the criteria indicated in the preceding paragraph, researchers from NPC Research in Portland, Oregon analyzed the outcome effectiveness and financial cost-beneficial effects of the Anne Arundel County Drug Court (“AA-DC”). To do this the researchers identified a sample of AA-DC participants from 1997-1998 and collected information regarding their criminal justice recidivism experience for a four-year period. The experience of the AA-DC sample was compared to that of a similar sample of individuals who did not enter AA-DC. The researchers

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<sup>1</sup> Finigan, M.W. (1996). *Societal Outcomes and Cost Savings of Drug and Alcohol Treatment in the State of Oregon*. Portland, OR: NPC Research.

confirmed that the samples were statistically similar in terms of their prior criminal histories, age, gender, race and proximate criminal charges at time of AA-DC eligibility.

Using the criteria of drug court performance indicated above, in its analysis of the AA-DC program, NPC Research found the following:

1. Program Graduation. National research has reported an average graduation rate of 48% for drug court programs.<sup>2</sup> NPC Research found a graduation rate of 54.7% for AA-DC.
2. AA-DC Participant Recidivism. The researchers found that, over the 48-month study period, members of the AA-DC sample were re-arrested at a rate 12.3% lower than that for the comparison sample. The AA-DC participants were found to have been re-arrested 18.8% fewer times on property crimes and a notable 73.7% fewer times on crimes against person charges. The difference in number of arrests on crimes against person charges is of particular note because of its implications for victimization costs. Members of the AA-DC sample were found to have been re-arrested a small number of times more than the comparison sample on drug charges— an average of .19 more re-arrests on drug charges (.70 for members of the AA-DC sample compared to .51 for members of the comparison sample). It should be noted, however, that the averages for the AA-DC sample were higher because of the experience of the 45% of the sample who did not graduate from the program. The non-graduate group experienced an average of 1.17 re-arrests on drug charges as compared to .31 for individuals who graduated from the AA-DC program.

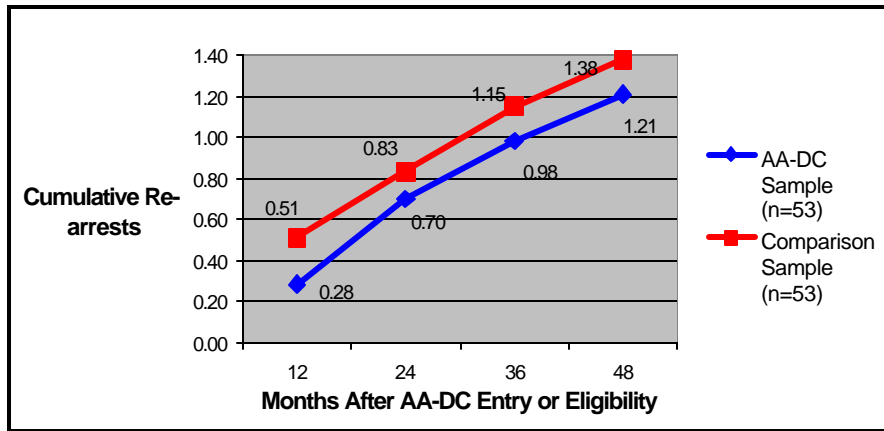
Chart 1. on the next page describes the cumulative average four-year re-arrest records of members of the AA-DC sample as compared to members of the comparison sample.

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<sup>2</sup> Belenko, S. (1999). *Research on Drug Courts: A Critical Review, 1999 Update*. New York: National Center on Addiction and Substance Abuse.

**Chart 1. Cumulative re-arrests.**

Cumulative average number of re-arrests for four years after AA-DC entry or eligibility, AA-DC sample and comparison sample.



3. Cost-benefit Analysis. NPC Research examined the estimated cost of AA-DC as compared to the estimated criminal justice system, victimization and Maryland and local income tax revenue benefits that were found to accrue to AA-DC participants. Table 1. summarizes the results of NPC Research’s cost analysis projected onto the total AA-DC program population in 1998.

**Table 1. Cost-benefit summary.**

Summary of the cumulative four-year financial benefits of the AA-DC sample as compared to the costs of AA-DC.

Criminal Justice System Costs	(\$53,148)
Victimization Cost Savings	\$521,676
Increased State, Local Income Tax	\$159,528
<i>Gross Benefit</i>	\$628,056
Amount "Invested" in AA-DC, 1998	\$362,748
<i>Gross Financial Benefit "Return" on AA-DC "Investment"</i>	173.5%
Net Benefit (Gross Benefit minus Amount "Invested")	\$265,308
<i>Net Financial Benefit "Return" on AA-DC "Investment"</i>	73.5%



The following are some of the most significant findings that emerged from the cost analysis:

- The average cost per participant in the AA-DC program in the 1997-1998 timeframe (adjusted to 2003 dollars) was \$2,109.
- The average total financial benefits per AA-DC sample member resulting from criminal justice system, victimization cost and income tax payment experience was \$3,651. This represents \$1.74 for every dollar spent on AA-DC participants in the AA-DC program.

## **Introduction**

NPC Research, Inc., funded by grants from the Administrative Office of the Courts of the State of Maryland and Baltimore Substance Abuse Systems, Inc., began a cost study of the Anne Arundel County Drug Court ("AA-DC") in the fall of 2002. NPC Research was recruited for this work because of its extensive national experience in performing drug court program outcome and cost evaluations. In addition to the examination of the cost consequences of the AA-DC, NPC Research also performed a cost analysis of the Baltimore City District and Circuit Court drug treatment courts. The work in Baltimore City is presented as a separate report.

Annapolis, the site of AA-DC, is located approximately 30 miles east of Washington, D.C. and 30 miles south of Baltimore, Maryland. Annapolis is the Capital of Maryland and county seat of Anne Arundel County. Anne Arundel County has a growing population of about 500,000. According to the U.S. Census Bureau, Anne Arundel County's population in 2000 was 81.2% White, 13.6% Black or African American, 2.6% Hispanic or Latino, and 2.3% Asian, with other races making up the balance of the population. Per capita income in 1999 was \$27,578, with a median household income of \$61,768. Anne Arundel County consists of 415.94 square miles of land, with 534 miles of coastline. Since Anne Arundel County is home of the United States Naval Academy, the State Capital and is adjacent to the National Capital, governmental employment is the largest employment sector in the County. The Annapolis historic district and other historic and recreational sites make tourism a major element of the County's economy. The County is also home of Baltimore-Washington International Airport and to Washington and Baltimore commuters.

### **Orientation to the Project**

NPC Research's approach to acquiring information regarding the operation and costs of AA-DC began with preliminary information provided by District Court and Anne Arundel County State's Attorney Office ("AA-SAO") representatives. The first set of information that NPC Research received concerned drug court eligibility and suggestions for selecting a comparison sample.

In February 2003, representatives of NPC Research made an initial site visit to Anne Arundel County. During this visit they met with the Drug Court Coordinator, who provided information about the history and operation of AA-DC, and introduced them to other key agency representatives affiliated with AA-DC. The AA-DC Coordinator, with the assistance of a representative of AA-SAO, explained where and how data were collected and located. The AA-DC coordinator also provided information regarding which agencies were involved with the drug court process, and the names and contact information for agency representatives who could provide additional information. The AA-DC Judge, also assisted in giving the researchers a better understanding of the AA-DC operation.

After the initial site visit, and throughout the project, information was gathered from contacts at the District Court and agencies involved in AA-DC and “business as usual” adjudication through telephone conversations and electronic correspondence. The researchers found all agencies to be cooperative and helpful.

In June 2003, the researchers made a second site visit to Annapolis. While in Annapolis they collected individual level data from criminal justice and treatment records provided by AA-DC and AA-SAO staff members. They also met with representatives of agencies that provide support for the AA-DC program and “business as usual” adjudication of cases in the District Court to determine their activities and resource commitments involved in these roles. To get a better understanding of the AA-DC program, the researchers attended an AA-DC review session.

### **Anne Arundel County and State of Maryland Agency Assistance For the Project**

Agencies that provided information or other forms of support for NPC Research’s investigation in Anne Arundel County are listed below. The nature of the assistance provided by each agency is also indicated.

- *District Court of Maryland, Anne Arundel County*: Representatives of the District Court in Annapolis assisted the researchers in understanding the organization and processes associated with AA-DC, in accessing criminal justice system and treatment data, and in identifying resources associated with AA-DC and “business as usual” adjudication of cases.

- *State of Maryland, Administrative Office of the Courts (“AOC”)*: A representative of the AOC provided information regarding caseload and cost factors for the District Court. He also provided general advice and assistance to the researchers in the pursuit of many of the project activities.
- *Anne Arundel County State’s Attorney’s Office (“AA-SAO”)*: AA-SAO staff members provided assistance to NPC Research in accessing criminal justice data and describing AA-SAO activities committed to AA-DC and “business as usual” adjudication of cases.
- *State of Maryland Office of the Public Defender, Anne Arundel County (“OPD”)*. OPD representatives assisted the researchers in understanding the activities and resources committed by OPD to AA-DC and “business as usual” adjudication of cases.
- *Anne Arundel County Sheriff’s Office (“AA-SO”)*: Staff members from AA-SO Operations Bureau provided information to the researchers concerning the activities and resources committed by AA-SO to the service of warrants.
- *Anne Arundel County Department of Detention Facilities*: The Department of Detention Facilities provided NPC Research staff members with data concerning days of incarceration for the sample members, and cost factors for transportation from detention to court, booking and incarceration.
- *Anne Arundel County Police Department (AA-PD)*: AA-PD representatives described the activities and resource commitments of AA-PD involved in arrest episodes.
- *Anne Arundel County Department of Health, Mental Health and Addictions Division*: Health Department staff members assisted NPC Research in understanding the role of their Division in assisting offenders with addiction problems. They also provided assistance to the researchers in pursuing treatment data.

## **Description of the Anne Arundel District Court Drug Treatment Court**

AA-DC was established in 1997. The Drug Court began as a 6-month program, but in 1999 it was modified to become an open-ended program with participants remaining in the program 9 to 12 months. This change was instituted because of the belief that a longer period of treatment and supervision was needed for participants to realize success in overcoming their drug abuse problems and avoiding criminal recidivism. Since the average period of time in the AA-DC program for individuals included in this study was 8 months, NPC Research expects that rates of drug abuse abatement and reduced recidivism should be improved for participants who entered the program after the entrance dates (1997-1998) included in this study.

Eligible participants enter the AA-DC on a voluntary basis. AA-DC is a pre-sentencing drug court. Individuals who are offered AA-DC but choose not to participate, and those who enter AA-DC but fail to meet the requirements of the program, are sentenced by a District Court Judge. Participants who successfully complete and graduate from the AA-DC program will have a suspended sentence or probation before judgment entered on their criminal record.

AA-DC currently averages 130 participants per year. In the 1997-1998 timeframe during which the samples included in this study either entered in or were eligible for the AA-DC program, there were 174 program participants.

AA-SAO determines eligibility for AA-DC. According to AA-DC procedures materials provided by representatives of the program to NPC Research, eligibility is based on the following criteria: The Defendant is charged with possession of a concealed dangerous substance (CDS), possession of CDS paraphernalia, theft, or prostitution; there are no additional charges, or the additional charges are minor (e.g., trespass, false statement, disturbing the peace, or alcohol offenses), or are related traffic offenses; there is no personal injury, property damage or restitution in this case; the defendant resides, or is willing to undergo treatment services (at own expense) in Anne Arundel County; there are no warrants, detainers or sentencing pending; there are no pending charges except charges pending in

Anne Arundel County which are eligible for inclusion in plea negotiations in this case; the Defendant has not been previously convicted of any of abduction, first degree arson, kidnapping, manslaughter (excluding involuntary), mayhem or maiming, murder, rape, robbery, robbery with a deadly weapon, carjacking or armed carjacking, first or second-degree sex offense, use of a handgun in the commission of a felony or a crime of violence, or attempted commission of the foregoing, first-degree assault, assault with intent to murder, rape, rob, or commit a first or second degree sex offense. In addition, the prospective participant may not be on parole or on probation, except under the condition that the candidate may be eligible with the recommendation of his/her probation agent and the judge responsible for the probation sentence.

The goals of AA-DC are similar to those of most drug courts in the United States.<sup>3</sup> To paraphrase material provided by representatives of the AA-DC to NPC Research, these goals include reduction of crime and recidivism, enhancement of community safety, reduction of the impact of drug cases on criminal justice resources, reduction of substance use, and assisting program participants to become responsible and productive members of the community.

The major elements of the AA-DC program are also similar to those found in other drug courts in the United States.<sup>4</sup> These elements include regular participant monitoring sessions before the AA-DC Judge, scheduled and random urinalysis, participation in a treatment program that may include detoxification and residential and outpatient treatment, and sanctions such as jail incarceration or community service for failure to meet program requirements. The frequency of court monitoring sessions and drug testing is reduced as participants demonstrate success in avoiding drugs and criminal justice system encounters.

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<sup>3</sup> For a succinct summary of typical drug court program goals see Cooper, C.S. (2001), *2000 Drug Court Survey Report: Program Operations, Services and Participant Perspectives*. OJP Drug Court Clearinghouse and Technical Assistance Project A Project of the Drug Courts Program Office, Office of Justice Programs, U.S. Department of Justice. P. 20.

<sup>4</sup> Cooper, C.S. (2001). Pp. 25-27.

AA-DC program participants graduate from the program when they complete a treatment plan and experience criminal offense-free, sanction-free and drug-free periods of time in accordance with the AA-DC program guidelines and acceptable to the Drug Court judge.

## **Outcome Methodology and Sample Characteristics**

In this section, the methods involved in evaluating outcomes associated with the AA-DC program will be described. Sample characteristics will also be summarized. Methods associated with the cost analysis portion of the project will be described in the Cost Analysis section of this report.

### **Sample Selection and Data Sources**

#### AA-DC Sample

NPC Research staff members selected a sample of individuals who had participated in the AA-DC from records kept by the AA-DC Coordinator. Fifty-three (n=53) individuals who entered the AA-DC between March 1997 and September 1998 were randomly selected from these AA-DC records. Twenty-nine (29) or 54.7% of the treatment sample graduated (successfully completed the AA-DC program requirements) from AA-DC. Twenty-four (24) or 45.3% of the sample did not complete the AA-DC program. These proportions appear to reflect the experience of all participants who entered the AA-DC in 1997-1998.

#### Comparison Sample

The AA-DC Coordinator also provided to NPC Research staff a complete list of individuals who were eligible for AA-DC in 1997-1998, were offered the program as an alternative to “business as usual” adjudication of their cases, but declined. NPC Research staff believed that this population of individuals would be substantively comparable to the AA-DC sample. From this list, a random sample of fifty-three (n=53) individuals was selected.

#### A Cautionary Point Regarding Sample Selection

A potential source of selection bias that could not be controlled for was the possibility of differences in motivation between the AA-DC and comparison groups. This is a problem with most quasi-experimental designs used in outcome studies of drug courts, particularly those collecting retrospective data. In the case of retrospective data collection, it is not possible to determine whether those who actually participated in the drug court program were more



motivated to change their drug habits than those who received traditional court processing. In addition, it is not possible to determine the myriad reasons offenders may have for choosing either drug court or traditional court processing. However, interviews with key informants as well as information gathered from interviews with participants in other drug court research<sup>5</sup> suggests that the reasons offenders choose for or against participating in drug court are not always related to motivational issues. Many offenders choose drug court because the alternative is extended incarceration and/or court fees. Other offenders refuse drug court because they live too far away, or they have children and would be unable to afford childcare, or their defense attorney advises them that the case against them is weak and could be dismissed. In the end, motivation to change may not be as important a factor in choosing a drug court option as other legal and personal factors. If that is true, it is less of a concern as a selection bias.<sup>6</sup>

Nevertheless, it is not possible to rule out motivation issues without true random assignment at the time eligibility is determined. Regardless of motivation issues, the end result of importance to policy makers in this type of cost analysis is to describe the actual cost of those who participate in drug court and the actual cost of those who go through traditional court processing.<sup>7</sup>

### Sources of Data

Data regarding drug court involvement and treatment for the AA-DC sample were collected from individual participant files by a NPC Research investigator in the offices of Anne Arundel County District Court in June 2003. Criminal history data for both samples were obtained from the AA-SAO. Hard copies of electronically stored records were provided by AA-SAO staff to NPC Research staff members in the office of the AA-SAO in June, 2003. Treatment data were also obtained from individual AA-DC files.

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<sup>5</sup> Carey, S.M. (2003) and Finigan, M.W. (2003). Personal communication.

<sup>6</sup> Carey, S. and Finigan, M. (2003). A Detailed Cost Analysis in a Mature Drug Court Setting: A Cost-Benefit Evaluation of the Multnomah County Drug Court. Washington, DC: Office of Research and Evaluation, National Institute of Justice.

<sup>7</sup> Carey and Finigan (2003).

## **Sample Characteristics**

### Sample Prior Criminal Histories

The researchers compared the prior criminal histories of the samples. With a mean of 2.21 prior arrests for the comparison sample and 2.47 for the AA-DC sample, there was found to be no significant difference between the samples. ( $p > .05$ )

### Sample Demographics

Table 2. includes a comparison of the gender, race, and age characteristics of the samples. As the table demonstrates, according to all of these basic demographic characteristics, the samples were commensurable.

**Table 2. Comparison of sample demographic characteristics. ( $p > .05$ )**

Dimension	AA-DC Sample		Comparison Sample	
Gender	81.1% male	18.9% female	73.6% male	26.4% female
Race	70.0% Caucasian	28.0% African-American	69.6% Caucasian	28.3% African-American
Age	36.4 years old		37.6 years old	

### Sample Arrest Charges

Table 3. compares the most frequently reported proximate charges for the samples at the time of their eligibility for the AA-DC program. The researchers believe that the samples are acceptably matched according to this criterion.

**Table 3. Comparison of samples - charges at time of AA-DC eligibility.**

Charge	AA-DC Sample	Comparison Sample
Possession of Marijuana	42.0%	42.1%
Theft	20.0%	23.7%
Possession of other Controlled Substances	38.0%	23.7%

### **Comparative Analysis of Samples**

The ultimate goal of the research involved in this project was to determine the financial costs and benefits of the AA-DC. To do this, NPC Research compared criminal recidivism rates of the AA-DC program sample and the comparison sample in order to determine the cost consequences of such. These recidivism rates were captured as of the date that members of the AA-DC sample began their participation in AA-DC and on the date members of the comparison sample were offered participation in the AA-DC program, respectively.

## Outcome Findings

The drug court model has been promoted under the assumption that drug court programs have efficacious impacts on the subsequent criminal activity of their participants. As a result, to assess the effectiveness of AA-DC, NPC Research examined four-years of recidivist experience of the AA-DC and comparison samples according to several dimensions. In the following subsections this examination will be discussed.

In terms of the statistical significance of the findings represented in this section, differences between the AA-DC group and the comparison group were generally significant beyond the  $p=.05$  level. In some cases the differences were significant beyond the  $p=.08$  level. Specific significance levels are available upon request.

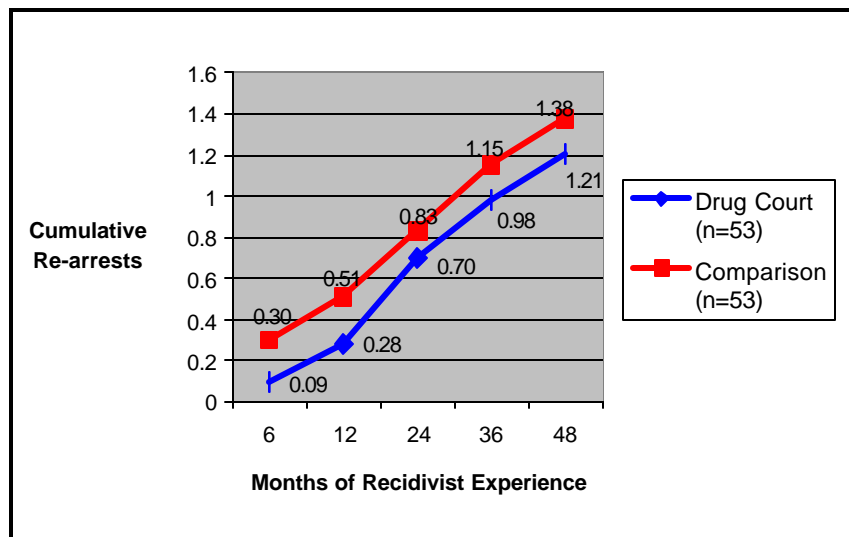
### **Recidivism**

#### Total Arrests

The researchers identified the cumulative recidivist experience of each member of the samples at six months, one year, two years, three years and four years after entry into AA-DC

**Chart 2. Comparative re-arrests.**

Average number of cumulative re-arrests , AA-DC sample and comparison sample.



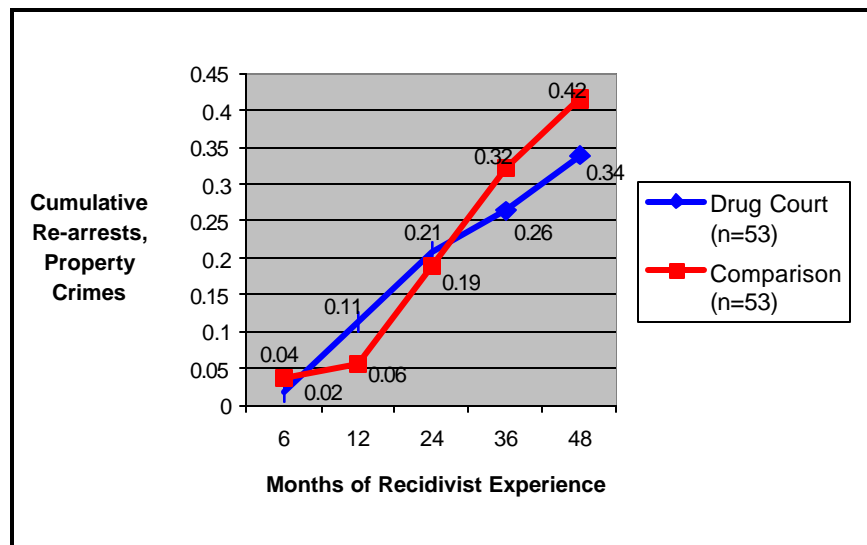
(AA-DC sample) or drug court qualification (comparison sample). As is the case elsewhere in this report, “recidivism” is defined as re-arrests. Chart 2. on the preceding page summarizes the experience of the samples.

Although NPC Research only found a statistically significant differences between the samples at six months and twelve months, the chart demonstrates that there is a notable difference in cumulative recidivist experience at each timeframe. After 48 months the researchers found that members of the AA-DC had experienced 12.3% fewer (1.21 versus 1.38) cumulative re-arrests than had the comparison sample.

### Re-arrests For Property-related Offenses

If AA-DC is successful in reducing drug abuse, it is reasonable to expect that illicit activities associated with the support of drug abuse will be reduced for individuals who had

**Chart 3. Comparative re-arrests, property crimes.** Average number of cumulative property crime re-arrests , AA-DC sample and comparison sample.



participated in the AA-DC program. To test this expectation, NPC Research compared the experience of the AA-DC sample with that of the comparison sample concerning re-arrests on property crime-related charges. Chart 3. indicates that the experience of the samples concerning re-arrests for property crimes is similar. However, the 48 month cumulative data

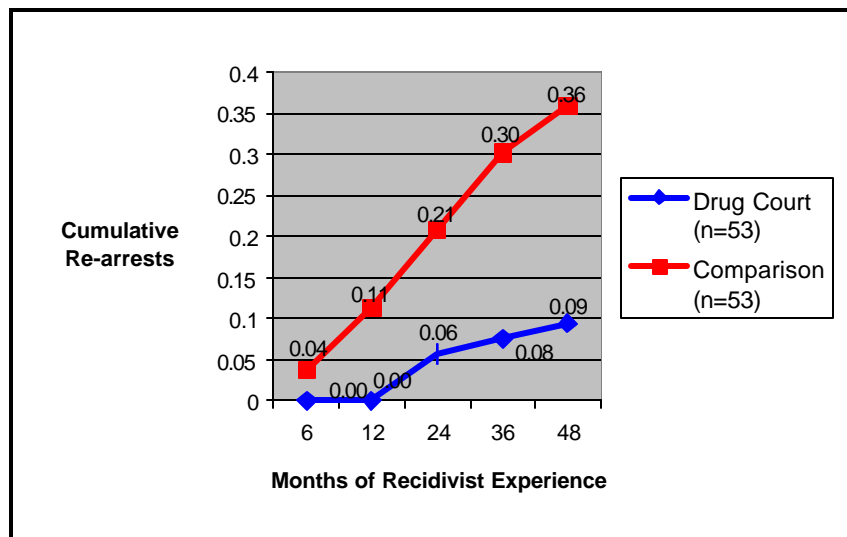
indicates that the AA-DC sample was re-arrested 18.8% fewer times (an average of .34 re-arrests per member of the AA-DC as compared to an average of .42 for members of the comparison sample) for property crimes than was the comparison sample.

### Re-arrests on Crimes Against Person Charges

If the AA-DC program is successful in dealing with the drug abuse problems of its participants, long-term improvements should be seen among other dimensions of personal responsibility and behavior. Re-arrests on crimes against person charges (such as assault) is one such dimension. Chart 4. summarizes the comparative 48 month experience of the AA-DC and comparison samples regarding re-arrests on person crimes.

**Chart 4. Comparative re-arrests, crime against person charges.**

Average number of cumulative crimes against person re-arrests , AA-DC sample and comparison sample. There is a statistical difference at 48 months ( $p < .05$ ).



As the chart demonstrates, there is a substantial difference between the experience of the AA-DC and comparison samples regarding re-arrests on crimes against person charges. After 48 months the AA-DC sample had been re-arrested an average of .09 times for person-related charges as compared to an average of .36 times for the comparison sample – a 73.7% difference.

Given the greater victimization costs associated with crimes against person charges as compared to property crimes, the findings regarding this dimension for the AA-DC sample are of notable significance. As will be discussed further in the cost analysis section of this report, the efficacious effect among AA-DC participants in terms of re-arrests on person charges will be reflected in this study's victimization cost calculations.

### **Treatment Experience**

NPC Research was unable to obtain information regarding the substance abuse treatment experience of the comparison sample. As a result, a comparative analysis of the experience of the AA-DC sample and comparison sample could not be performed.

# Cost Analysis

## **Introduction**

The analysis of the costs and benefits of criminal justice system programs such as the AA-DC is a complex undertaking. Researchers must consider the organizational structures and financial management systems of multiple jurisdictions and agencies to identify the germane activities of the organizations under consideration and the financial consequences of such. The analytic task is complicated by the fact that the organizations being studied have different budget systems and diverse (and sometimes non-existent) forms of administrative record keeping. Despite these challenges, in this report NPC Research has sought to present the concepts involved in its analysis in a digestible form that can be understood by the reader.

The primary purpose of the analysis represented in this report is to assess the costs and financial benefits of the AA-DC. To do this NPC Research utilized its Transaction Cost Analysis Approach (“TCA Approach”) to compare the estimated cost of the AA-DC program with criminal justice system and other costs avoided as the result of the operation of the program.<sup>8</sup> The researchers have compared the cost of AA-DC with costs that may be avoided as the result of AA-DC and other financial benefits that have accrued to former AA-DC participants. This comparison resulted in an assessment of the estimated cost-beneficial effects of the AA-DC. In summary terms, this process of cost analysis involved seven basic points of analysis:

1. **Identify the “investment costs” of the AA-DC program.** These are the costs that are required to operate the AA-DC. They involve a number of agencies of the State of Maryland and Anne Arundel County government.
2. **Identify “business as usual” criminal justice system costs that may be avoided as a result of the BCDTC program.** “Business as usual” criminal justice system costs, as compared to the cost of AA-DC, represent the costs associated with the ordinary process of criminal cases – arrests, booking episodes, incarceration episodes, court

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<sup>8</sup> NPC Research’s TCA Approach to cost analysis is described in Appendix A.



hearings and so forth. "Business as usual" criminal justice system costs are any costs incurred by the Maryland/Anne Arundel County criminal justice system outside of the AA-DC program. **For purposes of this study "business as usual" criminal justice system costs represent all criminal justice system costs of the comparison sample and the criminal justice system costs of the AA-DC sample members after their tenure in the AA-DC program.**

3. **Compare the "business as usual" criminal justice system cost experiences of the AA-DC and the comparison samples.** The difference in the "business as usual" criminal justice system cost experiences of the two samples can be seen as the financial benefit to the Anne Arundel County/Maryland criminal justice system resulting from AA-DC.
4. **Compare the "business as usual" criminal justice system cost differences between the samples with the "investment costs" of the AA-DC program.** This comparison will allow the policy maker and/or policy analyst to see the return on the investment in AA-DC resulting from savings in the criminal justice system outside of the AA-DC program.
5. **Compare the estimated victimization costs of the AA-DC sample and the comparison sample.**
6. **Estimate changes in State and local income taxes and other local public service system cost savings for AA-DC participants.**
7. **Summarize and analyze the cost findings.**

The reader may gain a better understanding of the NPC Research approach to drug court cost analysis by referring to Appendixes A., B., and C.

In the following pages of this section NPC Research will present its cost analysis findings.

## **“Investment” Cost of AA-DC**

### Cost Analysis Methodology

Through personal, electronic and telephone interviews with key agency representatives, analyses of jurisdictional budgets and other administrative documents, and direct observation of agency activities, NPC Research constructed a picture of the key components of the AA-DC program and the financial and other agency organizational resources required for its operation. Using these methods the researchers also specified the increments of such resources dedicated to each individual participant in the AA-DC. The cost factors considered in the following discussion include direct costs (those associated with the staff members and other resources directly applied to service provision) and indirect costs (administrative support, information technology, supervision, etc.). For a more complete discussion of how NPC Research considers different areas of cost in its TCA Approach, see Appendix A.

The agencies that provide the resources necessary for the operation of AA-DC and the roles played by each agency are as follows:

- District Court of Maryland, Anne Arundel County – The District Court, under the direction of the District Court Judge, conducts AA-DC sessions, provides administrative case support for AA-DC participants, and is responsible for other court session-related resources, such as courthouse and courtroom security.
- Anne Arundel County State’s Attorney’s Office (“AA-SAO”) – The AA-SAO is responsible for screening potential AA-DC participants, having an Assistant State’s Attorney attend AA-DC sessions, coordinating with the other agencies represented on the AA-DC team and maintaining case files on AA-DC participants.
- Maryland Office of the Public Defender (“OPD”) – The OPD represents many of the participants in AA-DC (others are represented by private attorneys). An Assistant Public Defender and Paralegal attend AA-DC sessions, coordinate with other AA-DC team agency representatives and maintain case files for their AA-DC clients.
- Anne Arundel County Health Department – At the time of the entrance of the study sample included in this analysis, the Health Department was responsible for payment

for treatment services provided to Anne Arundel County residents who did not have private insurance.

- Anne Arundel County Sheriff's Office ("AA-SO") – The Operations Division of AA-SO is responsible for serving bench warrants issued by the AA-DC Judge.
- Anne Arundel County Department of Detention Services – The Department of Detention Services is responsible for housing AA-DC participants who have been sentenced to jail time as a sanction for non-compliance with AA-DC program requirements and for transportation of detainees to and from AA-DC sessions.

No individual budget, single accounting system or other financial management structure exists for AA-DC. Rather, the resources that support AA-DC are allocated in the separate individual budgets of the agencies listed above. Typically no agency specifically identifies resources in its operating budget for drug courts. As a result, utilizing its TCA Approach, NPC Research constructed a "synthetic budget" for the AA-DC operation and identified unit cost factors for individual episodes of services provided by the agencies that support the AA-DC program.<sup>9</sup> NPC Research combined the unit costs with the AA-DC experience of each member of the study sample (number of drug court sessions attended, days of jail sanction, treatment received, etc.) to determine the AA-DC "investment" cost of each sample member.

It should be noted that, in developing its cost estimates associated with the AA-DC, NPC Research has not considered whether temporary intergovernmental grants are involved. Rather, the researchers have sought to reflect the "true" total cost of AA-DC operation – a position that it believes is of greater value to policy-makers who, faced with the unpredictable nature of federal grant funds for drug courts, are concerned with assessing the impact of absorbing the total cost of drug courts on the state and local level. However, the researchers have included in their analysis all publicly supported services provided by AA-DC – regardless of whether they involve intergovernmental grants.

It should also be noted that the researchers did not include in their cost analysis a variety of services provided to AA-DC participants that are not funded by taxpayers. These services

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<sup>9</sup> Details regarding NPC Research's estimation of the AA-DC cost environment or "synthetic budget" and unit cost factors are included in Appendix B.

include privately funded job training, mentoring, faith community support, 12 step programs and other services.

Cost Analysis Findings – The Cost of AA-DC

As can be seen in Table 4., NPC Research identified an average cost of \$2,109 per member of the AA-DC sample for participation in the AA-DC program (for the average 7.87 month length of participation in the program). Using this amount as an average cost for all drug court participants, for the year in which the AA-DC sample entered AA-DC, NPC Research estimates a total AA-DC cost of \$362,748 for the average participant population of 172 in 1998. The total estimated costs of the resource commitments made by each of the agencies supporting AA-DC are shown in Table 5.

**Table 4. Average AA-DC cost per participant.**

The average agency costs per AA-DC sample member. Costs are represented as 2003 values.

Agency	Cost
District Court	1,379
State's Attorney's Office	126
Office of Public Defender	46
Health Department	473
Sheriff's Office	32
Department of Detention Services	53
Total	\$2,109

**Table 5. Total agency costs for AA-DC.**

The estimated total agency costs committed to AA-DC for 1998. Costs are represented as 2003 values. (N=172)

Agency	Cost
District Court	237,188
State's Attorney's Office	21,672
Office of Public Defender	7,912
Health Department	81,356
Sheriff's Office	5,504
Department of Detention Services	9,116
Total	\$362,748

## **“Business As Usual” Criminal Justice System Costs**

### Cost Analysis Methodology

As was indicated at the beginning of the cost analysis section, **NPC Research defines “business as usual” criminal justice system costs as any costs incurred by the Maryland/Anne Arundel County criminal justice system outside of the AA-DC program. For purposes of this study “business as usual” criminal justice system costs represent all criminal justice system costs of the comparison sample and the criminal justice system costs of the BCDTC sample members after their tenure in the BCDTC program.**

To assess the local public financial benefits of the AA-DC, NPC Research first compared the “business as usual” criminal justice system cost experiences of the AA-DC sample and the comparison sample. Again, “business as usual” criminal justice system costs, as compared to the costs of AA-DC, represent the costs associated with the ordinary process of criminal cases – arrests, booking episodes, incarceration episodes, court hearings and so forth.

“Business as usual” criminal justice system costs are any costs incurred by the Maryland/Anne Arundel County criminal justice system outside of the AA-DC program.

As it did in determining the costs of the AA-DC, through personal, electronic and telephone interviews with key agency representatives, analyses of jurisdictional budgets and other administrative documents, and direct observation of agency activities, NPC Research constructed a picture of the key components of the “business as usual” disposition of cases in the criminal justice system and the financial and other agency organizational resources required for such.<sup>10</sup> NPC Research also specified the increments of such resources dedicated to each individual “business as usual” case. The agencies that NPC Research analyzed as providing the resources necessary for the “business as usual” processing of cases through the Anne Arundel County/Maryland criminal justice system and the roles played by each agency are as follows:

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<sup>10</sup> Details regarding NPC Research’s estimation of cost environment for the “business as usual” processing of criminal cases can be found in Appendix C.

- District Court of Maryland, Anne Arundel County – From the introduction of cases to the adjudicative process in District Court Commissioner hearings to the ultimate disposition of cases in trials, the District Court, as an organizational subdivision of the Maryland Judiciary, budgets and manages judicial, administrative, security and other resources associated with the adjudication of misdemeanor and certain felony cases.<sup>11</sup>
- Anne Arundel County State's Attorney's Office ("AA-SAO") – Although the AA-SAO deals with a wide variety of Circuit Court, Juvenile Court and other cases, for purposes of this analysis, focus is directed to its role in the adjudication of "business as usual" District Court cases. Typical cases in these courts involve domestic violence, drunk driving, assault, and theft. District Court cases differ greatly from those of the Circuit Court in that daily dockets run at a much faster pace, there are no juries, and trials rarely last more than a few hours.<sup>12</sup> The cost environment considered by NPC Research in this analysis includes all administrative costs associated with the adjudication of cases by AA-SAO.
- Maryland Office of the Public Defender ("OPD") – The OPD provides legal representation to indigent defendants.<sup>13</sup> The cost environment of the OPD considered by NPC Research in this analysis includes all activities of Assistant Public Defenders in case representation and administrative costs associated with the adjudication of cases.
- Anne Arundel County Police Department ("AA-PD") – The AA-PD provides law enforcement services in unincorporated Anne Arundel County. As the largest local law enforcement agency in the County, this agency was used as the model for the calculation of the cost consequences of investigation, arrest and transportation to booking of individuals charged with the commission of criminal offenses.
- Anne Arundel County Department of Detention Services – The Department of Detention Services is responsible for booking, providing pre-trial detention, transportation to court, and sentenced detention for individuals charged with the commission of criminal offenses.

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<sup>11</sup> For a description of the function of Maryland District Courts see [www.courts.state.md.us/district](http://www.courts.state.md.us/district) on-line.

<sup>12</sup> See Anne Arundel County State's Attorney's Office website on-line at [www.statesattorney-annearundel.com](http://www.statesattorney-annearundel.com).

<sup>13</sup> See the Maryland Office of Public Defender's website on-line at [www.opd.state.md.us/AboutOPD](http://www.opd.state.md.us/AboutOPD).

- Division of Parole and Probation, Maryland Department of Public Safety and Correctional Services – The Division of Parole and Probation supervises the conduct of parolees and adult probationers.

As was indicated above in regard to AA-DC cases, no individual budget, single accounting system or other financial management structure exists to reflect the total financial and other resource commitments associated with “business as usual” transactions that take place in the Maryland/Anne Arundel County criminal justice system. Again, as was the case with the operation of the AA-DC program, the resources involved in “business as usual” criminal justice system transactions are allocated in the separate individual budgets of the agencies listed above. As a result, utilizing its TCA Approach, NPC Research went to the separate agency sources of activity and cost information to construct unit cost factors for individual episodes of services provided by the agencies that support the processing of criminal cases.<sup>14</sup> NPC Research combined the unit costs with the recidivist re-arrest, adjudication, incarceration and supervision experience of each member of the study and comparison samples. The result of this analysis is an estimated “business as usual” cost for each member of the samples.

#### Cost Analysis Findings – Costs of Recidivism

***AA-DC Sample “Business As Usual” Cost of Recidivism.*** Through the examination of criminal history databases, jail records and other sources of data, NPC Research identified the experience of the AA-DC sample regarding their recidivist contacts with the criminal justice system other than those associated with the AA-DC program. The researchers combined this data with unit cost information that they developed regarding the “business as usual” criminal justice system. Again, the reader should note that **NPC Research defines “business as usual” criminal justice system costs as any costs incurred by the Maryland/Anne Arundel County criminal justice system outside of the AA-DC program. For purposes of this study “business as usual” criminal justice system costs represent all criminal justice system costs of the comparison sample and the criminal justice system costs of the BCDTC sample members after their tenure in the BCDTC program.**

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<sup>14</sup> Details regarding the calculation of the “business as usual” agency costs are included in Appendix D.

Table 6. represents the average “business as usual” criminal justice system cost per member of the AA-DC sample for each agency of the system after 48 months of AA-DC entry. As can be seen in the Table, the average cost per AA-DC sample member was \$9,557.

**Table 6. “Business as usual” recidivist cost of AA-DC sample.**

These are the average agency costs per AA-DC sample member for recidivist “business as usual” criminal justice system experience 48 months after entry into AA-DC. Costs are represented as 2003 values.

Agency	Cost
District Court	1,464
State's Attorney's Office	42
Office of Public Defender	56
Police Department	579
Department of Detention Services	7,018
Division of Parole and Probation	398
Total	\$9,557

**Comparison Sample “Business As Usual” Cost of Recidivism.** Table 7. summarizes the average “business as usual” criminal justice system cost per member of the comparison sample. The average cost per sample member is shown for each agency of the criminal justice system 48 months after determination of eligibility for AA-DC. As can be seen in the table, the average cost per sample member was \$9,248.

**Table 7. “Business as usual” recidivist cost of comparison sample.**

These are the average agency costs per comparison sample member for “business as usual” criminal justice system experience 48 months after qualification for AA-DC. Costs are represented as 2003 values.

Agency	Cost
District Court	1,673
State's Attorney's Office	48
Office of Public Defender	64
Police Department	662
Department of Detention Services	6,347
Division of Parole and Probation	454
Total	\$9,248



## **Cost Analysis Discussion**

### Criminal Justice System Costs

As was indicated above, NPC Research found a small difference in the four year criminal justice system cost experience of the AA-DC sample as compared to a comparison sample: an average of \$9,557 for members of the AA-DC sample versus \$9,248 for members of the comparison sample – this despite a lower average rate of recidivism for the AA-DC sample (1.21 versus 1.38 recidivist arrests). The average difference of \$309 results from a higher incarceration cost for former drug court participants – an average of 60.2 days of incarceration over four years for members of the AA-DC sample as compared to 54.2 days for members of the comparison sample. Since the researchers did not perform a process evaluation, they cannot offer a complete explanation of the higher rates of incarceration for the AA-DC sample. However, it is reasonable to assume that former drug court participants tend to receive harsher sentences for recidivist crimes than non-drug court participants. It should be noted that the large majority of jail time experienced by the AA-DC sample is attributable to the non-graduates included in the sample

If the four-year average cost difference between the AA-DC and comparison samples is projected onto the total 1998 AA-DC population of 172 we see that this cohort of drug court participants cost \$53,148 more than comparable non-drug court participants. However, it should again be emphasized that the average “business as usual” criminal justice system cost of the AA-DC sample was raised by the much higher rate of re-arrests among members of the AA-DC sample who did not graduate from the program as compared to members of the sample who graduated from the program

### Victimization Costs

The financial benefits of the AA-DC can also be considered in terms of savings in victimization costs resulting from avoided crime. Although victimization costs are not generally directly borne by the public, they often lead to governmental responses, such as the application of increased law enforcement resources, changes in sentencing policies or construction of additional jail space. However, regardless of governmental responses, victim

costs absorbed by citizens are costs to the entire political community. The recent literature concerning costs and benefits of criminal justice systems considers victimization cost to be an appropriate element of cost-benefit analysis routines.<sup>15</sup> As a result, NPC Research believes that it is reasonable to include victimization costs in this analysis.

In 1996 the National Institute of Justice published a monograph entitled *Victim Costs and Consequences: A New Look*.<sup>16</sup> This report is one of the most comprehensive and useful tools available regarding victimization costs. The report includes a summary of the estimated victim cost per incident for a list of crime types. The costs to victims that the authors considered include: “(1) out-of-pocket expenses such as medical bills and property losses, (2) reduced productivity at work, home, and school, and (3) non-monetary losses—such as fear, pain, suffering, and lost quality of life.”<sup>17</sup> From the list of crimes considered in the NIJ report, NPC Research constructed a model that it believes captures the nature and magnitude of the majority of crimes found in its analysis of recidivist episodes among the sample members considered in this report. This model includes: child abuse, assault, robbery, drunk driving, larceny, burglary and motor vehicle theft. NPC Research took the 1996 dollar values found in the report and adjusted them according to changes in the Baltimore Consumer Price Index to represent 2003 dollar values. NPC Research found an average modeled victimization cost of \$17,851.<sup>18</sup>

Using this average victimization cost, a comparison could be made between the four-year victimization cost consequences of the AA-DC sample and the comparison sample. After four years NPC Research found an average difference of .17 fewer cumulative crimes among the AA-DC sample member as compared to the comparison sample. Using the modeled victimization cost per incident, this means that AA-DC sample members cost an estimated average of \$3,033 less in cumulative four-year victimization costs as compared to members of the comparison sample. This estimated four year savings in victimization costs can be

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<sup>15</sup> Cohen, M.A. (2001). “The Crime Victim’s Perspective in Cost-Benefit Analysis: The Importance of Monetizing Tangible and Intangible Crime Costs.” In B.C. Welsh, D.P. Farrington and L.W. Sherman (Eds.), *Costs and Benefits of Preventing Crime*. Boulder, CO: Westview Press. Pp. 23 – 50.

<sup>16</sup> Miller, T.R., Cohen, M.A. and Wiersma, B. (1996) *Victim Costs and Consequences: A New Look*. Washington, DC: U.S. Department of Justice, National Institute of Justice.

<sup>17</sup> Miller, Cohen and Wiersma, (1996). P. 9.

<sup>18</sup> NPC Research’s victimization model can be found in Appendix E.

viewed as a savings of \$1.44 for every dollar “invested” in the AA-DC program for AA-DC sample members.

If the estimated average four-year victimization cost savings of \$3,033 for AA-DC sample members is projected onto the total 172 program participants in 1998, a total savings in victimization costs of \$521,676 can be seen. This savings in victimization costs can be viewed as recouping 143.8% of the total AA-DC program cost in 1998 invested in the AA-DC program for all participants.

In assessing NPC Research’s analysis concerning victimization costs, the reader should note that criminal activity tends to be under-reported. This means that victimization cost estimates may be very conservative. It should also be noted that so-called “victimless” crimes such as those involving drug charges and prostitution are not included in the victim cost index used in this analysis.

#### Increased Maryland and Local Income Tax Returns

One of the most important objectives of the AA-DC is to assure that participants who have significant substance abuse problems complete treatment. Not only is it assumed in the drug court model that completion of substance abuse treatment will reduce recidivism, it is also assumed that program participants who complete treatment will become more productive citizens. National research indicates that this increased productivity will be demonstrated by increased earnings among treatment completers. In turn, increases in earnings will result in a public benefit in the form of increased income tax payments by individuals who complete treatment.<sup>19</sup>

In M.W. Finigan’s 1996 examination of the societal cost-beneficial effects of individuals who complete drug and alcohol treatment, he found substantial improvements in actual income earnings for individuals who complete treatment as compared to individuals who received

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<sup>19</sup> It should be noted that another anticipated related public benefit would be reduced payment of unemployment benefits. However, the researchers did not believe that they possessed adequate evidence either in the form of immediate or previously completed research to support this inference.

little or no treatment.<sup>20</sup> These findings can be seen as applicable to graduates of the AA-DC program. In the Finigan study, the researchers found an average of \$6,305 in increased annual income for individuals who complete drug and alcohol treatment as compared a similar group who did not receive treatment.<sup>21</sup> The researchers believe that this finding is reasonable to use as a proxy for graduates of AA-DC. According to the website of the Comptroller of Maryland,<sup>22</sup> this increase in earnings should result in an average increase of \$578 per individual per year in Maryland and local income taxes paid by individuals who complete the AA-DC program. If this average increase in income tax payments is applied to all graduates of AA-DC in 1998, a cumulative estimated increase in income tax returns of \$159,528 is seen through the year 2002.<sup>23</sup>

**Summary Of Estimated Costs and Benefits of AA-DC**

NPC Research believes that its findings offer a positive picture of the cost-beneficial effects of the AA-DC program. Table 8. summarizes the financial costs and benefits that the researchers identified for AA-DC participants who entered the program in 1997-1998. As

**Table 8. Cost-benefit summary.**

Summary of the cumulative four-year financial benefits of the AA-DC sample as compared to the costs of AA-DC.

Criminal Justice System Costs	(\$53,148)
Victimization Cost Savings	\$521,676
Increased State, Local Income Tax	\$159,528
<i>Gross Benefit</i>	\$628,056
Amount "Invested" in AA-DC, 1998	\$362,748
<i>Gross Financial Benefit "Return" on AA-DC "Investment"</i>	173.5%
Net Benefit (Gross Benefit minus Amount "Invested")	\$265,308
<i>Net Financial Benefit "Return" on AA-DC "Investment"</i>	73.1%

<sup>20</sup> Finigan, M.W. (1996). Societal Outcomes and Cost Savings of Drug and Alcohol Treatment in the State of Oregon. Portland, OR: NPC Research.

<sup>21</sup> The amount indicated is for individuals who complete outpatient treatment – the most frequently utilized form of treatment of the AA-DC sample. The amount has been adjusted to 2003 dollars based on changes in the Washington-Baltimore CPI.

<sup>22</sup> See [www.interactive.marylandtaxes.com](http://www.interactive.marylandtaxes.com).

<sup>23</sup> See Appendix E. or summary of the calculations involved in estimating increases in income taxes paid by AA-DC graduates.

Table 8. demonstrates, NPC Research found \$628,056 in total financial benefits associated with all 174 participants in AA-DC the year that the AA-DC sample entered the drug court program. The average of \$3,651 in financial benefits per individual AA-DC participant is 1.74 times the AA-DC program cost of \$2,091 per participant.

### Other Potential Cost Savings

Based on national research concerning drug courts, NPC Research expects that the AA-DC results in cost savings to the public in areas other than those indicated above.<sup>24</sup> For instance, documented results in Buffalo and Lackawana, NY indicate that substantial positive cost-beneficial effects for drug court graduates may be found in reduced public support payments, reduced foster care costs, fewer drug- and alcohol-addicted babies, and increased child support payments. In Buffalo the Erie County Department of Social Services has estimated that \$50,000 per drug court graduate could be saved in public costs associated with these outcome dimensions of public services.<sup>25</sup> Since NPC Research did not collect data regarding these outcome dimensions from the samples included in this analysis, it is reluctant to project the experience in Buffalo or anywhere else in the United States onto Anne Arundel County. However, NPC Research suggests that the Buffalo/Lackawana findings can be viewed as strong anecdotal support for the efficacious effects of AA-DC in these areas of public concern.

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<sup>24</sup> Roman, J., Woodard, J., Harrell, A. and Riggs, S. (1998). *A Methodology For Measuring Costs and Benefits of Court-Based Drug Intervention Programs Using Findings From Experimental and Quasi-Experimental Evaluations*. Washington, DC: The Urban Institute.

<sup>25</sup> Collaborative Effort Between the Erie County Department of Social Services and the Buffalo Drug Court (2003). *Cost Savings/Cost Avoidance on Public Assistance Graduates of the Buffalo Drug Court*.

## Summary and Conclusions

The Drug Treatment Court Commission of the Administrative Office of the Courts of Maryland asked NPC Research to answer the following questions concerning the Anne Arundel County Drug Court: *How well is the AA-DC program performing? What are the financial costs and benefits of the AA-DC program?* The evidence presented in the preceding sections regarding the researchers' outcome and cost analysis findings answer these questions.

To address the questions posed by the Drug Court Commission, NPC Research examined three core issues: How does the graduation rate of AA-DC compare to national experience? What is the recidivist experience of AA-DC participants and how does it compare to national experience? How do financial benefits in the form of recidivist experience, victimization costs and post-program income taxes paid by AA-DC program participants compare to the cost of the AA-DC program?

To answer these research questions, the researchers selected a sample of AA-DC participants from 1997-1998 and collected information regarding their recidivist criminal justice experience for a four-year period. The experience of the AA-DC sample was compared to that of a similar sample of individuals who did not enter AA-DC. To perform the cost-benefit analysis the researchers linked a detailed examination of the costs of AA-DC and the "business as usual" criminal justice system to their AA-DC program and recidivist outcome findings regarding the samples. **NPC Research defines "business as usual" criminal justice system costs as representing all criminal justice system costs of the comparison sample and the criminal justice system costs of the BCDTC sample members after their tenure in the BCDTC program.**

The researchers also linked their findings regarding the recidivist experience of the samples to national research regarding victimization costs and employment expectations for treatment graduates.

Among the results of NPC Research's examination of the AA-DC program are the following primary findings:

1. Program Graduation. Completion of treatment as demonstrated by the rate of graduation from AA-DC is an indicator of the success of the program. National research has reported an average graduation rate of 48%.<sup>26</sup> NPC Research found a graduation rate of 54.7% for AA-DC.
2. Recidivism Findings. The researchers found that over the 48-month study period members of the AA-DC sample were re-arrested at a rate 12.3% lower than that for the comparison sample. The AA-DC participants were found to have been re-arrested 18.8% fewer times on property crimes and a notable 73.7% fewer times on crimes against person charges. The difference in number of arrests on crimes against person charges is of particular note because of its implications for victimization costs. Members of the AA-DC sample were found to have been re-arrested a small number of times more than the comparison sample on drug charges— an average of .19 more re-arrests on drug charges.
3. Cost-benefit Calculation. NPC Research examined the estimated cost of AA-DC as compared to the estimated criminal justice system, victimization and Maryland and local income tax revenue benefits that were found to accrue to AA-DC participants. The following are some of the most significant findings that emerged from the cost analysis:
  - The average cost per participant in the AA-DC program in the 1997-1998 timeframe (adjusted to 2003 dollars) was \$2,109.
  - The average financial benefits resulting from the criminal justice system, victimization cost and income tax payment experience of members of the AA-DC sample was \$3,651. This represents \$1.74 for every dollar spent on AA-DC participants in the AA-DC program.

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<sup>26</sup> Belenko, S. (1999)

As compared to national drug court performance indicators and cost-benefit criteria for all AA-DC participants and for graduates of the program, the AA-DC program as it was configured in 1997-1998 exhibited positive results. NPC Research expects that changes in the program after 1998 designed to extend the minimum period of program participation and improve treatment retention and completion should result in even more efficacious results. Examination of post-1998 AA-DC program performance would be a logical next step in monitoring the effectiveness of AA-DC.



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## **Appendix A.**

### **The NPC Research Transaction Cost Analysis Approach**

# **THE NPC RESEARCH COST ANALYSIS APPROACH: THE TRANSACTION COST ANALYSIS APPROACH**

## **Overview**

The public program cost evaluation approach developed by NPC Research – the transaction cost analysis approach (“TCA Approach”) – is designed as a response to two basic questions regarding the evaluation of the cost consequences of inter-agency/inter-jurisdictional programs:

- Can the cost of inter-agency/inter-jurisdictional programs be fully described?
- What is the most useful method of cost evaluation for such programs?

In the following two subsections these questions are more fully discussed. In the subsequent five sections, NPC Research’s response to these questions in the form of its cost evaluation approach is elaborated.

## **Can the Costs of Inter-agency Programs Be Fully Described?**

Inter-agency/inter-jurisdictional programs for the production and delivery of public goods and services are typically characterized by complex social, political and economic features. They involve employees drawn from different organizational cultures. They include the integration of a variety of specialized resources. Such resources are supported through separate public budgetary and financial management processes. In light of this organizational complexity, it would seem to be problematic as to whether a coherent evaluation of the cost consequences of such programmatic systems can be produced.

NPC Research believes that the cost consequences of inter-agency/inter-jurisdiction programs can be fully described. However, for this to be done, extensive understanding regarding the ways that agencies link their organizational resources must be developed. NPC Research’s TCA Approach described in the following sections is designed to generate levels of understanding regarding the nature of these inter-organizational linkages that has not heretofore existed in the realm of public program cost evaluation.

### **What is the Most Useful Method of Cost Evaluation for Inter-agency/Inter-jurisdictional programs?**

It is NPC Research's position that a fully elaborated public program cost evaluation approach should exhibit the following characteristics:

- It fully captures an understanding of the sources of organizational contributions to the support of inter-agency/inter-jurisdictional programs;
- It completely describes the activities each organizational contributor pursues in support of these programs;
- It identifies all of the direct and indirect costs – what NPC Research refers to as “transactional” and “institutional” costs – resulting from the pursuit of activities by all organizational contributors to inter-agency/inter-jurisdictional programs; and,
- This cost evaluation information is generated in forms that are meaningful to public jurisdiction policy leaders in policy-making routines such as program evaluation and budget preparation.

NPC Research's transaction cost analysis approach to public program cost evaluation discussed in the following sections possesses these characteristics.

### **Theoretical and Practical Grounding of the Transaction Cost Analysis Approach**

#### Overview

NPC Research's TCA Approach differs from other cost evaluation methods in large part because of its theoretical and practical roots. Unlike other approaches, the NPC Research cost evaluation model is not taken directly from economic theory. Although it recognizes and

incorporates ideas taken from economics, NPC Research's transaction cost analysis approach draws from five major sources of theoretical and practical thought:

- Organization theory
- Institutional theory
- Transaction cost economics
- Public management practice
- NPC Research practical experience

### Organization Theory

It is a common place to assert that modern life in western societies is "organizational life." Almost every aspect of life from home to the workplace involves contact with organizations – as frequently as not, large, complex organizations. In twenty-first century urban America complex organizations, singly and in interlinked clusters, are essential to the delivery of every public good and service – particularly in complex urban settings where most Americans live and work. As such, as determined through decision-making by elected and appointed officials, complex organizations and clusters of organizations are tools of collective social action wherein human, financial and physical resources are transformed into things that people want and need in the pursuit of daily urban life. Organizations concentrate power, values and resources to change and stabilize the way that we live.

In the application of the NPC Research TCA Approach in specific cost evaluation situations, an organizational perspective helps the researcher visualize organizational structural elements that are impacted by inter-organizational programs. This organizational structural assessment assists the researcher in understanding resource and outcome effects resulting from organizational commitments to extra-organizational programming.

### Institutional Theory

In considering the influence of institutional theory on NPC Research's approach to public program cost evaluation, W. Richard Scott's recent book, *Institutions and Organizations* is

useful.<sup>27</sup> The following extended quote from Scott introduces the subject of this area of discourse:

- Institutions are social structures that have attained a high degree of resilience.
- Institutions are composed of culture-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life.
- Institutions are transmitted by various types of carriers, including symbolic systems, relational systems, routines, and artifacts.
- Institutions operate at multiple levels of jurisdiction, from the world system to localized interpersonal relationships.
- Institutions by definition connote stability but are subject to change processes, both incremental and discontinuous . . .

In this conception, institutions are multifaceted, durable social structures, made up of symbolic elements, social activities, and material resources . . . Institutions by definition are the more enduring features of social life . . . giving 'solidity' [to social systems] across time and space . . .

Institutions exhibit these properties because of the processes set in motion by regulative, normative, and cultural-cognitive elements. These elements are the building blocks of institutional structures, providing the elastic fibers that resist change . . . (pp. 48, 49)

An institutional perspective strengthens NPC Research's ability to understand, describe and evaluate the systematic forms that inter-organizational programs take in response to political, legal, social and economic environmental influences. This perspective assists in the discovery of how organizational resource application and inter-organizational linkages are affected by public policy choices and program initiatives.

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<sup>27</sup> Scott, W. R. (2001). *Institutions and Organizations (Second edition)*. Thousand Oaks, CA: Sage Publications, Inc.



## Transaction Cost Theory

Transaction cost economics is largely concerned with the organizational forms and processes that result in intra- and extra-organizational integration and differentiation. With a focus on the “transaction” – an economic exchange at the boundaries of or internal to organization(s) – transaction cost economics (referred to as “new institutional economics” by some) considers how organizations seek to economize on transaction costs. This perspective leads the researcher to consider whether organizational forms that are created as responses to transaction cost economizing are the optimal responses.<sup>28, 29, 30</sup> A focus on issues related to uncertainty reduction encourages the researcher utilizing the NPC Research TCA Approach to consider whether observed manifestations of inter-organization and/or intra-organizational program-based integration contribute in positive or negative ways to predictable and desired outcomes.

The power of the concepts of transaction cost economics is enhanced by clearly joining it to one of the underlying assumptions of institutional theory – that the prospects for the survival of programs in complex and demanding environments cannot be viewed apart from the larger institutions upon which the programs are dependent.<sup>31</sup> Broadly-based institutions such as departments or jurisdictions provide institutional governance, direction and support resources that are essential to intra- or extra-agency program endurance. NPC Research makes the consideration of institutional resources an integral part of its cost evaluations.

## The Practical Grounding of the NPC Research Approach

In addition to its theoretical roots discussed above, the NPC Research approach to cost evaluation has been enhanced by practice in public management in two basic ways. First, NPC Research’s transaction cost analysis methods have been informed by prominent practical models of public resource policy-development, planning, programming and outcome assessment. Second, NPC Research staff members have developed

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<sup>28</sup> Perrow, C. (1986). *Complex Organizations: A Critical Essay*. New York: McGraw-Hill, Inc.

<sup>29</sup> Scott (2001)

<sup>30</sup> Brint, S. and Karabel, J. (1991). Institutional Origins and Transformations: The Case of American Community Colleges. In W.W. Powell and P.J. DiMaggio (eds.), *The New Institutionalism in Organizational Analysis* (pp. 337 – 360). Chicago: The University of Chicago Press.

<sup>31</sup> Martinez, R.J. & Dacin, M.T. (1999). Efficiency Motives and Normative forces: Combining Transactions Costs and Institutional Logic. *Journal of Management* 25 (1), 75-97.

understandings regarding evaluation of public resource utilization through their direct experiences in the management and evaluation of public programs. In the following sections the contributions of this practical grounding to the NPC Research approach will be discussed.

### Practical Discourse in Public Management

NPC Research's TCA Approach to public program cost evaluation has been significantly affected by a number of conceptual influences that arose in the discourse of public administration in the last third of the twentieth century. An understanding of these conceptual influences in the management of public agencies provides the researcher with a better understanding of the "real life" context within which agencies operate. The following list represents a partial summary of these influences.

- *Program Budgeting.* In program budgeting political leaders and public administrators consider traditional line-item budget information through the prism of larger activities pursued by agencies. In this approach to budget preparation and analysis agency expenditures are linked to explicit programmatic goals and objectives.<sup>32</sup>
- *Performance Budgeting.* Performance budgeting encompasses a family of budget planning approaches that emphasize the measurement of results as part of allocating public resources. The underlying idea of performance budgeting is a rational assessment of the linkage between measured outcomes and resource allocation. In the application of performance budgeting jurisdictional political and administrative leaders are usually interested in productivity improvement.<sup>33</sup>
- *Zero-based Budgeting.* Periodic consideration of the basic justification of programs and the resources that support them is the core concept of zero-based budgeting. The rationale of zero-based budgeting and its less stringent

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<sup>32</sup> Morgan, D. and Robinson, K. (2000). *Handbook on Public Budgeting*. Portland, OR: Hatfield School of Government, College of Urban and Public Affairs, Portland State University

<sup>33</sup> Morgan and Robinson (2000)

variants is to assist policy-makers in clarifying programmatic choices in the allocation of scarce budgetary resources.<sup>34</sup>

- *Guidance of Professional Organizations.* Professional associations such as the International City and County Management Association (ICMA) and the Government Finance Officers Association (GFOA) provide on-going support for the promulgation and dissemination of concepts regarding the planning, budgeting and evaluation of the application of public resources. For instance, in its on-line website GFOA provides extensive information regarding best practices in public budgeting, including basic principles and important elements of such.<sup>35</sup>

#### NPC Research's Practical Experience

NPC Research's approach to the cost evaluation of public programs is heavily informed by its staff's experience as public agency practitioners and public program evaluators. Through experience gained in work for municipal, county and state agencies, NPC Research staff members have developed "front-line" perspectives regarding the marshalling of organizational resources in pursuit of program activities. This experience as public administrators is enhanced by experience that NPC Researchers have acquired in a wide variety of evaluations of local and state inter-agency programs.

#### Summary of the Theoretical and Practical Grounding of the NPC Research Cost Evaluation Approach

Table A-1 summarizes the contributions of the theoretical and practical roots of the NPC Research approach to public program cost evaluation.

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<sup>34</sup> Morgan and Robinson (2000)

<sup>35</sup> Government Finance Officers Association (GFOA) (2002). "Best Practices in Public Budgeting." On-line: [www.gfoa.org/services/nacslb/](http://www.gfoa.org/services/nacslb/). Accessed August 20, 2002.

Source of Contribution	Nature of Contribution
Organizational Theory	Focus on organizational structures and process and their impacts on “transactional areas” of inter-agency/inter-jurisdictional program systems.
Institutional Theory	Understanding of the role of background institutions in providing stability for inter-agency/inter-jurisdictional programs through the provision of “institutional resources.”
Transaction Cost Economics	Conceptualization of the processes of inter-organization integration that support the key “transactions” that characterize inter-agency/inter-jurisdictional programs.
Public Management Practice	Understanding of the public resource planning, programming and evaluation processes which program evaluation programs draw upon and support.
NPC Research Experience	A comprehensive view of the environment of public policy analysis and development that an effective program cost evaluation approach should support.

**Table A-1 Contributions of the theoretical and practical roots of the NPC Research approach to public program cost evaluation.**

## **Description of the NPC Research Transaction Cost Analysis Method**

### **Overview**

The NPC Research TCA Approach to program cost evaluation is new to the realm of public program evaluation discourse. As a result, the procedures that it encompasses will be new and somewhat foreign to most readers. In light of this, in this section the basic components of TCA Approach methods will be briefly described. The discussion deals with the TCA Approach in a generic sense – the way that it would generally be applied in a cost evaluation of any public agency. The application of the approach in the evaluation of the Anne Arundel County and Baltimore City drug courts discussed elsewhere in this report demonstrates how it is implemented in specific situations.

## **System Analysis**

Early in a program cost evaluation the NPC Research TCA Approach involves a clear mapping of the organizations that contribute resources to the service delivery system under consideration and the role(s) that they play. With the assistance of individuals who have been identified as knowledgeable regarding the program or programs to be evaluated, researchers create system maps or flowcharts that reflect how organizations link to support an area of public services. The system maps or flow charts, supported by tables or other visual aids, demonstrate with diagrams and words how organizational resources are linked and the nature of such linkages. The resultant picture or pictures frequently represent institutionalized patterns in or what may be referred to as “de facto institutions” that do not appear on the organizational chart of any one agency or jurisdiction and cannot be found as a program or set of line items in a public organization’s budget. Rather, these discernable entities of public action are composites of the human resource, budgetary and other organizational resource commitments of more than one (in some cases many more than one) jurisdiction, agency or agency fragment.

## **Identification of Transactional Linkages**

Integral to the NPC Research TCA Approach is an identification of the key transactions that define public goods production and service delivery systems. Transactions are identifiable, measurable outcomes of such systems. They are characterized by clearly understood activities and activity-related costs. Transactions are the points where jurisdictions and agencies link to provide discrete criminal justice system, treatment system, social service system or other services in the public sector landscape. Transactions are measured on the basis of actual experience of the organizational subsystem(s) under consideration and their constituent supportive agencies. Thus, the nature, number and duration of organizational activities associated with transactions are identified and analyzed within the context of the actual experience of the constituent organizational units of subsystems. Visual representations of key system transactions typical of NPC Research cost analyses add additional layers of meaning to the flowcharts or other displays noted above.

### **Specification of Organizational Transactional Activities**

In the NPC Research TCA Approach the concept of “transactional areas” is important. Transactional areas can be visualized as the organizational “areas” where jurisdictional or agency resources come together to realize transactions. An agency’s role in the transactional area is first defined by the activities that it pursues in support of the transaction. These may be referred to as the “transactional activities” of the agency. Transactional activities are things that agencies do to help make transactions happen.

### **Specification of Organizational Transactional Resources**

Organizational “transactional resources” are the human and other resources that are directly engaged in transactional activities. Transactional resources are expressed in two forms – in terms of the amount of the resource that is consumed (e.g., minutes or hours of worker time) and in terms of the cost of the resource that is consumed (e.g., cost per hour of worker time).

### **Identification of Institutional Resources**

As indicated above, the NPC Research TCA Approach recognizes and proceeds on the basis of an understanding that agencies do not operate in isolation. They usually function within the context of larger organizations that provide direction, oversight and support for operating units. The larger organizational framework, or what may be referred to as the “institutional context,” provides direction and support for the agency’s application of transactional resources to transactional areas. The NPC Research TCA Approach refers to such jurisdictional organization resource commitments beyond the organizational boundaries of “transactional” agencies under consideration as “institutional resources.” Without such institutional support, agencies directly involved in transactions would not be able to provide transactional support in the transactional areas of inter-jurisdictional or inter-agency programs.

In the NPC Research TCA Approach the cost consequences of institutional support for transactional agencies are identified. Concurrent with the accumulation of direct cost

information and the calculation of transactional costs, a similar procedure is followed for institutional costs. *The identification of all institutional cost consequences of all governance, oversight and support activities results in a more complete and realistic assessment of the cost consequences that are most frequently of greatest concern to public policymakers – **cost to taxpayers.***

### **The Concept of “Opportunity Resources”**

With the identification of the transactional and institutional resources that agencies commit to transactional areas, the researcher is able to see the “opportunity resources” involved in this commitment. The idea of opportunity resources is similar to that of opportunity costs in economic theory. Opportunity resources represent the total resource commitments that agencies make to transactional areas and transactions – the building blocks of inter-agency/inter-jurisdictional programs – that are applied to one or one set of transactional area(s) of programs rather than to others. The interconnected ideas of transactional, institutional and opportunity resources offer a more complete picture of the impact of alternative organizational resource commitment than do such concepts as marginal and opportunity costs found in economic theory.

### **Unit Cost Analysis**

#### Translation of Transactional and Institutional Costs Into Unit Costs

With the acquisition of transactional and institutional cost information, it is a straightforward matter for researchers to translate such into program unit costs. Program unit costs represent the total cost consequences – the cost of the contributions of all agencies to transactional areas – of measurable products or services produced by inter-agency/inter-jurisdictional programs. The determination of program unit costs allows the researcher to calculate individual and aggregated costs of product or service consumption for any temporal framework. This information can also be disaggregated on the agency and jurisdictional level or further aggregated on the inter-agency/inter-jurisdictional system level.

## **Policy Analysis of Comparative Transactional Costs**

### Cost to the Taxpayer

As noted above, the cost consequence that the NPC Research approach is ultimately concerned with is that which most concerns jurisdictional policy leaders – ***cost to the taxpayer***. As a result, it focuses on the tangible activities of public agencies that must be budgeted and accounted for by jurisdictional legislators and executives.

### Application in a Cost-Benefit Analysis Framework

The cost accumulation and translation procedures described above are equally applicable to the calculation of the cost of programs and to the valuation of benefits that they generate. Just as the NPC Research TCA Approach is effective in the identification of transactions in the operation of programs under evaluation, it is equally useful in the exploration of the valuation of benefits in terms of reduced public agency activity costs as the result of the evaluated programs.

### Time Valuation Considerations

The NPC Research approach generally considers the cost and benefit value of programs on bases that policy-makers, managers and practitioners can understand – current or nearly current budgetary and cost factors. However, the data that the NPC Research transaction cost analysis approach generates can also be manipulated in economic models to produce future effect values.

### Implications For Policy Analysis and Decision-making

The system analysis and transactional, institutional and unit cost data developed in the process described above provide jurisdictional and agency policy-makers, managers and practitioners with a complete picture of the operation and value of inter-jurisdictional/inter-agency programs. The NPC Research Approach presents micro-level (e.g., agency unit cost contribution) and more macro-level (e.g., jurisdictional opportunity resources, program system cost) information.



The concept of opportunity resources described above linked to that of transactional area support allows policy-makers and jurisdictional managers to compare the implications of jurisdictional contributions to different transactional areas within and among public goods and services systems. The information that the NPC Research TCA Approach produces also facilitates comparisons that policy leaders may wish to make among agency transactional activities. Since the approach is grounded in the processes that policy leaders understand – budget preparation and human resource allocation, for example – it can be seen as particularly meaningful to them.

Diagram A-1 summarizes the major components of the NPC Research transaction cost analysis approach. It should be noted that for any given program evaluation there may be variations in the basic approach.

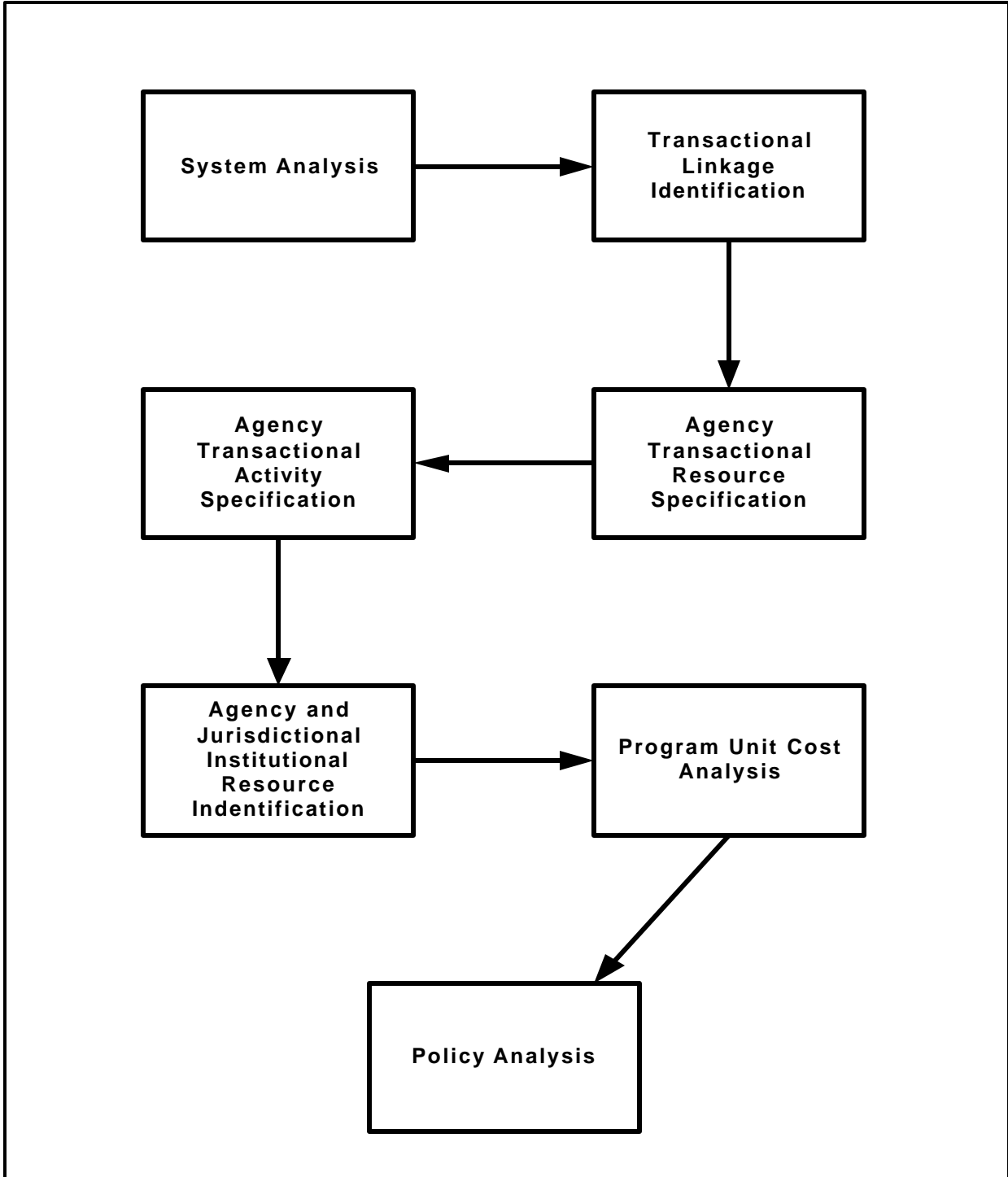
## **The NPC Research Program Cost Evaluation Approach As a Policy Analysis Tool**

### **Overview**

The NPC Research TCA Approach to public program cost evaluation can be seen as valuable to policy analysis at three levels of discourse:

- For jurisdictional legislators and executives
- For department and agency managers
- For program practitioners

In the following subsections these three ways that the NPC Research TCA Approach is of value to policy analysis will be briefly considered.



**Diagram A-1 The NPC Research transaction cost analysis process.**

### **Value To Jurisdictional Policy Leaders**

The transaction cost analysis approach to program cost evaluation supports the governance and oversight missions of jurisdictional policy-makers with inter-jurisdictional/inter-agency program performance information that facilitates the adjustment of resource allocation within or among the transactional areas or agency structures that define policy systems. It assists them in visualizing and analyzing public goods and services production in ways that go substantially beyond typical organization charts and budgets. Policy-makers are assisted in understanding the resources that they allocate through operating and capital budgets as “opportunity resources.”

### **Value To Organizational Managers**

NPC Research’s TCA Approach provides department and agency managers with tools for assessing their organizational component’s relationships with other agencies within programmatic transactional areas. It also facilitates the development of performance information that impacts human resource planning, budget preparation, capital improvements planning and other management requirements.

### **Value To Organizational Managers**

The systems perspective of the TCA Approach can help managers and practitioners at the operating level to understand how their contributions to transactional areas fit into systems of public goods and services production.

**Appendix B.**  
**Estimation of the Anne Arundel County**  
**Drug Treatment Court Cost Environment or “Synthetic Budget”**

## **Appendix B. Estimation of the Anne Arundel County Drug Treatment Court Cost Environment**

### **Introduction**

As was indicated in the discussion of the NPC Research TCA Approach in Appendix A., the first step in NPC Research's analysis of the cost environment of public service systems such as the Anne Arundel County and Baltimore City drug courts was to identify the organizational arrangements that give form to these complex systems. The Anne Arundel County Drug Court cost analysis section included a list of the agencies that play transactional roles in the AA-DC and a summary of the roles that they play. These agencies include: District Court of Maryland, Anne Arundel County; Anne Arundel County State's Attorney's Office; Maryland Office of the Public Defender, Anne Arundel County; Anne Arundel County Health Department; Anne Arundel County Sheriff's Office; and, Anne Arundel County Department of Detention Services.

In the following sections the methods involved in constructing the resource contributions of the agencies listed in the preceding paragraph will be discussed. Agency representatives who provided assistance in this effort and the nature of their assistance will also be noted.

### **District Court of Maryland, Anne Arundel County**

The District Court plays the most expansive and expensive transactional role in the operation of the AA-DC. In addition to administration of program elements that are unique to the AA-DC program, the District Court is also responsible for courtroom activities involved in participant program review sessions and administrative activities associated with the maintenance of participant case files. NPC Research identified specific District Court activities and staff commitments through personal interviews with Administrative Judge James W. Dryden, Drug Treatment Court Administrator Janet Ward and Deborah F. Cox, Anne Arundel County District Court Criminal/Traffic Supervisor. After experimenting with a variety of methods to determine the District Court transactional and institutional<sup>36</sup> costs, NPC

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<sup>36</sup> As discussed in Appendix A., "institutional costs" represent agency support and jurisdictional overhead costs associated with the transactional costs in question.

Research determined that the approach that would best capture the total budgetary commitments made to the AA-DC through the District Court operation would be to load the total Maryland District Court budget onto District Court Judges. Through an analysis of the State of Maryland's FY2002-2003 operating budget for the Maryland Judiciary, an hourly rate for the District Court Judge position was constructed. This rate was multiplied by the amount of Judge time committed to each AA-DC case – this time commitment was specified through an interview with Judge Dryden. NPC Research accounted for State of Maryland overhead and other Maryland Judiciary support resources that support District Court activities through analysis of the State of Maryland's FY2002-2003 operating budget. The resultant rate, including direct and indirect costs, was linked with the number of AA-DC session appearances that the researchers identified for each program participant to determine the District Court cost per participant.

#### Anne Arundel County State's Attorney's Office ("AA-SAO")

As was described in the cost analysis section of the report, Assistant State's Attorneys screen potential AA-DC program participants and represent the State through attendance at AA-DC sessions. The AA-SAO also maintains case files for each AA-DC participant. NPC Research identified AA-SAO resource commitments to AA-DC – primarily the time of an Assistant State's Attorney and an AA-SAO Paralegal – through a personal interview and electronic correspondence through e-mail with Michael Cogan, an Assistant State's Attorney. The researcher identified the total (direct and support) cost for the AA-SAO staff time commitments through an analysis of the Anne Arundel County operating budget for the State's Attorney's Office. A jurisdictional overhead rate was also constructed from an analysis of the County operating budget. The resultant rate was applied to time committed by Assistant State's Attorneys to AA-DC and combined with the number of appearances by AA-DC participants in case review sessions to determine the AA-SAO cost for each AA-DC sample member.

#### Maryland Office of the Public Defender ("OPD")

The OPD represents approximately 15% of participants in AA-DC. However, an Assistant Public Defender and a Paralegal attend every AA-DC participant review session. NPC Research identified the resource commitments of OPD to AA-DC through a personal

interview with Darren Douglas, Assistant Public Defender and Tayneka Galloway, OPD paralegal, and through subsequent electronic correspondence with Mr. Douglas. The researcher identified the direct costs for the Assistant Public Defender and Paralegal positions through analysis of OPD administrative documents. Agency support and jurisdictional overhead costs that could be assigned per hour of Assistant Public Defender and Paralegal time committed to AA-DC were constructed from the State of Maryland operating budget. The time commitments of OPD staff were averaged across all AA-DC participants, combined with the hourly costs for OPD staff and multiplied by the number of AA-DC sample member appearances in AA-DC review sessions to obtain an OPD cost per AA-DC participant.

#### Anne Arundel County Health Department

NPC Research staff discussed the role of Anne Arundel County Health Department in AA-DC during a personal interview and subsequent e-mail correspondence with Curt Toler and Linda Fassett of the Health Department. The primary role of the Health Department in AA-DC was in payment of treatment for indigent program participants. In the AA-DC sample NPC Research found program participants for whom treatment was paid by the U.S. Veterans Administration; Charles County, Maryland; Howard County, Maryland; and, Prince Georges County, Maryland. For purposes of the cost analysis these cases were treated as though Anne Arundel County was the payer. Since Anne Arundel County's treatment payment rates for 1998 were not available for researcher review, NPC Research used treatment rates obtained from Baltimore Substance Abuse Systems as proxies. These treatment rates were combined with individual treatment episode data obtained by NPC Research to develop treatment costs for each AA-DC sample member.

#### Anne Arundel County Sheriff's Office

The Operations Division of the Anne Arundel County Sheriff's Office is responsible for serving warrants issued by District Court Judges assigned to AA-DC. The staff commitments and direct costs associated with warrant service were identified by NPC Research in a personal interview with Captain W.E. Smith and Lieutenant Dennis Czorapinski of the Sheriff's Office. Agency support and jurisdictional overhead rates associated warrant service were constructed by the researcher through an analysis of the Anne Arundel County operating

budget. The resultant cost per warrant was combined with the number of warrants identified by NPC Research for each member of the AA-DC sample to obtain a total Sheriff's Office cost per sample member.

Anne Arundel County Department of Detention Services.

Anne Arundel County Department of Detention Services is responsible for the housing and transportation to court of individuals incarcerated by Anne Arundel County. Through electronic correspondence with Molly Nussear of Detention Services, a direct cost rate per day of incarceration and per transport to court was obtained by NPC Research staff members. This was added to agency support and jurisdictional overhead rates constructed by NPC Research from the Anne Arundel County operating budget to get a total cost per episode. These rates were combined with individual experience data identified by NPC Research to obtain the total Detention Services cost per member of the AA-DC sample.



**Appendix C.**  
**Estimation of the Anne Arundel County/Maryland**  
**Criminal Justice System “Business As Usual” Cost Environment**

## **Appendix C. Estimation of the Anne Arundel County/Maryland Criminal Justice System “Business As Usual” Cost Environment**

### **Introduction**

In the cost analysis section of the Anne Arundel County Drug Court report, the general method described as used by NPC Research to determine the cost-beneficial effect of the AA-DC includes a comparison of the difference in the cost consequences of the recidivist criminal justice experiences –“business as usual” processing of criminal cases – of the AA-DC sample with those of the comparison sample and a comparison of this cost difference with the cost of the AA-DC. Again reflecting the NPC Research TCA Approach described in Appendix A., the first step in NPC Research’s analysis of the cost environment of the “business as usual” Anne Arundel County/Maryland criminal justice system was to identify the organizational arrangements that give form to this complex system. The Anne Arundel County cost analysis section included a list of the agencies that play transactional roles in the “business as usual” processing of criminal cases and a summary of the roles that they play. These agencies include: District Court of Maryland, Anne Arundel County; Anne Arundel County State’s Attorney’s Office; Maryland Office of the Public Defender, Anne Arundel County; Anne Arundel County Police Department; Anne Arundel County Sheriff’s Office; Anne Arundel County Department of Detention Services; and, Division of Parole and Probation, Maryland Department of Public Safety and Correctional Services.

In the following sections the methods involved in constructing the resource contributions of the agencies listed in the preceding paragraph will be discussed. Agency representatives who provided assistance in this effort and the nature of their assistance will also be noted.

#### **District Court of Maryland, Anne Arundel County**

The District Court is responsible for the adjudication of misdemeanor and a limited number of felony crimes. The resources committed to this responsibility support Court activities from initial appearances before District Court Commissioners to preliminary inquiries and trials of individuals charged with criminal offenses. NPC Research identified specific District Court activities and staff and other resource commitments through personal interviews and

electronic correspondence with Administrative Judge James W. Dryden, Deborah F. Cox, Anne Arundel County District Court Criminal/Traffic Supervisor and Gray Barton, Executive Director, Maryland Drug Court Commission. The researcher's attention was particularly directed toward the most expensive transactional activities of the District Court – Judge's time committed to the adjudication of cases, administrative support of cases and courthouse and courtroom security. After experimenting with a variety of methods to determine the District Court transactional and institutional<sup>37</sup> costs, NPC Research determined that the approach that would best capture the total budgetary commitments made to the District Court's adjudication of "business as usual" cases would be to load the total Maryland District Court budget onto the time of District Court Judges. Through an analysis of the State of Maryland's FY2002-2003 operating budget for the Maryland Judiciary, an hourly rate for the District Court Judge position was constructed. This rate was multiplied by the amount of Judge time committed to each "business as usual" case – this time commitment was specified through an interview with Judge Dryden. NPC Research accounted for State of Maryland overhead and other Maryland Judiciary support resources that support District Court activities through analysis of the State of Maryland's operating budget. The resultant rate, including direct and indirect costs, was linked with the number of recidivist episodes that the researchers identified for members of the AA-DC sample and comparison sample to determine the District Court cost per participant.

#### Anne Arundel County State's Attorney's Office ("AA-SAO")

The AA-SAO is responsible for prosecutorial activities on behalf of the State in the adjudication of cases in the District Court. In addition to courtroom activities, the AA-SAO also maintains case files and pursues investigational activities associated with its prosecutorial responsibilities. NPC Research identified AA-SAO resource commitments to "business as usual" cases – primarily the time commitments of Assistant State's Attorneys and Paralegals – through a personal interview and electronic correspondence through e-mail with Michael Cogan, an Assistant State's Attorney. The researcher identified the total (direct and support) cost for the AA-SAO staff time commitments through an analysis of the Anne Arundel County FY2002-2003 operating budget for the State's Attorney's Office. A

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<sup>37</sup> As discussed in Appendix A., "institutional costs" represent agency support and jurisdictional overhead costs associated with the transactional costs in question.

jurisdictional overhead rate was also constructed from an analysis of the County operating budget. The resultant rate was applied to time committed by Assistant State's Attorneys and Paralegals to "business as usual cases" and combined with the number of recidivist episodes identified for each member of the two samples.

#### Maryland Office of the Public Defender ("OPD")

The OPD represents indigent individuals in the adjudication of cases in District Court. NPC Research identified the resource commitments of OPD to "business as usual" cases through a personal interview with Darren Douglas, Assistant Public Defender and Tayneka Galloway, OPD Paralegal, and through subsequent electronic e-mail correspondence with Mr. Douglas. The researcher identified the direct costs for the Assistant Public Defender and Paralegal positions through analysis of OPD administrative documents. Agency support and jurisdictional overhead costs that could be assigned per hour of Assistant Public Defender and Paralegal time committed to "business as usual cases" were constructed from the State of Maryland operating budget. The time commitments of OPD staff identified by Mr. Douglas and Ms. Galloway, combined with the hourly costs for OPD staff and multiplied by the number of recidivist episodes identified by NPC Research for each sample member, resulted in the OPD cost per sample member.

#### Anne Arundel County Police Department ("AA-PD")

Since Anne Arundel County Police Department is the largest law enforcement agency in the County, NPC Research used AA-PD to model the cost consequences of law enforcement agency participation in "business as usual" recidivist episodes. Through a personal interview with Assistant Chief of Police David Shipley and subsequent e-mail correspondence and telephone conversations with Assistant Chief Shipley and Lieutenant Tom Wilson, NPC Research identified the AA-PD resources committed to the key components of arrest episodes: respond to crime scene; make arrest; transport to police station; prepare arrest report; book evidence; interview suspect and witnesses; book prisoner; transport prisoner to the District Court Commissioner and/or County detention facility; process crime scene for evidence; and perform data entry for the arrest record. The arrest-related activities identified included the participation of uniformed police officers, police detectives, booking officers, police supervisors, evidence collection technicians and records clerks. Assistant Chief

Shiple and Lieutenant Wilson also provided the time commitments of each position involved in arrest episodes and the direct costs associated with such. From an analysis of the Anne Arundel County operating budget, NPC Research constructed an agency support cost rate and a jurisdictional overhead rate to apply to arrest episodes. The resultant cost per arrest episode was combined with the recidivist records of the sample members to produce the total law enforcement cost per sample member.

#### Anne Arundel County Department of Detention Services

Anne Arundel County Department of Detention Services is responsible for the booking, housing and transportation to court of individuals incarcerated by Anne Arundel County. Through electronic correspondence with Molly Nussear of Detention Services, a direct cost rate per booking, per day of incarceration and per transport to court was obtained by NPC Research staff members. This was added to agency support and jurisdictional overhead rates constructed by NPC Research from the Anne Arundel County operating budget to get a total cost per episode. These rates were combined with individual experience data identified by NPC Research to obtain the total Detention Services cost per booking and incarceration episode for each member of the AA-DC sample.

#### Division of Parole and Probation, Maryland Department of Public Safety and Correctional Services ("DPP")

DPP is responsible for the supervision of adult parolees and probationers. To determine DPP costs NPC Research analyzed the State of Maryland operating budget to determine the average cost (including direct, agency support and jurisdictional overhead cost) per month of supervision per individual supervised. This analysis included the identification of supervision workload and the probation agent resources available to manage such. The supervision cost per month was combined by NPC Research with individual records of time supervised to determine the cost per supervision episode and total DPP cost per sample member.

**Appendix D.**  
**Estimation of A Model of Victimization Costs**

## **Appendix D. Estimation of A Model of Victimization Costs**

### **Introduction**

One of the most important consequences of reductions in crime is the resultant reduction in costs to victims. A notable portion of the recent literature committed to the examination of the costs and benefits of crime prevention address the victim's perspective.<sup>38</sup> Consideration of victim's costs have not only included examination of tangible costs such as property damage, lost wages, medical costs and increased insurance premiums, but have also sought to place monetary value on intangible dimensions such as the pain and suffering of victims and/or the families of victims. Although victimization costs are not normally considered to be direct costs to taxpayers, NPC Research believes that public responses to increased victimization – increased law enforcement costs and new jail space construction, for example – ultimately become direct costs to the public. As a result, an examination of potential savings in victim costs associated with reduced crime resulting from drug courts has been included in this cost analysis.

In its interest to include a consideration of victim costs, NPC Research turned to an authoritative source produced under the auspices of the National Institute of Justice - Miller, Cohen, and Wiersma's 1996 monograph entitled *Victim Costs and Consequences: A New Look*. In this report the authors provide an index of the total tangible and intangible victims costs associated with 22 different crimes. NPC Research identified seven classes of crimes in this list that it believes to cover the type and magnitude of recidivist crimes committed by the sample members included in this study: child abuse and neglect; assault; robbery; drunk driving; larceny; burglary; and motor vehicle theft. Although NPC Research recognizes that it would only serve as a relatively rough indicator of victim costs, the researchers took the costs identified by Miller, Cohen and Wiersma and calculated the average cost per incident adjusted by the Washington-Baltimore CPI of these crime types. The researchers used this modeled cost as the victimization cost per crime to apply to the recidivist data that it

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<sup>38</sup> For an introduction to this body of literature see Cohen, M.A. (2001) "The Crime Victim's Perspective in Cost-Benefit Analysis: The Importance of Monetizing Tangible and Intangible Crime Costs," in Welsh, B.C., Farrington, D.P. and Sherman, L.W. (Eds.), *Costs and Benefits of Preventing Crime*. Boulder, CO: Westview Press.

identified for each sample member. Table D-1 includes the Miller, Cohen and Wiersma costs per crime type, the CPI adjustment made by NPC Research and the average victimization cost used in the cost analysis.

Category of Crime	1996 Cost	2003 Cost
Child abuse, neglect	60,000	74,328
Assault	9,400	11,645
Robbery	8,000	9,910
Drunk driving	18,000	22,298
Larceny	370	458
Burglary	1,400	1,734
Motor vehicle theft	3,700	4,584
Averages	14,410	17,851

**Table D-1. NPC Research’s calculation of victimization cost for the Maryland drug treatment court cost analysis.**



**Appendix E.**  
**Estimation of Increases in Income Paid By AA-DC Sample Graduates**

## Appendix E. Estimation of Increases in Income Taxes Paid By AA-DC Sample Graduates

### **Introduction**

In his 1996 report entitled, *Societal Outcomes and Cost Savings of Drug and Alcohol in the State of Oregon*, Dr. Michael W. Finigan of NPC Research found that individuals who completed alcohol and drug treatment realized substantial increases in income as compared to a comparison sample. This increase in income results in substantial increases in state income taxes paid. Since graduates of the AA-DC program successfully complete substance abuse treatment, NPC Research believes that it is reasonable to use the results of the 1996 study to predict estimated increased income taxes paid by AA-DC graduates as compared to income taxes paid by comparison sample members. As a result, NPC Research used Finigan’s findings for individuals who completed outpatient treatment (the most frequently utilized form of treatment in the AA-DC sample) to predict incomes for AA-DC graduates and members of the comparison sample. It then used information from the Comptroller of Maryland’s website to calculate the estimated tax paid by each group. Table E-1. demonstrates the results of this analytic process.

Study Group	1996 Income	Change in Washington-Baltimore CPI	2003 Income	Estimated Maryland, Local Income Tax Paid
1996 Finigan Comparison Sample as a Proxy for AA-DC Comparison Sample	12,935	17.5%	15,199	789.82
1996 Finigan Treatment Completion Sample as a Proxy for AA-DC Sample Graduates	19,240		22,607	1,367.64
Differences	6,305		16,932	577.82

**Table E-1. NPC Research’s estimation of income taxes paid by AA-DC sample graduates compared to comparison sample.**