RESEARCH REPORT February 2003

Evaluation of Breaking the Cycle

Adele Harrell, *The Urban Institute*
Ojmarrh Mitchell, *The Urban Institute*
Jeffrey Merrill, *Robert Wood Johnson Medical School*
Douglas Marlowe, *The Treatment Research Institute*

This report was prepared under Grant NIJ#97-IJ-CX-0013 from the National Institute of Justice. The nonpartisan Urban Institute publishes studies, reports, and books on timely topics worthy of public consideration. The views expressed are those of the authors and should not be attributed to the Urban Institute, its trustees, or its funders.

research for safer communities

URBAN INSTITUTE
Justice Policy Center

ACKNOWLEDGMENTS

The authors of this report are very grateful to the many people who contributed to this research, providing support, sending data, and answering endless questions.

The staff of the National Institute of Justice provided sustained support and inspiration, supplying funds for the evaluation, guiding the development and implementation of the Breaking the Cycle (BTC) initiatives, and encouraging understanding of the research needs. They include Betsi Griffith, Spurgeon Kennedy, Janice Munsterman, Carolyn Peake, Jennifer Wood, and Edward Zedlewski.

The assistance we received from the BTC staff, partner agencies, and others in the three demonstration sites was outstanding. This research would have been impossible without their willingness to share their time and data.

In Birmingham, special thanks go to Foster Cook, Kenneth Garner, Ralph Hendrix, Suzanne Muir, and Terri Williams of Treatment Alternatives to Street Crime (TASC) for their help and patience; to Glenda Bozle and the late Major Linn Moore of the Sheriff's Department for their willingness to let us interview inmates at the Jefferson County jail; and to Mike Carroll of the Administrative Office of the Courts for providing data. We also want to thank the judges of the District and Circuit courts and David Barber, District Attorney, for answering our many questions on site visits.

In Jacksonville, extraordinary help was provided by Jamie Brooks, the BTC project director, and Assistant Chief Tara Wildes of the Duval County Sheriff's Department. They both provided office space for interviewers, access to records, and data on key measures for the evaluation. We also appreciate the assistance we received from Brian O'Neill of the Pretrial Services Unit, the judges, the Clerk of Court's office, the State's Attorney's office, River Region and Gateway staff, and Judy Truett of the City of Jacksonville, and the willingness of the Florida Department of Corrections to provide computerized data on sample members on probation.

In Tacoma, the Pierce County Alliance staff, especially Jim Boyle, Terree Schmidt-Whelan, and the BTC project directors, Lisa Daheim and Terry Reid, made this research possible by providing data and access to partner agencies. We particularly appreciate the efforts of Roxanne Krieg and her staff at the Pretrial Services Unit in checking criminal history data and of Larry Gezelius of the Pierce County Information Services for providing court records for the evaluation. Thanks also go to Judge Cohoe, the District Attorney's Office, the Sheriff's Department, and the Department of Corrections for their help.

Staff at the Urban Institute (UI) and the Treatment Research Institute (TRI) who made major contributions to this evaluation include Alexa Hirst, UI's research associate, who compiled the data, visited the sites, and participated in all facets of the project before her move to San Francisco; Shannon Cavanagh, who got this project started; Sarah Ring-Kurtz and Patricia Lee, who managed the fieldwork for TRI; and the superb TRI field supervisors, Dianne Nakamura in Tacoma and Rhonda Graybeal in Jacksonville. We also thank John Carver, consultant to the Justice Management Institute, who prepared the early process evaluation report on Birmingham.

Finally, our deepest appreciation goes to the sample members who were willing to share their experiences with us in interviews and focus groups.

URBAN INSTITUTE
Justice Policy Center
2100 M STREET, NW
WASHINGTON, DC 20037
www.urban.org

Contents

Tables

Executive Summary

PART I. BTC IMPLEMENTATION

PART II. BTC IMPACT

PART IIII. BTC COSTS AND BENEFITS

Figures

PART I. BTC IMPLEMENTATION

PART II. BTC IMPACT

EXECUTIVE SUMMARY

This Executive Summary presents the highlights from the evaluation of the Breaking the Cycle (BTC) demonstration projects, conducted in Birmingham, Alabama, Jacksonville, Florida, and Tacoma, Washington, between 1997 and 2001. The BTC demonstrations tested the feasibility and impact of systemwide intervention to reduce drug use among offenders by identifying and intervening with drug-involved felony defendants. BTC reflects the widespread recognition among criminal justice professionals of the link between drug use and crime. Drug users commit crimes to get money for drugs, get involved in violence over drug deals, and commit crimes while under the influence of drugs. Faced daily with drug-abusing offenders, many judges, prosecutors, police, and corrections officers actively support efforts to reduce drug use among offenders and are willing to use the authority of the justice system to this end. The BTC strategy was to screen offenders shortly after arrest and require those found to use drugs to participate in a drug intervention while under criminal justice supervision.

The BTC demonstrations were supported by the National Institute of Justice (NIJ), the research arm of the U.S. Department of Justice, with funds provided by the National Office of Drug Control Policy. The first site, Birmingham, received funding in 1997, and the next two sites, Jacksonville and Tacoma, in 1998. BTC was managed by the NIJ with funds provided by the National Office of Drug Control Strategy. The NIJ Office of Development and Communication selected the sites through an extensive competitive process, monitored program implementation, and provided technical assistance to the sites. The NIJ Research and Evaluation Branch selected the evaluation team through a competitive process and guided the evaluation through a cooperative agreement.

The Treatment Research Institute recruited the evaluation samples, designed the survey instruments, and managed the surveys. The cost-benefit analysis was conducted by Dr. Jeffrey Merrill of the Robert Wood Johnson Medical Center.

BTC targeted all adult felony defendants and was not limited to those charged with drug offenses. Defendants were ordered to report to BTC for drug screening as a condition of pretrial release; those who reported drug use, tested positive for drugs, or were arrested on drug felony charges were placed in drug testing and, when appropriate, referred to drug treatment or drug education classes. The goal was to expand the scope of earlier programs such as drug courts and Treatment Alternatives to Street Crime (TASC) by incorporating drug reduction activities as part of handling felony cases.

The core system reforms called for by BTC model were early intervention, judicial oversight, graduated sanctions and incentives, and collaboration among justice and treatment agencies.

- **Early Intervention**. The BTC model called for identifying drug-using offenders immediately after they were arrested. The rationale for intervention at this point is that arrest is a crisis for most individuals and represents an opportunity to assist drug users in confronting and acknowledging a substance abuse problem. To capitalize on this moment of opportunity, BTC plans included drug testing of all offenders as soon as possible after arrest, early clinical assessment, and timely placement in drug treatment or monitoring as indicated by the assessment. Operationally, this meant setting up

procedures for (1) screening every defendant entering the criminal justice system to identify drug users and (2) preparing individualized treatment plans and conditions shortly after arrest.

- **Judicial Oversight.** The BTC model also required close judicial oversight of drug treatment participation. The experience of drug courts suggests that close judicial oversight can help reduce drug use and criminal behavior among participants, a lesson BTC planned to extend to all drug-using defendants under any form of criminal justice supervision. BTC planned to use judicial authority to monitor and sanction violations of conditions of community supervision, focusing on requirements for drug testing and treatment attendance if recommended. Operationally, judicial oversight called for court review of compliance and reports on drug treatment performance and drug testing prior to hearings.
- **Use of Graduated Sanctions and Incentives.** The agencies involved in BTC were expected to apply steady leverage to require abstinence and retain offenders in treatment. Borrowing from strategies pioneered by drug courts, BTC offender management plans specified consistent and timely use of sanctions. The sanction plans called for immediate and certain response to offender violations, with punishments graduating in severity as needed, and incentives for treatment progress. Operationally, these plans required that BTC specify (1) BTC rules and infractions; (2) sanctions for each type of infraction; and (3) the staff with authority (and responsibility) to respond to compliance and noncompliance. Further, BTC needed to have procedures for ensuring that the rules and policies were understood by the offenders, court staff, treatment staff, and supervising agents or case managers.
- **Close Collaboration among Criminal Justice and Drug Treatment Agencies.** The BTC sites were asked to engage in cross-agency planning and management. Operationally, key staff members of partner agencies were expected to attend regular meetings to develop policies, solve problems, and engage in setting objectives. Partner agencies were expected to exchange information on offender status and engage in collaborative monitoring of offender compliance in an ongoing and timely manner.

BTC had an important and lasting effect on the demonstration sites. BTC innovations generated considerable local political support and are continuing with substantial local funding in all three sites. A major reason for this support is that BTC is seen as an appropriate and effective alternative to pretrial detention. This was very important to the sites with overcrowded jails. The availability of supervision, drug testing, and penalties for continued drug use increased the willingness of the courts to release arrestees while their cases were pending, and offered the justice system strategies for addressing a factor that contributes to the risk of reoffending. This fact suggests that improvements in the strategies for coordinated intervention to address drug use among offenders were valued and that additional work needs to be done to identify ways to deliver these services efficiently and consistently. This enthusiasm persists despite the challenges, described below, of undertaking such substantial systemwide reforms and appears justified by the significant reductions in drug use and crime found by the evaluation.

IMPLEMENTING BTC

Early intervention proved challenging to the sites, all of which needed to establish new pretrial supervision and case management programs. In Birmingham and Tacoma, defendants were required as a condition of pretrial release to report to the TASC agency offices for a drug test and screening, followed by assessment if needed. In Jacksonville, jail medical staff administered drug tests and the TASC agency conducted screening and assessment in the jail or at the BTC offices. The procedures used are shown in table 1.

Early Case Identification Procedures in the BTC Sites

	Birmingham	Jacksonville	Tacoma
SCREENING			
When and Where	Post-release at BTC	Pre-release at jail intake following arrest	Post release at BTC
How	Self-administered questionnaire and EMIT drug test	Four screening questions and Roche TestCup-4 drug test	Questionnaire based on the Texas Christian University Drug Dependence Screen and Martin Diagnostic International Rapid drug test
ASSESSMENT			
When and Where	At BTC offices on initial visit (usually within week of arrest)	In jail or at BTC offices (shortly after bond condition requiring BTC issued)	At BTC offices, usually following group orientation meeting
How	Clinical interview	SASSI (Substance Abuse Subtle Screening Inventory) screener & DSM-IV assessment for abuse or dependence used to recommend placement on ASAM Level III.5 criteria	Clinical Interview

*Screening in Jacksonville is before the BTC order; in Birmingham and Tacoma screening is after the BTC order.

The average number of defendants screened, found eligible, and given a treatment plan each month was 365 in Birmingham, 182 in Jacksonville, and 129 in Tacoma. Thus, annually Birmingham assessed about 4,300 defendants, Jacksonville about 2,100, and Tacoma about 1,500.

The demonstration highlighted the potential advantages and disadvantages of conducting the initial screening in jail.

- **In-Jail Screening.** One advantage of in-jail screening is that results are available at the time of the release decision and can be used in setting release conditions. Another is that results can be used to identify detained defendants who should receive treatment in jail (if available). This procedure resulted in screening the highest proportion of charge-eligible arrestees. However, in-jail screening wastes resources if drug users do not subsequently receive an intervention because charges are dropped, reduced to misdemeanors, or shifted to another jurisdiction. Moreover, in Jacksonville, many defendants with positive screening results were not ordered to report to BTC as a condition of their release.
- **Postrelease Screening.** Advantages of postrelease screening are that it does not require jail space and staff. It saved resources in Tacoma and Birmingham, where jail-based treatment was limited to weekly Narcotics Anonymous/Alcoholics Anonymous (NA/AA) groups. Postrelease screening and assessment allowed case managers to make immediate referrals to treatment. However, limiting screening to those released may fail to identify the most seriously addicted defendants, who by virtue of their criminal history and lack of cash may be less likely to be released. Another potential disadvantage is that postrelease screening gives arrestees advance warning of a test and a chance to avoid detection by abstaining from drug use prior to the initial test. In response to these concerns, Birmingham required defendants arrested on drug felony charges to test negative for drugs on weekly tests for at least one month before concluding that they were not users and releasing them from BTC.

BTC sites used the results of the assessments to assign defendants to a level of drug intervention based on the severity of their drug involvement. There were differences in drug use patterns and severity of abuse across the three sites. In Birmingham, 55 percent of the BTC participants in the impact evaluation sample tested positive on their initial drug test, compared with 65 percent in Jacksonville and 68 percent in Tacoma. Abuse problems, as measured by drug composite scores on the Addiction Severity Index (ASI) (McLellan et al. 1992) above .04 at baseline,[1] were reported by 33 percent of the Birmingham BTC sample, 71 percent of the Jacksonville sample, and 60 percent of the Tacoma sample. However, the treatment placements recorded in the BTC management information systems (MISs) in each site did not parallel the apparent need patterns. The portion of BTC participants placed in residential or outpatient treatment at some time during their participation was about two-thirds in Birmingham, one-fourth in Tacoma, and one in twenty in Jacksonville. It should be noted that Tacoma and Jacksonville had serious problems with their MISs and it is likely that not all treatment placements were recorded.

Drug-involved defendants assessed as needing less intensive intervention were placed in drug testing, sometimes accompanied by drug education classes. Others were placed in drug testing and treatment readiness classes while waiting for treatment spaces. The average

[1] The score of .04 is the ASI cutoff point used by the Treatment Research Institute to differentiate those who need clinical intervention from those who do not.

number of drug tests per BTC participant was 9.7 in Birmingham, 2.8 in Jacksonville, and 12.2 in Tacoma. Most sanctions were for missing or failing a drug test, were delivered by case managers or pretrial officers, and were relatively mild. The case manager sanctions in Birmingham included an "alert" letter that warned noncompliant clients (received by 60 percent of the violators), case review by the case manager (received by 42 percent of the violators), and termination from BTC (received by 23 percent of the violators). In Jacksonville, the pretrial officer sanctions included warning letters, meeting with the supervising officer, and a violation report to the court. Although the infractions recorded for 20 percent of BTC testing participants were almost always followed by a sanction, only 19 percent of the positive results on tests conducted after BTC entry were noted as infractions. In Tacoma, the impact evaluation sample averaged 5.1 infractions per BTC participant and almost all were sanctioned. About two-thirds of the sanctions were delivered by case managers and involved letters, meetings, or changes in drug testing requirements.

Judicial monitoring was relatively rare in Birmingham and Jacksonville. Few hearings were held to review noncompliance and even fewer judicial sanctions were imposed. A sample of data from the program records showed 28 judicial sanctions in response to 8,601 infractions in Birmingham and 10 judicial sanctions in response to 458 infractions in Jacksonville. In Tacoma, one judge reserved one afternoon a week for review hearings for BTC participants with numerous infractions. About one-third (over 700) of the sanctions given to BTC participants in the impact evaluation sample were administered by the judge.

One problem BTC encountered was that plans did not specify what would happen in cases of sustained noncompliance or conditions under which participants would be terminated from BTC services. There seemed to be an implicit belief that sustained noncompliance would result in judicial sanctions that would graduate in severity and culminate in pretrial detention pending case disposition (prior to sentencing) or in probation revocation (postsentencing). The influx of cases resulted in much higher than anticipated caseloads for case managers and limited their capacity to provide close monitoring and deliver sanctions in a timely fashion. This problem was exacerbated by the lack of automated data systems linked to other agencies, which would have enabled case managers to distinguish inactive BTC clients (in jail or out on warrant) from those expected to be reporting regularly and to monitor treatment attendance and drug test results easily.

As this description indicates, BTC implementation fell short of the ideal in all three demonstration sites, highlighting the challenge of coordinated efforts to reduce drug use among all drug-involved felony defendants released to the community while their cases are pending.

LESSONS FOR THE FUTURE

The BTC effort to expand lessons from earlier programs produced valuable guidance for future development of programs and policies, particularly in three areas: strategies for identifying and responding to a range of substance abuse problems, the data infrastructure required to track the progress of individuals as they have contact with multiple agencies, and issues in managing interagency collaboration across justice and treatment agencies.

Lesson 1. BTC functioned best when case managers assumed responsibility for both managing treatment referrals and responding to drug testing infractions, backed up by judicial hearings as needed.

Two models emerged for managing treatment and supervision. In Birmingham and Tacoma, BTC expanded TASC case management capacity and asked case managers to adopt more stringent procedures for monitoring compliance with BTC requirements and administering sanctions for noncompliance. In Jacksonville, BTC divided these responsibilities between treatment providers and a newly created BTC supervision unit. In practice, this model split the intervention clearly into coerced abstinence for nonaddicted drug users and treatment for those meeting clinical criteria of abuse or dependence. This model was less successful in bridging the gap between justice and treatment agencies. Corrections officers tested, supervised, and sanctioned defendants, maintained records, and requested violation hearings if needed. Treatment agencies provided services for relatively few participants and rarely reported noncompliance to the pretrial officers. The plan for judges to review and sanction persistent noncompliance was consistently implemented only in Tacoma. Future programs need to engage in strategic planning around rules that define infractions, sanctions for responding to infractions, strategies for timely response to noncompliance, and work to engage the courts in sanctioning.

Lesson 2. Automated data systems are essential to ensure offender accountability in interventions aimed at large numbers of individuals. BTC helped sites recognize and address this need.

Criminal justice agencies must know the whereabouts of those under their supervision, and, in the case of BTC, be able to exchange this information with partner agencies. This proved to be very difficult. Lack of access to timely information on defendant release status affected BTC services both at screening and throughout the program. Because arrestees could post bond at any time and could be picked up on other charges at any time, it was difficult to determine when failure to appear for testing or appointments was deliberate noncompliance and when it resulted from incarceration. Efforts to exchange information were only partially successful and relied heavily on faxing, which was difficult, given the large numbers of BTC clients and their constantly shifting criminal justice status. BTC contributed to the solution in Birmingham and Jacksonville by supporting the development of MISs and in Tacoma by supporting the development of a link between the criminal justice data system and the TASC MIS. However, these improvements came very late in the program, and their absence was an impediment for much of the demonstration period.

Lesson 3. A major benefit of BTC, one not measured by the impact or cost-benefit evaluation, was building the structure and relationships to sustain coordinated policy development and ongoing collaboration among criminal justice agencies themselves and with treatment providers.

BTC, like many other demonstration projects, found that effective joint problem solving and strong local leadership were necessary. Two techniques used successfully to facilitate collaboration among the agencies in all BTC sites were (1) the development of detailed strategic plans that specified needed changes, set deadlines, and assigned responsibility for tasks and (2) the preparation of written memorandums of understanding on the purpose of BTC and the role of each agency in implementation. In all three cities, the most challenging management problem was engaging the state agencies that managed probation in making rather substantial

changes in supervision practices to accommodate the local BTC vision of combining treatment and monitoring. These large state agencies have statewide policies, data systems, and managerial procedures that make it hard to make changes in a specific jurisdiction. Moreover, the top officials were located in other cities and could not attend policy board meetings. This situation required extra willingness on the part of the regional directors to take on the challenge of training and encouraging their staff to participate in local partnerships.

THE IMPACT OF BTC

The findings from the impact evaluation confirm the benefits of BTC strategies, even when imperfectly implemented, and indicate that efforts to reduce drug use directed at all felony defendants under supervision in the community can produce gains in public safety.

Finding 1. BTC reduced drug use in two sites.

The results show that BTC participants were significantly less likely than similar defendants arrested in the year before BTC to

- Use an illicit drug in the 30 days before follow-up (Birmingham and Jacksonville)
- Use marijuana in the 30 days before follow-up (Jacksonville and black BTC clients in Birmingham)
- Use a stronger drug (mainly cocaine) in the 30 days before follow-up (Birmingham)
- Engage in heavy drug use in the 30 days before follow-up (Jacksonville)

However, no reductions in drug use were found in Tacoma. Several factors may explain this finding. Drug severity scores, as measured by the ASI composite score for drug abuse, were higher for BTC participants in Tacoma than in the other sites. Overall, the demand for treatment exceeded the supply, and long waits were common. Tacoma was the only site to have a significant problem with methamphetamine, a drug that is particularly difficult to treat. Tacoma also had a much higher proportion of white participants, the group that did not show marijuana use reductions in Birmingham.

The observed reductions in drug use were not clearly linked to participation in drug treatment. In Tacoma and Jacksonville, the BTC samples reported significantly more days of drug treatment in the month before the follow-up interview than the pre-BTC sample (2.1 days compared with 0.8 days in Jacksonville and 3 days compared with 1.3 days in Tacoma), but significant reductions in drug use were found in Jacksonville and not Tacoma. The pretrial monitoring was more aggressive and reached a far larger pool of eligible BTC defendants In Jacksonville than in Tacoma, suggesting that the difference in outcomes may have resulted from increased drug testing, monitoring, and pretrial supervision. Both of these sites had higher rates of stronger drug use (cocaine in Jacksonville and cocaine and methamphetamine in Tacoma) than did Birmingham.

In Birmingham, with its lower rate of stronger drug use, the BTC participants were significantly less likely to use drugs. The reductions in marijuana use were larger among black

participants than white participants. There was no significant difference in the number of days of drug treatment in the month before follow-up reported by BTC and comparison defendants. If the planned duration of drug treatment was short, BTC participants in Birmingham might have completed treatment prior to the month before follow-up, as the process evaluation indicated that most of those in need of treatment (based on clinical assessment) received it. Delays in treatment entry in Tacoma combined with widespread methamphetamine use may have delayed or derailed the impact of BTC on drug use. A competing (or complementary) explanation is that the heightened pretrial supervision and drug testing in Birmingham and Jacksonville, more widespread than in Tacoma where efforts were focused on a smaller pool of drug abusers, may have reduced drug use among BTC clients placed only in urine monitoring.

Finding 2. BTC reduced criminal activity.

In all three sites, BTC participants were less likely than comparison samples to report committing a crime in the six months before follow-up interview. When only drug offenses are examined, the results show that BTC participants were less likely to report drug sales or possession in the six months before follow-up. These differences were large and highly significant. Our validity analysis found that the comparison samples in Jacksonville and Birmingham reported a smaller portion of the officially recorded arrests than BTC participants in those two cities across the six months prior to follow-up. The difference in willingness to report offending suggests that the impact of BTC based on self-reported offending may be larger than that observed in this study.

In Birmingham and Tacoma, the BTC samples were less likely than the comparison samples to be arrested within a year of entering the program. In contrast, arrest records in Jacksonville showed higher arrest rates (and numbers of arrests) during the year for BTC participants than for the comparison group. This finding in Jacksonville is inconsistent with the analysis of self-reported offending and with findings in the other two sites for reasons that are unknown. One possibility is an overall increase in enforcement during the years of the study, which increased the likelihood of arrest independently of a change in offending; another is that data systems used to check recidivism were improved.

Overall, our conclusion is that BTC reduced criminal activity, with the caveat that Jacksonville did not conform to this general pattern.

Finding 3. BTC reduced family problems in all sites.

BTC participants also reported some improvements in domains of functioning associated with reductions in drug use, particularly improved relationships with family members. In all three sites, the severity of family problems as measured by the ASI composite score was significantly lower at follow-up for the BTC samples than for the pre-BTC samples, controlling for the severity of family problems and other factors at baseline.

Evidence of reduction in other problem areas was mixed. Tacoma BTC participants reported greater reductions than the pre-BTC comparison group in the severity of psychological problems, employment difficulties, and social difficulties. However, these gains were not observed in the other BTC sites. In Jacksonville alone, BTC was associated with a significant reduction in employment problems.

BTC COSTS AND BENEFITS

The analysis of costs and benefits estimated the return to the costs (expenditures and in-kind resources) to participating agencies. The cost estimates do not include the routine costs of operating the jails and courts, but count only the additional costs of BTC interventions. The benefits are confined to outcomes observed during the year after the start of intervention and do not count longer term benefits or those not measured by the impact evaluation. The results show positive returns to the investment in BTC in all three sites. The ratio of the costs averted for each dollar invested was 2.3 in Birmingham, 2.6 in Jacksonville, and 5.3 in Tacoma. Not all of these savings can be readily converted into budget dollars for the agencies participating in BTC since they represent savings to a host of stakeholders, including potential victims, public jurisdictions, insurers, and citizens in general as well as the public law enforcement, court, and corrections systems. However, the benefits are consistent with the public safety, health, and welfare missions of the investing agencies.

The results are conservative. Reductions in arrests, physical and emotional morbidity, and welfare use may lead to longer term savings not measured by this evaluation. In addition, the savings attributable to the reduced arrest rates at two of the sites are very conservatively estimated. If BTC has a very large effect on cutting arrests, it might make it possible to reduce both jail and prison capacity as well as the size of law enforcement and court systems. One large cost saving not captured by this analysis was that in both Birmingham and Tacoma, BTC was used to relieve serious jail overcrowding, thus reducing pressure to construct new jail facilities. Indeed, in Birmingham, the county commissioners voted continuation funds for BTC at the end of federal funding and cancelled plans for a bond referendum on a new jail.

THE BROADER IMPLICATIONS

The BTC findings on the positive impact of interventions with drug offenders are consistent with other recent studies of programs that use case management with treatment and sanctions to encourage abstinence from drug use and crime. For example,

- In the DC Superior Court, graduated sanctions that are certain and swift were found to reduce drug use prior to sentencing and crime in the year after sentencing, independently of the frequency of drug testing and judicial monitoring (Harrell, Cavanagh, and Roman 1999).
- Drug court evaluations with strong experimental or quasi-experimental designs report significantly lower likelihood of rearrest in the year after entry for participants than for control groups. For example, 44 percent of the drug court participants in Baltimore were rearrested within a year of entry compared with 56 percent of the control group ($p < .10$) (Gottfredson and Exum 2000). In Orange County, California, 22 percent of the drug court participants were rearrested compared with 34 percent of the control group (Deschenes et al. 1999).
- A five-year study of the Clark County, Nevada, drug court showed consistent and significant reductions in rearrest for drug offenses at one, two, and three years after program entry, but inconsistent results for reductions in arrests for other offenses (Goldkamp, White, and Robinson 2001).

- Not all drug courts are equally effective. Differences in the target population demographics and risk factors as well as variations in drug court policies and practices result in differences in the rates of participation, graduation, and treatment retention as well as differences in rearrest rates across courts and over time (Belenko 1999; Goldkamp, White, and Robinson 2001; Truit et al. 2001).

Other studies of using sanctions in criminal justice interventions for drug users stress the importance of two practices used by the BTC sites:

- **Making sure defendants understand the sanctions they face.** At the heart of increased accountability is the forging of an understanding between the court and the offender on behavioral requirements and consequences. When drug court defendants enter into an agreement with the judge, they accept a "contingency contract" that makes them accountable for participating in treatment; they must comply with a known set of rules that define sanctions and incentives which they can control through their behavior (see Harrell and Smith 1995; Inciardi et al. 1996; Pendergast et al. 1995). The importance of knowing rules in advance is likely to apply to offenders on probation and parole as well as those in drug courts.
- **Making sure defendants believe that sanctions earned will be delivered**. To be believable and effective, sanctions must be delivered as promised with a high degree of certainty. Somewhat surprising to many people is the finding that severity of punishment does not always influence behavior, and its effects may depend on the certainty of punishment or the salience of the penalty to the individual (Nagin and Pogarsky 2001). Effective responses may include positive incentives or rewards for doing well or punishments for noncompliance, and theoretically rewards are more powerful in eliciting desired behaviors. However, BTC and most programs for offenders relied on sanctions, imposed by case managers or judges. They included assignment to more intensive monitoring or treatment, judicial warnings, or short-term incarceration. Sanctions that are treatment-oriented (e.g., remand to detoxification or more intense treatment) have been shown to hold great promise (Anglin and Hser 1990; Lipton 1994). The critical point is that noncompliance should be consistently followed by a penalty that is severe enough to make the defendant try to avoid it.

In the two sites in which defendant perceptions were measured, BTC participants rated the risk of receiving a sanction for failing a drug test or missing drug treatment significantly higher at follow-up than the comparison group, indicating heightened awareness of the risk of legal consequences. However, defendant views of the severity of sanctions were mixed. BTC participants in Tacoma rated the severity of sanctions for a drug test failure significantly higher than the comparison group did. In Jacksonville, the reverse was true, with the BTC participants rating the severity of probable sanctions for these infractions significantly lower at follow-up than the comparison group did. This finding is consistent with the higher actual risk of judicial sanctions in Tacoma than Jacksonville and the difference in use of sanctions in the two sites.

BTC efforts to combine sanctions and treatment were consistent with other findings on the benefits of using these intervention strategies together.

- Falkin's (1993) evaluation of community-based treatment for offenders found that treatment combined with urinalysis and court monitoring with sanctions had higher rates of success than treatment alone.
- The impact of the Washington, D.C., Graduated Sanctions program was strongest for offenders who participated voluntarily in NA/AA treatment monitoring (Harrell, Cavanagh, and Roman 1999).
- Intensive Supervision Probation programs in California that combined treatment with strict surveillance reduced recidivism by as much as 15 percent more than high levels of surveillance alone, leading to recommendations that treatment be included as part of efforts to reduce criminal activity among drug felony offenders (Petersilia and Turner 1993; Petersilia, Turner, and Deschenes 1992). The authors warned that “Putting drug-dependent offenders in a program that forbids drug use, provides frequent testing, and provides no assured access to drug treatment virtually guarantees high violation rates" 1993, p. 320).

CHAPTER 1. INTRODUCTION

This report presents the final results of the evaluation of the Breaking the Cycle (BTC) demonstration projects. The BTC demonstrations tested the feasibility and impact of systemwide intervention to reduce drug use among offenders by identifying and intervening with drug-involved felony defendants. The BTC demonstrations were supported by the National Institute of Justice (NIJ), the research arm of the U.S. Department of Justice, with funds provided by the National Office of Drug Control Policy. The first site, Birmingham, Alabama, received funding in 1997, and the next two sites, Jacksonville, Florida, and Tacoma, Washington, in 1998.

BTC was managed by NIJ with funds provided by the National Office of Drug Control Strategy. The NIJ Office of Development and Communication selected the sites through an extensive competitive process, monitored program implementation, and provided technical assistance to the sites. The NIJ Research and Evaluation Branch selected the evaluation team through a competitive process and guided the evaluation through a cooperative agreement.

The BTC evaluation focused on three aspects of the demonstration: process, impact, and cost-benefit. The Urban Institute managed the evaluation, conducted the process evaluation, collected data on program services and justice system activities, and analyzed the impact of BTC. The Treatment Research Institute recruited the evaluation samples, designed the survey instruments, and managed the surveys. Dr. Jeffrey Merrill of the Robert Wood Johnson Medical Center conducted the cost-benefit analysis.

The process evaluation goals were to assess the feasibility of BTC as a model, identify the strategies developed and lessons learned at the sites for meeting the challenge of systemwide responses to drug use, and document the services delivered as a basis for understanding the impact evaluation outcomes. Data for process evaluation were collected from interviews of staff of collaborating agencies, weekly conference calls with site project directors, computerized information systems of participating agencies, and monthly reports on project activities submitted to NIJ by BTC grantees. Part I of this report provides an overview of the process evaluation findings to assist in interpreting the impact findings and identify the key implementation lessons. Three earlier reports have presented more detailed case studies of the implementation process in each site.[2]

---

[2] A.V. Harrell, O. Mitchell, and A. Hirst, *Implementing System-Wide Interventions for Drug-Involved Offenders in Pierce County, Washington: Evaluation of the Breaking the Cycle Demonstration*, Report submitted to the National Institute of Justice, June 2000.

A.V. Harrell, O. Mitchell, and A. Hirst, *Implementing System-Wide Interventions for Drug-Involved Offenders in Birmingham, Alabama: Evaluation of the Breaking the Cycle Demonstration,* Report submitted to the National Institute of Justice, June 2000.

The impact evaluation tested the general hypothesis that BTC would reduce drug use, crime, and drug-related problems among offenders; changes in case processing during BTC were also examined. The impact evaluation is based on a quasi-experimental comparison of defendants in BTC with samples of similar defendants arrested in the year before BTC implementation. Data collection included baseline and follow-up interviews with sample members, records on court and BTC services and contacts with criminal justice agencies and case managers during BTC, and records on arrests before sample entry and in the following year. Part II of this report presents the findings of this impact evaluation. Appendix A describes the methodology.

Results of the impact evaluation were used to estimate the return on investment in BTC. This was accomplished by documenting the additional costs of providing the BTC services and comparing them to costs averted by reductions in drug use and crime observed during the one-year follow-up period. These findings are shown in Part III.

A.V. Harrell, O. Mitchell, and A. Hirst, *Implementing System-Wide Interventions for Drug-Involved Offenders in Jacksonville, Florida: Evaluation of the Breaking the Cycle Demonstration,* Report submitted to the National Institute of Justice, June 2000.

PART I.

BTC IMPLEMENTATION

CHAPTER 2.
BREAKING THE CYCLE: THE INTERVENTION STRATEGY

The BTC demonstration reflects the widespread recognition among criminal justice professionals of the link between drug use and crime. Drug users commit crimes to get money for drugs, get involved in violence over drug deals, and commit crimes while under the influence of drugs. Faced daily with drug-abusing offenders, many judges, prosecutors, police, and corrections officers actively support efforts to reduce drug use among offenders and are willing to use the authority of the justice system to this end.

The two primary strategies used to change offender drug use behavior are legal pressure and drug treatment.

- **Legal pressure** takes various forms, including (1) penalties for positive drug tests and failure to attend treatment (graduated sanctions); (2) reductions in sentence or case dismissal for success (the plea or diversion offer); (3) incentives for progress (judicial praise or small gifts); and (4) reductions in intensity of reporting or treatment requirements for progress (such as less frequent drug testing). BTC relied primarily on the first of these strategies, using penalties to respond to noncompliance with drug testing and treatment requirements.
- **Drug treatment** includes programs such as (1) residential treatment; (2) outpatient programs, intensive or other; (3) substance abuse education groups; (4) Narcotics Anonymous/Alcoholics Anonymous (NA/AA); and (5) methadone maintenance. BTC sites used all of the options, although use of methadone maintenance was rare.

Use of these strategies has evolved over the past 25 years or so, since the DC Pretrial Services Agency began drug testing defendants released to the community and the first Treatment Alternatives to Street Crime (TASC) programs began accepting referrals from justice agencies. Subsequently, criminal justice agencies have tested many programs using a mix of these strategies. These programs targeted selected offenders who met program eligibility rules—generally a small portion of the drug-using offenders under supervision. The relative emphasis on treatment versus legal pressure has varied.

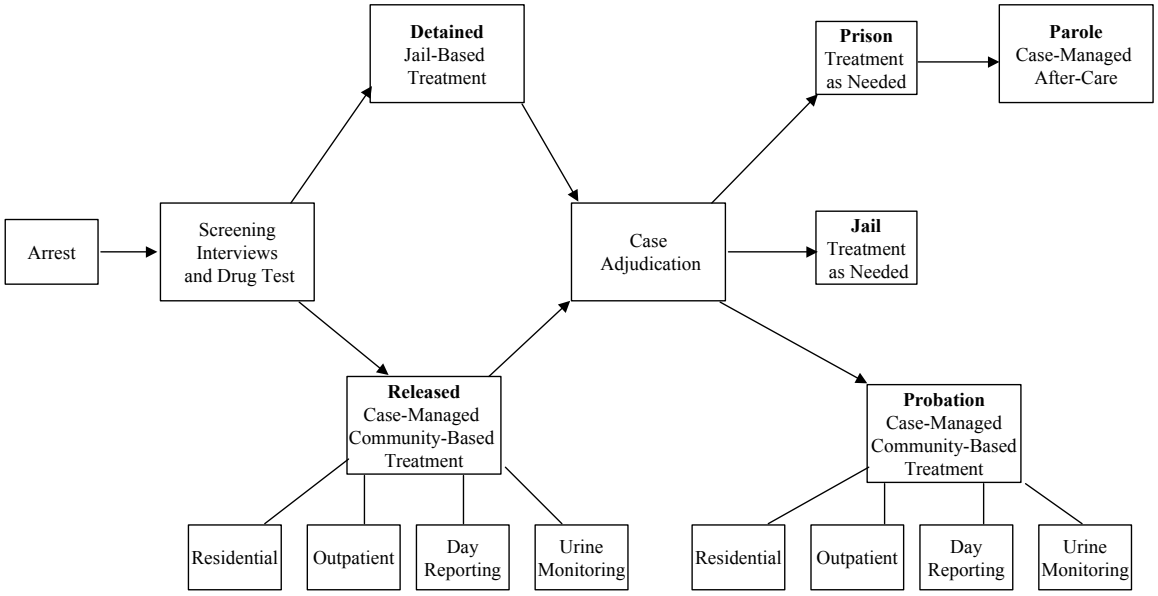
Some of these programs have relied primarily on monitoring drug use and penalizing continued drug use, but could include treatment. Examples include Intensive Supervision Probation and the DC Superior Court's Graduated Sanctions Program. Other programs have relied heavily on treatment, with legal consequences for failure. Examples include TASC, pretrial diversion programs, and prison-based therapeutic communities. More recently, programs have emerged that use treatment with graduated sanctions imposed by the courts to respond to noncompliance and offer incentives for treatment progress. Drug courts that require treatment and judicial sanctioning for noncompliance are an example. The BTC intervention strategies were guided by findings that drug courts, community-based treatment administered by TASC programs (see Anglin, Longshore, and Turner 1999; Belenko 1999), in-prison treatment with aftercare, and specialized drug diversion programs can reduce offender drug use and crime.

BTC expanded the scope of earlier programs by targeting all drug-involved felony defendants and incorporating drug reduction activities as part of standard operations. BTC planners envisioned efforts by justice agencies, acting individually and collaboratively, to provide services from arrest through probation or post-incarceration supervision, combining drug treatment and testing with legal pressure to decrease drug use and increase participation in treatment. The vision of systemwide intervention is illustrated in figure 2.1. Systemwide interventions encompassed community-based treatment for those released prior to sentencing, jail-based programs for those detained, and postsentencing treatment in the community, jail, and prison, with interventions of varying intensity and type to meet the needs of all drug users, regardless of the type of drug or severity of abuse. The BTC demonstration projects began testing this vision by targeting early intervention with felony defendants placed on pretrial release.

The core system reforms called for by the BTC model were early intervention, judicial oversight, graduated sanctions and incentives, and collaboration among justice and treatment agencies.

- **Early Intervention**. The BTC model called for identifying drug-using offenders immediately after they are arrested. The rationale for intervention at this point is that arrest is a crisis for most individuals and represents an opportunity to assist drug users in confronting and acknowledging a substance abuse problem. To capitalize on this moment of opportunity, BTC plans included drug testing of all offenders as soon as possible after arrest, early clinical assessment, and timely placement in drug treatment or monitoring as indicated by the assessment. Operationally, this approach meant setting up procedures for (1) screening every defendant entering the criminal justice system to identify drug users and (2) preparing individualized treatment plans and conditions shortly after arrest.
- **Judicial Oversight.** The BTC model also required close judicial oversight of drug treatment participation. The experience of drug courts suggests that close judicial oversight can help reduce drug use and criminal behavior among participants, a lesson BTC planned to extend to all drug-using defendants under any form of criminal justice supervision. BTC planned to use judicial authority to monitor and sanction violations of conditions of community supervision, focusing on requirements for drug testing and treatment attendance if recommended. Operationally, judicial oversight called for court review of compliance and reports on drug treatment performance and drug testing prior to hearings.
- **Use of Graduated Sanctions and Incentives.** The agencies involved in BTC were expected to apply steady leverage to require abstinence and retain offenders in treatment. Borrowing from strategies pioneered by drug courts, BTC offender management plans specified consistent and timely use of sanctions. The sanction plans called for immediate and certain response to offender violations, with punishments graduating in severity as needed, and incentives for treatment progress. Operationally, these plans required that BTC specify (1) BTC rules and infractions, (2) sanctions for each type of infraction, and (3) the staff with authority (and responsibility) to respond to compliance and noncompliance. Further, BTC needed to have procedures for ensuring that the rules and policies were understood by the offenders, court staff, treatment staff, and supervising agents or case managers.

Figure 2.1. The BTC Intervention Strategy



- **Close Collaboration among Criminal Justice and Drug Treatment Agencies.** The BTC sites were asked to engage in cross-agency planning and management. Operationally, key staff members of partner agencies were expected to attend regular meetings to develop policies, solve problems, and set objectives. Partner agencies were expected to exchange information on offender status and collaboratively monitor offender compliance in an ongoing and timely manner.

CHAPTER 3. THE DEMONSTRATION SITES BEFORE BTC IMPLEMENTATION

Birmingham, Alabama; Jacksonville, Florida; and Pierce County (Tacoma), Washington, were selected for the BTC demonstration, following an extensive planning process and site visits by NIJ staff and consultants. All three sites had a history of collaboration between justice agencies and drug treatment agencies, agreements from the key agencies to engage in extensive reforms to implement the core BTC strategies, and strong local leadership. They differed in offender demographics, region of the country, drugs abused, state drug laws, resources, and local political support for radical change. These differences provide a test of BTC's feasibility and impact in a variety of settings. This chapter describes the sites prior to BTC so that the findings can be understood in light of the local context in which reform was undertaken.

BIRMINGHAM PRIOR TO BTC

In the two-tiered court system in Birmingham, most felony cases were initiated in a lower court and waived to a grand jury unless a plea offer was accepted, and, if the defendant was indicted, cases were then filed in an upper court. Three District Court judges in Birmingham presided over arraignments, conducted preliminary hearings and bond reviews, accepted pleas, conducted bench trials, and imposed sentences. Decisions on filing charges (initiated by swearing out a warrant) were made by the District Attorney's office upon review of the preliminary charges, bond, and release recommendations. Plea offers were made in District Court and accepted by many felony defendants. Those who declined the District Court plea offer were waived to the grand jury for indictment. If the defendant was indicted by the grand jury, a new case was filed in Circuit Court, the upper tier court. Defendants who accepted a Circuit Court plea offer were either sentenced by the Circuit Court judge, or, if eligible, sent back to District Court for drug court. If the plea was declined, the case was tried in Circuit Court.

At the start of BTC, the Jefferson County jail was seriously overcrowded, and a federal court order to reduce overcrowding was entered during the first year of BTC. Two pretrial services programs, one operated by the jail and one by TASC, assisted defendants seeking pretrial release, although lengthy pretrial detention was not uncommon as many defendants could not post bond.

- **The Jail Pretrial Program** identified defendants who were eligible for pretrial release and prepared their bond paperwork.
- **The TASC Pretrial Program** identified drug-involved defendants eligible for release to TASC for assessment, treatment placement, and case management. The standard conditions for release to this program were full-time employment or schooling, random drug testing, reporting to TASC, confirmed attendance at NA/AA meetings, a curfew, and

attendance at drug or alcohol treatment within a specified time period. Approximately 50 defendants per month were released to the TASC Pretrial Program in 1996.

The District Court offered two programs for drug-involved defendants prior to the advent of BTC:

- **The Deferred Prosecution Program** was started by the District Attorney's office in 1991. Run as a joint effort with TASC, the program was open to first-time offenders proposed for diversion by their attorneys. Applicants were evaluated for eligibility by TASC and were subject to approval by the District Attorney's office and the judge upon review of their case, criminal history, and other characteristics. Participants could have the charges dropped (thereby avoiding a felony conviction) if they completed the treatment program recommended and were not rearrested for one year. This program was suspended just prior to BTC.
- **The District Court Drug Court Program** began operation in January 1996 with federal funds from the Drug Courts Program Office of the U.S. Department of Justice. In its first year, 196 defendants applied to the drug court and 113 were accepted. Referral to drug court was often delayed as cases moved slowly from District Court through the grand jury to Circuit Court before being determined to be eligible for the program.

The first opportunity for drug assessment for offenders who did not qualify for drug court or deferred prosecution prior to BTC (the large majority) was the Circuit Court presentencing investigation (PSI) at the time of sentencing, many months after arrest. The PSI was the first comprehensive check of the offender's criminal history and could include a recommendation that the offender be referred to TASC for assessment and postadjudication drug treatment as a condition of probation.

Most felony offenders were sentenced to probation. However, the probation department was seriously understaffed. As of April 1997, the Board of Pardons and Parole office had five or six positions open and caseloads of 110 to 140 per officer. Although probation officers could choose to administer drug tests using hand-held test cups to detect use of cocaine, marijuana, amphetamines, barbiturates, or opiates, such tests were rare. Only offenders placed on TASC supervision as a condition of their sentence to probation were regularly tested at the TASC offices, and officers were notified of results.

TASC provided case management for all of Birmingham's criminal justice programs for drug users. Established through the University of Alabama at Birmingham's Department of Psychiatry in 1973, TASC was responsible for assessing drug-dependent offenders and referring them for treatment, monitoring compliance, and reporting progress to the referring justice agency. In this role, TASC was responsible for maintaining tracking systems to monitor the offender's status within both the court system (conditions of release, upcoming court dates) and the treatment system (including scheduled appointments, compliance in reporting for appointments, and progress). Treatment services included (1) intensive and regular outpatient treatment, (2) three types of residential treatment (crisis stabilization, short-term treatment, and long-term therapeutic community), (3) supportive housing for offenders, (4) recovery homes, (5) methadone treatment, (6) women's services, including pregnant women's services, and (7) other supportive services, including cognitive life skills training, job placement assistance, health

screening, and referrals for educational services. In 1995, TASC screened 1,774 offenders; 1,479 were assessed and referred for treatment;[3] 100 were placed in residential drug treatment; and 203 were referred for outpatient drug treatment. The majority received services at TASC.

Offenders sentenced to prison were sent to the Department of Corrections (DOC) for assessment. That assessment was used to determine whether the offender would be assigned to one of the eight-week substance abuse treatment programs operated by DOC, placed in a therapeutic community, or sent to a prison that housed only offenders receiving drug treatment, where different treatment options were available. No treatment other than limited access to once-a-week AA sessions was available to those sentenced to time in jail.

JACKSONVILLE PRIOR TO BTC

Felony criminal cases were heard in a single court, the Circuit Court that served all of Duval County. The Circuit Court had six criminal dockets—four general criminal dockets and two devoted to repeat offenders. Initial decisions on jail release and bond conditions were made at an initial appearance within 24 hours of arrest. Many defendants remained in jail prior to case disposition, and those who secured release did not receive pretrial supervision. The first appearance in Circuit Court was scheduled for 14 to 17 days after the initial appearance.

In 1998, 15,905 felony cases were filed in Circuit Court. Filing decisions were made by the State's Attorneys' office. The time between arrest and filing for felony cases averaged 19 days, but was longer for some cases, particularly those involving seized substances, which were sent out for laboratory tests. Once cases were filed, they moved swiftly to disposition. Our experience in recruiting sample members indicated that charges were not filed against approximately 35 percent of those booked at the jail. When this percentage was combined with cases transferred to county court or filed as misdemeanors, only about half of the arrestees initially booked on felony charges become defendants in Circuit Court and eligible for BTC.

Specialized services available to defendants in Jacksonville prior to BTC included the following:

- **Pretrial Intervention (PTI)**, staffed by the Florida Department of Corrections, served adult first-time felony offenders. PTI participants signed a deferred prosecution agreement that could include requirements to report to a probation officer, complete community service hours, pay restitution, or undergo mental health or substance abuse evaluations and treatment. Once the offender successfully completed the program, charges were dismissed. If the offender failed to meet the conditions of the PTI contract, the case could be rejected from the program and returned to the prosecutor for review and appropriate legal action. Cases were generally referred to this program within 20 to 30 days of arrest. In 1997, 480 defendants in Duval County were referred to the program and 302 accepted and signed in to the program. Data were not available on how many of these defendants needed or received drug treatment.
- **Drug Court,** established in 1991, offered diversion to defendants arrested for offenses involving the purchase of drugs, possession of drugs, or nonviolent drug-related felonies.

[3] *Program Summary: UAB Substance Abuse Programs*, January 30, 1996.

To be accepted into drug court, defendants had to meet specific criteria and complete an intensive interview and screening process. Defendants who failed to satisfy program requirements were rejected from the program and had their cases returned to the prosecutor for appropriate legal action. In 1997, 570 defendants were referred to the program and 130 accepted and signed in to the program.

At sentencing, the conditions of probation could include court monitoring and referral to community-based treatment programs, including the following:

- **Mental Health Services**. In 1997, Duval County had a total of 50 adult crisis stabilization mental health beds for inpatient treatment and 67 day treatment slots. However, no special arrangements for accepting offenders were in place.
- **Drug Treatment**. In 1997, the county had 25 medical detoxification beds, 72 adult substance abuse residential beds, and 83 day/night substance abuse treatment slots (four hours per day), with no special arrangements for accepting offenders.
- **Court-Monitored Probation/Community Control,** established by one Circuit Court judge just prior to BTC implementation, used direct judicial oversight and management to monitor a defendant's progress on probation/community control. The program was designed to take corrective action prior to a formal violation and rewarded compliance with probation requirements. This judge required all defendants who were placed on probation/community control and who lived within driving distance of Jacksonville to return to court periodically for a status conference (the first being 30 to 45 days after sentencing). Defendants who met their requirements were eligible for early termination of probation, while those who were not in compliance received sanctions, which could include intermediate sanctions such as increased probation requirements or a formal probation violation. A relatively small portion of these offenders had drug-related conditions of probation.

Jacksonville, unlike the other two BTC sites, was not facing severe jail overcrowding and offered a broad array of treatment and education services in the jail. In 1997, approximately 30 percent of all arrestees participated in some form of in-jail substance abuse education classes; approximately 1,000 people a year completed the classes; and 250 received intensive treatment. Programs included the following:

- **Services for Adults**. The Duval County correctional system has provided substance abuse services to inmates since 1991. River Region Human Services operated a 66-bed modified therapeutic community residential treatment program for chemically dependent local offenders serving a county sentence. The program, 90 to 120 days long, was able to serve dual-diagnosis inmates and offered gender-specific programming. When the program developed a waiting list longer than one month, it activated a shorter six- to eight-week treatment program with 14 slots for male inmates.
- **Substance Abuse Prevention Classes**. Twenty-five substance abuse prevention classes were held per week in the jail and were available to all sentenced and pretrial inmates.
- **Services for Juveniles**. *A*n intensive nonresidential treatment program (16 hours/week) served up to 30 adult-adjudicated juveniles between the ages of 14 and 17 housed in the jail. It was funded by the City of Jacksonville.

Offenders sentenced to prison could receive treatment while incarcerated. However, decisions on access to these services were made independently of the local courts and were not expected to change following the introduction of BTC.

TACOMA PRIOR TO BTC

At the time of the BTC proposal, close to 8,000 persons were booked annually into the Pierce County jail on felony charges. Pierce County Pretrial Services worked with the jail staff to identify defendants eligible for release by reviewing the charge and criminal history and helped prepare the necessary papers. Although most defendants were released on bond within 24 hours of arrest, the jail was severely overcrowded.

Charges were screened by the prosecutor's office between booking and arraignment and filing decisions were made at that time, generally within 24 hours of booking. Charges were filed in over three-quarters of the cases. Felony cases, filed by one of the 41 attorneys assigned to the felony division, were assigned to Superior Court. Eleven judges handled over 5,500 cases per year in 1998 and 1999, an increase of 25 percent from 4,363 in 1990. Most felony defendants requested assigned counsel. In 1998, the assigned counsel handled nearly 5,000 felony cases, averaging over 230 cases per attorney. Case processing moved rapidly: the pretrial hearing generally occurred within two weeks of arrest. Most cases were resolved in two months (median days to disposition was 62), but nearly a fifth (19 percent) remained open at the end of a year.

For years prior to BTC, the Pierce County Alliance (PCA) had been providing community-based chemical dependency services for drug-abusing offenders. When the BTC grant was received in 1997, PCA was operating the following programs:

- **The PCA TASC Program** had an active caseload of 200 to 300 clients referred either from the Pierce County Superior Court or the local DOC Community Corrections Officers. Eligibility for TASC required evidence of substance abuse. Defendants were excluded for serious violent offenses, sex offenses, mental illness, and medical conditions requiring the ongoing use of psychoactive medications. Clients were referred to community-based treatment programs as needed and available. The options included long-term residential, inpatient, intensive outpatient, and outpatient treatment. These clients were required to provide periodic, random urine samples for monitoring purposes.
- **The Pierce County Drug Court** started operation as a locally funded pilot project in 1994 and became fully operational in 1996 under federal funding. Admission was limited to offenders diagnosed as substance abusers whose offenses did not include violence-, sex-, or weapons-related criminal charges. The program could accommodate approximately 300 active clients at any one time. Graduates of the 15- to 18-month program had their charges dismissed; those who failed had the maximum sentence imposed. In 1999, 242 defendants were admitted.

Drug treatment services were available prior to the implementation of BTC for some offenders incarcerated in state prisons. A modified 40-week intensive outpatient treatment and aftercare regimen was provided at most major state corrections institutions, including prisons,

prerelease facilities, and work-release facilities. However, there was a continual shortage of treatment slots. Priority for available treatment slots was given to offenders identified at sentencing under the provisions of the Drug Offender Sentencing Alternatives program. Because of overcrowding, drug treatment at the Pierce County jail was limited to weekly NA/AA meetings.

CROSS-SITE SUMMARY OF THE PRE-BTC RESOURCES FOR DRUG-INVOLVED OFFENDERS

Figures 3.1 and 3.2 compare the three jurisdictions in terms of their caseloads, resources, practices, and specialized programs prior to the start of BTC. Services for drug-using defendants were limited, and only a small proportion of the drug-using felony defendants in these jurisdictions were eligible for, or receiving, drug intervention services. None of the sites had traditional pretrial supervision units, although TASC provided pretrial case management for some defendants in Birmingham. All three had drug courts in operation, and two offered preplea diversion programs for selected defendants, but they served relatively small numbers of offenders. Only Jacksonville offered jail-based drug treatment.

Differences in the courts were also found. The number of felony cases filed in Jacksonville in the year before BTC was nearly triple the number filed in Birmingham and Tacoma. Case processing was relatively rapid in Jacksonville and Tacoma, which both had a single-court structure, with cases reaching disposition about two months after filing. Filing was almost immediate in Tacoma, but typically occurred several weeks after arrest in Jacksonville, so that the period from arrest to disposition was longer in Jacksonville. In Birmingham, case processing was slow, primarily because of the two-tier court system, long waits for a grand jury review, and delays in filing in some cases. As a result, time for BTC pretrial intervention was quite short in Tacoma, somewhat longer in Jacksonville, and quite long in Birmingham.

Figure 3.1. A Comparison of Felony Case Processing in the Demonstration Sites Prior to BTC

	Birmingham	Jacksonville	Tacoma
Criminal Justice System			
Arrests	14,000 in 1996	15,000 in 1998	8,000 in 1998.
Releases	68%; most within a week	Over 70% within 72 hours (combines felonies and misdemeanors)	45% within a week
Case Filing	Over 5,000 in 1995	Over 15,000 in 1998	Over 5,500 1999;
Dropped prior to filing	A very small percentage dismissed prior to or at first appearance	About 1/3 dropped; others transferred to county court, or charged as misdemeanors	23% dropped before or at initial appearance
Case Duration	37% felony cases open at end of a year	82 days to disposition (19 to filing)	60 to 120 days to disposition

Figure 3.2. Demonstration Sites' Offender Release, Supervision, and Treatment Services prior to BTC

	Birmingham	Jacksonville	Tacoma
Jail-based treatment	None Not offered	About 30% treated 1000/year completed classes; 250 in intensive treatment	Unknown number Weekly NA/AA groups
Pretrial Release Services	Jail program identified bail-eligible and prepared paperwork; no supervision.	None	Pretrial program identified bail-eligible and prepared paperwork; no supervision
Case management	TASC case management for about 600 in 1995	None	None
Court Programs	Deferred Prosecution (on hold); several hundred per year referred to TASC Drug Court (113 entered in 1996)	Diversion (PTI) for first time felony defendants (302 in 1997) Drug Court (130 entered in 1997)	Felony TASC (569 in 1998) Drug Court (240 per year)
Probation Drug Interventions	TASC screened over 1770 offenders in 1995 and referred nearly 1500 for treatment, large majority on probation	Court-monitored probation (one of 4 judges) included a few defendants with drug requirements	TASC pretrial case management and probation referrals (200-300 clients at a time)

The expansion of services faced different challenges depending on the location:

- **Limited jail space.** The jails in Birmingham and Tacoma were severely overcrowded, thus limiting options for jail-based intervention. Only Jacksonville had jail-based drug treatment prior to BTC. This treatment included group sessions and an intensive treatment program. NA/AA groups met weekly in the Tacoma jail, but no treatment was available in the Jefferson County jail.
- **Limited drug treatment slots.** Drug treatment slots available to offenders without insurance or the ability to pay were extremely limited relative to need, requiring that BTC either use its limited funds for treatment or compete for spaces with others in need of treatment.
- **Limited probation resources.** Probation caseloads were large and probation staff was oriented toward enforcement rather than intervention, although all three probation departments had the option of referring clients to TASC or a local treatment agency.

In conclusion, in all three BTC sites BTC-like interventions prior to case disposition were either quite limited in size and scope, or nonexistent.

CHAPTER 4.
BTC IMPLEMENTATION

This chapter documents BTC plans and implementation in Birmingham, Jacksonville, and Tacoma. BTC implementation fell short of the ideal in all three demonstration sites, highlighting the challenge facing coordinated efforts to reduce drug use among all drug-involved felony defendants released to the community while their cases are pending. Lessons from the BTC experience are identified to assist future efforts to intervene with drug-involved offenders. Additional information on the process of implementing BTC is found in the case study reports (Harrell, Hirst, and Mitchell 2000a, b, c).

INITIAL PLANS FOR BTC

All three sites made an early decision to target adult felony defendants on pretrial release who lived within the county or service area and could participate in intervention programs. However, there was considerable diversity in plans for implementing the four core BTC strategies, which were tailored to local needs and resources.

Birmingham

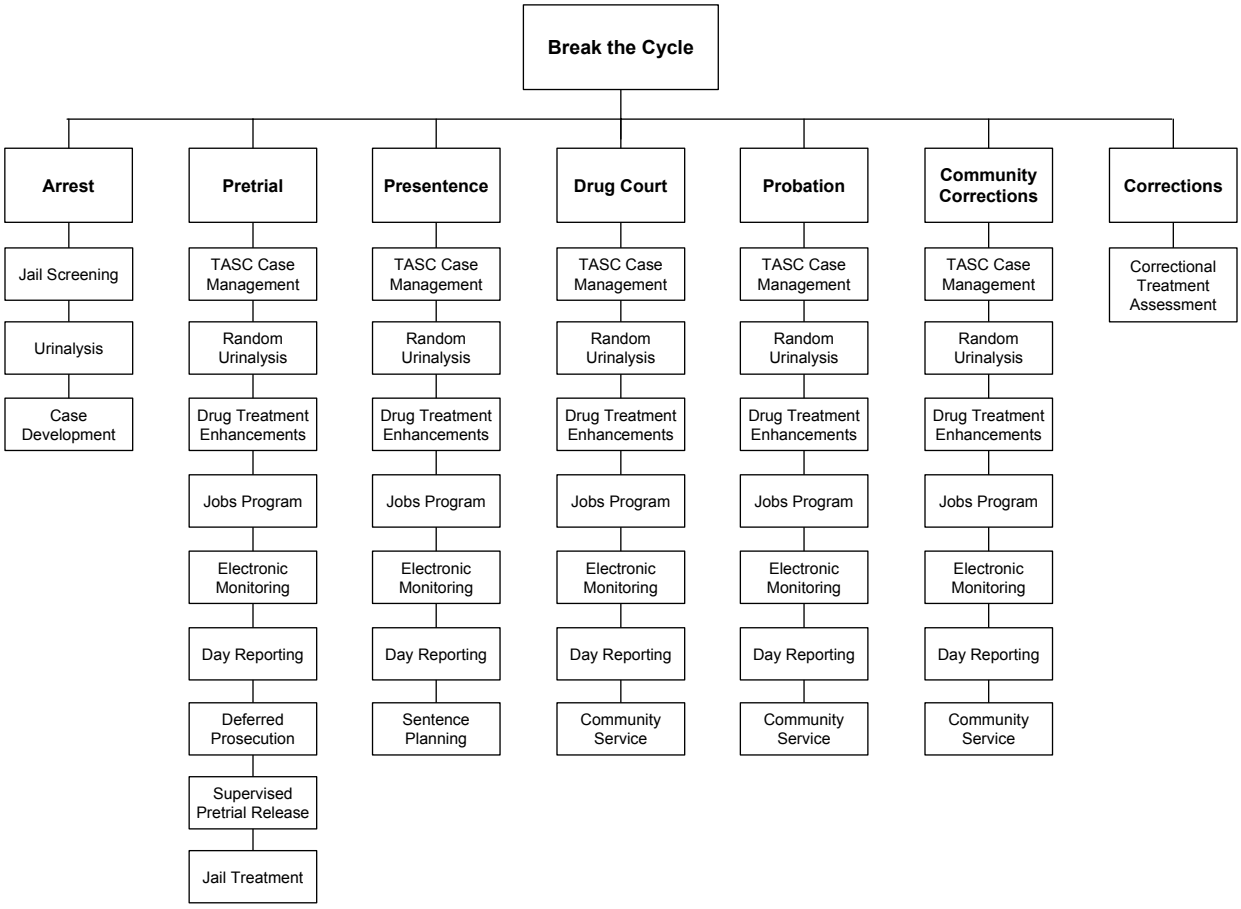
The Birmingham proposal for BTC called for the introduction of the following:

- Procedures for early intervention, careful case management, and proper treatment referrals that would match the level of supervision and treatment to defendant needs.
- Judicial review of all BTC defendants' records of treatment participation and drug testing at each court appearance as a means of improving treatment retention and compliance with drug-testing requirements.
- Appropriate and consistent use of graduated sanctions to support justice system requirements.
- A continuum of services provided to offenders throughout their period of criminal justice supervision.
- Ongoing collaborative planning by the justice agencies in Birmingham for the design and enactment of global change in the criminal justice system.

The grantee agency in Birmingham was the TASC agency affiliated with the University of Alabama. BTC planned to begin case identification with drug tests and screening questions at the jail intake medical examination so that results could be available at the initial appearance. Drug-involved offenders would be required to report to BTC if released or provided treatment in jail if not released. TASC responsibilities included (1) conducting clinical assessments, (2) developing treatment plans, (3) random drug testing of released BTC clients, (4) referring clients to treatment and monitoring treatment progress, (5) sanctioning infractions of treatment and

testing requirements, and (6) submitting reports to the court in advance of each hearing. Plans for expanded treatment options are shown in figure 4.1, reproduced from the agency's proposal.

Figure 4.1. Birmingham Plans for BTC



Source: The Birmingham BTC Proposal to NIJ

Jacksonville

The City of Jacksonville, the grantee agency, planned to build a network of BTC services by contracting with existing justice and treatment agencies, supervised by a project director and administrative staff working for the city. Its proposal focused on six areas:

- Designing effective program procedures for the early identification of drug-using felony defendants while implementing effective pretrial supervision, graduated sanctions, judicial oversight, and postsentence treatment. Screening and initial drug tests at booking, using medical services staff under contract to the jail, would be used to identify eligible defendants.

- Creating an entirely new pretrial services program for drug-using defendants, to include monitoring, supervision, case management, and service delivery. The Florida Department of Corrections agreed to establish a new Pretrial Services Unit (PTSU) to conduct drug tests and monitor compliance with treatment requirements.
- Providing professional assessment and treatment planning. River Region, the local TASC agency, was to provide assessments, prepare treatment plans, and provide interim treatment for clients waiting for placement in outpatient or residential treatment. The interim treatment consisted of three education classes conducted once a week.
- Expanding defendant access to outpatient and inpatient treatment. Gateway, a large agency that offered outpatient and residential treatment options, was to provide outpatient and inpatient treatment.
- Developing a system for exchanging real-time information among agencies on the criminal justice status and drug intervention status of defendants to assist in monitoring offenders and encouraging compliance. The City of Jacksonville planned to modify its existing integrated criminal justice information system to meet the needs of BTC for information sharing.
- Instituting strategies for planning and implementing changes. Plans included establishing a policy board with a steering committee to involve all key agencies in the planning process, preparing a memorandum of understanding to be signed by participating agencies indicating their commitment to BTC goals, and hiring a full-time project director.

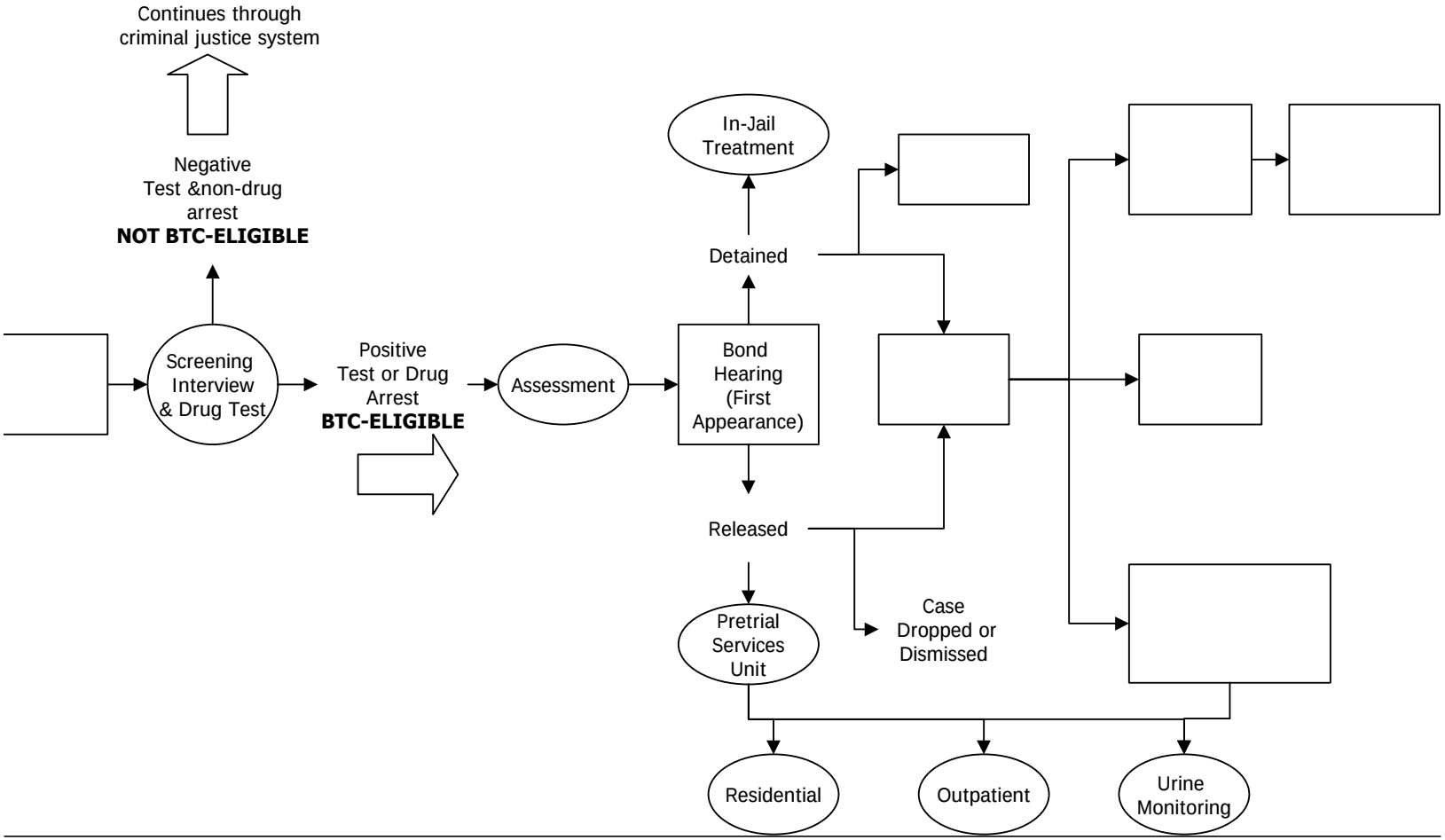
The flow chart included in Jacksonville's proposal (figure 4.2) illustrates the points of program intervention planned for BTC-eligible cases. The chart presents BTC plans for continuous, seamless services from arrest (the drug test and screening questions administered as part of the jail medical examination that followed booking) through and after sentencing for defendants who are not incarcerated. These plans include jail-based treatment for participants held after their first court appearance and postrelease pretrial monitoring.

Tacoma

In Tacoma, BTC was led by the Pierce County Alliance, the TASC agency, which planned to colocate staff from several BTC partner agencies at a new facility that would provide a primary point of intervention. The Pierce County proposal focused on three areas:

- Integrating the TASC and Drug Court programs with a new BTC Alternative Center to serve a much wider range of offenders. The new center, located a few blocks from the jail and courthouse, provided space for assessment, treatment planning, and case management; a drug-testing laboratory; meeting space for group treatment; offices for programmers to manage the automated data system; and space for liaison staff from the probation and sheriff's departments.
- Using increased client supervision and graduated sanctions to ensure offender accountability and increase compliance with court and BTC treatment requirements. The plans indicated that case managers would use administrative sanctions for some infractions and that a single BTC judge would designate docket time one half-day per week for review of those in violation.

Figure 4.2. Plans for the BTC Intervention in Jacksonville



- Developing strategies for sharing resources, information, and responsibilities among the partner agencies and for ongoing collaborative management of BTC under the umbrella of an interagency Advisory Committee. BTC planned to modify the existing management information system (MIS) used by PCA to collect the additional data it needed.

The Pierce County proposal presented two flow charts that illustrate the points of potential intervention in cases eligible for BTC. The first chart, figure 4.3, describes the pretrial case processing steps in Pierce County and notes the points at which eligible defendants would be identified and placed in BTC case management. The steps indicated screening and initial drug testing at the jail by BTC staff from TASC shortly after arrest. Judges would use the information to order eligible defendants to the BTC Alternative Center for assessment and placement in services. As figure 4.4 illustrates, BTC participation was expected to continue seamlessly through and after sentencing for those defendants not incarcerated.

Figure 4.3. BTC Concept: Pre-Sentencing

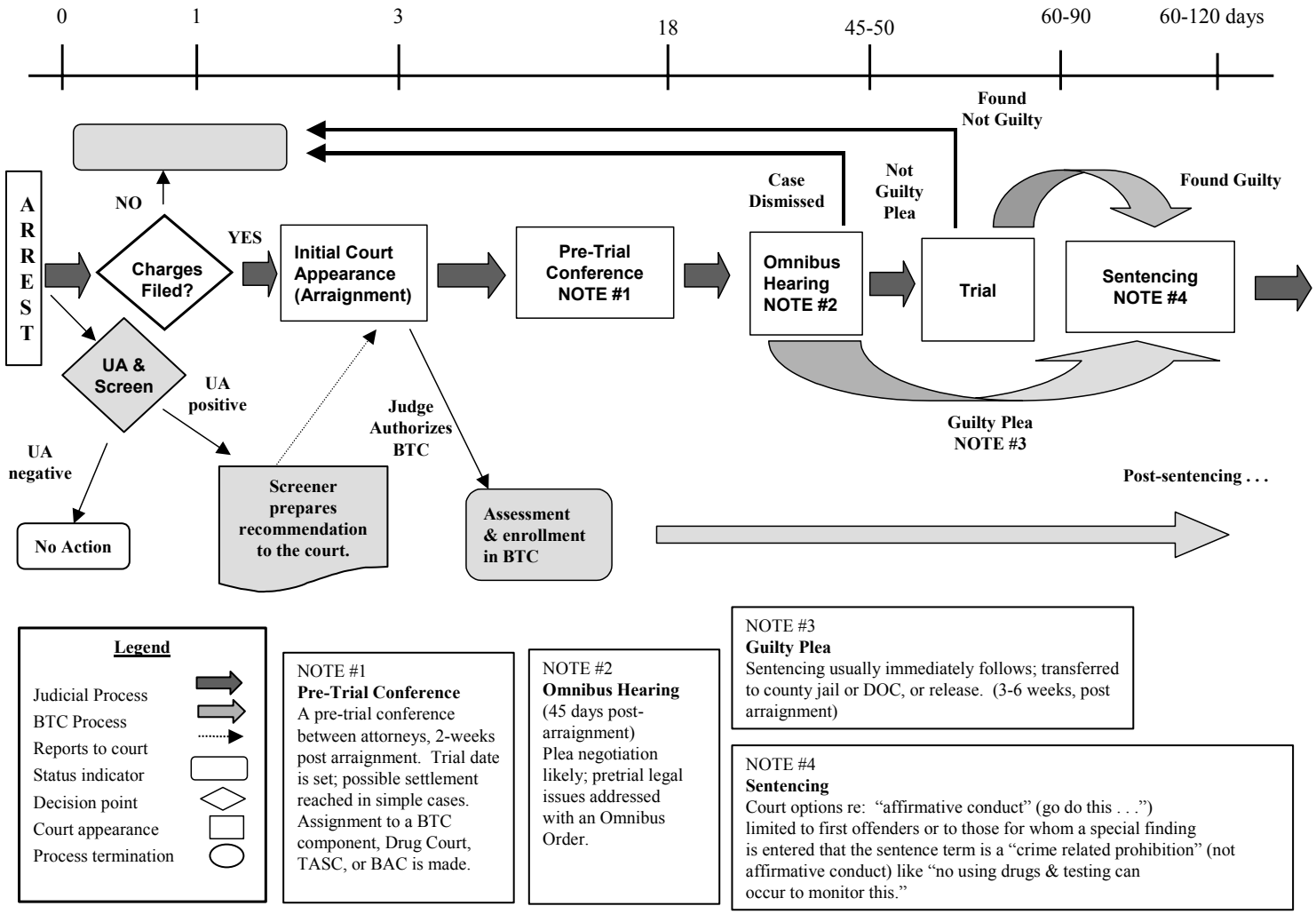
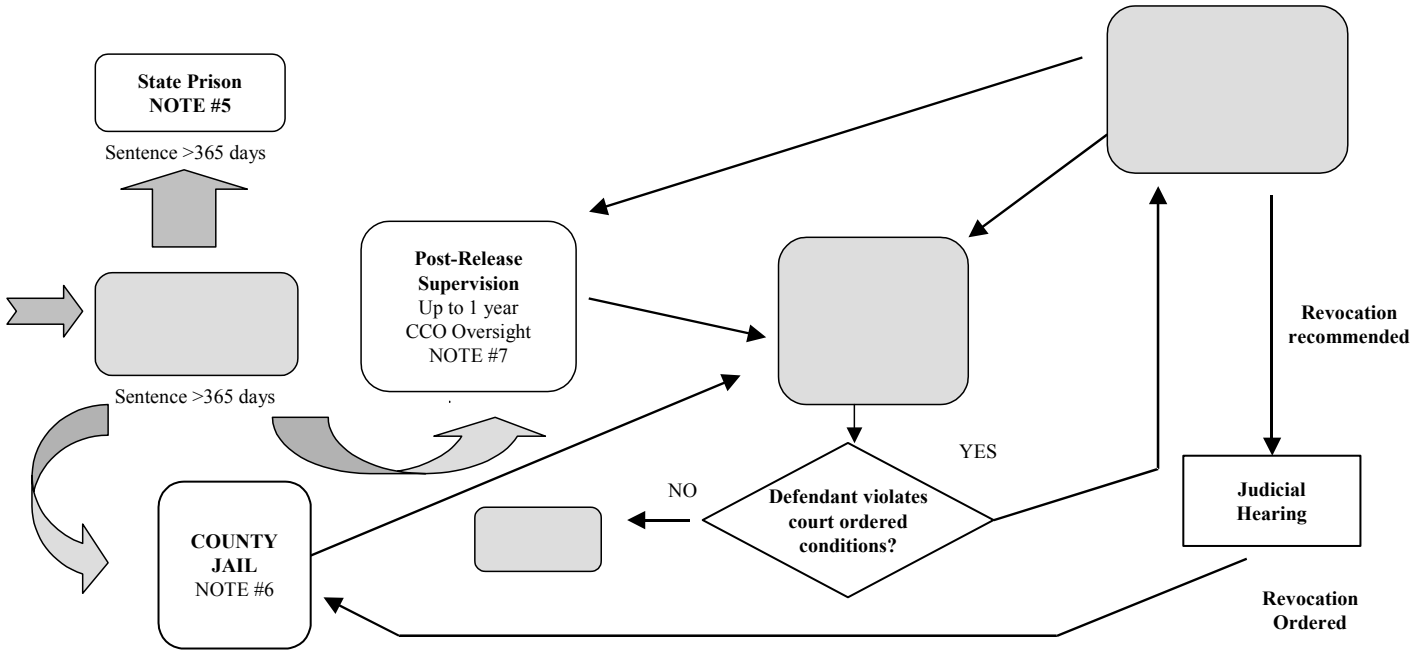


Figure 4.4. BTC Concept: Post Sentencing



NOTE #5
State Prison
For incarceration for over 1 year; BTC screening or assessment data can follow prisoner; judge may include need for substance abuse treatment in J&S

NOTE #6
County Jail Term
Up to one year; reduced by up to 1/3 "good time" and possible early release due to overcrowding; Sheriff control both.

NOTE #7
Post-Release Supervision
Up to one-year supervision by a Community Corrections Officer (CCO); will monitor compliance with court's order; extended by time during which defendant is non-compliant. BTC attendance limited to monitoring for substance abuse - no "affirmative conduct" in most cases.

NOTE #8
Community Custody
Sheriff orders that custody occur in the community with regular reporting to Alternative Confinement Center (BTC). Work crew, classes, work release; violations=administrative decision to transfer custody back to jailers after graduated sanctions are tried. No court involvement.

NOTE #9
Graduated Sanctions
Violations result in administrative graduated sanctions. If necessary, court is notified and a hearing occurs within 3-4 weeks if not in custody; 1-5 working days if in custody. Court can modify sentence by converting requirements to jail time and/or impose up to 60 days jail for each violation proven.

The following sections describe the implementation of BTC in each site and the lessons learned.

EARLY INTERVENTION

Plans to identify BTC-eligible offenders shortly after arrest proved difficult to implement in two sites owing to jail overcrowding. In Jacksonville, the Sheriff's Department incorporated a drug test and four questions into the medical examination at jail intake for all felony arrestees who lived in Duval County. However, in Birmingham and Tacoma, jail overcrowding placed heavy demands on staff to maintain security, book and release arrestees, and move arrestees for court appearances. In these sites, BTC was not able to arrange for jail escorts, secure access to bathrooms, and meet other requirements for acceptable testing in jails. After several months of trying to conduct initial drug tests and screening at the jail, these sites developed bond forms that required defendants to report to BTC offices for drug testing and screening within 24 hours of release. To encourage compliance and in recognition of the fact that these defendants would be under supervision while on release to the community, the bonds set lower cash amounts than had been previously used or increased the use of release without cash bond.

BTC screening procedures at each site are shown in figure 4.5. The sites differed in the timing and location of screening and assessment and in the diagnostic tools used. These differences played a role in the widely differing numbers screened as assessed. Table 4.1 presents data from monthly performance reports that the sites submitted to NIJ. Because there were changes in reporting forms and data availability issues, the statistics from the monthly reports believed to be most complete and accurate are used in this chapter to describe BTC implementation. The monthly statistics from Birmingham cover five months, while those from the other sites cover six months. These statistics have been converted to monthly estimates and used as indicators of service delivery across the period of full implementation.

Figure 4.5. Early Case Identification Procedures In The BTC Sites

	Birmingham	Jacksonville	Tacoma
SCREENING			
When and Where	Post-release at BTC	Pre-release at jail intake following arrest	Post release at BTC
How	Self-administered questionnaire and EMIT drug test	Four screening questions and Roche TestCup-4 drug test	Questionnaire based on the Texas Christian University Drug Dependence Screen and Martin Diagnostic International Rapid drug test
ASSESSMENT			
When and Where	At BTC offices on initial visit (usually within week of arrest)	In jail or at BTC offices (shortly after bond condition requiring BTC issued)	At BTC offices, usually following group orientation meeting
How	Clinical interview	SASSI (Substance Abuse Subtle Screening Inventory) screener & DSM-IV assessment for abuse or dependence used to recommend placement on ASAM Level III.5 criteria	Clinical Interview

*Screening in Jacksonville is before the BTC order; in Birmingham and Tacoma screening is after the BTC order.

Table 4.1. Early Case Identification Statistics: Based on Monthly BTC Site Performance Reports to NIJ

	Birmingham 8/99 –12/99 (5 months)	Jacksonville 9/00 – 2/01 (6 months)	Tacoma 7/00 – 12/00 (6 months)
Arrested on Eligible Charges	3,819	6,581	2,312
Ordered to BTC as condition of release	2,486	1,142	1,410
Screened by BTC*	1,827	4,331*	882
Initial drug test	1,470	3,969	683
Assessed/given treatment plan	1,827	1,093	772

*Screening in Jacksonville occurs before the BTC order; in Birmingham and Tacoma screening follows the order to report to BTC. In all three sites, assessment and preparation of a treatment plan follow an order into BTC as a condition of the release bond.

In Birmingham, the BTC bond condition was widely used. Two-thirds of those arrested on eligible felony charges and released were required by their bond conditions to report to BTC for screening. Approximately 365 defendants were admitted to BTC each month; no count was maintained of the number screened and found ineligible. However, 73 percent of the defendants released and ordered to BTC were admitted (48 percent of those arrested on eligible charges). The screening consisted of a self-administered questionnaire and a drug test, administered on the first visit to TASC (usually within a week of arrest). Defendants who indicated any involvement in drug use were then assessed using a clinical interview, and a treatment plan was prepared. Defendants facing drug felony charges were placed in BTC drug testing for one month even without any indications of drug use and discharged from BTC if all tests were negative. After intake, TASC case managers were responsible for implementing the treatment plan. One advantage of postrelease screening in Birmingham was that the arrestees who were not detained because they posted bond at time of arrest (about one-third of all arrestees) could be ordered to BTC at their first court appearance. If screening had been limited to the jail, they would have been missed.

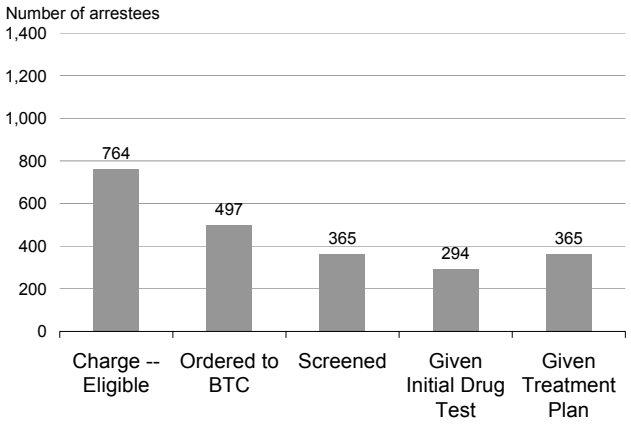
In Jacksonville, jail medical staff screened an average of 722 arrestees per month with an initial drug test and four screening questions at jail entry. Thus, like Birmingham, Jacksonville screened two-thirds of those eligible by charge. Although BTC hoped that all who screened positive for drug use would be ordered to report to BTC as a condition of release, only 17 percent of the charge-eligible defendants were ordered to BTC. While some of the charge-eligible defendants were not released from jail and others screened negative for drug use, it was clear that some magistrates and judges were not setting bonds that required BTC for all drug-using felony defendants. In an effort to increase appropriate early identification, two jail officers were stationed in the initial appearance courtroom to help identify BTC-eligible clients at the time bond conditions were being set. This helped reduce, but did not entirely solve, the problem. The River Region TASC program assessed defendants identified during the screening at the jail after they were ordered into BTC, contacting them either in jail or at the BTC offices. Assessments and treatment plans were completed for almost all of those who were given a BTC bond condition (97 percent). However, assessments indicating treatment needs did not always lead to intervention because (1) some were never released from jail and (2) some were released with BTC conditions but had their charges dropped by the State's Attorneys' office.

In Tacoma, screening and assessments were conducted by BTC case managers assigned to defendants when they reported to the BTC Alternative Center. Reporting to BTC was a condition of bond for 61 percent of the charge-eligible defendants (1,410 of 2,312). Of those ordered in, 63 percent reported to BTC at least once, 48 percent were given an initial drug test, and 55 percent were given a treatment plan. Thus, 33 percent of those arrested on eligible charges were screened and given a treatment plan. To increase compliance with orders to report to BTC, Tacoma developed a warning letter that was hand delivered by a deputy sheriff to the homes of those who failed to come in.

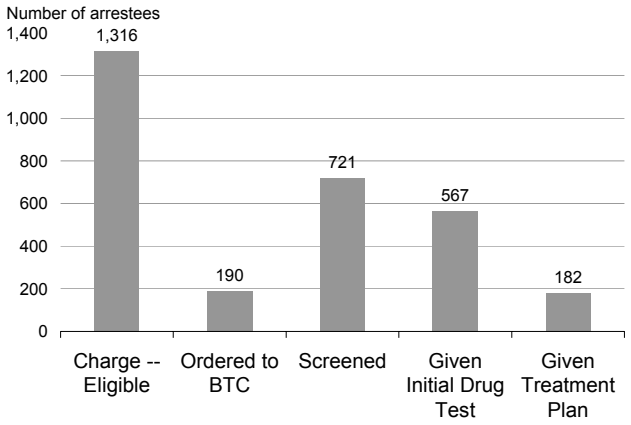
To facilitate cross-site comparisons, the statistics for the sites (available for differing periods of time) were converted to the estimates of per-month screening and assessment activities shown in figure 4.6. In comparing sites, it is important to remember that in Jacksonville not everyone who was screened was ordered into BTC, whereas in Birmingham and Tacoma screening and assessment followed the order to report to BTC.

Figure 4.6. Per Month BTC Case Identification Activity, by Site

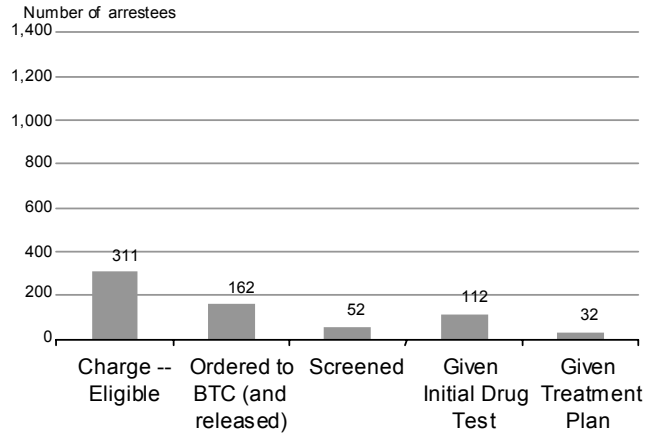
BIRMINGHAM



JACKSONVILLE



TACOMA



The comparison of sites highlights the potential advantages and disadvantages of conducting the initial screening in jail.

- **In-Jail Screening.** One advantage of in-jail screening is that results are available at the time of the release decision and can be used in setting release conditions. Another is that results can be used to identify detained defendants who should receive treatment in jail (if available). This procedure resulted in screening the highest proportion of charge-eligible arrestees. However, in-jail screening wastes resources if drug users do not subsequently receive an intervention because charges are dropped, reduced to misdemeanors, or shifted to another jurisdiction. Moreover, in Jacksonville, many defendants with positive screening results were not ordered to report to BTC as a condition of their release.

- **Postrelease Screening.** Advantages of postrelease screening are that it does not require jail space and staff. It saved resources in Tacoma and Birmingham, where jail-based treatment was limited to weekly NA/AA groups. Postrelease screening and assessment allowed case managers to make immediate referrals to treatment. However, limiting screening to those released may fail to identify the most seriously addicted defendants, who by virtue of their criminal history and lack of cash may be less likely to be released. Another potential disadvantage is that postrelease screening gives arrestees advance warning of a test and a chance to avoid detection by abstaining from drug use prior to the initial test. In response to these concerns, Birmingham required defendants arrested on drug felony charges to test negative for drugs on weekly tests for at least one month before concluding that they were not users and releasing them from BTC.

A comparison of Birmingham and Tacoma rates of screening completion for defendants released from jail and ordered to BTC suggests that conducting the full clinical assessment at the time of first contact will increase the proportion of defendants given a treatment plan. Immediate assessment also allows the treatment referral process to begin at once and reduces the level of effort required to track down those who have not been assessed.

THE BTC INTERVENTIONS: TREATMENT AND TESTING

The interventions offered by BTC sites were divided into categories based on the intensity of intervention. The least intensive intervention required drug testing, monitoring, and sanctions. Defendants in this intervention were given random drug tests; the tests were conducted weekly at first and less frequently later if defendants consistently tested clean. Those who tested positive for drugs or failed to appear were warned, reevaluated, and/or referred to court for a compliance hearing. Drug users without indicators of abuse or dependence, and, in the case of Birmingham, defendants who showed no evidence of drug use but had been arrested on drug felony charges were assigned to this intervention.

All three sites offered educational groups with drug testing for BTC participants. The groups were used primarily to ready clients for treatment while they were waiting to get into an inpatient or outpatient program and for some clients with a repeat history of drug arrests. Defendants in need of more intensive treatment were referred to community-based outpatient and residential programs with the goal of matching client characteristics, needs, and type of drug problem to an appropriate treatment modality. Although some delays in treatment entry occurred when spaces were not available or when clients needed to qualify for public funding, the wait for treatment was a serious problem only in Tacoma. The more intensive drug interventions included outpatient programs of varying intensity and residential treatment.

BTC sites used the results of the assessments to assign defendants to a level of drug intervention based on the severity of their drug involvement. The drug use reported by BTC participants in the impact evaluation samples differed in type and severity of abuse across the three sites (table 4.2). In Birmingham, over half (55 percent) of the BTC clients who completed a drug test at intake tested positive on their initial drug test, compared with 65 percent in Jacksonville and 68 percent in Tacoma. Abuse problems, as measured by ASI drug composite scores above .04 at baseline, were reported by 33 percent of the Birmingham BTC sample, 71

percent of the Jacksonville sample, and 60 percent of the Tacoma sample (Harrell, Marlow, and Merrill 2000). The lower rate of abuse-level drug use in Birmingham is consistent with the practice of admitting defendants charged with drug felonies for surveillance testing for one month and with the lower levels of drug use found during screening.

Table 4.2. Drug Use among BTC Clients in the Impact Evaluation Sample Reported on the Baseline Survey

	Birmingham n= 374	**Jacksonville** n=332	**Tacoma** n=382
Mean ASI composite drug abuse score	0.049	0.153	0.120
% with an ASI score above .04	36%	70%	64%
DRUGS USED			
Methamphetamines	2%	1%	43%
Cocaine or Heroin, no methamphetamines	36%	62%	19%
Other drugs, none of above	36%	28%	14%
No drug use reported	26%	10%	25%

The drug treatment statistics in table 4.3 for Birmingham come from monthly performance reports to NIJ and refer to the initial placement. The numbers in the table can reflect multiple placements. Clients often began BTC in drug testing and groups while waiting for placement in outpatient or residential programs. Initial placement in outpatient or residential treatment was recorded in the Birmingham MIS for 277 participants (12 percent of those given a treatment plan). However, when we classified BTC participants in Birmingham by the most intensive treatment received over the period of their participation, we found that 12 percent received residential treatment, 54 percent received outpatient treatment, and 30 percent received urinalysis (UA) monitoring only. Thus, many clients moved from UA placement to more intensive intervention over time. The statistics for Jacksonville and Tacoma were based on a special review of program records to identify all treatment placements, not just initial placements. In Jacksonville, 57 participants (5 percent of those given a treatment plan) received outpatient or residential treatment at some time during their participation. In Tacoma, 396 participants (51 percent of those given a treatment plan) received one of these services at some time during BTC.

The information in the table is based on what BTC sites reported on their monthly performance reports, but these records vary in completeness and accuracy. Consistent and reliable data on treatment participation and progress were not available because plans to implement computerized MISs to track these variables encountered substantial problems in implementation and were not used consistently. The numbers reported above may be low if

case managers failed to enter services delivered. Because BTC clients were assigned to a large number of different treatment providers, we were not able to assess the appropriateness of particular treatment programs or the quality of treatment provided. Criminal justice agencies and researchers need standardized strategies for measuring treatment appropriateness and quality to help in program development and evaluation.

Table 4.3. Drug Interventions reported on the Monthly Performance Reports to NIJ

	Birmingham *Initial Placement* 8/99 –12/99 (5 months)	**Jacksonville** *Any Placement* 9/00 through 2/01 (6 months)	**Tacoma** *Any Placement* 7/00 through 12/00 (6 months)
DRUG TREATMENT			
Residential			
Placed	36	7*	85
Average # days enrolled (for closed cases)	51 days	NA**	56 days
Outpatient			
Placed	177	50	311
Average # days enrolled (for closed cases)	51 days	NA**	108 days
Drug Education/Other Groups			
Placed	175	230	16
Only UA Monitoring			
Placed	1,576 (in 4 months)	399	249
Average # days enrolled (for closed cases)	77 days	NA**	50 days

*Based on files for six months. Annual expenditure data showed 175 BTC clients entered treatment at Gateway: 161 received outpatient treatment, 6 received residential treatment, 8 received both residential and outpatient treatment.

**Time in treatment was not recorded in the Jacksonville.

OFFENDER ACCOUNTABILITY: MONITORING, SANCTIONING, AND JUDICIAL OVERSIGHT

As noted above, the responsibility for surveillance and response to noncompliance during pretrial release was assigned to case managers in Birmingham and Tacoma and to a BTC Pretrial Supervision Unit in Jacksonville. The case mangers or pretrial officers were expected to monitor participants' compliance with drug test requirements and treatment plans, prepare reports on compliance prior to each hearing, and administer a set of graduated sanctions for

failure to comply. These sanctions, termed administrative sanctions, included warning letters, extra appointments, additional drug tests, more intensive treatment, and, when necessary, requests for noncompliance review by the judges.

Although BTC planned to continue the supervision requirements and procedures for defendants placed on probation at sentencing, only Tacoma achieved some success in sustaining BTC interventions when clients moved from pretrial status to probation. The probation departments in Birmingham and Jacksonville had huge caseloads and few resources, and they resisted the extra work (and therapeutic orientation) that BTC procedures entailed. The result was limited participation in continued intervention following sentencing. Strategies that helped Tacoma integrate pretrial and probation services included (1) stationing a liaison probation officer at the BTC offices and (2) working with the DOC to implement a new state law giving DOC responsibility for probation violation hearings. The new law's endorsement of interim administrative sanctions and strong support for BTC from top state and regional corrections officials further assisted BTC.

Data on infractions and sanctions shown in table 4.4 for Birmingham and Jacksonville come from the monthly performance reports on BTC participants submitted to NIJ; for Tacoma, the MIS data are based on the subset of BTC participants included in the impact evaluation sample.

In Birmingham, MIS records indicated that 82 percent of the BTC participants incurred an infraction, at an average of 8.5 infractions apiece, mostly for skipping a drug test or testing positive. Nearly 90 percent of the clients with infractions received a TASC sanction, at an average of three infractions apiece. However, multiple infractions (an average of 2.6) typically preceded each sanction. The sanctions included an “alert” letter that warned noncompliant clients (received by 60 percent of the violators), case review by the case manager (received by 42 percent of the violators), and termination from BTC (received by 23 percent of the violators). Case managers made additional treatment referrals for 10 percent of those who had infractions. Increased supervision and increased drug testing were rarely used to respond to compliance problems. The time between the first infraction and the first sanction averaged over one month. The number of days between the next infraction and the next sanction gradually declined, with the second sanction occurring about three weeks after the next infraction, and the third about two weeks after the next infraction. BTC case managers in Birmingham provided reports on the client’s drug test results, treatment compliance information, and case management compliance information before hearings. Judges sometimes referred to these reports and sometimes did not. Overall, the court imposed sanctions on 7 percent of all defendants with drug test violations and 9 percent of those with other infractions. Sanctions involving jail time were received by 72 (2 percent) of the more than 3,000 BTC clients in the database.

In Jacksonville, the PTSU recorded infractions for 20 percent of the BTC clients (233 out of 1,121). These included 132 positive drug tests and 326 other infractions (such as failure to report to PTSU, failure to comply with treatment, or rearrest). Only 8 of the infractions were not linked to a sanction, and some received multiple sanctions: 82 were sanctioned twice and 6 were sanctioned three times. The most frequently used sanctions were a warning letter (181), meeting with the PTSU officer (122), and a violation report to the court (102). The average time from infraction to sanction was 2.24 days, indicating a swift response to detected infractions. However, PTSU apparently failed to detect many infractions. The132 positive drug test results

were only 19 percent of the 684 positive results on drug tests conducted after BTC entry. Judicial sanctioning during the study period of September 2000 through January 2001 was relatively rare. PTSU filed 102 requests for violation hearings. A total of 23 violation hearings were held. According to PTSU, no action was taken in 10 of the hearings (no reason was recorded), a jail penalty was imposed in 3, and another type of sanction such as referral for a TASC reassessment was imposed in 10. No violation hearing was scheduled by the State's Attorneys' office for 74 requests.

In Tacoma, a review of BTC records for clients included in the impact evaluation sample found 1,969 infractions for the 383 BTC sample members—an average of 5.1 per client. The large majority of the infractions (71 percent) involved drug test failures. The number of sanctions exceeded the number of infractions, indicating that some clients received more than one sanction per infraction. One judge reserved one afternoon a week for BTC review hearings for clients on pretrial release (postsentencing reviews became the responsibility of the Corrections Department) and ordered 761 sanctions. If a client failed to appear at a review hearing, a warrant was issued. Tacoma was the only BTC site to achieve judicial monitoring and sanctioning as specified in the model.

Under a state law enacted during the BTC demonstration, responsibility for reviewing and sanctioning noncompliance of offenders on probation was assigned to the Department of Corrections. The DOC worked with BTC to develop procedures for responding to noncompliance using graduated sanctions that were consistent with BTC guidelines. However, data on DOC sanctions for probation violations were not available.

Table 4.4. Compliance and Sanctioning in BTC

	Birmingham 8/99 – 12/99 n=1,827	**Jacksonville** 9/00 through 2/01 n= 1,073	**Tacoma** *BTC clients in Impact Sample* n=383
Compliance Monitoring			
# drug tests	17,715	2,962	4,685
% positive	23%	43%	30%
Infractions Number	8,601	458	1,969
Average	(4.7 per client)	(0.4 per client)	(5.1 per client)
Failed to appear in court	12	NA	NA
New Arrest	4	27	NA
Positive, Missed or Diluted drug test	7,321	132	1,404
Failed to comply with Treatment	1,167	49	436
Other noncompliance	97	250	129
Sanctions Recorded by BTC staff			
Administrative Sanction	750	445	1,416
Judicial/court Sanction	28	10	761

The strategies used to convey the message that sanctions would be imposed had a significant effect on the offenders' perceptions of procedural fairness and sanction risk in Jacksonville and Tacoma, the two sites in which perceptions measures were added to the questionnaires. The perceptions of BTC participants were compared with those of similar defendants arrested in the year before BTC. The comparison was based on ratings nine months after arrest of the fairness and risk of sanctioning for drug test failures and missing drug treatment. General linear models were used to test the hypothesis that there was no difference in perceptions between groups nine months after arrest, controlling for similar perceptions shortly following arrest and other differences among respondents, including prior arrest.

The results in table 4.5 show that BTC participants in both Jacksonville and Tacoma rated the judges significantly higher on fairness than defendants arrested the prior year. In Jacksonville, but not Tacoma, the BTC participants also assigned a higher fairness rating to the case outcome than defendants arrested the prior year. Even larger differences were found in ratings of the risk of sanctions. BTC participants rated the risks of sanctions for missing drug treatment and failing a drug test significantly higher than did defendants arrested the prior year (table 4.6). The least square means, shown in figures 4.7 and 4.8, illustrate the magnitude of the differences, controlling for the other variables in the models.

Table 4.5. General Linear Models of Perceived Fairness at Followup

	Of the Judge		**Of Case Outcome**	
	Jacksonville	**Tacoma**	**Jacksonville**	**Tacoma**
BTC Treatment	17.69 ***	11.83 **	14.39 ***	0.27
Age	0.02	0.83	0.08	0.10
Age Squared	0.00	0.49	0.15	0.46
Female	0.00	10.71 **	0.03	0.00
Black	1.39	3.01	1.45	0.58
Education	0.00	2.62	1.42	3.46 *
Marital Status	1.01	3.46	0.00	0.00
Days Worked	0.12	0.29	0.06	2.42
Months Incarcerated	2.98	0.48	1.74	3.67 *
On probation/parole	8.73 *	0.27	0.59	0.00
Number of Prior Arrests	2.27	1.66	0.29	0.72
Number of Drugs Used	0.13	2.46	0.64	0.67
Number of Self-Reported Offenses	2.14	0.03	0.25	4.56 *
N:	456	461	331	363
Model *F* Value:	2.86 ***	2.23 **	4.03 ***	2.3 **
df:	13,442	13,447	13,317	13,349
R^2:	0.08	0.06	0.14	0.08

*p<.05, **p<.01, ***p<.001

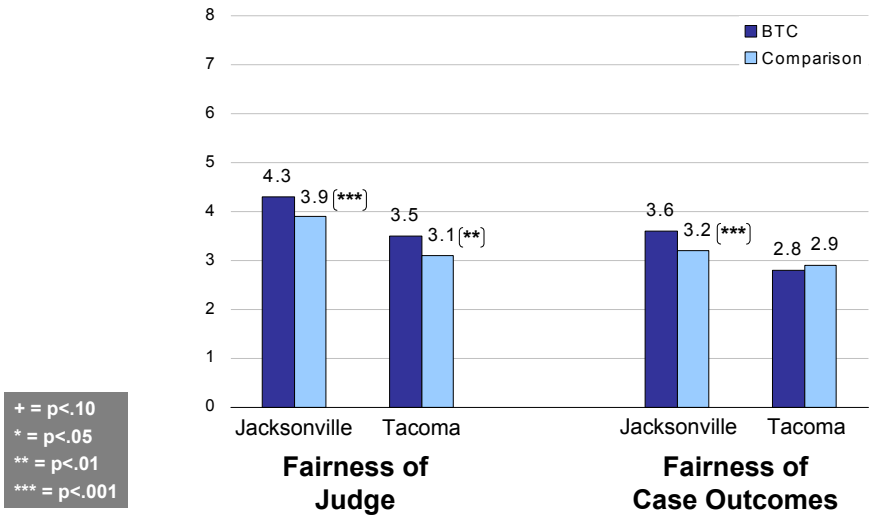
Table 4.6. General Linear Models of Perceived Certainty of Sanction

	Missed Drug Treatment				Failed Drug Test			
	Jacksonville		Tacoma		Jacksonville		Tacoma	
BTC Treatment	184.92	***	117.22	***	77.85	**	113.76	***
Age	5.92		0.26		42.42	*	0.04	
Age Squared	6.84		1.27		42.76	*	0.06	
Female	53.59	*	7.85		32.29		47.13	*
Black	9.47		0.52		7.91		20.54	
Education	11.41		3.17		6.97		0.72	
Marital Status	10.65		4.73		11.53		0.28	
Days Worked	17.48		0.03		48.69	*	11.20	
Months Incarcerated	0.04		0.86		0.53		14.29	
On probation/parole	38.79		0.46		44.05	*	0.94	
Number of Prior Arrests	18.55		3.04		7.55		0.12	
Number of Drugs Used	0.18		35.51	*	1.49		68.70	**
Number of Self-Reported Offenses	40.56		28.30		21.07		0.92	
Certainty at Baseline	3.13		156.59	***	12.98		36.48	*
N:	413		470		403		461	
Model *F* Value:	2.94	***	3.69	***	2.64	**	2.87	***
df:	14 & 398		14 & 455		14 & 388		14 & 446	
R^2:	0.09		0.10		0.09		0.08	

*p<.05, **p<.01, ***p<.001

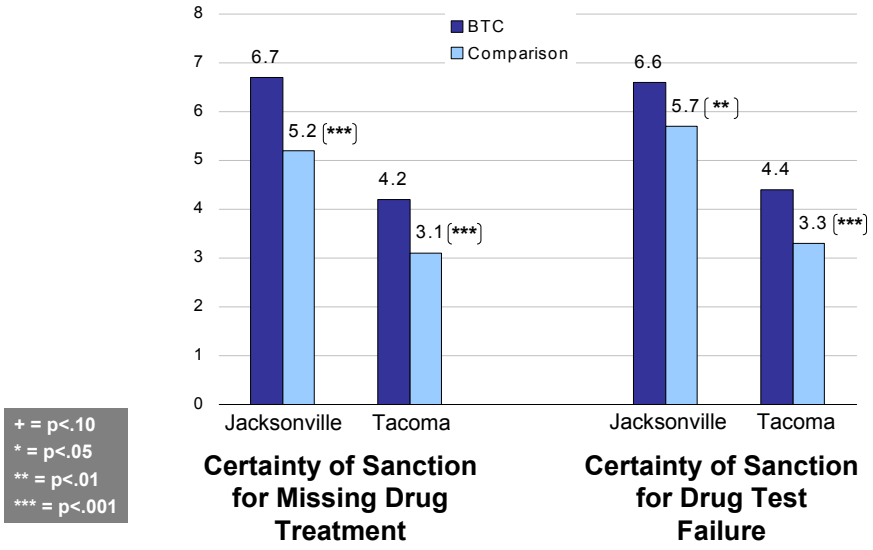
These findings taken together illustrate that BTC increased the perceptions of sanction risk in a way that participants perceived as fair and suggest that the process of clearly defining expectations for defendants on pretrial release was effective.

Figure 4.7. Rating of Fairness of the Judge and Case Outcome at Follow-up



Least square means controlling for individual characteristics and criminal history at Baseline

Figure 4.8. Rating of Certainty of Sanctions for Drug-Related Infractions at Follow-up



Least square estimates controlling for sample member risk and perceived certainty at baseline

FINDINGS ON DRUG INTERVENTIONS FOR FELONY DEFENDANTS

Models for Treatment and Monitoring

Our process evaluation identified two distinct models of intervention. One combined traditional case management with duties often assigned to supervision agencies for monitoring drug test results, filing reports on noncompliance, and imposing sanctions. The other divided these responsibilities between treatment providers and a newly created BTC supervision unit.

Model 1: The TASC Model of Case Management and Monitoring. In Birmingham and Tacoma, the two sites in which the TASC agency administered the BTC initiative, a single agency assumed responsibility for screening, assessment, treatment planning and case management, drug testing, and compliance monitoring. In those two sites, the BTC intervention heavily emphasized case management capacity to develop and implement individualized interventions adjusted to a broad range of drug use patterns, from infrequent use to severe addiction. In addition to their traditional role of making referrals and monitoring treatment progress, case managers were expected to deliver administrative sanctions for noncompliance with testing or treatment and report persistent problems to the court.

- In Birmingham, TASC case managers conducted the assessments at their offices or at a new, very small satellite office near the court. Defendants completed a self-administered screening questionnaire, followed by a clinical assessment by a case manager if the defendant reported drug use on the questionnaire. A drug test followed the screening (or assessment if one was done). Decisions on BTC eligibility were made at that time, and those who reported drug use or tested positive received a random drug testing assignment and an appointment with a case manager for discussion of treatment needs and services. Those waiting for treatment placement were often enrolled in group sessions at TASC in the interim.
- In Tacoma, the defendants reported for an orientation to BTC, at which time BTC staff described the BTC program requirements, collected basic demographic information, and scheduled an assessment and treatment planning appointment with a case manager within a few weeks. Immediately following the orientation, defendants were given a drug test and placed in weekly random drug testing. To ease the overwhelming demands on the case management staff, Tacoma tried using early drug test results to identify those who needed assessment and treatment. Selected defendants were placed in drug testing for one month prior to entering case management. Those who tested positive during this trial period were scheduled for assessment. However, this plan was abandoned because most of these clients failed the drug tests and were referred to assessment anyway. BTC clients were placed in case management in one of three programs: BTC, TASC, or drug court. All three programs were operated by PCA, were instructed to use consistent monitoring and sanctioning procedures, and entered data on the same MIS. At a client's first appointment, the case managers conducted an assessment, prepared treatment recommendations, and initiated the treatment placement process.

Model 2: Separation of Treatment and Monitoring. Jacksonville developed a model in which agencies divided responsibility for the core BTC components. The jail medical staff conducted initial screening. On the basis of the screening results, eligible defendants were ordered as a bond condition to report to the BTC PTSU within 24 hours of release. PTSU, operated by the Florida Department of Corrections under a contract from BTC, assigned clients to regular random drug testing, monitored their compliance, and reported continued noncompliance to the courts. Under contract to BTC, the TASC agency (River Region) conducted assessments either in jail before release or at the BTC offices after release and notified PTSU of its treatment recommendations. The TASC agency also held a three-session interim treatment program for clients who were waiting for more intensive treatment and was responsible for drug testing of clients referred to this program. Clients in need of outpatient or residential drug treatment were referred to a large treatment agency (Gateway), which provided treatment under contract to BTC. The BTC project director, working for the City of Jacksonville, the grantee agency, managed the contracts and the process of interagency collaboration. This model built upon the strengths and specialized skills of the partner agencies, but resulted in less fully integrated service delivery.

In practice, this model seemed to split the intervention clearly into coerced abstinence for nonaddicted drug users and treatment for those meeting clinical criteria of abuse or dependence. PTSU, staffed by probation officers, maintained records and requested violation hearings if needed for BTC clients in any intervention tracks. PTSU tested, supervised, and sanctioned defendants who used drugs but were not found to need treatment. Such defendants proved to be the majority of BTC clients. Although the treatment programs assumed the responsibility for drug testing, monitoring treatment attendance, and reporting client compliance status to PTSU for BTC clients referred to them, such reports were rare and the focus for these offenders was on treatment.

One problem all three sites faced was that BTC plans did not specify what would happen in cases of sustained noncompliance or conditions under which participants would be terminated from BTC services. There seemed to be an implicit belief that sustained noncompliance would result in judicial sanctions that would graduate in severity and culminate in pretrial detention pending case disposition (before sentencing) or in probation revocation (after sentencing). The influx of cases resulted in much higher than anticipated caseloads, particularly in Birmingham and also in Tacoma, and the high caseloads reduced case managers' capacity to provide close monitoring and deliver sanctions in a timely fashion. This problem was exacerbated by the lack of automated data systems linked to other agencies, which would have enabled case managers to distinguish inactive BTC clients (in jail or out on warrant) from those expected to be reporting regularly and to monitor treatment attendance and drug test results easily.

The Critical Role of Data in Maintaining Accountability

The BTC demonstrations highlighted the critical role of automated data systems in interventions aimed at large numbers of individuals. In order to ensure offender accountability, criminal justice agencies must know the whereabouts of those under their supervision, and, in the case of BTC, be able to exchange information on compliance with BTC requirements with partner agencies. This proved to be very difficult. Lack of access to timely information on

defendant release status affected BTC services both at screening and throughout the program. Because arrestees could post bond at any time and could be picked up on other charges at any time, it was difficult to determine when failure to appear for testing or appointments was deliberate noncompliance and when it resulted from incarceration. Efforts to exchange information were only partially successful and relied heavily on faxing, which was difficult, given the large numbers of BTC clients and their constantly shifting criminal justice status.

Birmingham began BTC with no automated record keeping in place for case managers. BTC planned to use the MIS developed by the Center for Court Innovation for the Brooklyn Treatment Court. However, the system was written in Sybase, and Birmingham faced many delays and false starts in locating programmers to adapt the programs to BTC applications. Problems in arranging automated downloading of drug test results into the system resulted in delays, sometimes substantial, during the project. Once the conversion was finally completed, it was used successfully to record screening results, assessments, and treatment referrals, to produce reports to the court, and to generate alert letters to clients. Shortly into operations, BTC recognized the need for timely access to jail records to determine which defendants had been released and were due to report. However, lengthy negotiations with the jail and the county agency that maintained the automated jail data failed to produce automated links that would facilitate checking on defendant release status. The need for additional hardware to link the systems and confidentiality concerns became insurmountable obstacles, due in part to reservations about BTC among jail staff. As a result, the only way for BTC case managers to determine defendant jail status was to review chronological (not alphabetical) daily release logs from the jail. This could not realistically be done for hundreds of clients on a daily basis.

Jacksonville entered BTC with an integrated data system maintained by the city. The city, as the prime BTC grantee, planned to modify the system to use it in tracking BTC defendants. However, the system proved more difficult to use than anticipated. Problems included incompatible court and jail data and resistance to system changes that would facilitate tracking BTC hearings and court responses to violations. In the face of Y2K threats to computer systems, the city was unable to devote the needed programming resources. Subsequently, the MODIS Corporation was hired to assist in programming an independent, web-based data management system for BTC. This system attained operational status but was never used consistently by the partner agencies. As a result, the data on agency performance reported above were updated and cleaned for use in the evaluation after the end of the demonstration. The lack of a functional data system forced BTC to rely on less reliable and more labor-intensive communication strategies. Jail staff notified the PTSU by fax of the release of BTC defendants. PTSU staff stationed at the court faxed information on BTC hearing outcomes to the supervision unit. PTSU relied on treatment providers to notify them of client noncompliance.

Tacoma began BTC with a plan to have the court transmit copies of BTC release orders (bond conditions) to the BTC offices. This alerted the staff to the order, but determining which defendants had been released required looking each one up on the jail data system one at a time (and presumably each day until release). However, near the end of the study period, selected key elements of jail data were integrated into the court data system (Legal INformation eXchange, or LINX) and made available to BTC. This enabled the program to download data on defendants, reducing data entry labor, and provided data on jail releases. For case management and client compliance tracking, BTC planned to adapt the MIS used by Pierce County Alliance

for the drug court and TASC programs. However, the MIS was privately owned by the vendor that created it, and BTC encountered significant delays in obtaining the new applications it needed. These applications were needed to support computerized monitoring of drug testing, compliance, and sanctions. Because the vendor was converting the system to a new computer language, BTC experienced multiple problems with the new system, including slow processing and computer crashes in both the core applications and BTC additions, which were added slowly over time. As a result, case managers, faced with recurring program bugs and delays, relied heavily on paper files, and BTC had to hire staff to enter data to help them keep up and to enter reports on client compliance faxed or sent by probation officers and treatment providers.

Managing Collaboration among BTC Partner Agencies

The BTC sites began operations with letters of commitment from judges, prosecutors, sheriffs, probation directors, treatment providers, and TASC agencies. Strategies for translating these commitments to operations entailed establishing policy boards that met regularly and had authority to negotiate changes in policies and procedures that governed internal agency operations and interagency relationships. BTC, like many other demonstration projects, found that effective joint problem solving and strong local leadership were necessary.

In Birmingham and Jacksonville, the grantee agency charged with managing BTC (the TASC agency and the city, respectively) had to try to reform the justice system from the outside. Despite a long history of TASC referrals from the courts and probation in Birmingham, previous efforts had not involved joint planning and shared responsibility for offender management, but rather had been built on clearly delineated areas of responsibility delegated to each agency. In Birmingham, it took some time for BTC to build a working policy board, but leaders there cite the legacy of interagency collaboration as a lasting contribution of BTC. In Jacksonville, prior collaborations had been led not by the city, but by agencies within the justice system. This fact made it difficult to get senior judges and prosecutors involved in decisions on BTC operations and to institutionalize BTC operations within the courts. However, Jacksonville's steering committee evolved into a strong working team that devoted considerable attention to developing procedures for smooth coordination in which each agency understood its role and responsibilities. Although the lead agency in Tacoma was also a TASC agency, there was a long history of joint problem solving and sharing of resources through policy board meetings attended by senior staff of the justice agencies. This history facilitated relatively rapid progress during the planning phase.

Two techniques used successfully to facilitate collaboration among the agencies in all BTC sites were (1) the development of detailed strategic plans that specified needed changes, set deadlines, and assigned responsibility for tasks and (2) the preparation of written memorandums of understanding describing the purpose of BTC and the role of each agency in implementation.

In all three cities, the most challenging management problem was engaging the state agencies that managed probation in making rather substantial changes in supervision practices to accommodate the local BTC vision of combining treatment and monitoring. These state agencies had statewide policies, data systems, and management that made it hard to be flexible and make changes in a specific jurisdiction. Moreover, the top officials were located in other

cities and could not attend policy board meetings. This situation required extra willingness on the part of the regional directors to take on the challenge of training and encouraging their staff to participate in local partnerships.

Lessons for the Future

Despite the challenges, BTC had an important and lasting effect on the demonstration sites. The program generated considerable local political support and is continuing with substantial local funding in all three sites. There are several reasons for this. One is that BTC is seen as an appropriate and effective alternative to pretrial detention. This was very important to the sites with overcrowded jails. The availability of supervision, drug testing, and penalties for continued drug use increased the courts' willingness to release arrestees while their cases were pending and provided the justice system with strategies for addressing a factor that contributes to the risk of reoffending. These facts suggest that improvements in the strategies for coordinated drug intervention are valued and that additional work needs to be done to identify ways to deliver these services efficiently and consistently.

As a feasibility test, BTC was extremely successful in identifying strategies for, and the challenges of, interagency collaborations focusing on reducing recidivism and drug use among individuals under supervision. Challenges to undertaking the broad system reforms planned for BTC were significant in some sites and clearly influenced the extent to which the projects were able to achieve their implementation goals. The most serious challenges included the following:

- **Jail Overcrowding.** BTC efforts to introduce new testing and screening procedures faced serious problems in the two sites with severe jail overcrowding. The new procedures placed additional time demands on jail staff, required proper facilities for drug testing, involved arranging access to new arrestees by qualified substance abuse screeners, and required space for adding jail-based treatment options.
- **Exchange of Information among Key Agencies.** The computerized databases at the jail, courts, probation, and prosecution offices were not designed to support case management of individual defendants. The case management data systems in the treatment agencies needed modification to improve monitoring and court reporting for BTC. Tracking and exchanging data is critical to program operations.
- **Coordination between Local and State Agencies.** BTC involved close collaboration among local agencies, each of which was asked to change its practices in some ways. When the authority and leadership was local, this was possible. It was a greater challenge to change practices and record keeping when decisions rested with state agency management located in another city and responsible for statewide practices. Thus, getting local probation departments, managed in all sites by the State Department of Corrections, to adopt new BTC sanctioning and reporting procedures represented a challenge.
- **Resistance to BTC's Therapeutic Orientation and Workload.** It was difficult to untangle the degree to which judicial and correction officer resistance to BTC monitoring and sanctioning plans stemmed from concerns about deviating from the mission of enforcement or from concerns about adding to their extremely heavy workloads.

Other challenges came in the form of unintended consequences of existing practices. In one site, many arrestees bonded out before entering the jail, so they were not identified as eligible for BTC until the first hearing after the bond hearing. In another site, the decision not to file charges often occurred after clients had received a full assessment and started treatment. As a result, investments in case identification and assessment did not result in continued treatment and testing. In two sites, introducing changes to the practices and record keeping of probation officers, who were employed and managed by state agencies located in other cities, proved exceptionally difficult.

Early intervention efforts in BTC also raised an issue of how to target those who could receive sufficient intervention while under supervision. While the limited interventions received by those who were not prosecuted may have been beneficial, a more efficient use of resources for Jacksonville, given local filing practices, might have been to delay full assessments and services until decisions on case filing had been reached. In addition, postrelease assessments may be the most feasible arrangement when jails are overcrowded and results are not used for referral to in-jail treatment. In Birmingham, the relatively lengthy period of pretrial release for most defendants allowed sufficient time for intervention for many BTC participants. However, in jurisdictions like Jacksonville and Tacoma that dispose of cases within three months of filing, it is essential that probation departments be prepared to consistently apply BTC intervention strategies—treatment, testing, and sanctioning—for defendants found guilty and placed on probation.

CHAPTER 5.
CHANGES IN CASE PROCESSING AND OUTCOMES DURING BTC IMPLEMENTATION

BTC introduced significant changes in criminal justice policies and practices. This chapter describes the changes in court system operations during BTC and examines the effects of these changes on case disposition, duration, and sentencing in each site. It compares samples of approximately 500 felony cases filed in the year prior to BTC with samples of about 500 cases filed during BTC in each site. The data come from court case processing records and provide a limited amount of information on the characteristics of the defendants. To control for individual differences among sample members, additional analyses were conducted using the samples from the impact evaluation. The results of the detailed analysis, shown in appendix B, largely replicate the findings presented below, and differences in the results of the two analyses are noted in the text. Throughout this chapter, the unit of analysis is the case. Because a case may involve multiple charges, "dismissal" means that all charges were dismissed, while "guilty" refers to a finding of guilt on at least one charge. Cases are considered open until disposition of all charges.

In general, few changes in case processing were found. Those that were detected indicate improvements in case processing during BTC. In Birmingham, a higher proportion of felony cases were disposed of within a year of filing during BTC than before. In Tacoma, the percentage of cases pleading guilty increased during BTC, as did the percentage of cases reaching disposition within a year compared with the prior year. Although other events were influencing case processing during BTC, it seems safe to conclude that BTC did not introduce court delays or negatively affect prosecution. Indeed, the enthusiasm for continuing BTC at the end of the demonstration in all three sites suggests that BTC was viewed as assisting the justice agencies in their work.

BIRMINGHAM

An Overview of Case Processing in Birmingham

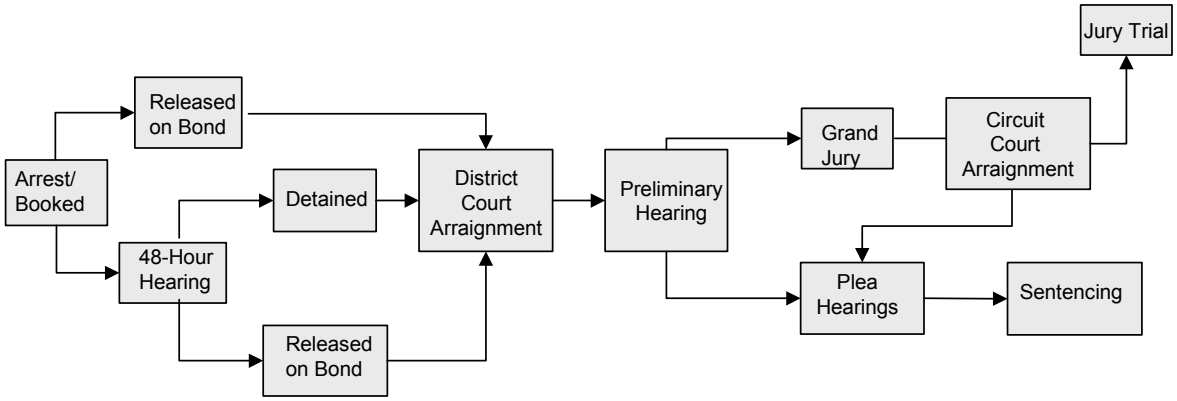
The changes in case handling that accompanied BTC must be understood within the context of the Birmingham courts. All cases begin in District Court. The three District Court judges preside over arraignments, conduct preliminary hearings and bond reviews, take pleas, conduct bench trials, and impose sentences. In the absence of an early plea, felony cases are waived to a grand jury and the case closed in District Court. If the grand jury issues an indictment, a case is filed in Circuit Court. Figure 5.1 illustrates the process felony cases follow from arrest to case disposition.

- **Arrest to Release**. About a third of those arrested in Birmingham posted bond at that time and were released immediately after booking; the remainder were detained and

appeared before a duty judge within 48 hours at an initial or "48-hour hearing." At this hearing, the bond and release conditions were determined. Most of those detained following arrest posted bond and were released within a week.[4]

- **Cases Filing.** The District Attorney's office reviewed the preliminary charges, bond, and release recommendations and decided whether to file charges (initiated by swearing out a warrant).
- **Arraignment.** The arraignment hearing in District Court was scheduled to occur within seven to ten days of arrest for defendants in need of a court-appointed attorney (about 65 percent), but could be postponed for several weeks by defendants with a private attorney.
- **Preliminary Hearing.** A preliminary hearing was scheduled for several weeks after arraignment. Attorneys of defendants who wished to accept the plea offer filed an intent to plead at that time, and a plea hearing was scheduled for two weeks later. Felony defendants who declined the District Court plea offer received a District Court disposition of "waived to the grand jury," closing the District Court case.
- **District Court Sentencing.** A sentencing hearing followed the formal plea hearing by about a month.

Figure 5.1. Case Flow in Birmingham



- **Grand Jury Hearing.** Owing to large case backlogs, grand jury hearings took place three to six months after waiver from District Court.
- **Arraignment in Circuit Court.** If the grand jury indicted the defendant, a case was filed in Circuit Court, the defendant was arraigned, and a second plea offer was presented. If the defendant declined the plea offer, a trial was scheduled in Circuit Court. If the defendant accepted the plea offer, the trial took place in Circuit Court. However, if the defendant was eligible for drug court or a specialized docket, the case was closed in Circuit Court and reopened in District Court.

[4] A small number were released on their own recognizance.

One of the first BTC changes was the development of a release bond that would require felony defendants to report to TASC following release. The new bond was a top priority at the first Policy Board meeting and was instituted March 2, 1998. The availability of additional monitoring of defendants through BTC had the effect of increasing the number of defendants released pending case disposition.

Most of the changes in case processing during BTC resulted from the response to a huge backlog of unresolved criminal court cases and severe jail overcrowding. According to a 1998 report by the Alabama Judicial Data Center (AJDC), criminal judges (both District and Circuit Court) in Birmingham had a backlog of 3,000 cases that were more than a year old. The AJDC breakout of the cases pending in Circuit Court found that the five judges had more than 8,000 cases pending and an average caseload of 1,600. About 37 percent of their cases were more than a year old. The American Bar Association and the Alabama Supreme Court have held that criminal cases should be resolved within 180 days to ensure a defendant's constitutional right to a speedy trial. Judicial response to these findings varied, but some judges faulted the difficulty in settling cases involving mandatory minimums (which do not allow judicial discretion, so defendants often demand jury trials) and the rising number of capital murder cases, which require days or weeks to try. A study, conducted by the National Center for State Courts, of nine felony court systems around the country found that Jefferson County was one of the slowest to dispose of felony cases.

The jail crisis came to a head in May 1998 when Jefferson County entered into a consent decree after an inspection by the U.S. Department of Justice found severe overcrowding in violation of the law. County commissioners agreed to resolve the jail overcrowding, proposing to build a new jail (with an 896-bed capacity) by fall 1999 and to find immediate ways to reduce the jail population by 400 and to keep the number of inmates in the existing jail near 1,000. They then initiated a study of the costs of jail construction and a review of the existing criminal justice system.

While awaiting the results of the system review, the court introduced several new programs that used BTC resources to reduce jail overcrowding and case backlogs and advance the goal of early identification and treatment of drug-involved offenders. These innovations took place between October 1998 and June 1999, the months of full BTC implementation.

- **The Rocket Docket.** The "Rocket Docket" was implemented to move the cases of pretrial jail inmates through the system and relieve pressure on the jail. It required the 16 circuit judges from the civil, criminal, and family court divisions to handle the cases of nearly 600 inmates, with the oldest cases first. The Rocket Docket ran for two weeks in October 1998 and one week in January 1999. Relatively few of the defendants appearing on the Rocket Docket were released—most were sentenced to state prison. The Rocket Docket reduced the jail population and helped the county comply with the consent decree. The process identified issues that the criminal justice system needed to address: (1) It was difficult to locate offenders, and especially to identify who was in jail; (2) the county lacked the facilities and court staff to handle the caseloads; and (3) the backlog problem consisted primarily of cases open in Circuit Court, not District Court.
- **The Expedited Docket.** Jefferson County introduced an expedited docket targeted at the large number of defendants who rejected the District Court plea offer, opting to wait four to five months for a grand jury hearing. It was limited to Class C felonies identified

as eligible by the Assistant District Attorney and TASC treatment program. Most of these defendants were already on pretrial release, had already been assessed by BTC, and had already been participating in BTC for several months at the time the docket was introduced. TASC case managers prepared a list of TASC clients whom they considered eligible, based on offense (this included most nonviolent felonies) and treatment compliance, and their cases were placed on the expedited docket.

Expedited docket hearings occurred within 14 days of a District Court waiver to the grand jury. Defense attorneys for defendants willing to accept a plea that required a sentence involving TASC treatment and supervision entered a presworn admission of probable cause and waived the right to a grand jury hearing. This process avoided the delays in gaining admittance to drug court that resulted from case backlogs and long waits for toxicology reports from the state. Between March and August 1999, 76 defendants on the expedited docket were sentenced to probation, and a smaller number were transferred to the diversion program, set for trial, or dismissed, resulting in a significant reduction in the number of cases awaiting grand jury hearings.

- **The Diversion Program.** The backlog of cases prompted the court to reinstate the previously suspended diversion program as part of BTC. The BTC diversion program admitted only first-time felony offenders charged with the possession of small quantities of drugs (no sales cases or large quantity possession cases). Defendants had to plead guilty, with the understanding that if they remained drug-free and had no additional arrests, the plea would be set aside at the end of six months. Participants were referred to TASC for assessment, treatment if needed, and supervision, but participants were not rejected from the program if they did not present evidence of substance abuse. Between January and August 1999, 816 defendants entered the program. Of this group, 458 (56 percent) were already active TASC clients who had entered BTC at the time of arrest. Most of these defendants had been released from the jail prior to program entry, although a few were still in jail. Some of these defendants had been waived to the grand jury and were waiting for a hearing to be scheduled; others had been placed directly on the deferred docket for District Court disposition.

Figure 5.2. Alternative Court Dockets for Drug-Related Cases in Birmingham during BTC

	Deferred Docket	Drug Court	Expedited Docket
Eligibility	Felony drug cases: Quantity of substance cannot exceed 5 g. cocaine, 113 g. marijuana, 10 pills of any kind, or 10 individual baggies.	Drug cases excluding sales and violent offenders	Class C felonies (non-drug and drug cases)
	District Attorney determines eligibility.	Judge/District Attorney/Defense Attorney jointly determine eligibility.	District Attorney determines eligibility
Typical Referral Source	Defense attorney	Judges and/or defense attorneys	District Attorney
Duration of Supervision	6 months	12 months	6 months
Fee[1]	$1,000	$1,500	Low-risk - $35/mo. for six months High-risk - $500
Incentive for Compliance	Charge dismissed	Charge dismissed	Expedited disposition Less costly Usually better plea offer
Related Definitions			**Low-risk =** compliant at the point of placement on expedited probation; typically “urines only” clients **High-risk =** non-compliant (i.e. positive UA, not reporting as required) at the point of placement on expedited probation; typically “ten pointers” and/or offenders in need of treatment

While not directly part of the BTC implementation effort, these initiatives, combined with the existing drug court, greatly expanded the options for handling drug-related cases and BTC’s role in providing early intervention, court-supervised treatment, and TASC case management for a variety of drug-related cases. The three specialized dockets are summarized below. It is likely that many of the changes in case handling observed during BTC can be attributed to these innovations.

Case Handling, Disposition, and Sentencing in Birmingham before and during BTC

Data from the Alabama Administrative Office of the Courts were used to examine the changes in criminal case processing associated with the introduction of BTC. To assess

changes, the evaluation compares two samples of felony cases filed in Jefferson County District Court. The first sample, the pre-BTC sample, consists of all felony filings (n = 1,491) between October 1, 1997, and December 31, 1997 (the period prior to implementation of any BTC services). The second sample, the BTC sample, consists of all felony cases (n = 2,024) filed between October 1, 1998, and December 31, 1998, during the most extensive implementation of BTC services. The data collected on these cases include all court actions by the District and Circuit Courts in Jefferson County during the 365 days following filing. The data include all actions related to a single incident.

Table 5.1 compares the charges during the two time periods. The results indicate that the number of cases filed increased from 1,491 in the last quarter of 1997 (pre-BTC) to 2,024 in the last quarter of 1998 (during BTC). The largest increases occurred in two offense categories: cases involving drug charges and cases involving “other” charges, such as bad checks.

Table 5.1. Increases in Quarterly Felony Filings by Charge Category in Birmingham

Charge	Pre-BTC	During BTC	Percent Change
Violent	274	309	+13%
Property	492	543	+10%
Drug	564	915	+62%
Other	161	257	+59%
Total	1,491	2,024	+36%

The percentage of cases remaining open at the end of a year dropped significantly during BTC (table 5.2). In the pre-BTC sample, about 40 percent of the felony cases were open one year after filing. The large majority of the open cases had received a District Court disposition of "waived to grand jury" but had not yet been filed in Circuit Court. During BTC, about 29 percent of felony cases were open at the end of a year; most of these had been waived to grand jury. These reductions in time to disposition reflect the efforts made concurrent with BTC to improve the speed of court processing.

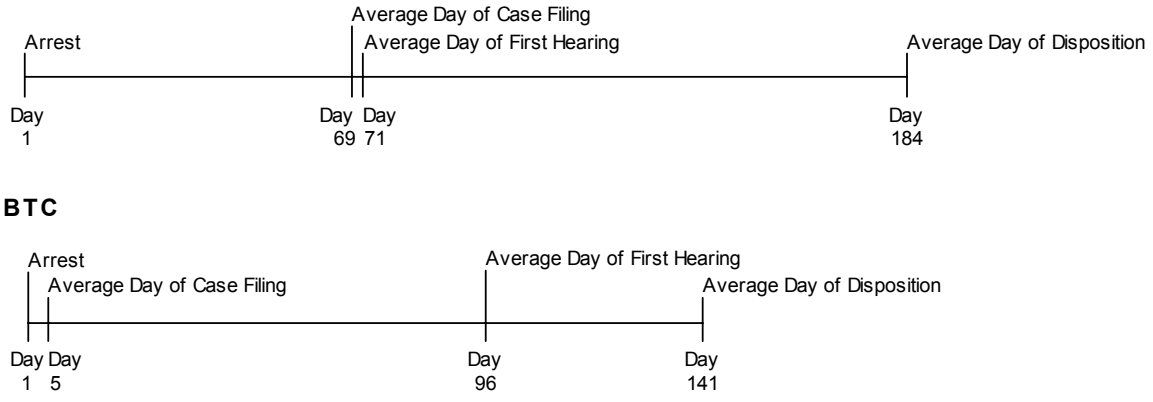
Table 5.2. Pre-BTC/BTC Comparison of Case Processing in Birmingham

	Pre-BTC n = 1,491		BTC n = 2,024	
Case Status One Year from Case Filing				
Open Cases – number (percent of total)	600	(40%)	582	(29%)
Waived to Grand Jury – pending hearing	523	(35%)	505	(25%)
No Court Hearings One Year after File Date	73	(5%)	12	(<1%)
Active	4	(<1%)	65	(3%)
Closed Cases	891	(60%)	1,442	(71%)
Dismissed/Nolle Prossed/Acquitted	290	(20%)	597	(29%)
Guilty/Convicted	584	(39%)	783	(39%)
Other	16	(1%)	62	(3%)

Another significant change was an increase in the number of dispositions at the first hearing, from 33 percent in the pre-BTC sample to 50 percent in the BTC sample. Efforts to encourage early pleas account for this reduction. The introduction of the diversion option conversely resulted in some delay in reaching final disposition, as defendants were given six months to comply with requirements and earn dismissal of their case. Other changes in case processing occurred between these two periods. Figure 5.3 shows the case processing timeline prior to BTC (the top line) and during BTC (the bottom line). These lines show the following:

- A significant reduction in the time between arrest and case disposition for cases closed within a year of filing (a growing portion of all cases). Looking only at cases closed within a year of filing, the data show that the overall time from arrest to case disposition fell from 184 days in the pre-BTC period to 141 days during BTC, a 43-day reduction.
- Most of the reduction in time to disposition came from a substantial increase in the percentage of cases disposed of at the first hearing. In the pre-BTC sample, 33 percent of the cases were disposed of at the first hearing. This percentage rose to 50 percent during BTC.
- The growth in the number of cases settled at the first hearing reduced the average number of hearings from 1.3 prior to BTC to 1.2 during BTC for cases closed within a year of filing.

Figure 5.3. Timelines: Pre-BTC/BTC Comparison of Average Number of Days to Events in Birmingham



Overall, the time between arrest and first hearing was 23 days longer during BTC than before BTC, despite a significant reduction in time between arrest and filing. Before BTC, the time between arrest and filing was 69 days, but the first hearing occurred about 4 days after filing. During BTC, the time between arrest and filing was only 5 days, but the time between filing and first hearing rose to 91 days. This was caused in part by the sharp increase in the number of cases filed (see table 5.1).

The sentences imposed during BTC also shifted, with substantially more offenders getting probation and fewer being sentenced to incarceration only (table 5.3). The percentage of closed cases in which the sentence was probation only increased from 42 percent before BTC to 57 percent during BTC. The percentage of closed cases in which the sentence was incarceration decreased from 40 percent to 19 percent. At least some of the reduction resulted from plea offers made to defendants on the expedited and rocket dockets.

Table 5.3. Pre-BTC/BTC Comparison of Sentences Imposed in Birmingham

Type of Sentence Imposed in Guilty Cases	Pre-BTC n=584		BTC n=783	
Probation Only[a]	244	(42%)	450	(57%)
Confinement Only	232	(40%)	149	(19%)
Confinement and Probation	89	(15%)	83	(11%)
Other	19	(3%)	101	(13%)
Total	584	(100%)	783	(100%)

[a] Probation Only includes all sentences involving a term of probation and any sanction other than a period of imposed confinement (i.e., a term of probation plus restitution, or fines, etc.).

Summary of Case Processing Changes in Birmingham

The introduction of a number of changes in case handling during the period of BTC full implementation resulted in a significant increase in the proportion of cases disposed of within a year of filing. Overall, the analysis found the following:

- The average time to case disposition dropped by 43 days, and the percentage of cases closed within a year of filing rose from 60 percent to 71 percent. The multivariate analysis of the cases of defendants in the impact sample shown in appendix B found that the difference in likelihood that cases would be closed within a year was highly significant ($p < .01$).
- During BTC, the number of felony cases awaiting a grand jury hearing a year after filing declined, but one-quarter were still pending an indictment hearing at the end of a year.
- A substantial increase in case filings lengthened the delay for a first hearing during BTC. Thus, despite the dramatic reduction in the time between arrest and filing, the time between arrest and first hearing actually grew. This could have been the effect of handling the backlog and efforts to reduce jail overcrowding.
- Although the analysis above shows a substantial increase in the proportion of cases disposed of at the first hearing, the difference disappeared in the multivariate analysis of the impact evaluation samples (appendix B). This suggests that differences in case and client characteristics may account for the lower number of hearings per case during BTC.
- The analysis of the impact samples found that during BTC, cases were less likely than before BTC to be found guilty (perhaps due to successful completion of the diversion

program) but more likely to result in incarceration if found guilty. This suggests that the system was focusing on the more serious cases/offenders, offering alternatives in less serious cases, or that defendants either completed pretrial intervention successfully or faced the alternative sentence.

JACKSONVILLE

An Overview of Case Processing In Jacksonville

Florida's Fourth Judicial Circuit, which includes Duval County, had a Chief Judge, 24 Circuit Court judges, a State's Attorney, a Public Defender, and 13 County Court judges at the time of BTC. Judicial policies were guided by the Florida Supreme Court and Administrative Orders of the Chief Judge. A Court Administrator for the circuit performed many administrative duties for the court system. In Duval County, felony cases are scheduled in one of six Circuit Court dockets. Two are reserved for serious and repeat offenders. The majority of BTC cases were scheduled for one of the four general criminal dockets.

The first hearing after arrest was the bond (J1) hearing, held daily, usually with a county judge presiding. Different circuit or county judges rotated assignments to these J1 hearings on weekends and holidays. At J1, the judge set the amount of money bonds, specified release conditions, and, in some cases, took pleas and passed sentence on misdemeanor cases. Bond recommendations were offered by the prosecutor and were based on a review of the defendant's local record (National Crime Information Center [NCIC] criminal histories are not available by first appearance). The prosecutor subsequently made decisions on filing the case.

Judicial Case Processing, Disposition, and Sentencing in Jacksonville before and during BTC

In order to determine BTC's effect on judicial case processing in Jacksonville, two samples were obtained from the Jacksonville criminal justice system. One sample consisted of the first 500 felony cases consecutively screened by the Prosecutor's office beginning on March 1, 1999, the year prior to implementation of BTC. The second sample consisted of 500 felony cases consecutively screened by the Prosecutor's office beginning on February 1, 2000, during the period of full BTC implementation. The data collected on these cases include all court actions during at least the 365 days following initial case screening.

Table 5.4 indicates that the samples of cases filed before and during BTC were similar in the race, gender, and age of defendants and did not differ significantly in number of charges per case. In both time periods the largest category of offenses involved drug crimes, followed by property and violent offenses. However, sample cases processed before BTC implementation included more drug offenses and fewer traffic offenses than the sample of cases processed after BTC implementation.

Table 5.4. Comparison of Defendant and Offense Characteristics in Jacksonville

	Pre-BTC (n = 500)	BTC (n = 500)	Significance of Difference
Defendant Characteristics			
Gender			ns
Female	15%	12%	
Male	85%	88%	
Race			ns
Black	67%	67%	
Non-Black	33%	33%	
Mean Age (standard deviation)	33.4 (9.5)	34.1 (10.0)	ns
Offense Characteristics			
*Type of Offense***			p<.05
Drug Offenses	41%	35%	
Property Offenses	23%	22%	
Violent/Person Offenses	17%	15%	
Traffic Offenses	7%	13%	
Weapons Offenses	2%	2%	
Other/Unknown Offenses	10%	13%	
Mean Number of Charges (standard deviation)	1.7 (1.0)	1.7 (1.0)	ns

p < 0.05; **p < 0.01; ***p < 0.001; ns = not significant

Figure 5.4 displays the median number of days from arrest to key case processing events. Overall, these comparisons show a consistent pattern of similarity. There were no significant differences in time to charge filing, first appearance, or final disposition (for those cases that were resolved). Furthermore, similar proportions of cases in both time periods were still unresolved one year after initial arrest: 7 percent of pre-BTC cases versus 9 percent of cases processed during BTC.

Figure 5.4. Median Days from Arrest to Case Processing Event in Jacksonville

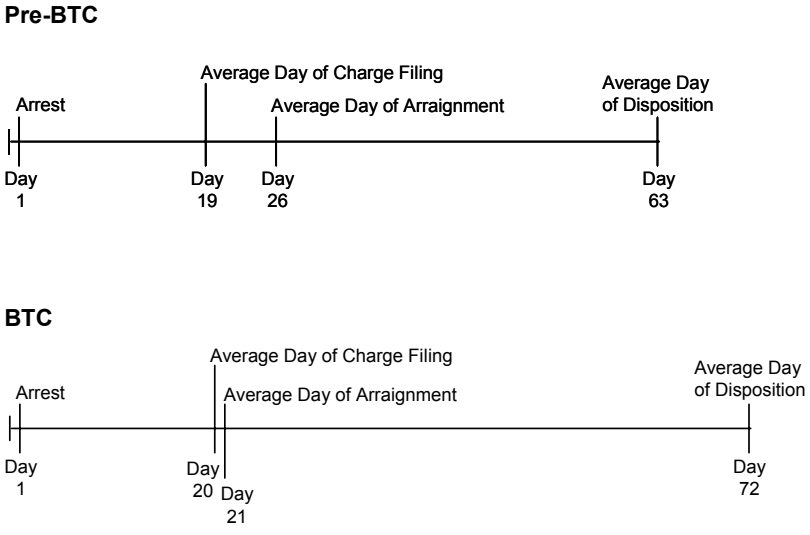


Table 5.5 compares the two samples on conviction and sentencing outcomes. It should be noted that sentencing in Florida is based on the 1998 Florida Criminal Punishment Code. This sentencing paradigm provides a uniform evaluation of relevant factors in the sentencing decision, while allowing judges to maintain a considerable amount of discretion. Paramount among these factors are current offense, prior criminal record, and victim injury.

The comparisons in table 5.5 continue to reveal a consistent pattern of similarity in the pre-BTC and BTC cases. The two samples were similar on type of case disposition, proportion of cases unsolved one year after arrest, type of sentence received, and average number of convictions per case.

Table 5.5. Pre-BTC/BTC Comparison of Case Outcomes One-Year from Arrest in Jacksonville

	Pre-BTC (N = 500)	**BTC** (N = 500)	**Significance of Difference**
Case Unresolved after 365 Days	7%	9%	ns
Closed Cases	93%	91%	ns
Disposition in Closed Cases			
Dismissed/Nolle Prossed/Acquitted	8%	9%	ns
Guilty/Convicted	84%	82%	ns
Incompetent to Stand Trial	<1%	<1%	ns
Sentences in Closed Cases			
Incarceration	69%	66%	ns
Probation	21%	23%	ns
Other	10%	11%	ns
Mean Number of Conviction Charges in Guilty Cases (standard deviation)	1.2 (0.8)	1.2 (0.7)	ns
Mean Months of Incarceration in Guilty Cases (standard deviation)	14.2 (23.2)	11.7 (21.5)	ns
Mean Months of Probation in Guilty Cases (standard deviation)	4.1 (9.6)	4.7 (10.1)	ns

[a] Months of incarceration ordered was censored at the 95th percentile because of a few cases that received very long sentences.

*p < 0.05; **p < 0.01; ***p < 0.001 ns = not significant

Summary of Case Processing Changes in Jacksonville

The findings from the comparison of cases processed before and after implementation of BTC suggest that BTC had a minimal impact on case processing in Jacksonville. Cases in both periods were found to be similar in regard to several case processing outcomes, including time to charge filing, initial court hearing, and disposition. The proportion of convicted offenders sentenced to incarceration was also similar, as was the mean length of incarceration for those found guilty. These findings were confirmed by the analysis based on the samples included in the impact evaluation, which controlled for differences in defendants and case characteristics (appendix B).

TACOMA

An Overview of Judicial Case Processing in Tacoma

After arrest and booking, case processing in Tacoma begins with screening by the Prosecutor's office to determine whether and which charges to file against an arrestee. In Tacoma, the Prosecutor has the power to charge felony cases directly in Superior Court, bypassing grand jury and initial case filing proceedings in lower courts. Prosecutors review the police report and the arrestee's criminal history before making charging decisions. The initial charging decision (i.e., whether and which charges to file) is made between booking and first appearance in court, which is most often the day after booking. Thus the charging decisions are made quickly, generally within 24 hours of booking.

At first appearance, the defendant is arraigned, the defendant enters a plea of "not guilty," counsel is assigned for indigent defendants (the vast majority of defendants), bail is set for defendants still in custody, and the date of next appearance is scheduled. The next appearance, the "pretrial conference," most often occurs 14 days after first appearance. In between first appearance and the pretrial conference, the Prosecutor's office shares information about the case with the defense attorney, as required by law (i.e., discovery). The primary purpose of the pretrial conference is to explore possible resolutions to the case. If a suitable resolution can be agreed upon at the pretrial conference, the defendant agrees to plead guilty and a plea date is set. If no resolution is agreed upon, then a trial date is set; if trial motions are anticipated, an "omnibus hearing date" is set. Generally, on the plea date, the defendant pleads guilty and is sentenced by the presiding judge. However, in some cases, the presiding judge will request a presentence report, and in a relatively small number of cases, presentence reports are required by law. In these instances, a separate sentencing date is set.

As in most jurisdictions, the vast majority of cases are resolved via guilty pleas, and trials are relatively rare. A recent Justice Management Institute study of felony case processing in Tacoma found that in 1999, 83 percent of felony cases were resolved by guilty pleas, 13 percent were dismissed, and the remainder were resolved via bench and jury trials (Carlson et al. 2001, p. 39). Thus, over 95 percent of cases were resolved via guilty pleas. The Justice Management Institute's report also found that the case processing in Tacoma is fairly rapid; half of all cases filed in 1999 were closed within 59 days of initial case filing and 75 percent within 108 days (Carlson et al. 2001, 40).

Judicial Case Processing, Disposition, and Sentencing in Tacoma before and during BTC

The analysis of changes in judicial case processing in Tacoma during BTC compares two samples of cases from the LINX system. The first sample consisted of the first 505 felony cases consecutively screened by the Prosecutor's office beginning on March 1, 1998, prior to implementation of BTC. The second sample consisted of 501 felony cases consecutively screened by the Prosecutor's office beginning on March 1, 1999, during the period of full BTC implementation. The data collected on these cases include all court actions during at least the 365 days following initial case screening. It should be emphasized that the unit of analysis in this assessment is the case, not the charge. This distinction is important because a case can comprise many charges, each of which can have different dispositions and disposition dates.

Table 5.6 compares characteristics of the offenders and charges in the two samples. There were no significant differences between the BTC and pre-BTC samples in age, race, gender, or number of charges. However, compared with the cases prior to BTC, a larger portion of those processed during BTC faced drug possession charges and weapons offenses, and a smaller portion were charged with drug sales and property offenses. We have no reason to believe these differences were associated with the introduction of BTC.

As figure 5.5 shows, there were no significant differences in median days from arrest to key case processing events: arraignment (first appearance), pretrial conference, or final disposition (for those cases that were resolved). What this figure does not display is the fact that the proportion of cases that remained open (unresolved) after one year was significantly smaller during BTC than before BTC. Nineteen percent of the cases filed prior to BTC implementation remained open after one year, compared with 9 percent of cases filed during BTC.

Table 5.6. Comparison of Cases Characteristics in Tacoma Before and During BTC

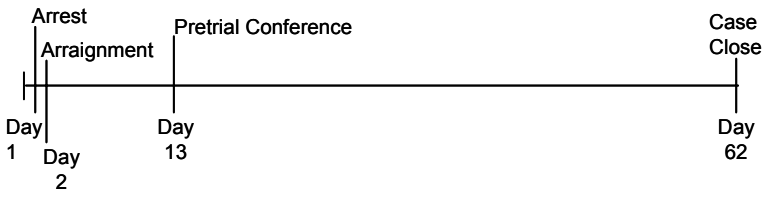
	Pre-BTC (N=414)[a]	BTC (N=464)	Significance of Difference
OFFENDER CHARACTERISTIC			
Gender			ns
Female	23%	22%	
Male	77%	78%	
Race			ns
White	74%	77%	
Non-White	26%	23%	
Mean Age at Arrest	31.8	32.1	ns
(standard deviation)	(8.7)	(8.9)	
OFFENSE CHARACTERISTIC			
Type of Charge			p<.05
Drug Possession	34%	41%	
Drug Sales	19%	13%	
Property Offenses	27%	22%	
Person Offenses	5%	5%	
Weapons Offenses	4%	7%	
DUI/Traffic Offenses	4%	4%	
Public Order/Other	8%	8%	
Mean Number of Charges	1.6	1.7	ns
(standard deviation)	(1.0)	(1.0)	

[a] Note: Missing data reduces the total number of cases from 1006 to 878 in this analysis.

p < 0.05; **p < 0.01; ***p < 0.001 ns = not significant

Figure 5.5. Median Days from Arrest to Case Processing Event in Tacoma

Pre-BTC



During BTC Implementation

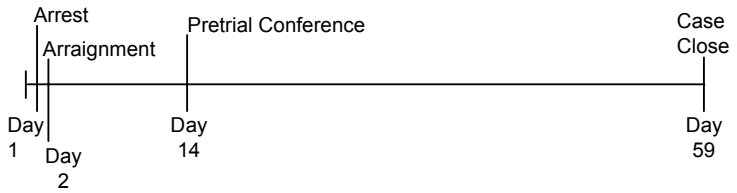


Table 5.7 compares the two samples on conviction and sentencing outcomes. Significantly more of the cases in the BTC sample than in the pre-BTC sample pled guilty, but there was no significant difference in the number of conviction charges or the type of sentence in guilty cases. It should be noted that sentencing in Washington State is based on a presumptive guideline system, in which the presumptive sentence for each case is determined by the intersection of offense seriousness and offender criminal history on the sentencing grid.

Table 5.7. Sentencing Outcomes in Tacoma Before and During BTC

	Pre-BTC (n=414)[a]	**BTC** (n=464)	**Significance of Difference**
Mean Number of Convictions Per Case	1.0	1.1	ns
(standard deviation)	(0.8)	(0.8)	
Method of Disposition			p<.05
Guilty Plea	84%	89%	
Dismissed	16%	10%	
Trial	<1%	1%	
Type of Sentence			ns
Jail	80%	79%	
Prison	19%	21%	
Probation w/o incarceration	<1%	<1%	
Mean Length of Incarceration, in days	262	273	ns
(standard deviation)	(457)	(479)	

[a] Missing data reduces the total number of cases from 1006 to 878 for mean number of convictions per case, method of disposition, and length of incarceration (414 and 464, respectively for Pre-BTC and BTC cases), and 762 for type of sentence (347 and 415, respectively).

p < 0.05; **p < 0.01; ***p < 0.001 ns = not significant

Summary of Case Processing Changes in Tacoma

During BTC the percentage of cases resolved through plea increased compared with the prior year, as did the percentage of cases reaching disposition within a year. This outcome could result from an increase in pleas entered as part of drug court or diversion programs; however, dismissals did not increase as would be expected in a successful postplea, presentence treatment program. Another possibility is that the failure to appear rates at pretrial hearings declined as a result of BTC monitoring, shortening time to disposition. No significant changes were observed in types of charges, number of conviction charges, and sentences between the samples of cases filed before and during BTC.

PART II.

BTC IMPACT

CHAPTER 6.
BTC IMPACT ON DRUG USE AND CRIME

The impact evaluation findings presented in this chapter and the next are based on quasi-experimental comparisons of samples of BTC participants selected shortly after an arrest with comparable samples of defendants arrested in the year before BTC implementation. The impact analysis is based on interview data and official records. Interview data on personal characteristics, drug use history and severity, past criminal activity, and other areas of social functioning were collected in baseline interviews conducted shortly after the arrest and in follow-up interviews approximately nine months later. Official records were used to measure arrests before and in the year after the arrest. The procedures used to select the samples, the characteristics of the samples, the data collection procedures, and the analysis strategies are described in detail in appendix A.

This chapter examines the central impact question: Did BTC reduce drug use and crime? BTC participants in two of the three demonstration sites, Birmingham and Jacksonville, reported significantly less past-month drug use on follow-up interviews approximately nine months after arrest than did the comparison groups. In all three sites, BTC participants were less likely than the comparison groups to report committing offenses on the follow-up interviews. During the year after the arrest, official records showed significantly lower likelihood of rearrest and significantly fewer rearrests for BTC participants than for comparison groups in Birmingham and Tacoma. The evidence is presented below.

REDUCTIONS IN DRUG USE

Breaking the Cycle's impact on drug use was measured by self-reported drug use in the 30 days prior to the follow-up interview.[5] Table 6.1 shows the prevalence of any drug use, any stronger drug use, heavy drug use (16 or more days of illegal drug use in past month, summing across drugs),[6] any marijuana use, and frequent drinking to intoxication (four or more times) in the 30 days before follow-up in the pre-BTC and BTC samples in each site.[7]

[5] This drug use measure includes use of heroin, other opiates, cocaine, marijuana, amphetamines, barbiturates, other sedatives, hallucinogens, and inhalants.

[6] For example, days of marijuana use plus days of cocaine use plus days of use of other drugs. The sum may count a day more than once if multiple drugs were used on that day.

[7] The sample is limited to sample members who reported drug use or tested positive for drugs, and excludes sample members in BTC only because they had been charged with a felony drug offense.

Table 6.1. Self-reported Drug Use in the 30 days Prior to Follow up Interview by Site

	Birmingham		Jacksonville		Tacoma	
	Pre-BTC (n = 137)	BTC (n = 213)	Pre-BTC (n = 297)	BTC (n = 215)	Pre-BTC (n =247)	BTC (n = 260)
BASELINE DRUG USE						
Any Drug Use	50%	87%***	85%	92%**	98%	84%***
Stronger Drug Use	34%	39%	59%	62%	88%	68%***
Heavy Drug Use	14%	32%***	46%	54%*	72%	40%***
Marijuana Use	30%	62%***	61%	69%	53%	47%
Weekly Alcohol to Intoxication	23%	26%	39%	40%	25%	17%*
FOLLOW UP DRUG USE						
Any Drug Use	26%	23%	40%	27%**	53%	50%
Stronger Drug Use	12%	8%	23%	15%*	44%	40%
Heavy Drug Use	7%	8%	18%	12%*	31%	23%*
Marijuana Use	16%	10%	32%	22%*	31%	25%
Weekly Alcohol to Intoxication	12%	17%	32%	26%	18%	13%
DAYS INCARCERATED IN 30 DAYS BEFORE INTERVIEW						
Baseline	15.4	2.8***	11.1	4.9***	3.7	12.1***
Follow up	11.2	2.1***	6.8	4.0**	7.6	4.8***

NOTE: Only respondents who completed both surveys and had some indication of substance abuse were included in this table.

* p < .05 ** p < .01 *** p <.001 indicates level of significance of differences between Pre-BTC and BTC samples within sites; Other differences were not significant.

As shown, BTC samples in Birmingham and Jacksonville were significantly more likely to report past-month illegal drug use at baseline than the pre-BTC samples, while the reverse was true in Tacoma. At follow-up, the rates of drug use were similar in pre-BTC and BTC samples on most drug use measures in Birmingham and Tacoma, but are significantly lower in the BTC sample in Jacksonville. However, these simple bivariate comparisons conceal significant differences in drug use at baseline and in sample characteristics (described in appendix A). There were also significant differences in opportunity to use illicit drugs. Although the pre-BTC sample members in all three sites spent three to nine days more than BTC participants in jail in the month before the follow-up, they were still as likely or more likely to use illicit substances during that period.

To control for differences in the samples, the hypothesis that BTC participants were less likely than the comparison sample to report drug use at follow-up was tested using multivariate probit models. The models include independent variables to control for differences in the characteristics of sample members and were estimated with and without the selection bias correction. In addition to the BTC treatment (yes/no), the models include controls for opportunity to use drugs (number of days in jail in the 30 days prior to the follow-up interview); demographic

variables (sex, race, age, and education); prior drug use (in the 30 days before the baseline interview); and variables included to control for sample selection differences. Tests of the significant interaction between BTC treatment and the other independent variables were conducted to assess differences in the impact of BTC across subgroups of defendants. The interactions found to be significant terms are shown in the tables.

In the multivariate results (table 6.2), the Birmingham BTC sample was significantly less likely than the pre-BTC sample to report using drugs in the 30 days before the follow-up interview and less likely to use a stronger drug (cocaine or heroin) during this time, controlling for sample differences and selection. However, the interaction term in the marijuana use model shows that BTC had statistically significant and substantial effects on the marijuana use of African Americans, but not on the marijuana use of whites.

Table 6.2. Impact in Birmingham: Self-Reported Drug Use in the 30 Days Prior to Follow-up Interview, controlling for Defendant Characteristics and Sample Differences

Variable	Any Drug Use	Any Stronger Drug Use	Heavy Drug Use	Any Marijuana Use
BTC Treatment[a]	–0.303*	–0.338*	0.072	–0.021
Age	0.008	0.029***	0.015	–0.009
Female	–0.139	0.052	–0.698**	–0.635**
Black	–0.043	0.343	0.154	0.357
Black*BTC Tx	—	—	—	–0.821*
Education	–0.064	–0.130**	–0.045	–0.038
Employ Bother	–0.098	–0.114	–0.333	0.116
Days Worked	–0.007	–0.007	–0.014	0.006
Months in Jail	0.004	0.001	0.003	0.007
On Probation	0.233	0.248	0.299	0.476**
Serious Offender	0.024	0.016	–0.062	–0.009
Prior Offenses	0.002	0.004	0.008**	0.000
Prior Drug Use	0.009	0.007	0.014**	0.018***
Days in Jail	–0.050***	–0.049***	–0.073**	–0.040***
Constant	0.037	–0.865	–1.438*	–0.642
N	350	350	350	350
–2LL	39.732***	34.848***	30.577****	39.876***
Pseudo–R^2	0.103	0.156	0.165	0.151

a/Significance tests for this variable are one–tailed.

*p < 0.10; **p < 0.05; ***p < 0.01

In Jacksonville, the multivariate models indicate a significantly lower likelihood of drug use in the 30 days prior to follow-up by BTC participants than by the pre-BTC comparison group on three of the four drug use measures—any illegal drug use, heavy drug use, and marijuana use. The results did not show significantly lower rates of past-month stronger drug use, which in Jacksonville consisted primarily of cocaine use, among BTC participants.

Table 6.3. Impact in Jacksonville: Self-Reported Drug Use in the 30 Days Prior to Follow-up Interview, controlling for Defendant Characteristics and Sample Differences

Variable	Any Drug Use	Use of Stronger Drugs	Heavy Drug Use	Any Marijuana Use
BTC Treatment[a]	–0.269**	–0.097	–0.430**	–0.265*
Age	–0.007	0.012	–0.185***	–0.107*
Age Squared	—	—	0.002***	0.001*
Female	–0.338*	–0.223	–0.435	–0.291
Black	0.112	0.125	0.128	0.071
Education	–0.022	–0.035	0.035	–0.006
Married	–0.216	–0.063	0.202	–0.832***
Days worked, Past 30	–0.007	–0.004	–0.004	–0.009
Months Incarcerated, lifetime	–0.001	0.002	0.006	–0.004
On Probation	0.136	0.220	0.440*	–0.001
Prior Offenses, Past 6 mos.	0.001	0.000	0.000	0.000
Prior Arrests	0.007	0.001	0.000	0.016*
Prior Drug Treatment Episodes	0.047*	0.061**	0.087	0.031
Age First Used Drugs	–0.014	–0.026*	0.005***	–0.018
Live with Drug User	0.353*	0.105	0.063	0.413*
Days Used Drugs, past 30 (all drugs)	0.010**	—	0.013**	—
Days Used Methamphetamine, past 30	—	0.068*	—	—
Days Used Cocaine, past 30	—	0.031***	—	—
Days Used Opiates, past 30	—	0.018	—	—
Days Used Marijuana, past 30	—	—	—	0.033***
Days in Jail, past 30	0.230***	0.201***	0.524***	0.238***
Days in Jail, squared	–0.009***	–0.008***	–0.045***	–0.010***
Time between Interviews	0.001	0.001*	0.000	0.001
Constant	–0.295	–1.502**	0.748	0.726
MODEL FIT				
N	450	446	450	450
–2LL	117.060***	89.700***	116.650***	133.440***
Pseudo–R^2	0.203	0.204	0.308	0.255

[a] Significance tests for this variable are one-tailed.

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

In Tacoma (table 6.4), BTC participants were not significantly less likely than the comparison sample to report drug use in the 30 days before the follow-up interview. This finding held across drug use measures (any drug use, any use of stronger drugs, heavy drug use, or any marijuana use). These results do not change substantively when selection or attrition bias corrections are taken into account. Moreover, additional analyses (not shown) revealed that there were no significant differences between the two groups when each type of drug use was analyzed separately; that is, the two groups did not differ on use of methamphetamines, cocaine, opiates, or other drugs.

Table 6.4. Impact in Tacoma: Self-Reported Drug Use in the 30 Days Prior to Follow-up Interview, controlling for Defendant Characteristics and Sample Differences

Variable	Any Drug Use	Use of Stronger Drugs	Heavy Drug Use	Any Marijuana Use
BTC Treatment[a]	–0.075	0.022	–0.064	–0.197
Age	0.003	0.008	0.003	–0.016*
Female	–0.113	0.118	–0.051	–0.231
Black	0.129	–0.040	–0.088	0.345*
Education	0.078	0.155***	–0.046	–0.021
Married	–0.304*	0.037	–0.447**	–0.436**
Days worked	–0.011	–0.015	–0.016*	–0.004
Months Incarcerated, lifetime	–0.001	0.001	0.002	0.000
On Probation	–0.044	0.001	0.315**	–0.101
Prior Offenses	0.002*	0.003**	0.001	0.001
Prior Arrests	0.000	–0.001	0.009	–0.008
Prior Drug Treatment Episodes	0.054*	0.024	0.101***	–0.002
Age First Used Drugs	–0.037**	–0.032*	–0.023	–0.061***
Live with Drug User	0.297*	0.257	0.155	0.008
Days Used Drugs, past 30 (all drugs)	0.008*	—	0.016***	—
Days Used Methamphetamine, past 30	—	0.023***	—	—
Days Used Cocaine, past 30	—	0.026*	—	—
Days Used Opiates, past 30	—	0.030***	—	—
Days Used Marijuana, past 30	—	—	—	0.008*
Days in Jail, past 30	0.202***	0.232***	0.114***	0.143***
Days in Jail, squared	–0.009***	–0.010***	–0.006***	–0.007***
Time between Interviews	–0.001	0.000	0.000	–0.002
Constant	–0.556	–2.504***	–0.505	1.505
MODEL FIT				
N	461	461	461	461
–2LL	128.8***	165.4***	116.75***	90.83***
Pseudo–R^2	0.202	0.265	0.215	0.165

[a] Significance tests for this variable are one-tailed.

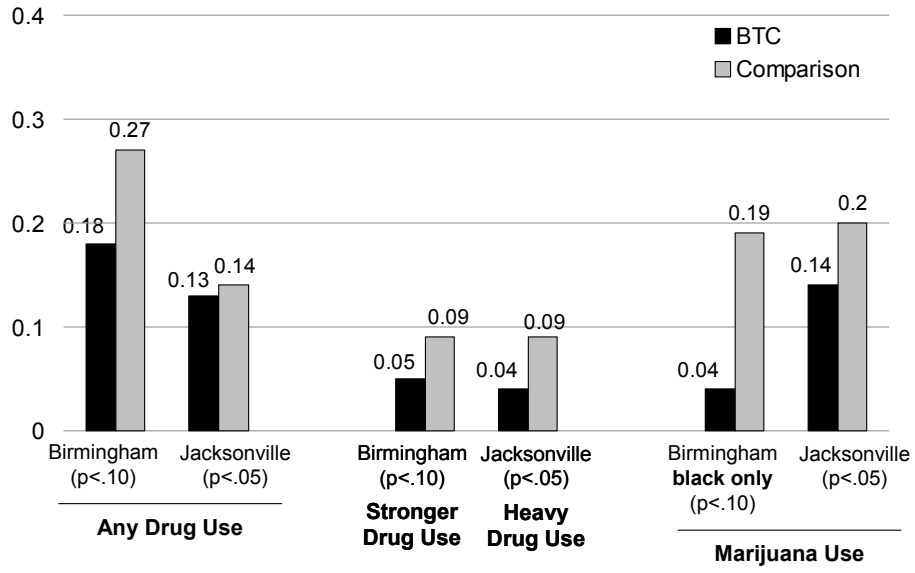
*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

The results show reductions in drug use in Birmingham and Jacksonville, but not in Tacoma. Specifically, the BTC sample was significantly less likely than the pre-BTC sample to do the following:

- Use an illicit drug in the 30 days before follow-up (Birmingham and Jacksonville)
- Use marijuana in the 30 days before follow-up (Jacksonville and black BTC clients in Birmingham)
- Use a stronger drug in the 30 days before follow-up (Birmingham)
- Engage in heavy drug use in the 30 days before follow-up (Jacksonville)

Figure 6.1 illustrates the differences between the BTC and pre-BTC samples for those differences found to be significant in the multivariate modeling. The values shown are the predicted probability of drug use for each group at the mean value of the other independent variables in the model.

Figure 6.1. Predicted Probabilities of Drug Use with Covariates Held at the Mean



* All covariates held at mean except days in jail, which is constrained to zero in the analysis of heavy drug use.

The observed reductions in drug use are not clearly linked to participation in drug treatment and may well have resulted from increased drug testing, monitoring, and pretrial supervision. In Tacoma and Jacksonville, the BTC samples reported significantly more days of drug treatment in the month before the follow-up interview than the pre-BTC sample did (2.1 days versus 0.8 days in Jacksonville and 3 days versus 1.3 days in Tacoma), but significant reductions in drug use were found in Jacksonville and not in Tacoma. In Birmingham, where little difference in days of drug treatment was reported for the month before follow-up, significant differences in drug

use were found. One possible explanation is that drug treatment was of short duration, with the result that BTC participants in Birmingham and Jacksonville had completed treatment prior to the month before follow-up. The known delays in treatment entry in Tacoma combined with widespread methamphetamine use may have delayed or derailed the impact of BTC on drug use. A competing (or complementary) explanation is that the heightened pretrial supervision and drug testing in Birmingham and Jacksonville, more widespread than in Tacoma where efforts were focused on a smaller pool of drug abusers, may have reduced drug use among the BTC clients with less severe drug problems who were placed only in urine monitoring.

Separate analyses of drinking alcohol to intoxication in the 30 days before the follow-up interview (not shown) found no significant difference between the samples. This suggests that BTC efforts to reduce illegal drug use through testing, treatment, and supervision had no carry-over effect on alcohol abuse.

REDUCTIONS IN CRIMINAL ACTIVITY

One of the key premises of the Breaking the Cycle program was that recidivism could be reduced if drug-involved arrestees were promptly identified and referred shortly thereafter to appropriate treatment modalities. The following analysis uses official arrest and self-report data to test the hypothesis that BTC reduced continued criminal activity. The analysis also assesses whether BTC reduced the likelihood of any recidivism, and whether BTC reduced the number of offenses shown in both the official and self-report data. The measures constructed from responses to the follow-up survey include (1) the number of times the respondent had committed 14 types of offenses in the six months before the follow-up interview and (2) the number of arrests for 14 offenses in the six months before the interview.[8] In addition, official criminal justice records were collected to measure any arrest and the number of arrests in the 12 months after sample entry. Criminal history records could not be located for all sample members, and these cases were excluded from the analysis. In Birmingham, 124 cases in the BTC sample and 55 cases in the pre-BTC sample were excluded. In the other two sites, where recruitment to the sample followed BTC intake, only three cases were excluded, all from the pre-BTC sample in Jacksonville, for failing to report drug use or testing positive for drugs.

Because self-report data on stigmatized behaviors and arrest records are both subject to error, we compared the indicators to detect differences that might affect impact evaluation assessments. In general, we expect that memory error and misunderstanding of arrest would affect all sites and samples equally and thus not explain differences between the samples. Instead, differences are likely to be a function of denial of criminality, the inaccuracy of official records (or record-checking procedures), or changes in enforcement. Denial, in turn, may vary depending on the perceptions of consequences for revealing behavior subject to legal penalties. In a pre-postcomparison, official records can be affected by changes in record-keeping or arrest policies.

[8] The 14 types of offenses were shoplifting or vandalism; parole or probation violations; drug offenses; forgery; weapons offenses; burglary, larceny, or breaking and entering; robbery; assault; arson; rape; homicide or manslaughter; prostitution; contempt of court; and any other offenses.

Table 6.5 compares the average number of arrests based on official records and average number of self-reported arrests for the six months prior to the follow-up interview. The detected discrepancies can reflect either error in the official records or differences in record-checking procedures or error in self-reported data stemming from memory inaccuracy, deliberate denial of offending, or misinterpretation of police contacts (e.g., being questioned but not actually arrested). The phi coefficients are used to show the strength of the relationship between the self-report data and official records.

Table 6.5. Arrests in the Six Months prior to Follow-Up Interview by Site

	Birmingham		Jacksonville		Tacoma	
	Pre-BTC (n = 137)	BTC (n = 250)	Pre-BTC (n = 234)	BTC (n = 205)	Pre-BTC (n =286)	BTC (n = 256)
Any self-reported arrests	32%	14%***	34%	38%	70%	57%**
Any official arrest	39%	8%***	50%	47%	50%	38%**
SELF-REPORT VS. OFFICIAL						
Correctly Reported Arrest or No Arrest	73%	85%	67%	84%	69%	70%
Over-reported Arrest	10%	11%	9%	3%	26%	25%
Under-reported Arrest	17%	4%	24%	13%	5%	5%
Phi Coefficient	0.42	0.29	0.36***	0.69***	0.41	0.44

* p < .05 ** p < .01 *** p <.001 for differences between Pre-BTC and BTC samples within sites.

The differences in reporting accuracy by the BTC and pre-BTC samples were not significant in Birmingham and Tacoma. However, a comparison of the two sites shows that both samples in Tacoma report more arrests than shown in official records, suggesting that some arrests were not reflected in those records. In Birmingham, discrepancies are more evenly divided between over- and underreporting. Nonetheless, the similarity in pattern between samples in both sites suggests that minimal bias is introduced by willingness to report offending.

In Jacksonville, the difference in reporting accuracy between the pre-BTC sample and BTC sample was significant, with higher underreporting of arrests by the pre-BTC sample. Thus, in Jacksonville, possible underreporting of arrest by the pre-BTC sample compared with the BTC sample could (if correlated with underreported of offending) result in an underestimate of the effects of BTC on criminal activity when measured by self-reported offending. This would occur because the observed difference in self-reported offending would be smaller than it would be without denial on the part of the comparison sample.

SELF-REPORTED OFFENSES

The hypothesis that BTC reduced criminal activity was tested with criminal offenses reported on the follow-up interviews. These self-report measures may be a more complete record of offending, because official measures of crime record only offenses detected by the authorities. The majority of offenses go undetected, so self-report measures provide important insight into the effectiveness of BTC.

The survey instrument asked respondents to report the number of times they had committed 14 types of offenses in the past six months. Responses were used to create two summary measures of self-reported crime, both covering the six months before follow-up interview: (1) number of total offenses committed, regardless of type of offense and (2) number of drug offenses (sales/distribution) committed. These measures were then used to create dichotomous variables indicating any recidivism and any drug recidivism.

Table 6.6 displays the number of reported offenses at baseline and follow-up by site. These results indicate that BTC participants self-reported considerably less recidivism of all types than the pre-BTC sample did, before controlling for other factors. In the analyses that follow, more rigorous analytic techniques are employed to control for the sample differences.

Table 6.6. Self-reported Offenses in the 6 Months Prior to Interview by Site

	Birmingham		Jacksonville		Tacoma	
	Pre-BTC (n = 137)	BTC (n = 245)	Pre-BTC (n = 312)	BTC (n = 215)	Pre-BTC (n =286)	BTC (n = 255)
BASELINE						
Number of Offenses	21.1	3.0***	22.5	20.4	47.1	42.7
(standard deviation)	(50.1)	(11.6)	(49.5)	(45.8)	(63.2)	(69.1)
Number of Drug Offenses	9.9	1.3***	12.8	10.6	20.4	23.1
	(27.2)	(6.5)	(31.3)	(29.1)	(37.9)	(38.7)
FOLLOW UP						
Number of Offenses	13.7	2.1	7.21	2.08 ***	27.6	10.6***
	(36.9)	(14.2)	(25.29)	(11.16)	(55.8)	(31.0)
Number of Drug Offenses	8.7	1.3	3.07	1.75	16.6	6.7***
	(22.5)	(8.8)	(15.57)	(11.08)	(35.1)	(23.1)
FOLLOW UP						
Any Offense	39%	21%	23%	11%***	45%	26%***
Any Drug Offense	23%	10%	10%	6%**	30%	17%***

* p < .05 ** p < .01 *** p <.001 for differences between Pre-BTC and BTC samples within sites.

Probit models were used to estimate BTC's effect on the likelihood of any recidivism. Negative binomial estimation was used for the analysis of the number of offenses, a count variable with many zero values. Because the number of self-reported offenses has a skewed distribution (i.e., most respondents reported no offenses, but a small number reported substantial involvement in crime), this variable was recoded to censor the maximum number of offenses at the 95th percentile. Additional analyses were performed to determine if BTC participation affected the likelihood of drug use because of the substantive interest in BTC's effect on drug crimes. This variable was heavily skewed by the presence of a few high-rate offenders so it was also recoded, with censoring at the 95th percentile.

In Birmingham (table 6.7), the BTC sample was significantly less likely than the pre-BTC sample to report any criminal activity in the prior six months and any drug offense in the prior six months, after controlling for other variables. However, the number of offenses reported by the BTC sample was not significantly lower than the number reported by the pre-BTC sample.

Table 6.7. Impact in Birmingham: Self-Reported Recidivism in the Six Months Prior to Follow-up

Variable	Any Offense	Any Drug Offense	Number of Offenses	Number of Drug Offenses
BTC Treatment[a]	–0.883***	–0.328*	–0.444	–0.600
Age	–0.002	–0.009	–0.010	–0.011
Female	–0.181	–0.197	–0.659	–0.701
Black	–0.301**	0.214	0.609	1.397
Black*BTC Tx	0.788*	—	—	—
Education	–0.072	–0.089*	–0.326**	–0.413
Employ Bother	0.356**	0.509**	0.889	–0.360
Employ Bother*BTC Tx	–0.903**	–1.085**	–2.962***	—
Days Worked	–0.016	–0.014	–0.050**	–0.049
Months in Jail	–0.002	–0.001	–0.006	–0.005
On Probation	0.255	0.060	0.803	0.692
Serious Offender	0.077	0.058	–0.315	–0.494
Prior Offenses	0.002	0.007*	0.013	0.015
Prior Drug Use	0.010*	0.008	–0.002	–0.002
Constant	0.523	0.075	4.291***	4.879
Overdispersion Parameter	—	—	7.221***	14.767***
N	382	382	382	382
–2LL	44.87***	37.64***	83.88***	25.52**
Pseudo–R^2	0.100	0.114	0.074	0.039

[a] Significance tests for this variable are one-tailed.

*p < 0.10; **p < 0.05; ***p < 0.01

In Jacksonville, the self-reported offending data show significantly lower rates of criminal activity among BTC participants than among the comparison group in the six months before the follow-up interview. The reductions in criminal activity were reflected in four summary measures: the likelihood of committing a crime, the likelihood of selling or possessing drugs, the number of offenses in the 14 categories combined, and the number of drug offenses.

Table 6.8. Impact in Jacksonville: Self-Reported Recidivism in the Six Months Prior to Follow-up

Variable	Any Offense	Any Drug Offense	Number of Offenses	Number of Drug Offenses
BTC Treatment[a]	–0.509***	–0.308*	–1.016***	–0.853*
Age	0.000	–0.019	–0.033	–0.075**
Female	–0.039	0.201	0.402	–0.069
Black	–0.001	0.297	1.032**	0.895
Education	–0.018	–0.042	–0.028	–0.093
Married	–0.623**	–0.469	–2.679***	–1.442
Days worked, past 30	0.001	0.001	–0.006	–0.001
Months Incarcerated, lifetime	–0.001	0.006	0.018	0.021*
On Probation	–0.016	–0.062	0.652	0.160
Days Used Drugs, past 30 (all drugs)	0.003	0.012**	0.012	0.023
Prior Offenses, past 6 mos.	0.006***	0.004**	0.014***	0.011**
Prior Arrests	0.031***	0.008	0.044	0.052*
Constant	–0.954	–0.966	0.158	0.061
			13.776***	14.935**
MODEL FIT				
N	484	484	484	484
–2LL	61.570***	37.040***	39.500***	28.86***
Pseudo–R^2	0.138	0.134	0.040	0.063

[a] Significance tests for this variable are one-tailed.

*p < 0.10; **p < 0.05; ***p < 0.01

In Tacoma, the self-reported offending data show significantly lower likelihood of criminal activity among BTC participants than among the comparison group in the six months before the follow-up interview on the two prevalence measures: any offending and any drug possession or sales. However, the number of offenses in these two categories, while lower among BTC participants, was not significantly lower than the number reported by the comparison group, and the models explained relatively little of the variance in number of offenses.

Table 6.9. Impact in Tacoma: Self-Reported Recidivism in the Six Months Prior to Follow-up

Variable	Any Self-Reported Offense	Any Self-Reported Drug Offense	Number of Offenses	Number of Drug Offenses
BTC Treatment[a]	–0.367***	–0.303**	–0.734	–0.726
Age	–0.121**	–0.014	–0.017	–0.055
Age squared	0.002**	—	0.000	—
Female	0.087	0.051	–0.033	0.151
Black	–0.025	0.097	–0.271	–0.324
Education in years	–0.030	–0.047	0.134	0.126
Married	–0.033	0.017	–0.050	0.983
Days worked, past 30	–0.002	–0.007	–0.010	–0.003
Months Incarcerated, lifetime	0.001	0.002	0.004	0.009
On Probation/Parole	0.054	0.265*	0.386	1.109
Prior Drug Use	0.010**	0.011**	0.027	0.043
Prior Arrests	0.054***	0.015	0.052	0.022
Prior Offenses	0.004***	0.005***	0.008	0.011
Constant	1.440	–0.432	0.755	0.245
Overdispersion Parameter			10.324	17.901
MODEL FIT				
N	523	523	523	523
–2LL	93.16***	76.24***	43.76***	36.15***
Pseudo–R^2	0.138	0.140	0.019	0.021

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

The predicted probabilities of reporting an offense in the six months before follow-up, with the other variables in the model held at their mean values, are shown for any offense in figure 6.2. Figure 6.3 shows the predicted probability of a drug offense during this time. Figure 6.4 shows the predicted number of offenses in these two categories in Jacksonville, the only site in which the BTC participants reported significantly fewer offenses.

Comparing the multivariate results for the three sites shows that the BTC sample was significantly less likely than the pre-BTC sample to do the following:

- Report an offense in the six months before follow-up ($p < .01$) in all three sites, although in Birmingham the significant differences were limited to comparisons of white defendants
- Report any drug offense in the six months before follow up in all three sites ($p < .10$)
- Use a stronger drug in the 30 days before follow-up (in Birmingham)

In Jacksonville, the BTC defendants reported significantly fewer offenses ($p < .01$), including significantly fewer drug offenses ($p < .10$).

Figure 6.2. Predicted Probability of Any Offense with Covariates Held at the Mean Pr(Y=1|x)

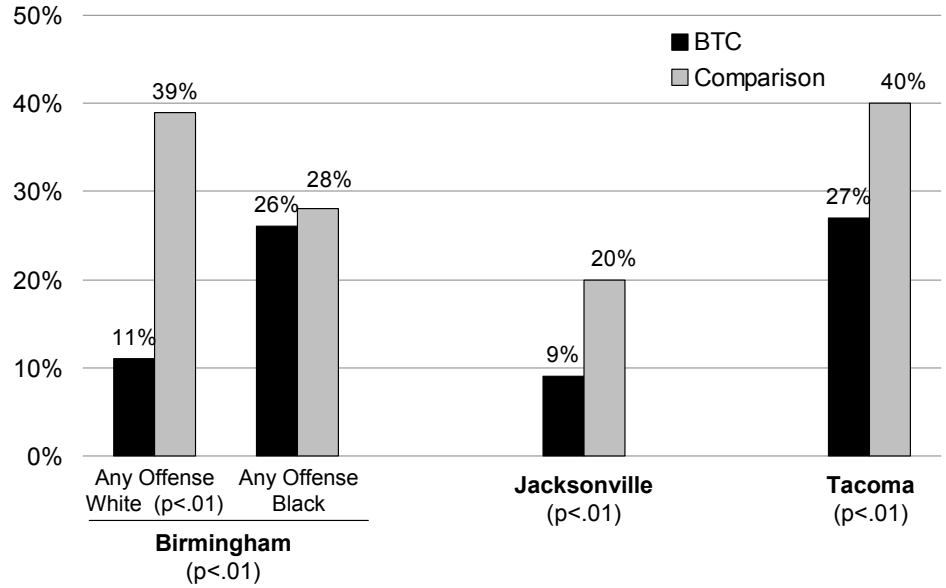


Figure 6.3. Predicted Probability of Drug Offenses with Covariates Held at the Mean Pr(Y=1|x)

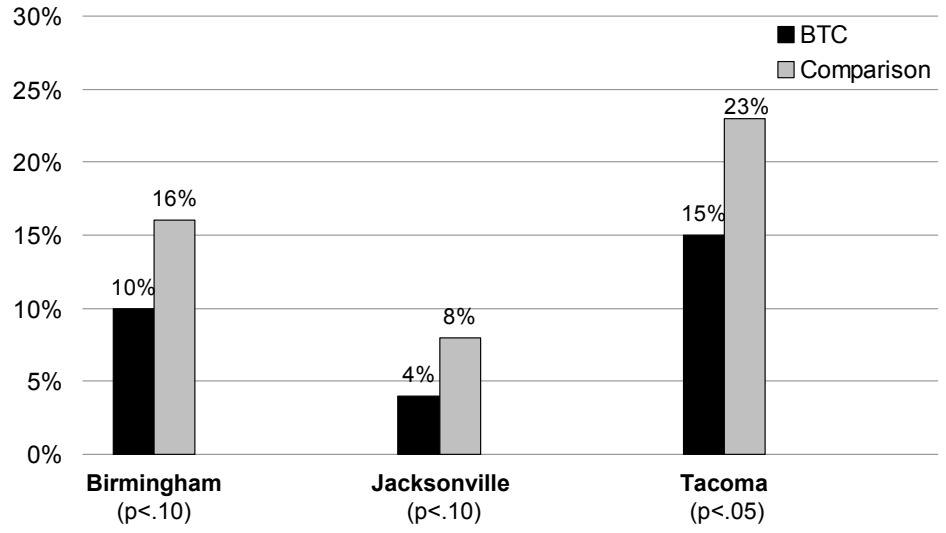
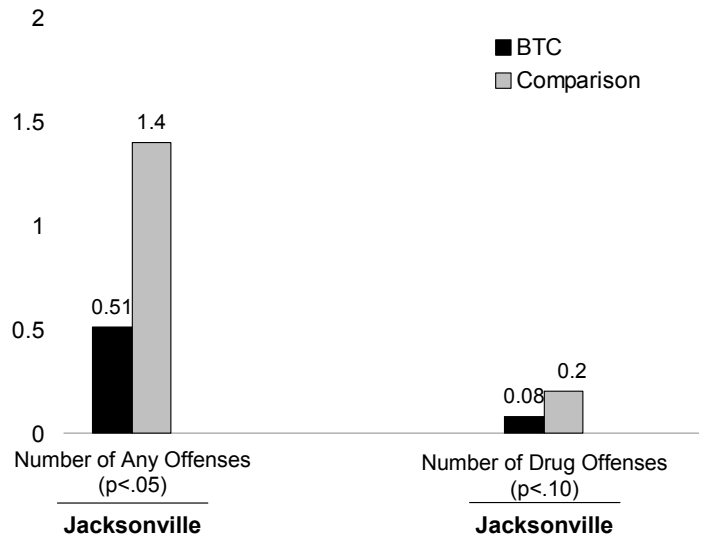


Figure 6.4. Predicted Number of Any Offenses and Drug Offenses with Covariates Held at the Mean: Jacksonville
Pr(Y=1|x)



OFFICIAL ARRESTS

The analysis first assesses BTC's effect on the likelihood and number of officially recorded arrests in the 12 months after sample entry, controlling for offender characteristics and criminal history. Because one of the focuses of the BTC project was to reduce substance-abuse-related crime, there is a substantive interest in drug offenses, so separate analyses were conducted to ascertain whether BTC had an effect on drug offenses. Probit analysis is used for dichotomous outcomes (e.g., any rearrest) and negative binomial models are used in the analysis of court outcomes (e.g., number of rearrests).

Table 6.10 shows the rearrest rates in each site by sample without controlling for differences in sample characteristics. The results suggest that, on several measures, BTC participants in Birmingham and Tacoma were less likely to recidivate during the year after sample entry. These findings were confirmed by the multivariate modeling results.

Table 6.10. Official Recidivism in the 12 months Following Sample Entry

Re-Arrest Outcome	Birmingham		Jacksonville		Tacoma	
	Pre-BTC sample (n = 137)	BTC sample (n = 250)	Pre-BTC sample (n = 309)	BTC sample (n = 334)	Pre-BTC sample (n =351)	BTC sample (n = 382)
Any Re-Arrest[a]	59%	24%***	43%	50%	60%	45%***
Number of Re-Arrests (SD)	1.28 (1.47)	0.38*** (0.81)	0.63 (0.92)	0.77 (0.97)	1.19 (1.54)	0.82*** (1.15)
Any Drug Re-Arrest[a]	25%	12%**	13%	25%	32%	26%
Number of Drug Re-Arrests (SD)	0.43 (0.90)	0.14*** (0.41)	0.17 (0.50)	0.33 (0.63)	0.43 (0.73)	0.33* (0.63)

[a] One-tailed Chi-square tests.

* p < .05 ** p < .01 *** p <.001 for differences between Pre-BTC and BTC samples within sites.

In Birmingham (table 6.11), BTC sample members were significantly less likely to be arrested in the 12 months after entering the study and had significantly fewer arrests during that time than the comparison group did. The results show that BTC's effects on arrest in Birmingham varied by race. For both racial groups, BTC participation significantly reduced the likelihood of being rearrested; however, this effect was considerably stronger for whites. The "average" African American in the BTC sample was predicted to have half as many arrests as the "average" African American in the comparison sample; the difference between white sample members in the two groups was smaller, but still significant.[9] The same results are found regardless of whether the selection bias correction is omitted or included. The selection correction does not significantly improve the model fit to these data; therefore, the conclusions and predicted probabilities are based on the models without the selection correction.

[9] Note that in the current context, the average offender is an imaginary person who has all of the average characteristics of the entire sample. Thus, these estimates do not apply to any one person in the data set, but are approximations of BTC's overall impact.

Table 6.11. Impact in Birmingham: The Probability of Arrest and Number of Arrests in the 12 months After Sample Entry

Variable	Any Arrests	Number of Arrests	Any Drug Arrests	Number of Drug Arrests
BTC Treatment[a]	–1.248***	–1.614***	–0.407**	–0.915***
Age	–0.011	–0.017*	–0.002	–0.005
Female	–0.054	–0.051	–0.025	–0.307
Black	–0.355	–0.334	0.091	–0.004
Black*BTC Tx	0.647**	0.907**	—	—
Education	0.030	0.026	0.069	0.080
Employ Bother	0.124	0.160	–0.136	0.012
Days Worked	–0.011	–0.011	–0.009	–0.016
Months in Jail	–0.002	–0.002	–0.001	–0.006
On Probation	–0.182	0.087	–0.206	–0.356
On Probation*BTC Tx[b]	0.635**	—	—	—
Serious Offender	0.049	0.169	0.021	0.026
Prior Arrests	0.018	0.028**	0.020	0.045**
Prior Offenses	0.001	0.003	0.003	0.003
Prior Drug Use	–0.002	0.002	0.001	0.003
Constant	0.431	0.301	–1.545***	–1.801**
Overdispersion Parameter	—	0.769***	—	1.689***
N	387	387	387	387
–2LL	64.81***	71.93***	23.04**	28.71***
Pseudo–R^2	0.127	0.081	0.066	0.062

[a] Significance tests for this variable are one-tailed.

[b] This interaction is mean-centered; i.e., the overall sample mean has been subtracted from any observation. Thus, when this term equals zero, the BTC treatment variable is evaluated at the mean level of Probation.

*p < 0.10; **p < 0.05; ***p < 0.01

There is no evidence that BTC in Jacksonville reduced the likelihood or number of rearrests in the year after program entry (table 6.12). This finding stands in sharp contrast to the lower rates of crime reported by BTC sample members than pre-BTC sample members on the follow-up survey. It also conflicts with the finding that BTC sample members reported more officially recorded arrests than the pre-BTC sample members did. It is not clear whether the conflicting findings reflect differences in arrest practices, record keeping, or actual differences in recidivism.[10] Risk of rearrest declined as the number of days of work in the past month

[10] Criminal history checks in Jacksonville involved detailed checks of NCIC and local records and included all new offenses except traffic violations. However, prior arrests were measured by arrests recorded in NCIC, which could have reduced the effectiveness of controls for prior offenses.

increased, and past crime, either prior arrests or self-reported offending prior to the baseline, increased the risk of rearrest in three of four models. However, none of the models explained a large portion of the variation in recidivism as indicated by pseudo-R^2 values of .04 or smaller.

Table 6.12. Impact in Jacksonville: Any Re-Arrests in the 12 months Following Sample Entry

Variable	Any Arrest	Number of Arrests	Any Drug Arrest	Number of Drug Arrests
BTC Treatment[a]	0.224	–0.209	0.083	0.733
Age	–0.006	–0.005	0.002	0.003
Female	0.006	0.060	–0.111	–0.034
Black	0.011	0.002	–0.005	0.058
Education	–0.015	–0.001	–0.002	–0.008
Married	–0.224	–0.321*	–0.159	–0.106
Days worked, past 30	–0.006	–0.015**	–0.012*	–0.031***
Months Incarcerated, lifetime	–0.001	–0.004	0.001	0.000
On Probation	–0.249*	–0.226	–0.237	–0.125
Days Used Drugs, past 30 (all drugs)	0.003	0.004	0.006	0.006
Prior Offenses, 6 mos. before baseline	0.003***	0.001	0.003**	0.003
Prior Arrests	0.019**	0.019***	0.002	0.004
Constant	0.030	–0.137	–0.977**	–1.772
Overdispersion Parameter	—	0.249***	—	0.927***
Selection Bias Correction	—	0.369**	0.324*	—
MODEL FIT				
N	643	643	643	643
–2LL	29.790***	34.220***	20.98*	31.860***
Pseudo–R^2	0.034	0.039	0.034	0.040

[a] Significance tests for this variable are one-tailed. *p < 0.10; **p < 0.05; ***p < 0.01

The results displayed in table 6.13 demonstrate that in Tacoma, BTC significantly reduced both the likelihood of an arrest and the number of arrests incurred in the 12 months after sample entry, controlling for other variables. Before selection bias is controlled for, BTC's effect on recidivism is statistically significant and modest in magnitude; after controlling for selection bias, BTC's effect on recidivism remains statistically significant but increases considerably in magnitude.

Table 6.13. Impact in Tacoma: Probability of Arrest and Number of Arrests in the 12 months After Sample Entry

Variable	Any Arrest	Number of Arrests	Any Drug Arrest	Number of Drug Arrests
BTC Treatment[a]	–1.284***	–0.934***	–0.909***	–1.028**
Age	–0.079**	–0.097**	0.026	0.031
Age squared	0.001*	0.001**	0.000	0.000
Female	–0.258**	–0.314**	–0.301***	–0.272
Black	0.129	0.057	–0.016	0.048
Education in years	0.022	–0.007	–0.038	–0.030
Married	0.079	0.091	0.208	0.227
Days worked, past 30	–0.012*	–0.017**	–0.014*	–0.015
Months Incarcerated, lifetime	–0.002	–0.002	–0.001	–0.003*
On Probation/Parole	0.181*	0.026	0.278***	0.253
Prior Drug Use	–0.008**	–0.004	–0.004	–0.002
Prior Offenses	0.001	0.001**	0.000	0.001*
Prior Arrests	0.056***	0.052***	0.009	0.014
Constant	1.575**	1.999***	–0.164	–0.955
Selection Correction[b]	0.722***	0.425**	0.527***	0.549**
Overdispersion Parameter	—	0.550***	—	0.522***
MODEL FIT				
N	677	677	677	677
–2LL	–122.67***	–95.07***	37.950***	26.120**
Pseudo–R^2	0.131	0.051	0.047	0.024

[a] Significance tests for this variable are one-tailed.

[b] In the Bivariate Probit this term refers to the correlation between the error terms (Rho); in the Negative Binomial models this term refers to the Inverse Mills Ratio

*p < 0.10; **p < 0.05; ***p < 0.01

Separate analyses were conducted to test the hypothesis that BTC reduced arrests for drug offenses. The dependent variable in the first set of drug rearrest models is the probability of rearrest on a drug charge; the dependent variable in the second set of models is the number of rearrests on drug charges. BTC was significantly related to lower likelihood of rearrest on a drug offense after controlling for selection bias and resulted in fewer arrests for drug offenses in the first year after entry.

Figure 6.5. Predicted Probabilities of an Arrest with Covariates Held at the Mean [Pr(Y=1|x)]

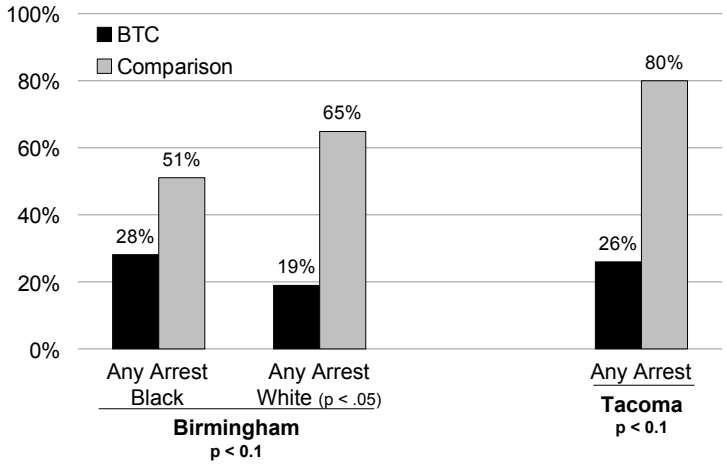


Figure 6.6. Predicted Probabilities of a Drug Arrest (Possession or Sales) with Covariates Held at the Mean [Pr(Y=1|x)]

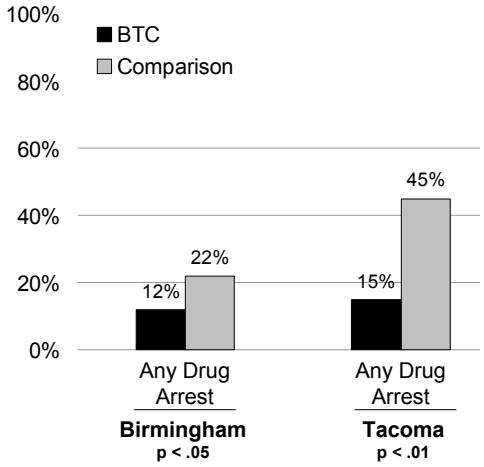


Figure 6.7. Predicted Number of Arrests with Covariates Held at the Mean [Pr(Y=1|x)]

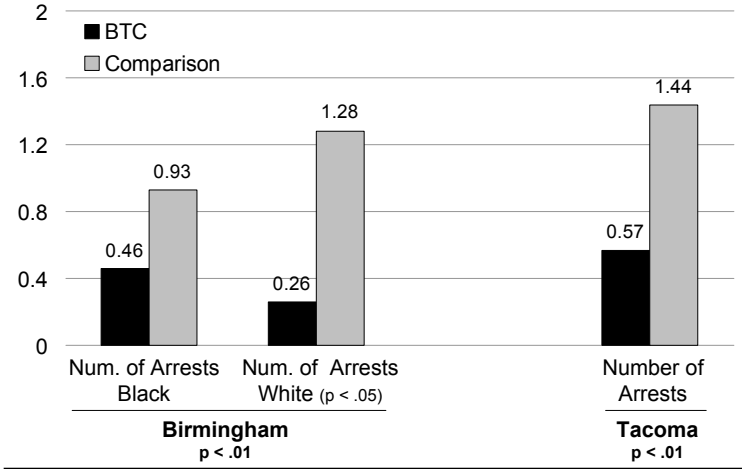
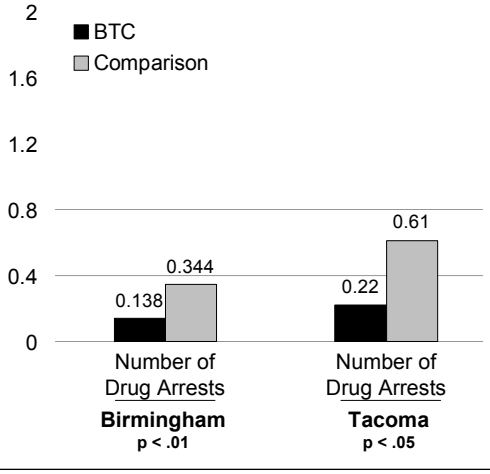


Figure 6.8. Predicted Number of Drug Arrest(s) (Possession or Sales) with Covariates Held at the Mean [Pr(Y=1|x)]



The predicted probabilities of arrest in year after sample entry, with the other variables in the model held at their mean values, are shown for any offense in figure 6.5 and for drug offenses in figure 6.6 for Birmingham and Tacoma, the two sites in which significant differences were found. Figures 6.7 and 6.8 show the predicted number of arrests in these two categories in Birmingham and Tacoma during this time.

The results of the multivariate analysis are as follows:

- BTC defendants were significantly less likely than pre-BTC defendants to be arrested at least once for any offense and for a drug offense in the year after the initial arrest in both Birmingham and Tacoma, but not in Jacksonville.
- BTC defendants had significantly fewer arrests and significantly fewer drug arrests than the pre-BTC defendants in the year after the initial arrest in both Birmingham and Tacoma, but not in Jacksonville.
- In Birmingham, BTC effects varied by race. Reductions in the likelihood of arrest and number of arrests were significantly greater among white than black BTC participants ($p < .05$).

BTC was also hypothesized to delay time to recidivism; therefore, the analysis also examined time to rearrest. Survival analysis was used to test this hypothesis. Specifically, Cox regression was used to estimate time to rearrest for the treatment and control groups, while controlling for the same list of factors as in the above analyses of rearrests. The results of this analysis are presented in table 6.14. These results show that the time to first rearrest was significantly longer for BTC participants than for pre-BTC sample members in Birmingham and Tacoma (hazard ratios are below one) but significantly shorter for BTC participants than for pre-BTC sample members in Jacksonville (hazard ratio above one). The shorter time to first rearrest for the BTC sample in Jacksonville was consistent with the finding of no reduction in the likelihood of arrest.

Table 6.14. Time to First Re-Arrest in Birmingham (Cox Regression Hazard Ratios)

	Birmingham	Jacksonville	Tacoma
BTC Treatment[a]	0.404***	1.395***	0.267***
Age	0.990	0.992	0.901**
Age squared	—	—	1.001**
Female	1.065	0.979	0.765**
Black	0.996	0.983	1.148
Education in years	1.048	0.995	1.046
Married	—	0.733	1.140
Employment Bothers	1.209	—	—
Days worked, past 30	0.988	0.988*	0.982**
Months Incarcerated, lifetime	0.998	1.000	1.000
On Probation/Parole	1.121	0.765	1.386***
Serious Offender	1.143	—	—
Prior Drug Use	1.019	1.004	0.994
Prior Offenses	1.002	1.003**	1.001
Prior Arrests	0.999	1.013*	1.042***
Selection Correction[b]	—	—	1.960***
MODEL FIT			
N	387 (245 Censored)	643 (344 Censored)	677 (333 Censored)
–2LL	52.96***	35.12***	108.46***

[a] Significance tests for this variable are one-tailed.

[b] This term refers to the Inverse Mills Ratio to correct for the probability of inclusion in the sample as described in Appendix A.

*p < 0.10; **p < 0.05; ***p < 0.01

CHAPTER 7.
THE IMPACT OF BREAKING THE CYCLE ON EMPLOYMENT, FAMILY, AND HEALTH PROBLEMS

Participation in Breaking the Cycle was hypothesized to lead directly and indirectly to improvements in social well-being. This chapter tests the hypothesis that BTC participation led to reductions in medical, psychological, employment, social, or family problems. The severity of problems was measured by self-report data collected in interviews using a modified version of the Addiction Severity Index (ASI). The analysis examines composite scale scores of problems during the 30 days before the follow-up, controlling for problems reported at baseline.

The results show that, in all three sites, the severity of family problems at follow-up was significantly lower for the BTC samples than the pre-BTC samples, controlling for other factors and the severity of family problems at baseline. Other findings varied by site. In Tacoma, but not in Birmingham and Jacksonville, BTC participants reported greater reductions than the pre-BTC comparison sample in severity of psychological problems, employment difficulties, and social difficulties. In Jacksonville, but not in other sites, BTC was associated with a significant reduction in employment problems.

The variables used to measure problem severity included the following ASI problem severity composite scores:

- **Medical Problems** is composed of three equally weighted items. Respondents are asked how many days they have experienced medical problems, how troubled they have been by these medical problems, and how important treatment is for these medical problems.
- **Psychological Problems** is composed of 11 equally weighted questions asking if respondents have experienced significant psychological problems in the past 30 days, how many days they have experienced these psychological problems, how bothered they have been by these psychological problems, and how important treatment for these problems is.
- **Employment Problems** is composed of four equally weighted questions asking respondents how many days they have been paid for working in the past 30 days, how much money they received from working, and about the respondent's access to an automobile.
- **Family Problems** is composed of five equally weighted questions asking respondents about their satisfaction with their current marital status, how many days in the past 30 they have had serious conflicts with family members, how troubled they have been by family problems, and how important treatment is for these family problems.

In addition to these four ASI composite measures, we created two other composite scores from the interview items.

- **Employment Difficulties** is based on three equally weighted questions: How many days have you experienced employment problems in the past 30 days? How troubled or bothered have you been by these employment problems? How important to you is counseling for these employment problems? Unlike the ASI employment composite score, which is concerned with objective measures of employment (e.g., how much money respondents earned in the past 30 days), these composite scales measure respondents' perceptions of the severity of their problems.
- **Social Difficulties** measures recent conflicts/problems with non-family members, based on three equally weighted questions: How many days in the past 30 have you had serious conflicts with other people (excluding family members)? How troubled have you been by these social problems? How important to you is treatment for these social problems?

The following sections begin with a basic analysis of changes in the composite scale scores, comparing the baseline scores, the follow-up scores, and the change scores (follow-up score minus baseline score) for the BTC sample with scores for the pre-BTC sample in each site. Scores on all composite scales range from 0 to 1, with higher scores indicating more serious problems.[11] For the change scores, smaller numbers indicate greater reductions in problems. The scores illustrate the magnitude of the differences observed directly at each time point and the relative rate of change, without adjusting for differences in the samples, noted in earlier chapters. All significance tests are two-tailed.

To adjust for the significant differences in samples, multivariate analysis of the significant differences between samples using the procedures described in appendix A follows. This analysis tests the hypothesis that the BTC participants had lower problem scores at follow-up than did the pre-BTC sample (one-tailed test), using models that control for demographic variables, prior criminality, number of days incarcerated in the past 30 days, and other variables related to sample differences at baseline. Tobit was used on scores that had a high percentage of respondents who did not report any problems and thus violated the normality assumption necessary for ordinary least squares (OLS) regression (see Long 1997).

[11] Scale and item means and Cronbach alphas are shown in appendix C.

BIRMINGHAM

Table 7.1 compares the six composite scores for the BTC and pre-BTC groups who completed both interviews. At baseline, the BTC group had significantly lower scores on three ASI composite scales: medical ($p < .05$), employment ($p < .01$), and family problems ($p < .01$). At follow-up, significant differences between the two groups remained on the employment and family problems scales ($p < .01$). While the scores indicate a reduction in problems for most measures, the severity of employment and medical problems actually rose for the BTC participants, and change between the baseline and follow-up was significantly different between the two samples on these measures. However, these differences do not control for sample differences.

Table 7.1. ASI Problem Severity Scores by Group and Interview

ASI Score	Pre-BTC (n=137)	BTC (n=245)
Medical Problems Score		
Baseline	0.183	0.106**
Follow-up	0.131	0.114
Change	–0.052	+0.008*
Employment Problems Score		
Baseline	0.805	0.577***
Follow-up	0.754	0.604***
Change	–0.051	+0.027***
Family Problems Score		
Baseline	0.168	0.076***
Follow-up	0.124	0.044***
Change	–0.043	–0.032
Psychological Problems Score		
Baseline	0.222	0.070
Follow-up	0.108	0.062
Change	–0.114	–0.008
NEW COMPOSITE MEASURES		
Employment Difficulties Score		
Baseline	0.289	0.121
Follow-up	0.216	0.119
Change	–0.073	–0.002
Social Difficulties Score		
Baseline	0.068	0.023
Follow-up	0.070	0.026
Change	+0.002	+0.003

*p < 0.10; **p < 0.05; ***p < 0.01

The multivariate modeling in table 7.2 shows significantly greater reductions in family problems (indicated by the negative sign to the significant coefficient for BTC treatment) for BTC participants than for the pre-BTC sample, once controls for sample differences are introduced. Although the reductions in problems in other areas were not significant, the coefficients on the parameter estimates for BTC were negative on five of the six scales, suggesting an overall pattern of problem reduction.

Table 7.2. BTC in Birmingham: Changes in Health, Employment, Family/Social, and Psychological Problems, controlling for Defendant Characteristics and Sample Differences

Variable	Medical Problems	Employment Problems [a]	Family Problems	Psychological Problems	Employ Difficulties	Social Difficulties
BTC Treatment	–0.019	0.038	–0.084**	–0.056	–0.135	–0.108
Age	0.017***	0.001	0.003	0.012***	–0.010*	0.003
Female	0.184	–0.046	0.029	0.076	0.003	0.106
Black	–0.038	0.086***	–0.060*	–0.081	0.093	–0.029
Education	–0.027	–0.017***	–0.001	–0.017	–0.004	0.001
Married	0.252*	–0.011	0.024	–0.041	0.181	0.043
Days worked, past 30	0.000	0.005***	–0.003*	0.000	–0.012**	–0.004
Month Incarcerated, lifetime	0.003	0.000	0.000	–0.001	0.000	0.000
On Probation	0.072	–0.007	0.040	0.029	–0.103	0.025
Prior Offenses	0.001	0.000	–0.001	0.001	0.000	0.001
Prior Arrests	–0.010	–0.002	0.000	–0.011	0.001	0.000
Prior Drug Treatments	–0.012	0.019	0.016	0.009	0.094***	0.043*
Live with Drug User	0.263	0.032*	0.080	0.190*	0.204	0.058
Heavy Drug Use	–0.005	0.001	0.000	–0.001	–0.002	–0.003
Prior Medical Problems	0.689***	—	—	—	—	—
Prior Employment Problems	—	0.634***	—	—	0.146	—
Prior Family/Social Problems	—	—	0.329***	—	—	0.471*
Prior Psychological Problems	—	—	—	0.580***	—	—
Days in Jail, past 30	–0.018***	0.008****	–0.001	0.001	–0.001	–0.007**
Time between Interviews	0.001*	0.000	0.000	0.000	0.000	0.000
Constant	–1.149***	0.213**	–0.134	–0.407*	0.174	–0.534**
Sigma	0.707***	—	0.234***	0.417***	0.659***	0.381***
MODEL FIT						
N	359	359	359	359	359	359
Pseudo–R^2	0.130***	0.527***	0.226***	0.155***	0.076***	0.133***

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

[a] The results from this model are based on an OLS regression; the other models were estimated using Tobit regression.

The models also show other significant predictors of changes in problems at the time of follow-up. Current medical problems increased significantly with age. They decreased as the number of past-month jail days increased, suggesting that jail medical care may have been received. Somewhat surprisingly, current medical problems were marginally higher among those who were married, controlling for other variables in the model. Current employment problems had the expected correlates. African Americans had more severe employment problems. Those with fewer years of education and few days of employment in the month before the baseline interviews also had increased employment problems, controlling for other factors. Similarly, current employment problems increased with the number of days in jail in the month before follow-up. A history of drug treatment increased employment difficulties. Family problems were marginally more severe among African Americans and increased as days of work in the month before baseline increased. Psychological problems increased in severity with age and were marginally higher among those who lived with a substance abuser. Social difficulties increased as days in jail in the month before baseline decreased and were marginally higher among those with a history of drug treatment.

JACKSONVILLE

Table 7.3 compares the six composite scores of respondents from the BTC and pre-BTC groups who completed both interviews. At baseline, the BTC group had lower scores on the employment ($p < .01$) and psychological problems ($p < .05$) scales. Furthermore, the BTC scores on the social difficulties scale were somewhat lower ($p < .10$). At follow-up, the BTC sample had significantly less severe problems than the pre-BTC sample in four of the six areas: employment problems ($p < .01$), employment difficulties ($p < .01$), family problems ($p < .05$), and psychological problems ($p < .01$).

Two findings in table 7.3 are noteworthy. First, all of the change scores are negative for both groups, indicating that both groups consistently reported less severe problems on the follow-up interview than on the baseline interview. Second, only in the case of employment difficulties was the change score for BTC significantly different (and larger) than the reduction in problems reported by the pre-BTC sample ($p < .10$). It is evident that the groups' average reduction in severity of problems was virtually indistinguishable in the areas of employment and psychological problems. Although the differences between the groups' change scores on the medical and family problems scales appear large, they are not statistically significant.

Table 7.3. Jacksonville Composite Problem Scores by Group and Interview

ASI Score	Pre-BTC (n=310)	BTC (n=215)
Medical Problems Score		
Baseline	0.198	0.222
Follow-up	0.108	0.118
Change	–0.090	–0.104
Employment Problems Score		
Baseline	0.695	0.595***
Follow-up	0.638	0.536***
Change	–0.057	–0.059
Family Problems Score		
Baseline	0.149	0.121
Follow-up	0.090	0.051**
Change	–0.059	–0.070
Psychological Problems Score		
Baseline	0.219	0.177**
Follow-up	0.130	0.084***
Change	–0.080	–0.093
NEW COMPOSITE MEASURES		
Employment Difficulties Score		
Baseline	0.202	0.205
Follow-up	0.154	0.102**
Change	–0.048	–0.104*
Social Problems Score		
Baseline	0.099	0.073*
Follow-up	0.046	0.031
Change	–0.053	–0.042

Significance of difference between the BTC and pre-BTC samples:
*p < 0.10; **p < 0.05; ***p < 0.01

The first column in table 7.4 displays the results of the analysis of BTC's effect on medical problems. These results show that BTC did not significantly alter clients' medical well-being, independent of the other variables in the model. Medical problems increased with age, as expected, and were more severe among women and those who had received drug treatment prior to the baseline.

The OLS regression analysis assessing BTC's effect on severity of employment problems[12] found that, independent of other factors, BTC significantly reduced employment problems. Employment problems were more severe among African Americans, increased with days in jail in the month before baseline, and increased as years of education decreased.

Table 7.4. Impact in Jacksonville: BTC's Impact on Well-Being

Variable	Medical Problems	Employment Problems [a]	Family Problems	Psychological Problems	Employ Difficulties	Social Difficulties
BTC Treatment	0.012	–0.058**	–0.140***	–0.012	–0.075	–0.145
Age	0.028***	0.001	0.002	0.002	0.001	–0.007
Female	0.505***	–0.001	0.022	0.108*	–0.050	0.181*
Black	0.190	0.092***	–0.003	–0.010	0.298***	–0.054
Education	0.027	–0.020***	0.007	0.008	–0.010	0.018
Married	0.382*	0.018	–0.106	–0.046	0.166	–0.086
Days worked, past 30	–0.007	0.002	–0.001	0.001	–0.010*	–0.004
Months Incarcerated, lifetime	0.002	–0.001*	0.001	0.001	–0.004	0.002
On Probation	0.242	0.007	0.015	0.130**	0.375***	0.063
Prior Offenses	–0.001	0.001	0.001	0.001	0.001	0.001
Prior Arrests	0.004	0.003**	0.001	–0.002	0.010	–0.003
Prior Drug Treatments	0.028	0.001	–0.006	0.015	–0.013	0.006
Age First Used Drugs	–0.018	–0.002	0.001	–0.005	–0.006	0.001
Live with Drug User	0.004	–0.055	0.085	0.015	–0.217	0.064
Heavy Drug Use	0.011**	0.001	0.002	0.001	–0.004	0.002
Prior Medical Problems	0.702***	—	—	—	—	—
Prior Employment Problems	—	0.482***	—	—	0.670***	—
Prior Family/Social Problems	—	—	0.348***	—	—	0.503***
Prior Psychological Problems	—	—	—	0.874***	—	—
Days in Jail, past 30	–0.006	0.010***	0.028***	0.004*	–0.029***	0.053***
Days in Jail, squared	—	—	–0.001***	—	—	–0.002***
Time between Interviews	–0.001	0.001	0.001	0.001**	0.001	0.001
Constant	–2.478***	0.403***	–0.314*	–0.703***	–0.561	–0.490
Sigma	1.050	—	0.346	0.382	0.745	0.489
MODEL FIT						
N	465	466	457	441	460	466
Pseudo–R^2	0.142***	0.398***	0.104****	0.237***	0.125***	0.130***

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

[a] The results from this model are based on an OLS regression.

Family problems were significantly lower among BTC participants than the pre-BTC sample, controlling for other factors. However, BTC participation had no significant impact on respondents' reports of psychological problems. Psychological problems at follow-up were marginally higher among women and significantly higher among those who were on probation at the time they entered the sample.

The last two columns in table 7.4 present the results of the analyses of the employment difficulties and social difficulty severity scores. While the analysis of perceived employment

[12] OLS regression was used in this analysis because the dependent variable's distribution resembled the normal distribution much more closely than the other dependent variables analyzed in this chapter.

difficulties in table 7.3 preliminarily indicated that BTC clients exhibited a larger reduction in employment difficulties than the comparison group did, this difference disappears once other factors are taken into account. The final column shows that BTC participation did not result in a reduction in social difficulties.

TACOMA

Table 7.5 compares the six composite scores for the BTC and pre-BTC groups that completed both interviews. At baseline, the BTC group had significantly lower scores on four of the six composite scales: employment problems ($p < .10$), family problems ($p < .05$), employment difficulties ($p < .05$), and social difficulties ($p < .05$). Although both groups reported a decline between baseline and follow-up in problems in all areas, the only significant reductions occurred in the domains of psychological problems and employment difficulties.

Table 7.5. Tacoma Composite Problem Scores by Group and Interview

ASI Score	BTC (n=286)	Pre-BTC (n=256)
Medical Problems Score		
Baseline	0.295	0.241
Follow-up	0.279	0.235
Change	–0.016	–0.006
Employment Problems Score		
Baseline	0.791	0.824*
Follow-up	0.778	0.813
Change	–0.013	–0.011
Family Problems Score		
Baseline	0.163	0.202**
Follow-up	0.094	0.149***
Change	–0.069	–0.053
Psychological Problems Score		
Baseline	0.272	0.284
Follow-up	0.187	0.240**
Change	–0.085	–0.044*
NEW COMPOSITE MEASURES		
Employment Difficulties Score		
Baseline	0.189	0.248**
Follow-up	0.180	0.174
Change	–0.009	–0.074**
Social Difficulties Score		
Baseline	0.121	0.168**
Follow-up	0.063	0.106**
Change	–0.058	–0.062

Significance of difference between the BTC and pre-BTC samples: *p < 0.10; **p < 0.05; ***p < 0.01

Table 7.6. Impact in Tacoma: BTC's Impact on Well-Being

Variable	Medical Problems	Employment Problems [a]	Family Problems	Psychological Problems	Employ Difficulties	Social Difficulties
BTC Treatment	0.064	0.036	–0.119***	–0.105**	–0.143**	–0.192***
Age	0.007*	0.002*	–0.001	0.002	–0.001	–0.004
Female	0.066	–0.001	0.034	0.016	–0.050	0.140**
Black	0.034	0.034	0.019	0.004	0.130**	0.074
Education	0.031	–0.033***	–0.003	–0.038***	–0.023	0.032*
Married	–0.069	–0.041	0.066	0.003	0.060	0.086
Days worked, past 30	–0.003	0.005***	–0.003	–0.004*	–0.003	–0.001
Months Incarcerated, lifetime	0.002	0.000	0.000	0.003***	0.002	0.000
On Probation	–0.075	–0.017	0.034	–0.006	0.010	0.038
Prior Offenses	0.001	0.001	0.001	0.001	0.001	0.000
Prior Arrests	–0.005	0.004*	0.005*	–0.002	–0.005	0.010**
Prior Drug Treatments	0.024**	0.004	0.006	0.001	0.002	0.005
Age First Used Drugs	–0.001	–0.001	–0.003	–0.002	–0.014**	–0.014**
Live with Drug User	–0.009	0.011	0.034	0.019	0.157**	0.020
Heavy Drug Use	0.002	0.001	0.002*	0.001	–0.004**	0.000
Prior Medical Problems	0.459***	—	—	—	—	—
Prior Employment Problems	—	0.565***	—	—	0.322***	—
Prior Family/Social Problems	—	—	0.372***	—	—	0.424***
Prior Psychological Problems	—	—	—	0.695***	—	—
Days in Jail, past 30	–0.002	0.007***	0.023***	0.004*	–0.009***	0.036***
Days in Jail, squared	—	—	–0.001***	—	—	–0.001***
Time between Interviews	–0.001	0.001	–0.001**	0.001	–0.001**	–0.001
Constant	–0.604**	0.514***	0.144	0.397**	0.830***	–0.372
Sigma	0.554	—	0.282	0.349	0.491	0.423
MODEL FIT						
N	515	512	507	488	508	516
R^2	0.087***	0.330***	0.198***	0.206***	0.071***	0.146***

*$p < 0.10$; **$p < 0.05$; ***$p < 0.01$

[a] The results from this model are based on an OLS regression.

BTC participants had a significantly larger decrease in psychological problems than the pre-BTC sample did. This decrease may have resulted from their contacts with case managers who worked with them to seek drug treatment. However, employment difficulties decreased significantly more for the comparison group (for which difficulties were higher to start with) than for the BTC sample, possibly because the former were not involved in time-consuming BTC requirements.

The multivariate models that controlled for sample differences found a slightly different pattern, but also indicated reductions in problems in multiple areas. BTC participants had significantly lower scores on four of the six composite scales: psychological problems, family problems, employment difficulties, and social difficulties. The severity of medical problems, while not related to BTC, increased with age and the number of drug treatment episodes prior to baseline (an indicator of length and severity of drug use). The severity of employment problems (the ASI composite score) increased with days in jail in the month before baseline, increased as years of education decreased, and increased as days of work in the month before baseline decreased. Other findings on factors that affected outcomes independently of the significant effects of BTC showed that (1) psychological problems increased in severity as years of education decreased and months of prior incarceration increased; (2) employment difficulties were more severe among African Americans and those who lived with drug users, increased as age of first drug use decreased, and increased as heavy drug use in month before baseline decreased; and (3) social difficulties were more severe among women, increased with the number of prior arrests, and increased as age of first drug use decreased.

SUMMARY OF BTC'S EFFECTS ON EMPLOYMENT, FAMILY/SOCIAL, AND HEALTH PROBLEMS

In all three sites, the severity of family problems at follow-up was significantly lower for the BTC samples than for the pre-BTC samples, controlling for other factors and the severity of family problems at baseline. However, evidence of reduction in other problem domains was mixed. Tacoma BTC participants reported greater reductions than the pre-BTC comparison group did in the severity of psychological problems, employment difficulties, and social difficulties. However, these gains were not observed in the other BTC sites. In Jacksonville, but not in other sites, BTC was associated with a significant reduction in employment problems.

Figures 7.1 through 7.3 illustrate the difference between the BTC and comparison samples at follow-up on those composite measures found to differ significantly on employment, family/social, and health problems. The estimates show difference in composite scores, holding other variables in the model at their average values.

Figure 7.1. Predicted Probabilities of Family Problems with Covariates Held at the Mean

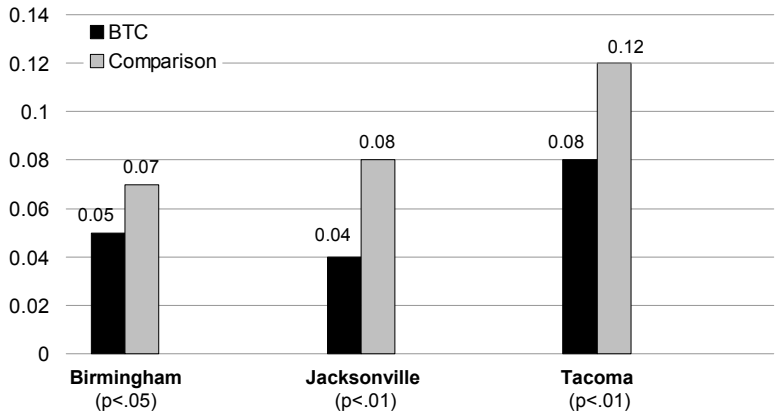


Figure 7.2. Predicted Probabilities of *Employment Differences* with Covariates Held at the Mean

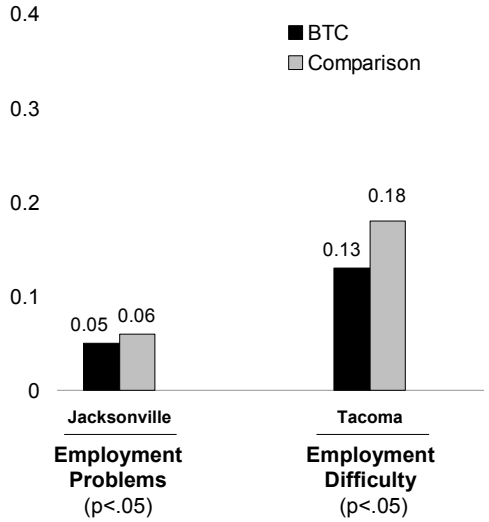
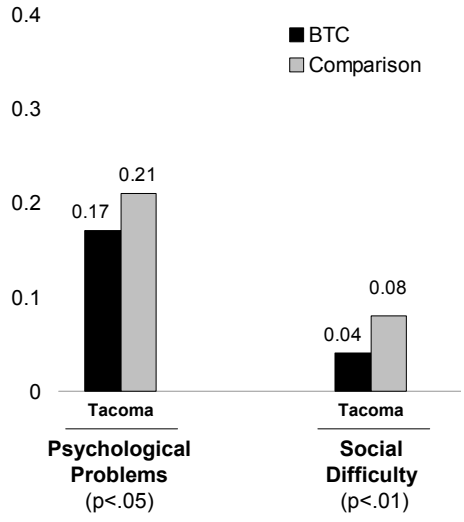


Figure 7.3. Predicted Probabilities of *Other Problem Reductions* with Covariates Held at the Mean



PART III.

BTC COSTS AND BENEFITS

CHAPTER 8.
RETURNS TO THE INVESTMENT IN BTC

This chapter presents the results of a cost-benefit analysis (CBA) of the three BTC sites. The CBA documents the costs of BTC, assigns monetary values to the reductions in crime found in the impact evaluation of BTC, and estimates the ratio of benefits to the costs for each of the three sites. From a public policy perspective, CBA is a powerful analytic tool that can be used to evaluate the impact of an intervention (Merrill 1998). The value of CBA stems from the hope that for every dollar spent, there are savings that exceed that amount.[13] CBA can be used to measure the effectiveness of a broad spectrum of programs, such as public initiatives supported by government funding or private projects undertaken by an insurance company. Put in business terms, a positive CBA affirms that the return on investment is greater than the investment itself.[14]

The costs of BTC include expenditure of BTC funds, as well as the monetary value of agencies' resources required to add BTC services to felony case processing. This strategy for measuring costs parallels the impact evaluation, where BTC outcomes were assessed relative to outcomes that existed prior to the introduction of BTC. In other words, we are interested in the costs and benefits of providing BTC services to felony case processing compared with pre-BTC services.

The benefits estimated in this CBA are those resulting from crime reduction. The impact evaluation found a reduction in drug use in addition to a reduction in crime. However, none of the cost-saving benefits associated with reduced drug use, such as decreased health care costs or increased employment and earnings, were detected in the CBA. The failure to observe these outcomes may have been due to the relatively short follow-up period of nine months; it may take longer to realize these benefits. The impact evaluation also found reductions in family problems. However, these benefits are excluded from this analysis in the absence of a strategy for placing monetary value on reductions in family problems. In sum, for a variety of reasons, certain benefits have been excluded from this CBA. The effect of these exclusions is to underestimate the benefits of BTC and, consequently, to err on the conservative side.

The crime reduction costs were based on two outcomes from the impact evaluation. The first was a reduction in self-reported offenses reported on the follow-up survey. Each interview took place approximately nine months after the start of the intervention and asked about criminal activity during the six months immediately preceding the interview. As described in chapter 5, BTC participants in all three sites were significantly less likely to report offending during that six-month period. The second outcome from the survey, a reduction in the likelihood

[13] Typically, a CBA estimates costs and benefits either from the perspective of society as a whole or from the perspective of funding agencies. This analysis takes the former approach.

[14] While the cost analysis literature is still fairly limited with respect to substance abuse interventions, an excellent summary of the extant literature exists in Cartwright (2001).

of arrest, was measured by official arrest records in the year after sample entry (described in appendix A). In Birmingham and Tacoma (but not in Jacksonville), BTC participants were significantly less likely to be arrested during the year than were members of the comparison groups.

The CBA shows a positive return on the investment in BTC at all three sites. The value of averted crime costs for every dollar of investment was estimated to be $2.30 in Birmingham, $2.60 in Jacksonville, and $5.30 in Tacoma. While not all of these savings can be readily converted into local budget reductions, since they represent savings to society as a whole (victims, public jurisdictions, insurers, citizens, and the criminal justice system, including law enforcement, court, and corrections systems), they do show a significant and positive benefit from the program. The following sections describe the methods used in this CBA, the results of the CBA, and the limitations of the CBA.

METHODOLOGY

Calculation of the CBA ratio for each site involved four steps: (1) estimating the additional per-person cost of the BTC intervention; (2) estimating the per-person value of averted offending; (3) estimating the per-person value of averted arrests; and (4) calculating the CBA ratio.

Step One. Estimating the Additional Per-Person Cost of BTC

The estimation of the additional costs of the BTC intervention for felony defendants included three cost categories:

- BTC program operating costs[15]
  - Testing and assessment
  - Referral and case management
  - Direct services from BTC
  - Ongoing operations of the MIS
- Costs of treatment outside of BTC
- Cost to the courts, prosecutors, and defense bar, including sanctions

In many cost-benefit studies, accounting methodologies (Harwood and McCliggot 1998) or economic methodologies (French et al. 1997) are used to estimate program costs. However, these approaches were not deemed appropriate for the BTC program, as it was an add-on to the existing costs of the TASC program. An economic or accounting approach would require separating the costs of the preexisting TASC activities from those of the BTC effort. This would have been difficult in all sites, and particularly difficult in Birmingham. Instead, BTC was treated as an independent new effort, with its own costs covered by the grants. For example, new staff were hired for the intervention, new equipment was purchased, and space was paid for by the

[15] Note that this excludes planning and start-up costs.

NIJ and Office of National Drug Control Policy (ONDCP) program funding. Thus, after consultation with staff at each site, it was determined that BTC costs were most easily and accurately accounted for on the basis of the NIJ/ONDCP funding. In addition, where appropriate at each site, costs for services supplied by and to the TASC to operate BTC were included.

This appeared to be the most straightforward way of presenting cost data to policymakers, who have less interest in the intricacies of economic or accounting theory and more concern with how much programs are costing them directly. Recent events appear to reinforce this view, particularly as it relates to accounting theory and rules, where using more complicated methods of accounting have led to varied and idiosyncratic results for a number of public companies.

A set of site-specific costs were determined for each site based on the local BTC budgets, the local TASC costs for BTC, and site-specific treatment and criminal justice costs. The average per-person cost was estimated to be the total costs for a defined time period divided by the number of persons served during that period.

Step Two. Estimating the Per-Person Value of Averted Offending

Estimates of the monetary value of crime were taken from the published literature on the social and economic costs of crime (Miller et al. 1996; Rajkumar and French 1997; Roman and Harrell 2001). The costs by offense type used in this analysis were based on estimates provided by Roman and Harrell (2001). These estimates included direct costs to the public and direct costs to the victims of crime. The direct costs to the public included criminal justice system costs and were estimated on the basis of arrest outcomes. The direct victim costs included medical care, mental health care, lost productivity, and property loss, but did not include compensation for pain and suffering.[16] Because some “hard to quantify” costs were excluded from the analysis, the result is a conservative estimate of the costs of crime.

Cost per Crime by Type of Offense	
Arson	$23,832
Assault	$2,035
Burglary	$1,021
Drug dealing and drug manufacturing	$2
Forgery	$72
Prostitution	$28
Robbery	$3,576
Rape	$6,570
All other	$923

[16] Intangible costs, such as pain and suffering, are difficult to estimate reliably. In the absence of a consensus in the literature about the magnitude of these types of benefits, intangible costs were not included in this analysis.

Criminal offending was measured from self-report data on the commission of crimes, regardless of whether an arrest was made. Survey respondents were asked how often they committed each of 14 types of offenses during the six months before the baseline and follow-up interviews. Survey responses were used to calculate the number of crimes, by crime type, committed by the BTC sample and pre-BTC sample during both time periods.

To estimate the total cost of crime for a survey respondent, the number of crimes in each category was multiplied by the cost per crime (shown above), and crime costs were summed across the 14 crime types. The distribution of the cost of crime variable was highly skewed, as more than half of each sample reported no criminal activity. Using only survey respondents who reported committing at least one offense, the costs of offenses committed by lawbreakers were estimated using linear regression. This regression model was specified as $p(O_{fu}) = f(p(O_{bx})$, Age, Race, Education, Gender, Group)[17] where the cost of offenses during the follow-up period (O_{fu}) was a function of the cost of offenses during the six months prior to baseline (O_{bx}), age (<25, 25–44, >44), race (white, black, other), educational level (<high school [HS], HS graduate, >HS), gender, and study group (BTC or comparison). The least squares mean for each group is the total cost of crimes committed by group members. To estimate the per-person cost, this mean was divided by the number of persons in each group.[18]

Step Three. Estimating the Per-Person Value of Averted Arrests

The cost of arrest consists of the estimated days of incarceration following the first arrest in the year after the start of the intervention. Other costs of arrests, such as those involving law enforcement and the courts, were not included because significant changes in the number of arrestees would be necessary to change the number of police or court personnel.

The daily cost of averted incarceration is based on the discounted value of a day in jail. The average daily cost of jail was estimated to be $70 in Birmingham, based on the national estimate provided in Roman and Harrell (2001), and a $60 local estimate provided by Tacoma. The analysis did not use the full cost of a day in jail, because there are significant fixed costs that do not change as the number of inmates changes. To be very conservative, the marginal

---

[17] Note that a variety of other independent variables were tried in the logistic and linear models without making any difference in the results in terms of either the significance or magnitude of the “group” variable. Thus, a simple model with basic demographic factors was used throughout.

[18] In Birmingham, propensity score analysis was used to identify two comparable groups of respondents to control for selection bias. The propensity scores were estimated using a logistic regression where the dependent variable was the dichotomous membership in the control (= 0) or experimental (= 1) groups. The independent variables included age, race, gender, whether or not the person had been in jail during the 30 days prior to the interview, and whether the person had committed a serious crime (homicide, assault, robbery, burglary, or rape) in his or her lifetime. The number of days in the past 30 that the person had experienced medical, psychological, drug, or alcohol problems (each as a separate independent variable) were specified in the model as well. The model had a Cox & Snell R^2 of .287 and successfully classified 80 percent of the cases into the correct group and a –2log likelihood of 529.623. The fitted probabilities of membership in the intervention group (= 1) for each person were calculated and arrayed by the propensity scores from the lowest to the highest (this is irrespective of actual group membership) in four quartiles. For each quartile, members in the actual comparison and BTC groups were selected to create a matched set of persons in that quartile. The results were calculated as the probability of law-breaking for the resulting matched samples of 96 BTC participants and 74 comparison group members. The costs and benefits were calculated using these matched samples and the resulting per-person estimates applied to the full sample size to permit comparisons to the cost estimates.

cost attributed to jail savings was assumed to be 30 percent of the cost of a full day. This is lower than, for example, the variable cost for hospitals, which run at about 60 percent of the total. The capital and staffing costs of jails are expected to be less variable than hospital costs. To be on the safe side, the marginal savings were discussed with the two sites to ensure consensus between the individual programs and the researcher.

The average duration of incarceration following arrest is assumed to be six months, based on statistics from the Bureau of Justice Statistics (1995), Camp and Camp (1996), and Langan and Brown (1997).

Step Four. Calculating the Cost-Benefit Ratio

Based on the results of the first three steps, the CBA is then calculated as the ratio of the total per-person benefits divided by the total per-person costs. If the CBA ratio is greater than one, BTC is said to show benefits relative to the investment (Merrill 1999).

RESULTS

BTC Cost per Person

Birmingham. Working closely with the staff of the Birmingham TASC, we analyzed the BTC program budgets to identify the costs that should be attributed to the operation of BTC. In Birmingham, BTC costs included budget items for screening, monitoring, case coordination, treatment provision, and data collection and retrieval. In addition, administrative costs for program operation and operating costs of the MIS, considered vital to the operations of the entire effort, were included. However, start-up costs for TASC related to BTC and development costs for the MIS were not included, since they were deemed one-time costs.

Using this approach, it was estimated that the direct cost of the intervention was $2.98 million, out of a total NIJ/ONDCP budget of $3.81 million for BTC. TASC costs estimated to be $2.14 million were added (these figures were provided by and discussed with the Birmingham TASC), for a total cost of $5.12 million. This covered the costs of the BTC services for 7,566 persons who either were screened positive for drugs and/or alcohol or indicated that they had a substance problem. Thus, the cost per person for the Birmingham site was estimated to be $677.

The $677 per-person cost was for the entire population. However, the estimates of costs of averted crime in Birmingham were based on samples generated using propensity score analysis. A legitimate question, therefore, was whether this per-person figure of $677 would apply to the matched sample used for the estimates of benefits. The MIS data alone provided only limited information to answer this question, but combining them with information from the ASI permitted us to estimate the percentage of persons in the total population and in the matched samples who had received treatment services that could affect the cost of services. While only 13 percent of the total population had received treatment, 34 percent of the experimental sample reported receiving treatment. On the basis of the Birmingham TASC budget, the total cost of treatment services was $421,183, or an additional $428 per person treated over and above the costs of screening, assessment, and monitoring afforded to all persons. It should be noted that the average cost of $428 per person for treatment is not the total cost of treatment, but the average across all persons who received *any* treatment,

regardless of the amount. Assuming that 34 percent of the population received treatment services, instead of the 13 percent of the entire sample, and using the average of $428 per person as the cost of treatment, the overall total average cost per each matched sample person was raised to $767.

The cost estimates for Birmingham do not include the costs of judicial monitoring because so few compliance hearings were held and the additional cost to routine case processing was minimal (see chapter 4). It was determined that while this represented a small added cost to BTC, it would make little difference to the CBA.

Tacoma. Most of the costs associated with the Tacoma site were covered by the overall BTC NIJ/ONDCP budget. Tacoma budget documents provided details on the relevant cost centers, such as personnel, equipment, testing, communications, travel, and BTC offices. Budget documents also specified the time frames in which expenses were incurred. On the basis of this information, a 12-month budget was calculated by prorating each of the line-item costs to a one-year time frame. For example, if an individual's cost covered a 36-month period, one-third of those costs were included in the budget estimations.

Other costs outside the BTC budget included court costs, drug treatment, and use of court personnel. The court costs of $17,887 included compliance hearings by judges and court staff and were based on staff salary levels and amount of time devoted to these efforts. Drug treatment costs, which were separate from the NIJ budget, were calculated on the basis of services utilization data provided by the Pierce County Alliance (PCA). For residential drug treatment, the average number of days of care (56 days) was also provided by PCA. For outpatient services, the average number of visits (23 visits) was based on current research by the author using data from the Washington State substance abuse agency, and costs of these services were also derived from the state data. In addition, the costs for the judges, court clerks, and the Prosecutor's office, including salaries, fringe benefits, and time dedicated to the BTC project, were provided by those entities to the PCA.

Total treatment caseloads, as well as treatment caseloads by levels of care, were provided by the PCA. Individuals were considered to be in BTC if they were assessed, were found in need of services, and had a treatment plan developed for them by BTC. Caseloads were based on six months of data, so the number was doubled to derive annual caseloads. It is assumed that the number of persons involved in the intervention represented a nonoverlapping population, and individuals were not counted more than once in a year. The total treatment caseload in Tacoma for a one-year period was estimated to be 1,544 cases.

Tacoma BTC Costs

BTC/NIJ Budget	$1,299,614
Treatment	$932,718
Courts	$17,887
Prosecutor's Office	$5,897
Total BTC Costs	$2,256,116

Based on estimated total BTC costs of $2,256,116 and a total treatment caseload of 1,544 persons during that one-year period, the average BTC cost per person was $1,461.

Jacksonville. The costs for the Jacksonville site were estimated following an approach similar to that of Tacoma. However, because the costs of treatment were included in the budget (as opposed to Tacoma, where they were separate reimbursements), it was a more straightforward calculation. In addition to detailed budget information, actual expenditure information by cost center and activity was provided. While Jacksonville data were available for the entire project period, the budget information used in the analysis covered a specific six-month period, from October 2000 to March 2001, when the program was functioning at its maximum level of activity. Treatment caseloads were also available for that period, so a cost per person could be estimated. For this period, BTC costs were broken down into personnel, overhead, and contract services, which included payments to service providers for treatment costs. In addition, costs of jail personnel working to assist BTC early identification in the initial appearance court and the cost of sanctions were added to create a total six-month cost.

Jacksonville BTC Costs	
Personnel	$198,840
Overhead	$129,192
Contractual	$898,728
Jail Staff	$8,502
Cost of Sanctions	$4,044
Total BTC Costs	$1,239,306

According to performance tracking information, over the six-month period, 1,093 persons were ordered to BTC and received a treatment plan. Based on total BTC costs of $1,239,306 and the treatment caseload, the average cost per person was estimated to be $1,133.

BTC Benefits of Reduced Offending

The next step of the CBA examined the costs of crimes among those who committed crimes. Table 8.2 shows benefits estimations for the pre-BTC sample and the BTC sample at each site. The number of lawbreakers, the average cost of crime per lawbreaker, and the total costs of crimes by lawbreakers are included. Because the difference in total costs of crime among lawbreakers between the pre-BTC and the BTC samples was not significant in Birmingham and Tacoma, the same average value was used for both the BTC and pre-BTC samples ($2,823 in Birmingham and $20,354 in Tacoma). Therefore, in those two sites, the benefits reflect solely the lower proportion of BTC participants committing offenses. The total costs of crime in each group are divided by the sample size to calculate the per-person cost of crime. The last row in table 8.2 shows the dollar estimate of the total benefits of crime reduction from BTC for each site during a one-year period (i.e., the cost of crime by the pre-BTC sample minus the cost of crime by the BTC sample). The results show positive benefits to BTC in all sites, ranging from $479 in Birmingham to $7,324 in Tacoma.

Table 8.1. Benefit Calculations by Site

	Birmingham		Jacksonville		Tacoma	
	Pre-BTC	**BTC**	**Pre-BTC**	**BTC**	**Pre-BTC**	**BTC**
Number of lawbreakers in the impact sample	37	16	60	31	111	51
Average cost of crimes per lawbreaker	$2,823	$2,823	$22,602	$10,036	$20,346	$20,346
Total costs of crime	$104,551	$45,168	$1,356,120	$311,116	$2,258,406	$1,037,646
Impact sample size[a]	96	74	312	215	244	277
Crime cost per sample member	$1,089	$610	$4347	$1447	$11,071	$3,746
Benefit per sample member	$479		$2,900		$7,324	

[a] Birmingham sample sizes based on propensity score matched samples.

BTC Benefits of Reduced Arrests

In addition to benefits from reduced offending by the BTC sample, benefits were estimated as a result of cost savings resulting from reduced arrests in the BTC sample. The estimation is based on reduced incarceration following the first arrest during the follow-up year.[19] During the follow-up year, 39 percent of the pre-BTC sample and 8 percent of the BTC sample in Birmingham and 50 percent of the pre-BTC sample and 38 percent of the BTC sample in Tacoma were arrested. When these proportions are applied to the full BTC sample in each site, reductions of 120 arrests attributable to BTC participation in Birmingham [(387 * .39) – (387 * .08)] and 65 arrests in Tacoma [(542 * .50) – (542 * .38)] were estimated.

Based on 120 arrests, a daily incarceration cost of $70, and 182.5 average incarceration days, the total arrest costs avoided in Birmingham were $1.533 million. Multiplying the total arrest costs by the marginal costs of arrest (.30) and dividing by the total number in the sample (387) produced a savings from reduced arrests of $1,320 per person in Birmingham. Using the same approach for Tacoma, but assuming $60 per day for incarceration and a reduction of 65 arrests, the savings were $394 per person.

[19] Only the first arrest was used because including all arrests would overestimate the savings, since it would overrepresent arrests not followed by incarceration.

The Cost-Benefit of BTC

Table 8.2 summarizes the benefits of crime reduction per BTC participant.

Table 8.2. Crime Reduction Benefits of BTC per BTC Participant

	Birmingham	Jacksonville	Tacoma
Per-person Reduced Costs of Offenses	$479	$2,900	$7,324
Per-person Reduced Costs of Arrests	$1,320	0	$394
Total Benefits Per-person	$1,799	$2,900	$7,718

Table 8.3 shows the total benefits per person, the total costs per person, and the resulting cost/benefit ratio (total benefits divided by total costs).

Table 8.3. The Ratio of BTC Benefits to Costs: the CBA

	Birmingham	Jacksonville	Tacoma
Total Benefits per Person	$1,799	$2,900	$7,718
Total Costs per Person	$767	$1,133	$1,461
Benefit to Cost Ratio	2.3	2.6	5.3

On the basis of these estimations, each of the three sites showed a positive benefit-to-cost ratio in which the return per person exceeded the cost of services for that person. Across all persons, these average ratios reflect a consistent finding in terms of the return on investment at each of the sites.

LIMITATIONS IN DEFINING BENEFITS

While the findings of the CBA were consistently positive, even greater longer term savings are possible. Originally, the intent of this analysis was to look at benefits across a number of domains and total up these benefits (ΣB_d)/C, where B_d would be the benefits in each domain (d), in order to calculate the full extent of the CBA. Benefits were to be calculated on the basis of comparisons of changes in the behavior of the persons in the BTC and pre-BTC groups by

comparing costs for the two groups only during the six-month period before the follow-up interview took place. In other words, such items as medical and mental health expenditures, welfare costs, income, and arrest data would be assessed to see if the BTC group had lower costs over this period than did the pre-BTC group (using the experience of the six-month period prior to the baseline interview as a covariate).

As part of the initial design of the evaluation, specific questions were added to the ASI at baseline and follow-up to identify the utilization of services over the six months prior to each interview. The number of person hospitalizations or months of welfare benefits could be converted into monetary terms so that benefits could be imputed. The areas covered in the interview included medical and psychiatric services, arrests, and employment and public assistance income. Unlike a cost-effectiveness analysis, in which monetary changes are not necessarily calculated, the CBA permitted differences in actual service use to be estimated and dollar savings, where they existed and were significant, to be attached to them. By comparing the use of such services for the BTC and pre-BTC groups, an assessment could be made as to whether, for the BTC group, there were reduced costs in these domains. The following cost-related outcomes were to be analyzed:

- Medical costs: Number of days of inpatient and outpatient hospital services, emergency room visits, and physician and clinic visits over the past six months
- Mental health costs: Inpatient and/or residential care days and ambulatory visits over the past six months
- Employment income: Number of days employed over the past six months
- Public assistance: Number of days of receipt of public assistance benefits (e.g., Aid to Families with Dependent Children/Temporary Assistance for Needy Families, Supplemental Security Income, general assistance) over the past six months

To convert these outcomes into benefits, local Medicaid rates for medical and psychiatric utilization were to be used for either per diem or per visit costs, whichever was applicable. In the case of employment and public assistance costs, other data from the ASI permitted us to calculate an average income or payment per day over the past 30 days. That per diem number was then applied to the number of compensated days over the past six months to calculate the employment or public assistance income.

Unfortunately, this approach proved to be more problematic than originally anticipated, for a number of reasons. In many cases, the six-month data for either or both the follow-up and baseline periods were too limited in terms of the number of persons who actually endorsed some utilization for statistically significant differences to be observed. This problem is more a function of the limited time frames involved in the evaluation than of anything inherent in the data collection process. Analysis of survey data on several outcomes in the 30 days prior to interview indicated significant differences between groups. However, the fact that BTC participants appeared to be doing better at follow-up than the comparison group does not automatically translate into cost savings for that group. Monetary benefits can only be imputed from evidence of a decrease in utilization of services or from a demonstrably lower need for

public dollars to be expended (i.e., public assistance). The fact that health status might have improved does not necessarily lead to a calculation of dollar savings for medical care.

The effectiveness analysis did demonstrate a significant difference in Birmingham and Tacoma between the comparison and BTC groups in terms of arrests during the six-month period prior to the follow-up interview. Savings that resulted from this difference are included in the estimates, although there are some methodological concerns. While it might be argued that this reduction in arrests and incarcerations can be fully converted into a monetary benefit, that position may be difficult to defend. This is because reductions in arrests do not necessarily lead to decreases in the number of police, court personnel, or corrections facilities. Thus, the only savings that can be attributed are the marginal costs of incarceration following arrest and conviction. Given the immense fixed costs of the criminal justice systems, these savings are not sizable in the short term. While from a cost-effectiveness perspective this is a highly significant finding, in terms of a cost/benefit, there is a much less measurable impact. However, in Birmingham and Tacoma there were significant enough reductions in arrest rates that some marginal cost savings could be calculated and included as marginal savings at those sites.

CONCLUSIONS

Despite the caveats included in the above discussion, at each site, significant program benefits compared to program costs existed. While not all of these savings can be readily converted into local budget reductions because they represent savings to society as a whole (the victims, the public jurisdictions, insurers, and citizens, as well as the public law enforcement, courts, and corrections systems), they do show a significant and positive benefit from the program. In addition, the savings and CBAs did prove persuasive in convincing the stakeholders at the sites to continue the efforts.

Further, most of these benefits were seen at a point only nine months after the initiation of the intervention. There is some evidence from the effectiveness analysis that reductions in arrests, physical and emotional morbidity, and welfare use may eventually lead to longer term direct savings for those in the program, which could then be added to the benefits side of the equation. In addition, the savings attributable to the reduced arrest rates at two of the sites were conservatively estimated and might lead to even much greater savings, particularly if an expanded program has a larger, systemwide effect on cutting arrests, thereby making it possible to reduce both jail and prison capacity as well as the size of law enforcement and court systems.

In summary, the results of the CBA associated with the BTC program are encouraging in terms of reducing criminal activity and its associated costs to society. Despite all of the constraints on the study, each site showed a CBA ratio significantly greater than one. While positive, this finding also raises the need for further study at other sites, as well as a longer term evaluation of the program at the three existing BTC sites, to determine how much the program may be able to save society in terms of reduced criminal justice, health, and welfare costs.

PART IV.
REFERENCE LIST

Anglin, M.D. and Y. Hser. 1990. "Treatment of Drug Abuse." In *Drugs and Crime*, edited by M. Tonry and J. Q. Wilson (393-460). Chicago: University of Chicago Press.

Anglin, D.M., D. Longshore, and S. Turner. 1999. "Treatment Alternatives To Street Crime." *Criminal Justice and Behavior* 26(2): 168-195.

Barnow, B.S., G.G. Cain, and A.S. Goldberger. 1980. "Issues in the Analysis of Selectivity Bias." In *Evaluation Studies Review, Vol. 5,* edited by G. F. E.W. Stromsdorfer (43-59). Beverly Hills, CA: Sage Publications.

Belenko, S. 1999. "Research on Drug Courts: A Critical Review 1999 Update." *National Drug Court Institute Review* 2(2): 1-58.

Biglan, A., D. Hood, P. Brozovsky, L. Ochs, D. Ary, and C. Black. 1991. "Subject Attrition in Prevention Research." In *Drug Abuse Prevention Intervention Research: Methodological Issues*, NIDA Research Monograph Series 107, pp. 213-233. Rockville, MD: National Institute on Drug Abuse.

Bureau of Justice Statistics. 1995. *Compendium of Federal Justice Statistics, 1995*. NCJ-164259. Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics.

Camp, C.G. and G.M. Camp. 1996. *The Corrections Yearbook, 1996*. South Salem, NY: Criminal Justice Institute, Inc.

Carlson, A., G. Gish, B. Mahoney, J. Hodges, and G. Kyle. 2001. *Management Study of Felony Case Processing in Pierce County, Washington.* Denver, CO: Justice Management Institute.

Cartwright, W.S. 2001. *Economics of Drug Treatment Bibliography*. Rockville, MD: National Institute of Drug Abuse.

Deschenes, Elizabeth Piper, Iraj Imam, Thomas L. Foster, Lori Diaz, Veronica Moreno, Leslie Patascil, DeSondra Ward, with Curtis Condon. 1999. *Evaluation of Orange County Drug Courts*. Richmond, CA: The Center for Applied Local Research. June.

Falkin, G. 1993. *Coordinating Drug Treatment For Offenders: A Case Study.* Report to the National Institute of Justice.

Foster, M.E. and L. Bickman. 1996. "An Evaluator's Guide to Detecting Attrition Problems." *Evaluation Review* 20(6): 695-723.

French, M.T., L.J. Dunlap, G.A. Zarkin, K.A. McGeary, and A.T. McLellan. 1997. "A Structured Instrument For Estimating The Economic Costs Of Drug Abuse Treatment. The Drug Abuse Treatment Cost Analysis Program (DATCAP)." *Journal of Substance Abuse Treatment* 14: 445-55.

Goldkamp, John S., Michael D. White, and Jennifer B. Robinson. 2001. *From Whether To How Drug Courts Work: Retrospective Evaluation Of Drug Courts In Clark County (Las Vegas) and Multnomah County (Portland).* Phase II Report from the National Evaluation of Drug Courts (I) submitted to the National Institute of Justice. Philadelphia: Crime and Justice Research Institute.

Gottfredson, D.C. and M.L. Exum. 2000. *The Baltimore City Drug Treatment Court: First Evaluation Report*. College Park, MD: Department of Criminology and Criminal Justice, The University of Maryland.

Graham, J.W. and S.I. Donaldson. 1993. "Evaluating Interventions With Differential Attrition: The Importance of Nonresponse Mechanisms and Use of Follow-Up Data." *Journal of Applied Psychology* 78(1): 119-28.

Harrell, Adele, Shannon Cavanagh, and John Roman. 1999. *Final Report: Findings from the Evaluation of the DC Superior Court Drug Intervention Program*. Washington, DC: The Urban Institute. May.

Harrell, A., D. Marlow, and J. Merrill. 2000. "Evaluation of Breaking the Cycle: Preliminary Findings from Birmingham, AL." Briefing at the Office of National Drug Control Policy, Washington, DC. April.

Harrell, A. and B. Smith. 1996. *Evaluation of the District of Columbia Superior Court Drug Intervention Program: Focus Group Interviews*. Report to the National Institute of Justice. Washington, DC: The Urban Institute.

Harwood, H.J. and D. McCliggot. 1998. "Unit Costs and Substance Abuse Treatment." *Association of Health Services Research Newsletter.* Fall.

Heckman, J.J. 1979. "Sample Selection As a Specification Error." *Econometrica* 47(1): 153-61.

Inciardi, J.A., D.C. McBride, and J.E. Rivers. 1996. *Drug Control and the Courts*. Thousand Oaks, CA: Sage Publications.

Langan, P. and J.M. Brown. 1997. "Felony Sentence in the United States, 1994." *Bureau of Justice Statistics Bulletin* (pp. 8-9, tables 8-11). Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics.

Lipton, Douglas. 1994. "The Correctional Opportunity: Pathways to Drug Treatment for Offenders." *Journal of Drug Issues, Inc.* 24: 331-348.

Long, J.S. 1997. *Regression Models for Categorical and Limited Dependent Variables*. Thousand Oaks, CA: Sage Publications.

McLellan, A.T., H. Kushner, D. Metzger, R. Peters, et. al. 1992. "The Fifth Edition of the Addiction Severity Index." *Journal of Substance Abuse Treatment* 9(3): 199-213.

McLellan, A.T., L. Luborsky, G.E. Woody, and C.P. O'Brien. 1980. "An Improved Diagnostic Instrument For Substance Abuse Patients." The Addiction Severity Index. *Journal of Nervous and Mental Disease* 168: 26-33.

Merrill, J.C. 1999. "Economic Issues in Substance Abuse." In *Addictions: A Comprehensive Guidebook for Practitioners*, edited by B.S McCrady and E.E. Epstein. Oxford University Press.

Merrill, J. 1998. "Evaluating Treatment Effectiveness: Changing our Expectations." *Journal of Substance Abuse Treatment.* Summer.

Miller, T.R., M.A. Cohen, and B. Wiersema. 1996. *Victim Costs and Consequences: A New Look.* Washington, DC: U.S. Department of Justice, National Institute of Justice.

Nagin, D. S. and G. Pogarsky. 2001. "Integrating Celerity, Impulsivity, and Extralegal Sanction Threats into a Model of General Deterrence: Theory and Evidence." *Criminology* 39(4): 865-892.

Pendergast, Michael, Douglas M. Anglin, and Jean Wellisch. 1995. "Treatment for Drug-Abusing Offenders Under Community Supervision." *Federal Probation* 66-75.

Petersilia, J. and S. Turner. 1993. "Evaluating Intensive Supervision Probation and Parole: Results of a Nationwide Experiment." *Research in Brief*. Washington, DC: U.S. Department of Justice, National Institute of Justice.

Petersilia, J., S. Turner, and E.P. Deschenes. 1992. "The Costs and Effects of Intensive Supervision for Drug Offenders." *Federal Probation* 56: 12-17.

Rajkumar, A.S. and M.T. French. 1997. "Drug Abuse, Crime Costs and the Economic Benefits of Treatment." *Journal of Quantitative Criminology* 13: 291-323.

Ring-Kurtz, S., J. Merrill, D. Carise, D. McKeon, and A. Harrell. 1998. "Gender Differences Within the Criminal Justice System: Needs Versus Services." Paper presented at the 60th Annual Scientific Meeting of the College on Problems of Drug Dependence, Scottsdale, AZ. June.

Roman, J. and A. Harrell. 2001. "Assessing the Costs and Benefits Accruing to the Public from the Washington, DC Superior Drug Intervention Program." *Law and Policy* 23(2): 237-268.

Smith, D.A. and R. Paternoster. 1990. "Formal Processing and Future Delinquency Deviance Amplification as Selection Artifact." *Law & Society Review* 24(5): 1109-31.

Truitt, Linda, Norman Hoffman, William M. Rhodes, Sarah Kuck, Michael Kane, and Cassie P. Bacani. 2001. *Drug Court Evaluation Phase II: Prognostic Indicators of Program Retention Outcomes for Escambia County and Jackson County Adult Drug Courts*. Draft report submitted to the National Institute of Justice. Cambridge, MA: Abt Associates. December.

Winship, C. and R.D. Mare. 1992. "Model for Sample Selection Bias." *Annual Review of Sociology* 18: 327-50.

Winship, C. and S.L. Morgan. 1999. "The Estimation of Causal Effects from Observational Data." *Annual Review of Sociology* 25: 659-707.

PROJECT REPORTS, PAPERS AND PRESENTATIONS

Carver, J., A. Harrell, and S. Cavanagh. 1998. *Baseline Report on Birmingham Alabama's Breaking the Cycle Initiative.* Report to the National Institute of Justice. Washington, DC: The Urban Institute. February.

Festinger, D.S., J.C. Merrill, D.B. Marlowe, A.V. Harrell, P.A. Lee, J. McNellis, and A.T. McLellan. 2000. "Problem Severity and Treatment Outcomes of Substance Abusing Female Offenders." Poster presented at the 62nd Annual Scientific Meeting of the College on Problems of Drug Dependence, San Juan, Puerto Rico. June.

Harrell, A.V., J. Merrill, O. Mitchell, and D. Marlowe. 2002. "Intervening with Drug-Using Offenders: Lessons from Breaking the Cycle." Presented at the "Breaking the Cycle: Field Test to Practice" Strategy Session. Washington, DC: The Urban Institute. March.

Harrell, A.V., O. Mitchell, A. Hirst, D. Marlow, and J. Merrill. 2002. "Breaking the Cycle of Drugs and Crime: Findings from the Birmingham BTC Demonstration." *Criminology and Public Policy 1*(2): 183-216.

Harrell, A.V., O. Mitchell, A. Hirst, J. Merrill, and D. Marlowe. 2001. "Breaking the Cycle: Findings on Implementation and Impact." Presented at the Annual Meeting of the American Society of Criminology, Atlanta, GA. November.

Harrell, A.V. 2001. "Accountability and Treatment for Drug Using Offenders: Lessons from Breaking the Cycle." Paper presented at the Association for Public Policy Analysis and Management 23rd Annual Research Conference. November.

Harrell, A.V., O. Mitchell, A. Hirst, D. Marlow, and J. Merrill. 2001. "Reducing Drug Use among Felony Defendants: Findings from Breaking the Cycle." Presented at the Annual Conference on Criminal Justice Research and Evaluation: Enhancing Public Policy. July.

Harrell, A.V., A. Hirst, O. Mitchell, D. Marlow, and J. Merrill. 2001. *Evaluation of the Breaking the Cycle Demonstration in Birmingham, Alabama: Final Report.* Report submitted to the National Institute of Justice. Washington, DC: The Urban Institute. June.

Harrell, A.V., A. Hirst, O. Mitchell, D. Marlow, P. Lee, and J. Merrill. 2001. "Reducing Drug Use and Crime among Felony Defendants: Findings from the Evaluation of Breaking the Cycle." Presented at the Research in Progress Seminar, National Institute of Justice, Washington, DC. March.

Harrell, A.V., A. Hirst, and O. Mitchell. 2000. *Implementing System-Wide Interventions for Drug-Involved Offenders In Birmingham, Alabama: Evaluation of the Breaking The Cycle Demonstration.* Report submitted to the National Institute of Justice. Washington, DC: The Urban Institute. June.

Harrell, A.V., A. Hirst, and O. Mitchell. 2000. *Implementing System-Wide Interventions for Drug-Involved Offenders In Jacksonville, Florida: Evaluation of the Breaking The Cycle Demonstration.* Report submitted to the National Institute of Justice. Washington, DC: The Urban Institute. June.

Harrell, A.V., A. Hirst, and O. Mitchell. 2000. *Implementing System-Wide Interventions for Drug-Involved Offenders In Pierce County, Washington: Evaluation of the Breaking The Cycle Demonstration.* Report submitted to the National Institute of Justice. Washington, DC: The Urban Institute. June.

Harrell, A.V., D. Marlow, and J. Merrill. 2000. "Evaluation of Breaking the Cycle: Preliminary Findings from Birmingham, AL." Briefing at the Office of National Drug Control Policy, Washington, DC. April.

Harrell, A.V., J. Merrill, and D. Marlowe. 1999. "Breaking the Cycle: Treatment Needs of Drug-Involved Felony Defendants." Presented at the 51st Annual Meeting of the American Society of Criminology, Toronto, Canada. November.

Harrell, A.V. and A. Goodman. 1999. *Review of Specialized Family Drug Courts: Key Issues in Handling Child Abuse and Neglect Cases*. Submitted to the National Institute of Justice. Washington, DC: The Urban Institute. February.

Harrell, A.V., S. Cavanagh, and A. Hirst. 1998. *Breaking the Cycle Process Evaluation Report on Phase I Implementation in Birmingham, Alabama*. Paper submitted to the National Institute of Justice. Washington, DC: The Urban Institute. August.

Harrell, A.V. 1998. "Breaking the Cycle: Lessons on Implementing Systemwide Interventions for Drug-Involved Offenders." Presented at the American Probation and Parole Association 23rd Annual Training Conference, Norfolk, VA. August.

Harrell, A.V., F. Cook, and J. Carver. 1998. "Cycle of Drug Abuse in Birmingham." *NIJ Journal*. Washington, DC: U.S. Department of Justice, National Institute of Justice. July.

Harrell, A.V. 1998. "Breaking the Cycle of Drug Abuse in Birmingham." Paper presented at the Academy of Criminal Justice Sciences, Albuquerque, NM. March.

Hirst, A. and A.V. Harrell. 2000. "Measuring Perceptions of Procedural Justice among Court-Monitored Offenders." Presented at the 52nd Annual Meeting of the American Society of Criminology, San Francisco, CA. November.

Lee, P.A., D.B. Marlowe, J.C. Merrill, A.V. Harrell, D.S. Festinger, J. McNellis, and A.T. McLellan. 2000. "Methamphetamine Use and Criminal Activity Among Substance Abusers." Poster presented at the 62nd Annual Scientific Meeting of the College on Problems of Drug Dependence, San Juan, Puerto Rico. June.

Marlowe, D.B. 2002. **"**Effective Strategies for Intervening with Drug Abusing Offenders." *Villanova Law Review* 47(4): 989-1026.

Marlowe, D.B., A. Elwork, D.S. Festinger, and A.T. McLellan. In press. "Drug Policy By Popular Referendum: This, Too, Shall Pass." *Journal of Substance Abuse Treatment*.

Marlowe, D.B., J.C. Merrill, A.V. Harrell, and A.T. McLellan. 2000. "The Role of Judicial Status Hearings in Drug Court." Presented at the 52nd Annual Meeting of the American Society of Criminology, San Francisco, CA. November.

Marlowe, D.B., J.C. Merrill, A.V. Harrell, D.S. Festinger, P.A. Lee, J. McNellis, and A.T. McLellan. 2000. "Breaking The Cycle of Drugs and Crime in Three U.S. Cities." In "Crime, Violence, and Drug Abuse," chaired by D.B. Marlowe and J. Milby. Paper session conducted at the 62nd Annual Scientific Meeting of the College on Problems of Drug Dependence, San Juan, Puerto Rico. June.

Marlowe, D.B., J.C. Merrill, A.V. Harrell, A.T. McLellan, P.A. Lee, and J. McNellis. 2000. "The Birmingham 'Breaking the Cycle' Demonstration Project." In "Emerging Issues In Forensic Mental Health Policy," chaired by D.B. Marlowe. Paper session conducted at the 2000 Biennial Conference of the American Psychology-Law Society, New Orleans, LA. March.

McNellis, J., D.B. Marlowe, J.C. Merrill, A.V. Harrell, D.S. Festinger, P.A. Lee, and A.T. McLellan. 2000. "Concurrent Validity Of ASI Substance Use And Legal Items Among Felony Offenders." Poster presented at the 62nd Annual Scientific Meeting of the College on Problems of Drug Dependence, San Juan, Puerto Rico. June.

Merrill, J.C. 2002. *A Cost/Benefit Analysis of the Birmingham "Breaking the Cycle" Program*. Report submitted to the National Institute of Justice. June.

Mitchell, O., A.V. Harrell, and A. Hirst. 2001. "Preliminary Results from the Breaking the Cycle Demonstration Project: Pierce County, WA." Presentation at the 53rd Annual American Society of Criminology Meeting, Atlanta, GA. November.

Mitchell, O., A.V. Harrell, and A. Hirst. 2001. "Assessing the Effectiveness of Breaking the Cycle: Birmingham, AL." Presentation at the 38th Annual Meeting of the Academy of Criminal Justice Sciences, Washington, DC.

Appendix A
Impact Evaluation Methodology

The impact analysis tests the hypotheses that BTC reduced criminal involvement, substance abuse, and problems related to health, mental health, employment, and family of felony drug defendants in the demonstration sites. The evaluation examines the relationship between changes in these areas and characteristics of participants, the kinds and levels of services and supervision they received, and perceptions of defendants about the justice system's handling of their case. The results are based on a quasi-experimental design that compares samples of offenders selected prior to implementation of BTC who would have been eligible for BTC if it had existed, with samples of offenders who were ordered into BTC.

BTC was hypothesized to affect case handling and the length of time required to reach a disposition, the number of hearings, and the kinds of sentences imposed. The analysis compares these outcomes for samples of cases filed prior to BTC with samples of cases filed during the period of full BTC implementation. However, BTC was only one factor influencing these changes, and the effects of BTC alone, independent of external events such as changes in the law and efforts to reduce jail overcrowding, cannot be determined. Thus, these results should be considered in the context of events described in the process evaluation.

Process evaluation of BTC implementation was conducted throughout the project. The process evaluation goals were to assess the feasibility of BTC as a model, to identify the strategies and lessons developed at the sites for responding to the challenge of systemwide responses to drug use, and to document the services delivered as a basis for understanding the impact of evaluation outcomes. The process evaluation was based on quarterly site visits with interviews of staff of collaborating agencies, weekly conference calls with site project directors, analysis of site data systems, and monthly reports to NIJ on project activities.

THE DESIGN OF THE IMPACT EVALUATION

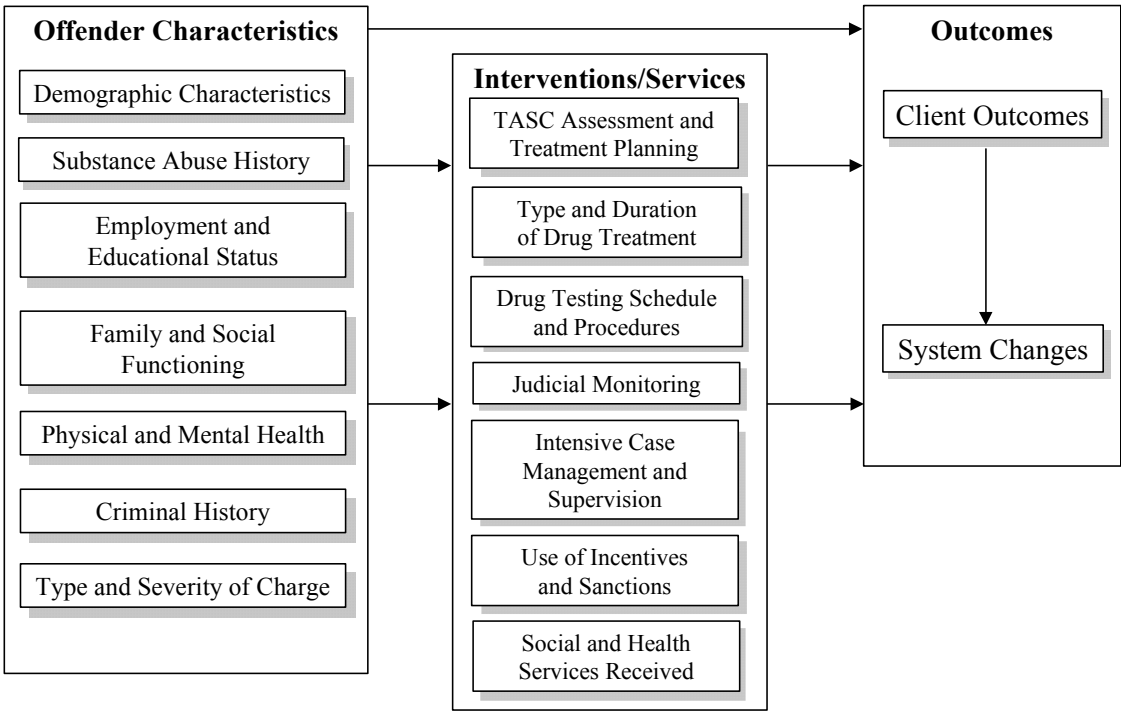
The conceptual framework guiding the study design and choice of data to be collected is shown in figure A.1. The evaluation examined the outcomes illustrated in the boxes on the far right. Goals for offenders include reductions in drug and alcohol use, criminal activity, and health, social, and employment problems. The evaluation also assessed changes in the perceptions of offenders concerning the fairness of the hearings and the risk and severity of consequences for noncompliance with court orders. System changes examined by the evaluation include the number of hearings and number of days between arraignment and case disposition, top charge at conviction, and sentences imposed.

The center column illustrates factors hypothesized to affect offender and system outcomes. They include drug treatment placements, type and duration of drug treatment, drug testing, frequency of judicial monitoring, intensity of contact with case managers or court supervision staff, the types of incentives and sanctions, and the timeliness and consistency of sanctioning.

Offender characteristics that may affect both the type of services received and the response are shown on the far left of the exhibit. They include demographic or background

characteristics of the offender such as age, race/ethnicity, and gender; substance abuse pattern and severity; employment and educational status; family status and living situation; physical and mental health; prior criminal activity; and current charge. These factors may influence outcomes directly or define groups that respond differently to BTC.

Figure A.1. Conceptual Framework for the Evaluation of Breaking the Cycle

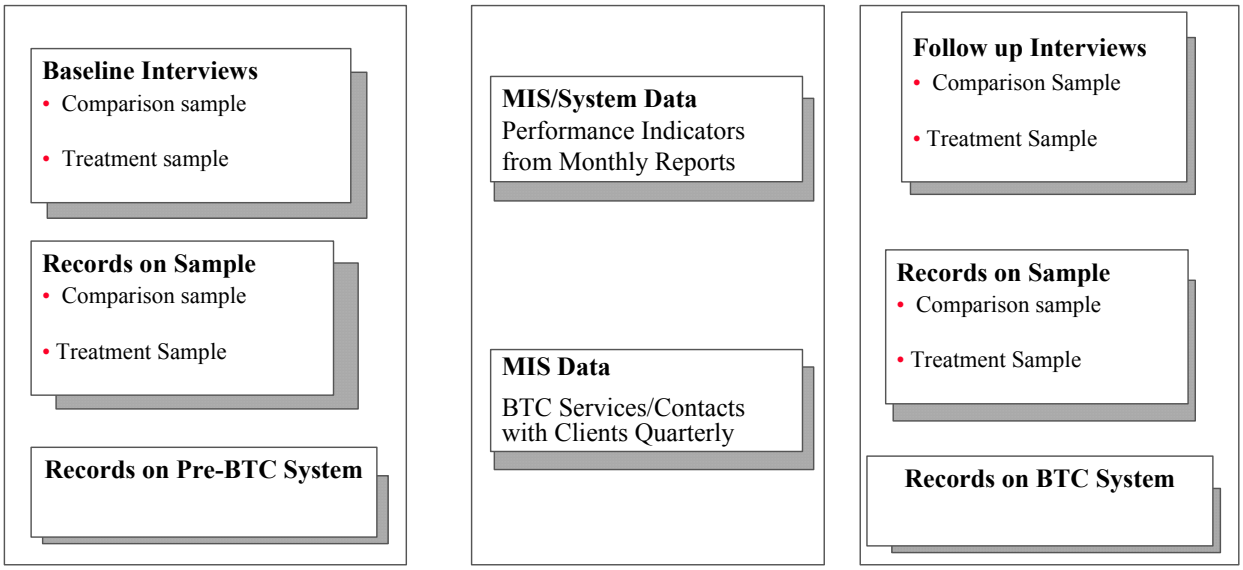


The sources of data used to measure the concepts in the framework are shown in figure A.2. The data sources include records maintained by the BTC programs and partner agencies, arrest records from local and National Crime Information Center databases, and court records on filings and case outcomes. Record-based data were collected for all sample members in all sites. In addition, interviews were conducted by the Treatment Research Institute (TRI) with sample members shortly following arrest (baseline) and again nine months later (follow-up). The questionnaires consisted of the Addiction Severity Index (ASI; McLellan et al. 1992), modified to include additional questions about illegal activities and participation in drug treatment services. In Birmingham, respondents were also given the Risk of AIDS Behavior questions. In Jacksonville and Tacoma, these questions replaced questions about perceptions of fairness and the consequences of noncompliance with court orders.

Figure A.2. Data Source Matrix

Category in Conceptual Framework	BTC records	Arrest records	Court records	Survey
OFFENDER CHARACTERISTICS				
Demographic Characteristics	X			X
Substance Abuse History	X			X
Employment and Education Status	X			X
Family Composition and Living Situation	X			X
Physical and Mental Health	X			X
Criminal History		X	X	X
Type and Severity of Charge	X	X	X	
INTERVENTIONS/SERVICES				
Screening	X			
Assessment/Treatment Planning	X			
Drug Treatment	X			X
Drug Testing Schedule and Procedures	X			
Judicial Monitoring	X			
Case Management	X			
Court Supervision				
Use of Incentives and Sanctions	X			
Social and Health Services Received	X			
OUTCOMES (CLIENT OUTCOMES)				
Reduced Drug Use				X
Reduced Criminal Activity		X		X
Reduced Problems - employment, health, mental health, family				X
OUTCOMES (SYSTEM CHANGES)				
Number of hearings			X	
Days to disposition			X	
Top charge at disposition			X	
Sentence imposed			X	
Alternatives to incarceration			X	

Figure A.3. BTC Data Collection Overview



SAMPLE SELECTION AND BASELINE INTERVIEWS

The sample selection procedures were designed to select individuals who would be eligible for BTC services (even if selected prior to BTC implementation). Sample members were required to be (1) age 18 or older; (2) residents of the county or BTC service area; (3) facing a felony charge; and (4) involved with illegal drugs as measured by a current drug charge, a positive urinalysis screen, or self-reported drug use. A small number of potential sample members were excluded because of a language barrier, psychiatric impairment, or intoxication at the time they were contacted.

Participation in the evaluation was voluntary. TRI staff contacted potential sample members shortly after arrest and asked for their consent. They were guaranteed confidentiality and offered financial incentives for participation. Those who agreed signed a written consent form agreeing to participate in the study and allow the research team to collect data from criminal justice and treatment agencies. At each interview contact, sample members were reminded that participation was voluntary and asked formally to consent to an interview. To protect the data provided to the study, all research staff signed confidentiality pledges, a detailed data security plan was developed for data handling and storage, and a letter from the Justice Department extending the protections of a Federal Certificate of Confidentiality was obtained.

Participants were paid $10 for completing the baseline interview (ASI and Deterrence) and $20 for the follow-up interview (Follow-up ASI and Follow-up Deterrence). Participants who were difficult to reach for follow-up were mailed a letter offering a $10 bonus (for a total payment of $30) if they called in immediately to complete their interview. The procedures for contacting

and interviewing sample members were tailored to operations at each BTC site, as described below.

Birmingham

The pre-BTC sample was recruited between March 13 and May 2, 1997, by inviting arrestees tested for the Drug Use Forecasting (DUF)2 project in the Birmingham jail to take part in the study. Following the DUF drug test and interview, a research recruiter invited arrestees to be part of the study. Those who agreed (n = 311) signed a consent form that included agreement that their DUF drug test results would be provided to the research team with the understanding that they would receive a $10 stipend by mail and would be contacted for the study if they were found to be eligible. Only those who tested positive for at least one drug (n = 236, 76 percent of those who consented) were considered eligible and included in the comparison sample. Baseline interviews took place approximately a month following consent (median = 28 days). Ninety-nine percent were telephone interviews.

The BTC sample was recruited from the defendants ordered to BTC upon release. Plans to recruit them following a drug test in the jail had to be changed when BTC dropped plans to screen for program eligibility at the time of arrest. In lieu of in-jail drug testing, BTC required defendants charged with felonies to report to Treatment Alternatives to Street Crime (TASC) within 24 hours of release from the jail on bond. The defendants were screened at that time for BTC eligibility using a drug test and short self-administered questionnaire. Those who tested positive, reported drug use, or were charged with drug felonies became eligible for BTC.

Between September 8 and December 1, 1998, 596 defendants were contacted and initially determined to be BTC eligible; 545 of them (91 percent) agreed to participate in the study and were sent a payment of $10. However, 171 of them were later found to be ineligible because their charges were dropped or reduced to a misdemeanor, or they lived outside Jefferson County and thus were not eligible for BTC services, leaving a final sample of 374. The BTC sample did not differ significantly from the population of clients served by BTC in Birmingham on age, gender, race, marital status, education, public assistance, or criminal history (prior convictions and arrests). However, the BTC sample was more likely to be unemployed (33 percent) than the BTC clients in general (24 percent). All 374 sample members were interviewed in person, usually at the TASC offices on the day of consent.

Jacksonville

The pre-BTC sample was recruited between May 5 and September 30, 1999, at the Duval County Jail. TRI contacted 2,758 (77 percent) of 3,561 apparently eligible arrestees booked on felony charges during the recruitment period. Most of the 808 arrestees not contacted were released from the jail before they could be contacted. A small number were unavailable for contact because they were in court or the medical or psychiatric unit, or were receiving visitors. Nearly half of those contacted (1,306 or 47 percent) signed a consent form agreeing to participate in the study. There were no statistically significant differences in race, age, or gender between those who consented and those who did not. However, consent rates did differ by primary charge, with slightly more defendants charged with drug offenses or theft agreeing to participate in the study. Subsequently, 861 of those who consented were removed from the study because their charges were later dropped or reduced to a misdemeanor, or they had no indications of a substance abuse problem (negative urinalysis and did not self-report

drug use), or they were sentenced directly to state prison. All of these conditions would have made them ineligible for BTC services had BTC been in existence at that time. The final sample consisted of 445 individuals. The baseline interviews with the pre-BTC sample were completed in person at the jail, an average of 11 days after arrest.

The BTC sample was recruited between February 1 and July 14, 2000, at the Duval County Jail (73 percent) or the BTC office (27 percent). The sample was limited to arrestees who had been ordered to the BTC program during this period. Judges ordered arrestees to the BTC program based on the same eligibility criteria used to recruit the pre-BTC sample (a county resident charged with a felony). TRI contacted 1,117 (87 percent) of the 1,266 ordered into BTC during the recruitment period. Consent was obtained from 808 (72 percent of those contacted; 64 percent of those ordered in). Of those who agreed to participate, 473 were found, upon additional checking, to be ineligible and were excluded from the sample. Defendants were excluded from BTC if the charges were dropped or reduced to a misdemeanor or if they exhibited no signs of drug use (negative urinalysis and did not self-report drug use). A small number were excluded because they lived outside the county served by BTC, were already in the study, were transferred to another jurisdiction, had an incomplete assessment, or were sentenced directly to state prison.

The final BTC sample consisted of 335 felony defendants. All baseline interviews were conducted in person. The average time from arrest to interview was five days. A comparison of this final baseline sample with the total population of active or inactive BTC clients showed no significant differences on age, race, gender, or type of charge.

Tacoma

The pre-BTC sample was recruited between May 6 and September 12, 1999. Following booking at the Pierce County Jail, arrestees meeting the following eligibility requirements were asked to participate in the study: (1) over age 18 ; (2) residents of Pierce County; (3) charged with a felony, excluding certain violent or sexual offenses; and (4) displayed evidence of drug involvement as measured by a current drug charge, a positive urinalysis screen, or self-reported drug use.

Of the 1,097 eligible arrestees who were contacted,[1] 597 (54 percent) agreed to participate in the study. Those who agreed to participate signed an informed consent agreement and underwent an approximately 45-minute interview while still in jail, with the understanding that they would receive a $10 stipend by mail. There were no statistically significant differences in gender, age, or type of charge between those who consented and those who did not. However, a small but statistically significant difference was detected on race (consenters were more likely to be Asian, Hispanic, or Native American). Thus, the group of arrestees who agreed to participate in this evaluation appears representative of the overall population of offenders entering Tacoma's criminal justice system during the period just prior to implementation of BTC. Subsequently, 176 of those who consented were removed from the study because their charges were later dropped or reduced to a misdemeanor, they had no indications of a substance abuse problem (negative urinalysis and did not self-report drug use), or they were sentenced directly to

[1] An additional 498 arrestees met the study's eligibility criteria but the research team was unable to contact these arrestees, usually because they were released before the research team could contact them. A small number of arrestees were unavailable because they were in court, in the medical or psychiatric unit, or were receiving visitors.

state prison. All of these conditions would have made them ineligible for BTC services had BTC been in existence.

The BTC sample was recruited between February 1 and August 11, 2000, at the Pierce County Jail and the Breaking the Cycle Alternative Center. Initially, the researchers planned to recruit the entire BTC sample from the Pierce County Jail; however, the severe overcrowding problem at the jail led to many logistical problems in contacting eligible arrestees. In order to contact a higher percentage of eligible arrestees, the sample recruitment was moved to the BTC offices and took place shortly after release from jail. The sample was limited to arrestees who had been ordered to the BTC program. Judges ordered arrestees to the BTC program based on the same eligibility criteria used to recruit the pre-BTC sample.

Of the 564 arrestees contacted, 83 percent (n = 468) consented to participate in the study; 62 percent consented while in jail and the other 38 percent consented at the Breaking the Cycle Alternative Center (BAC).[2] Those who agreed to participate underwent the same 45-minute interview as the pre-BTC sample and received the same $10 stipend. However, the BTC sample usually was not interviewed immediately after consent; the interview occurred an average of 13 days after consent . Eighty-six of the initial BTC sample were subsequently dropped because their charges were dropped or reduced to a misdemeanor, they exhibited no evidence of substance abuse, or they lived outside Pierce County, leaving a final baseline sample of 382. All baseline interviews were conducted in person: 56 percent in jail, 44 percent at the BTC office.

A comparison of this final baseline sample with the total population of active or inactive BTC clients reveals considerable similarity between the two groups. The two groups did not differ beyond chance levels on gender, race, age, or marital status. However, the BTC sample contained significantly more drug offenders and fewer property offenders than did the overall BTC population.

Summary of Sample Selection

Although the BTC treatment groups and the pre-BTC comparison groups appear to be generally representative of their respective populations, it is possible that the sampling method and/or changes in the sampling method (i.e., in-jail versus in the community interviews) led to significant differences between the two groups. As a result, the full sample (i.e., the baseline groups before attrition) and the subsample who completed both interviews were compared on various *baseline* measures. Table A.1 compares the pre-BTC and BTC samples within each site and illustrates some of the differences in the characteristics of the BTC clientele across the jurisdictions.

[2] Another 228 eligible arrestees were not contacted, most because they had been in enrolled in BTC for more than 10 days.

Table A.1. Sample Characteristics by Site at Baseline (Full Sample)

	Birmingham		Jacksonville		Tacoma	
	Pre-BTC[3] (n =192)	BTC (n =374)	Pre-BTC (n = 444)	BTC (n =332)	Pre-BTC (n=351)	BTC (n=382)
Male	84%	79%	78%	83%	70%	72%
African-American	70%	64%	62%	61%	22%	20%
Unmarried	89%	86%	89%	86%	91%	79%***
Mean Age in Years	32.4	30.4	31	32	31.4	33.0
Mean Years of Education	11.2	11.5	11.5	11.6	11.5	11.5
Mean # Days Paid for Work, Past 30	5.3	12.3	8.3	11.7***	5.3	4.3
Mean Employment Income Past 30 Days	$272	$629	$477	$738***	$284	$314
Received Public Assistance Past 6 Months	10%	8%	9%	2%	22%	16%
Type of offense (target arrest)[x]						
Drug	31%	55%***	40%	69%***	64%	78%***
Property	33%	21%	32%	17%	27%	14%
Person	8%	4%	10%	4%	3%	2%
Other	4%	9%	18%	11%	6%	7%
Unknown	24%	11%	0	0	0	0
Prior Arrests	8.4	5.2***	7.89	6.67**	7.8	6.7**
Crimes committed - self report, Past 6 mos.	20.6	2.6	21.7	17.6	50.8	43.2
Days in jail, Past 30 days	16.2	4.1***	11.5	5.2***	3.9	12.6***
Months Incarcerated - self report, Lifetime	16.9	8.6	2.4	1.3***	16.7	14.9
Mean Age First Drug Use	16	16	15.8	16.2	14.3	14.6
Self-Report Drug Use, Past 30 Days						
Cocaine	29%	30%	51%	58%	33%	17%***
Opiates	5%	6%	9%	11%	21%	19%
Methamphetamines	2%	2%	—	—	57%	43%***
Marijuana	30%	55%***	60%	69%***	56%	42%***
Other	6%	7%	12%	11%	15%	11%
Mean Baseline ASI Composite Scores (Range from 0 to 1)						
Medical	0.18	0.10***	0.20	0.21	0.27	0.30
Employment/Support	0.79	0.61***	0.69	0.60***	0.82	0.80
Alcohol Abuse	0.13	0.11	0.18	0.20	0.13	0.11
Drug Abuse	0.08	0.05***	0.11	0.15**	0.17	0.12***
Legal	0.40	0.40	0.53	0.55**	0.64	0.51**
Family/Social	0.17	0.08***	0.15	0.13	0.22	0.16***
Psychological	0.22	0.07	0.24	0.19**	0.29	0.26

* p < .05 ** p < .01 *** p <.001 for differences between Pre-BTC and BTC samples within sites.
** P < .01 ** p < .01 *** P <.001 for differences between BTC and Pre-BTC samples within sites.

[3] The Pre-BTC sample in Birmingham was smaller than samples in other jurisdictions due to limiting sample selection to arrestees taking part in the Drug Use Forecasting testing program during the intake period.

In Birmingham, the pre-BTC sample, compared with the BTC sample, had significantly more days in jail in the 30 days before the baseline interview and more prior arrests, indicating higher risk levels. However, they were less likely than the BTC sample to report past-month marijuana use and had lower scores on the ASI composite scales measuring medical, employment, drug, and family/social problems.

In Jacksonville, the pre-BTC sample, compared with the BTC sample, had significantly more days in jail in the 30 days before the interview, worked fewer days in the past month, and had lower income levels, indicating higher risk levels. However, they were less likely than the BTC sample to report past-month marijuana use. Their ASI Composite Scale scores were higher than the BTC sample in some areas (employment and psychological problems) and lower in others (drug and legal problems).

In Tacoma, the pre-BTC sample was significantly younger (by 1.6 years), less likely to be married, reported more serious family/social and legal problems, and had more prior arrests than the BTC sample. In addition, the arrest that preceded sample entry was less likely to be a drug charge for the pre-BTC sample than the BTC sample. Although the pre-BTC sample members were significantly more likely to report using cocaine, methamphetamine, and marijuana in the 30 days before the baseline interview than the BTC sample, these differences (except for cocaine use) are not significant after controlling for days in jail (time at risk for using drugs). Results of initial drug tests, available for only a portion of the sample, suggest a different pattern, with significantly higher percentages of the pre-BTC sample positive for methamphetamines, marijuana, and other drugs. As a result, the models include measures of baseline drug use to control for potential sample differences in drug involvement.

FOLLOW-UP INTERVIEWS

Birmingham

Follow-up interviews were conducted by phone (90 percent) and in person (10 percent) with 137 members of the pre-BTC sample (71 percent) and 245 members of the BTC sample (66 percent). Originally, two follow-up interviews were planned, one at nine months and one at fifteen months after sample recruitment. However, analysis of results from comparison sample interviews found no significant differences in outcomes measured at the two times, so follow-up for BTC sample was limited to the nine-month interview. For the comparison sample, the nine-month follow-up was used when available (n = 113), and the fifteen-month follow-up used if no nine-month follow-up was completed (n = 24). As a result, the actual time between baseline and follow-up varied; the average length of time between interviews was 290 days (median = 264 days). For the pre-BTC comparison sample, the time between baseline and follow-up ranged from 92 days (for one respondent whose baseline interview was conducted a long time after sample recruitment) to 599 days. For the BTC sample, the time between interviews ranged from 239 to 428 days.

Jacksonville

Follow-up interviews were conducted with 317 (71 percent) members of the pre-BTC sample and 218 (65 percent) members of the BTC sample. Pre-BTC interviews were conducted 48 percent in person, 52 percent by phone. BTC interviews were conducted 39 percent in

person, 61 percent by phone. For the pre-BTC comparison sample, the time between baseline and follow-up ranged from 199 days to 503 days (median = 302 days). For the BTC sample, the time between interviews ranged from 181 days to 437 days (median = 233 days). Because of this difference in time between interviews, in subsequent analyses time between interviews is used as a control variable where appropriate.

Tacoma

Follow-up interviews were conducted with 255 (73 percent) of the 351 pre-BTC sample participants interviewed at baseline and 286 (75 percent) of the 382 BTC sample participants interviewed at baseline. Pre-BTC interviews were conducted 55 percent in person, 45 percent by phone. BTC interviews were conducted 46 percent in person, 54 percent by phone. For the pre-BTC comparison sample, the time between baseline and follow-up ranged from 199 days to 503 days (median = 261 days). For the BTC sample, the time between interviews ranged from 181 days to 437 days (median = 233 days). Because of this difference in time between interviews, in subsequent analyses time between interviews is used as a control variable where appropriate.

The detailed analysis of attrition, shown in appendix B, found no evidence of differential attrition by group. Furthermore, the interaction between treatment status and attrition did not predict baseline ASI composite scores on the alcohol or legal problems scales but did predict baseline drug use scores. This finding suggests that differential attrition is not problematic for the analysis of alcohol use and legal problems; however, the analysis does offer weak evidence of an attrition problem for the analysis of drug use outcomes.[4]

Summary

Table A.2 summarizes the sample recruitment and interviewing experience. As described in the text above, the point at which contact was first attempted varied by sample and affected rates of consent and the percentage of those found eligible. Difficulty in predicting release from jail and final filing decisions meant that many sample members consented and were interviewed, only to be found ineligible at a later time. This was the price paid for getting true early baseline interviews with defendants who were subsequently found to be ineligible.

[4] The evidence supporting an attrition problem is characterized as "weak" because, while the interaction between attrition and treatment group status does predict severity of baseline drug problem, the interaction between severity of baseline drug problem and treatment group status does not significantly predict attrition.

Table A.2. BTC Sample Recruitment and Interviewing Summary

	Birmingham		Jacksonville[c]		Tacoma[d]	
	Pre-BTC	BTC[b]	Pre-BTC	BTC	Pre-BTC	BTC
Recruitment Dates	3/13/97 to 5/2/97	9/8/98 to 12/1/98	5/5/99 to 9/30/99	2/1/00 to 7/14/00	5/6/99 to 9/12/99	2/1/00 to 8/11/00
Consented	311	545	1306	808	597	468
(% of those approached)	(na)	(91%)	(47%)	(72%)	(54%)	(83%)
Eligible[a]	236	374	445	335	421	382
Baseline Interview	192	374	444	335	351	382
(% of eligible)	(81%)	(100%)	(100%)	(100%)	(83%)	(100%)
Follow up Interview	137	245	317	218	255	286
	(71%)	(66%)	(71%)	(65%)	(73%)	(75%)

[a] Consenting preceded eligibility determination except for the BTC sample in Birmingham.

[b] In Birmingham, the BTC sample was first contacted after BTC eligibility was determined and interviews conducted at the time of consent.

[c] In Jacksonville, research contact occurred at the time of booking and many of those consented were not released or were later found ineligible. Because case filing decisions were made an average of 20 days after arrest, most baseline interviews preceded final eligibility determination (ie., a pending felony case) and baseline interviews with ineligible respondents were discarded.

[d] In Tacoma, the BTC was contacted, consented and interviewed prior to final eligibility determination.

DATA ANALYSIS PROCEDURES

The analysis uses two strategies to control for differences in the samples at baseline and in attrition: traditional multivariate models that incorporate control variables to measure observed sample differences and a two-stage estimation procedure designed to capture the effects of unmeasured sample differences (Heckman 1979). The two-stage method is used to assess whether *unmeasured* variables, related to both treatment status *and* the outcomes of interest (e.g., recidivism), lead to bias in the estimates of BTC's effect (Barnow, Cain, and Goldberger 1980; Smith and Paternoster, 1990; Winship and Mare, 1992). At the first stage, the likelihood of being a BTC sample member was estimated using predictors believed to differentiate the two groups. The purpose of this first-stage equation is to obtain a correction factor, which in essence is a proxy for unmeasured variables. This correction factor is then included in a second-stage equation as an independent variable, along with other variables hypothesized to affect the outcome of interest (see Winship and Mare 1992 or Winship and Morgan 1999).

The models used for the first-stage equation were chosen on the basis of the predictive power and parsimony in controlling for the sample differences at each site (tables A.3.–A.5). The predictors of treatment status were measures of sociodemographic factors, current and past employment status, criminal history, and seriousness of substance abuse and other social problems. The variables included in the model varied by site and were selected to maximize the

parsimonious prediction of sample membership. The predictive power of the models was not improved by additional variables and the selected models did have any indications of collinearity problems, as determined by variance inflation factors. The pseudo-R^2 for the sample selection model was .38 for Birmingham, .23 for Jacksonville, and .27 for Tacoma.

Table A.3. Sample Selection Model (First-stage Equation) for Birmingham Analysis

Variable	Parameter Estimate	b/Std. Error	*p*-level
Constant	1.40	4.79	0.00
Female	0.34	1.64	0.10
Time at current residence	–0.01	–1.91	0.06
Full-time Employment/Student[a]	0.56	2.42	0.02
Part-time Employment	0.57	2.21	0.03
Days in Jail, past 30 days	–0.06	–7.84	0.00
On Parole/Probation at Sample Entry	–0.44	–2.45	0.01
Lifetime number of prior drug treatment episodes	–0.10	–1.48	0.14
Number of Self-Reported Offenses, past 6 months	–0.01	–2.41	0.02
Days experiencing Drug Problems, past 30 days	–0.02	–1.75	0.08
Days experiencing Psychological Problems, past 30 days	–0.02	–2.23	0.03
Days experiencing Employment, past 30 days	–0.03	–2.90	0.00
Model Fit			
Pseudo–R^2	0.38		
–2LL	180.93; 11 DF p = 0.0001		
N	382		

[a] The full-time and part-time employment variables are indicator variables; the suppressed category is all other responses, including "service," "retired/disability," "unemployed," or "in controlled environment."

Table A.4. Sample Selection Model (First-stage Equation)for Jacksonville Analysis

Variable	Parameter Estimate	b/Std. Error	*p*-level
Longest Full-time Job Ever Held, in Years	0.041	11.206	0.001
Days Paid for Working, Past 30 Days	0.035	19.303	0.001
Income from Illegal Sources, Past 30 Days	0.000	4.207	0.040
Months Paid for Working, Past 6 Mos.	–0.088	7.792	0.005
Severity of Legal Problems ASI Score	1.962	19.609	0.001
Severity of Drug Problems ASI Score	1.986	11.726	0.001
Severity of Psychological Problems ASI Score	–1.101	17.029	0.001
Days Used Marijuana, Past 30 Days	0.021	10.220	0.001
Months Incarcerated, Lifetime	–0.007	10.203	0.001
On Probation/Parole at Baseline	–0.587	13.332	0.000
Days Engaged Illegal Activities for a Profit, Past 30 Days	–0.037	12.345	0.000
Alcohol Problem	–0.615	3.703	0.054
Cocaine Problem	–0.992	17.780	0.001
Marijuana Problem	–0.532	6.710	0.010
Poly-Drug Use Problem	–0.171	0.638	0.424
Alcohol-Drug Problem	–0.685	14.915	0.001
Constant	–0.707	6.935	0.009
Model Fit			
Pseudo–R^2	0.23		
–2LL	173.64; 16 DF p = 0.0001		
Valid N	661		

Table A.5. Sample Selection Model (First-stage Equation) for Tacoma Analysis

Variable	Parameter Estimate
Constant	1.161***
Age	0.016*
Married	0.563***
Full-time	–0.310*
Days Paid for Working, Past 30	–0.026**
Months Paid for Working, Past 6 mos.	0.106***
ASI Legal Composite Score	–1.956***
Number of Self-reported drug offenses, past 6 mos.	0.008***
Prior Arrests	–0.032**
Times Treated for Drug Abuse, Lifetime	0.059*
Days used Cocaine, Past 30	–0.040***
Days used Methamphetamine, Past 30	–0.041***
Days used Marijuana, Past 30	–0.013*
Days used Opiates, Past 30	–0.023**
Model Fit	
Pseudo–R^2	0.27
–2LL	216.21***
Valid N	698

*p<.05, **p<.01, ***p<.001

Dichotomous drug and recidivism outcome variables were first estimated with probit models. Then, in order to investigate the effects of selection on these results, dichotomous outcome variables were estimated again, this time using bivariate probit models. These bivariate probit models simultaneously estimate the sample selection model (discussed above), BTC's effect on the outcome of interest, and the correlation between the two error terms (rho) from the two outcomes. The inclusion of this correlation term corrects for selection bias (Smith and Paternoster 1990, p. 1118). Models with counts as dependent variables (e.g., number of arrests) were first estimated with poisson or negative binomial regression. Similar to the analysis of dichotomous variables, these analyses were then repeated with the inclusion of Heckman's correction term. The results of the selection-corrected models will be reported only when the inclusion of the Heckman correction leads to substantively different results than the analysis without the correction.

Appendix B
Changes in Case Handling, Disposition, and Sentencing in the Evaluation Samples

In order to explore changes in case processing during BTC more carefully, this appendix uses the case files of the defendants included in the impact evaluation sample described in appendix A.

Birmingham

Of the 566 cases in the two Birmingham impact evaluation samples, 480 were located in the Administrative Office of the Courts data. Each case was followed for one year from original case filing date. These cases were compared on several case processing measures, including closure rate, disposition (guilty rate), and average number of hearings to case closure. The findings produced from these analyses follow the case processing trends for the larger sample described in appendix A.

BTC cases were more likely to be resolved within 12 months of original case filing and more likely to result in a period of confinement (if found guilty), but defendants were less likely to be found guilty, as shown in table B.1. The cases differed significantly on other variables that may affect case disposition, such as charge and lifetime number of months incarcerated. A logistic regression, controlling for case characteristics, was used to estimate the effect of BTC on the likelihood of case disposition within a year (table B.2). The results indicate that the odds of a BTC case being closed within one year were 79 percent greater than a comparison case being closed in the same amount of time.

Table B.1 Case and Client Variables for the BTC and Pre-BTC Impact Evaluation Samples in Birmingham

	Pre-BTC Sample (n = 147)	BTC Sample (n = 333)	Significance of Difference
Case closed within 12 months of filing	46%***	61%	$p < .01$
Found guilty, if closed	69%***	50%	$p < .01$
Incarcerated, if guilty	6%	21%	ns
Mean number of hearings in case	1.63***	1.44	$p < .01$
Type of charge			
Drug distribution	4%	9%	ns
Drug possession	35%***	53%	$p <. 01$
Disorder	3%	5%	ns
Person/violent	11%**	5%	$p < .05$
Weapons	2%	5%	ns
Property	44%	23%	ns
Offender Characteristics			
Gender			ns
Female	16%	21%	
Male	84%	79%	
Race			ns
Black	70%	64%	
Nonblack	30%	36%	
Mean age	32.2	31.0	ns
Lifetime number of months incarcerated	15.1***	5.7	$p < .01$

*$p < .10$; **$p < .05$; ***$p < .01$; ns= not significant

Table B.2. Logistic Regression Estimates of Case Disposition within a Year of Filing in Birmingham

Variable	Parameter Estimate	Standard Error	Significance-Level
BTC case	0.58	0.22	< 0.01
Female	0.46	0.26	0.08
Black	–0.24	0.21	0.26
Age	–0.01	0.01	0.80
Disorder offense	–0.25	0.52	0.64
Drug distribution offense	–1.78	0.43	< 0.01
Drug possession offense	–0.55	0.24	0.02
Person/violent offense	–1.08	0.41	< 0.01
Weapons offense	–0.20	0.53	0.71
Lifetime months incarcerated	–0.01	>0.01	0.01
Drug use	0.29	0.27	0.28
Constant	0.42	0.47	0.37
Model Fit			
N	480		
–2 log likelihood (covariates only)	45.861 with 11 DF (p = .001)		
R^2	0.07		

However, comparisons of the cases closed within a year of filing did not find significant differences between the BTC and comparison samples in the number of hearings per case or likelihood of conviction:

- Poisson regression analysis found no significant differences in the number of hearings prior to disposition between BTC cases and pre-BTC cases, controlling for other factors (table B.3).

- Logistic regression showed no significant differences in the likelihood of conviction between BTC cases and pre-BTC cases, controlling for other factors (table B.4).

Table B.3. Number of Hearings to Disposition for Cases Closed within a Year of Filing in Birmingham (Poisson Regression)

Variable	Parameter Estimate	Standard Error	Significance-Level
BTC Case	0.13	0.26	0.79
Female	0.04	0.13	0.76
Black	0.01	0.11	0.92
Age	< 0.01	< 0.01	0.95
Disorder offense	0.08	0.26	0.76
Drug distribution offense	0.37	0.25	0.14
Drug possession offense	0.01	0.13	0.91
Person/violent offense	0.26	0.24	0.28
Weapons offense	0.18	0.25	0.46
Lifetime months incarcerated	0.01	< 0.01	0.16
Drug use	< 0.02	0.16	0.89
Constant	0.07	0.26	0.79
Model Fit			
N	273		
–2 log likelihood (covariates only)	5.91 with 11 DF (p < .10)		
R^2	0.01		

Table B.4. Disposition of Cases Closed within a Year of Filing in Birmingham (Logistic Regression)

Variable	Parameter Estimate	Standard Error	Significance-Level
BTC Case	–0.36	0.34	0.29
Female	–0.58	0.33	0.08
Black	–0.04	0.29	0.90
Age	–0.01	0.01	0.45
Disorder offense	–1.67	0.65	0.01
Drug distribution offense	–2.22	0.75	< 0.01
Drug possession offense	–1.76	0.34	< 0.01
Person/violent offense	–1.29	0.64	0.04
Weapons offense	–0.79	0.65	0.23
Lifetime months incarcerated	–0.01	< 0.01	0.10
Drug use	0.08	0.41	0.84
Constant	1.98	0.69	< 0.01
Model Fit			
N	273		
–2 log likelihood (covariates only)	53.28 with 11 DF (p = .0001)		
R^2	0.14		

Jacksonville

In Jacksonville, complete case processing data were retrieved from court records for 429 of the 444 clients (97 percent) in the pre-BTC sample and 326 of the 332 clients (98 percent) in the BTC sample. These case records were compared regarding time to charge filing, first court appearance, and disposition, as well as type and length of sentence received in each case. This analysis examines case processing while controlling for defendant characteristics including education, employment history, and number of prior arrests.

Table B.5 shows that there were no differences between the two samples on gender, race, age, social status variables, or mean number of charges. The samples did differ significantly by offense types. Unlike Birmingham, the Jacksonville BTC sample contained a higher proportion of drug offenders than did the pre-BTC sample.

Table B.5. Defendant and Offense Characteristics for the Impact Evaluation Samples in Jacksonville

	Pre-BTC (N = 429)	BTC (N = 326)	Significance of Difference
Defendant Characteristics			
Gender			ns
Female	21%	17%	
Male	79%	83%	
Race			ns
Black	61%	60%	
White	39%	40%	
Mean Age (SD)	30.8 (9.5)	32.1 (9.8)	ns
Offense Characteristics			
Type of offense			$p < .01$
Drug offenses	40%	64%	
Property offenses	26%	16%	
Violent/person offenses	10%	3%	
Traffic offenses	5%	8%	
Other/unknown offenses	19%	9%	
Mean number of charges (SD)	2.2 (2.1)	2.0 (1.1)	ns

A more rigorous analysis of time to disposition is presented in table B.6. This analysis controls for several variables expected to affect case processing decisions and differences between the two samples of cases using Cox regression (survival analysis). These variables include demographic variables, social status variables, number of prior arrests, and type of offense. Type of offense is dummy coded with drug offenses as the reference category.

The survival analysis found no significant differences in time to disposition between BTC and pre-BTC cases. Results do show significant relationships between time to case disposition and age and race of the defendants. Older defendants and African Americans have a greater likelihood of having their case closed on any given day than younger defendants and Caucasian defendants. Conversely, defendants with more stable employment histories have a lower likelihood of having their case closed on any given day than those with more employment problems. Defendants charged with "other" offenses (mostly public order offenses) have a lower likelihood of having their case closed on any given day than those charged with drug offenses.

Table B.6. Time to Case Disposition in Jacksonville (Cox Regression)

Variable	Parameter Estimate	Hazard Ratio
BTC	–0.053	0.949
Age	0.023***	1.023
Female	0.058	1.059
Black	0.213**	1.238
Years in longest job	–0.022**	0.978
Educational level	0.003	1.003
Property offense	0.145	1.159
Violent offense	–0.129	0.879
Driving offense	0.053	1.055
Other offense	–0.122***	0.643
Number of charges	0.036*	1.037
Prior arrests	0.010*	1.010
Self-reported offending in past 6 months.	0.000	1.000
Model Fit		
N	733	
-2LL	48.717***	

*p < 0.10; **p < 0.05; ***p < 0.01

The sentencing outcomes for the two samples were very similar (table B.7). There were no significant differences in number of convictions per case, method of disposition, or type of sentence in cases where the defendant was found guilty. However, BTC cases had significantly fewer hearings prior to case disposition than the pre-BTC cases.

Table B.7. Pre-BTC/BTC Comparison of Case Outcomes One Year from Arrest

	Pre-BTC (N = 421)	**BTC** (N = 325)	**Significance of Difference**
Case unresolved after 365 days	20%	19%	ns
Disposition of closed cases			$p < .01$
Dismissed/nolle prossed/acquitted	5%	1%	
Guilty/convicted	75%	79%	
Other	< 1%	1%	
Mean number of conviction charges in closed cases (SD)	1.1 (0.7)	1.1 (0.4)	ns
Average number of hearings to case close (SD)	8.3 (9.4)	6.7 (5.0)	$p < .05$
Type of sentence in guilty cases			ns
Incarceration	60%	58%	
Probation without incarceration	20%	22%	
Other	1%	1%	

A more thorough analysis of incarceration duration controls for group differences and other variables expected to affect sentence length, including type of offense, number of prior arrests, number of convictions, and social status. Table B.8 presents the results of an ordinary least squares (OLS) regression of cases sentenced to incarceration tested for sample differences in sentence duration (months of incarceration). Again, the difference between the BTC cases and pre-BTC cases was not significant; the months of incarceration specified in the sentence remained similar. As expected, the duration of incarceration in the sentence was significantly related to the number of conviction charges, number of self-reported offenses, and conviction for a violent crime (compared to conviction for a drug offense).

Table B.8. Length of Sentence to Incarceration in Months for Jacksonville Impact Evaluation Sample (OLS Regression)

Variable	Parameter Estimate	Significance-Level
BTC	–1.278	0.277
Age	–0.020	0.788
Female	–0.623	0.690
Black	0.003	0.998
Tenure of longest job, in years	-0.038	0.785
Educational level	0.162	0.630
Property offense	–1.503	0.317
Violent offense	8.827	0.000
Driving offense	–1.868	0.474
Other offense	1.813	0.376
Number of charges	0.059	0.835
Number of convictions	2.642	0.015
Prior arrests	–0.004	0.952
Self-reported offending, past 6 months.	0.026	0.033
Intercept	1.533	0.730
Model Fit		
N	417	
R^2	0.07	

Tacoma

In Tacoma, complete case processing data were found on 293 of the 351 clients (83 percent) in the comparison group and 307 of the 382 clients (80 percent) in the BTC group; the remaining cases are either not found or incomplete. These case records were compared on time to arraignment, pretrial conference, and disposition, as well as type and length of sentence received in each case. This analysis incorporates measures of offense seriousness and criminal history score, coded in accordance to Washington State Sentencing Guidelines.

Table B.9 compares the groups on several pertinent offender and offense characteristics. This comparison displays several significant differences between the groups on important variables, including age at arrest, criminal history score, and type of charge. There were no differences between the groups, however, on gender, race, or mean number of charges.

Table B.9 Offender and Offense Characteristics for Impact Evaluation Sample in Tacoma

	Pre-BTC (N = 293)	BTC (N = 307)	Significance of Difference
Offender Characteristics			
Gender			ns
Female	28%	24%	
Male			
Race			ns
White			
Nonwhite	28%	26%	
Mean age at arrest (SD)	31.5 (8.4)	32.9 (8.4)	$p < .05$
Criminal history (SD)	1.5 (1.9)	1.1 (1.8)	$p < .01$
Offense Characteristics			
Type of charge			$p < .05$
Drug possession	50%	53%	
Drug sales	18%	24%	
Property offenses	24%	14%	
Person offenses	3%	3%	
Other offenses	5%	6%	
Mean number of charges (SD)	1.64 (0.83)	1.72 (1.03)	ns
Mean offense seriousness (SD)	1.48 (1.64)	1.42 (1.56)	

Table B.10 shows several significant differences between the groups on variables thought to affect time to disposition. The analysis below controls for these differences and other variables expected to affect time to disposition using Cox regression (survival analysis). These variables include demographic variables, guideline criminal history score, number of prior arrests, type of offense, and offense seriousness. Type of offense is dummy coded with drug possession as the reference category.

The key finding for the evaluation is that the likelihood of case disposition on any given day is 29 percent greater for the BTC group than the comparison group. This means that the BTC group's cases were closed more quickly than those of the comparison group.

Table B.10. Time to Disposition for Impact Evaluation Sample in Tacoma (Cox Regression)

Variable	Parameter Estimate	Hazard Ratio
BTC	0.255***	1.290
Age	–0.007	0.993
Female	–0.134	0.874
Nonwhite	–0.105	0.901
Drug distribution offense	–0.663***	0.515
Property offense	0.330***	1.391
Violent offense	0.188	1.206
Other offense	–0.096	0.909
Number of charges	–0.023	0.977
Criminal history score	–0.107***	0.899
Prior arrests	0.028***	1.028
Offense seriousness level	–0.091***	0.913
Model Fit		
N	574	
-2LL	97.251***	

*p < 0.10; **p < 0.05***p < 0.01

The sentencing outcomes for the two samples did not differ significantly on the number of conviction charges per case, method of disposition (table B.11), or duration of incarceration ordered at sentencing. While there appears to be a meaningful difference on this measure, this difference is largely attributable to one case in the comparison group with a very long sentence; comparing the group means on length of sentence omitting this case reduces that difference to 126 days versus 116 days, a nonsignificant difference. The median for both groups was 60 days.

Table B.11. Comparison Sentencing Outcomes for the Impact Evaluation Samples in Tacoma

	Pre-BTC (N = 293)	**BTC** (N = 307)	**Significance of Difference**
Mean number of convictions per case (SD)	1.1 (0.4)	1.1 (0.4)	ns
Method of disposition			ns
Guilty plea	98%	98%	
Dismissed	3%	2%	
Trial	0%	0%	
Type of sentence			$p < .05$
Jail	91%	95%	
Prison	9%	5%	
Probation w/o incarceration	0%	0%	
Mean length of incarceration, in days (SD)	141 (371)	116 (193)	ns

The analysis of length of incarceration ordered at sentencing, shown in Table B.12, controls for group differences and other variables expected to affect sentence length, including offense seriousness, criminal history, and number of convicted charges. The results are based on an OLS regression with log sentence in days as the dependent variable; type of offense is dummy coded with drug possession as the reference category. This analysis indicates that participating in BTC had no meaningful effect on sentence length independent of other factors. As expected, offense seriousness level, criminal history score, and number of arrests were significantly related to incarceration duration.

Table B.12. Log Sentence in Days for the Impact Evaluation Samples in Tacoma (OLS Regression)

Variable	Parameter Estimate	Significance-Level
BTC	0.118	0.162
Age	0.002	0.734
Female	–0.221	0.022
Nonwhite	0.132	0.167
Drug distribution offense	1.028	0.000
Property offense	0.244	0.035
Violent offense	0.428	0.103
Other offense	0.358	0.070
Number of charges	0.018	0.711
Number of convictions	0.206	0.141
Criminal history score	0.357	0.000
Prior arrests	0.039	0.000
Offense seriousness level	0.118	0.000
Intercept	2.434	0.000
Model Fit		
N	574	
R^2	0.46	

Appendix C
Composite Scale Properties

TACOMA Baseline Scores

	All (N = 733)	BTC (N = 382)	Comparison (N = 351)
ASI MEDICAL COMPOSITE (alpha = 0.898)	0.280	0.292	0.267
Days experienced medical problems, past 30 days	7.116	7.526	6.670
How troubled by medical problems, past 30 days	1.241	1.325	1.151
How important is treatment for medical problems	1.164	1.165	1.162
EMPLOYMENT COMPOSITE SCORE (alpha = 0.658)	0.808	0.798	0.819
Have valid driver's license	0.217	0.255	0.177
Have auto available	0.130	0.155	0.103
Number of days paid for working, past 30 days	4.784	4.291	5.319
Money received from working, past 30 days	299.705	313.861	284.339
ALCOHOL COMPOSITE SCORE (alpha = 0.863)	0.109	0.070	0.152
Days used alcohol, past 30 days	5.185	3.052	7.533
Days used alcohol to intoxication, past 30 days	3.160	1.942	4.501
Days experienced alcohol problems, past 30 days	1.296	0.963	1.663
How troubled by alcohol problems, past 30 days	0.298	0.178	0.429
How important is treatment for alcohol problems	0.331	0.183	0.493
Money spent on alcohol, past 30 days	23.302	13.830	33.729
DRUG COMPOSITE SCORE (alpha = 0.596)	0.142	0.120	0.166
Days used heroin past 30 days	2.012	1.270	2.828
Days used methadone past 30 days	0.121	0.139	0.101
Days used opiates/analgesics past 30 days	0.649	0.589	0.716
Days used barbiturates past 30 days	0.142	0.037	0.259
Days used sedatives past 30 days	0.815	0.974	0.641
Days used cocaine past 30 days	2.515	1.599	3.520
Days used amphetamines past 30 days	7.305	4.471	10.417
Days used cannabis past 30 days	5.182	3.809	6.690
Days used hallucinogens past 30 days	0.077	0.042	0.115
More than one substance/day past 30	6.226	4.042	8.624

	All (N = 733)	**BTC (N = 382)**	**Comparison (N = 351)**
days			
Days experienced drug problems past 30 days	7.378	7.241	7.529
How important is treatment for drug problems	1.582	1.610	1.552
LEGAL COMPOSITE SCORE (alpha = 0.589)	0.570	0.510	0.639
Presently awaiting charges, trial/sentencing	0.916	0.850	0.991
Days illegal activities for profit past 30 days	5.979	3.312	9.015
How serious are present legal problems	3.045	2.865	3.250
How important is counseling for legal problems	3.073	2.836	3.343
Money from illegal sources, past 30 days	545.169	475.463	624.773
FAMILY COMPOSITE SCORE (alpha = 0.649)	0.188	0.157	0.223
Are you satisfied with this situation?	1.373	1.471	1.265
Days serious conflict with family-30 days?	2.266	1.680	2.910
Days serious conflict with others-30 days?	1.834	1.661	2.023
How troubled by the family problems?	0.981	0.841	1.134
Problem get along: mother-30 days?	0.132	0.117	0.142
Problem get along: father-30 days?	0.095	0.121	0.081
Problem get along: sibling-30 days?	0.121	0.108	0.131
Problem get along: spouse-30 days?	0.255	0.269	0.244
Problem get along: children-30 days?	0.043	0.064	0.032
Problem get along: other family member-30 days?	0.052	0.046	0.055
Problem get along: friend-30 days?	0.124	0.109	0.137
Problem get along: neighbor-30 days?	0.068	0.066	0.070
Problem get along: coworker-30 days?	0.044	0.126	0.017
PSYCH COMPOSITE SCORE (alpha = 0.782)	0.277	0.263	0.294
Had serious depression, past 30 days	0.464	0.470	0.458
Had serious anxiety, past 30 days	0.522	0.543	0.497
Had hallucinations, past 30 days	0.088	0.071	0.108
Had trouble understanding, past 30 days	0.302	0.255	0.356
Had trouble controlling violent behavior, past 30 days	0.168	0.134	0.207
Had serious thoughts of suicide, past 30 days	0.098	0.063	0.138
Attempted suicide, past 30 days	0.011	0.008	0.015
Medication for psych problems, past 30 days	0.119	0.134	0.102
# days had psych problems, past 30 days	9.989	9.485	10.560

	All (N = 733)	**BTC (N = 382)**	**Comparison (N = 351)**
How troubled by psych problems, past 30 days	1.987	1.879	2.111
EMPLOYMENT DIFFICULTY SCORE (alpha = 0.801)	0.204	0.173	0.237
Days had employment problems, past 30 days	3.315	2.365	4.349
How troubled by employment problems, past 30 days	0.874	0.751	1.009
How important is counseling for employment problems, past 30 days	1.130	1.010	1.260
SOCIAL CONFLICTS SCORE (alpha = 0.547)	0.149	0.120	0.181
Days had serious conflicts with non-family members, past 30 days	1.858	1.649	2.086
How troubled by social problems, past 30 days	0.724	0.641	0.814
How important is counseling for social problems	0.415	0.579	1.077

TACOMA Follow-up Scores

	All (N = 542)	BTC (N= 286)	Comparison (N = 256)
MEDICAL COMPOSITE SCORE (alpha = 0.877)	0.258	0.279	0.235
Days experienced medical problems, past 30 days	6.453	7.309	5.492
How troubled by medical problems, past 30 days	1.215	1.326	1.091
How important is treatment for medical problems	1.022	1.046	0.996
EMPLOYMENT COMPOSITE SCORE (alpha = 0.752)	0.795	0.779	0.813
Have valid driver's license	0.203	0.253	0.148
Have auto available	0.134	0.157	0.109
Number of days paid for working, past 30 days	5.991	6.064	5.910
Money received from working, past 30 days	353.784	306.167	405.339
ALCOHOL COMPOSITE SCORE (alpha = 0.855)	0.080	0.073	0.087
Days used alcohol, past 30 days	3.498	3.205	3.826
Days used alcohol to intoxication, past 30 days	2.155	1.947	2.387
Days experienced alcohol problems, past 30 days	1.267	1.254	1.281
How troubled by alcohol problems, past 30 days	0.278	0.272	0.285
How important is treatment for alcohol problems	0.229	0.233	0.225
Money spent on alcohol, past 30 days	17.596	12.247	23.603
DRUG COMPOSITE SCORE (alpha =0.602)	0.093	0.086	0.101
Days used heroin past 30 days	1.583	1.448	1.732
Days used methadone past 30 days	0.186	0.301	0.059
Days used opiates/analgesics past 30 days	0.749	0.631	0.878
Days used barbiturates past 30 days	0.006	0.000	0.012
Days used sedatives past 30 days	0.602	0.477	0.740
Days used cocaine past 30 days	1.415	1.556	1.260
Days used amphetamines past 30 days	3.341	2.828	3.906
Days used cannabis past 30 days	2.805	2.624	3.004
Days used hallucinogens past 30 days	0.051	0.014	0.091
More than one substance/day past 30 days	3.129	2.753	3.543
Days experienced drug problems past 30 days	6.015	5.588	6.484
How important is treatment for drug problems	1.113	1.022	1.213
LEGAL COMPOSITE SCORE (alpha = 0.701)	0.335	0.283	0.393
Presently awaiting charges, trial/sentencing	0.447	0.371	0.532
Days illegal activities for profit past 30 days	3.092	2.392	3.884
How serious are present legal problems	2.321	2.163	2.500
How important is counseling for legal problems	1.769	1.382	2.208
Money from illegal sources, past 30 days	301.947	208.505	407.823
FAMILY COMPOSITE SCORE (alpha = 0.678)	0.120	0.095	0.149
Are you satisfied with this situation?	1.517	1.570	1.456
Days serious conflict with family-30 days?	0.963	0.817	1.127

	All (N = 542)	**BTC (N= 286)**	**Comparison (N = 256)**
Days serious conflict with others-30 days?	1.095	0.986	1.218
How troubled by the family problems?	0.588	0.415	0.782
Problem get along: mother-30 days?	0.092	0.062	0.129
Problem get along: father-30 days?	0.073	0.031	0.122
Problem get along: sibling-30 days?	0.079	0.066	0.093
Problem get along: spouse-30 days?	0.150	0.109	0.197
Problem get along: children-30 days?	0.028	0.007	0.051
Problem get along: other family member-30 days?	0.021	0.018	0.024
Problem get along: friend-30 days?	0.061	0.048	0.075
Problem get along: neighbor-30 days?	0.028	0.021	0.035
Problem get along: coworker-30 days?	0.039	0.032	0.045
PSYCH COMPOSITE SCORE (alpha = 0.825)	0.211	0.186	0.238
Had serious depression, past 30 days	0.357	0.316	0.402
Had serious anxiety, past 30 days	0.370	0.335	0.410
Had hallucinations, past 30 days	0.074	0.051	0.100
Had trouble understanding, past 30 days	0.261	0.236	0.289
Had trouble controlling violent behavior, past 30 days	0.115	0.084	0.149
Had serious thoughts of suicide, past 30 days	0.073	0.062	0.084
Attempted suicide, past 30 days	0.010	0.000	0.020
Medication for psych problems, past 30 days	0.132	0.120	0.145
# days had psych problems, past 30 days	7.935	7.175	8.775
How troubled by psych problems, past 30 days	1.464	1.371	1.566
EMPLOYMENT DIFFICULTY SCORE (alpha = 0.759)	0.177	0.180	0.174
Days had employment problems, past 30 days	3.194	3.570	2.784
How troubled by employment problems, past 30 days	0.823	0.888	0.753
How important is counseling for employment problems, past 30 days	0.876	0.791	0.969
SOCIAL CONFLICTS SCORE (alpha = 0.567)	0.083	0.063	0.105
Days had serious conflicts with non-family members, past 30 days	1.070	0.979	1.173
How troubled by social problems, past 30 days	0.420	0.336	0.514
How important is counseling for social problems	0.254	0.290	0.592