Chittenden County Treatment Court Burlington, VT

Evaluation Report

DRAFT

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EXECUTIVE SUMMARY

The Chittenden County Treatment Court (CCTC) has been working since 2003 to interrupt the cycle of addiction by combining evidence-based treatment and intensive judicial supervision, with the overall goals of reducing the impact of drug-related cases on the criminal justice system, enhancing community safety, increasing participants' sobriety and enabling them to be more productive members of the community.

Having worked as an evaluator for the State of Vermont over several years, NPC Research staff members have observed the CCTC, interviewed team members, held focus groups with participants, and collected data from program and State and County management information systems. Many of CCTC's practices are clearly aligned with evidence-based practices. There are other practices that the NPC team recommends CCTC consider changing as well as implementing best practices that are not currently in place. The outcomes from this study, specifically increased recidivism and higher costs among participants, suggest that the program should consider policy and practice changes (details and rationale are included in the full report that follows this summary).

Addressing discrepancies between court policy and practice, including the clarification parameters around program participation (especially substance use during participation, phase progression, and responses to behavior) may help address program performance problems including:

- Higher rates of re-arrest
- Earlier re-arrest (subsequent to the index arrest)
- A lower-than-average rate of graduation (48%)
- Higher costs associated with more time incarcerated due to higher rates of criminal recidivism

Specifically, drug court participants had a significantly[1] higher number of rearrests for all types of arrests, compared to the comparison group 2 and 3 years after program entry even after controlling for sex, age, race, and criminal history.[2,3] Drug court graduates had fewer rearrests

[1] Unless otherwise noted, "significant" findings have p values <.05

[2] Non-adjusted means are as follows by group and time period (1 Year, 2 Years, 3 Years): All CCADC Participants – 1.15, 1.67, 2.29; Comparison Group – 0.66, 1.16, 1.63.

[3] Time at risk is not included in the reported ANCOVA model. The average number of rearrests for each year was reviewed with incarceration time included as a covariate and the findings were similar, though the sample sizes were slightly reduced due to missing incarceration data. At Year 3, CCADC participants had more rearrests. Adjusted means by group and time period (1 Year, 2 Years, 3 Years): All CCADC Participants – 1.28, 1.87, 2.50; Comparison Group – 0.69, 1.23, 1.65.

than all CCTC court participants but similar to the comparison group 1, 2, and 3 years after program entry.[4]

Total cost for the CCTC program is estimated at $11,926 per participant. The total outcome cost over 3 years from program entry for the CCTC per participant (regardless of graduation status) was $43,537, while the cost per comparison group member was $43,083. The difference between the CCTC and comparison group represents a loss of $454 per participant. When costs due to victimizations are added, the difference in costs increases with CCTC participants costing a total of $2,817 more per participant than the comparison group due mainly to more property victimizations committed by participants.

This report is intended to describe the evaluation and propose changes that may address and help remediate these negative findings. A summary of NPC's key recommendations is included here. The full list of recommendations can be found in the study summary at the end of the report.

NPC suggests that the program implement the following changes to improve participant outcomes and decrease associated costs.

- Re-assessing general phase requirements and implement 5 phases with the associated specific requirements as described by the National Association of Drug Court Professionals. The CCTC team received training on this model in July 2016.
- Provide clarification on team member roles and write up a memorandum of understanding that describes each team member role, specific duties and other agreements (such as the confidentiality of staffing meetings) and have each team member sign.
- Ensure that all participants are represented by defense counsel during their time in the program and in particular, ensure that defense counsel remains in the staffing meeting for the discussion of all participants
- Develop specific guidelines on the use of sanctions and rewards following NADCP's best practice standards, give a printed copy of the guidelines to each team member and consider hanging a poster with the guidelines in the room used for staffing
- Explain the reasons for incentives and sanctions in court including the specific behavior being sanctioned or rewarded and what behavior you expect from participants. Also be aware of the importance of appearing to treat different participants fairly.
- Increase participant time spent before the judge, particularly for participants who are doing well, allowing them to explain (for the benefit of all participants) what they are doing to be successful.

[4] Graduates are not necessarily matched to the entire comparison group and therefore they are not directly comparable to the means of the comparison group, but are provided to add context for differences in outcomes between all drug court participants and graduates.

- Invest resources in training for all new team members on the drug court model, addiction and trauma, and work to ensure refresher training occurs for all other team members at regular intervals.
- Have judges serve longer terms on the drug court bench. Research shows that the longer judges stay with the drug court program, the better participant outcomes.
- Finally, participants stated they were rarely sanctioned for use, that sometimes their recent use was not mentioned in court, and they could not predict whether they would receive a sanction. It is important to remember that the purpose of the drug treatment court is to provide the structure and accountability that allow participants to end their drug use so that they can also end their physical dependence and engage in other, healthy and pro-social behaviors. We recommend that the team implement guidelines that are clear to both the team and participants regarding the court's response to drug use in the program.

From observations and interviews, it is clear that the CCTC team is committed to the program and to supporting participants to improve their lives. The implementation of some additional research based best practices will help ensure that the CCTC program reach its goals of reducing recidivism, protecting public safety and enabling participants to lead healthy and productive lives.

BACKGROUND

Drug courts are designed to guide offenders with substance use problems into treatment that will reduce drug use and improve the quality of life for the offenders and their families. Benefits to society often include substantial reductions in crime and decreased drug use, resulting in reduced associated costs to taxpayers and increased public safety.

In a typical drug court program, participants are closely supervised by a judge who is supported by an interdisciplinary team including a drug court administrator, case managers, substance abuse treatment providers, prosecuting attorneys, defense attorneys, law enforcement officers, and parole and probation officers who work together to provide services to drug court participants. Prosecuting and defense attorneys modify their traditional adversarial roles to support the treatment and supervision needs of program participants.

Drug courts can be effective in reducing criminal recidivism (GAO, 2005), improving the psycho-social functioning of offenders (Kralstein, 2010), and reducing taxpayer costs due to positive outcomes for drug court participants (including fewer re-arrests, less time in jail and less time in prison) (Carey & Finigan, 2004; Carey, Finigan, Waller, Lucas, & Crumpton, 2005). Some drug courts have been shown to cost less to operate than processing offenders through business-as-usual in the court system (Carey & Finigan, 2004; Carey et al., 2005).

More recently, research has focused not just on *whether* drug courts work but *how* they work, and *who* they work best for. Research-based best practices have been developed (e.g., Volume I of NADCP's Best Practice Standards was published in 2013 and Volume II in 2015). These Best Practice Standards present practices associated with significant reductions in recidivism or significant increases in cost savings or both. The Standards also describe the research indicating for whom the traditional drug court model works best, specifically, high-risk/high-need individuals. The Standards recommend that drug court programs either limit their population to high-risk/high-need individuals, or develop different tracks for participants at different risk and need levels (i.e., follow a risk-need responsivity model). That is, drug courts should assess individuals at intake to determine the appropriate services and supervision level based on their assessment results (e.g., Andrews, Bonta, & Wormith, 2006; Lowenkamp & Latessa, 2005). This research has led to the development of more sophisticated drug court programs, including programs that have implemented multiple tracks for their offenders based on the four "quadrants" of risk and need (high-risk/high-need, high-risk/low-need, low-risk/high-need, and low-risk/low-need).

The Chittenden County Treatment Court (CCTC) was implemented in June 2003 to interrupt the cycle of addiction by combining evidence-based treatment and intensive judicial supervision, with the overall goals of reducing the impact of drug-related cases on the criminal justice system, enhancing community safety, increasing participants' sobriety and enabling them to be more productive members of the community. The program, designed to take a minimum of 9 months to complete, accepts only post-plea/pre-conviction participants. The program population consists of high-risk/high-need Chittenden County residents that have been charged with crimes related to their drug addiction. The CCTC has a capacity to serve approximately 40 participants in the adult drug court program at one time. As of February 2016, the program reports 33 active participants. Since implementation in 2003, a total of 309 participants have entered the program, 125 have graduated, 141 exited the program unsuccessfully (were terminated, and 10 who left the program due to transfers or who were deceased. This results in an overall retention rate of approximately 53% and an overall graduation rate of about 45%.

Evaluation Description and Purpose

This report summarizes the process evaluation findings from the May 2016 process evaluation report as well as detailed methods and findings based on a comprehensive outcome and cost evaluation.

Research demonstrates that drug courts that have performed monitoring and evaluation and made changes based on the feedback have significantly better outcomes, including twice the reduction in recidivism rates and over twice the cost savings (Carey, Finigan, & Pukstas, 2008; Carey, Mackin, & Finigan, 2012; Carey, Waller, & Weller, 2011). NPC Research has been working with the Vermont Court Administrator's Office since 2008 to assess and provide technical assistance to improve Vermont's Adult Drug Courts and determine the programs' adherence to best practices. In 2013, a comprehensive process evaluation was completed in Chittenden and abbreviated assessments on best practices were completed in Washington and Rutland counties.

In late 2015, NPC Research was contracted by the State of Vermont Court Administrator's Office to provide an updated process evaluation of the CCCTC, along with an outcome and cost study. In May 2016, NPC provided the Court with a draft of the process report, held a debriefing phone call to discuss feedback, integrated the court team's feedback and submitted a final version of the report to the Chittenden Court team and to the State Court Administrator's Office.

Summary of Findings from the Process Evaluation

The May 2016 Process Evaluation Report provides a comprehensive review of NPC's methods and findings. Key commendations and recommendations[5] are summarized in the following subsections.

COMMENDATIONS

Overall, the CCTC follows the guidelines and some of the best practices within the 10 Key Components of Drug Courts. Among its many positive attributes, the program should be commended for the following practices:

- **The team added a law enforcement representative**. NPC previously recommended that the team work to include a law enforcement liaison on the team. CCTC team members noted that there was generally support from local law enforcement agencies, but that time constraints prevented them from participating. However, team members stated during the December 2015 follow-up call that a law enforcement representative is now participating on the team. The CCTC is commended for addressing this issue, as research has shown that drug courts that include law enforcement as an active team member have higher graduation rates, lower recidivism rates, and higher cost savings (Carey et al., 2011, 2012). If their role is not already defined on the team, the CCTC can use law enforcement to assist with home visits to verify that participants are living in an environment conducive to recovery.
- **All active team members attend both staffing and court sessions.** The CCTC judge, both attorneys, the coordinator, treatment representatives and case managers all attend both staffing meetings and court sessions. Research suggests that greater team member representation at staffing and court sessions is related to greater reductions in recidivism and higher cost savings (Carey et al., 2012).
- **A policy committee meets regularly.** The program has implemented a policy committee, referred to as "systems meetings." The purpose of these meetings is to discuss and make decisions about drug court policy issues that cannot be addressed during staffing sessions. The committee is also responsible for ensuring the court is working toward program goals. This committee should plan on using an upcoming session to address the commendations and recommendations described in this report.
- **CCTC has a dedicated public defender and deputy state's attorney assigned to the program.** Best practices research indicates that this results in positive participant outcomes including significantly lower recidivism and increased cost savings (Carey et al., 2008). Both attorneys are aware of the team approach while participating in drug court proceedings and are clearly supportive of the drug court model.
- **The program uses a validated assessment tool to determine participant risk and need (including level of substance use disorder).** A validated assessment tool allows the

[5] This summary does not reflect any changes that the Court may have implemented since May.

program to provide more appropriate and effective substance use treatment and other services.

- **The program offers an array of treatment services and uses evidence-based programming.** The CCTC offers a breadth of diverse and specialized services to program participants through its partnership with the Howard Center, along with utilizing various other treatment providers in the area. One area of note, is the new IOP program that is currently housed in the courthouse. This is a clinical best practice (to be co-located) and the CCTC is highly commended for being able to establish this type of programming.
- **The program offers referrals for ancillary services for participants.** Team members reported that the CCTC makes referrals for medical, dental and psychiatric care when needed. Meeting participant needs across the spectrum of issues affecting their lives can help them be more successful. In addition, appropriate care can help mitigate participant use of substances to self-medicate problems related to physical pain. Many programs have seen benefits with reduction in recidivism from offering health services.
- **The program provides relapse prevention education while participants are active in the program and an aftercare program following graduation.** Drug courts that provide relapse prevention education and aftercare have significantly improved participant outcomes (Carey et al., 2012). A relapse prevention plan enhances participants' ability to maintain the behavioral changes they have accomplished through participation in the CCTC. Although aftercare services are not required of all participants, having these services is a clinical best practice, supporting individuals in their transition to a drug-free lifestyle.
- **Drug testing occurs at least 2 times per week and now occurs on weekends**. Research indicates that testing 2 or more times per week in at least the first phase leads to lower recidivism rates, and continuing this frequency throughout the program is a recommended practice. The program is also commended for implementing weekend testing. Although testing 7 days a week is difficult to do, having the ability to test even 1 day per weekend greatly increases the amount of coverage on participants and substantially reduces the window of time that participants know testing will not occur. The CCTC should also be commended for extending the hours for testing on the weekday so that participants can more easily meet their drug testing requirements around their work schedules.
- **Participants are required to test clean for greater than 90 days before they can graduate.** Research has shown that greater than 90 days is a best practice, and the longer clients are required to be clean before graduation, the more positive their outcomes (both in terms of lowered recidivism and lower costs) (Carey et al., 2005, 2008, 2012).
- **Results from drug testing are obtained within 1 day.** The drug testing company utilized by the CCTC (Burlington Labs) is able to provide results for most drug tests within 1 day, including EtG testing. The CCTC is commended for working with a drug testing agency

that provides results within 2 days as research has shown this best practice is associated with higher graduation rates and lower recidivism (Carey et al., 2008).

- **In response to participant feedback during the evaluation process, the team adjusted the clean time requirements for phase advancements.** Since clean time requirements were less than the overall program phase length, participants reported that continued substance use occurred until they needed to start accumulating clean time for phase advancement. During the follow-up call after the site visit, the team reported that this practice has already changed, and any new participants entering the program are now subject to clean time requirements that equal the minimum time required in each phase, specifically, 60 days in Phase 1, 90 in Phase 2, and 90 in Phase 3.
- **Appropriate jail sanction lengths.** Jail sanctions for CCTC participants are generally 1–2 days. Although the option to use jail as a sanction is an integral piece of an effective drug court (Carey et al., 2008), jail should not be used for excessive lengths of time. There are some behaviors that are extremely difficult for individuals who are addicted to substances to perform in the early phases of the program, particularly abstinence. The immediate use of jail then leaves the court with no harsher alternatives (aside from lengthier time, which has been shown to be ineffective) to use later in the program when relapse should no longer be occurring. For this reason, the CCTC is commended for using jail infrequently.
- **The program requires participants to stay through the entire court hearing.** Drug court hearings are a forum for educating all participants and impacting their behavior. It is important that the court requires most participants (exceptions can be made) to stay for the entire hearing to observe consequences (both good and bad) and to learn how those who are doing well are able to succeed and make healthy choices and positive changes in their lives.
- **Status review hearings occur once every 2 weeks.** Research has shown that court appearances once every 2 weeks can have better outcomes than less frequent court appearances (Carey et al., 2008; Marlowe et al., 2006) (except in very high-risk populations who may do better starting with weekly appearances).
- **Judges preside over drug court for 2 years.** Drug court advocates have successfully worked with the state to allow drug court judges to stay beyond the usual 1-year rotations for up to 2 years on the drug court bench. The program and other drug court advocates should continue to campaign the Vermont Supreme Court (and other appropriate parties) regarding implementation of a policy that would structure the judicial rotation so that judges can stay on the drug court bench longer, have some time for training by the previous judge for the newly incoming judge, and eventually have the same judges rotate back through to the drug court bench, utilizing their past experience. Allowing the judge to volunteer for this service, if possible, also increases the potential for improved client outcomes (Carey et al., 2008, 2012). If it is not possible to change the frequency of rotation, it is important to have previous drug court judges available to

new judges for consultation, as judge experience and longevity are correlated with more positive participant outcomes and greater cost savings (Finigan, Carey, & Cox, 2007).

- **The program has participated in this process evaluation and will have an outside evaluation of outcomes and costs.** Drug courts that have participated in outside evaluation and have adjusted their program practices based on the results of these evaluations have significantly lower recidivism and higher cost savings (Carey et al., 2012). An evaluation of process, outcomes and costs, will be beneficial to the program for continuing improvement. In addition, outcome and cost findings can be especially helpful in obtaining funding from federal and state sources.
- **The program has creatively and effectively addressed many participant needs.** The program is commended for creating solutions to challenges in the program and in the community faced by participants. Team members provided examples of challenges they have solved related to psychiatric services and housing. This responsiveness and support helps the participants develop trust in the program and allows them to see that the program is working in their best interests.

NPC's review of program operations also resulted in some recommendations for program enhancements. The following recommendations reflect the primary areas of program improvement identified in the staff and participant interviews and observations during the site visit. Background information, more detailed explanations, and additional recommendations are presented within each of the 10 Key Components in the main body of the May 2016 report.

- **Provide clarification on team member roles.** In 2013, NPC observed that there was a lack of clarity in the roles of several team members. In particular, the schedules, expectations and duties related to case manager interactions with the clients were not well defined. There were some participants assigned specifically to case managers who provided support and scheduled regular meetings with participants. However, in other instances, participants may receive case management and attend regular meetings with treatment clinicians at Howard Center (or other treatment agencies). Communication among team members in the situation does occur but this overlap in services and duties may result in confusion for team members about how they should interact with these participants. The program may benefit from having more clear expectations and outlined duties for these case managers (or assigning one to drug court and the other to mental health court). Similar issues continued into 2016. NPC recommends that the team work together on a Memorandum of Understanding (MOU) that clearly defines all team member roles and responsibilities, including the role of the case managers.
- **Increase use of email communication.** Some team members noted that the use of email communication has lessened over time. This may be due to the turnover of team members, and the difficulty for some to use the treatment provider's encrypted email system. However, ongoing communication between court sessions is integral to informing team members of participant behaviors, and ensures that all information, including positive drug tests, is being considered before a court response is rendered. One possible option is to use participant initials or other pseudonyms that allow for

easier communication without compromising confidentiality. Another option is to allow all team members to share information within the court's updated drug court database.

- **Work to have a probation department representative on the team.** The probation department was initially involved with the program, but the relationship became contentious over time. Team members noted their concern that probation officers took a punitive approach incongruent with the treatment-based approach of drug court. However, team members also noted the lack of a probation representative greatly affected supervision levels of participants. In particular, the program does not have access to alcohol monitoring or GPS devices and no other options are currently available. In addition, home checks are infrequent due to lack of time or training. Finally, the lack of probation involvement impacts the participant population as the program is less likely to accept offenders currently on probation/furlough/parole which limits their pool of potential clients. It is highly recommended that the program reach out to the probation department again to request their support and help in selecting an officer who is interested in and willing to be trained in the treatment court model. The program should require that they be formally trained before joining the team and complete an orientation before attending staffing and court sessions. Most importantly, the team should outline the duties, tasks, and expectations of the probation officer in the MOU between all relevant agencies. **UPDATE**: As of summer 2016, the CCTC followed this recommendation and added a probation officer to the team who attends staffing and court sessions.
- **Participants should be represented by counsel during their time in the program.** Currently, when any participants that retain private attorneys (or have conflict of interest in the public defender's office) are discussed in staffing, the assigned public defender leaves the room due to concerns related to the Health Insurance Portability and Accountability Act (HIPAA) and potential conflict of interest. The public defender's chief concern is that she should not learn certain information unless a release is signed at each staffing. It is strongly recommended that the program address this issue, as team members also expressed concern regarding ex parte communication. Participants should always be represented by counsel during discussions in staffing sessions and any subsequent court sessions, particularly if there is a possibility that there may be sanctions that involve property or liberty interests. If private attorneys are unable (or unwilling) to be present, or the conflict attorney is not able to attend, these participants must be represented by the public defender. HIPAA concerns are not typically an issue since the program can have the appropriate parties sign a confidentiality form. Going forward, the program should give serious consideration to having participants sign up with the public defender once they enter in the program, and have a second attorney available in the case of conflicts.
- **Work to increase program capacity**. Team members were unsure of the exact reason for the lower number of active participants, but noted it was probably due to several issues over time. This includes the turnover of staff members, particularly the program coordinator, drug court judge, and state courts official, which resulted in a temporary hold on accepting new participants. A local program, Rapid Intervention Community

Court (RICC), is also accepting individuals who may be eligible for drug court, possibly resulting in fewer referrals for the CCTC. RICC works to intervene with lower level offenders and defendants with an extended history within the criminal justice system (individuals who may also be considered eligible for participation in drug court). The team should consider coordinating with the RICC to clarify the eligibility criteria for each program and determine if there are ways that they can work together to provide the services and resources needed for the population they serve. In addition, the team could review their eligibility guidelines and do more outreach agencies that refer offenders to the program. This will help gain a better understanding of how participants are being referred to the CCTC and whether there are additional defendants that are not being referred despite meeting eligibility criteria that could be referred going forward.

- **Continue efforts to reduce the time between arrest and program entry.** The team stated that significant delays hinder program entry for some participants. This is typically caused by the length of time between arrest and charges being filed (typically 6 weeks), delays in receiving paperwork (police reports, etc.), and the concern on the part of the public defender's office to expedite cases to protect due process rights. Team members noted the number of high-level changes required to substantially change arrest to entry times. However, the team should still consider conducting a case flow review to address potential bottlenecks to the entry process, perhaps identifying smaller issues that slow down the process, with the hope that larger system issues may be addressed in the future.
- **Monitor participant time in program.** During both visits to the CCTC, it was noted that many participants had been active in the program for extended periods of time (some as long as 4 years). While a set amount of time to complete the program should not be established, the program must consider the amount of resources that participants may be using and weigh that with providing the opportunity to other potential participants. NACCTCP created a new 5-phase form that the CCTC may use as a template for establishing timelines and milestones with participants. There is currently a training planned for an NACCTCP staff member to travel to Vermont to provide training in person on the five phase model as well as incentives and sanctions.
- **Evaluate general phase requirements:** The requirements of each program phase should mirror the basic stages of recovery including initiation of abstinence and stabilization, maintenance, relapse prevention and aftercare planning. The current participant handbook states that certain phases are "minimum of 3-4 months," with no distinction of what may allow a participant to advance phases in 3 months versus 4 months. It was observed that most participants were required to be in the phase for 4 months, which may necessitate an update to the handbook to reflect this requirement. Each phase should also have specific goals that must be achieved before advancement, regardless of the length of time the participant is in that phase. The upcoming training from NACCTCP staff will assist the CCTC team in developing their phase model following research based best practices.

- **Develop specific guidelines on the use of sanctions and rewards and give a printed copy to each team member.** Drug courts that have written guidelines for sanctions and rewards and that provide these guidelines to the team have double the graduation rates and 3 times the cost savings compared to drug courts that do not have written guidelines (Carey et al., 2008, 2011). These guidelines should be considered a starting point for team discussion of rewards and sanctions during staffing sessions and not hard and fast rules. They can help the team in maintaining consistency across participants so that, when appropriate, similar behaviors result in similar sanctions. The guidelines also serve as a reminder of the various reward and sanction options available to the team so they do not fall into habits of using the same type of sanctions (e.g., jail, loss of sober time) so frequently that they become ineffective. The CCTC has previously begun to address this recommendation by scheduling policy meetings with the specific goal to create guidelines for the team on incentives and sanctions; however, turnover among team members has delayed this action. It is recommended that all team members receive training in the use of incentives and sanctions, along with proximal and distal goals. Since the time of the site visit, NACCTCP has been contacted and plans for training are underway.
- **Explain the reasons for rewards and sanctions in court and be aware of the importance of appearing fair.** Because this drug court often imposes rewards and sanctions on an individualized basis, the team needs to take into consideration the appearance of unequal treatment for similar infractions. The court should communicate the rationale behind decisions regarding sanctions and incentives, even if it seems redundant at times. NPC encourages the team to explain court responses to behavior in detail during court sessions for the benefit of the participant being addressed by the judge and for the participants who are observing. In particular, the judge should describe the noncompliant behavior that the participant needs to stop and why a specific sanction was chosen with the intention of changing that behavior, and then describe what the participant should be doing instead. It can be very helpful for a participant to hear from the judge what they should do and not just what they should not do. This provides the participant with a positive behavior they can use in place of the negative behavior.

  Similarly, time should be taken with participants who are doing well to emphasize what they are doing right. The court should encourage participants to share in court what strategies they used to make it to appointments on time, or to avoid a situation that would trigger relapse, etc. Most participants already know what it looks like to do the wrong thing and be in trouble; what they often do not know is how to do it right. Participants can learn about correct behavior by listening to those participants who are doing well in court.
- **Increase participant time spent before the judge, particularly for participants who are doing well.** During the court session observation, participants spent an average of 2 minutes speaking with the judge. An average of 3 minutes or greater per participant is related to higher graduation rates and significantly lower recidivism rates than drug

courts that spend less than 3 minutes per participant (Carey et al., 2011). Since the court session is a learning opportunity for all participants, spending more time with the participants who are doing well, and ensuring that all participants can hear the conversation (rather than private conversations), will allow other participants to observe and learn positive behaviors that will help them replace old negative behaviors. High-performing participants should be used as an example for others, and should be given much more praise in front of the courtroom, along with engaging them in conversations about how they are accomplishing their goals. The drug court model is based on behavior modification so the focus should be on their behaviors.

- **Continue to share evaluation and assessment results.** The CCTC team members are encouraged to discuss the overall findings, both to enjoy the recognition of its accomplishments and to identify areas of potential program adjustment and improvement. In anticipation of receiving this report, the CCTC should schedule a time for the policy committee to discuss the results of this report and how the information it contains can be used. The program should also set time aside to review the Adult Drug Court Best Practice Standards (Volume I & II) to see which are being met and which are attainable for the program.

  Courts that have participated in an evaluation and made program modifications based on evaluation feedback have had twice the cost savings compared to courts that have not adjusted their program based on evaluation feedback (Carey et al., 2012). Appendix A contains a brief set of guidelines for how to review program feedback and next steps in making changes to the program.

- **Invest resources in training for all new team members, and work to ensure refresher training occurs for all other team members at regular intervals**. In particular, role-specific training would be extremely beneficial for the drug court coordinator, deputy state's attorney, and law enforcement representative (if no training has been received). Team members recently noted that the entire CCTC team will be attending the 2016 National Association of Drug Court Professionals Annual Training Conference. Additionally, providing a training opportunity for a probation officer on the role of probation in drug court may increase their buy in to the drug court model. All new team members should also be required to complete some formal training before (or shortly after) joining the team. The program provides an orientation, a packet of resources (policy and procedure manual, participant handbook, etc.) for review, and completion of online webinars available through NACCTCP, however not all team members are completing these orientation and training activities. We recommend that the program set up a system for team members to work together to ensure new members complete the orientation activities. In addition, setting aside time once per month or every other month to watch webinars or review information on best practices and other topics can help keep all team members up to speed.

- **Consider establishing an advisory group to further connect with existing and new community partners.** The team should continue discussing possible community connections and resources, and consider establishing an advisory group that meets once

or twice per year—both for ideas for generating outside support to enhance the program, and to be responsive to changes in the environment and participant needs. If it has not been done recently, completing a community mapping worksheet can help to reevaluate new resources and identify additional areas of need. (http://dn2vfhykblonm.cloudfront.net/sites/default/files/community_mapping_resources_chart.pdf).

- **Consider ideas to enhance graduation ceremonies.** The observed graduation ceremony was extremely positive. The team should consider ways to bring in outside agencies and additional community members to attend the ceremony as a means of garnering additional support for the program. Announcing the gifts that are given to participants or having the deputy state's attorney announce any dismissed/reduced charges are also ways to add weight to the ceremony.
- **Continue to invite community members and staff from other agencies to CCTC graduations**. Despite being established for many years, team members noted that much of the general community is still unaware of the CCTC program and its mission to improve the community and individual lives. It is important to educate those not familiar with drug courts about how the drug court model works and its benefits. Graduation ceremonies provide powerful testimony for the effectiveness of drug courts. Inviting potential partners, such as speakers involved in the recovery or treatment community, to graduation ceremonies is one low-cost strategy for strengthening outreach efforts, and allows them to witness positive program impacts.

Several of the program practices that resulted in the recommendations listed above may be related to the recidivism outcomes described in the next section. In addition, it is important to note that the program implemented many of best practices that resulted in the commendations within the last year and therefore participants who had benefited from those practices would still be in the program and not be included in the participant sample used in the outcome evaluation. This is also noted in the discussion of the outcome evaluation results later in the this report.

OUTCOME EVALUATION

The main purpose of an outcome evaluation is to determine whether program participation is associated with improved participant outcomes. An outcome evaluation can examine short-term outcomes that occur while a participant is still in the program including whether the program is delivering the intended amount of services, whether participants receive treatment more quickly and complete treatment more often than those who do not participate, whether participants are successfully completing the program in the intended amount of time, whether drug or alcohol use is reduced, and what factors lead to participants successfully completing the program. An outcome evaluation can also measure longer term outcomes, including participant outcomes after program completion such as re-arrests and incarceration.

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

1. What is the impact of drug court on recidivism?

   1a. Is participation in CCTC associated with a reduction in the average *number of* all rearrests for those individuals compared with traditional court processing?

   1b. Is participation in CCTC associated with a lower overall *recidivism rate* (the percent of participants who were rearrested) compared with traditional court?

   1c. Are non-drug court offenders (offenders who go through the traditional court process) more likely to get a new arrest sooner than drug court participants?

2. What is the relationship between drug court participation and substance abuse treatment?

   2a. Do CCTC participants enroll in substance abuse treatment more often than non-drug court offenders (offenders who go through the traditional court process)?

   2b. Do CCTC participants spend more time in substance abuse treatment than non-drug court offenders (offenders who go through the traditional court process)?

3. How successful is the program in bringing program participants to completion and graduation within the expected time frame?

4. What participant and program characteristics are associated with successful CCTC outcomes? What predicts non-completion (termination or unsuccessful exit from the CCTC program)?

Outcome Study Methods

For the outcome study, NPC included all participants who entered the CCTC program since it's inception and identified a sample of individuals eligible for the CCTC but who received traditional court processing for their charge (a policy alternative). It is important to identify a comparison group of individuals who are eligible for the CCTC because those who are not eligible represent a different population of CCTC offenders; thus, any differences that cause

individuals to be ineligible for CCTC could also be the cause of any differences found in outcomes. (NPC's methods for selecting the comparison group are described below.) Data for both program and comparison participants were tracked through existing administrative databases for a period of 1 to 3 years post CCTC court entry depending on the availability of the data. The evaluation team used criminal justice and treatment utilization data sources as described in Table 1 to determine whether CCTC participants and the comparison group differ in subsequent arrests as well as treatment utilization.

SAMPLE/COHORT SELECTION

To ensure a rigorous outcome evaluation, it is necessary to select a cohort of individuals who participated in the CCTC and a cohort of similar individuals who did not.

The CCTC Participant Group

The CCTC participant sample was the population of individuals who entered the program from February 2003 to June 2015. Outcomes are presented in 1-, 2-, and 3-year increments. However, some drug court participants do not have 2 or 3 full years since the date they entered the program; therefore, the 2- or 3-year recidivism rate for those individuals was not measured.

The Comparison Group

Step 1: Selecting the Comparison Group

The comparison sample is composed of individuals who are similar to those who participated in the drug court program (e.g., similar demographics and criminal history) but who did not participate in the program. NPC obtained case and arrest data for Chittenden County from the Vermont Criminal Information Center (VCIC) (see Table 1 for more details). These data allowed for the identification of individuals who received similar types of eligible arrests (e.g., drug, property, etc.) and therefore were potentially eligible for CCTC. Additional information was gathered from the Department of Corrections (DOC) database that indicated whether they fit the eligibility criteria for the drug court program. This information included detailed demographics and criminal history. All CCTC participants and comparison individuals were matched on all available information (described in detail below) using propensity score weighting.

Step 2: Matching the Comparison Group to the CCTC Group - Application of Propensity Score Weighting

Comparing program participants to offenders who did not participate in the drug court (comparison group members) is complicated by the fact that program participants may systematically differ from comparison group members, and those differences, rather than drug court, may account for some or all of the observed differences in the impact measures. To address this complication, once the available comparison sample was identified, we used a

method called propensity score matching because it provides some control for differences between the program participants and the comparison group (according to the available data on both groups) (Rosenbaum & Rubin, 1983). Propensity scores are a weighting scheme designed to mimic random assignment.

NPC matched participants with potential comparison group members on a number of participant characteristics including: 1) race, 2) age, 3) sex, and 4) prior criminal history. Table 2 lists the data elements that were used in the matching process.

DATA COLLECTION AND SOURCES

Administrative Data

NPC staff members adapted procedures developed in previous drug court evaluation projects for data collection, management, and analysis of the CCTC data. The data necessary for the evaluation were gathered from administrative databases as described in Table 1. The table lists the type of data needed and the source of these data.

Table 1. CCTC Evaluation Data and Sources

Data	Source
Drug Court Program Data *Examples:* • Participant demographics • Program start and end dates • Drug Tests • Sanctions and Incentives • Dates of court appearances	Chittenden Adult Treatment Court Access Database
Criminal Justice-Related Data *Examples:* • Incident dates (arrest dates) • Dates of case filings • Charges • Prison entry and exit dates • Jail entry and exit dates	Vermont Crime Information Center
Department of Corrections Related Data *Examples:* • Identifiers • Demographics • Jail and/or prison entry and exit dates • Probation and/or parole entry and exit dates	Vermont Department of Corrections

Data	Source
Substance Abuse Treatment *Examples*: • Entry and exit dates of treatment received • Types of substance abuse treatment received • Cost of treatment	Howard Center

Outcome Evaluation Findings[6]

Tables 2-5 provide the demographics for the study sample of CCTC participants (all matched participants who entered from February 2003 to June 2015) and the comparison group. Propensity score matching included the characteristics with bolded text, and showed no imbalances. Other characteristics, not used in matching due to lack of availability of consistent data in the comparison group, are provided as additional information.

Overall, Table 2 shows that about three-fifths of CCTC participants were male, almost all were White, and the average age at program entry was 28 years old with a range from 17 to 54 years old. None of these characteristics was significantly different in the comparison group.

Table 2. CCTC Participant and Comparison Group Characteristics: Demographics

	CCTC Participants *N* = 280	**Comparison Group *N* = 418**
Sex		
Male	58%	55%
Female	42%	45%
Race/Ethnicity		
White	95%	94%
African American	3%	6%
Other	2%	0%
Age at Entry Date		
Average age in years	28 years	29 years
Range	17 – 54	17 – 66

[6] Analysis methods are included as Appendix B

In terms of prior criminal history, the CCTC participants and comparison group were very similar. Table 3 shows the criminal history for the CCTC participants and the comparison group. There were no statistically significant differences in criminal history between the two groups.

Table 3. CCTC Participant and Comparison Group Characteristics: Criminal History

	CCTC Participants *N* = 280	Comparison Group *N* = 418
Average number of arrests 2 years prior to program entry	4.25	4.40
Average number of person arrests 2 years prior to program entry	0.24	0.26
Average number of property arrests 2 years prior to program entry	2.79	2.83
Average number of drug arrests 2 years prior to program entry	0.45	0.46
Average number of other arrests 2 years prior to program entry	4.22	4.38
Average number of misdemeanor arrests 2 years prior to program entry	3.03	3.29
Average number of felony arrests 2 years prior to program entry	1.90	1.77

About one in four CCTC participants had some college or were college graduates and almost half were employed at entry. Most CCTC participants were single. The majority of CCTC program participants reported prescription drugs as a drug of choice. Cocaine and heroin were also used by roughly half and marijuana and alcohol by more than one-third, of the study participants.

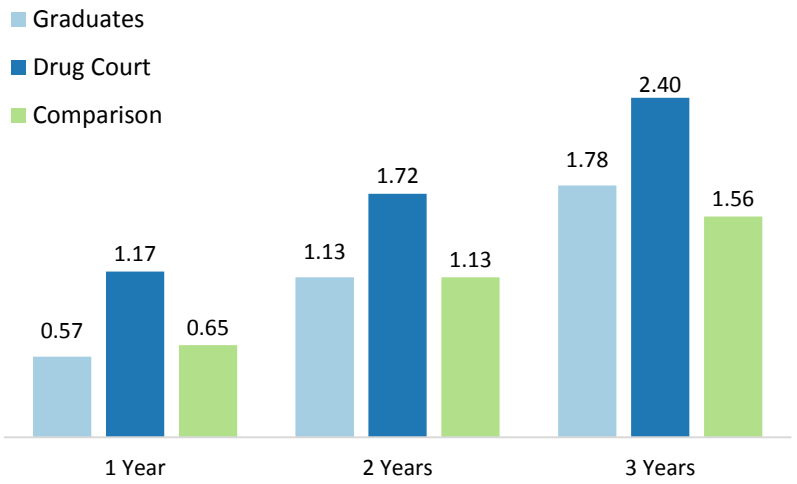
OUTCOME STUDY QUESTION #1: WHAT IS THE IMPACT OF CCTC ON CRIMINAL RECIDIVISM?

1a. Is participation in the drug court associated with a reduction in the average number of all rearrests for those individuals compared with traditional court processing?

Figure 1 illustrates the average number of cumulative rearrests for each year up to 3 years after program entry for CCTC graduates, all CCTC participants, and the comparison group. As illustrated in the graph, drug court participants had a significantly higher number of rearrests (including all types of charges but not traffic citations), relative to the comparison group 2 and 3

years after program entry, controlling for sex, age, race, and criminal history.[7,8] This indicates that up to 3 years from program entry, the program was associated with higher recidivism. Drug court graduates had fewer rearrests than all CCTC court participants but similar numbers to the comparison group 1, 2, and 3 years after program entry.[9]

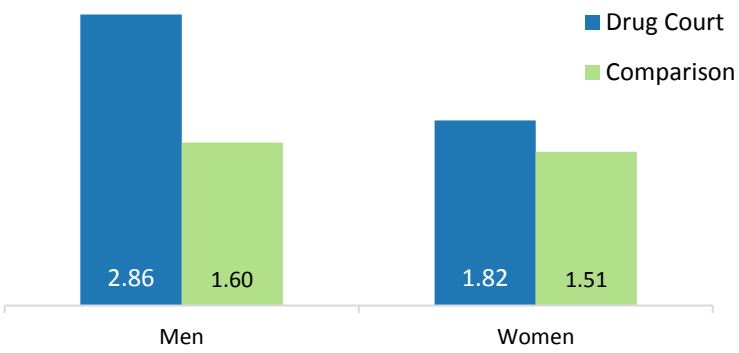
Figure 1. Average Number of Rearrests over 3 Years[10]



Further examination into the average number of rearrests for program participants and the comparison group revealed an interaction between participation in the CCTC and gender. As shown in Figure 2, men who participated in CCTC had significantly more rearrests than men in the comparison group ($p < .001$) while women across groups had similar numbers of rearrests. Figure 2 displays the average number of rearrests at 3 years post program entry, this interaction and finding was present at 1- and 2- years post entry as well.

[7] Non-adjusted means are as follows by group and time period (1 Year, 2 Years, 3 Years): All CCADC Participants – 1.15, 1.67, 2.29; Comparison Group – 0.66, 1.16, 1.63.
[8] Time at risk is not included in the reported ANCOVA model. The average number of rearrests for each year was reviewed with incarceration time included as a covariate and the findings were similar, though the sample sizes were slightly reduced due to missing incarceration data. At Year 3, CCADC participants had more rearrests. Adjusted means by group and time period (1 Year, 2 Years, 3 Years): All CCADC Participants – 1.28, 1.87, 2.50; Comparison Group – 0.69, 1.23, 1.65.
[9] Graduates are not necessarily matched to the entire comparison group and therefore they are not directly comparable to the means of the comparison group, but are provided to add context for differences in outcomes between all drug court participants and graduates.
[10] Sample sizes by group and time period (1 Year, 2 Years, 3 Years): Graduates *n* = 127, 125, 114; All CCADC Participants *n* = 280, 273, 244; Comparison Group *n* = 418, 346, 283.

Figure 2. Average Number of Rearrests at 3 Years by Gender[11]



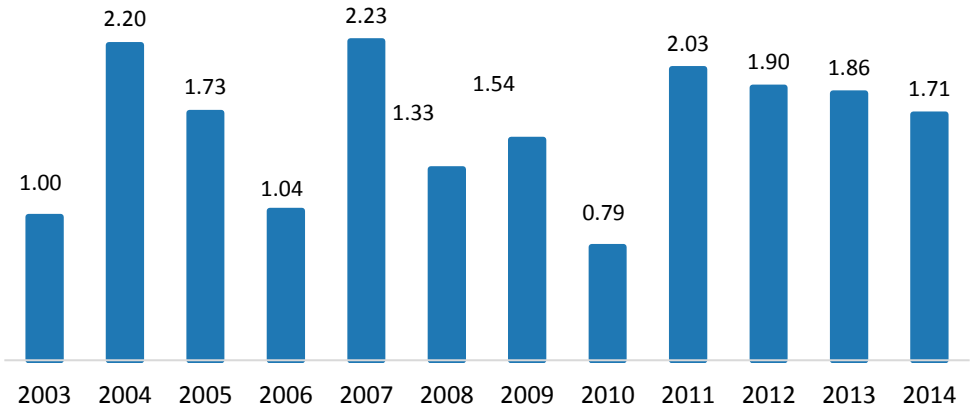
The number of arrests occurring in the 2 years prior to program entry also greatly affected outcomes. While CCTC participants and comparison group offenders with fewer priors (1 or less) were similar to each other, CCTC participants averaging 4 or more prior arrests had significantly more rearrests each year post entry ($p < .001$) than the comparison group offenders with similar numbers of prior arrests. [12]

Participant outcomes were also explored over a relatively long period of time (2003 to 2015) and included participants who received varying dosage in terms of length of stay in the program. Figure 3 shows the average number of rearrests 2 years post program entry, by program entry year. While averages vary by year, 2011 through 2014 have produced more consistent averages but with a slight downward trend. Further examination of Figure 3 reveals that the recidivism numbers appear to increase one year and then decrease the next year; a two-year cycle. Since judges in Vermont serve two-year terms in drug treatment courts, this pattern in recidivism is consistent with judge rotation and also consistent with prior research showing that recidivism increases in drug courts each time a new judge presides over the program and recidivism decreases the longer the same judge remains with the program (e.g., Finigan, Carey & Cox, 2008).

[11] Sample sizes by group and sex: CCADC Men *n* = 133, CCADC Women *n* = 111; Comparison Group Men *n* = 157, Comparison Group Women *n* = 126.

[12] Adjusted means by group and prior arrest (1 prior, 4 priors, 7 priors) at 3 years post program entry: All CCADC Participants – 1.08, 2.28, 3.48; Comparison Group – 0.58, 1.47, 2.37.

Figure 3. Average Number of Rearrests at 2 Years Post Entry by Program Entry Year[13]



Length of stay in the program (or dosage) seemed unassociated with recidivism; participants staying in the program 0 to 6 months averaged 1.97 rearrests, participants with 6 to 12 months averaged 1.60 rearrests, and participants with at least 1 year in the program averaged 1.52 rearrests – all at 2 years post entry.[14]

In addition to all rearrests, a key measure for drug courts is new arrests associated with drug charges as this is an indication of continued drug use. Figure 4 illustrates the average number of rearrests *with drug charges* for each year up to 3 years after program entry for CCTC graduates, all CCTC participants, and the comparison group. Although the average number of drug rearrests is higher for the CCTC group, the difference is not statistically significant, given the low incidence of drug rearrests for both groups (the majority of both groups had no drug rearrests 1-, 2-, and 3-years post entry). [15,16]

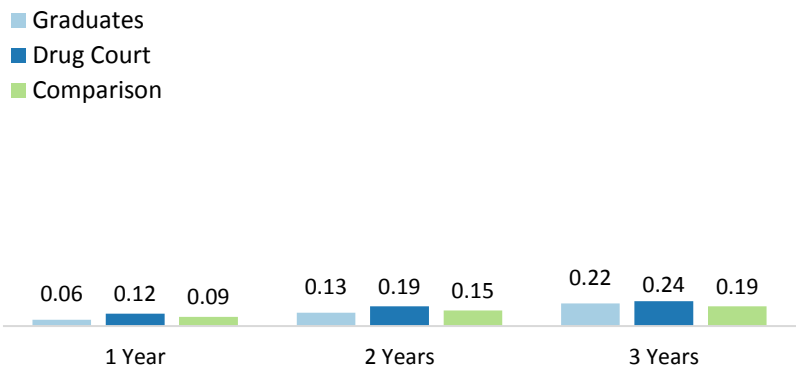
[13] Sample sizes by year: 2003 *n* = 11, 2004 *n* = 25, 2005 *n* = 22, 2006 *n* = 23, 2007 *n* = 22, 2008 *n* = 21, 2009 *n* = 13, 2010 *n* = 24, 2011 *n* = 31, 2012 *n* = 31, 2013 *n* = 29, 2014 *n* = 23.

[14] Sample sizes by program length of stay: 0 to 6 months *n* = 63, 6 to 12 months *n* = 55, and more than 12 months *n* = 125.

[15] Non-adjusted means are as follows by group and time period (1 Year, 2 Years, 3 Years): All CCADC Participants – 0.12, 0.19, 0.23; Comparison Group – 0.09, 0.15, 0.18.

[16] Time at risk is not included in the reported ANCOVA model. The average number of rearrests for each year was reviewed with incarceration time included as a covariate and the findings were similar, though the sample sizes were slightly reduced due to missing incarceration data. Adjusted means by group and time period (1 Year, 2 Years, 3 Years): All CCADC Participants – 0.12, 0.20, 0.26; Comparison Group – 0.09, 0.17, 0.22.

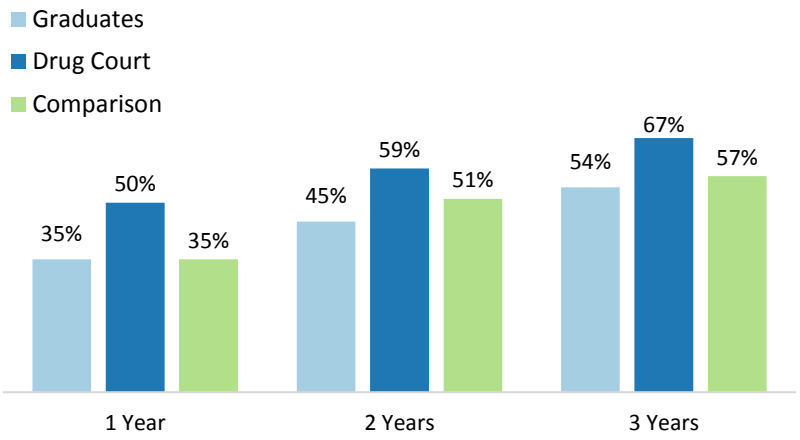
Figure 4. Average Number of Drug Rearrests over 3 Years[17]



1b. Is participation in drug court associated with a lower overall recidivism rate (the percent of participants who were rearrested) compared with traditional court?

In addition to examining the average numbers of rearrests as described in 1a, it is also useful to examine the proportion of individuals from each group who were rearrested at least once over time. Figure 4 illustrates the percent of CCTC graduates, all CCTC participants, and comparison group members who were rearrested over a 3-year period for any charge following program entry. The percent of CCTC participants rearrested was significantly higher than the comparison group each year post entry when controlling for sex, age, race, and criminal history.

Figure 5. Percent of Individuals Rearrested for any Offense over 3 Years[18]



[17] Sample sizes by group and time period (1 Year, 2 Years, 3 Years): Graduates *n* = 127, 125, 114; All CCADC Participants *n* = 280, 273, 244; Comparison Group *n* = 418, 346, 283.

[18] Sample sizes by group and time period (1 Year, 2 Years, 3 Years): Graduates *n* = 127, 125, 114; All CCADC Participants *n* = 280, 273, 244; Comparison Group *n* = 418, 346, 283.

To assess a more complete history of the criminality of both groups, researchers also reviewed arrests by type of charge including person (e.g., assault), property (e.g., theft), drug (e.g., possession), or other arrest charges (e.g., trespassing) 3 years from program entry in Figure 6 and level (misdemeanor and felony) in Figure 7.[19] Researchers used logistic regressions to control for age, race, sex, and criminal history and determine statistical differences between groups.

Figures 6 and 7 demonstrate that, with the exception of drug crimes, there were significant differences between groups. CCTC participants had significantly lower rates of person crimes ($p < .05$). However, CCTC participants had significantly higher rates of property ($p < .001$), "other," misdemeanor, and felony arrests ($p < .05$). "Other" arrests, accounting for the greatest portion of charges, include a wide variety of offenses such as public disorder, restraining order violations, and disturbing the peace. Property arrests are also particularly prevalent for the participant group. One possible factor for the high number of both property and "other" arrests is the proximity of the court house to a major retail area; less than 2 blocks and across the street from the court house as well as adjacent to a major bus line stop. During the process evaluation, the program noted that the security for the retail area was highly attuned to recognize drug court participants and often had them arrested for loitering, trespassing, and theft. As the comparison group offenders were not required to be present at the court house as frequently as the program participants, this might explain part of the vast difference in these types of arrests.

[19] When an individual received more than one charge per arrest, a single arrest could be coded as both a person and property crime. Therefore, the percentages in Figures 5-6 do not add up to the percent of total arrests reflected in Figure 4.

Figure 6. Percent of Individuals Rearrested by Arrest Charge at 3 Years[20]

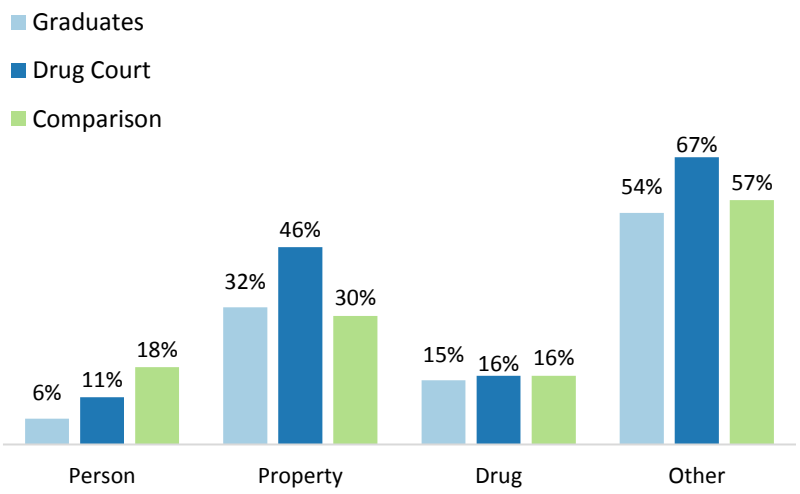
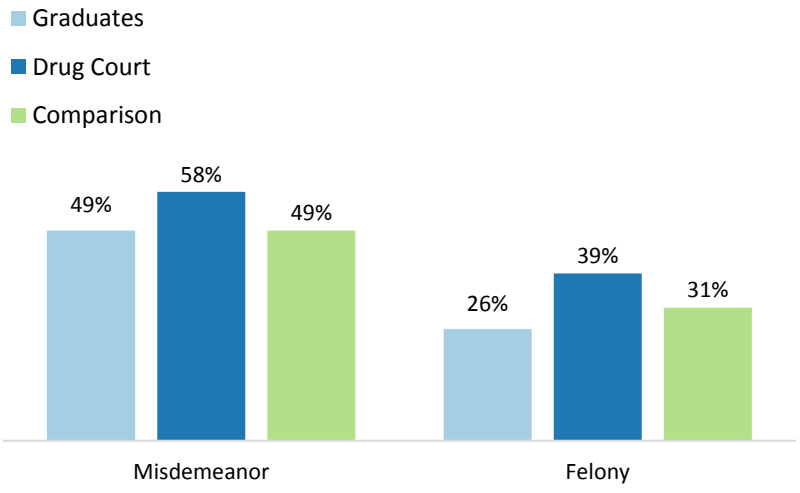


Figure 7. Percent of Individuals Rearrested by Arrest Level at 3 Years[21]

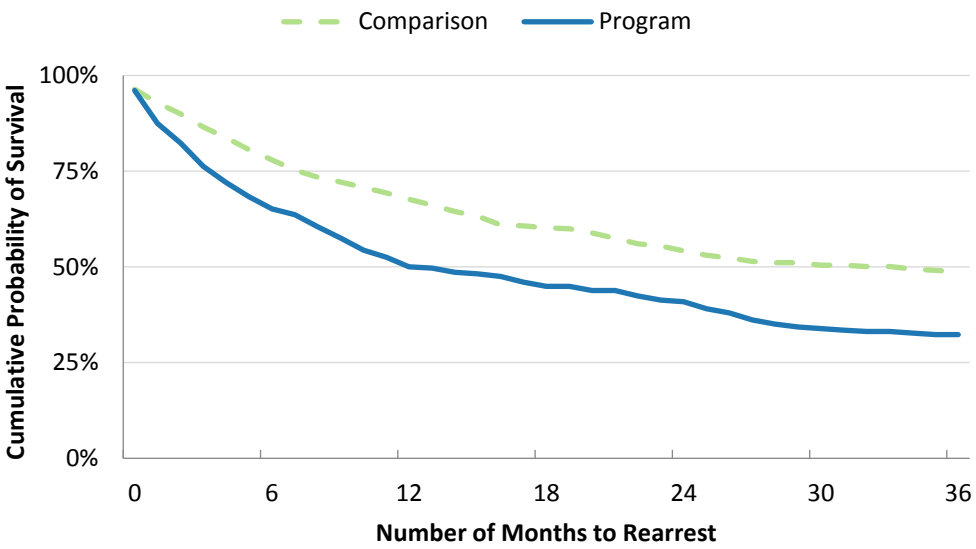


[20] Sample sizes by group: Graduates *n* = 114; All CCADC Participants *n* = 244; Comparison Group *n*= 283.
[21] Sample sizes by group: Graduates *n* = 114; All CCADC Participants *n* = 244; Comparison Group *n*= 283.

1c. Are non-drug court offenders (offenders who go through the traditional court process) more likely to get a new arrest sooner than drug court participants?

Researchers conducted a survival analysis of participants with up to 3 years (presented in months) of outcome data. Results in Figure 8 show that the time to a rearrest for CCTC participants and comparison group members occurred at significantly different rates within the first year, and then leveled out in years 2 and 3. The solid blue line represents the CCTC group, and the dashed line represents the comparison group. As the line drops, this indicates the occurrence of rearrests over time. A steeper drop in the line indicates a greater number of rearrests occurring sooner. The average time to first rearrest for program participants was 18 months and 23 months for the comparison group, a significant difference ($p < .001$). Moreover, half of program participants were rearrested within 13 months while the comparison group did not reach 50% re-arrested until 34 months. At the end of the 3-year period (for participants with a full 3 years of time since entry), 68% of CCTC participants were rearrested compared to 51% of comparison group.

Figure 8. Probability of Remaining Un-Arrested over Time [22]



[22] Sample sizes by group: All CCADC Participants *n*= 280; Comparison Children *n*= 418.

OUTCOME STUDY QUESTION #2: HOW HAS CCTC PARTICIPATION IMPACTED USE OF SUBSTANCE ABUSE TREATMENT?

2a. Do CCTC participants enroll in substance abuse treatment more often than non CCTC offenders?

CCTC participants utilized mental health and substance abuse treatment services at higher rates than the comparison group, prior to program entry. Table 4 displays the proportion of each group who received certain services at Howard Center in the 2 years prior to program entry. While over one quarter of the program participants received some form of mental health or substance abuse treatment within 2 years before entering the program, none of the comparison group had previous treatment at Howard Center, the primary substance use treatment agency in Chittenden County.

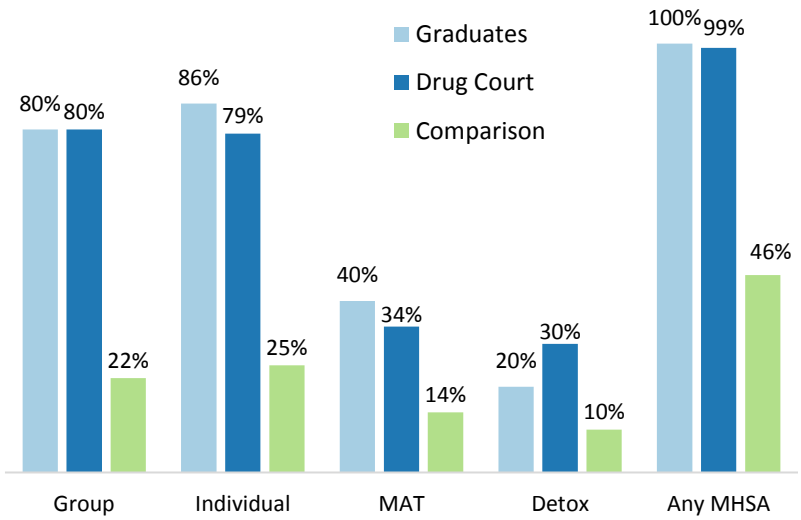
Table 5. CCTC Participant and Comparison Group Characteristics: Prior Substance Abuse Treatment

	CCTC Participants *N* = 204	**Comparison Group *N* = 418**
Prior Substance Abuse Treatment		
Group treatment received 2 years prior to program entry (or an equivalent date for the comparison group)	14%	0%
Individual treatment received 2 years prior to program entry (or equivalent date)	12%	0%
Detox treatment received 2 years prior to program entry (or equivalent date)	16%	0%
Medicated assisted treatment (MAT) received 2 years prior to program entry (or equivalent date)	8%	0%
Any mental health or substance abuse treatment received 2 years prior to program entry (or equivalent date)	28%	0%

Once participants enter the program, access to services increases. Significantly more CCTC participants received treatment in the 3 years after the program entry date than non CCTC offenders. Figure 9 illustrates the percent of CCTC graduates, all CCTC participants, and comparison group members who received treatment over a 3-year period. The percent of CCTC participants receiving treatment was significantly higher than the comparison group ($p < .001$ for each service), controlling for sex, age, race, and criminal history. It is important to note that

treatment data received was only from the Howard Center, which is the primary treatment provider in Chittenden County and the CCTC. However, some individuals in both participant groups and comparison group received substance abuse treatment from other agencies.

Figure 9. Percent of Individuals Receiving Treatment at 3 Years[23]



2b. Do CCTC participants spend more time in substance abuse treatment than non CCTC offenders?

In the 3 years after program entry, the CCTC participants spent more time in treatment services than the comparison group. Figure 10 shows the average number of hours CCTC graduates, all CCTC participants, and comparison group members spent in group, individual, and detox treatment. The reported average number of hours for each treatment types was adjusted[24] for sex, age, race, and criminal history. The number of hours was significantly higher for CCTC participants than the comparison group members for group and detox services ($p < .001$) as well as individual services ($p < .05$).

[23] Sample sizes by group at 3 Years: Graduates $n = 86$; All CCADC Participants $n = 173$; Comparison Group $n = 298$.
[24] Non-adjusted means are as follows by group and treatment type (group, individual, MAT, detox): CCADC-CAM Participants – 43, 16, 39; Comparison Group – 7, 3, 4.

Figure 10. Average Hours Spent in Treatment Over 3 Years[25]

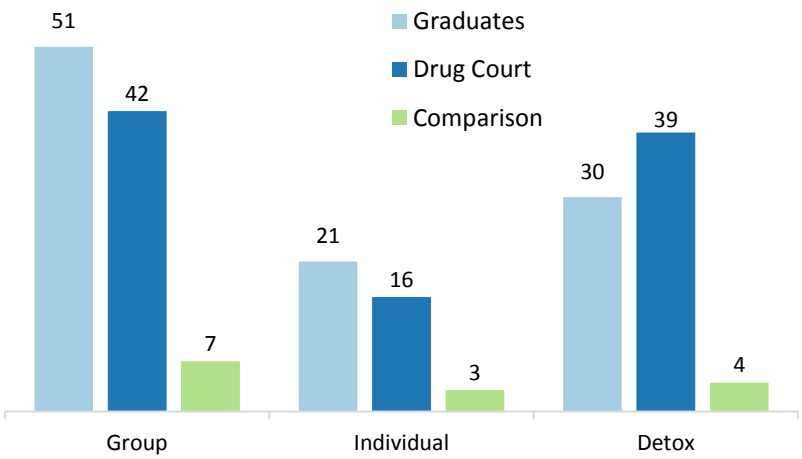
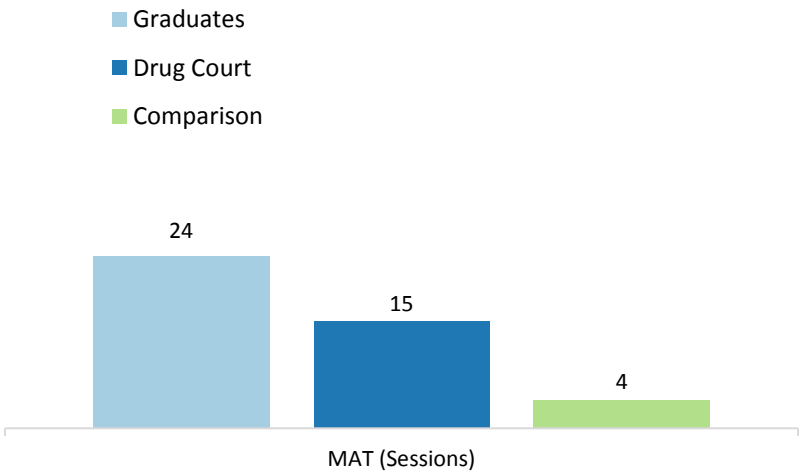


Figure 11 shows the number of medically assisted treatment sessions (MAT) for each group. While MAT appears to differ greatly between groups, when controlling for sex, age, race, and criminal history[26] the differences are not significant.

Figure 11. Average Medically Assisted Treatment (MAT) Sessions Over 3 Years[27]



[25] Sample sizes by group at 3 Years: Graduates *n* = 86; All CCADC Participants *n* = 173; Comparison Group *n* = 296.
[26] Non-adjusted means are as follows by group: All CCADC Participants – 15; Comparison Group – 4.
[27] Sample sizes by group at 3 Years: Graduates *n* = 86; All CCADC Participants *n* = 173; Comparison Group *n* = 296.

OUTCOME STUDY QUESTION #3: HOW SUCCESSFUL IS THE PROGRAM IN BRINGING PROGRAM PARTICIPANTS TO COMPLETION AND GRADUATION WITHIN THE EXPECTED TIME FRAME?

Whether a program is bringing its participants to successful completion and doing so in the intended time frame is measured by program graduation (completion) rate, and by the amount of time participants spend in the program. Program *graduation rate* is the percentage of participants who graduated from the program, out of a cohort of participants who started during a similar period and who have left the program either by graduating or by being unsuccessfully discharged. Active participants are excluded from the calculation. Graduation rate was calculated for each entry year from 2003 to 2015. The program's graduation rate for all participants entering between February 2003 and June 2015 is 48%, which is lower than the national average of 57% (The latter half of 2015 and all of 2016 were not included because a large number of the participants were still active). Table 6 shows program status by entry cohort year.

Table 6. CCTC Completion Status by Entry Year

Program Entry Year	Total Participants	Graduates	Non-Graduates	Actives
2003	14	43%	57%	0%
2004	26	31%	69%	0%
2005	23	43%	57%	0%
2006	24	67%	33%	0%
2007	23	30%	70%	0%
2008	22	41%	59%	0%
2009	13	23%	77%	0%
2010	25	44%	56%	0%
2011	31	74%	26%	0%
2012	34	44%	56%	0%
2013	30	57%	37%	7%
2014	25	32%	48%	20%
2015	11	9%	46%	46%
2016	11	0%	0%	100%

Note. Percentages may not add up to 100% due to rounding.

Regardless of the graduation rate, programs should identify and focus on those practices that are associated with successful completion. To increase graduation rates, drug court teams must consider the challenges participants face in meeting program requirements, review program operations, and make adjustments to support participants in their ability to comply. For example, if an individual is homeless or does not have enough to eat, it can be difficult to focus on engaging in substance abuse treatment. Or, if a participant has no transportation, getting to appointments can be exceptionally challenging. If the goal is to get participants to treatment (rather than to test participant's ability to find transportation) then providing transportation is a good way to meet this goal.

To measure whether the program was conforming to the expected time frame for participant completion, the evaluation team calculated the average amount of time in the program for CCTC graduates. The minimal requirements of CCTC theoretically allow for graduation at approximately 9 months from the time of entry to graduation. On average, most participants spend more than 9 months in the program, regardless of completion status. Best practice research shows that drug courts that require a minimum of 12 months in the program have significantly better outcomes.

The average length of stay in CCTC for all participants was 391 days (almost 13 months). Graduates spent an average of 502 days in the program (16 and a half months), ranging from 5 and a half months to 3.4 years in the program. Approximately 25% graduated within 12 months, and 75% graduated within 18 months after program entry. Participants who did not graduate spent, on average, around 9 and a half months in the program. The program is not graduating the majority of its participants within the 9-month time frame and, like the majority of drug courts in the United States, CCTC participants spend considerably more time than 12 months in the program.

OUTCOME STUDY QUESTIONS #4: WHAT PARTICIPANT CHARACTERISTICS ARE ASSOCIATED WITH PROGRAM SUCCESS AND DECREASED RECIDIVISM?

NPC compared graduates and non-graduates on a variety of factors to determine whether there were any patterns associated with program graduation. The following analyses included participants who entered the program from 2003 through 2015. Of those 301 individuals, 149 (49%) were unsuccessfully discharged from the program and 134 (45%) graduated.[28]

Analyses were performed to determine if there were any demographic, criminal history, or program activity differences among participants that were related to successful drug court completion, including sex, age, ethnicity, length of time in the program, drug tests, prior treatment, treatment dosage during the program, and number of arrests in the 2 years before drug court entry. Tables 7-10 show the results for graduates and non-graduates. Any results that showed significant differences between graduates and non-graduates from the chi-square and *t* test analyses are in bold.

As presented in Table 7, graduates were significantly more likely to have at least a high school education and be employed at entry. Graduates were significantly less likely to report marijuana or cocaine as drugs of choice.

[28] The remaining 6% still active or exited for other reasons (e.g., moved, transferred, etc.) at the time of this evaluation (*n* = 17).

Table 7. CCTC Graduate & Non-Graduate Characteristics: Demographics

	Graduates ***n*** **= 134**	**Non-Graduates** ***n*** **= 149**
Sex		
Male	53%	47%
Female	60%	40%
Race/Ethnicity		
White	95%	95%
African American	2%	2%
Other	3%	3%
Age at Entry		
Average age in years	29	28
Married at Entry		
Yes	13%	87%
No	8%	92%
Education at Entry		
Less than high school	**11%**	**28%**
High School, GED, or more	**89%**	**72%**
Employed at Entry		
Yes	**54%**	**31%**
No	**46%**	**69%**
Drugs of Choice		
Prescription Drugs	80%	89%
Cocaine	**45%**	**69%**
Heroin	36%	54%
Marijuana	**29%**	**58%**
Alcohol	29%	46%

Note. Sample sizes vary by item depending on missing data.

Table 8 describes the criminal history of graduates and non-graduates prior to entering the program. Graduates had, overall, fewer arrests (specifically fewer "other" and misdemeanor arrests) in the 2 years prior to drug court entry, indicating that those with more severe criminal histories (higher risk individuals) are not graduating at similar rates as those with less extensive criminal histories.

Table 8. CCTC Graduate & Non-Graduate Characteristics: Criminal History

	Graduates ***n* = 134**	**Non-Graduates** ***n* = 149**
Arrest to Entry Days		
Average number of days	170	167
Prior Arrests		
Average number of arrests 2 years prior to program entry	**3.75**	**4.60**
Average number of person arrests 2 years prior to program entry	0.17	0.28
Average number of property arrests 2 years prior to program entry	2.74	2.77
Average number of drug arrests 2 years prior to program entry	0.40	0.43
Average number of other arrests 2 years prior to program entry	**3.71**	**4.58**
Average number of misdemeanor arrests 2 years prior to program entry	**2.46**	**3.45**
Average number of felony arrests 2 years prior to program entry	1.98	1.84

Table 9 describes the mental health and substance abuse treatment history[29] of graduates and non-graduates prior to entering the program. Graduates were more likely to have received group treatment at Howard Center prior to entry. And, although not statistically significant (most likely due to small sample size), it is interesting to note that twice as many graduates as non-graduates received medically assisted treatment prior to program entry.

Table 9. CCTC Graduate & Non-Graduate Characteristics: Treatment History

	Graduates ***n* = 101**	**Non-Graduates** ***n* = 103**
Percentage receiving group treatment 2 years prior to program entry	**29%**	**15%**
Percentage receiving individual treatment 2 years prior to program entry	17%	19%
Percentage receiving medically assisted treatment 2 years prior to program entry	13%	6%
Percentage receiving detox treatment 2 years prior to program entry	20%	24%
Percentage receiving any mental health or substance abuse treatment 2 years prior to program entry	62%	52%

Table 10 displays a variety of activities that occur for participants while in the program. CCTC graduates and non-graduates look similar. For a few items, differences follow an expected pattern. For example, graduates often stay in the program longer and receive more rewards (i.e., are in compliance with the program). Treatment, however, presents some interesting trends. While graduates and non-graduates appear to receive similar hours in group treatment, successful participants spend more time in individual treatment and MAT and less time in detox. Data are unavailable to explain this finding. It could be that those with multiple detox episodes are experiencing more relapses and struggling to complete program requirements. It could also be that those able to receive MAT early are less likely to relapse and therefore less likely to require detox services.

[29] Treatment history only available for participants receiving services from Howard Center. This represents a subset of program participants, primarily those entering the program 2008 and later.

Table 10. CCTC Graduate & Non-Graduate Characteristics: Program Activities and Treatment

	Graduates *n* = 134	Non-Graduates *n* = 149
Program Length of Stay		
Average number of days in program	**502**	**290**
Court Sessions		
Average number of court sessions attended in first 3 months in program[a]	7	6
Drug Testing		
Average number of UAs administered in first 3 months in program[a]	12	10
Average number of positive UAs in first 3 months[a]	3	3
Incentives		
Average number of rewards received in first 3 months in program[a]	13	4
Sanctions		
Average number of sanctions received in first 3 months[a]	1	1
Treatment Received[b]		
Average number of group hours attended in first 3 months in program[a]	7.8	5.8
Average number of individual hours received in first 3 months in program[a]	3.3	1.3
Average number of sessions for medically assisted treatment (MAT) received in first 3 months in program[a]	1.4	0.3
Average number of hours in detox in first 3 months in program[a]	4.0	15.2

Note. The *n* for each category may be smaller than the total group *n* due to missing data.

[a] For those with available data and participated in the program for at least 3 months. Graduates *n* = 132; non-graduates, *n* = 136.

[b] For those with available treatment data and participated in the program for at least 3 months. Graduates *n* = 101; non-graduates, *n* = 103.

Characteristics Related to Criminal Justice Recidivism

Another indicator to examine is characteristics of participants who are –re-arrested versus not re-arrested. All program participants were reviewed to determine whether any factors or characteristics were related to being rearrested within 2 years after program entry. Similar to the results detailed between graduates and non-graduates, participants who were not rearrested had fewer prior arrests, including misdemeanors and "other" arrests, in the 2 years prior to entry. In addition, those who were not successful in the program as well as men were more likely to recidivate. When controlling for all significant factors in a logistic regression, sex and program status (terminated participants) were most likely to predict criminal justice recidivism (p <.001).

COST EVALUATION

NPC conducted an analysis of the CCTC to assess the cost of the program, and the extent to which program costs are offset by any cost-savings related to participant outcomes.

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

1. How much does the CCTC program cost?
2. What is the cost impact on the treatment and criminal justice system of sending individuals through CCTC compared to individuals eligible for the CCTC but who received traditional processing?
3. What is the cost-benefit ratio for investment in the CCTC?

Cost Evaluation Methods

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

COST TO THE TAXPAYER

In order to maximize the study's benefit to policymakers, a "cost-to-taxpayer" approach was used for this evaluation. This focus helps define which cost data should be collected (costs and avoided costs involving public funds) and which cost data should be omitted from the analyses (e.g., costs to the individual participating in the program).

The central core of the cost-to-taxpayer approach in calculating benefits (avoided costs) for drug courts specifically is the fact that untreated substance abuse will cost tax dollar-funded systems money that could be avoided or diminished if substance abuse were treated. In this approach, any cost that is the result of untreated substance abuse and that directly impacts a

citizen (through tax-related expenditures) is used in calculating the benefits of substance abuse treatment.

OPPORTUNITY RESOURCES

Finally, NPC's cost approach looks at publicly funded costs as "opportunity resources." The concept of opportunity cost from the economic literature suggests that system resources are available to be used in other contexts if they are not spent on a particular transaction. The term opportunity resource describes these resources that are now available for different use. For example, if substance abuse treatment reduces the number of times that a client is subsequently incarcerated, the local sheriff may see no change in his or her budget, but an opportunity resource will be available to the sheriff in the form of a jail bed that can now be filled by another person, who, perhaps, possesses a more serious criminal justice record than does the individual who has received treatment and successfully avoided subsequent incarceration. Therefore, any "cost savings" reported in this evaluation may not be in the form of actual monetary amounts, but may be available in the form of a resource (such as a jail bed, or a police officer's time) that is available for other uses.

The cost evaluation involved calculating the costs of the program and the costs of outcomes (or impacts) after program entry (or the equivalent for the comparison group). To determine if there were any benefits (or avoided costs) due to CCTC program participation, it was necessary to determine what the participants' outcome costs would have been had they not participated in the CCTC. One of the best ways to do this is to compare the costs of outcomes for CCTC participants to the outcome costs for similar individuals who were eligible for the CCTC but did not participate. The comparison group in this cost evaluation was the same as that used in the preceding outcome evaluation.

DATA COLLECTION AND SOURCES

The TICA methodology is based upon six distinct steps. Table 11 lists each of these steps and the tasks involved.

Table 11. The Six Steps of TICA

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

Step 1 (determining program process) was performed during a site visit, through analysis of CCTC documents, and through interviews with key informants. Step 2 (identifying program transactions) and Step 3 (identifying the agencies involved with transactions) were performed through observation during a site visit and by analyzing the information gathered in Step 1. Step 4 (determining the resources used) was performed through extensive interviewing of key informants, direct observation during a site visit, and by collecting administrative data from the

agencies involved in the CCTC. Step 5 (determining the cost of the resources) was performed through interviews with CCTC and non-CCTC staff and with agency financial officers, as well as analysis of budgets found online or provided by agencies. Finally, Step 6 (calculating cost results) involved calculating the cost of each transaction and multiplying this cost by the number of transactions. For example, to calculate the cost of drug testing, the unit cost per drug test is multiplied by the average number of drug tests performed per person. All the transactional costs for each individual were added to determine the overall cost per CCTC participant/comparison group individual. This was reported as an average cost per person for the CCTC program, and outcome/impact costs due to rearrests, jail time and other recidivism costs, as well as any other service usage, such as substance abuse treatment. In addition, due to the nature of the TICA approach, it was also possible to calculate the cost of CCTC processing per agency, so that it was possible to determine which agencies contributed the most resources to the program and which agencies gained the most benefit.

Cost data that were collected for the CCTC evaluation were divided into program costs and outcome costs. The ***program costs*** were those associated with activities performed within the program. The program-related "transactions" included in this analysis were court hearings (including staffing meetings and other activities preparing for the hearings), case management, drug tests, substance abuse treatment, and any other unique services provided by the program to participants for which administrative data were available. The ***outcome costs*** were those associated with activities that occurred outside the CCTC program. These transactions included criminal justice-related activities (e.g., new arrests subsequent to program entry, subsequent court cases, jail/prison days, probation/parole days), treatment events, as well as other events that occurred such as victimizations.

NPC built the Cost Study on findings from the Outcome Study described earlier in this report.

Program Costs

Obtaining the cost of CCTC transactions for status review hearings (i.e., court sessions) and case management involved asking each CCTC team member for the average amount of time they spend on these activities (including preparing for staffing meetings and the staffing meetings themselves), observing their activities on a site visit and obtaining each CCTC team member's annual salary and benefits from a supervisor or financial officer at each agency involved in the program. As this is typically public information, some of the salaries were found online, but detailed benefits information usually comes from the agency's financial officer or human resources department. In addition to salary and benefits, the indirect support rate and jurisdictional overhead rate were used in a calculation that results in a fully loaded cost per court session per participant and cost per day of case management per participant. The indirect support rates and overhead rates for each agency involved in the program were obtained from agency budgets that were found online or by contacting the agencies directly.

Drug testing costs were obtained using information from the CCTC coordinator and Medicaid reimbursement rates. The specific details for how the cost data were collected and the costs calculated for CCTC are described in the results.

Treatment costs for the various modalities used were obtained from billing information from the Howard Center. Treatment costs used in this analysis are actual amounts paid for program participants.

Outcome Costs

For arrest costs, information about which law enforcement agencies typically conduct arrests was obtained by talking with program staff (attorneys and court staff) along with Web searches. Four of the five major law enforcement agencies were included. NPC contacted staff at each law enforcement agency to obtain the typical positions involved in an arrest, average time involvement per position per arrest, as well as salary and benefits and support/overhead rates. NPC used that information in its TICA methodology to calculate the cost of an average arrest episode. Some cost information was obtained online from agency budgets or pay scales. The arrest cost at each law enforcement agency was averaged to calculate the final "cost per arrest" in the outcome analysis.

The cost per court case was calculated from budget information and caseload data from several agencies—the Chittenden County Superior Court, Vermont Department of State's Attorneys, and Vermont Office of the Defender General. Information was found online at each agency's Web site or from agency staff.

Treatment costs were obtained directly from billing information from the Howard Center, and only include the amounts that were actually paid. Note that for program participants, treatment during the program was already included in the program costs. In order to avoid double counting the treatment received by CCTC participants during the program and also in the outcome time period, NPC only included treatment that occurred *after* exit from the program in the outcome costs.

The cost per day of probation and parole was calculated using information found on the Vermont Department of Corrections Web site. Costs were updated to fiscal year 2016 at the time of the cost calculations using the Consumer Price Index.

Jail and prison are combined in Vermont. The cost per day of jail/prison was found in an annual report on the Vermont Department of Corrections Web site. The cost per day of jail/prison was updated to fiscal year 2016 at the time of the cost calculations using the Consumer Price Index.

Person and property victimizations were calculated from the National Institute of Justice's *Victim Costs and Consequences: A New Look (1996).* The costs were updated to fiscal year 2016 dollars using the Consumer Price Index.

Cost Evaluation Findings

The findings from the cost evaluation are explained below according to study question

COST STUDY QUESTION #1: *HOW MUCH DOES THE CCTC PROGRAM COST?*

As described in the cost methodology, program transactions for which costs were calculated in this analysis included status review hearings (including staffings), case management, drug treatment, and drug tests. The costs for this study were calculated to include taxpayer costs only. All cost results provided in this report are based on fiscal year 2016 dollars or were updated to fiscal year 2016 using the Consumer Price Index.

Program Transactions

A drug court session, for the majority of drug courts, is one of the most staff and resource intensive program transactions. These sessions include representatives from the following agencies:

- Vermont Judiciary- Chittenden County Superior Court (Judge, Coordinator);
- Vermont Office of the Defender General (Public Defender);
- Chittenden County State's Attorney's Office (Prosecutor);
- Vermont Department of Corrections- Burlington Probation and Parole (Probation Officer);
- Howard Center (Clinical Supervisor, Treatment Clinician, Case Managers);
- Burlington Police Department (Police Officer).

The cost of a ***Court Appearance or Status Review Hearing*** (the time during a session when a single program participant interacts with the judge) is calculated based on the average amount of court time (in minutes) each participant interacts with the judge during the drug court session. This includes the direct costs for the time spent for each CCTC team member present, the time team members spend preparing for the session, the time team members spent in staffing, the agency support costs, and jurisdictional overhead costs. The cost for a single CCTC court appearance is $203.18 per participant.

Case Management is based on the amount of staff time dedicated to case management activities during a regular work week and is then translated into a total cost for case management per participant per day (taking staff salaries and benefits, and support and overhead costs into account).[30] The agencies involved in case management are the Chittenden County Superior Court, Office of the Defender General, Howard Center, Burlington Police

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

Department, and Vermont Department of Corrections- Burlington Probation and Parole. The daily cost of case management is $9.25 per participant.

Treatment Services for the majority of CCTC participants are provided by the Howard Center, although the program also utilizes numerous other area treatment agencies. The treatment costs used for this analysis are billing amounts obtained from the Howard Center, and only include the amounts that were actually paid (mainly by taxpayers via Medicaid reimbursements). Because total treatment costs per participant were included in the treatment dataset, there are no unit costs for treatment such as group treatment sessions or individual treatment sessions. Treatment is reported as an average cost per participant instead of unit cost per service received. (See Table 12).

Drug Testing is performed by Burlington Labs. Insurance covers most drug testing, and an estimated 90% of participants are on state insurance (with the remainder having private insurance). Drug testing costs were obtained from information from the coordinator and from Medicaid reimbursement rates found online. The average cost per UA test per participant is $14.86.

CCTC participants pay a $300.00 ***Program Fee*** to the Superior Court. It was assumed that all participants paid this fee in full, so the program fee was included in the cost analysis.

Note that jail sanctions are typically included in program costs, but due to the format of the jail data, NPC was unable to differentiate which jail stays were for program-related sanctions and which were for other reasons, so all jail time (including any jail sanctions due to the program) was analyzed in the outcome section.

Program Costs

Table 12 displays the unit cost per program related event (or "transaction"), the number of events and the average cost *per individual* for each of the CCTC events for program graduates and for all participants who exited the program.[31] The sum of these events or transactions is the total per participant cost of the CCTC program. The table includes the average for CCTC graduates (N= 134) and for all CCTC participants regardless of completion status (N = 283). It is important to include participants who were discharged as well as those who graduated as all participants use program resources, whether they graduate or not.

[31] Program participants included in the program cost analysis are those who had sufficient time to complete the program and who exited the program either through graduation or termination. Active participants were not included in the analysis as they were still using program services so did not represent the cost of the full program from entry to exit.

Table 12. Program Costs per Participant

Transaction	Unit Cost	Avg. # of Events per person for CCTC Graduates	Avg. Cost per person for CCTC Graduates	Avg. # of Events per person for CCTC Participants	Avg. Cost per person for CCTC Participants
Court Appearances	$203.18	24.88	$5,055	20.81	$4,228
Case Management Days	$9.25	502.09	$4,644	390.59	$3,613
Treatment[32]	N/A	N/A	$4,936	N/A	$3,629
Drug Tests	$14.86	69.25	$1,029	50.87	$756
Program Fees	$300.00	1	($300)	1	($300)
TOTAL			**$15,364**		**$11,926**

The unit cost multiplied by the number of events per person results in the cost per person for each transaction during the course of the program. When the costs of the transactions are summed the result is a total CCTC program cost per participant of $11,926. The cost per graduate is $15,364. The largest contributor to the cost of the program is court sessions ($4,228), followed by treatment ($3,629). Note that the graduates cost more than the participants in general, as graduates are in the program longer and use more of every resource.

[32] Unit costs or the number of events for treatment were not calculated for this cost analysis because total billing costs paid per participant were included in the treatment dataset.

Program Costs per Agency

Another useful way to examine program costs is by the amount contributed by each agency involved in the program. Table 13 displays the cost per CCTC participant by agency for program graduates and for all participants.

Table 13. Program Costs per Participant by Agency

Agency	Avg. Cost per Person for CCTC Graduates	Avg. Cost per Person for CCTC Participants
Superior Court[33]	$1,430	$1,129
State's Attorney	$592	$495
Defender General	$920	$758
Howard Center[34]	$5,997	$4,783
Law Enforcement	$139	$115
Department of Corrections	$321	$261
Substance Use Treatment (Howard Center)	$4,936	$3,629
Drug Testing	$1,029	$756
TOTAL	**$15,364**	**$11,926**

Table 13 shows that the costs accruing to the Howard Center (staffing, court sessions, case management and treatment) account for 61% of the total program cost per participant, which is appropriate given that the Howard Center has the largest number people on the CCTC team and does the majority of case management as well as treatment for participants. The next largest cost (30%) is for treatment, followed by the Superior Court (9%) for time spent on staffing, court sessions and case management.

CCTC Program Costs Summary

Total cost for the CCTC program is estimated at $11,926 per participant. Overall, the largest portion of CCTC costs is due to resources put into court hearings (an average of $4,228, or 35% of total costs), followed by treatment ($3,629 or 30%) and case management (an average of

[33] The $300 program fee was included in the Superior Court's total as participants pay the fee to the court.
[34] Howard Center is listed separately from Treatment to show the costs for Howard Center staff time on court sessions and case management.

$3,613, or 30% of total costs). When program costs are evaluated by agency, the largest portion of costs accrues to the Howard Center ($4,783 or 40% of total costs), followed by treatment ($3,629 or 30%) and the Superior Court ($1,129 or 9%).

COST STUDY QUESTION #2: WHAT IS THE COST IMPACT ON THE TREATMENT AND CRIMINAL JUSTICE SYSTEM OF SENDING INDIVIDUALS THROUGH CCTC COMPARED TO INDIVIDUALS ELIGIBLE FOR THE CCTC BUT WHO RECEIVED TRADITIONAL PROCESSING?

NPC calculated costs of each of the criminal justice system outcome transactions that occurred for CCTC and comparison group participants. As mentioned previously, transactions are those points within a system where resources are consumed and/or change hands. Outcome transactions for which costs were calculated in this analysis included rearrests, subsequent court cases, drug and other treatment services, jail/prison time, probation/parole supervision time, and victimizations. Only costs to the taxpayer were calculated in this study. All cost results represented in this report are based on fiscal year 2016 dollars or were updated to fiscal year 2016 dollars using the Consumer Price Index.

The outcome cost analyses were based on a cohort of adults who participated in the CCTC and a matched comparison group of individuals who were eligible for the CCTC program but who did not attend the program. These individuals were tracked through administrative data for 3 years post program entry (and a similar time period for the comparison group). This study compares recidivism and treatment system costs for the two groups over 3 years, as well as the costs by agency.

The 3-year follow-up period was selected to allow a large enough group of both CCTC and comparison individuals to be representative of the program, as well as to allow more robust cost numbers through use of a follow-up period with as many individuals as possible having at least some time during the follow-up period that represented time after program involvement.

The outcome costs experienced by CCTC graduates are also presented below. Costs for graduates are included for informational purposes but should not be directly compared to the comparison group. If the comparison group members had entered the program, some may have graduated while others would have terminated. The CCTC graduates as a group are not the same as a group made up of both potential graduates and potential non-graduates.

The outcome costs discussed below do not represent the entire cost to the criminal justice system and treatment system. Rather, the outcome costs include the transactions for which NPC's research team was able to obtain outcome data and cost information on both the CCTC and comparison group from the same sources. However, we believe that the costs represent the majority of system costs.

Outcome costs were calculated using information from the Vermont Judiciary- Chittenden County Superior Court, Vermont State's Attorney's Office, Vermont Office of the Defender

General, Vermont Department of Corrections (including the Field Services Division), Howard Center, National Institute of Justice, Burlington Police Department, South Burlington Police Department, Essex Police Department, and Colchester Police Department. The methods of calculation were carefully considered to ensure that all direct costs, support costs and overhead costs were included as specified in the TICA methodology followed by NPC.

Finally, note that some possible costs or cost savings related to the program are not considered in this study. These include the number of drug-free babies born, health care expenses, and CCTC participants legally employed and paying taxes. The gathering of this kind of information is generally quite difficult due to HIPAA confidentiality laws and due to the fact that much of the data related to this information are not collected in any one place, or collected at all. Although NPC examined the possibility of obtaining this kind of data, it was not feasible within the time frame or budget for this study. In addition, the cost results that follow do not take into account other less tangible outcomes for participants, such as improved relationships with their families and increased feelings of self-worth. Although these are important outcomes to the individual participants and their families, it is not possible to assign a cost to this kind of outcome, (it is priceless). Other studies performed by NPC have taken into account health care and employment costs. For example, Finigan (1998) performed a cost study in the Portland, Oregon, adult drug court which found that for every dollar spent on the drug court program, $10 was saved due to decreased criminal justice recidivism, lower health care costs and increased employment.

Outcome Transactions

Arrest costs were gathered from representatives of the Burlington Police Department, South Burlington Police Department, Essex Police Department, and the Colchester Police Department (four of the five main arresting agencies in Chittenden County). The cost per arrest incorporates the time of the law enforcement positions involved in making an arrest, law enforcement salaries and benefits, support costs and overhead costs. The average cost of a single arrest at the four law enforcement agencies is $316.95.

Court Cases include those cases that are dismissed as well as those cases that result in conviction. Because they are the main agencies involved, court case costs in this analysis are shared among the Vermont Judiciary- Chittenden County Superior Court, Chittenden County State's Attorney's Office, and the Vermont Office of the Defender General. Using caseload information obtained from the 2015 Vermont Judiciary Statistical Report to the Legislature, and budget information obtained from the 2017 Vermont Judiciary Budget, the 2016 State's Attorney Budget, and the 2017 Defender General Budget and Caseload Performance Report, the average cost of a Superior Court Case is $2,008.99.

Treatment costs used for this cost analysis were obtained directly from billing information from the Howard Center, and only include the amounts that were actually paid. Note that for

program participants, treatment during the program was already included in the program costs. In order to avoid double counting the treatment received by CCTC participants during the program and also in the outcome time period, NPC only included treatment that occurred *after* exit from the program in the outcome costs.

Jail/Prison costs were found in an annual report on the Vermont Department of Corrections Web site. The statewide cost per person per day of jail/prison was $170.48 in 2015. Using the Consumer Price Index, this was updated to fiscal year 2016 dollars, or $170.69.

Probation/Parole is provided by the Vermont Department of Corrections- Field Services Division. The cost of probation/parole was calculated using information from the 2014 Facts and Figures Report on the Department of Corrections Web site. The average cost of probation and parole was $5.64 per day in 2014. Using the Consumer Price Index, this was updated to fiscal year 2016 dollars, or $5.71.

Victimizations were calculated from the National Institute of Justice's *Victim Costs and Consequences: A New Look (1996).* [35] The costs were updated to fiscal year 2016 dollars using the Consumer Price Index. ***Property crimes*** are $13,646.23 per event and ***person crimes*** are $44,207.16 per event.

[35] The costs for victimizations were based on the National Institute of Justice's *Victim Costs and Consequences: A New Look (1996).* This study documents estimates of costs and consequences of personal crimes and documents losses per criminal victimization, including attempts, in a number of categories, including fatal crimes, child abuse, rape and sexual assault, other assaults, robbery, drunk driving, arson, larceny, burglary, and motor vehicle theft. The reported costs include lost productivity, medical care, mental health care, police and fire services, victim services, property loss and damage, and quality of life. In our study, arrest charges were categorized as violent or property crimes, and therefore costs from the victimization study were averaged for rape and sexual assault, other assaults, and robbery and attempted robbery to create an estimated cost for violent crimes, arson, larceny and attempted larceny, burglary and attempted burglary, and motor vehicle theft for an estimated property crime cost. All costs were updated to fiscal year 2016 dollars using the consumer price index (CPI).

Outcome Cost Results

Table 14 shows the average number of recidivism-related events per individual for CCTC graduates, all CCTC participants (regardless of graduation status) and the comparison group over 3 years. These events are counted from the time of program entry, except for treatment for the CCTC graduates and participants, which is counted from the time of program exit.

Table 14. Average Number of Recidivism Events per Person over 3 Years from CCTC Entry

Recidivism Related Events	CCTC Graduates Per Person (n = 114)	CCTC Participants Per Person (n = 244)	Comparison Group Per Person (n = 283)
Rearrests	1.78	2.29	1.63
Superior Court Cases	1.62	2.11	1.58
Probation/Parole Days	192.29	331.80	268.06
Jail/Prison Days	36.89	185.82	206.12
Treatment	N/A	N/A	N/A
Property Victimizations	0.79	1.13	0.73
Person Victimizations	0.09	0.16	0.23

Overall, as demonstrated in Table 14, CCTC participants have slightly fewer jail/prison days than the comparison group, but more rearrests, Superior Court cases, and probation/parole days. CCTC participants also have fewer person victimizations than the comparison group, but more property victimizations.

Table 15 presents the outcome costs for each transaction for graduates, all CCTC participants (graduates and terminated participants) and the comparison group.

Table 15. Outcome Costs per Participant over 3 Years

Transaction	Unit Costs	CCTC Graduates Per Person (n = 114)	CCTC Participants Per Person (n = 244)	Comparison Group Per Person (n = 283)
Rearrests	$316.95	$564	$726	$517
Superior Court Cases	$2,008.99	$3,255	$4,239	$3,174
Probation/Parole Days	$5.71	$1,098	$1,895	$1,531
Jail/Prison Days	$170.69	$6,297	$31,718	$35,183
Treatment	N/A	$6,295	$4,959	$2,678
SUBTOTAL		**$17,509**	**$43,537**	**$43,083**
Property Victimizations	$13,646.23	$10,781	$15,420	$9,962
Person Victimizations	$44,207.16	$3,979	$7,073	$10,168
TOTAL		**$32,269**	**$66,030**	**$63,213**

The first subtotal in Table 15 displays the costs associated with outcomes that occurred in the 3 years after program entry for the CCTC group and the comparison group (an estimated "program entry date" was calculated for the comparison group to ensure an equivalent time period between groups) not including victimizations. Because victimizations were not calculated using the TICA methodology, the costs for these events are presented separately, with the final total providing the total costs for all events from program entry to 3 years after program entry. This final total illustrates the costs associated with participation in the CCTC program and to individuals eligible for the CCTC but who received traditional processing. Table 15 shows that the difference in the 3-year outcome cost between the CCTC participants and the comparison group is a negative $454 per participant, indicating that CCTC participants cost more than the comparison group. When costs due to victimizations are included, the difference increases further with CCTC participants costing $2,817 more (per participant) than comparison group members. This difference shows that there is no benefit, or savings, due to CCTC participation. Graduates of the program show substantial savings compared to the comparison group (a savings of $30,944 when victimizations are included mainly due to substantially less

time spent incarcerated), however, a comparison of graduates to the comparison group is not valid as the two groups are not equivalent. Some of the comparison group is made up of people who would have terminated prior to graduation. Overall, the cost results show a higher cost for those who participate in the CCTC due to use of more system resources including additional arrests, court cases, probation/parole time, treatment, and property victimizations.

Outcome Costs per Agency

These same outcome costs were also examined by agency to determine the relative cost to each agency that contributes resources to the CCTC program. The transactions shown above are provided by one or more agencies. If one specific agency provides a service or transaction (for example, the Vermont Department of Corrections provides jail/prison days), all costs for that transaction accrue to that specific agency. If several agencies all participate in providing a service or transaction (for example, the Superior Court, State's Attorney's Office, and Defender General are all involved in Superior Court cases), costs are split proportionately amongst the agencies involved based on their level of participation. Table 16 provides the cost for each agency and the difference in cost between the CCTC participants and the comparison group per person. A positive number in the difference column indicates a cost savings for CCTC participants.

Table 16. Outcome Costs per Participant by Agency over 3 Years from Program Entry

Agency	CCTC Outcome Costs per Participant	Comparison Outcome Costs per Individual	Cost Difference per Individual
Superior Court	$1,269	$950	($319)
State's Attorney's Office	$1,380	$1,033	($347)
Office of the Defender General	$1,591	$1,191	($400)
Law Enforcement	$726	$517	($209)
Department of Corrections	$33,612	$36,714	$3,102
Treatment	$4,959	$2,678	($2,281)
SUBTOTAL	**$43,537**	**$43,083**	**($454)**
Victimizations*	$22,493	$20,130	($2,363)
TOTAL	**$66,030**	**$63,213**	**($2,817)**

*These costs accrue to a combination of many different entities including the individual, medical care, etc. and therefore cannot be attributed to any particular agency above.

Table 16 shows that only the Department of Corrections has a benefit, or savings, associated with the CCTC program due to CCTC participants spending less time incarcerated. As demonstrated in Tables 15 and 16, the total outcome cost over 3 years from program entry for the CCTC per participant (regardless of graduation status) was $43,537, while the cost per comparison group member was $43,083. The difference between the CCTC and comparison group represents a loss of $454 per participant. When costs due to victimizations are added, the difference in costs increases with CCTC participants costing a total of $2,817 more per participant than the comparison group due to more property victimizations for participants.

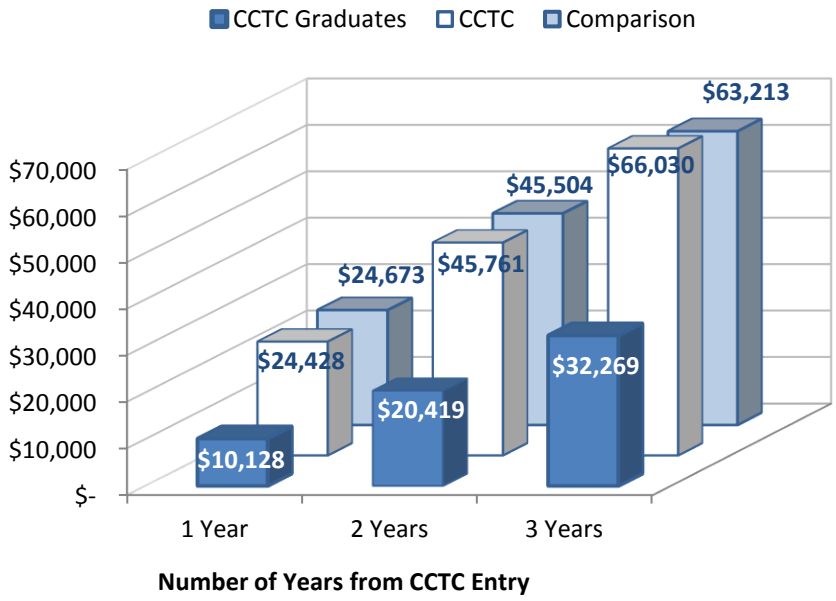
COST STUDY QUESTION #3: WHAT IS THE COST-BENEFIT RATIO FOR INVESTMENT IN THE CCTC?

Over time, the CCTC does not result in cost savings or a return on taxpayer investment in the program. The program investment cost is $11,926 per CCTC participant. As previously mentioned, only treatment that occurred after program exit was taken into account for the CCTC participants, as treatment that occurred during the program was already included in the program investment cost. When the cost difference in outcomes between CCTC participants and comparison group members is calculated without treatment costs, the benefit due to reduced use of incarceration for CCTC participants over the 3 years included in this cost-benefit analysis came to $1,827 (as opposed to the negative $454 if treatment costs are included). However, when victimization costs are added, the return again becomes negative, with CCTC participants costing $536 more than comparison group members. This amount does not result in a positive return on the investment so a cost-benefit ratio was not calculated. Note that this analysis only included criminal justice system and treatment system costs. If other system costs such as health care and employment were included, it is possible that a return on investment might occur.

Cost Conclusion

Figure 12 provides a graph of the outcome costs for graduates, all participants and the comparison group over 3 years, including victimizations.

Figure 12. Criminal Justice and Treatment Costs per Person: CCTC Participants and Comparison Group Members 3 Years After Program Entry



The costs illustrated in Figure 12 are those that have accrued through 3 years after program entry. Many of these costs are due to outcomes while the participant is still in the program. These findings indicate that at the time the participants in the study went through the program, the CCTC was not necessarily beneficial to Chittenden County and Vermont taxpayers, as over time it did not result in cost savings or a return on its investment. The program investment cost is $11,926 per CCTC participant. There was not a positive return on the investment over the 3-year outcome time period.

Overall, the CCTC program had:

- A program cost of $11,926 per participant.
- A criminal justice system and treatment system loss of $2,817 per participant over 3 years from program entry.

However, it is possible with more recent program changes, outcomes for participants will improve, and if the program is able to implement the best practices recommended in this report from the process study as well as the recommendations in the following summary, then outcomes should improve substantially. The vast majority of research studies show that drug treatment court programs that follow best practices demonstrate significant reductions in recidivism for their participants as well as substantial cost savings.

SUMMARY AND RECOMMENDATIONS

The CCTC is among Vermont's oldest collaborative court programs committed to meeting the treatment and other support needs of participants with the goal of improving outcomes and reducing tax payer burden associated with drug-related crime. The program adheres to some research-based best practices but several important best practices have not been implemented or were not implemented at the time the participants included in this study were going through the program. Unfortunately, based on the current study, participants are experiencing worse criminal recidivism outcomes relative to members of a comparison group and, as a consequence, also adding additional burden to the agencies and systems that seek to support their recovery and wellbeing.

Specifically, CCTC participants, on average, cost the tax payer approximately $2,800 more than members of a comparison group due to higher treatment, supervision and property crime costs. Other, less tangible, costs in terms of trauma to participants and their families associated with re-arrest and incarceration draw additional urgency to improving CCTC policy and practices.

NPC suggests that the program implement the following changes to improve participant outcomes and decrease associated costs:

- Re-assessing general phase requirements and implement 5 phases with the associated specific requirements as described by the National Association of Drug Court Professionals. The CCTC team was trained on this model in July 2016.
- Provide clarification on team member roles and write up a memorandum of understanding that describes each team member role and specific duties and agreements and have each team member sign.
- Increase the use of email communication among the court team to share information about participants' progress and participation expediently rather than waiting until staffing meetings
- Continue to have a probation department representative on the team and make use of the information and connections with the probation department to implement increased supervision and home visits.
- Ensure that all participants are represented by defense counsel during their time in the program and in particular, ensure that defense counsel remains in the staffing meeting for the discussion of all participants
- Develop specific guidelines on the use of sanctions and rewards following NADCP's best practice standards, give a printed copy of the guidelines to each team member and consider hanging a poster with the guidelines in the room used for staffing

- Explain the reasons for incentives and sanctions in court including the specific behavior being sanctioned or rewarded and what behavior you expect from participants. Also be aware of the importance of appearing to treat different participants fairly.
- Increase participant time spent before the judge, particularly for participants who are doing well, allowing them to explain (for the benefit of all participants) what they are doing to be successful.
- Have judges serve longer terms on the drug court bench. Research shows that the longer judges stay with the drug court program, the better participant outcomes.
- Invest resources in training for all new team members on the drug court model, addiction and trauma, and work to ensure refresher training occurs for all other team members at regular intervals
- Establish an advisory group to further connect with existing and new community partners
- Finally, the site visit team observed and learned through focus groups and interviews that the CCTC team understands that drug use may continue over time among participants who are high need as they struggle with their physical dependence. While this perspective generally reflects effective programming, it may be confusing for participants if the message from the court against continued use is not clear, consistent, and immediate. For example, participants stated they were rarely sanctioned for use, that sometimes their recent use was not mentioned in court, and they could not predict whether they would receive a sanction. It is important to remember that the purpose of the drug treatment court is to provide the structure and accountability that allow participants to end their drug use so that they can also end their physical dependence and engage in other, healthy and pro-social behaviors. We recommend that the team implement guidelines that are clear to both the team and participants regarding the court's response to drug use in the program.

From observations and interviews, it is clear that the CCTC team is committed to the program and to supporting participants to improve their lives. The implementation of some additional research based best practices will help ensure that the CCTC program reach its goals of reducing recidivism, protecting public safety and enabling participants to lead healthy and productive lives.

ADDITIONAL RESOURCES

The appendices at the end of this document contain resources to assist the program in making any changes based on the feedback and recommendation in this report. Appendix A provides a brief "how-to" guide for beginning the process of changing program structure and policies. Other important and useful resources for drug courts are available at the National Drug Court Resource Center's website: http://www.nCCTCrc.org and www.drugcourtonline.org.

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APPENDIX A: GUIDELINES FOR HOW TO REVIEW PROGRAM FEEDBACK

Brief Guide for Use of NPC Evaluation and Technical Assistance Reports

The 10 Key Component assessment results can be used for many purposes, including 1) improvement of program structure and practices for better participant outcomes (the primary purpose), 2) grant applications to demonstrate program needs or illustrate the program's capabilities, and 3) requesting resources from boards of county commissioners or other local groups.

When you receive the results:

- **Distribute copies of the report** to all members of your team, advisory group, and other key individuals involved with your program.
- **Set up a meeting** with your team and policy committee to discuss the report's findings and recommendations. Ask all members of the group to **read the report** prior to the meeting and **bring ideas and questions**. Identify who will **facilitate** the meeting (bring in a person from outside the core group if all group members would like to be actively involved in the discussion).
- During the meeting(s), **review each recommendation**, discuss any questions that arise from the group, and **summarize the discussion, any decisions, and next steps**. You can use the format below or develop your own:

Format for reviewing recommendations:

Recommendation: Copy the recommendations from the electronic version of report and provide to the group.

Responsible individual, group, or agency: Identify who is the focus of the recommendation, and who has the authority to make related changes.

Response to recommendation: Describe the status of action related to the recommendation (some changes or decisions may already have been made). Indicate the following:

- 1. This recommendation will be accepted. (see next steps below)
- 2. Part of this recommendation can be accepted (see next steps below and indicate here which parts are not feasible or desirable, and why)
- 3. This recommendation cannot be accepted. Describe barriers to making related changes (at a future time point, these barriers may no longer exist) or reason why the recommendation is not desirable or would have other negative impacts on the program overall.

Next steps: Identify which tasks have been assigned, to whom, and by what date they will be accomplished or progress reviewed. Assign tasks only to a **person who is present**. If the appropriate person is not present or not yet identified (because the task falls to an agency or to the community, for example), identify who from the group will take on the task of identifying and contacting the appropriate person.

- Person: (Name)
- Task: (make sure tasks are specific, measurable, and attainable)
- Deadline or review date: (e.g., June 10th) The dates for some tasks should be soon (next month, next 6-months, etc.); others (for longer-term goals for example) may be further in the future.
- Who will review: (e.g., advisory board will review progress at their next meeting)

- **Contact NPC Research** after your meeting(s) to discuss any questions that the team has raised and not answered internally, or if you have requests for other resources or information.
- **Contact NPC Research** if you would like to hold an additional conference call with or presentation to any key groups related to the study findings.
- **Request technical assistance or training as needed** from NACCTCP/NCCTCI or other appropriate groups.
- **Add task deadlines to the agendas of policy meetings**, to ensure they will be reviewed, or select a date for a follow-up review (in 3 or 6 months, for example), to discuss progress and challenges, and to establish new next steps, task lists, and review dates.

APPENDIX B: OUTCOME STUDY DATA ANALYSES METHODS

Once all data were gathered on the study participants, researchers cleaned and moved the data into SPSS 23.0 for statistical analysis. The analyses used to answer specific questions are described below.[36]

PS Matching was performed using a tool developed in R used in conjunction with SPSS (Ho, D. et al, 2007 and 2007b; Hansen, B. B., 2004; Hansen, B. & Bowers, J., 2008; and Thoemmes, F., 2011).

RESEARCH QUESTION #1: WHAT IS THE IMPACT OF CCTC ON CRIMINAL RECIDIVISM?

1a. Does participation in CCTC reduce the average number of all rearrests for those individuals compared with traditional processing?

Independent sample *t* tests and univariate analysis of covariance (ANCOVA) were performed to compare the mean number of all rearrests for all CCTC participants and the comparison groups for each year up to 3 years after program entry. Means generated by univariate analysis were adjusted in the analysis based on sex, age, race, and criminal history.[37] The non-adjusted means for graduates are included in the results for reference but should not be compared directly with the comparison group as the comparison group includes an unknown number of individuals who, had they participated in CCTC, may have terminated unsuccessfully from the program and are therefore not equivalent to CCTC graduates.

1b. Does participation in CCTC lead to a lower overall recidivism rate (the percent of participants who were rearrested) compared with traditional processing?

Crosstabs were run to examine differences in recidivism rate (the number/percentage of individuals rearrested at least once during the specified time period) between CCTC and the comparison groups for each year up to 3 years following program entry. Chi-square analyses were used to identify any significant differences in rearrest rates between CCTC-CAM and comparison group participants.

A logistic regression was used to determine if differences between CCTC participants and the comparison group were significant over and above any differences due to sex, age, race, and criminal history.

[36] Analyses that examine outcome time periods greater than 1 year include only participants who have the full outcome time available. For example, analyses that examine outcomes 2 years from CCADC entry will only include individuals that have 2 full years of outcome time available. Outcomes are based upon program entry date (or a similarly assigned date for the comparison group).

[37] Time at risk is NOT controlled for in this or subsequent research questions as the intention of the analysis is to determine whether CCADC participation (which typically occurs in the community) reduces recidivism more effectively than business-as-usual, which typically includes at least some incarceration. If incarceration was used for non-CCADC participants and was effective in reducing crime, then controlling for this factor would prevent us from determining which path (CCADC or business as usual) was more effective.

1c. Are non-drug court offenders (offenders who go through the traditional court process) more likely to get a new arrest sooner than drug court participants?

Survival analysis examined the time it took for a drug court participant to be rearrested after the program start date compared the comparison group (offenders who went through "business as usual" court processing). Time to rearrest, or survival time, was calculated by subtracting the date rearrested from the program start date. The survival opportunity window was capped at 3 years post entry, or the date of the dataset export (VCIC data exported on July 7th, 2016), whichever was earliest. The number of months of observation for each participant serves as the censor date for those not rearrested. A Kaplan-Meier estimator and a Cox Regression were used to determine if there were any significant differences in how swiftly (or how soon) rearrests occurred between drug court participants and the comparison group.

RESEARCH QUESTION #2: WHAT IS THE IMPACT OF CCTC ON SUBSTANCE ABUSE TREATMENT?

2a. Do CCTC participants enroll in substance abuse treatment more often than non CCTC offenders?

Crosstabs were run to examine differences in treatment exposure rate (the number/percentage of individuals who received substance abuse treatment during the specified time period) between CCTC and the comparison groups for each year up to 3 years following program entry. Chi-square analyses were used to identify any significant differences in treatment rates between CCTC and comparison group participants.

2b. Do CCTC participants spend more time in substance abuse treatment than non CCTC offenders?

Independent sample *t* tests were performed to compare the average dosage for a subset of substance abuse treatment for all CCTC participants and the comparison groups for each year up to 3 years after program entry.

RESEARCH QUESTION #3: HOW SUCCESSFUL IS THE PROGRAM IN BRINGING PROGRAM PARTICIPANTS TO COMPLETION AND GRADUATION WITHIN THE EXPECTED TIME FRAME?

Whether a program is bringing its participants to completion in the intended time frame is measured by program graduation (successful completion) rates, and by the amount of time participants spent in the program. The program graduation rate is the percentage of participants who graduated from the program out of the total group of participants who started during a specified time period and who have all left the program either by graduating or being unsuccessfully discharged (that is, none of the group is still active and all have had an equal chance to graduate). The CCTC graduation rate is included for all participants, by entry year, from February 2003 to December 2015. The average graduation rate (for participants entering between February 2003 and June 2015, to allow for enough time to complete the program) is

compared to the national average for CCTC graduation rates, and the differences are discussed qualitatively.

To measure whether the program is graduating participants in its expected time frame, the average amount of time in the program was calculated for participants who had enrolled in the CCTC program between February 2003 and December 2015, by CCTC entry year, and have been successfully discharged from the program. The average length of stay for graduates and for all participants was compared to the intended time to program completion, and the differences are discussed qualitatively.

RESEARCH QUESTIONS #4: WHAT PARTICIPANT CHARACTERISTICS PREDICT PROGRAM SUCCESS AND DECREASED RECIDIVISM?

Graduates and unsuccessfully discharged participants were compared on the basis of demographic characteristics, criminal justice history, substance abuse treatment history, and a variety of activities occurring during the program to determine whether any significant patterns predicting program graduation could be found. In order to best determine which factors were related to successful CCTC completion, chi-square and independent samples *t* tests were performed to identify which factors were significantly associated with program completion (graduation). A logistic regression was used including all variables in the model to determine if any factors were significantly related to graduation status above and beyond the other factors.

Participant characteristics, criminal justice history, substance abuse treatment history, and program activities were also examined in relation to whether an individual was involved in subsequent criminal justice recidivism following CCTC entry. Chi-square and independent samples *t* test were performed to identify which factors were significantly associated with recidivism. A logistic regression was used including all variables in the model to determine if any factors were significantly related to recidivism above and beyond the other factors.