



Juvenile Community Programs Statewide Contracts

Project Brief
Spring 2022



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Executive Summary

Investing in programs for justice-involved youth that reduce future involvement in crime benefits all North Carolinians. Preventing a repeat offense among high-risk juveniles saves North Carolina \$120,000 on average in victim, societal, and justice system costs – 79 percent of which is associated with the impact on victims.

The Division of Juvenile Justice and Delinquency Prevention (DJJDP) – Juvenile Community Programs offers a wide array of programs and services for adjudicated youth.^[1] These interventions aim to disrupt the cycle of recidivism, restore community safety, and help juveniles internalize skills thus promoting a trajectory for juveniles to lead successful and productive adult lives.

This report examines the effectiveness, costs, and benefits of DJJDP’s statewide contract programs that seek to reduce recidivism among adjudicated juveniles classified as high-risk. Three of the seven programs are proven to lower the likelihood of recidivism for this population, based on rigorous research evidence. The remaining programs have a strong theory base but need further evaluation to measure their effects.^[2]

Without state contracted program intervention, 55 percent of high-risk juveniles recidivate within five years. Key findings from this analysis, presented below, demonstrate the value of investing in preventive, forward-thinking juvenile programming.

Program Effectiveness and Return on Investment Findings

Program Impact	\$ - Costs Benefits Per Participant, Lifetime ^[3]	Benefit: Cost Ratio
AMIkids (Functional Family Therapy)		
Most effective for youth with higher risks and needs.		
For youth re-entering the community on post-release supervision, AMIkids reduces recidivism by 69%. For every dollar spent, the program returns \$9.44.	-\$6,428 \$60,679	\$9.44: 1
For court-involved youth, AMIkids reduces recidivism by 13%. For every dollar spent, the program returns \$0.97.	-\$6,428 \$6,219	\$0.97: 1
Methodist Multipurpose Group Homes and Transitional Living Homes using the Value-Based Therapeutic Environment model		
Lowers recidivism by 26%. For every dollar spent, the program returns \$13.01	-\$2,421 \$31,496	\$13.01: 1
Eckerd’s Cognitive Behavioral Therapy (CBT) component		
Lowers recidivism by 10% when delivered in the secure custody or residential environment. For every dollar spent, the program returns \$5.13.	-\$1,678 \$8,605	\$5.13: 1

[1] An adjudication is a finding by a judge, following an adjudicatory hearing, that a juvenile committed a delinquent act.

[2] Additional details regarding evidence definitions are available on OSBM’s website.

[3] Costs and benefits are modeled on a per person basis. They include the short- and long-term effects of program treatment over the participant’s lifetime. Costs and benefits are presented in 2020 dollar values, calculated using a 3.5% discount rate.

These results support two guiding principles within Juvenile Justice:

Children have the capacity to change



Delivering the right program at the right time - targeting interventions based on what is appropriate and proven effective for the individual's needs - maximizes benefits to victims, the justice system, juveniles, and families.



Guiding Principles

Accordingly, Juvenile Community Programs plans to take the following next steps:

1

Expand the use of AMIkids (Functional Family Therapy) for Youth on PRS: DJJDP aims to expand the number of post-release supervision youth served by FFT through educational outreach to Court Services and Facility Operations staff. DJJDP will also consider seeking additional funding to expand overall program capacity, if needed.

2

Fill Priority Research Gaps: DJJDP plans to seek funding opportunities and academic partnerships to assess top-priority programs that have not yet been rigorously evaluated, with the goal of measuring their effectiveness relative to alternative treatments.

3

Incentivize Proven Practices: DJJDP intends to incentivize providers to deliver proven, effective and high-fidelity programs to targeted populations by expanding performance-based contracting.

4

Communicate and Educate: DJJDP plans to inform legislators and other stakeholders of the outcomes related to public investments in preventive, forward-thinking juvenile programming. Communication efforts will aim to increase awareness of the value of serving high-risk youth in settings other than youth development centers.

5

Continue Partnerships: DJJDP will continue to look for opportunities to partner with OSBM on projects that inform the state's policy making process in a fiscally responsible way, both through Results First and through other avenues.

About NC Results First

The North Carolina Results First Initiative helps the state identify programs that generate positive outcomes and maximize the value of taxpayer dollars. Through Results First, OSBM and agency partners review high-quality evidence to determine the effectiveness of publicly funded programs and conduct benefit-cost analyses to identify high-return investments. Insights from the process inform budget and policy decisions, including program delivery, contract design, resource allocation and future research priorities.

The Results First framework is based on research synthesis and benefit-cost modeling developed by the Pew Charitable Trusts^[4] and the Washington State Institute for Public Policy (WSIPP). OSBM customizes the benefit-cost model to the North Carolina context and provides support for agency partners to implement the analytical tools within the Results First framework.

Collaborative Process

To estimate the impact and cost-effectiveness of the selected juvenile justice programs, DJJDP and OSBM collaborated on a multi-phase process to inventory DJJDP's programs, review the research evidence, and gather and analyze case records and administrative data.

In the first phase, the DJJDP team used its programmatic expertise to inventory and match North Carolina's programs to existing research evidence based on the key elements of the implementation design and delivery.

In the second phase, the team calculated and validated the following components of the analysis:

Crime patterns and recidivism trends of the target populations,



Counts of all adjudicated and convicted offenses in the state, coded into seven crime categories



Justice system utilization patterns and resource cost estimates for the entire juvenile and adult criminal justice systems.



Throughout the process, the DJJDP - Juvenile Community Programs and OSBM collaborated with a range of other stakeholders from across the state:

- Division of Adult Correction – Administrative Analysis Unit
- NC Government Data Analytics Center (GDAC)
- North Carolina Sentencing and Policy Advisory Commission (SPAC)
- Administrative Office of the Courts (AOC)
- Office of Indigent Defense Services (IDS)
- NC Sheriffs' Association

[4] See details about the Results First Initiative here: [Results First: Cost-Benefit Model Aids Policymakers in Funding Decisions | The Pew Charitable Trusts \(pewtrusts.org\)](#)

Project Focus: State Contracted Programs for High-Risk Juveniles

Juvenile Community Programs funds and supports residential and non-residential programming intended to prevent and reduce juvenile crime and delinquency. DJJDP contracts with non-profit and government-sponsored entities to provide short-term residential centers, group homes, transitional living homes, family services, and crisis and assessment centers. Juvenile Crime Prevention Council (JCPC) programs are grant-funded partnerships (state, county, and local) supporting a continuum of locally defined programs and services for adjudicated and at-risk juveniles.

DJJDP focused this project on Juvenile Community Programs' statewide contracts due to their scope and large impact on the North Carolina juvenile population. Contracts for these programs total over \$25 million^[6] and account for 83 percent of Juvenile Community Program's budget and 13 percent of DJJDP's budget.

DJJDP - Juvenile Community Programs^[5]

Program Type by Funding Source	Number Served (FY 2019-20)
JCPC Programs	17,997
State Contracted Programs	1,102
JCPC Intensive Intervention Services	290
Total	19,389

State contracted programs serve adjudicated juveniles^[7] with a high risk of recidivism.^[8] These programs target high-risk juveniles based on their court [disposition levels](#) – the juvenile equivalent of an adult sentence – ranging from level I (least intensive) through level III (most intensive).

Juvenile Crisis and Assessment Centers were not included in this analysis. Although the Crisis and Assessment Centers are a contracted service overseen by Juvenile Community Programs, their primary function is to assess juveniles and provide recommendations for services or further placement rather than providing treatments aimed at reducing recidivism.

*For this analysis, **recidivism** is defined as a new juvenile adjudication or adult conviction; it excludes complaints, arrests and technical violations.*

[5] Source: [Juvenile Justice 2020 Annual Report](#).

[6] Reflects the FY 2020-21 authorized budget for contractual programs in fund 1231, Community Program Services. Total includes all contracts under the purview of Juvenile Community Programs except JCPC, which are paid for through grants-in-aid rather than contracts.

[7] This analysis reflects sentencing practices before Raise the Age implementation in December 2019. Before Raise the Age, adjudicated juveniles included youth who were at least 6 but less than 16 years of age who committed an offense that would be a crime or infraction if committed by an adult.

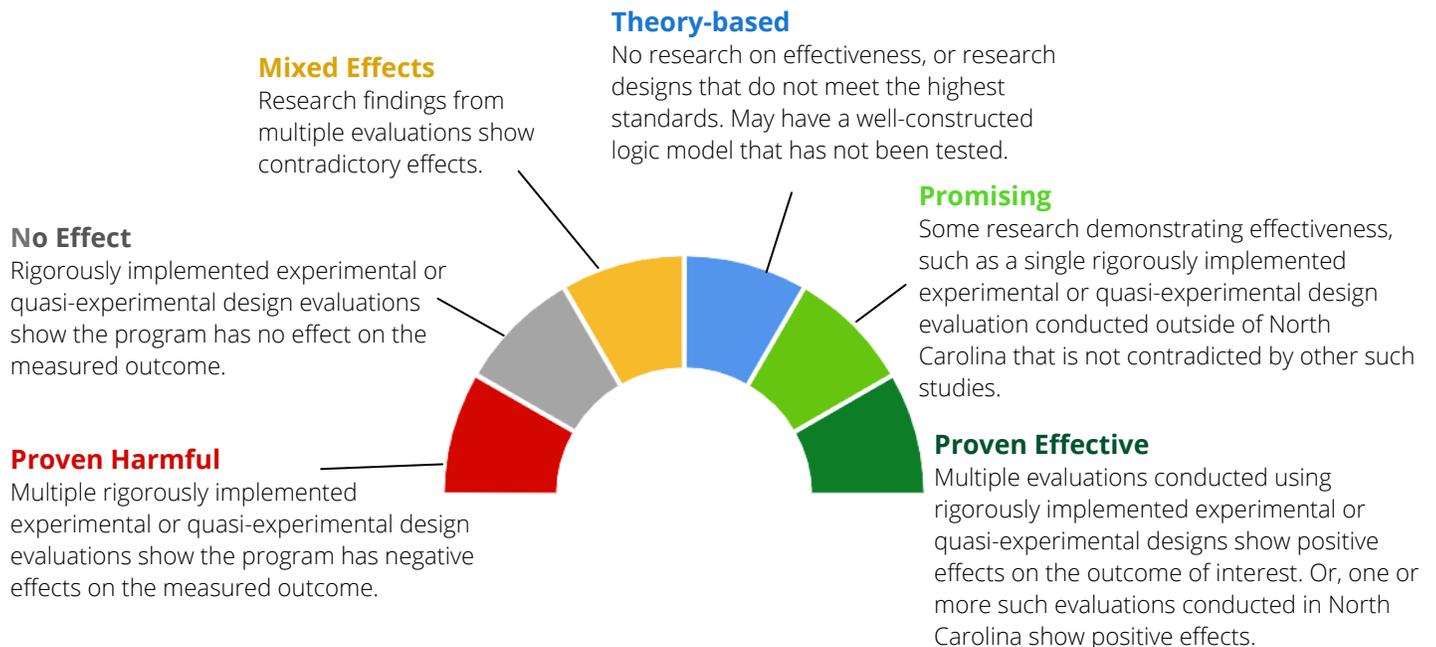
[8] High risk juveniles are defined as those with a risk level of 4 or 5 on intake assessments. Juvenile court counselors administer the North Carolina Assessment of Juvenile Risk of Future Offending (NCAR) to incoming youth. Scores are used as a predictor for recidivism and prompt DJJDP to provide a systematic response appropriate to juvenile's level of risk.

Program Inventory and Evidence Review

To complete the program inventory, DJJDP and OSBM first identified the state contracted programs that aim to reduce recidivism among high-risk juveniles.

Then they reviewed the available research evidence to evaluate each program based on its measured impact (positive or negative) and the rigor of the research designs. They rated each program on a scale ranging from “proven effective” to “proven harmful.” The ratings definitions are summarized below; more details can be found on OSBM’s website.[9]

Tiered Levels of Evidence



Program inventories provide a systematic way to assess what programs are being delivered to achieve a policy goal or desired outcome, how those programs are being delivered, and whom those programs target. Inventories also include details on the discrete subcomponent interventions that comprise broader delivery models like residential care facilities.

An **evidence review** can help program managers determine the effectiveness of their array of services, empower decisionmakers to employ more evidence-based programs, and identify opportunities for filling top-priority evidence gaps. Additionally, the clearinghouses that underlie the evidence ratings can inform what proven programs and services could be included in the service array when designing and awarding state contracts.

[9] <https://www.osbm.nc.gov/operational-excellence/north-carolina-results-first/evidence-definitions>

Strength of Evidence for State Contracted Programs

DJJDP identified three program models and four program subcomponents that aim to reduce recidivism among high-risk juveniles. These programs are delivered at multiple sites across the state.

Three of the state contracted programs received the highest rating of “proven effective.” The remaining interventions are “theory based,” meaning they may have a strong logic model, but no research has been conducted or the existing research does not meet the standards needed to determine the programs’ effect.

Programs and Evidence Ratings

Program	Target Population	Evidence Rating
Value-Based Therapeutic Environment Model (Program Model) Methodist Multi-purpose Group Homes Methodist Transitional Living Homes	Adjudicated youth aged 11-17, disposition level II 1) Youth on post-release supervision or disposition level III; or 2) Disposition level II and transitioning from residential care program	 Proven Effective
Eckerd Male Short-Term Residential Program (Program Model) Program components: <ul style="list-style-type: none"> Restorative Justice Cognitive Behavioral Therapy: Forward Thinking Interactive Journaling Motivational Interviewing Substance Abuse Behaviors Group 		 Theory-based  Theory-based  Proven Effective  Theory-based  Theory-based
AMIkids North Carolina Family Services - Functional Family Therapy (Program Model)	Adjudicated youth aged 10-18; majority court-involved disposition level I and II, some disposition II and III re-entering community from confinement or a residential program	 Proven Effective

While decisionmakers can and should use the program inventory and evidence review to inform program delivery and contract decisions, only program models shown here currently have sufficient research evidence to determine their effect on recidivism.

This summary presents the programs currently funded from the initial inventory, available on OSBM’s [website](#). Provider contracts are evaluated and re-awarded periodically. In September 2020, the contract for residential services for females changed vendors from WestCare North Carolina Girls Program to Eckerd Girls Residential Academy at Kerr Lake. The programs provided under this new contract have not yet been inventoried and assigned evidence ratings and are not included here.

PROGRAM DETAILS

Value-Based Therapeutic Environment (VBTE) – Group Homes and Transitional Living Homes

The VBTE residential model incorporates a variety of services to meet individualized needs, including educational services, participation in community service, vocational services, and individualized service plans that address the behaviors that led to justice system involvement. The program is a non-punitive treatment model that concentrates on enhancing the youth's use of appropriate social skills. Seven VBTE group homes and four VTBE transitional living homes are located across the state, each operated by Methodist Home for Children. Youth referred to group homes are aged 11-17 and identified as Level II disposition.

Cognitive Behavioral Therapy (CBT) for Youth in Institutional and Residential Settings

CBT is a psychotherapy treatment that focuses on cognitive restructuring delivered in both individual and group settings. Interactive Journaling, the form of CBT delivered at the Eckerd Short Term Residential facilities, is an experiential writing process that motivates and guides youth toward positive change. The journaling component encourages youth to internalize or “try on” new knowledge. Counselors lead the journaling activities and provide other activities that correlate with the content of the journals and the journal objectives. The journaling activities challenge participants' distorted thinking, identify maladaptive behaviors and consequences, identify practical alternative behaviors, and guide practice of new skills.

CBT is one component of the programming at Eckerd's Male Short Term Residential facilities and is mandatory for all participants. The target population is males aged 13-17 who are identified as a Level II disposition and who have behavioral and academic challenges. Behavioral challenges may include aggression, theft, substance use and gang involvement.

Functional Family Therapy (FFT) - AMIkids

FFT is a short-term, community-based therapeutic intervention for delinquent youth at risk for institutionalization. Delivered by AMIkids North Carolina Family Services, FFT's family-based treatment approach is designed to improve within-family attributions, family communication and supportiveness, while decreasing intense negativity and dysfunctional behavior patterns. Parenting skills, youth compliance and the complete range of behavior domains (cognitive, emotional and behavioral) are targeted for change based on the specific risk and protective factor profile of each family. The model's five phases include Engagement, Motivation, Assessment, Behavior Change, and Generalization.

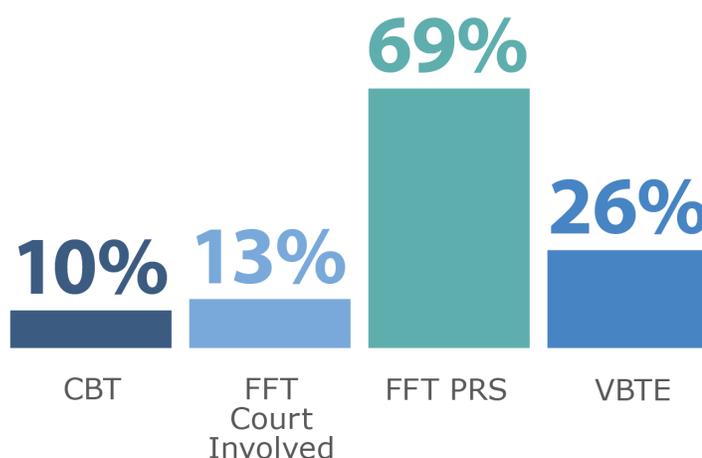
FFT is intended for youth aged 10-18 who are at risk for -- or presenting with -- delinquency, violence, substance use, Conduct Disorder, Oppositional Defiant Disorder, or Disruptive Behavior Disorder. Most youth receiving FFT are court-involved and on probation, with disposition levels I or II. FFT is also delivered to youth re-entering the community following a YDC commitment or residential facility placement with disposition levels II or III.

Programs' Impact on Recidivism

All state contracted interventions for which rigorous research exists are proven to be effective at reducing recidivism among high-risk juveniles.^[10] How much the intervention reduces participants' likelihood of recidivism differs by program and target population. For this analysis, recidivism is defined as a new juvenile adjudication or adult conviction; it excludes complaints, arrests, and technical violations.

Research for AMLkids - **Functional Family Therapy (FFT)** separately measured the effect of the program when delivered to 1) **court-involved juveniles** with lower dispositions and 2) juveniles re-entering the community from a youth development center (YDC) or residential facility on **post-release supervision (PRS)**. The program reduces the likelihood of recidivism for lower disposition, court-involved youth by 13 percent, but research shows a larger, 69 percent recidivism reduction when delivered to higher disposition youth re-entering the community on PRS.

Programs' Effects on Decreasing Recidivism from Baseline According to Research Evidence



Multipurpose Group Homes and Transitional Living Homes using the **Value-Based Therapeutic Environment (VBTE)** model are expected to lower recidivism rates among participants by 26 percent. Research measured the effect of placement in a group home or transitional living home utilizing the VBTE model compared to the recidivism rates of youth of similar disposition and risk level committed to a YDC.

The available research evidence indicates that North Carolina can expect a 10 percent reduction in recidivism from delivering **Cognitive Behavioral Therapy (CBT)** in an institutional or residential program setting compared to not delivering the therapy in those settings. Unlike FFT and VBTE, CBT is not a comprehensive program model on its own. This therapy is a subcomponent of the suite of services and interventions currently delivered within the Eckerd short-term residential program. Additional research would be needed to determine the effect of Eckerd as a whole, inclusive of all its subcomponents. However, these findings indicate that CBT is an effective therapy in residential settings.

[10]The program effects were estimated by the Washington State Institute for Public Policy's systematic literature review. Each effect measure is estimated from a meta-analysis of all research studies with strong, credible evaluation designs found for each program.

Benefit-Cost Analysis

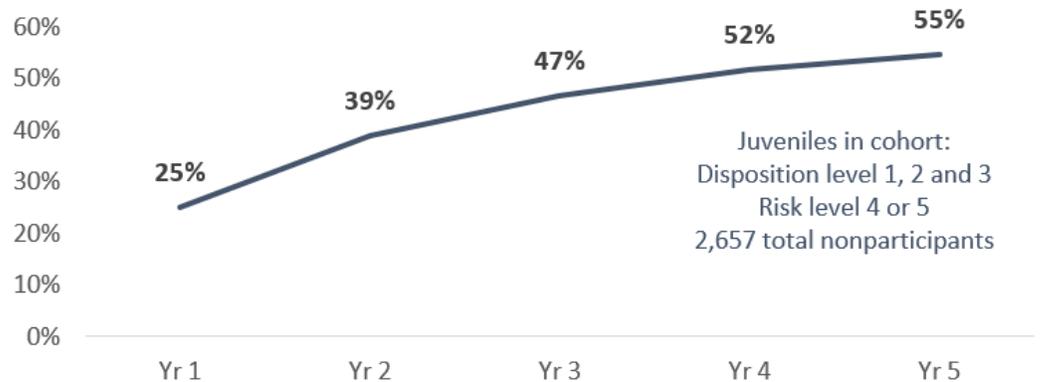
Reducing recidivism and lowering crime in the state through effective programming for justice-involved youth benefits participants, taxpayers, and society. Program participants avoid the negative consequences of further involvement with the justice system, reflected in higher graduation rates and lifetime earnings. North Carolinians benefit from avoided victimization harms and damages as well as lower juvenile and adult criminal justice system utilization – a cost savings for government entities and taxpayers. OSBM and DJJDP estimated the benefits of the three proven effective programs and then compared them against the delivery costs to determine the state’s return on investment.

Two main factors that comprise the expected benefits from juvenile recidivism interventions are:

1. The effect of program participation on crime reduction
2. The avoided societal cost of a recidivism event.

Each program’s crime reduction effect is the difference between the target population’s recidivism rates with and without the program treatment. Among eligible high-risk juveniles who did not participate in these community-based interventions, over half (55%) recidivated within five years.^[11]

55% of High Risk Juveniles Recidivate Within 5 Years Without State Contracted Program Intervention



Each program’s effect on lowering participants’ likelihood of re-offending ranges from 10 percent to 69 percent, as discussed on the previous page.

The second factor, the societal cost of recidivism, is discussed in more detail in the next section.

[11] This recidivism “baseline” provides a proxy for recidivism rates in the absence of community program intervention. The recidivism baseline cohort was limited to juveniles who did not participate in the contract-funded programs as part of their court-ordered sanctions but have the same risk level, disposition level and demographic characteristics as the youth served by those programs.

Cost of One Recidivism Event

The total cost of an average recidivism event by a high-risk juvenile is \$120,000.^[12] This value includes the cost of crime victimization, the juvenile's lost education and lifetime earnings, and justice system use associated with re-offending. These costs are weighted by the frequency and severity of the crimes committed by this population.

Harms and damages experienced by crime **victims**, such as medical expenses, property loss, and pain and suffering, account for 79 percent of these costs.

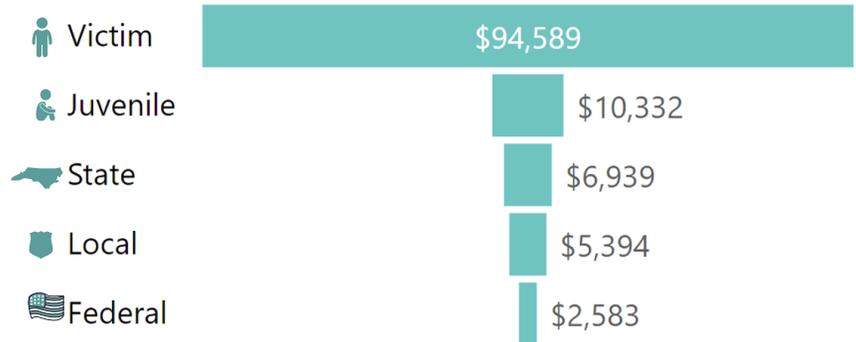
The **juvenile** offender themselves will earn approximately \$10,000 less than their peers over their lifetime due to justice system involvement.

State, local and federal governments (taxpayers) incur direct costs for the arrest, court processing, and any subsequent confinement, supervision or programmatic interventions, as well as the indirect cost of lower tax revenues from lost earnings. The justice system costs borne by taxpayers amount to \$12,000 (10 percent) on average.

Cost of Recidivism Reflects Population Crime Patterns

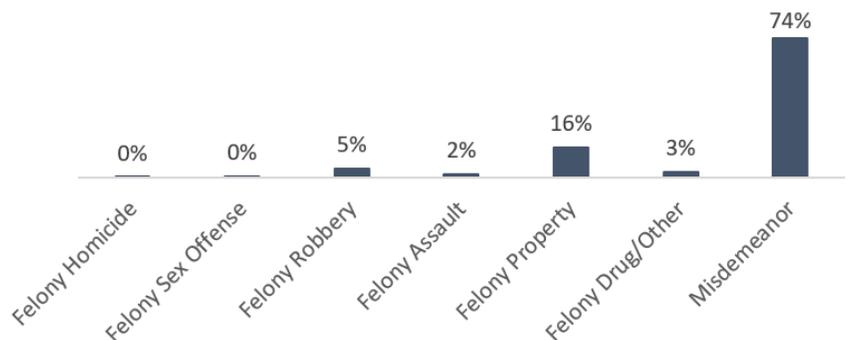
Higher status offenses, such as robberies and assaults, are most costly to victims and taxpayers, but lower status offenses like misdemeanors and property crimes are much more common. Misdemeanors make up nearly 75 percent of all recidivism offenses among high-risk juveniles. Therefore, the cost of an average recidivism event reflects that felony offenses that have high victim costs are relatively rare among this population group. Similarly, justice system resources like probation and community programming are used more often than high-cost prison and youth detention center resources associated with higher offense classes.

Cost of an Average Recidivism Events Among High-Risk Juveniles



Recidivism Crime Patterns Among High-Risk Juveniles

Percent of total recidivism events by type



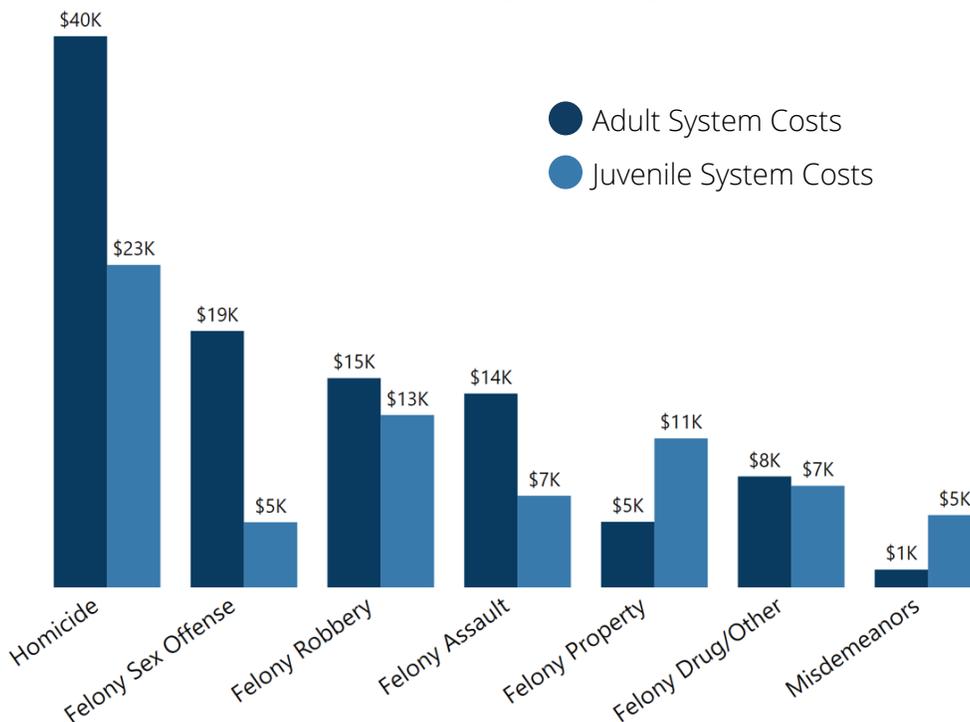
[12] These costs are specific to the crime patterns of juveniles with risk level 4 or 5, disposition level 1-3, and an average age of 15. The costs are estimated over a future time horizon of multiple years. All costs are presented in 2020 dollars, using a 3.5% discount rate.

Justice System Costs

The cost of the average recidivism event includes the justice system resources an individual might utilize from the point of arrest through completion of any court-ordered sanctions, including police, court services, confinement, supervision, and community programming. This analysis used case management data and court records to model North Carolina’s justice system utilization patterns and associated costs, averaged across more than 135,000 records.

Some crime types are more resource intensive than others, and resource costs differ between the juvenile and adult systems. Estimates take into account the probability of an offender using each resource for their specific crime and the “length of stay” or duration of use. Adult criminal justice system costs are included because high-risk juveniles who re-offend after juvenile system involvement are most often charged in the adult system due to their age.

**Marginal Justice System Costs
per Person by Crime Type**



The values presented above are the *marginal* costs typically incurred by the justice system for each crime type. OSBM and DJJDP mined administrative data and workload studies to estimate marginal costs for each justice system resource – those costs that would change immediately if the number of cases increased or decreased. Compared to an average cost that would include all types of expenditures, a marginal cost better reflects the savings government entities would experience from a moderate reduction in recidivism.

Justice Data Limitations

North Carolina does not have a centralized jail data collection and reporting system so cost information is limited. Jail costs are overestimated relative to other resources.

This analysis relied on a self-response survey of jail average daily costs conducted by the NC Association of County Commissioners.

Responses likely include staffing costs, but it is not possible to extract staffing costs from the estimates to better approximate the marginal cost.

Justice System Resource Marginal Costs per Person per Year by Crime Type, 2020 Dollars

Justice System Resource	Homicide	Felony Sex Offense	Robbery	Felony Assault	Felony Property	Felony Drug/Other	Misdemeanor
Police	\$675	\$675	\$675	\$675	\$675	\$675	\$675
Courts	\$11,305	\$2,863	\$2,056	\$2,054	\$1,075	\$974	\$415
Juvenile Detention	\$7,743	\$7,743	\$7,743	\$7,743	\$7,743	\$7,743	\$7,743
Juvenile Probation*	\$4,203	\$4,225	\$8,982	\$4,982	\$8,596	\$5,977	\$5,787
Youth Detention Center	\$8,521	\$8,521	\$8,521	\$8,521	\$8,521	\$8,521	\$8,521
Juvenile PRS*	\$6,353	\$16,132	\$14,148	\$14,992	\$11,916	\$14,701	\$18,649
Jail	\$23,170	\$23,170	\$23,170	\$23,170	\$23,170	\$23,170	\$23,170
Adult Probation*	\$866	\$994	\$1,080	\$950	\$939	\$964	\$855
Prison	\$5,112	\$5,112	\$5,112	\$5,112	\$5,112	\$5,112	\$5,112
Adult PRS*	\$1,487	\$1,095	\$1,725	\$1,889	\$1,979	\$1,821	\$1,663

*Weighted average cost including standard probation or post-release supervision (PRS) and certain state-funded, court-ordered programming.

Marginal costs include immediate expenses, such as medical care, food and certain staff time costs, but exclude long-term capital expenses. Personnel costs are also excluded when confinement facilities are understaffed and when supervision caseloads are high because recidivism reduction would not reduce costs in these situations. Staffing and capital expenses account for the largest portion of justice system average costs, so the marginal costs in this analysis are significantly lower than the average costs typically reported in other contexts.

Raise the Age Legislation's Effect on Estimated Justice System Benefits

This analysis captures sentencing patterns in North Carolina prior to Raise the Age (RtA), when most offenses committed at age 16 and older were charged in adult court. The average age of Juvenile Justice state contracted program participants is 15, so high-risk juveniles who recidivate after treatment generally utilized adult criminal justice system resources rather than juvenile system resources.

Moving forward, misdemeanants and certain felony offenders who recidivate will typically remain in the juvenile system until age 18. Therefore, more of the savings from program-driven recidivism avoidance will shift from the adult system to the juvenile justice system.

Additionally, if these interventions are available to youth aged 16-18 who would not have been able to receive juvenile programming before RtA, North Carolina may experience additional recidivism

Average Age Tried as Adult Pre-RtA

Homicide	13
Felony Sex Offense	16
Felony Robbery	16
Felony Assault	16
Felony Property	16
Felony Drug/Other	16
Misdemeanors	16
Avg treatment age	15

Victimization Costs

Harms and damages experienced by crime victims account for 79 percent of the quantified costs of an average recidivism event among high-risk juveniles, amounting to \$94,600. This average value reflects that felony offenses with high victim costs are relatively rare among this population group; victimless misdemeanors are most common. Even so, the victimization costs are significant.

Victims of person and property crimes may experience tangible costs including medical expenses, property damage and reduced earnings, as well as intangible costs related to pain and suffering. Tangible costs can be measured directly while intangible costs are computed, in part, from jury awards for pain, suffering and lost quality of life.

The Results First benefit-cost model incorporates national research to calculate the average cost of the physical, property and intangible effects of specific felony offenses.^[13] The model does not include any victimization costs for misdemeanors or the felony drug or “other” felony offense categories; these are considered victimless crimes in the research literature.

Some serious felony crime events often involve more than one victim. Costs per victimization are multiplied by the average number of victimizations per conviction in North Carolina by crime type to estimate the total victimization costs per conviction. For example, on average, a felony property crime costs \$2,354 per victimization, and in North Carolina 5.4 victimizations occur per felony property conviction, so the total victimization costs per conviction are \$12,717.

Most Serious Offense Type	Total Victimization Costs Per Conviction 2020 Dollars
Felony Homicide	\$9,302,842
Felony Sex Crimes	\$956,327
Felony Assault	\$155,721
Felony Robbery	\$73,144
Felony Property	\$12,717
Felony Drug/Other	N/A
Misdemeanors	N/A

[13]The model uses the average values from the Miller and McCollister studies as calculated by WSIPP:

Miller, T. R., Cohen, M. A., and Wiersema, B. Victim costs and consequences: A new look. National Institute of Justice Research Report, 1996. Retrieved from: <https://www.ncjrs.gov/pdffiles/victcost.pdf>.

McCollister, K. E., French, M. T., and Fang, H. The cost of crime to society: New crime-specific estimates for policy and program evaluation. Drug and Alcohol Dependence, 108, 2010, pp. 98-109.

Cohen, M. A. and Piquero, A. R. New evidence on the monetary value of saving a high-risk youth. Journal of Quantitative Criminology, 25, 2009, pp. 25-49.

Washington State Institute for Public Policy. (December 2019). Benefit-cost technical documentation. Olympia, WA: Author. Retrieved from: <https://www.wsipp.wa.gov/TechnicalDocumentation/WsippBenefitCostTechnicalDocumentation.pdf>.

Return on Investment

DJJDP and OSBM compared the value of the programs' recidivism reduction benefits against their delivery costs to estimate the state's return-on-investment per participant served. Key metrics from this analysis help paint a picture of each program's impact in North Carolina:

Recidivism Reduction from Baseline: This analysis shows the difference between the target population's expected recidivism rates with and without program treatment. The program's effect on crime reduction is drawn from existing research evidence. The recidivism reduction from baseline shows the degree of change that North Carolina can expect when programs are implemented with fidelity to the core design and delivery elements that research has proven to be effective.

Total Benefits: The long-term, monetized benefits from reducing the likelihood of recidivism among high-risk juveniles include avoided crime victimizations, lower justice system costs, and higher education and earnings for participants.^[14] When applicable, the estimated benefits also include the avoided costs from the "usual" treatment – the services the individual would have otherwise received.

Total Costs: Costs reflect the immediate expenses that the state incurs from delivering the program to one person. ^[15]

Net Benefits: The per-person benefits minus the costs of program delivery provides a measure of return-on-investment. It answers, "How much better off is North Carolina from investing in this program?"

Benefit-Cost Ratio: Another measure of return-on-investment, the benefit-cost ratio presents the benefits generated per dollar spent on the program.

Confidence: The confidence metric is the percentage chance that the program will yield positive net benefits. To test the sensitivity of the results to variations in key estimates, this analysis simulated the benefits and costs 10,000 times, varying model inputs within a reasonable range.

[14] Costs and benefits are presented in 2020 dollar values. Future costs and benefits are discounted using a 3.5% discount rate.

[15] The justice system cost and savings are based on marginal costs; those expenditures that would change immediately if the number of justice-involved individuals increased or decreased. Compared to an average cost that would include all short- and long-term expenses, a marginal cost better reflects the savings government entities would experience from a moderate reduction in recidivism.

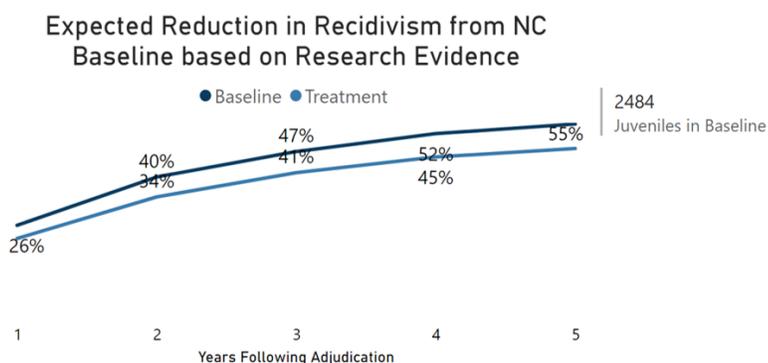
Functional Family Therapy for Court-Involved Youth – AMIkids

Functional Family Therapy (FFT) is a short-term, high quality intervention model designed to be delivered in 12 to 14 sessions over a three- to five- month duration. The model is designed to target youth aged 10 to 18 identified with behavioral or emotional problems by the juvenile justice, mental health, school, and child welfare systems. Most youth receiving FFT are court-involved and on probation, with level I or II dispositions. FFT is also a viable intervention model used for disposition level II and III youth re-entering the community following a YDC commitment or as a step-down from a short-term residential placement.

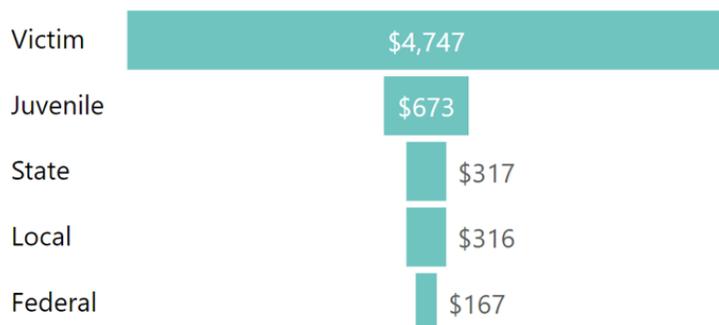
Key Findings

For high-risk juveniles on probation with level I or II dispositions, Functional Family Therapy reduces recidivism by 13 percent.

The program generates \$6,219 in benefits for North Carolinians per youth served.



Benefits by Perspective



- ✓ Avoided victimization costs of \$4,747.
- ✓ A higher lifetime earnings of \$673 for each youth participant.
- ✓ Justice system savings of \$612. [16]
- ✓ The participant's higher education and earnings also increase tax dollars collected by \$187.

Return on Investment Per Person

Program delivery costs \$6,428 per person, a cost that slightly exceeds the expected long-term benefits from program participation of \$6,219 per person, as outlined above. The results indicate a net loss of \$209 dollars per participant, or stated differently, a return of 97 cents per dollar invested in the program.

The sensitivity of results was tested by re-running the model thousands of times, varying key model parameters and cost estimates within a reasonable range. This sensitivity analysis indicates that the expected recidivism reduction benefits outweighed the program delivery costs half the time. In other words, there is a 50 percent chance that the benefits will exceed the costs when FFT is used as an intervention for court-involved, level I and II disposition juveniles.

(\$209)
Net Benefits
\$0.97 : 1
Benefit-Cost Ratio
50%
Confidence

[16] The justice system cost savings are based on *marginal* costs; those expenditures that would change immediately if the number of justice-involved individuals increased or decreased. Compared to an average cost that would include all short- and long-term expenses, a marginal cost better reflects the savings government entities would experience from a moderate reduction in recidivism.

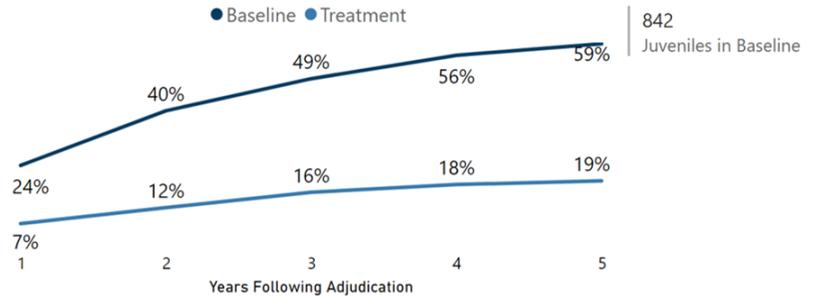
Functional Family Therapy for Youth on Post-Release Supervision – AMIkids

Functional Family Therapy (FFT) may also be utilized with juveniles reentering the community from juvenile facilities such as youth development centers or other residential placements. Research shows greater impacts for these youth than for youth that are court-involved with Level I or II dispositions.

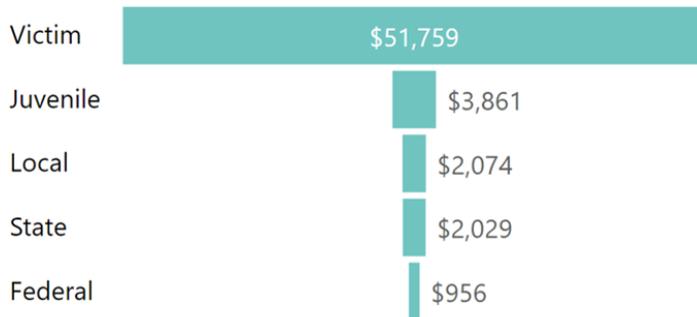
Key Findings

Functional Family Therapy reduces recidivism among high-risk, post-release level II or III disposition juveniles by 69 percent. The reduction in recidivism generates \$60,679 in benefits per juvenile served by the program.

Expected Reduction in Recidivism from NC Baseline based on Research Evidence



Benefits by Perspective



- ✓ Avoided victimization cost of \$51,759.
- ✓ A higher lifetime earnings of \$3,861 for youth participant.
- ✓ Justice system savings of \$3,984.[17]
- ✓ The participant's higher education and earnings also increase tax dollars collected by \$1,075.

Return on Investment Per Person

Program delivery costs are \$6,428 per person. When the per-person long-term benefits from the program are subtracted from the delivery costs, the result indicates a net benefit of \$54,251 dollars per youth participant, a return of \$9.44 per dollar invested in the program.

As noted in the FFT analysis for court-involved level I and II disposition youth, the sensitivity of the results was tested by running the model thousands of times, varying key model parameters and cost estimates within a reasonable range. All scenarios showed net positive results. Policymakers can be confident that the benefits of delivering FFT to youth on post-release supervision will outweigh the costs of delivery due to the large impact of the program for this high-need population group.

\$54,251

Net Benefits

\$9.44 : 1

Benefit-Cost Ratio

100%

Confidence

[17] The justice system cost savings are based on *marginal* costs; those expenditures that would change immediately if the number of justice-involved individuals increased or decreased. Compared to an average cost that would include all short- and long-term expenses, a marginal cost better reflects the savings government entities would experience from a moderate reduction in recidivism.

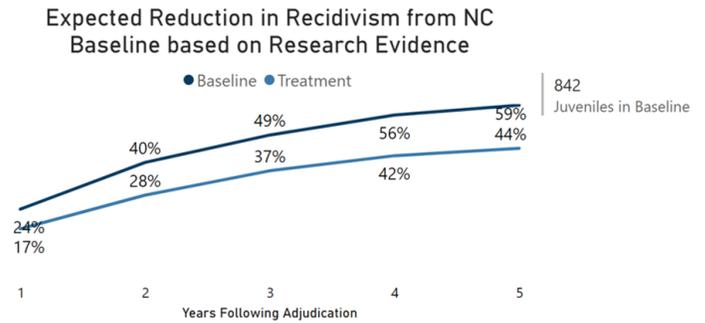
Value-Based Therapeutic Environment Model – Multipurpose Group Homes and Transitional Living Homes

The Methodist Home for Children's (MHC) Value-Based Therapeutic Environment (VBTE) Model is a nonpunitive treatment model that concentrates on teaching juvenile justice-involved youth about prosocial behaviors as alternatives to antisocial behaviors. The VBTE Model is used in residential juvenile group homes and transitional living homes owned by Juvenile Justice and operated by MHC in North Carolina. The target population is youth aged 10 to 18 years who are involved in the juvenile justice system.

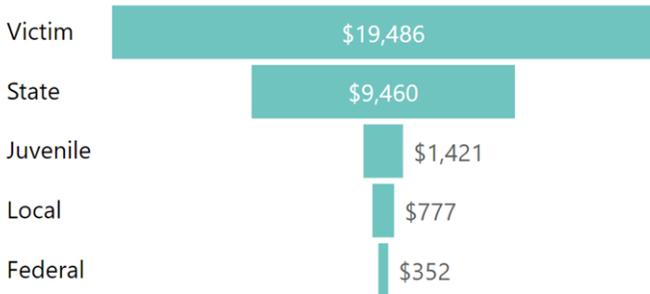
Key Findings

VBTE participation reduces recidivism among high-risk juveniles with level II or III dispositions by 26 percent.

The program generates \$22,810 in benefits per person served in the program.



Benefits by Perspective



- ✓ Avoided victimization costs of \$19,486.
- ✓ A higher lifetime earnings of \$1,421 for the participant.
- ✓ Justice system savings of \$1,507.^[18]
- ✓ The participant's higher education and earnings also increase tax dollars collected by \$396.

Return on Investment Per Person

Program delivery costs are \$2,421 per participant. When the per-person long-term benefits from the program are subtracted from the delivery costs, the results indicate a net benefit of \$29,075 dollars per participant, a return of \$13.01 per dollar invested in the program.

If VBTE were not available to these youth as a treatment option, the court would likely commit them to a YDC. Therefore, each person served by VBTE saves the state and taxpayers an additional \$6.3K, the difference between the marginal cost of the program (\$2,421) and the marginal cost of the average YDC commitment of 1.03 years (\$8,686). The YDC marginal cost excludes long-term facilities costs and staffing because YDCs would not be closed or staffing reduced if the YDC population declined moderately. Marginal costs are significantly lower than average costs reported in other contexts.

\$29,075
Net Benefits

\$13.01 : 1
Benefit-Cost Ratio

100%
Confidence

Due to the combined recidivism reduction benefits and the cost savings from providing an alternative to a YDC commitment at initial treatment, policymakers can be confident that the benefits of this program will outweigh the costs of delivery. The sensitivity of the results was tested by running the model thousands of times, varying key model parameters and cost estimates within a reasonable range. All scenarios showed net positive results.

[18] The justice system cost savings are based on *marginal* costs; those expenditures that would change immediately if the number of justice-involved individuals increased or decreased. Compared to an average cost that would include all short- and long-term expenses, a marginal cost better reflects the savings government entities would experience from a moderate reduction in recidivism.

Cognitive Behavioral Therapy in Short-Term Residential Settings

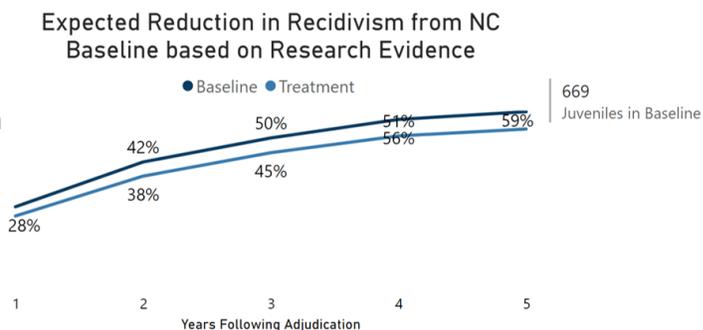
Unlike FFT and VBTE, which are comprehensive and independent programs, Eckerd uses an array of services and interventions within the Eckerd short-term residential program milieu, with Cognitive Behavioral Therapy (CBT) being one of them. Costs and benefits identified in this analysis apply to a CBT single component of Eckerd's service delivery, not to the entire Eckerd program model.

CBT is a form of psychological treatment that has been demonstrated to be effective for a range of problems including depression, anxiety disorders, alcohol and drug use problems, marital problems, eating disorders, and severe mental illness. Numerous research studies suggest that CBT leads to significant improvement in functioning and quality of life. In many studies, CBT has been demonstrated to be as effective as, or more effective than, other forms of psychological therapy or psychiatric medications. CBT is based on several core principles, including the principles that psychological problems are based, in part, on faulty or unhelpful ways of thinking, psychological problems are based, in part, on learned patterns of unhelpful behavior, and people suffering from psychological problems can learn better ways of coping with them, thereby relieving their symptoms and becoming more effective in their lives. CBT treatment usually involves efforts to change thinking patterns.

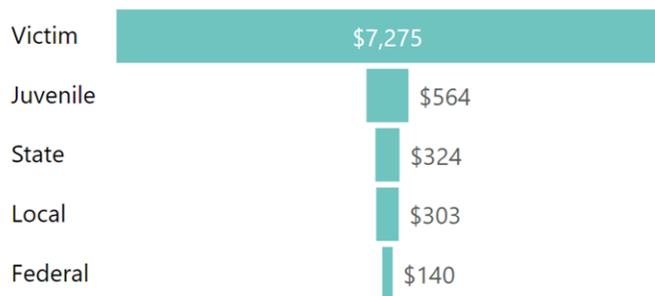
Key Findings

The research evidence indicates that North Carolina can expect a 10 percent reduction in recidivism from delivering CBT in an institutional or residential program setting like Eckerd, compared to not delivering the therapy in that setting.

This recidivism reduction generates \$8,605 in benefits per person served in the program.



Benefits by Perspective



- ✓ Avoided victimization costs of \$7,275.
- ✓ A higher lifetime earnings of \$564 for the participant.
- ✓ Justice system savings of \$609.^[19]
- ✓ The participant's higher education and earnings also increase tax dollars collected by \$157.

[19] The justice system cost savings are based on *marginal* costs; those expenditures that would change immediately if the number of justice-involved individuals increased or decreased. Compared to an average cost that would include all short- and long-term expenses, a marginal cost better reflects the savings government entities would experience from a moderate reduction in recidivism.

Return on Investment Per Person

Program delivery costs are, a single component of the services delivered with Eckerd's short-term residential service model, is \$1,678 per participant served. When the per-person long-term recidivism benefits from the program are subtracted from the delivery costs, the results indicate a net benefit of \$6,928 dollars per participant, a return of \$5.13 per dollar invested in the program.

CBT program delivery costs, a single component of the services delivered with Eckerd's short-term residential service model, is \$1,678 per participant served. When the per-person long-term recidivism benefits from the program are subtracted from the delivery costs, the results indicate a net benefit of \$6,928 per participant, a return of \$5.13 per dollar invested in the program. The research literature for cognitive behavioral therapy (CBT) for youth in institutional and residential settings also measured the therapy's impact on other outcomes in addition to recidivism. The evidence shows that CBT delivered in these settings also reduces externalizing behavior symptoms (e.g., aggressive, hostile, or disruptive behavior), internalizing symptoms (e.g., sadness, anxiety, or withdrawal), and suicidal ideation. These life-changing outcomes, however, could not be quantified through the benefit-cost analysis.^[20]

The sensitivity of the results was tested by running the model thousands of times, varying key model parameters and cost estimates within a reasonable range. The results indicate that the expected recidivism reduction benefits outweighed the program delivery costs 65 percent of the time.

\$6,928

Net Benefits

\$5.13 : 1

Benefit-Cost Ratio

65%

Confidence

[20] The crime reduction and higher education and earnings benefits associated with these outcomes are already captured by this analysis directly. This analysis does not monetize any healthcare costs for the mental health conditions because the results come from a single study with a small study population so there is not sufficient confidence in these outcomes. Suicidal ideation is not a monetizable outcome.

Next Steps

These results support two guiding principles within Juvenile Justice:

Children have the capacity to change



Delivering the right program at the right time - targeting interventions based on what is appropriate and proven effective for the individual's needs - maximizes benefits to victims, the justice system, juveniles, and families.



Guiding Principles

1

Expand the Use of Functional Family Therapy for Youth on Post Release Supervision

DJJDP provides a wide array of services at all points in the juvenile justice system. More importantly, DJJDP focuses on the importance of admitting individuals to the service most appropriate to their risk level, strengths, and needs. Since Functional Family Therapy programming has been shown to be highly effective when delivered to juveniles re-entering the community from secure youth development centers and other residential placements, DJJDP will amplify FFT communication materials to juvenile court services and facility operations staff who lead post release supervision planning efforts that develop actions necessary to match juveniles with appropriate community-based services. Currently, the FFT program under AMIkids has the capacity to serve up to 520 youth annually with access in all 100 counties. If additional funding is required and is sought to allow the program to serve at an increased capacity for youth on post release supervision, increased funding would allow for hiring more FFT counselors, increasing the total number of PRS-targeted youth that may be served.

2

Incentivize Proven Practices with Performance-Based Contracting

DJJDP - Juvenile Community Programs has already begun incorporating learnings from the Results First Initiative, by exploring the use of performance-based contracting. As the section learns more from the benefits of each model, not only can the section continue to ensure fidelity to models it chooses to contract with providers to deliver, but also can ensure that the contracts are addressing the most appropriate target populations that may increase the return on investment for each program participant. Providers that are consistent with maintaining high fidelity to program models and also meeting contractual obligations with serving specific target populations, as learned via this benefit-cost study with FFT, should receive contractual compensation for meeting those outlined utilization measures.

3

Fill Priority Research Gaps

DJJDP and OSBM were unable to evaluate some top priority programs using the Results First benefit-cost model process due to limited research and evaluation of certain program models (i.e., Restorative Justice models such as restitution, community service, sentencing circles, mediation programs). Barriers to obtaining research and evaluation services include lack of funding for such initiatives. The section continues to seek funding opportunities and use resources made available to the section through this Results First initiative project and partnerships developed through OSBM.

4

Communicate and Educate

Research indicates that the evaluated statewide contract programs reduce recidivism, thus benefiting high-risk juveniles, their families, the community, and the state. Juvenile Justice will develop summary materials to inform legislators of the outcomes related to state-funded investments in preventive, forward-thinking juvenile programming.

The Results First findings will be communicated through research briefs, job aids, and public-facing materials to improve the availability of data to legislators for decision making purposes; to existing and potential programs for the purposes of seeking additional funding resources including grant opportunities; to the public so that transparency may be served in program potential and use of public funds; and to Juvenile Justice professionals to further increase the understanding of matching the right services at the right time.

Juvenile Community Programs will relay the findings of this Results First study to internal Juvenile Justice professionals, external partners (i.e., Juvenile Crime Prevention Councils), and other stakeholders to affect cost savings not only from a statewide contract perspective but also from a local service delivery perspective, teaching local stakeholders to select services that match local juvenile needs that produce the most impactful benefit, to both the youth served and the returned benefit to the community, leading to cost savings.

5

Continue Partnerships

DJJDP and OSBM will continue to look for opportunities to partner on projects that inform the state's policy making process, both through Results First and through other avenues.