

# **Youth Treatment Court Outcome Evaluation: Recidivism Results for Discharged Youth**

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**Debbie Dawes  
Janis Kupersmidt, PhD**



**Prepared by innovation Research & Training, Inc.**

*Address: 1415 W NC Highway 54 – Suite 121, Durham, NC 27707  
Voice: 919 493 7700 Fax: 919 493 7720*

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## Youth Treatment Court Outcome Evaluation: Recidivism Results for Discharged Youth

### Executive Summary

#### Purpose:

- To describe the characteristics of the youth discharged from the Youth Treatment Courts (YTCs) in North Carolina
- To compare the characteristics of the youth across the five courts
- To explore and test the relationship between participant characteristics and court program compliance to graduation
- To measure recidivism of youth discharged from the YTCs by following them through the juvenile justice and adult criminal justice system in the six-month period following discharge from the YTC

#### Method:

- Three primary sources of data were used in this outcome evaluation to describe youth discharged from the YTCs and to explore subsequent involvement in the juvenile and/or adult criminal justice systems:
  - *YTC MIS*: Data describing youth discharged from YTCs were drawn from the YTC MIS which is maintained by the Administrative Office of the Courts (AOC). The YTC MIS contains information collected by case coordinators in the course of evaluating and serving the youth. All data for youth discharged between April 2003 and April 2006 were available for analysis.
  - *NCJOIN*: The second data source comes from the Department of Juvenile Justice and Delinquency Prevention (DJJDP). Through the NC Juvenile Online Information System (NCJOIN), DJJDP collects and maintains information about the youth it serves. NCJOIN data were used to: 1) describe youth discharged from YTCs in terms of their individual risk factors for re-offending, 2) complete complaint (charge) information that was missing in the YTC MIS, and 3) describe subsequent involvement in the juvenile justice system in the six-month period following discharge from the YTC program.
  - *ACIS*: AOC's Automated Criminal Information System (ACIS) was the third data source. ACIS contains docket-based criminal information for all court-involved individuals to include charge and convicted offense information, and criminal sentencing information. These data were used to describe involvement in the adult criminal justice system in the six-month period following discharge from the YTC program.
- Recidivism is defined as a delinquent complaint and/or an adult charge in the six-month period following discharge from the YTC.
- Univariate statistics and frequencies describe the sample discharged from the courts.
- Logistic regression and chi-square are used as appropriate to describe court-by-court sample differences and to identify significant predictor variables related to graduation and recidivism.

## Key Findings:

### **Sample of Discharged Youth**

- The 132 participants across the five YTCs differ in their average age and race; however, the proportion of males to females is not significantly different across courts.
- Information related to the charge associated with referral to the YTC program indicated that 56% of youth had a Minor offense (Class 1 – Class 3 misdemeanor) for their most serious charge. The remaining 44% had a Serious offense (Class F – Class I felony, Class A1 misdemeanor) for their most serious offense. Specifically, 34% of youth had a most serious charge involving a Class 1 misdemeanor and 28% had a most serious charge involving a Class H felony. No youth discharged from the YTC program were referred to the program having a Violent charge (Class A – Class E felony). Offense seriousness of participants did not vary across courts.
- Analyses of a variety of risk factors related to the likelihood of future offending were available for 55% of the discharged sample:
  - 71% of youth had no undisciplined or delinquent adjudications prior to referral to the YTC program
  - 81% were not engaged in assaultive behavior
  - 32% had runaway from home at least once prior to YTC program referral
  - 88% were reported to have some level of substance use in the 12 months prior to assessment
  - 79% were reported to have serious school problems
  - 56% of youth were reported to regularly associate with others involved in delinquent/criminal activity and another 25% were reported to be rejected by pro-social peers or to occasionally associate with others who have been involved in delinquent/criminal activity
  - 61% were reported to have a parent/guardian who is willing and able to provide supervision
  - Overall, 26% of youth fell in the “Low Risk” category; 57% fell in the “Medium Risk” category; and, 17% fell in the “High Risk” category.
  - The only risk factor that varied significantly across courts was peer relations.
- Positive drug screen results are greatest for marijuana. Attaining abstinence with this drug may be more difficult for youth and/or the test for marijuana may more accurately detect its use, because traces of marijuana remain in the body longer than some other drugs, such as alcohol.
- On average, youth receive more rewards than sanctions. While there was no significant difference in rewards received with regard to race, there was a difference with regard to sex, where females received more rewards on average than males. The number of sanctions used does not appear to be influenced by race or sex.

- The most frequently used sanction was juvenile detention, and the most frequently used reward was judicial praise or courtroom applause. All courts used both of these.

### **Graduation**

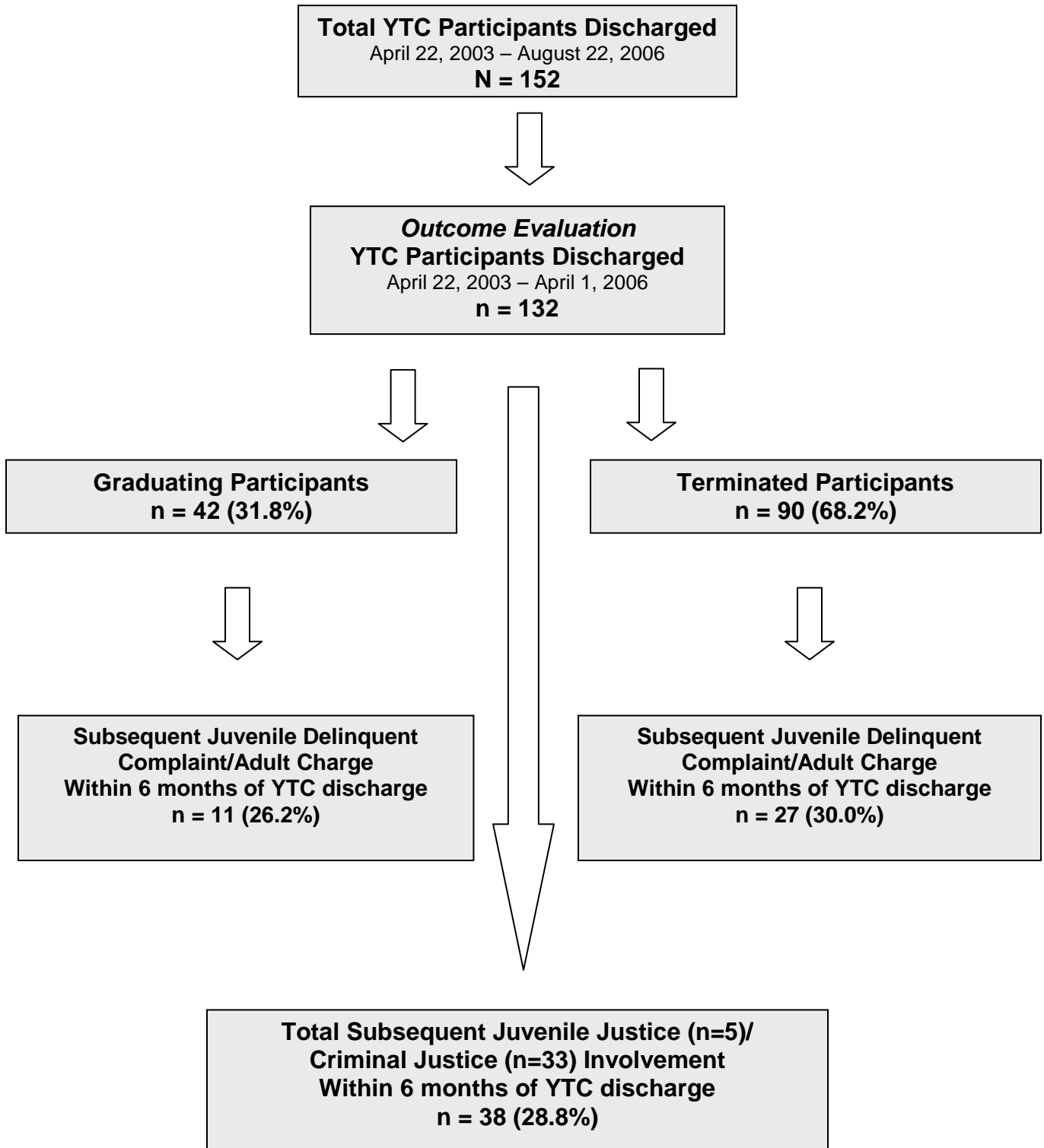
- The overall graduation rate for the 132 youth discharged from the five YTCs is 32%, with a range of 19% to 63% across courts. On average, program length of stay was 301 days, with a range of 11 days to 681 days. Generally speaking, courts graduating a higher percentage of youth have longer average lengths of stay.
- The most common reason for discharge was non-compliance (55%) with the second most common reason being voluntary withdrawal from the program (17%). When discharged for non-compliance, the youth seemed to be non-compliant with several different aspects of the program requirements.
- Youth assessed by court counselors as “Low Risk” graduated at a higher rate (63%) than “Medium Risk” youth (34%) or “High Risk” youth (8%).
- Individual predictors of graduation were found. The predictive variables included fewer days of detention, receiving more rewards in proportion to sanctions, higher compliance test rates for marijuana, and longer program length of stay.
- YTC court placement, age, race, sex, and risk level are each significantly, individually related to graduation.
- While individual predictors of graduation were found, these findings should be considered preliminary and should not be used to draw conclusions about causality.
- While demographic information about the sample was nearly complete, data analyses were hindered by the significant amount of missing data for important program compliance indicators such as rewards received, sanctions imposed, school attendance, detention served, community service hours completed, and drug test compliance.

### **Recidivism**

- The overall recidivism rate for the 132 youth discharged from the five YTCs is 29%, with a range of 13% to 50% across courts. The average time between YTC discharge and re-offense was 95 days, with a range of two days to 177 days.
- For the 38 youth who recidivated in the six-month period following discharge, 63% had a most serious charge involving a misdemeanor offense. 39% had at least one charge involving a drug offense. While recidivist youth accrued between 1 and 10 new charges during the follow-up period, the vast majority of them were charged with only one or two new offenses.
- About the same proportion of males (29.5%) and females (25.9%) were charged with a new offense. All racial groups recidivated at about the same rate: 29.5% of Caucasians, 26% of African Americans, and 25% of youth identified as an “Other” race were charged with a new offense.

- Youth assessed by court counselors as “Medium Risk” had the lowest recidivism rate (24.4%) relative to “Low Risk” youth (31.6%) and “High Risk” youth (33.3%).
- The recidivism rates for youth with a most serious charge for a misdemeanor (charge associated with referral to the YTC program) and those with a most serious charge for a felony were nearly identical (30.3% and 28.0%, respectively).
- The recidivism rate for youth who graduated from the YTC program was lower than those who were terminated from the program (26% and 30%, respectively).
- YTC court placement, race, sex, charge level associated with YTC referral, risk level, prior juvenile court involvement, and type of YTC discharge were not significantly related to recidivism. Individual predictors of recidivism were not found.
- The predictive variables tested include: age at YTC discharge, individual drug compliance test rates for alcohol and methamphetamines, number of rewards over sanctions, and program length of stay.
  - The alcohol compliance test rate variable approached significance, where higher compliance rates were related to a decrease in the likelihood of re-offense.
  - While not significant, the direction of the relationship between the methamphetamine compliance test rate variable and recidivism suggests that higher compliance rates are related to decreases the likelihood of re-offense.
  - While not significant, the direction of the relationship between the rewards/sanctions and recidivism suggests that the more rewards over sanctions received, the less likely youth are to re-offend.
  - While not significant, the direction of the relationship between program length of stay and recidivism suggests that the longer youth remain in the program, the less likely they are to re-offend.

**NC YOUTH TREATMENT COURT OUTCOME EVALUATION:  
FINDINGS FOR GRADUATION AND RECIDIVISM**



## Conclusions and Recommendations:

Due to the prevalence of missing data, firm conclusions cannot be drawn based on the analyses contained in this report. These analyses should be considered preliminary. However, results from these analyses may be used to guide future analyses. For example, results detailed in this report suggest that the interactions between race and court program should be explored relative to their effect on graduation. Should more complete data be available in the future, then the relationships between graduation and the significant predictor variables (e.g., age, sex, risk level, days in detention, the preponderance of rewards to sanctions, drug test compliance rates for marijuana, program length of stay) should be confirmed. Of particular value is the information that further analyses could provide in terms of improving the identification and targeting of youth who could benefit the most from this intensive program. In addition, a more in-depth exploration of the various program components (e.g., drug testing; the mix of rewards and sanctions used; the use of detention) could enhance program operation.

With regard to recidivism, it appears that none of the predictor variables examined were significantly related to re-offense. It is possible that the prevalence of missing data for risk level, juvenile court history, and program compliance data confounded the detection of their influence on recidivism. It is also possible that factors outside of those included in these analyses are better predictors of recidivism (e.g., previous commitment to a Youth Development Center, number of previous delinquent complaints, types of prior delinquent complaints). Finally, due to time constraints of the study, program participants were only followed for a six-month period following release. This is important to bear in mind when comparing recidivism rates found in this study to similar studies with generally longer follow-up periods. In future studies, it is recommended that participants be followed for a post-release period of at least 12 months to more fully measure recidivism.

Overall, this study demonstrated that it is possible to connect AOC's YTC-MIS data with DJJDP's NCJOIN data to create a detailed profile of youth served in the YTC program. Joining these datasets creates the potential of gaining a better understanding of what works in terms of increasing graduation rates and decreasing recidivism rates, and for whom the program is most appropriate. However, in order to facilitate future analyses, entering all YTC program-related information, even if no event occurred, would allow more individuals to be retained in the analyses. This, in turn, could improve the likelihood of obtaining valid results for use by program administrators.

# Youth Treatment Court Outcome Evaluation: Recidivism Results for Discharged Youth

## Introduction

### Purpose of the Report

This report constitutes the third in a series of quantitative evaluations of the Youth Treatment Courts (YTCs) of North Carolina. This report focuses on findings from archival data entered into the MIS system for youth who were discharged from the YTCs between April 2003 and April 2006. These data predate the Youth Treatment Court Outcome evaluation and so do not include youth randomized into the courts.

The goal of this report is to describe the youth discharged by the North Carolina YTC programs, to compare these characteristics across courts, and to explore and test potential mediator and moderator variables related to graduation and recidivism.

## Methods and Procedures Used

### Description of the Data

#### Sample of Discharged Youth

The sample used for analysis was drawn from the YTC MIS and includes all youth who were discharged from the court programs between April 2003 and April 2006. The YTC MIS outputs a series of data files rather than one file containing all of the court information. Each file contains a different set of information related to the youth or the youth's case; each file also contains a personal identifier that allows the data sets to be linked. For purposes of this report, the following tables were used:

- *DischargeSummary*<sup>1</sup>: There were 152 youth identified in this data table as having been discharged from the YTC program between April 2003 and August 2006. Outcome data regarding recidivism was extracted on October 1, 2006. Given the six-month follow-up period defined in this outcome evaluation, it was necessary to limit the sample to those youth discharged from the YTC program by April 2006. The resulting sample is comprised of 132 discharged youth. Data regarding the date of program discharge, the type of discharge (graduation, termination), reasons for termination and types of non-compliance were extracted from this table.
- *YouthInfo*: Demographic information for the 132 discharged youth and YTC court placement were extracted from this table.
- *ParticipantStatus*: The program start date for each discharged youth was captured from this table. Of note, 12 youth were never identified in this table as

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<sup>1</sup> There were 162 youth identified in the ParticipantStatus table as having been discharged from the YTC program. Based on previous conversations with YTC administrators and the importance of having complete information, the discharged sample was drawn from the DischargeSummary table.

having an “active” status so no program start date information was retrieved for these cases.

- *Offenses*: Data about each youth’s most serious charge associated with referral to the YTC program was captured from this data table. Charged offense information was available for 97 (73%) discharged youth.
- *DrugTestEntry*: This table contains drug test compliance data. There were 52 youth (39%) with alcohol compliance test data; 125 youth (95%) with marijuana compliance test data; 80 youth (61%) with cocaine compliance test data; 74 youth (56%) with methamphetamine compliance test data; and 77 youth (58%) with opiate compliance test data.
- *SanctionsRewards*: This table contains Information about the number of type of sanctions and rewards received during program participation. Sanction information was available for 85 (64%) youth in the sample. Reward information was available for 76 (58%) youth in the sample.
- *DetentionDays*: Information related to the total number of days served in detention as a sanction was extracted from this table. Data were available for 47 (36%) youth in the sample.
- *SchoolAttendance*: School information related to the number of classes skipped, the number of days absent, the number of days excused, and the number of in-school and out-of-school suspension days was available for the 43 (33%) discharged youth.

One major problem affecting data analysis in this report is the amount of missing information. While demographic information was nearly complete for the sample, program compliance data (e.g., rewards, sanctions, drug test compliance) were frequently missing. It is not clear whether data are missing because of incomplete data entry or because particular indicators were not relevant for the entire sample and were left blank. Given the substantial amount of missing data for important program compliance indicators, the results presented in this report should be used with caution.

## **Recidivism Data**

Two primary sources of data were used in this evaluation to explore subsequent involvement in the juvenile justice and/or adult criminal justice system by youth discharged from the YTC program:

- *NCJOIN*: The first data source comes from the Department of Juvenile Justice and Delinquency Prevention (DJJDP). Through the NC Juvenile Online Information System (NCJOIN), DJJDP collects and maintains information about the youth it serves. For purposes of this report, NCJOIN data were used to: 1) describe youth discharged from YTCs in terms of their individual risk factors for re-offending, 2) fill in complaint (charge) information associated with referral to the YTC program that was missing in the YTC MIS, and 3) describe subsequent involvement (new delinquent complaint) in the juvenile justice system in the six-month period after discharge from the YTC program.
- *ACIS*: The Administrative Office of the Courts’ (AOC) Automated Criminal Information System (ACIS) was the second data source for measuring

recidivism. ACIS contains docket-based criminal information for all court-involved individuals. These data were used to describe involvement in the adult criminal justice system in the six-month period following discharge from the YTC program.

### **Overview of the Analyses**

Frequencies were calculated to describe the individual characteristics of discharged youth. Individual characteristics examined include age, race, sex, charged offense, and risk factors. Measures of program compliance were examined through frequencies of the following: drug test results and test compliance, school attendance, sanctions and rewards received, and detention days served. Reasons for youth discharge are also presented. When there are a sufficient number of youth, group differences were examined with chi-squares. Logistic regression analyses were conducted as permitted by the data.

## **Results**

### **Characteristics of Discharged Youth**

This section of the report explores the number of youth discharged by court, demographic characteristics of youth discharged from the YTC program, information about the most serious charge associated with referral to the YTC program, and individual risk factors associated with re-offending. Where found, statistically significant group differences across courts are noted.

#### **YTC Court Placement**

Table 1 shows the distribution of the 132 youth discharged from each YTC between April 2003 and April 2006. The number of youth discharged by YTC ranged from a low of 10 youth in the Wake YTC to a high of 63 youth in the Mecklenburg YTC. According to AOC YTC program administrators, YTCs discharging a low number of youth either were operational later or experienced severe staff shortages which limited their capacity to operate.

**Table 1: Number of Youth Discharged by YTC (n=132)**

Youth Treatment Court	Number Percent of Sample
Durham	22 16.7
Forsyth	21 15.9
Mecklenburg	63 47.7
Rowan	16 12.1
Wake	10 7.6

Source: YTC-MIS (DischargeSummary and YouthInfo tables), AOC

### Demographic Characteristics

Table 2 presents descriptive data on the demographic characteristics of the 132 discharged youth. Youth discharged across the five YTCs differ significantly in average age ( $p < .01$ ) and race ( $p < .05$ ). Participants, on average, were nearly 16-years-old at discharge, with some as young as 13 and others as old as 17. The most common race among discharged participants was African American, but this differs significantly by court. Across courts, nearly 60% of discharged participants were African American and 34% Caucasian. Male participants outnumbered female participants 4 to 1, and this was relatively constant across courts.

**Table 2: Demographics of Discharged Youth (n=132)**

Age <sup>b</sup>	Mean	Range
Age at Discharge	15.7	13 - 17
Sex	Number	Percent
Male	105	79.6
Female	27	20.4
Race <sup>a</sup>	Number	Percent
Caucasian	44	34.1
African American	77	59.7
Other*	8	6.2

<sup>a</sup>  $p < .05$

<sup>b</sup>  $p < .01$

\*Table notes: The race category “Other” is comprised of youth identified as Asian/Pacific Islander, Native American or Other. Race information for three youth was missing.

Source: YTC-MIS (DischargeSummary and YouthInfo tables), AOC

### Most Serious Charge Information

The YTC MIS contains information related to the charge(s) associated with a referral to the YTC program. Charged offense information was available in the YTC MIS for 97 discharged youth. Charged offense information was extracted from NCJOIN for another 21 youth, yielding offense information for a total of 118 discharged youth (or 89% of the

sample). Table 3 shows the most serious charged offense associated with referral to the YTC program for the 118 discharged youth. More youth were charged with a Minor offense (Class 1 – Class 3 misdemeanor) than with a Serious offense (Class F – Class I felony or Class A1 misdemeanor). Specifically, 56% had a most serious charge involving a Minor offense, while 44% had a most serious charge involving a Serious offense. Looking at offense class, more youth were charged with Class 1 misdemeanor offenses (n=40 or 33.9%) relative to the other offense classes. Felony breaking and/or entering (n=10 or 8.5%) and misdemeanor larceny (n=10 or 8.5%) were the most commonly charged offenses. It is important to note that there were no charges involving Violent offenses (Class A – Class E felony). Offense seriousness did not vary significantly across courts.

**Table 3: Most Serious Charged Offense Associated with YTC Referral (n=118)**

Offense Level	Offense Class	Offense Text	Number Percent	
Serious	F	Indecent liberties w/child	1	
	<b>Class F Subtotal</b>		<b>1 0.9</b>	
	G	Common law robbery	1	
	<b>Class G Subtotal</b>		<b>1 0.9</b>	
	H	Breaking and/or entering		10
		Possession of stolen goods/motor vehicle		8
		Breaking/entering and larceny		5
		Larceny		3
		Larceny of motor vehicle		3
		Attempted common law robbery		1
		Sell/deliver Schedule VI CS		1
		Possession w/intent to sell/deliver cocaine		1
	Possession w/intent to MSD cocaine		1	
	<b>Class H Subtotal</b>		<b>33 27.9</b>	
	I	Break or enter a motor vehicle		4
		Deliver Schedule VI controlled substance		2
		Possession w/intent to MSD cocaine		2
		Create counterfeit controlled substance		1
		Possession w/intent to MSD marijuana		1
		Possession w/intent to sell/deliver cocaine		1
		Possess Schedule II CS		1
		Possess Schedule VI CS		1
		Possess Schedule IV CS		1
Financial card fraud		1		
<b>Class I Subtotal</b>		<b>15 12.7</b>		
Class A1	Assault w/deadly weapon or serious injury	2		
<b>Class A1 Subtotal</b>		<b>2 1.7</b>		
<b>Serious Total</b>			<b>52 44.1</b>	

<b>Minor</b>	<b>Class 1</b>	Larceny	10
		Breaking and/or entering	5
		Possess marijuana ½ oz to 1 ½ oz	5
		Simple assault	5
		Assault on government official	3
		Communicating threats	3
		Possess drug paraphernalia	2
		Possess Schedule IV controlled substance	2
		Possess fortified wine, liquor	1
		Injury to personal property	1
		Injury to real property	1
		Larceny of motor vehicle	1
		Possess weapons on school property	1
		<b>Class 1 Subtotal</b>	
			<b>33.9</b>
	<b>Class 2</b>	Simple assault	6
		Disorderly conduct	2
		No operator's license	2
		Assault/affray	1
		Possess handgun by minor	1
		Resist/obstruct public officer	1
		Set fire to woodlands	1
	<b>Class 2 Subtotal</b>		14
			<b>11.9</b>
	<b>Class 3</b>	Possess Schedule VI controlled substance	8
		Curfew violation	1
		Second degree trespass	1
<b>Class 3 Subtotal</b>		10	
		<b>8.5</b>	
<b>Unknown Class</b>	Arson – Free Text	2	
<b>Unknown Class Subtotal</b>		2	
		<b>1.7</b>	
<b>Minor Total</b>		66	
		<b>56.0</b>	

Table notes: Charged offense information was missing for 14 discharged youth. In addition, there are two youth with charges for “Arson-Free Text” where the offense class and level are unknown

SOURCES: YTC MIS (DischargeSummary and Offense tables), AOC

NCJOIN, DJJDP

## Risk Factors

In addition to describing demographic characteristics and charged offense information for youth discharged from the YTCs, a variety of risk factors, or evidence-based indicators related to re-offending, were also explored using data extracted from NCJOIN, the management information system of the Department of Juvenile Justice and Delinquency Prevention. Prior to delinquent adjudication or disposition, court counselors administer the Assessment of Juvenile Risk of Future Offending. Risk factors on this instrument include:

- age at first delinquent complaint
- number of undisciplined or delinquent referrals to juvenile intake

- most serious prior adjudication
- type of prior assaults
- runaway incidents
- known use of alcohol or illegal drugs during the past 12 months
- school behavior problems during the past 12 months
- peer relationships
- parental supervision
- overall risk level

Responses to the risk factors are combined and scored, creating an individual assessment, or risk level, regarding the likelihood of future offending. Risk information was available for 72 (55%) discharged youth and reflects risk information proximate to the time each youth was referred to the YTC program. Generally speaking, creating a risk profile of program participants is a meaningful way of revealing the complex set of challenges youth face, in addition to their juvenile justice involvement and substance use. Risk can also be instrumental in understanding individual differences in graduation and recidivism rates. However, given the large amount of missing data for the sample, the reader should use caution in interpreting the risk profile since it is not known how representative the available data are. In other words, it is possible that the available data under- or over-state the severity in risk factors for the sample.

Table 4 shows the distribution of youth by each risk factor. Very few discharged youth (n=3 or 4%) were under the age of 12 at the time of their first delinquent complaint. About 40% of youth had no prior undisciplined or delinquent referrals to juvenile intake. Another 35% had only 1 prior referral to intake. While the YTC program does not target first-time offenders, most discharged youth (70.8%) had no prior undisciplined or delinquent adjudications. The vast majority of discharged youth (n=58 or 81%) were not engaged in assaultive behavior. Nearly 32% of discharged youth had runaway from home at least once prior to YTC program referral. As expected, most discharged youth (n=63 or 88%) were reported to have some level of substance use in the 12 months prior to assessment. Of note, 12% were assessed by court counselors as having “No known substance use.”<sup>2</sup> Few discharged youth (n=2 or 3%) were reported to have “No school problems” while the overwhelming majority (n=57 or 79%) were reported to have serious school problems. Most discharged youth were reported to have problem peer relations. About 56% of youth were reported to regularly associate with others involved in delinquent/criminal activity. Another 25% were reported to be rejected by pro-social peers or to occasionally associate with others who have been involved in delinquent/criminal activity. Most youth (n=44 or 61%) were reported to have a parent/guardian who is willing and able to provide supervision. Overall, 26% of discharged youth fell in the “Low Risk” category; 57% fell in the “Medium Risk” category; and, 17% fell in the “High Risk” category. The only risk factor that varied significantly across courts was peer relations ( $p < .05$ ). However, the risk factor for parental supervision approached statistical significance ( $p = .053$ ).

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<sup>2</sup> It is possible that more accurate information about substance use is collected by court counselors on the Assessment of Juvenile Needs.

**Table 4: Risk Profile of Discharged Youth at Program Entry (n=72)**

<b>Risk Factor</b>	<b>Number Percent of Sample</b>
<b>Age at First Delinquent Complaint</b>	
Age 12+ or no delinquent complaint	69 95.8
Under age 12	3 4.2
<b>Number of Prior Court Referrals</b>	
Current referral only	29 40.3
1 prior referral	25 34.7
2 – 3 prior referrals	14 19.4
4 or more prior referrals	4 5.6
<b>Most Serious Prior Adjudication</b>	
No prior adjudications	51 70.8
Prior undisciplined	3 4.2
Prior Class 1-3 misdemeanor	11 15.3
Prior Class F-I felony/A1 misdemeanor	6 8.3
Prior Class A-E felony	1 1.4
<b>Prior Assaults</b>	
No assaults	58 80.6
Involvement in an affray	4 5.5
Yes, without a weapon	9 12.5
Yes, with a weapon	1 1.4
<b>Prior Runaways</b>	
No	49 68.1
Yes	23 31.9
<b>Known Substance Use</b>	
No known substance use	9 12.5
Some substance use, need further assessment	24 33.3
Substance abuse, assessment and/or tx needed	39 54.2

*table continued*

table continued

**Table 4: Risk Profile of Discharged Youth at Program Entry (n=72)**

<b>Risk Factor</b>	<b>Number Percent of Sample</b>
<b>Extent of School Problems</b>	
No school problems (enrolled, attending regularly)	2 2.8
Minor school problems <sup>3</sup>	3 4.2
Moderate school problems <sup>4</sup>	10 13.9
Serious school problems <sup>5</sup>	57 79.1
<b>Peer Relations<sup>a</sup></b>	
Peers provide good support and influence	6 8.3
Rejected by pro-social peers/influenced by negative peers	18 25.0
Regularly associates w/others involved in delinquent/criminal acts	40 55.6
Gang member or associates with a gang	8 11.1
<b>Parental Supervision</b>	
Parent, guardian willing and able to supervise	44 61.1
Parent, guardian willing but unable to supervise	28 38.9
<b>Risk (to re-offend) Level</b>	
Low (0 – 7 points)	19 26.4
Medium (8 – 14 points)	41 56.9
High (15+ points)	12 16.7
Average Risk Score (points)	10.6

<sup>a</sup> p < .05

Source: NCJOIN Risk Assessment Data, NC Department of Juvenile Justice and Delinquency Prevention.

<sup>3</sup> Minor school problems: attending with problems handled by teacher/school personnel, or 1-3 unexcused absences/truancy (source: NC Assessment of Juvenile Risk of Future Offending, DJJDP).

<sup>4</sup> Moderate school problems: 4 – 10 unexcused absences/truancy, or 1 or more in-school suspensions or 1 short-term suspension – up to 10 days (source: NC Assessment of Juvenile Risk of Future Offending, DJJDP).

<sup>5</sup> Serious school problems: more than 1 short-term suspension, or 1 or more long-term suspension, or more than 10 unexcused absences, or expelled/dropped out (source: NC Assessment of Juvenile Risk of Future Offending, DJJDP).

### YTC Program Compliance

This section of the report explores compliance with YTC program components for discharged youth. Variables analyzed include program length of stay, in-program drug test results, court-ordered rewards and sanctions, days served in detentions, and school behavior.

#### Drug Testing

One of the primary measures of compliance used by the YTCs is drug testing. Each YTC screens for the presence of alcohol, marijuana, cocaine, opiates, and methamphetamines with urine testing. Table 5 presents the results of drug testing. Most tests revealed no drug or alcohol use; however, the positive test rate for marijuana (24%) was much higher than the positive test rate for any of the other drugs tested. Of note, relatively few tests for alcohol were conducted as these tests can only detect recent alcohol consumption. Urine tests for drugs such as marijuana can detect use in the past few weeks.

**Table 5: Drug Test Results**

Compliance Type	Test Result	Alcohol	Cocaine	Marijuana	Meth.	Opiates
Compliant	Negative based on test	712 94%	2,239 95%	3,119 71%	2,261 98%	2,259 98%
	Excused positive	0	0	4 <1%	3 <1%	5 <1%
Non-compliant	Positive based on test	16 2%	83 4%	1,042 24%	10 <1%	14 <1%
	Admitted use	12 2%	3 <1%	55 1%	0	1 <1%
	Refused/unable to give specimen	6 <1%	11 <1%	87 2%	11 <1%	11 <1%
	Did not show for test	1 <1%	2 <1%	18 <1%	2 <1%	2 <1%
Other	Contaminated specimen	1 <1%	2 <1%	4 <1%	2 <1%	2 <1%
	Inconclusive results	0	4 <1%	15 <1%	3 <1%	4 <1%
	Lab rejected specimen	6 <1%	7 <1%	26 <1%	7 <1%	7 <1%
	Specimen not submitted for analysis	1 <1%	1 <1%	5 <1%	1 <1%	1 <1%
<b>TOTAL</b>		<b>755</b>	<b>2,352</b>	<b>4,375</b>	<b>2,300</b>	<b>2,306</b>

SOURCE: YTC MIS (DischargeSummary and DrugTestEntry tables), AOC

In addition to testing the compliance rate for each drug, individual compliance was calculated for each youth. For this analysis, compliance was defined as a negative drug test result or an excused positive drug test. The definition of non-compliance encompassed failure to appear for testing, refusal to be tested (or inability to give a specimen), admission of use, and/or a positive urine screen. Each individual received an overall compliance percent score for each drug. Table 6 shows that average individual compliance was highest for the methamphetamine (99%) and opiate (96%) tests. In contrast, average individual compliance was lowest for marijuana (65%). For every drug, there were youth who achieved 100% compliance (i.e., every test was negative). However, for all but the methamphetamine test, there were youth who were 100% non-compliant.

**Table 6: Individual Compliance with Drug Testing**

<b>Drug Tested</b>	<b>Number</b>	<b>Mean Compliance for Individuals Tested</b>	<b>Range of Compliance for Individuals Tested</b>
Alcohol	52	83%	0 - 100%
Cocaine	80	87%	0 - 100%
Marijuana	125	65%	0 - 100%
Methamphetamines	74	99%	60 - 100%
Opiates	77	96%	0 - 100%

SOURCE: YTC MIS (DischargeSummary and DrugTestEntry tables), AOC

### **Court Response: Rewards and Sanctions**

Across courts, 727 rewards were used and entered into the YTC MIS. Table 7 shows the types and frequencies of rewards used by the courts. The YTCs used applause or judicial praise most frequently (37%), and the courts also frequently gave a plaque or certificate to mark youth progress (20%). The rewards used least frequently were a reduction or lifting in curfew, the allowance of day or overnight travel, accelerated progression to the next court phase, reduction in community service, food/candy, financial support, and reduction in treatment. Individual courts used between two and nine different types of rewards. In addition, there were significant differences ( $p < .01$ ) across courts in the number of rewards used. There was also a significant difference ( $p < .01$ ) between males and females in the number of rewards received. On average, females (N=18) received 8.9 rewards as compared to 5.3 received by males (N=58). There were no significant differences with regard to race and rewards received. Across all participants, youth received an average of 2.3 more rewards than sanctions.

**Table 7: Rewards Administered by YTCs (n=727)**

Reward	Number	Percent
Applause and/or judicial praise	272	37%
Certificate / plaque	147	20%
A-list	112	15%
Gift or gift certificate	78	11%
Other reward	70	10%
Graduation	16	2%
Court attendance reduced	13	2%
Curfew reduced or lifted	6	<1%
Phase acceleration	5	<1%
Day/overnight travel	4	<1%
Community service reduced	1	<1%
Food/candy	1	<1%
Financial support	1	<1%
Treatment attendance reduced	1	<1%

SOURCE: YTC MIS (DischargeSummary and SanctionsRewards tables), AOC

Table 8 shows the types and frequencies of sanctions used by the courts. The most commonly used sanction was juvenile detention (41%). The least frequently used sanctions included attendance at AA/NA meetings, curfew, increase in court attendance, judicial directives, increase in treatment attendance and increase in case coordinator appointments. Individual courts used between two and 12 different types of sanctions with youth. All courts used juvenile detention. In addition, there were significant differences ( $p < .02$ ) across courts with regard to sanctions used. At the individual level, there were no significant racial or gender differences in the number of sanctions received.

**Table 8: Sanctions Administered by YTCs (n=730)**

Sanction	Number	Percent
Juvenile detention	302	41%
Other sanction	140	19%
Community service increased	107	15%
Written report / essay	50	7%
Electronic house arrest Electronic house arrest	20	3%
Verbal reprimand	19	3%
Ordered to pay fines	16	2%
Discharged from YTC	15	2%
Warning	15	2%
Judicial directives	14	2%
Limitation or loss of a privilege (TV, cell phone, etc.)	9	1%
Inpatient placement	7	1%
Attend AA/NA meetings	4	<1%
Curfew imposed	4	<1%
Treatment attendance increased	4	<1%
Court attendance increased	3	<1%
Case coordinator appointment(s) increased	1	<1%

SOURCE: YTC MIS (DischargeSummary and SanctionsRewards tables), AOC

Table 9 presents information about the number of days in detention. Of those youth serving YTC MIS-documented days in detention, the total number of days served ranged from one through 104. The average number of detention days served while in the YTC program was 14.7.

**Table 9: Detention Days Served**

Sanction	Number	Mean	Range
Detention days served	47	14.7	1 – 104

SOURCE: YTC MIS (DischargeSummary and DetentionDays tables), AOC

### Other Compliance Indicators: School Behavior

The YTC MIS contained school information for 43 youth. Table 10 provides a school attendance profile of these youth. On average, youth skipped 2.6 classes and missed 4.3 days of school due to in-school or out-of-school suspension while in the program. In addition, youth were absent from school for an average of 13 days and were excused from school for an average of 5.5 days.

**Table 10: School Behavior (n=43)**

Sanction	Mean	Range
Classes skipped	2.6	0 – 73
Days In-school/out-of-school suspension	4.3	0 – 29
Days absent	13.0	0 – 162
Days excused	5.5	0 - 45

SOURCE: YTC MIS (DischargeSummary and SchoolAttendance tables), AOC

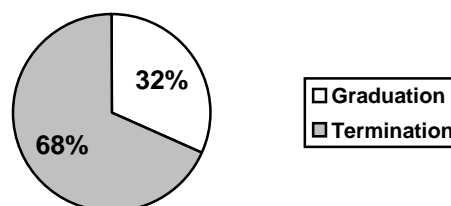
### Outcomes for Discharged Youth

This section of the report takes a close look at graduation and termination from the YTCs. In particular, reasons for program termination and factors that may be related to successful graduation are explored. In addition to the discharge analysis, youth outcomes related to recidivism (subsequent involvement in the juvenile justice and/or adult criminal justice system) are examined.

#### Type of YTC Discharge

Overall, 32% (n=42) of the 132 discharged youth graduated from the program while 68% (n=90) were terminated. While the average graduation rate was 32%, this rate varied significantly across courts. This issue is described in further detail later in this section (see page 25).

**Figure 1: Type of YTC Discharge (n=132)**



## Program Length of Stay

Table 11 presents information about program length of stay. On average, youth discharged from the YTCs during the study period stayed in the program for 301 days.<sup>6</sup> There were statistically significant differences ( $p < .001$ ) across courts with regard to program length of stay. Average length of stay ranged from a low of 210 days for the YTC program in Mecklenburg County to a high of 443 days for the YTC program in Rowan County. Youth who graduated from the program stayed longer, on average, than youth who were terminated (413 days and 248 days, respectively). The difference in average length of stay for graduates compared to youth who were terminated is statistically significant ( $p < .001$ ).

**Table 11: YTC Average Length of Stay**

Court	Number	Average Length of Stay (days) <sup>a</sup>	Range (days)
Durham	21	408	98 – 651
Forsyth	21	309	42 - 553
Mecklenburg	52	210	11 - 441
Rowan	16	443	21 - 681
Wake	9	299	56 - 381
<b>TOTAL</b>	<b>119</b>	<b>301</b>	<b>11 - 681</b>

<sup>a</sup>  $p < .001$

Table note: Length of stay was missing for 13 youth.

SOURCE: YTC MIS (Dischargesummary and Participantstatus tables), AOC

## Termination

Each youth terminated from the YTC program had a primary reason for discharge listed in the YTC MIS. Table 12 presents these reasons. The most common reason for termination from the program involved “non-compliance, other than a positive urine screen.” More than half of the participants were terminated for this reason. The next most common reason for termination resulted from the voluntary withdrawal of the youth (17%).<sup>7</sup>

<sup>6</sup> Information about the “active” status date was missing for 13 youth. As a result, average length of stay is computed for 119 of the 132 discharged youth.

<sup>7</sup> YTC program staff reported that this category is often used to capture termination information for cases in which a participant’s probation period was not extended.

**Table 12: Primary Reason for Termination**

Reason for Termination	Number	Percent
Non-compliance, other than positive urine test	50	55%
Voluntary withdrawal (neutral discharge)	15	17%
Technical violation of probation (not related to non-compliance)	7	8%
Other reason	7	8%
New adjudication – non-drug/alcohol crime	6	7%
New adjudication – drug/alcohol crime	3	3%
Positive drug test	1	1%
Dispositional placement	1	1%
<b>TOTAL</b>	<b>90</b>	<b>100%</b>

SOURCE: YTC MIS (DischargeSummary table), AOC

For the 50 youth who were terminated due to “non-compliance, other than a positive urine test,” more specific information was available. Table 13 shows these results. For each youth, several types of non-compliance may have been recorded, so the percentages do not total 100%. While “Other” was reported as the most frequent type of non-compliance, almost half of non-compliant youth failed to attend treatment, failed to attend court, and/or failed to contact the case coordinator.

**Table 13: Types of Non-Compliance Leading to Discharge (n=50)**

Type of Non-compliance	Number	Percent
Other non-compliance	29	58%
Failure to attend treatment	24	48%
Failure to attend court	23	46%
Failure to contact case coordinator	22	44%
Failure to contact court counselor	17	34%

SOURCE: YTC MIS (DischargeSummary table), AOC

## Graduation

Based on previous research findings, YTC staff hypotheses, and available measures, 15 variables were included in a logistic regression model to predict graduation:

### Youth Characteristics

- YTC court placement
- age at program referral
- race
- sex
- risk level
- most serious charged offense class
- most serious charged offense level (felony, misdemeanor)

### Program Compliance

- drug test compliance rates for alcohol, marijuana, cocaine, methamphetamines, and opiates

- total number of days spent in detention
- the number of rewards minus the number of sanctions received
- program length of stay

Information related to school behavior and hours of community service were not included due to the prevalence of missing data.

Missing data across the 15 predictor variables resulted in all but 11 youth being dropped from the model. The remaining dataset contained a complete separation of data points, which prevented the calculation of a maximum likelihood estimate and rendered the model’s fit questionable. As a result, the model fit and statistics were not interpreted.

While regression analysis was not possible, follow-up analyses were conducted to explore the relationship between the predictor variables and graduation. For each nominal variable, chi-square analyses (or Fisher Exact tests) were performed. These analyses examined the relationship between discharge type and YTC court placement, sex, race, risk level, and offense seriousness. For each continuous variable, a logistic regression was performed with one independent variable predicting graduation. These variables included: age, drug test compliance rates, the number of rewards minus the number of sanctions received, total number of days in detention, and program length of stay.

**Predictor Variables for Graduation: Chi-square Analyses**

Table 14 shows graduation and termination rates by YTC program. Graduation rates ranged from a high of 62.5% for the YTC program in Rowan County to a low of 19% for the YTC program in Mecklenburg County. There were significant differences ( $p < .01$ ) across courts with regard to the type of program discharge.

**Table 14: Type of Program Discharge by YTC Program**

Court <sup>a</sup>	Type of Discharge		TOTAL
	Graduation Number Percent	Termination Number Percent	Number Percent
Durham	7 31.8	15 68.2	22 16.7
Forsyth	9 42.9	12 57.1	21 15.9
Mecklenburg	12 19.0	51 81.0	63 47.7
Rowan	10 62.5	6 37.5	16 12.1
Wake	4 40.0	6 60.0	10 7.6
<b>TOTAL</b>	42 31.8	90 68.2	132 100.0

<sup>a</sup>  $p < .01$

SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC

Table 15 shows the distribution of discharged youth by sex and type of discharge. More than half of all females discharged from the program graduated compared to one quarter of their male counterparts. The chi-square for this analysis was significant ( $p < .02$ ), pointing to a significant difference in the graduation rates of females and males.

**Table 15: Sex by Type of Discharge**

Sex <sup>a</sup>	Type of Discharge		TOTAL Number Percent
	Graduation Number Percent	Termination Number Percent	
Males	28 26.7	77 73.3	105 79.5
Females	14 51.8	13 48.2	27 20.5
<b>TOTAL</b>	42 31.8	90 68.2	132 100.0

<sup>a</sup>  $p < .02$

SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC

Table 16 shows the distribution of youth by race and type of discharge. Fisher’s Exact test in this analysis was significant ( $p < .03$ ) with Caucasian youth graduating at nearly twice the rate of African American youth (47.7% and 24.7%, respectively).

**Table 16: Race by Type of Discharge**

Race <sup>a</sup>	Type of Discharge		TOTAL Number Percent
	Graduation Number Percent	Termination Number Percent	
Caucasian	21 47.7	23 52.3	44 34.1
African American	19 24.7	58 75.3	77 59.7
Other	2 25.0	6 75.0	8 6.2
<b>TOTAL</b>	42 32.6	87 67.4	129 100.0

<sup>a</sup>  $p < .03$

Table note: Race was missing for 3 youth.

SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC

Table 17 shows the distribution of youth by risk level and type of discharge. Risk level data was available for only 55% ( $n=72$ ) of the sample. As expected, youth assessed by court counselors as “Low Risk” graduated at a higher rate (63.2%) than “Medium Risk” youth (34.2%) or “High Risk” youth (8.3%). Fisher’s Exact test in this analysis was significant ( $p < .01$ ), indicating that the type of discharge is influenced by risk level.

**Table 17: Risk Level by Type of Discharge**

Risk Level <sup>a</sup>	Type of Discharge		TOTAL Number Percent
	Graduation Number Percent	Termination Number Percent	
Low	12 63.2	7 36.8	19 26.4
Medium	14 34.2	27 65.8	41 56.9
High	1 8.3	11 91.7	12 16.7
<b>TOTAL</b>	27 37.5	45 62.5	72 100.0

<sup>a</sup> p<.01

Table note: Risk data were missing for 60 youth.

SOURCE: YTC MIS (DischargeSummary table), AOC  
NCJOIN, DJJDP

Information about the most serious charged offense level (felony, misdemeanor) as well as the most serious charged offense class was available for 88% (n=116) of discharged youth. Overall, 56.9% (n=66) of youth had a most serious charge involving a misdemeanor while 43.1% (n=50) were had a most serious charge involving a felony. The seriousness of the charged offense associated with referral to the YTC program did not influence graduation.

**Predictor Variables for Graduation: Logistic Regression**

On average, participants referred to the YTC program were 14.7-years-old, with a range of 13- to 16-years-old. Based on a logistic regression model with age at the time of YTC referral as an independent variable, there was a significant relationship found between age and graduation. This analysis suggests that older participants were less likely to graduate. This analysis included all but one youth in the sample.

Five logistic regression models were developed to test the relationship between program compliance and graduation. These analyses used each of the individual drug test compliance rates for alcohol, marijuana, cocaine, methamphetamines, and opiates. There were 52 youth (39%) with an alcohol compliance test rate; 125 youth (95%) with a marijuana compliance test rate; 80 youth (61%) with a cocaine compliance test rate; 74 youth (56%) with a methamphetamine compliance test rate; and 77 youth (58%) with an opiate compliance test rate. Youth with a higher compliance rate for marijuana were found to have a significantly higher likelihood of graduation (p<.001). Approaching statistical significance was the relationship between cocaine compliance rates and graduation (p< .056), where higher compliance rates were related to an increase in the likelihood of graduation. None of the other compliance variables were significant.

Sixty of the 132 discharged youth had reward and/or sanction information indicated in the YTC MIS. Regression analysis indicated that the relationship between the number of rewards/sanctions received and graduation was significant (p<.001). This finding

suggest that the greater the number of rewards over sanctions, the greater the likelihood of graduation.

Forty-seven of the 60 youth with reward and/or sanction information served some time in detention as a sanction. It is unclear how many of the 72 youth with missing reward and/or sanction information may also have served time in detention. However, based on a logistic regression with the available data, there appears to be a significant relationship ( $p < .04$ ) between detention days served and graduation. This finding suggests that each additional day spent in detention decreases the likelihood of graduation.

The last logistic regression model tested the relationship between program length of stay and graduation. Program length of stay information was available for 119 discharged youth. The model shows a significant relationship ( $p < .001$ ) between program length of stay and graduation, where each additional day spent in the program increases the likelihood of graduation. While it was not possible to interpret the magnitude of this relationship in this analysis, it is an important piece of missing information. For example, to the extent that each additional day spent in the program amounts to a large increase in the likelihood of graduation, it could be the case that every effort should be made to keep participants in the program longer.

### **Graduation: Summary of Findings**

- Overall, 32% ( $n=42$ ) of youth discharged during the study period graduated from the YTC program.
- Given that interpretation of the logistic regression model predicting graduation was not possible, follow-up analyses were conducted to test the relationship between each of the 15 predictor variables and graduation.
- It appears that type of discharge was influenced by sex, where females are more likely than males to graduate.
- There was a significant relationship found between age and graduation, where older participants appear less likely to graduate.
- Race and YTC court placement were both found to influence graduation. However, given the racial differences in youth served by each court, it is unclear what percentage of the variation in graduation rates is attributable to program differences between courts as opposed to differences in the youth served by each court.
- Type of program discharge appears to be influenced by youth risk level, where lower risk youth are more likely to graduate than higher risk youth.
- While individual predictors of graduation were found, these findings should be considered preliminary and should not be used to draw conclusions about causality.
- Seriousness of the charged offense (felony, misdemeanor or offense class) was not found to be significant with regard to type of program discharge.
- Using logistic regression, each program compliance variable was modeled to test its relationship in predicting graduation.
- Findings suggest that

- o Youth with higher drug compliance test rates for marijuana were more likely to graduate.
- o Youth who received more rewards than sanctions were more likely to graduate.
- o The more days youth spent in detention, the less likely they were to graduate.
- o The more time youth spent in the YTC program, the more likely they were to graduate. This finding is not surprising; however, the important missing piece of information in this analysis is the magnitude of the relationship between length of stay and graduation. In other words, how much more likely are participants to graduate with each additional day spent in the program? To the extent that each additional day spent in the program amounts to a large increase in the likelihood of graduation, it could be argued that every effort should be made to keep participants in the program longer.

## Recidivism

The 132 youth discharged from the YTC program were tracked for the six-month period following discharge to capture information on recidivism. *For purposes of this report, recidivism is defined as a new delinquent complaint in the juvenile justice system and/or a new charge in the criminal justice system.* Figure 2 shows that 29% (n=38) of discharged youth had a new delinquent complaint and/or adult charge in the six months following discharge from the YTC program. The average time between YTC discharge and re-offense was 95 days for youth who recidivated. The time between program discharge and re-offense ranged from two days to 177 days.

**Figure 2: Recidivism Rate for Youth Discharged from YTCs (n=132)**

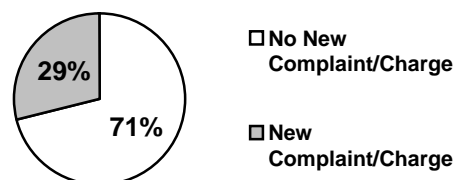


Table 18 shows the most serious recidivist offense for the 38 youth discharged from the YTC program. About 63% of youth had a most serious charge for a misdemeanor offense. Youth were most commonly charged with Class 1 offenses (n=14 or 37%). For the group, misdemeanor larceny (n=4) and possession of stolen goods/motor vehicle (n=4) were the most frequently charged offenses. There were few youth (n=3 or 8%) charged with violent felonies (Class A – Class E) following discharge from the YTC program. While only 7 youth had a most serious charge involving a drug offense, another 6 youth had an additional (less serious) charge involving a drug offense. In total, 13 (39%) of the 38 youth who recidivated were charged with at least one drug offense in the six-month period following discharge from the YTC program.

**Table 18: Most Serious Recidivist Offense**

Offense Class	Offense Text	Number
C	First degree kidnapping	1
D	Robbery with a dangerous weapon	1
	First degree burglary	1
G	Sell cocaine	1
H	Possession of stolen goods/motor vehicle	4
	Possession w/intent to sell/deliver cocaine	2
	Sell/deliver marijuana	1
	Breaking and/or entering	1
	Obtain property by false pretense	1
I	Possession w/intent to sell/deliver marijuana	1
<b>Felony Subtotal</b>		<b>14 (36.8%)</b>
Class 1	Larceny	4
	Simple assault/affray/assault and battery	3
	Communicating threats	2
	Possess stolen property	1
	Injury to personal property	1
	Injury to real property	1
	Driving while license revoked	1
	Other Class 1 offense	1
Class 2	Resist public officer	2
	Disorderly conduct at school	1
	No operator's license	1
	Possess handgun by minor	1
	Fictitious information to officer	1
	Simple assault	1
Class 3	Possess up to ½ oz. marijuana	2
	Shoplifting	1
<b>Misdemeanor Subtotal</b>		<b>24 (63.2%)</b>
<b>TOTAL</b>		<b>38 (100%)</b>

SOURCES: YTC MIS (Discharge Summary table), AOC  
 NCJOIN, DJJDP  
 ACIS, AOC

Table 19 shows the total number of charges accrued by youth who recidivated after YTC discharge. About 74% (n=28) of youth were charged with one or two offenses during the follow-up period.

**Table 19: Total Count of Recidivist Charges by Youth**

Total Count of Recidivist Charges	Number of Youth	Percent
1	11	29.0
2	17	44.7
3	2	5.3
4	2	5.3
5	1	2.6
6	1	2.6
7	2	5.3
8	1	2.6
10	1	2.6
<b>TOTAL</b>	<b>38</b>	<b>100.0</b>

SOURCES: YTC MIS (Discharge Summary table), AOC  
 NCJOIN, DJJDP  
 ACIS, AOC

### Predicting Recidivism

As a first step in developing a logistic regression model to predict re-offense after program discharge, 18 predictor variables were analyzed to test for significant correlation with each other and with recidivism:

#### *Youth Characteristics*

- YTC court placement
- age at discharge
- race
- sex
- risk level

#### *Offense History*

- number of referrals to juvenile intake
- prior juvenile court involvement (prior to YTC referral)
- history of assaultive behavior
- most serious charged offense level (felony, misdemeanor) of offense resulting in referral to the YTC program

#### *Program Compliance*

- drug test compliance rates for alcohol, marijuana, cocaine, methamphetamines, and opiates
- total number of days spent in detention
- the number of rewards minus the number of sanctions received
- program length of stay

- type of discharge from YTC

This analysis revealed that none of the 18 predictor variables tested are associated with recidivism. In addition, there were a number of variables which were correlated with each other. Two variables were approaching significance ( $p < .10$ ) with regard to recidivism: alcohol compliance test rate and methamphetamine compliance test rate. Higher compliance test rates for each of these drugs were associated with reductions in recidivism.

A logistic regression model was developed to predict recidivism by removing predictor variables highly correlated with another predictor variable. Similar to the regression analysis to predict graduation, missing data across the remaining predictor variables resulted in all but 25 youth being dropped from the model. The remaining data contained a complete separation of data points, which prevented the calculation of a maximum likelihood estimate and rendered the model's fit questionable. As a result, the model fit and statistics were not interpreted.

Follow up analyses were conducted to explore the relationship between the predictor variables and recidivism. For each nominal variable, chi-square analyses (or Fisher Exact tests) were performed. These analyses examined discharge type by YTC court placement, sex, race, risk level, charge level, prior court involvement, and type of YTC discharge (graduation, termination). For each continuous variable, a logistic regression was performed with one independent variable predicting recidivism. These variables included: age at program discharge, drug test compliance rates, and program length of stay.

### ***Predictor Variables for Recidivism: Chi-square Analyses***

Table 20 shows recidivism rates by YTC program. While the average recidivism rate was 29%, rates ranged from a low of 12.5% for the YTC program in Rowan County to a high of 50% for the YTC program in Wake County. It is important to note that when analyzing small numbers, percentages are often misleading. For example, the low 12.5% recidivism rate for the Rowan County amounts to, in absolute terms, 2 youth. In contrast, the high 50% recidivism rate for the Wake County program amounts to 5 youth. It is for this reason that tests of significance are performed. As such, there were actually no significant differences between courts with regard to recidivism.

**Table 20: Recidivism by YTC Program**

<b>Court</b>	<b>No New Complaint/Charge Number Percent</b>	<b>New Complaint/Charge Number Percent</b>	<b>TOTAL Number Percent</b>
Durham	16 72.7	6 27.3	22 16.7
Forsyth	12 57.1	9 42.9	21 15.9
Mecklenburg	47 74.6	16 25.4	63 47.7
Rowan	14 87.5	2 12.5	16 12.1
Wake	5 50.0	5 50.0	10 7.6
<b>TOTAL</b>	94 71.2	38 28.8	132 100.0

SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC  
NCJOIN, DJJDP  
ACIS, AOC

Table 21 shows the distribution of sex by recidivism. About the same proportion of males (29.5%) and females (25.9%) were charged with a new offense in the six months following discharge from the YTC program. The chi-square for this analysis was not significant.

**Table 21: Sex by Recidivism**

<b>Sex</b>	<b>No New Complaint/Charge Number Percent</b>	<b>New Complaint/Charge Number Percent</b>	<b>TOTAL Number Percent</b>
Males	74 70.5	31 29.5	105 79.5
Females	20 74.1	7 25.9	27 20.5
<b>TOTAL</b>	94 71.2	38 28.8	132 100.0

SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC  
NCJOIN, DJJDP  
ACIS, AOC

Table 22 shows the distribution of race by recidivism. All racial groups recidivated at about the same rate: 29.5% of Caucasians, 26% of African Americans, and 25% of youth identified as an “Other” race were charged with a subsequent offense. Fisher’s Exact test in this analysis was not significant.

**Table 22: Race by Recidivism**

Race	No New Complaint/Charge		New Complaint/Charge		TOTAL	
	Number	Percent	Number	Percent	Number	Percent
Caucasian	31	70.5	13	29.5	44	34.1
African American	57	74.0	20	26.0	77	59.7
Other	6	75.0	2	25.0	8	6.2
<b>TOTAL</b>	94	72.9	35	27.1	129	100.0

Table note: Race was missing for 3 youth.  
 SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC  
 NCJOIN, DJJDP  
 ACIS, AOC

Table 23 shows the distribution of youth by risk level and recidivism. Risk level data were only available for 55% (n=72) of discharged youth. Youth assessed by court counselors as “Medium Risk” had the lowest recidivism rate (24.2%) relative to “Low Risk” youth (31.6%) and “High Risk” youth (33.3%). Fisher’s Exact test in this analysis was not significant.

**Table 23: Risk Level by Recidivism**

Risk Level	No New Complaint/Charge		New Complaint/Charge		TOTAL	
	Number	Percent	Number	Percent	Number	Percent
Low	13	68.4	6	31.6	19	26.4
Medium	31	75.6	10	24.4	41	56.9
High	8	66.7	4	33.3	12	16.7
<b>TOTAL</b>	52	72.2	20	27.8	72	100.0

Table note: Risk data were missing for 60 youth.  
 SOURCE: YTC MIS (DischargeSummary table), AOC  
 NCJOIN, DJJDP  
 ACIS,AOC

Prior juvenile court involvement (before YTC referral) was captured from DJJDP’s risk assessment instrument. Youth categorized as having “prior involvement” includes youth with undisciplined and/or delinquent adjudications. Data were available for 72 (55%) discharged youth. Table 24 shows the distribution of youth by level of prior juvenile court involvement and recidivism. Youth with no juvenile court involvement prior to referral to the YTC program had a recidivism rate of 31%. Conversely, youth with prior

court involvement had a recidivism rate of 19%. The chi-square for this analysis was not significant.

**Table 24: Prior Juvenile Court Involvement by Recidivism**

Prior Juvenile Court Involvement	No New Complaint/Charge	New Complaint/Charge	TOTAL
	Number Percent	Number Percent	Number Percent
No prior involvement	35 68.6	16 31.4	51 70.8
Prior involvement	17 81.0	4 19.0	21 29.2
<b>TOTAL</b>	52 72.2	20 27.8	72 100.0

Table note: Risk data were missing for 60 youth.  
 SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC  
 NCJOIN, DJJDP  
 ACIS, AOC

Table 25 presents the distribution of youth by most serious charge level (the charge associated with referral to the YTC program) by recidivism. The recidivism rates for youth with a most serious charge for a misdemeanor and those with a most serious charge for a felony were nearly identical (30.3% and 28.0%, respectively). The chi-square for this analysis was not significant.

**Table 25: Most Serious Charge Level by Recidivism**

Most Serious Charge Level	No New Complaint/Charge	New Complaint/Charge	TOTAL
	Number Percent	Number Percent	Number Percent
Misdemeanor	46 69.7	20 30.3	66 56.9
Felony	36 72.0	14 28.0	50 43.1
<b>TOTAL</b>	82 70.7	34 29.3	116 100.0

Table note: Charge level data were missing for 16 youth.  
 SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC  
 NCJOIN, DJJDP  
 ACIS, AOC

Table 26 shows the distribution of youth by type of YTC discharge and recidivism. Thirty percent of youth who were terminated were subsequently charged with a new offense, while 26% of youth who graduated from the program were subsequently charged with a new offense. The chi-square for this analysis was not significant.

**Table 26: Type of YTC Discharge by Recidivism**

Type of Discharge	No New Complaint/Charge	New Complaint/Charge	TOTAL
	Number Percent	Number Percent	Number Percent
Terminated	63 70.0	27 30.0	90 68.2
Graduated	31 73.8	11 26.2	42 31.8
<b>TOTAL</b>	94 71.2	38 28.8	132 100.0

SOURCE: YTC MIS (DischargeSummary and YouthInfo tables), AOC  
NCJOIN, DJJDP  
ACIS, AOC

**Predictor Variables for Recidivism: Logistic Regression**

Based on a logistic regression model with age at program discharge as an independent variable, there was no significant relationship between age and recidivism. All 132 youth were included in this analysis.

Since the individual drug compliance test data for alcohol and methamphetamines were approaching statistical significance ( $p < .10$ ) in the earlier correlation analysis, these variables were further explored. Two logistic regression models were developed to test the relationship between these program compliance variables and recidivism. There were 52 youth (39%) with alcohol compliance test data, and 74 youth (56%) with methamphetamine compliance test data. The alcohol compliance test variable approached statistical significant ( $p < .10$ ) with regard to recidivism, where higher compliance rates were related to a decrease in the likelihood of recidivism. The methamphetamine compliance test variable was not significant. However, the direction of the relationship with recidivism suggests that the higher compliance rates, the less likely recidivism becomes.

Sixty of the 132 discharged youth had reward and sanction information indicated in the YTC MIS. Regression analysis indicated that the relationship between the number of rewards over sanctions received and recidivism was not significant. However, the direction of the relationship with recidivism suggests that the more rewards over sanctions received, the less likely youth are to re-offend.

The last logistic regression model tested the relationship between program length of stay and recidivism. Program length of stay information was available for 119 discharged youth. There was no significant relationship found. However, the direction of the relationship with recidivism suggests that the longer the program length of stay, the less likely recidivism becomes.

## Recidivism: Summary of Findings

- Overall, 29% (n=38) of the 132 youth discharged during the study period were charged with a new offense in the six-month period following program discharge.
- Given that interpretation of the logistic regression model predicting recidivism was not possible, follow-up analyses were conducted to test the relationship between each of the 11 predictor variables and recidivism.
- Recidivism rates ranged from a low of 12.5% for the YTC program in Rowan County to a high of 50% for the YTC program in Wake County. There was no significant difference in recidivism rates across courts.
- About the same proportion of males (29.5%) and females (25.9%) were charged with a new offense in the six months following discharge from the YTC program. All racial groups recidivated at about the same rate: 29.5% of Caucasians, 26% of African Americans, and 25% of youth identified as an “Other” race were charged with a subsequent offense. Chi-square analyses suggest that recidivism was not influenced by race or sex.
- Youth assessed by court counselors as “Medium Risk” had the lowest recidivism rate (24.4%) relative to “Low Risk” youth (31.6%) and “High Risk” youth (33.3%). The relationship between risk level and recidivism was not significant.
- Youth with no juvenile court involvement prior to being referred to the YTC program had a recidivism rate of 31%. Conversely, youth with prior court involvement had a recidivism rate of 19%. Chi-square analysis suggests that prior juvenile court involvement does not influence recidivism.
- Looking at the charge associated with referral to the YTC program, the recidivism rates for youth with a most serious charge for a misdemeanor and those with a most serious charge for a felony were nearly identical (30.3% and 28.0%, respectively). This predictor variable was not found to be significant with regard to recidivism.
- The recidivism rate for youth who graduated from the YTC program was lower than those who were terminated (26% and 30%, respectively). Chi-square analysis suggests that the type of program discharge does not influence recidivism.
- Using logistic regression, age at discharge, drug compliance test variables for alcohol and methamphetamines, and program length of stay were modeled individually to test their relationship to predicting recidivism.
- Findings suggest that:
  - There was no significant relationship between age at program discharge and recidivism.
  - The alcohol compliance test rate variable approached statistical significance ( $p < .10$ ) with regard to recidivism, where higher compliance rates were related to a decrease in the likelihood of re-offense.
  - The methamphetamine compliance test rate variable was not significant. However, the direction of the relationship with recidivism suggests that the higher compliance rates, the less likely recidivism becomes.
  - There was no significant relationship found between the net number of rewards received over sanctions and recidivism. However, the direction of

- the relationship with recidivism suggests that the more rewards over sanctions received, the less likely youth are to re-offend.
- There was no significant relationship between program length of stay and recidivism. However, the direction of the relationship with recidivism suggests that the longer youth remain in the program, the less likely they are to re-offend.

### **Conclusions and Recommendations:**

Due to the prevalence of missing data, firm conclusions cannot be drawn based on the analyses contained in this report. These analyses should be considered preliminary. However, results from these analyses may be used to guide future analyses. For example, results detailed in this report suggest that the interactions between race and court program should be explored relative to their effect on graduation. Should more complete data be available in the future, then the relationships between graduation and the significant predictor variables (e.g., age, sex, risk level, days in detention, the preponderance of rewards to sanctions, drug test compliance rates for marijuana, program length of stay) should be confirmed. Of particular value is the information that further analyses could provide in terms of improving the identification and targeting of youth who could benefit the most from this intensive program. In addition, a more in-depth exploration of the various program components (e.g., drug testing; the mix of rewards and sanctions used; the use of detention) could enhance program operation.

With regard to recidivism, it appears that none of the predictor variables examined were significantly related to re-offense. It is possible that the prevalence of missing data for risk level, juvenile court history, and program compliance data confounded the detection of their influence on recidivism. It is also possible that factors outside of those included in these analyses are better predictors of recidivism (e.g., previous commitment to a Youth Development Center, number of previous delinquent complaints, types of prior delinquent complaints). Finally, due to time constraints of the study, program participants were only followed for a six-month period following release. This is important to bear in mind when comparing recidivism rates found in this study to similar studies with generally longer follow-up periods. In future studies, it is recommended that participants be followed for a post-release period of at least 12 months to more fully measure recidivism.

Overall, this study demonstrated that it is possible to connect AOC's YTC-MIS data with DJJDP's NCJOIN data to create a detailed profile of youth served in the YTC program. Joining these datasets creates the potential of gaining a better understanding of what works in terms of increasing graduation rates and decreasing recidivism rates, and for whom the program is most appropriate. However, in order to facilitate future analyses, entering all YTC program-related information, even if no event occurred, would allow more individuals to be retained in the analyses. This, in turn, could improve the likelihood of obtaining valid results for use by program administrators.