Office of Justice Systems Analysis

Research Report

Recidivism Among Youth Released From The Youth Leadership Academy To The City Challenge Intensive Aftercare Program

Bruce Frederick and Dina Roy
June, 2003

HIGHLIGHTS:

• This study examined recidivism among 323 male juvenile delinquents from New York City who were released from the Sergeant Henry Johnson Youth Leadership Academy (YLA) to the City Challenge Intensive Aftercare Program (CCh) from May, 1992 through June, 1999.

C The YLA-CCh sequence consists of approximately 5 to 8 months of residential care at the YLA, followed by post-residential day treatment in the CCh program for the remainder of the youth's placement in state custody, usually totaling twelve to eighteen months. The program design incorporates many of the features found to be characteristic of effective programs in prior research.

C The primary purpose of this study was to determine whether nominal improvements in program design and implementation were accompanied by reductions in post-release recidivism. Based on interviews with program managers, the historical development of the YLA-CCh program sequence was divided into four phases:

1. *YLA Development (May 1992 - March 1996):* This period was characterized by steady development and refinement of the YLA component, accompanied by persistent instability in the CCh component.

2. *CCh Development (April 1996 - March 1997):* By the end of this phase, a stable location, some key staffing changes, and collaboration with outside consultants culminated in a CCh component that continued the essential features of the YLA program and was considered by program managers to be consistent with the principles of the federally-sponsored Intensive Aftercare Program model.

3. *First CAS Contract (April 1997 - May 1998):* Family services were enhanced through a contract with the Children's Aid Society (CAS). CAS staff tended to provide therapy to selected families directly rather than refer family members to existing services.

4. *Second CAS Contract (June 1998 - June 1999):* The role of CAS staff shifted to the present focus on conducting in-depth psychosocial evaluations of family circumstances. On the basis of these evaluations, CAS staff then arrange access to needed services.

C Analyses of changes in recidivism rates controlled for changes in the distribution of youth characteristics and circumstances, including age, race, length of residential stay, time at risk, 2 measures of academic achievement, 4 measures of prior record, 4 measures of youth attitudes and behavior, 4 measures of youth's home environment, 5 measures of local crime and arrest rates, and 6 measures of local population and housing characteristics. These measures were combined in multivariate statistical models to produce scores reflecting the *a priori risk* of recidivism for each individual.

C After controlling for changes in *a priori risk,* the study found no reduction in overall recidivism, as measured by post-release arrests for any criminal offenses. The study did find a statistically significant reduction between the second and third phases for certain measures of violent recidivism. The effects were strongest for short-term recidivism, that is, for rearrests for violent crimes within the first 6 months following release. During the second phase, the observed rate of violent recidivism within six months at risk had been more than double the rate expected on the basis of average *a priori risk,* but it dropped to levels slightly below *a priori risk* during the third and fourth phases. Despite this relative reduction, though, the absolute level of violent recidivism for the fourth phase was still high–17% within 6 months and 31% within 12 months.

C Patterns in the detailed findings suggest that the relative reduction in violent recidivism was probably not due to changes in the characteristics and circumstances of participants, changes in pre-arrest revocation rates, changes in local arrest rates, or improvements in the YLA component. Among the most salient explanations, the most plausible is that the reduction was due primarily to improvements in the City Challenge Intensive Aftercare Program.

Table of Contents

Introduction

A recent study by the Division of Criminal Justice Services (DCJS) examined recidivism among 9477 juvenile offenders (JOs), juvenile delinquents (JDs), and persons in need of supervision (PINS) who were discharged from state custody from 1991 through 1995 (Frederick, 1999). That study found that most of the youth placed in state custody had multiple personal risk factors, faced difficult home and community circumstances, and had prior arrests or PINS petitions, prior probation terms, or prior out-of-home placements. Among these high-risk youth, 83 percent of males and 49 percent of females were arrested within 36 months of their first release from residential confinement to community supervision. A substantial proportion of the youth–52 percent of males and 15 percent of females–were arrested for violent offenses within 36 months of first release.

On-site interviews suggested that one of the key factors contributing to the high recidivism rates was a lack of program continuity in the transition from residential confinement to aftercare. The report recommended that the New York State Office of Children and Family Services (OCFS) develop, implement, and evaluate comprehensive program models that would provide a graduated transition from residential confinement to independent living and would ensure continuity of programming across service settings. In particular, it was recommended that program development efforts focus on continuity of program content, increased emphasis on family interventions, and substantial enhancements to aftercare.

The recommendations offered in the DCJS report were based primarily on a review of recent program evaluation literature. During the past decade, a consensus has begun to emerge concerning what types of interventions are most effective in reducing recidivism among serious and violent delinquents. A series of literature reviews and meta-analyses have analyzed the findings of hundreds of evaluations of institutional and community-based programs (Andrews et al., 1990; Gendreau & Ross, 1987; Izzo & Ross, 1990; Lipsey, 1992a, 1992b; Lipsey & Wilson, 1998; Whitehead & Lab, 1989).

These comprehensive reviews have yielded a fairly consistent set of findings. Effective programs tend to be based on explicit theoretical principles, and they target factors demonstrated empirically to be associated with the risk of re-offending. Many effective programs involve multimodal, skills-oriented, behavioral interventions with a strong cognitive component.

These are variously characterized as cognitive-behavioral, social-cognitive, interpersonal cognitive problem-solving or behavioral social skills training programs (Mulvey, Arthur, & Reppucci, 1993; Palmer, 1991). Such programs generally focus on teaching youth how their perceptions and thinking patterns lead to undesirable behavior; they usually include training in specific social skills such as interpreting social situations, evaluating alternatives, considering the consequences of behavior, resisting peer pressure, and recognizing and controlling anger; and they may incorporate a focus on values or moral reasoning (Chavaria, 1997; Glick & Goldstein, 1987; Mulvey et al., 1993). Cognitive-behavioral interventions are distinct from purely behavioral programs such as token economies and intensive supervision without treatment components, which have repeatedly been shown to be ineffective (U.S. Department of Health and Human Services, 2001).

Meta-analyses have also generally found that the positive effects of the most effective community-based programs are larger than the positive effects of the most effective institutional programs (Lipsey & Wilson, 1998). Among community-based programs, family-based interventions have recently attracted a great deal of attention. Although meta-analyses have found small average effects for family therapy programs overall, a few specific family therapy programs (Multisystemic Therapy, Functional Family Therapy, and Mutlidimensional Treatment Foster Care) have consistently been shown to be effective in reducing a variety of problem behaviors–including violent delinquency–with positive effects lasting several years in some studies (U.S. Department of Health and Human Services, 2001). In another domain, research from drug treatment literature suggests that combining institutional treatment with community-based treatment based on the same intervention model is more effective in reducing criminal recidivism than either institutional or community-based treatment alone (Inciardi, 1996).

The Office of Juvenile Justice and Delinquency Prevention (OJJDP) has been supporting an initiative to develop and test comprehensive juvenile aftercare programs. The Intensive Aftercare Program (IAP) model (Altshuler & Armstrong, 1990, 1991, 1996, 1997) is based on insights from three traditions in delinquency theory: strain theory, social learning theory, and social control theory. The principles derived from these theoretical traditions that are intended to guide IAP program development and operation include (1) preparing youth for progressively increased responsibility and freedom in the community; (2) facilitating youth-community interaction; (3) working

with both the youth and targeted community support systems to arrange socialization opportunities; (4) developing new resources and supports when a community does not offer natural opportunities for involvement in conventionally-oriented environments; and (5) monitoring youth and the community regarding their ability to deal with each other productively. Program features that are critical to successful operationalization of these principles include a strategy for dealing with the external environment and effective implementation of an overarching case management system.

Taken as whole, the literature cited above suggests that effective programming during the aftercare phase is critically important for youth for whom some period of residential confinement is considered necessary. However, it also highlights a potential dilemma. On the one hand, it suggests that the institutional phase should incorporate theory-based, cognitive-behavioral principles, and that aftercare should be designed to reinforce and help youth apply the skills and values introduced in the institutional phase. On the other hand, it is clear that aftercare should incorporate attention to family functioning and the relationships among the youth, his or her family, and community support systems. It is not clear exactly how a youth-centered skill development focus and a family-centered social environment focus can be successfully integrated in a single program across institutional and aftercare phases.

The OCFS Youth Leadership Academy/City Challenge (YLA-CCh) program sequence was cited in the DCJS report as one program model worthy of further study, because it incorporates many of the elements found important in recent literature. Although the previous DCJS study failed to find significant differences between the recidivism rates for YLA graduates and the recidivism rates for male JDs served in other limited-secure, residential programs, the time period covered by the previous study was not representative of current program design and operations. Since then, longstanding problems with City Challenge physical facilities and program staffing have been resolved; an attempt has been made to incorporate the principles of the IAP model into the City Challenge component; the family support functions of City Challenge have been enhanced through a close working relationship with the Children's Aid Society; and a more systematic assessment and case management system has been implemented.

The YLA/CCh Program Sequence

The YLA-CCh sequence consists of approximately six months of residential care at the Sergeant Henry Johnson Youth Leadership Academy (YLA), followed by post-residential day treatment in the City Challenge (CCh) program for the remainder of the youth's placement in state custody. The program serves high-risk, male JDs from New York City. The current program sequence is especially notable for the degree of consistency of approach among program staff and for the degree of continuity of control and program content in the transition from YLA to CCh.

The YLA Phase: More Than a Boot Camp

The YLA phase is often portrayed as a "juvenile boot camp," but its quasi-military orientation may not be the most fundamental feature of the program. The essential elements of the YLA program include a strong values orientation; an emphasis on leadership, skill development, and academic education; and a strong linkage to family and other potential support systems–all organized in a graduated sequence.

MacKenzie and Rosay (1996) have distinguished between "new generation" boot camps and the old-style boot camps that were the subject of much attention from the public and politicians. The old-style boot camps emphasized group activities, military drill and ceremony, physical labor and exercise, strict obedience, and summary punishments. The "new generation" programs retain some aspects of a military-style regimen (especially during early stages of participation) but place greater emphasis on rehabilitative treatment, leadership training, transitional programming, and aftercare.

Traditional boot camps have not been found to be any more effective in reducing recidivism than other institutional programs, and some evaluations have found higher recidivism rates for boot camps than for other programs (U.S. Department of Health and Human Services, 2001). However, boot camps have been shown to have positive results in other respects. One study that compared the experiences of juveniles in 26 boot camps to those of juveniles in 22 traditional facilities (MacKenzie et al., 2001) found that juveniles in boot camps perceived their environments to be more structured, more therapeutic or helpful, and less hostile than juveniles in traditional facilities. Contrary to the expectations of

critics, juveniles in boot camps did not experience higher levels of anxiety, and boot camps did appear to foster caring relationships between youth and staff. In turn, juveniles who perceived their environments to be more positive (regardless of whether the facilities were labeled as boot camps) exhibited greater reductions in depression and antisocial attitudes. These findings raise the possibility that the positive environment fostered by a quasi-military regimen, coupled with the rehabilitative orientation of a "new generation" program, may prove more effective than traditional institutional interventions.

The Four Values

The YLA program and all of its components are focused on four values which are the basis for evaluating daily achievements or failures. The four values are self-discipline (personal accountability), affiliation (teamwork, ability to form trusting relationships), self-esteem (personal competence), and self-worth (valuing self–and others–enough to consider the consequences of behavior).

The four values are integrated into every aspect of YLA programming, but they are also separately introduced and reinforced through a structured group discussion curriculum called "The Magic Within." The "Magic" is a cognitively oriented program designed to help youth understand how what they value and what they believe about themselves influence what they perceive to be their options and how they ultimately choose to behave. Consistent with this philosophy, other components of the program are designed to build a genuine basis for positive beliefs and values. A key component is the "Leadership Model," which is based on contemporary military training methods. Staff do not demean the youth. Instead, the Leadership Model is based on positive assumptions about human nature (e.g., people want to improve, people move toward a leader who feeds their sense of self-worth, etc.). Staff model positive leadership behavior. Youth are taught what it takes to be a leader (for example, a leader has to know where he wants to go and how to get there), and are encouraged to take on the role of "leading themselves." In addition, the program emphasizes skill development, working with family members, a gradual transition from basic tasks to more difficult challenges, and a gradual transition from an institutional environment with a high degree of control to community living with a greater degree of independence.

Components of The Four Values

According to program documentation (Cornick, 2000), The Four Values "are broken down into 25 components that are used to specify exactly what the values mean and what the expectations [are] for each component . . ." (no page numbers). The 25 components are listed below.

SELF DISCIPLINE

Independence
Accountability
Response to Authority
Participation
Conflict Resolution
Problem Solving
Consequences
Self Control

AFFILIATION

Attitudes Toward Abuse
Team Work
Compassion
Support
Deception
Relationships
Fairness

SELF ESTEEM

Leadership
Self Assessment
Criticism
Pride in Progress
Presentation
Confidence

SELF WORTH

Optimism
Goals
Influence
Moral Center

The expectations for each component become more rigorous as a cadet progresses from the Basic Challenge phase to the Advanced Challenge phase in the YLA, and ultimately to the City Challenge phase on aftercare. For example, with respect to the Self Control component, a cadet is expected to learn to think before he acts (Basic), channel energy to positive activities (Advanced), and eventually exhibit self control under stress (City Challenge). With respect to Moral Center, a cadet is expected to progress from understanding some issues of right and wrong (Basic), to being able consistently to articulate why something is right or wrong (Advanced), and ultimately to exhibit morally based actions (City Challenge).

City Challenge: The Aftercare Component

Upon graduation from the YLA, youth return to New York City and are enrolled in the City Challenge day reporting program. Key components of the YLA program are continued in the CCh day program. Youth continue to participate in the Magic Within sessions, which are sometimes led by the YLA Director or the YLA staff psychologist, each of whom visits the City Challenge site approximately once a week. City Challenge staff adhere to the same Leadership Model and "the four values" emphasized by YLA staff.

City Challenge staff conduct a home assessment when a youth is first admitted to the YLA, in order to identify problems that need to be addressed prior to the youth's release to community supervision. If the initial home assessment suggests significant problems, the Children's Aid Society (CAS) makes up to six home visits to conduct a thorough psycho-social evaluation of family circumstances. CAS prioritizes a family's need for services and brokers services through other community-based agencies. CAS arranges access to services such as substance abuse treatment, medical treatment or other individual treatment for family members, after school programs, SSI hearings, foster care certification, and access to special education programs.

Youth attend academic classes at the City Challenge site, which has a school program functioning as a Career Education Center within the New York City public school system. Most youth do not return to their neighborhood schools. However, if youth are ready to attend school outside CCh, they can be placed directly in another alternative school via administrative transfer, without having to go through the Board of High School Admissions process (which can often take several months).

The progression through levels of freedom, responsibility, and task difficulty begun at the YLA is continued at CCh. Youth are subject to curfews and strict attendance rules. Privileges are awarded or retracted according to program performance and compliance with expectations. Serious or persistent violations result in revocation and return to residential confinement.

Program History

According to program managers, the YLA-CCh program sequence has only recently begun to achieve stable implementation that is relatively consistent with the intended program model. For the purposes of the present research project, the development and maturation of YLA-CCh was divided into the four phases described below.

Phase 1: YLA Development (May 1992 - March 1996)

This period was characterized by steady development and refinement of the YLA component, accompanied by persistent instability in the CCh component. When the YLA program first opened in May of 1992, it accepted youth from all areas of the State. Youth entered the program in discrete cohorts of 15 cadets each, a cohort cycled through the program in four months, and the program more strongly resembled an old-style "boot camp" than does the current YLA. Within less than a year, YLA had been expanded to a six-month program and had abandoned the cohort approach in favor of continuous admissions. During the last half of this time period, a psychologist was hired, and she and the program director began expanding and refining the Magic Within program.

The CCh component was opened in December of 1992 at the 14th Street Armory in Manhattan with only two staff members. The initial program tried to transfer the military model then emphasized at the YLA (marching, khaki uniforms, calisthenics, etc.) into the community-based program. The youth resisted this approach, and the rate of AWOL was extremely high. In May of 1994, CCh lost its program site when the armory was converted to a shelter for the homeless. For several months, program staff held sessions with the youth under an oak tree in Prospect Park in Brooklyn. The program was moved into the basement of the Brownsville Recreation Center in Brooklyn in September, 1994. The Board of Education decided to establish City Challenge as an alternative school location and assigned two Youth Opportunities Unlimited (YOU) teachers to supplement one CCh teacher and 2 other staff persons. However, the Brownsville location was near the New Lots subway station, one of the most violent in the city and a known drug market site. In one instance, a gun fight that started in the street migrated into the CCh site. The high rate of program AWOL was due in part to its location. In the summer of 1995, the program moved to an empty building in Bedford-Stuyvesant, and staff were occupied for much of the next year renovating the building.

During the early part of this period, youth spent 5 months in City Challenge after release from the YLA, then were transferred to normal aftercare for the remainder of their placement. Beginning in December

1994, youth were retained in City Challenge until final discharge. The Magic Within curriculum was introduced into City Challenge during the latter part of this period, but according to program managers was not well-implemented.

Phase 2: CCh Development (April 1996 - March 1997)

During this phase, a stable location, some key staffing changes, and collaboration with outside consultants led to the development of a CCh program model that continues the essential features of the YLA program and is considered by program staff to be generally consistent with the principles of the IAP model. In April 1996, a counselor was hired for City Challenge who was committed to carrying through the approach begun in the YLA. He, in turn, hired new staff and had built a CCh team the Director considered effective by the summer of 1996. In September 1996, YLA-CCh staff met with Philip Coltoff of the Children's Aid Society and David Altschuler, one of the researchers who developed the Intensive Aftercare Program model for OJJDP, to begin planning how to incorporate the IAP principles into City Challenge.

By the end of this phase, the Magic Within was developing into a stable, well-implemented component, and it has subsequently become the heart of the YLA-CCh program sequence.

Phase 3: First CAS Contract (April 1997 - May 1998)

In the spring of 1997, CCh established a contract with the Children's Aid Society to provide service brokerage for youths' family members. However, CAS staff tended to become involved only when there were therapeutic issues that interested them, and then they tended to provide therapy directly rather than refer family members to existing services. There was a constant tension between the therapeutic approach favored by the CAS staff and the service model preferred by YLA-CCh management.

Phase 4: Second CAS Contract (June 1998 - June 1999)

In June 1998, there was a change in the CAS staff assigned to serve the City Challenge program. The new staff were chosen in consultation with YLA-CCh management. Currently, the primary role of CAS staff is to conduct in-depth psycho-social evaluations of family circumstances when the initial CCh home assessment suggests significant problems. On the basis of these evaluations, CAS staff then arrange access to needed services. Special attention is given to families of youth who have had their community supervision revoked and have been returned to residential confinement at the YLA.

Other recent enhancements to the YLA-CCh sequence include:

- a prescriptive programming approach that incorporates periodic assessment of the 25 components of the four core values
- efforts to improve the degree to which both YLA and CCh staff are involved in teaching the core values
- a shift toward focusing daily evaluations of youth on the values rather than behavioral compliance alone
- expansion of the City Challenge program hours to provide program activities until 6 PM and detention until 7 PM
- supervised programming on Saturday
- curfew coverage 6 days per week
- increased use of returns to YLA for "retraining" and "respite" (e.g., while family issues are being resolved or an alternative home is being arranged).

The maturation of City Challenge may be correcting many of the problems cited in the1999 DCJS report as factors potentially contributing to high recidivism rates. The current program sequence has a high degree of continuity throughout the YLA and City Challenge phases, it places considerable emphasis on family issues within an intensive aftercare model, and it provides a graduated sequence of progressively relaxed control and progressively more challenging expectations, accompanied by a system of graduated sanctions.

Research Question

The present research was designed to determine whether these theoretically important improvements have been accompanied by lowered recidivism rates among YLA graduates. This goal was pursued through the following specific research objectives:

1. Measure the post-release recidivism rates among YLA graduates for each phase in the historical evolution of the YLA-CCh program sequence.

2. Develop statistical models to control for the potential effects of changes in individual-level and community-level risk factors, including the potential effects of local law enforcement practices.

3. Develop adjustments to recidivism measures to control for the potential effects of changes in revocation practices on time at risk.

4. Determine the magnitude and statistical significance of differences among program phases in recidivism rates, controlling for risk and protective factors, local law enforcement practices, and time at risk.

Research Design

Because the primary goal of the research was to examine historical changes in recidivism rates accompanying changes in program implementation, the design of the research was necessarily retrospective, and it was important for the analyses to control for other historical changes that might have affected measured recidivism rates. The most obvious alternative explanations for changes in recidivism rates are these:

Changes in the type of youth placed in the YLA. Even if there were no change in program effectiveness, a reduction in recidivism rates could be produced by changes in risk factors or protective factors pertaining to the youths themselves, their families, or the communities to which the youths are returned.

Changes in law enforcement in the youths' home communities. Violent crime rates have declined dramatically in New York City during the past few years. If these reductions were accompanied by reductions in arrest rates for violent offenses among adolescents, then a portion of any apparent reduction in youth recidivism rates could be due to the general effect of changes in law enforcement. Alternatively, if increasing arrests for minor offenses have deterred certain "street behavior," it is possible that this pattern could yield an increase in overall rearrest rates among YLA graduates, but a reduction in rearrests for more serious offenses. Thus, it was important for the research to maintain important distinctions among crime types, both in controlling for local law enforcement patterns and in measuring post-release recidivism.

More aggressive revocation policies. YLA-CCh staff suggest that they have increased the frequency with which they revoke CCh participation and return youth to the YLA. Revocation is used both as a sanctioning option for serious or persistent failure to comply with expectations and as a respite for youth facing serious family problems. An increase in revocation rates could avert some impending arrests and contribute to any apparent reduction in recidivism, as measured by rearrest within a fixed followup period. However, it is also possible that revocation merely delays rearrest and that any apparent reduction in recidivism might be an artifact of a reduction in average time at risk.

For any claims about increased effectiveness of the program to be credible, it is necessary to demonstrate empirically that any observed change in recidivism rates is not attributable to confounding with these other historical changes. Therefore, the research controlled for these factors explicitly, using methods described later in this report.

Subjects

The study examined recidivism among 323 male juvenile delinquents[1] who were placed in state custody, spent all or a portion of their period of residential confinement in the YLA, and were released from the YLA to the City Challenge aftercare program between the inception of the program and June 30, 1999. All of the youth were returned to aftercare in New York City, mostly to the northern half of Brooklyn, the northern half of Manhattan, or the southwestern portion of the Bronx. Selected characteristics of the study cohort are displayed in Table 1.

Table 1: Characteristics of Study Cohort

Selected Attributes	Avg. or %
Avg. age at first release to aftercare (age ranged from 14 to 17)	15.7
Avg. age at first out-of-home placement (age ranged from 2 to 15)	12.5

Race/ethnicity
    % Black Hispanic
    % Black Non-Hispanic
    % Non-Black Hispanic
    % Non-Black Non-Hispanic
	12.4
	70.0
	15.8
	1.8

Avg. N of prior offenses	2.3
% with prior violent offenses	49.5
% whose alcohol abuse disrupts normal functioning (according to YLA staff)	30.0
% whose drug abuse disrupts normal functioning (according to YLA staff)	59.0

---

[1]A total of 398 youth were released to City Challenge during that period. However, case files could be located for only 323. Most of the missing files pertained to youth released during the earliest phase; 124 of the 186 case files pertaining to those youth were successfully retrieved.

Recidivism Measures

Dates and crime types of post-release arrests and convictions were obtained from official records maintained by DCJS and the New York City Corporation Counsel's office.[2] Measures were constructed reflecting the occurrence of any arrest, any felony arrest, and any violent felony (VFO) arrest, as well as the occurrence of any arrest, felony arrest, or VFO arrest that resulted in conviction. In addition, analyses examined the statutory rank of the first arrest, the probability of conviction for the first arrest, the number of days from release to the first arrest, and the number of arrests during the followup period. A more detailed listing of the measures examined is given in Appendix A.

A minimum of 365 days of followup were available for all youth in the study cohort. However, in order to control for the possible effects of changes in revocation practices, service setting histories were analyzed to determine the actual time at risk of rearrest in the community, after accounting for time spent in residential confinement upon revocation of community supervision. Among the 323 youths in the cohort, at least 180 days at risk were available for 321 of the youths, and at least 365 days at risk were available for 306 of the youths.

Risk Control Models

A number of statistical models were developed relating weighted combinations of risk factors to selected outcome measures. The purpose of these models was to control for youth characteristics and circumstances in analyses of the differences in outcomes across historical phases in the development and refinement of the YLA-CCh program sequence. A total of eight regression models were developed, each tailored for use in analyses of a specific outcome measure. Six logistic regression models were estimated, one for each of the following dichotomous recidivism measures:

- C   any arrest within 365 days at risk;
- C   felony arrest within 180 days at risk;
- C   violent felony (VFO) arrest within 180 days at risk;
- C   violent felony (VFO) arrest within 365 days at risk;
- C   VFO vs. nonVFO for first arrest within 365 days at risk; and
- C   VFO arrest within 180 days at risk that resulted in conviction for any offense.

In addition, ordinary least squares (OLS) regression models were developed to control for youth characteristics and circumstances in analyses of the following two outcome measures:

- C   seriousness (statutory rank) of first arrest within 365 days at risk; and
- C   number of days to first arrest within 365 days at risk.

Throughout this report, these statistical models are called *risk control models*. The probability of recidivism, predicted seriousness of first arrest, or predicted number of days to first arrest generated for an individual youth by the applicable model is called the *a priori risk*. For some of the data displays, *a priori risk* was averaged across individuals within program development phases to yield *expected values* reflecting the distribution of the characteristics and circumstances of youth released to aftercare during each phase.

Measures of Person-level Risk Factors

Data collection was guided by a review of literature on factors associated with the risk of delinquency, examination of existing risk scales, and practical considerations such as the retrospective availability of relevant data and the difficulty of collecting potentially available data. Data collection yielded a large number of individual items in seven person-level domains: prior record, youth attitudes and behavior, home environment, academic achievement, youth's race, youth's age, and length of stay in residential confinement.

All but two of these domains (age and length of stay) were represented by multiple measures. A total of 18 person-level measures were candidates for inclusion in the construction of risk control models. Eleven of these 18 measures, in turn, were subscales constructed from multiple individual items. The measures are listed and grouped by *a priori* domain in Table 2. The details of scale construction and validation are explained in Appendix A.

Among the eleven multiple-item subscales, six yielded internal consistency reliability estimates (Cronbach's coefficient alpha) ranging from .70 to .83, a range generally considered adequate for research purposes. Five multiple-item measures of person-level risk factors had marginally adequate reliabilities ranging from .63 to .69.

---

[2]Corporation Counsel's office is the presentment agency for juvenile arrests processed in family court in New York City.

Table 2   Measures of Person-Level Risk Factors

A Priori Domain	Scale or Variable [a]
Race	Black Non-Hispanic Black Hispanic
Age	Age at First Release to Aftercare
Prior Record	Problems in Prior Placements Chronic Involvement History of Low-level Violent Crime Violent Criminal History
Length of Stay	Optimum Length of Stay
Attitudes and Behavior	Disruptive Substance Abuse Problems in School Antisocial Attitudes Violent Behavioral History
Home Environment	Family Attachment Criminogenic Family Victim of Neglect Hostile Home
Academic Achievement	Years Behind in Reading Years Behind in Math

[a] Variables are defined in more detail in Table A2.

Two potentially relevant factors that were not well-represented among the measures developed for this study were mental health problems and peer relationships. The OCFS data base included intake assessment items reflecting mental health problems, but preliminary analyses showed an implausibly sharp increase in the incidence of mental health problems in recent years, and OCFS staff suggested the increase might be an artifact of the fact that assessments for male juvenile delinquents are now done at a reception center that specializes in intake processing. Because the questions addressed in this study pertained specifically to historical changes, and therefore cases from the period before the reception center was introduced could not be ignored, the mental health items were excluded from analysis.

Data collected from paper case files included staff judgments about youths' peer relationships and gang involvement, but these items did not exhibit the expected correlations with recidivism. Because the relevance of these factors is well established in prior literature, it is most likely that they were not reliably measured in the present study. One item relating to "street history" (a 5-point rating ranging from "family-oriented" to "lives on the street") was included in the Family Attachment scale.

Measures of Community-level Risk Factors

A growing body of literature strongly supports the conclusion that local rates of crime and delinquency are influenced by community-level characteristics, beyond what would be expected from the aggregation of individual-level characteristics (Elliott et al., 1996; Frederick, 1999; Sampson & Lauritsen, 1994; Sampson, Raudenbush, & Earls, 1997; Simcha-Fagan & Schwartz, 1986). Relationships have been found between various measures of delinquency and local crime rates, population composition (age, gender, race, ethnicity, racial and ethnic diversity), population density, residential stability, distribution of educational attainment, marriage and divorce rates, and concentrated disadvantage. Recent research (Elliott et al., 1996; Sampson et al., 1997; Vesyey and Messner, 1999; Yoshikawa, 1994) suggests that such characteristics can affect the probability of delinquency both directly and indirectly through the influence of community disorganization on informal social controls and family interactions.

Direct measures of community disorganization were not available for this study. However, local crime rates measured at the precinct level and a number of population and housing indices measured at the census tract level were included. In addition, the study included precinct-level measures of arrest rates and the ratio of arrests to reported crimes. The latter were intended to serve as controls for possible changes in the intensity of law enforcement efforts. The community-level measures are listed and grouped by *a priori* domain in Table 3.

Table 3:   Measures of Community- level Characteristics

A Priori Domain	Scale or Variable [a]
Local Crime and Arrest Rates	Nonfelony Arrest Rates Felony Arrest-to-Crime Ratio Theft Arrest-to-Crime Ratio Felony Arrest Rates Serious Crime Rates
1990 Census Tract Charac-teristics	Singles and Service Workers Economic Status 1 Economic Status 2 Culture Index Population Influx (1985-1990) Population Influx (1989-1990)

[a] Variables are defined in more detail in Table A2.

The items used to construct precinct-level and tract-level scales had value ranges that varied dramatically from one measure to another. In order to prevent items with large raw score values from unduly dominating composite scales, all of the items measured at the precinct level or tract level were converted to standardized scores ("z-scores") prior to combining items into composite scales.

Community-level scale values in the z-score metric were then attached to person-level records. For the precinct-level measures, these scale values reflect the crime and arrest rates prevailing in the precinct to which a youth was released in the year the youth was released, relative to other precincts and other years in New York City. For the tract-level measures, the scale values reflect population and housing characteristics in the census tract to which the youth was released, relative to other census tracts in New York City in 1990.

Analyses

The construction of risk control models is described in detail in Appendix A. The predictive validity of the risk control models was evaluated by examining the values of R^2 (for the linear models) or Nagelkerke Pseudo-R^2 (for the logistic regression models), and by calculating the bivariate correlations between predicted and observed values. The R^2 values and the bivariate correlations for split halves of the study cohort are displayed in Table 4. Additional indices are displayed in Table A5 of the Appendix.

The Nagelkerke Pseudo-R^2 values indicate moderately strong predictive power for all of the logistic regression models. The R^2 values for the both of the linear models (for class of first arrest and days to first arrest) indicate fairly weak predictive power. The correlations between predicted and observed values show excellent stability of predictive power across split halves (Table 4) and relatively good stability across historical phases (Table A5) for most of the modeled recidivism measures.

The statistical significance of changes in recidivism rates was tested by adding variables reflecting contrasts among program phases to the risk control models. Three sets of contrasts were tested. The first set of contrasts was based on the idea that achieving stable implementation of the City Challenge component by the end of Phase 2 and introducing enhanced family services at the beginning of Phase 3 might have resulted in a significant difference between the outcomes achieved before that transition and the outcomes achieved after that transition. A second set of contrasts examined the possibility that continual improvements in YLA and City Challenge operations might have produced gradual reductions in recidivism rates. This was operationalized as a set of orthogonal contrasts testing for linear, quadratic, and cubic trends. A third set of contrasts was introduced to test the significance of individual phase-to-phase differences.

Table 4: Predictive Validity of Risk Control Models

Dependent Measure	R-Squared or Nagelkerke Pseudo R-Squared	Correlations Between Predicted and Observed For Split Halves of the Study Cohort	
		Odd	Even
Any arrest in 365 days at risk	.314	.52	.45
Felony arrest in 180 days at risk	.317	.50	.47
VFO arrest in 180 days at risk	.347	.47	.54
VFO arrest in 365 days at risk	.337	.53	.47
1st arrest in 365 days at risk is VFO	.472	.64	.59
Class of 1st arrest in 365 days at risk	.164	.36	.46
VFO arrest resulting in conviction	.378	.63	.36
Days to 1st arrest in 365 days elapsed	.169	.36	.47

Following a suggestion by Hosmer and Lemeshow (1989), fairly inclusive criteria were adopted for including variables in the risk control models. (See Appendix A for details.) This constitutes a conservative approach with respect to the tests for differences among program phases, since some of the differences in recidivism rates that were fundamentally due to changes in program implementation might have been inappropriately attributed to non-significant risk factors. This conservative approach was adopted because prior research has found that non-experimental designs that employ statistical controls usually cannot control adequately for all of the relevant collateral influences and therefore usually overestimate the treatment effects.

Findings

Trends in Youth Characteristics and Circumstances

Table 5 displays the average scaled score by program phase for each of the 29 measures tested for inclusion in the risk control models. Variables with generally increasing values across program phases included Disruptive Substance Abuse, Violent Behavioral History, Criminogenic Family, Hostile Home, Nonfelony Arrest Rates, Felony Arrest-to-Crime Ratios, and Theft Arrest-to-Crime Ratios.

In addition, a few variables showed declines from Phase 1 to Phase 2, but then increased again through Phases 2, 3, and 4. These included the proportion Black Non-Hispanic, Chronic Involvement, History of Low-Level Violent Crime, Optimum Length of Stay, Family Attachment, Years Behind in Reading, and Years Behind in Math.

Variables that showed noticeable declines across program phases included precinct-level Felony Arrest Rates and precinct-level Serious Crime Rates.

Not all of these theoretically-relevant factors exhibited the expected correlations with recidivism. Some failed to exhibit significant correlations with any of the selected recidivism measures. Moreover, different risk factors appeared to be important for predicting different recidivism measures, and a few risk factors had significant relationships with recidivism in the counter-intuitive direction.

The bivariate correlations between measured risk factors and eight selected recidivism measures are presented in Table A4 of the Appendix. The regression weights for risk factors in each of the eight risk control models are presented in Tables A6a and A6b.

Table 5: Trends in Variables Used in Developing Risk Control Models

Variable Label	Program Phase			
	1	2	3	4
Black Non-Hispanic	.69	.61	.67	.77
Black Hispanic	.11	.15	.13	.12
Age at First Release	15.6	15.7	15.7	15.8
Problems in Prior Placement	1.20	1.46	1.28	1.46
Chronic Involvement	7.24	6.89	7.56	8.05
History of Low-Level Violent Crime	2.54	2.00	2.28	2.55
Violent Criminal History	4.29	4.39	5.10	4.27
Optimum Length of Stay	1.01	.78	.82	1.09
Disruptive Substance Abuse	.62	.74	1.03	.98
Problems in School	3.40	3.41	3.44	3.68
Antisocial Attitudes	14.2	13.7	12.8	14.6
Violent Behavioral History	1.90	2.33	2.33	3.09
Family Attachment	2.99	2.80	2.80	2.99
Criminogenic Family	1.11	1.39	1.80	1.58
Victim of Neglect	.32	.46	.48	.42
Hostile Home	1.70	1.96	2.23	2.33
Years Behind in Reading	2.81	1.09	3.28	3.33
Years Behind in Math	3.15	2.41	3.28	3.54
Nonfelony Arrest Rates	-1.68	2.98	3.89	4.63
Felony Arrest Ratio	0.00	2.52	3.14	2.88
Theft Arrest Ratio	.13	.86	1.02	1.02
Felony Arrest Rates	2.36	1.29	.51	-0.13
Serious Crime Rates	1.59	-0.43	-0.90	-1.10
Singles and Service Workers	1.96	1.71	2.10	2.10
Economic Status 1	3.54	3.59	3.03	3.84
Economic Status 2	3.92	3.71	3.05	4.38
Culture Index	1.57	1.67	1.73	1.80
Pop Influx (85-90)	.42	-.36	.12	-.11
Pop. Influx (89-90)	-.01	-.26	-.05	-.15

Note: Most of the values in the above table reflect relative standing on arbitrary scales. However, the values for race are proportions, and the values for age, years behind in reading, and years behind in math are in years.

Recidivism Rates by Program Phase

Table 6 presents trends in rearrests across the four program development phases. The results show little change in the rate of arrests for all crimes combined. However, for more serious crimes (especially violent felonies) there is a fairly consistent pattern in which rearrest rates remain high for the first two phases, drop noticeably during the third phase, and then increase again during the fourth phase, though not to the higher levels experienced during the first two phases.

Table 6: Trends in Recidivism Across Program Development Phases

Mean

	Phase of program development at time of 1st Release				
	YLA Development	CCh Development	First CAS Contract	Second CAS Contract	Total
Any arrest within 180 days elapsed	.32	.30	.26	.34	.31
Any arrest within 180 days at risk	.37	.37	.30	.34	.35
Any arrest within 365 days elapsed	.57	.59	.56	.63	.59
Any arrest within 365 days at risk	.61	.63	.59	.60	.61
Felony arrest within 180 days elapsed	.26	.26	.15	.24	.23
Felony arrest within 180 days at risk	.27	.33	.18	.27	.26
Felony arrest within 365 days elapsed	.48	.48	.41	.48	.47
Felony arrest within 365 days at risk	.52	.54	.44	.48	.50
Violent arrest within 180 days elapsed	.18	.17	.10	.13	.15
Violent arrest within 180 days at risk	.19	.20	.10	.17	.17
Violent arrest within 365 days elapsed	.30	.33	.18	.28	.28
Violent arrest within 365 days at risk	.34	.35	.24	.31	.31
Statutory rank of 1st arrest within 180 days at risk	4.39	4.24	3.56	3.55	4.00
Statutory rank of 1st arrest within 365 days at risk	4.34	4.03	3.77	3.43	3.96
N of arrests in 365 days at risk	1.23	1.28	1.10	1.23	1.22
N of felony arrests in 365 days at risk	.87	.83	.73	.78	.81
N of vfo arrests in 365 days at risk	.46	.43	.34	.39	.42
Days from release to 1st arrest within 180 days elapsed	99.15	96.57	94.56	104.10	99.58
Days from release to 1st arrest within 180 days at risk	134.59	120.47	113.11	116.90	124.10
Days from release to 1st arrest within 365 days elapsed	166.00	178.37	203.12	181.31	179.07
VFO if any arrest in 365 days at risk	.55	.55	.40	.52	.52

Table 7: Proportion Arrested In 180 Days At Risk and Convicted (Age 16+ At Release)

Arrests in 180 Days at Risk	N	Overall	Phases 1 & 2	Phases 3 & 4	Significance Level
ANY (resulting in conv.)	200	.185	.206	.165	.472
FEL (resulting in conv.)	200	.120	.155	.087	.191
VFO (resulting in conv.)	200	.080	.113	.049	.119
1st Arrest Conv. Rate (ANY)	67	.507	.500	.515	>.999
1st Arrest Conv. Rate (FEL)	40	.475	.435	.529	.750
1st Arrest Conv. Rate (VFO)	26	.423	.400	.455	>.999

The reductions in recidivism rates during the third phase were greatest (proportionally) for violent crime arrests within a short followup period (180 days). The same general pattern was also reflected in longer-term followup for felony arrests and VFO arrests, the number of arrests within 365 days of release, the average statutory rank of the first arrest, the probability that the first rearrest was for a violent offense, and the average time from release to first arrest. However, absent controls for changes in the distribution of youth characteristics and circumstances, none of these changes was statistically significant.

Table 7 presents measures based on convictions following rearrest. Because court dispositions were available only for cases disposed in adult court, these analyses had to be limited to youth who were 16 years old or older at the time of first release to City Challenge. Also, the analyses were limited to arrests that occurred within 180 days of post-release followup, in order to allow time for cases to reach final disposition within the available followup time.

There were proportionally large declines in the rates of felony arrests and VFO arrests that resulted in conviction (at any level). The analyses of conviction rates presented in the last three rows of Table 7 suggest that the declines in convicted arrests were not due to changes in post-arrest processing. However, although the observed declines were proportionally large, they were small in absolute magnitude and not statistically significant.

Contrasts Among Phases, Controlling for Risk

As previously explained, the statistical significance of changes in recidivism rates was tested by adding variables reflecting contrasts among program phases to the risk control models, then determining whether adding the program phase variables significantly improved the fit of the models to the data. In addition, in order to construct displays comparing trends in modeled risk to trends in actual recidivism, the models were used to calculate a predicted outcome for each youth. The predicted values were then averaged across youth within each phase to yield expected values (expected recidivism rates for the dichotomous outcome measures, expected statutory rank, or expected days from release to first arrest). Trends in these aggregate expected values are compared to trends in average actual outcomes in Figures 1 through 8.

Figure 1: Arrest Within 365 Days At Risk

Observed Value   *Expected Value*
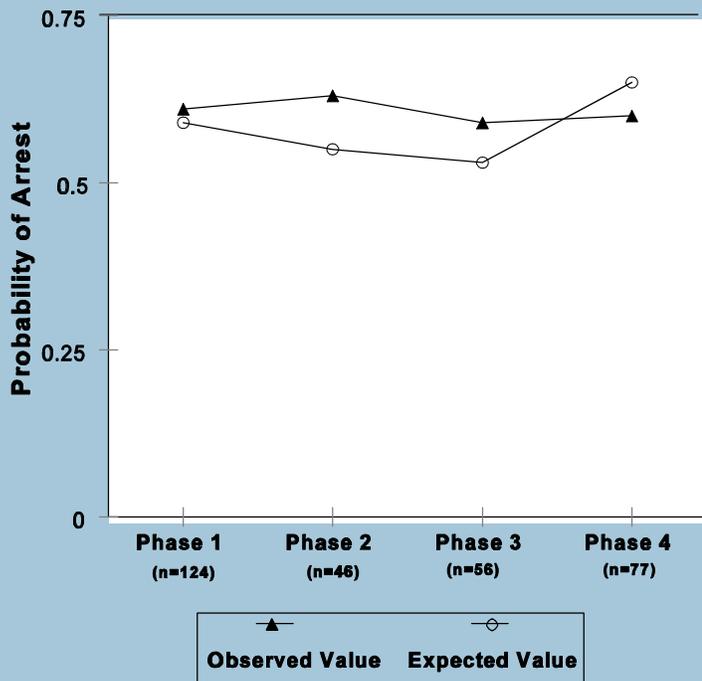
Arrest Within 365 Days at Risk

The expected rate of arrests within 365 days at risk, as reflected in the average modeled probability of rearrest calculated using the applicable risk control model, declined slightly from the first phase through the third phase, then increased in the fourth phase (see Figure 1). The actual rearrest rates followed a slightly different pattern, remaining at the initial level through the second phase and then declining slightly in the third and fourth phases.

Although the actual rearrest rate remained somewhat higher than modeled expectation during the second phase and was somewhat lower than expectation during the fourth phase, neither the contrast between the first two phases and the second two phases, the linear trend across phases, nor any of the successive phase-to-phase changes was statistically significant.

Figure 2: Felony Arrest Within 180 Days at Risk

Observed Value   *Expected Value*
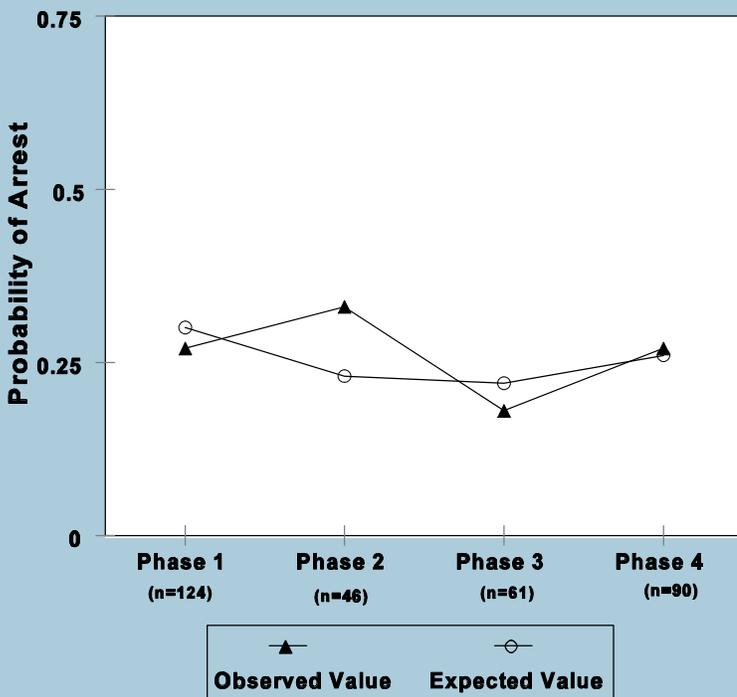
Felony Arrest Within 180 Days at Risk

The expected rate of felony arrests within 180 days at risk followed a pattern similar to that for any arrests, but the magnitude of the changes was somewhat larger (see Figure 2). Actual felony rearrest rates increased somewhat between the first and second phases and then declined markedly between the second and third phases. However, because modeled risk levels were also declining, the change from the second to the third phase was not statistically significant.

Relative to expectation, felony arrest rates were greater in phase two than in phase one (p = .032). Also, the cubic trend was marginally significant (p = .067), reflecting the fact that, relative to modeled risk, actual felony arrest rates increased from the first to second phase, decreased from the second to third phase, and then increased very slightly again from the third phase to the fourth phase.

Figure 3: VFO Arrest Within 180 Days at Risk

Probability of Arrest

- 0.75
- 0.50
- 0.25
- 0.00

Phase 1	Phase 2	Phase 3	Phase 4
(n=124)	(n=46)	(n=61)	(n=90)

Observed Value   Expected Value
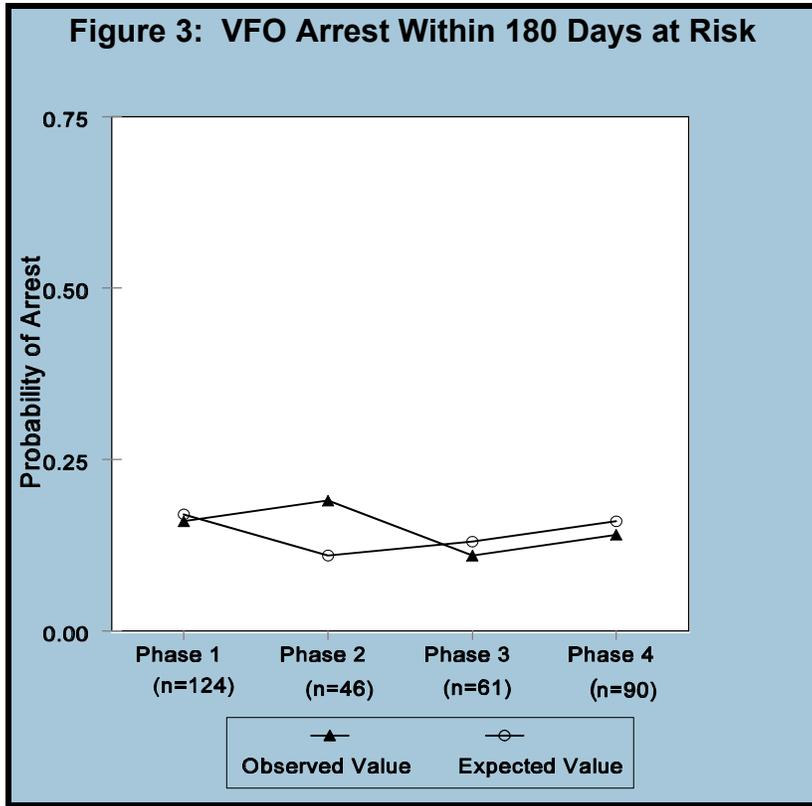
VFO Arrest Within 180 Days at Risk

Modeled risk of a VFO arrest within 180 days at risk dropped sharply between the first and second phase, but then increased thereafter, returning nearly to its initial level by the fourth phase (see Figure 3).

In constrast, the actual VFO arrest rate remained high during the second phase in spite of the sharp drop in modeled risk. However, the actual rate dropped slightly below the expected value in the third phase and remained slightly below modeled expectation as the expected rate increased during the fourth phase.

Controlling for modeled risk, the (relative) increase from Phase 1 to Phase 2 (p = .050), the decrease from Phase 2 to Phase 3 (p=.038), and the cubic trend reflecting sequential increase, decrease, and leveling (p = .047) were all statistically significant.

Figure 4: VFO Arrest Within 365 Days at Risk

Probability of VFO Arrest

- 0.75
- 0.50
- 0.25
- 0.00

Phase 1	Phase 2	Phase 3	Phase 4
(n=124)	(n=46)	(n=59)	(n=77)

Observed Value   Expected Value
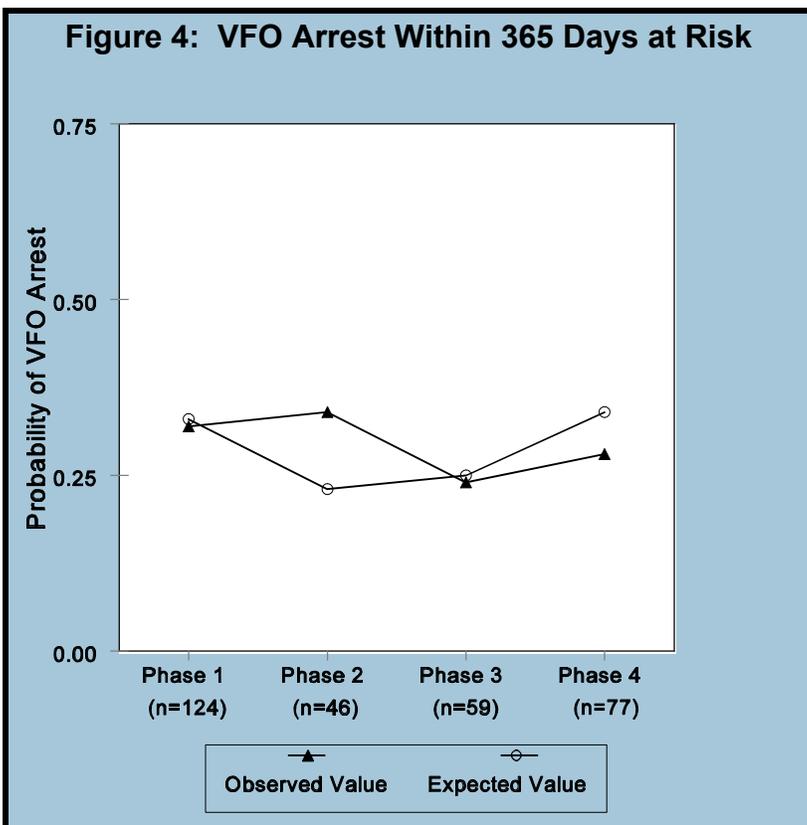
VFO Arrest Within 365 Days at Risk

Modeled risk of a VFO arrest within 365 days at risk and actual VFO arrest rates followed patterns very similar to those for VFO arrest within 180 days at risk (see Figure 4). However, for the longer-term followup, only the decline from Phase 2 to Phase 3 was marginally significant (p = .074).

Figure 5: VFO Arrest, Given Any Arrest Within 365 Days at Risk

| Phase 1 (n=76) | Phase 2 (n=29) | Phase 3 (n=35) | Phase 4 (n=46) |

▲ Observed Value   ⊸ Expected Value
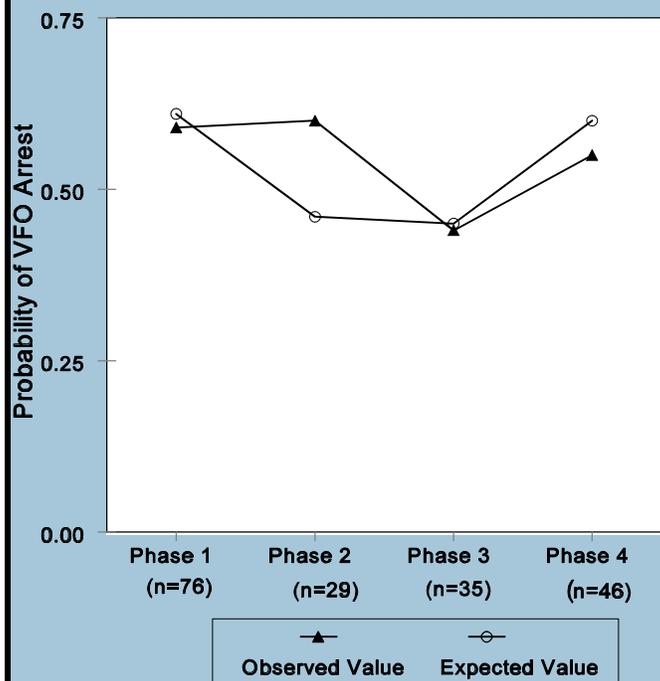
VFO Arrest, Given Any Arrest Within 365 Days at Risk

This analysis focused just on those youth who had at least one arrest within 365 days at risk. Among these 186 youth the modeled probability that at least one of a youth's arrests was for a VFO declined sharply in Phase 2, remained at that level during Phase 3, but then increased sharply again in Phase 4 (see Figure 5).

In contrast, while risk levels declined in Phase 2, the actual probability of a VFO given any arrest remained high. The actual probability then declined belatedly to match modeled expectation in Phase 3, then remained slightly below expectation as the risk level rose in Phase 4.

Although these changes were substantial in absolute magnitude, this analysis was based on a smaller number of cases than the previous ones. The change from Phase 1 to Phase 2 was marginally significant (p=.064), as was the quadratic trend (p=.092) indicating that, relative to expectation, the probability that one of a youth's arrests was for a VFO peaked during the second phase, then declined again during Phases 3 and 4.

Figure 6: Statutory Rank of First Arrest Within 365 Days at Risk

| Phase 1 (n=76) | Phase 2 (n=29) | Phase 3 (n=35) | Phase 4 (n=46) |

▲ Observed Value   ⊸ Expected Value
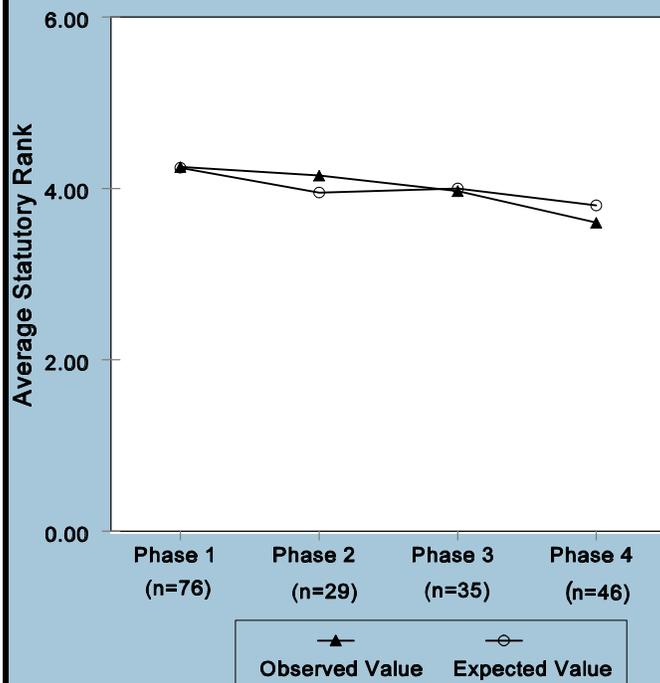
Statutory Rank of First Arrest Within 365 Days at Risk

The average statutory rank of first arrest declined steadily across the four phases, but this closely paralleled the trend in modeled risk, and so, controlling for youth characteristics and circumstances, none of the changes across phases was statistically significant (see Figure 6).

Figure 7: VFO Arrest That Resulted in Conviction
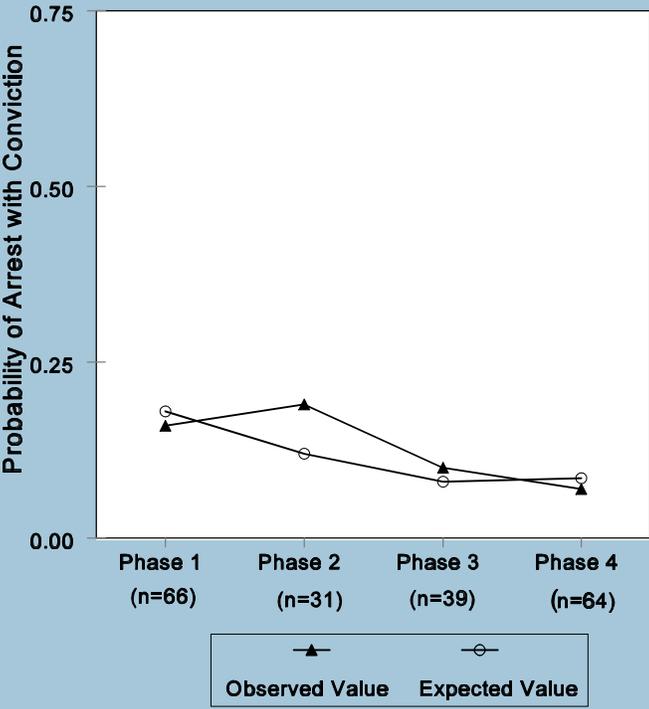
VFO Arrest That Resulted in Conviction

The probability of a VFO arrest within 180 days at risk that resulted in a conviction for any offense followed a pattern similar to that for all VFO arrests (see Figure 7). The observed arrest rate first increased while modeled risk was decreasing, then the observed arrest rate decreased during the third and fourth phases, while modeled risk decreased slightly in the third phase and then increased slightly in the fourth phase.

In spite of the small number of cases in this analysis (limited to youth who were 16 or older at the time of first release), the difference between Phase 2 and Phase 1 was statistically significant (p=.020), as was the quadratic trend (p=.018), reflecting the fact that, relative to expectation, the probability of a VFO arrest that resulted in conviction peaked during the second phase, then declined during the third and fourth phases.

Figure 8: Days From Release to First Arrest Within 365 Days Elapsed
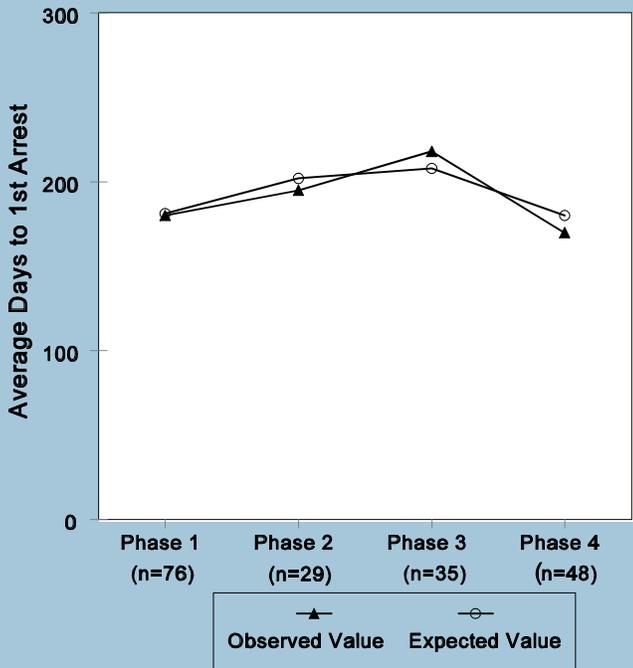
Days From Release to First Arrest Within 365 Days Elapsed

The actual average time from release to first arrest increased slightly from the first phase through the third phase and then declined in the fourth phase (see Figure 8). However, the changes were small and did not produce much deviation from modeled expectation, so none of the changes across phases was statistically significant.

Discussion

The modeled *a priori* risk of a VFO arrest dropped sharply between the first and second of the historical phases of program development, but average risk increased thereafter, returning to its initial level by the fourth phase. In contrast, actual VFO arrest rates remained high during the second phase, in spite of the sharp drop in modeled risk. The actual rate dropped slightly below the expected value in the third phase and then increased but remained slightly below modeled expectation during the fourth phase, while average risk was increasing. Thus, relative to average risk scores for the participating youth, the difference between the violent recidivism rate during the second phase and the violent recidivism rate during the third and fourth phases was statistically significant.

The observed rate of violent recidivism was higher during the fourth phase (Second CAS Contract) than it was during the third phase (First CAS Contract). This might seem to suggest that the mode of family intervention under the first contract was actually more effective than the preferred mode of intervention eventually implemented under the second contract. However, relative to average *a priori* risk, the rate of arrest for a violent crime within a year at risk was actually slightly better during the fourth phase. This is evident in the difference between observed values and expected values displayed in Figure 4 and in the fact that the logistic regression coefficient for the change from Phase 3 to Phase 4 had a negative sign (see Table A7c), indicating that Phase 4 was associated with a lower probability of violent recidivism, after controlling for youth characteristics and circumstances. Although the contrast between the third and fourth phases was not statistically significant, the direction of the effect suggests that any difference in effectiveness between the phases was more likely to favor the fourth phase than the third phase.

The relative reduction in violent recidivism rates could be attributable to improvements in program implementation or to changes in other influential factors that occurred during the time period examined in the study. The three most plausible alternative explanations are (1) changes in the type of youth participating in the program; (2) changes in law enforcement in the youths' home communities; and (3) more aggressive revocation policies. These potential explanations can be largely discounted on the basis of evidence examined in this study.

Changes in the Type of Youth Participating in the Program

The relative reduction in violent recidivism cannot have been due to changes in the risk factors measured in this study, because average modeled risk of a VFO arrest actually increased steadily from Phase 2 through Phase 4. The reduction in recidivism could have been due to changes in influential characteristics and circumstances not measured in the present study, but the risk control models were, in fact, fairly comprehensive. Scores of items were collected in the broad domains found in previous studies to be associated with the risk of offending. Among the items collected, those that were excluded from the final models were excluded either because they were redundant or because they were found not to predict recidivism in the highly selected population of chronic and serious delinquents placed in state custody.

Two domains may not have been adequately measured. Items pertaining to mental health problems were excluded because it appeared that screening for mental health problems improved dramatically in the midst of the historical period examined in the study. Items pertaining to peer relationships were excluded because, as measured, they were not consistently correlated with the recidivism measures. Because the relevance of peer relations is well-established in prior literature, it is most likely that they were not reliably measured in the present study. In spite of these two omissions, however, the risk control models for violent recidivism exhibited moderately strong predictive power, with pseudo-R^2 ranging from .347 to .472. These are well above the predictive power typically found with published risk assessment instruments (Gendreau, Little, & Goggin, 1996), suggesting that the variance due to the omitted factors may have been captured indirectly by other factors that were included in the risk control models.

Changes in Law Enforcement

The index of precinct-by-year felony arrest rates used in developing risk control models did decline substantially from the first phase through the fourth phase examined in this study. However, both the bivariate correlation and the regression coefficient between this index and violent recidivism were negative, indicating that precinct-years with lower-than-average felony arrest rates were generally associated with higher-than-average violent recidivism rates. Moreover, this index included both violent and nonviolent felonies and arrest rates for both adults and juveniles.

Figure 9 shows the specific city-wide trends for misdemeanor, felony, and violent arrests of persons under age 21. The graph shows that even as violent crime rates were declining, VFO arrests of youth under age 21 rose dramatically from 1992 through 1997, then declined only slightly from 1997 to 1998. The transition from Phase 2 to Phase 3, as defined for the present study, occurred in the spring of 1997, the same year the VFO arrest rates for youth under age 21 peaked. Monthly local arrest rates were not collected for this study. However, from the annual figures displayed in Figure 9, it appears that VFO arrest rates for youth under age 21 were either higher or about the same in Phase 3 as they had been in Phase 2. It is not likely that they were lower during Phase 3. Therefore, it is unlikely that they account for the lower relative violent recidivism in Phase 3.

Figure 9: Trends in Arrest for Youth Under 21

Changes in Revocation Rates

Program managers suggested that more aggressive revocation policies had resulted in an increase in the proportion of participants returned to residence from aftercare without having yet been arrested for a new crime. An increase in revocation rates could avert or delay some impending arrests and produce an apparent reduction in recidivism, as measured by rearrest within

a fixed followup period. To avoid a possible artifact due to reduced average time at risk, the followup period was extended when necessary to account for periods of residential confinement served upon revocation of community supervision.

In addition, a collateral analysis was conducted to examine the actual trend in revocation rates. The percentage returned to residential confinement within 365 days of first release to community supervision did increase sharply between Phase 1 (27.4%) and Phase 2 (43.5%), but then it declined slightly in Phase 3 (41.0%) and fell substantially in Phase 4 (34.8%). Thus, even if time at risk had not been controlled in the construction of the recidivism measure, the change in revocation rates could not have produced the observed reduction in violent rearrest rates.

Conclusions

The design of the Youth Leadership Academy/City Challenge program sequence incorporates many of the features found to be characteristic of effective programs in prior research. It is based on an explicit rationale that guides interventions in both the residential and aftercare phases. The YLA phase relies on a military-style regimen to promote a structured, safe, respectful environment within which to pursue a values-oriented curriculum. According to program managers, interventions focus on skill development, reducing counterproductive perceptions and thinking patterns, learning anger control, and reinforcing prosocial values and moral bases for behavior. The program incorporates clearly communicated consequences for positive and negative behavior and a graduated sequence of progressively more rigorous expectations. Youth are gradually granted increasing responsibility and privileges, but are also subject to return to less advanced stages when they fail to meet expectations. The program also incorporates interventions with the youth's family, although the family interventions delivered through this component may not be very similar to those found to be effective in previous research.

Program managers also asserted that significant improvements in implementation had been achieved since the early years of the program. They reported that the "Magic Within" values curriculum was reportedly implemented in essentially its current form in the Youth Leadership Academy by the spring of 1997 (the end of the second phase examined in this research). Longstanding problems with City Challenge physical facilities and staffing had reportedly been resolved, an attempt had been made to incorporate the principles of

the OJJDP Intensive Aftercare Program model into the City Challenge component, the family support functions of City Challenge had been enhanced through contracts with the Children's Aid Society, and a more systematic assessment and case management system had been implemented. If the program model is an effective one, and if, as the program managers suggested, the model has been implemented more faithfully since 1997 than it was during the earlier years, then recidivism rates should have declined during the more recent phases.

After controlling for changes in the distribution of known risk factors, this study found no reduction in overall recidivism as measured by post-release arrests or convictions for criminal offenses (misdemeanors and felonies combined). The study did find statistically significant reductions in measures of violent recidivism. The effects were strongest for short-term recidivism– that is, rearrests for violent crimes within the first 6 months following release.

The trend in violent recidivism has to be understood in relation to historical changes in the distribution of the characteristics and circumstances of youth participating in the program. The modeled *a priori* risk of arrest for a violent crime dropped sharply between the first and second of the historical phases of program development, but average risk increased thereafter, returning to its original level by the fourth phase. In contrast, the actual violent arrest rate remained high during the second phase, in spite of the sharp drop in modeled risk, but it dropped to slightly below *a priori* risk during the third phase. Although the observed rate of violent recidivism increased again during the fourth phase, it did not increase as much as did the average *a priori* risk.

The relative reduction in violent recidivism rates between the second and third phases was probably not due to changes in the characteristics of participants, changes in revocation rates, or changes in local arrest rates. Changes in the characteristics of participants between the second and third phases were such that the average risk of violent recidivism went up rather than down. The revocation rate increased between the first and second phases but remained constant thereafter, and in any case, the analysis controlled for actual time at risk in the community. And finally, though the precinct-level rates of reported violent crime declined substantially during this period, the rates of arrests for violent crimes for persons under age

21 in the youths' home communities were actually much higher during the third and fourth phases than they had been during the first and second phases.

The relative reduction in violent recidivism rates could have been due to improvements in the YLA program, improvements in the City Challenge program, unmeasured changes in the distribution of youth characteristics and circumstances, or some combination of these. However, measurement of risk factors was fairly comprehensive in relation to the coverage of formal risk assessment instruments in common use. Improvements in YLA implementation began much earlier and progressed more gradually than the observed change in violent recidivism rates, which occurred later and more abruptly. The largest improvements in City Challenge implementation occurred just prior to and coincident with the sharp drop in violent recidivism. Thus, among the most obvious explanations, the most plausible is that the relative reduction in violent recidivism rates was due primarily to improvements in the implementation of the City Challenge Intensive Aftercare Program.

Although it appears that improvements in the implementation of aftercare were accompanied by a relative reduction in violent recidivism, the absolute level of violent recidivism in the fourth phase was still high. Among youth released to aftercare from June 1, 1998 through June 30, 1999 (the most recent period included in this study), 31% were arrested for a violent offense and 60% were arrested for any crime within a year at risk.

The fidelity of program implementation was not systematically evaluated in this study. Thus, it is unclear whether the failure of the YLA-CCh program sequence to achieve lower recidivism rates was due to poor implementation of key components of the program, or whether, in principle, the program model is not an effective one for this population. A preliminary exploration of the latter question is incorporated in a study currently in progress, which is investigating whether the specific skills, values, and behavior patterns targeted in the YLA program are actually related to post-release recidivism, and whether the YLA program produces positive changes in the most influential factors.

References

Altschuler, D. M., & Armstrong, T. L. (1990). Intensive Community-Based Aftercare Programs: Assessment Report: U.S. Office of Juvenile Justice and Delinquency Prevention.

Altschuler, D. M., & Armstrong, T. L. (1991). Intensive aftercare for the high-risk juvenile parolee: Issues and approaches in reintegration and community supervision.

Altschuler, D. M., & Armstrong, T. L. (1994). Intensive aftercare for high-risk juveniles: A community care model.: U.S. Office of Juvenile Justice and Delinquency Prevention.

Altschuler, D. M., & Armstrong, T. L. (1996). Aftercare not afterthought: Testing the IAP model. Juvenile Justice, III(1), 15-22.

Altschuler, D. M., & Armstrong, T. L. (1997). Reintegrating high-risk juvenile offenders from secure correctional facilities into the community. Corrections Management Quarterly, 1(4), 75-83.

Andrews, D. A., Zinger, I., Hoge, R. D., Bonta, J., Gendreau, P., & Cullen, F. T. (1990). Does correctional treatment work? A clinically relevant and psychologically informed meta-analysis.

Chavaria, F. R. (1997). Probation and cognitive skills. Federal Probation, 61(2), 57-60.

Elliott, D. S., Wilson, W. J., Huizinga, D., Sampson, R. J., Elliott, A., & Rankin, B. (1996). The effects of neighborhood disadvantage on adolescent development. Journal of Research in Crime and Delinquency, 33(4), 389-426.

Frederick, B. (1999). Factors Contributing To Recidivism Among Youth Placed With The New York State Division For Youth. Albany, NY: New York State Division of Criminal Justice Services.

Gendreau, P., Little, T., & Goggin, C. (1996). A meta-analysis of the predictors of adult recidivism: What works! Criminology, 34, 575-607.

Gendreau, P., & Ross, R. R. (1987). Revivication of rehabilitation: Evidence from the 1980s. Justice Quarterly, 4(3), 349-407.

Glick, B., & Goldstein, A. P. (1987). Aggression replacement training. Journal of Counseling and Development, 65, 356-362.

Hosmer, D. W., & Lemeshow, S. (1989). Applied Logistic Regression. New York: Wiley.

Inciardi, J. A. (1996). A corrections-based continuum of effective drug abuse treatment. Washington, D.C.: National Institute of Justice, Office of Justice Programs, U.S. Department of Justice.

Izzo, R. L., & Ross, R. R. (1990). Meta-analysis of rehabilitation programs for juvenile delinquents: A brief report. Criminal Justice & Behavior, 17(1), 134-142.

Lipsey, M. W. (1992a). The effect of treatment of juvenile delinquents: Results from meta-analysis. In F. Losel & D. Bender & T. Bliesener (Eds.), Psychology and law: International perspectives (pp. 131-143). New York: Walter de Gruyter.

Lipsey, M. W. (1992b). Juvenile delinquency treatment: A meta-analytic inquiry into the variablity of effects. In T. D. Cook & H. Cooper & D. S. Cordray & H. Hartmann & L. V. Hedges & R. J. Light & T. A. Louis & F. Mosteller (Eds.), Meta-analysis for explanation: A casebook (pp. 83-127). New York: Russell Sage.

Lipsey, M. W., & Wilson, D. B. (1998). Effective intervention for serious juvenile offenders: A synthesis of research. In R. Loeber & D. P. Farrington (Eds.), Serious & violent juvenile offenders: Risk factors and successful interventions. Thousand Oaks, CA: US Sage.

MacKenzie, D. L., & Rosay, A. B. (1996). Correctional boot camps for juveniles. In American Correctional Association (Ed.), Juvenile and Adult Boot Camps. Laural, MD: ACA.

MacKenzie, D. L., Wilson, D. B., Armstrong, G. S., & Gover, A. R. (2001). The impact of boot camps and traditional institutions on juvenile residents: Perceptions, adjustment, and change. Journal of Research in Crime and Delinquency, 38(3), 279-313.

Mulvey, E. P., Arthur, M. W., & Reppucci, N. D. (1993). The prevention and treatment of juvenile delinquency: A review of the research. Clinical Psychology Review, 13, 133-167.

Palmer, T. (1991). The effectiveness of intervention: Recent trends and current issues. Crime and Delinquency, 37(3), 330-346.

The Right Site. (1996). Easy Analytic Software, Inc.

The Right Site. (1999). Easy Analytic Software, Inc.

Sampson, R., & Lauritsen, J. L. (1994). Violent victimization and offending: Individual- and community-level risk factors. In A. Reiss & J. Roth (Eds.), Understanding and Preventing Violence: Volume 3, Social Influences (pp. 1-114). Washington, D.C.: National Academy Press.

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and violent crime: A multlevel study of collective efficacy. Science, 277(15), 918-924.

Simcha-Fagan, O., & Schwartz, J. E. (1986). Neighborhood and delinquency: an assessment of contextual effects. Criminology, 24(4), 667-703.

U.S. Department of Health and Human Services. (2001). Youth Violence: A Report of the Surgeon General. Rockville, MD.: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Injury Prevention and Control; Substance Abuse and Mental Health Services Administration, Center for Mental Health Services; and National Institutes of Health, National Institute of Mental Health.

Veysey, B. M., & Messner, S. F. (1999). Further testing of social disorganization theory: An elaboration of Sampson and Groves's "Community Structure and Crime". Journal of Research in Crime and Delinquency, 36(2), 156-174.

Whitehead, J. T., & Lab, S. P. (1989). A meta-analysis of juvenile correctional treatment. Journal of Research in Crime and Delinquency, 26(3), 276-295.

Yoshikawa, H. (1994). Prevention as cumulative protection: Effects of early family support and education on chronic delinquency and its risks. Psychological Bulletin, 115(1), 28-54.

Appendix A

Construction and Validation of Risk Control Models

A number of statistical models were developed relating weighted combinations of risk factors to selected outcome measures. The purpose of these models was to control for youth characteristics and circumstances in analyses of the differences in outcomes across historical phases in the development and refinement of the YLA/CCh program sequence.

A total of eight regression models were developed, each tailored for use in analyses of a specific outcome measure. Six logistic regression models were estimated, one for each of the following dichotomous recidivism measures:

C any arrest within 365 days at risk;
C felony arrest within 180 days at risk;
C violent felony (VFO) arrest within 180 days at risk;
C violent felony (VFO) arrest within 365 days at risk;
C VFO vs. nonVFO for first arrest within 365 days at risk; and
C VFO arrest within 180 days at risk that resulted in conviction for any offense.

In addition, ordinary least squares (OLS) regression models were developed to control for youth characteristics and circumstances in analyses of the following two outcome measures:

C seriousness (statutory rank) of first arrest within 365 days at risk; and
C number of days to first arrest within 365 days at risk.

Throughout this report, these statistical models are called risk control models. The probability of recidivism, predicted seriousness of first arrest, or predicted number of days to first arrest generated for an individual youth by the applicable model is called the *a priori* risk. For some of the data displays, *a priori* risk was averaged across individuals within program development phase to yield an expected value reflecting the distribution of the characteristics and circumstances of youth released to aftercare during each phase.

The remainder of this appendix identifies the domains covered by measures of youth characteristics and circumstances, identifies the sources of data used in the construction of scales in each domain, explains the scale development process, discusses the reliability and validity of the resulting scales, explains how risk control models were constructed, discusses the predictive validity of the models, and explains how the models were used to test the statistical significance of differences in outcomes among program phases.

Domains of Characteristics and Circumstances

Data collection was guided by a review of literature on factors associated with the risk of delinquency, examination of existing risk scales, and practical considerations such as the retrospective availability of relevant data and the difficulty of collecting potentially available data. Data collection yielded a large number of individual items in nine general domains: prior record, youth attitudes and behavior, home environment, academic achievement, crime and arrest rates at the precinct level, housing and population characteristics at the census tract level, youth's race, youth's age, and length of stay in residential confinement.

All but two of these domains (age and length of stay) were represented by multiple measures. A total of 29 measures were candidates for inclusion in the construction of risk control models. The measures are listed and grouped by *a priori* domain in Table A1.

Nine of the 29 measures listed in Table A1 consisted of a single item each. The remaining measures were constructed as composites of 2 to 15 items each. The development of composite scales is explained in a later section of this appendix.

Data Sources

OCFS

Data obtained from a central data base maintained by the Office of Children and Family Services (OCFS) included race and ethnicity, age at first release to community supervision, prior arrest and adjudication record, and reading and math achievement test scores. The OCFS data base also included the service setting histories needed to determine admission and discharge dates, length of residential stay prior to first release to community supervision, revocation of community supervision, time spent in residential confinement following revocation, and total time at risk for rearrest in the community during the study followup period.

Program staff at the Youth Leadership Academy retrieved information from youth case files concerning prior placements, court history, age at first out-of-home placement, youths' use of firearms, substance abuse, problems in school, antisocial history, violent behavioral history, youths' attachment to family, criminogenic family characteristics, negative relationships with family members, and whether youths were victims of abuse or neglect.

NYPD

The New York City Police Department provided counts of arrests and reported crimes disaggregated by precinct for each year from 1992 through 1998. Within precinct, counts of reported crime were further disaggregated by crime type, and arrest counts were disaggregated by crime type and age of arrestees. These data were used to construct one set of controls for changes in community-level risk of arrest.

RSITE

Additional community-level measures were also derived from population and household characterstics by census tract obtained from a commercially-available market research data base (The Right Site, 1996; The Right Site, 1999). The specific indicators used in scale construction are listed in Table A2.

Recidivism Measures

Dates and crime types of post-release arrests and convictions were obtained from two sources. Adult criminal histories (arrests and convictions on or after a youth's sixteenth birthday) and portions of juvenile histories were obtained from the statewide criminal history repository maintained by the New York State Division of Criminal Justice Services. Additional information about juvenile histories was obtained from the New York City Corporation Counsel's office, which is the presentment agency for juvenile arrests processed in family court in New York City. These data were used to construct the following recidivism measures:

- the occurrence of an arrest for any criminal offense within 180 days elapsed,
- any arrest within 180 days at risk,
- any arrest within 365 days elapsed,
- any arrest within 365 at risk,
- felony arrest with 180 days elapsed,
- felony arrest within 180 days at risk,
- felony arrest within 365 days elapsed,
- felony arrest within 365 days at risk,
- arrest for a violent felony offense (VFO) within 180 days elapsed,
- VFO arrest within 180 days at risk,
- VFO arrest within 365 days elapsed,
- VFO arrest within 365 days at risk,
- statutory rank of first arrest within 180 days at risk,
- statutory rank of first arrest within 365 days at risk,
- number of arrests within 365 days at risk,
- number of felony arrests within 365 days at risk,
- number of VFO arrests within 365 days at risk,
- the number of days from release to first arrest within 180 days elapsed,
- number of days from release to first arrest within 180 days at risk,
- number of days from release to first arrest within 365 days elapsed,
- number of days from release to first arrest within 365 days at risk,
- whether first arrest (given any arrest) was VFO or not,
- any arrest within 180 days at risk that resulted in a conviction for any offense,
- felony arrest within 180 days at risk that resulted in a conviction for any offense,
- VFO arrest within 180 days at risk that resulted in conviction for any offense,
- whether first arrest (given any arrest) resulted in any conviction,
- whether first felony arrest (given any felony arrest) resulted in any conviction, and
- whether first VFO arrest (given any VFO arrest) resulted in any conviction.

Item Selection and Scale Construction

Items were selected for inclusion in scale construction and subsequent analyses based on a combination of *a priori* and empirical considerations. Age, race, and length of stay in residential confinement were included arbitrarily for their obvious policy relevance and compatibility with other research. Other candidate items were grouped into broad domains (youth prior record, youth attitudes and behavior, academic achievement, home environment, precinct-level items, and tract-level items) then considered one group at a time. The process of recoding, screening, and combining community-level items was somewhat different than the process for person-level items.

Person-level Items

Most of the person-level variables had a limited number of discrete values. The frequency distributions of such items were examined, and variables were recoded as necessary to reduce gaps and low-frequency cells in the distributions and–to the extent possible–produce monotonic or interpretable bimodal relationships with the recidivism measures. Only one variable, the length of residential stay prior to first release, yielded a consistent bimodal relationship; that variable was recoded so that a value of zero reflected the optimum length of stay and

values greater than zero reflected varying degrees to which youth spent less than optimum or more than optimum time in residential confinement. Unless otherwise noted, all variables were recoded so that higher values reflected higher risk of recidivism for a majority of the recidivism measures. (See Table A2 for additional information about the items ultimately included in the construction of risk control models.)

Correlations were calculated between each recoded item and selected recidivism measures. Items were retained for further analysis if they exhibited zero-order correlations of .05 or greater with several recidivism measures. In addition, some items exhibiting near-zero correlations with recidivism were retained for further analysis if they were commonly included in published risk assessment instruments or consistently identified as risk factors in prior research. However, both in this study and in previous research (Frederick, 1999), it was found that many of the variables found to be indicators of risk in more general populations did not predict recidivism in the highly selected population of male juvenile delinquents placed in state custody.

Each group of items retained for further analysis was subjected to alpha factor analysis with varimax and/or equimax rotations. Items with high loadings on stable factors were grouped together in subscales for further testing. The internal consistency reliability (Cronbach's coefficient alpha) was computed for each subscale. In some cases, interpretation of the factor analytic results was used to add additional items to subscales in an effort to increase subscale reliability. Some items were added and others were deleted on the basis of the reliability analyses.

For each subscale, a series of regression analyses were conducted to determine whether items within a subscale should be differentially weighted and whether the optimum weighting would differ substantially across different recidivism measures. As a result of these analyses, a few items were given double weighting, but most subscales were computed as simple sums of equally weighted items. In a few cases, subscales were split or alternative versions were retained so that key items could be allowed to take on different weights in the analysis of different recidivism measures. Also, a few items were retained both as individual indicators and as components of subscales when it appeared that the variance they held in common with other subscale items was important for some purposes but their unique variances were important for other purposes. Table A2 gives further details about the construction of each of the subscales (labeled "variables" in Table A2) that were ultimately used in developing risk control models.

Community-level Items

The items used to construct precinct-level and tract-level scales had value ranges that varied dramatically from one measure to another. In order to prevent items with large raw score values from unduly dominating composite scales, all of the items measured at the precinct level or tract level were converted to z-scores prior to combining items into composite scales.

The z-scores for precinct-level items were calculated with precinct-by-year as the unit of count, using the means and standard deviations of precinct-level measures calculated across the 532 combinations of 7 years (1992 - 1998) by 77 precincts. A z-score calculated in this fashion represents the number of standard deviations that a given precinct-year lies above or below the mean for all precinct-years (in New York City). A similar process was used to construct z-scores among 286 census tracts for data from the 1990 census.

Factor analyses, subscale construction, and reliability analyses for the precinct-level measures and tract-level measures were conducted maintaining the precinct-by-year and tract-level units of count, respectively. Subscale totals in the z-score metric were calculated simply by adding the z-scores for component items for each geographic unit.

Community-level subscale totals in the z-score metric were then attached to person-level records. For the precinct-level measures, these subscale totals reflect the crime and arrest rates prevailing in the precinct to which a youth was released in the year the youth was released, relative to other precincts and other years in New York City. (Because the source data were only available for the period 1992 - 1998, youth released to aftercare during the first half of 1999 were assigned the precinct-by-year subscale totals derived from 1998 data.) For the tract-level measures, the subscale totals reflect population and housing characteristics in the census tract to which the youth was released, relative to other census tracts in New York City in 1990.

Community-level characteristics were attached to person-level records in order to permit construction of statistical models at the person-level. Although it would have been theoretically more appropriate to apply multi-level statistical models, the necessary statistical software was not available to the researchers at the time the analyses had to be conducted. In any case, the 323 youth included in the final analyses were distributed across a large number of census tracts and precinct-years. Preliminary analyses showed that the number of persons per unit was small (most often 1 or 2; and 5 or less in almost all cases) and regression diagnostics suggested there were negligible problems with the lack of independence among observations that can arise in such circumstances.

Reliability

Twenty of the 29 variables that were candidates for inclusion in the risk control models were composite scales based on 2 or more items. Internal consistency reliabilities (Cronbach's coefficient alpha) for the composite scales are displayed in Table A3. Thirteen of the scales had estimated reliabilities ranging from .70 to .95, a range generally considered adequate for research purposes. Another six scales had marginally adequate reliabilities ranging from .64 to .69. One of the scales, labeled Hostile Home, exhibited poor reliability (alpha = .50) and should be considered a weak measure of the underlying construct. (See table A2 for the items included in this scale.)

Nine of the variables that were candidates for inclusion in the risk control models were based on single items. Reading and math achievement scores were, of course, based on multi-item standardized tests, but only the total scores were available for these analyses. Such tests can be expected to have high reliability in the general population, but may be less reliable when used with the multi-problem delinquents typically placed in state custody. Age was based on verified date of birth and is expected to be highly reliable. Length of stay based on administrative records, precinct-level ratio of theft arrests to reported thefts, and tract-level population influx are also assumed to have relatively good reliability. The reliabilities are unknown for race and ethnicity judgments, or whether a youth was thought to be a victim of child neglect.

Validity

One way of assessing the validity of the measures developed as described above is to examine the extent to which interrelationships among the measures are consistent with what would be expected *a priori*. Table A1 lists general domains of risk factors suggested by prior risk assessment research and research on the influence of community-level factors. The table shows how the empirical clustering of measures developed for this study relates to the *a priori* grouping. A maximum likelihood factor analysis with varimax rotation yielded 10 reliable factors.

C   The two measures representing "race" (Black-NonHispanic and Black-Hispanic) formed one factor. Only two categories were necessary, because most of the remaining youth were Nonblack-Hispanic; there were only 10 Nonblack-NonHispanic youth in the study cohort.

C   Three of the four variables intended to measure prior record formed another factor. However, the fourth measure, Problems in Prior Placement, clustered more strongly with Age at First Release than with the remaining prior record measures.

C   All of the variables intended to measure youth attitudes and behavior loaded on a single factor, along with Optimum Length of Stay and Family Attachment.

C   Three of the four variables intended to measure home environment (Criminogenic Family, Victim of Neglect, and Hostile Home) loaded on a single factor. The fourth measure, Family Attachment, related more strongly to the Attitudes and Behavior group, as noted above. The Family Attachment measure included ratings of parental control, family support, and "street history," all of which would be expected to have direct connections to youth behavior.

C   Years Behind Grade Level in Reading and Years Behind Grade Level in Math formed a single factor.

C   Precinct-level measures of local crime and arrest rates separated into two distinct factors. One factor represented rates of relatively more serious crime and arrests. The other represented rates of less serious arrests and ratios of arrests to reported crime (intended as a measure of the intensity of law enforcement activity in a precinct-year)

C   Tract-level characteristics separated into two distinct factors. One factor represented tract-level economic status and cultural activity. The other consisted of two measures that were intended to reflect neighborhood instability. However, subsequent analyses suggested these measures might actually have served to identify neighborhoods experiencing population growth connected with positive development. One of the tract-level measures, Singles and Service Workers, related more strongly to the serious crime and arrests factor than to the economic status and cultural activity factor.

Two potentially relevant factors that were not well-represented among the measures developed for this study were mental health problems and peer relationships. The OCFS data base included intake assessment items reflecting mental health problems, but preliminary analyses showed an implausibly sharp increase in the incidence of mental health problems in recent years, and OCFS staff suggested the increase might be an artifact of the fact that assessments for male juvenile delinquents are now done at a reception center that specializes in intake processing. Because the questions addressed in this study pertained specifically to historical changes, and therefore cases from the time period before the reception center was introduced could not be ignored, the mental health items were excluded from analysis.

The data collected from paper case files included staff judgments about youths peer relationships and gang involvement, but these items did not exhibit the expected correlations with recidivism. Because the relevance of these factors is well-established in prior literature, it is most likely that they were not reliably measured in the present study. One item relating to "street history" (a 5-point rating ranging from "family-oriented" to "lives on the street") was included in the Family Attachment scale.

Table A4 displays the bivariate correlations between selected recidivism measures and the 29 variables that were candidates for inclusion in risk control models. Considered one at a time, some of these theoretically relevant risk factors failed to exhibit significant correlations with any of the selected recidivism measures. Moreover, different risk factors appeared to be important for predicting different recidivism measures, and a few risk factors had significant relationships with recidivism in the counter-intuitive direction.

To cite just one example, a high rating for the variable Hostile Home was associated with a lower-than-average probability of arrest for a serious offense within the first 6 months following release to aftercare. Several such counter-intuitive relationships were also found in an earlier study examining a similar population of youth placed in New York State custody (Frederick, 1999). It is conjectured that these counter-intuitive relationships may be due to the fact that the youth placed in state custody constitute a highly selective subset of the general population. Specifically, nearly all of the youth in this study were already "proven recidivists" with multiple risk factors. Among such youth, it may be that those whose delinquency had been supported by one set of risk factors may be more likely to eventually desist from further criminality than those whose delinquency had been supported by another set of risk factors. To continue the above example, juveniles whose delinquency had been largely attributable to hostile home environments may be more likely to desist following a period of out-of-home placement and aftercare than those whose delinquency was sustained by antisocial attitudes that had persisted in spite of a supportive home environment.

Construction of Risk Control Models

Construction of risk control models and multivariate analyses of changes in recidivism across historical phases in program development were limited to the eight recidivism measures identified on page A1. As previously explained, logistic regression (LR) analyses were conducted to model the probability of recidivism for the six dichotomous measures. For the two remaining measures, ordinary least squares (OLS) regressions were conducted to model the outcomes. Variables were selected from among the 29 candidate variables by backward elimination for both the LR models and the OLS models. Variable selection proceeded as follows:

C   All 29 candidate variables were entered initially. The resulting models are called the "full models" in subsequent discussions.

C   Variables were eliminated from the full models in stepwise fashion using the backward elimination method. Following a suggestion by Hosmer and Lemeshow (1989), fairly liberal criteria (p # .20) were adopted for initially retaining variables in the models. The resulting models are called the "minimum models" in subsequent discussions.

C   Minimum models were examined to determine whether all of the empirical factors identified in Table A1 were represented. Variables were added as necessary to insure that each factor was represented by at least one variable. If no variable was retained for a given factor by the initial backward elimination, a variable representing that factor was added to the model. The variable added was the one that had survived the backward stepwise process the longest.

C   A series of interaction terms were tested for possible inclusion in the models. Interactions were selected for inclusion by the forward stepwise method and were retained only if they were statistically significant at the .10 level or better. For each interaction included in the model, the corresponding main effects were retained regardless of their level of significance. The models resulting from this step and the previous step are called the "mixed models" in subsequent discussions.

C   Mixed models were examined for possible problems with multicollinearity, and variables were removed from the models as necessary. The resulting models are called "final models" in subsequent discussions. The regression coefficients for each of the eight final models are displayed in Tables A6a and A6b.

Validation of Risk Control Models

The predictive validity of the risk control models was evaluated by examining the values of R^2 (for the OLS models) or Nagelkerke Pseudo-R^2 (for the LR models), and by calculating the bivariate correlations between predicted and observed values for the study cohort overall, split halves of the study cohort, and separately for youth released during each of the four historical phases of program development. These values are displayed in Table A5 for the full model, minimum model, mixed model, and final model for each of the eight modeled recidivism measures.

The Nagelkerke Pseudo-R^2 values indicate moderately strong predictive power for all of the final LR models. The R^2 values for the both of the final OLS models indicate fairly weak predictive power. The correlations between predicted and observed values show excellent stability of predictive power across split halves and relatively good stability across historical phases for most of the modeled recidivism measures.

Tests of Contrasts Among Program Phases

The statistical significance of changes in recidivism across program phases, controlling for changes in youth characteristics and circumstances, was tested by adding contrasts among program phases to the risk control models. Fairly liberal criteria were applied, in that effects were highlighted if they were statistically significant at the .10 level or better. Two sets of orthogonal contrasts were planned *a priori*:

C   The first set of *a priori* contrasts was based on the idea that achieving stable implementation of the City Challenge aftercare program by the end of Phase 2 and introducing enhanced family services through the Children's Aid Society at the beginning of Phase 3 might have resulted in a significant difference between the outcomes achieved before that transition and the outcomes achieved after that transition. A set of orthogonal contrasts compared Phases 1 and 2 combined versus Phases 3 and 4 combined, Phase 1 versus Phase 2, and Phase 3 versus Phase 4. The differences between the first two phases combined versus the last two phases combined were not statistically significant for any of the eight recidivism measures modeled. However, relative to values expected on the basis of significant risk factors, recidivism rates were *higher* in Phase 2 than in Phase 1 for felony arrest within 180 days at risk, VFO arrest within 180 days at risk, VFO if any arrest in 365 days at risk, and VFO arrest resulting in conviction. These results reflect the fact that average modeled risk levels declined between Phase 1 and Phase 2, while actual recidivism rates remained high.

C   The second set of *a priori* contrasts examined the possibility that continual improvements in YLA and City Challenge operations might have produced gradual reductions in recidivism rates. This was operationalized as a set of orthogonal contrasts testing for linear, quadratic, and cubic trends. However, the linear trend was not statistically significant for any of the recidivism measures modeled. The quadratic trend was significant for VFO arrest given any arrest within 365 days at risk and for VFO arrest that resulted in conviction. The cubic trend was significant for felony arrest and VFO arrest within 180 days at risk. These results reflect the fact that, *relative to expectation*, the probability of rearrest for serious crimes peaked during the second phase then declined or stabilized at a lower (relative) level during Phases 3 and 4.

The unanticipated increase in recidivism (relative to expectation) that occurred between Phase 1 and Phase 2 rendered the *a priori* contrasts less relevant than expected. Therefore, a third set of contrasts was introduced to test the significance of individual phase-to-phase differences. These tests necessarily replicated the significant increases between Phase 1 and Phase 2 found in the first set of contrasts described above, but also found significant decreases in recidivism between Phase 2 and Phase 3 for two measures–felony arrest within 180 days at risk and VFO arrest within 180 days at risk. Following those decreases, there were no significant increases or decreases in recidivism rates (relative to modeled expectation based on youth characteristics and circumstances) between Phase 3 and Phase 4. Because these contrasts were introduced *post-hoc* and also are not statistically independent of one another, the results should be interpreted conservatively. Nevertheless, the results suggest that violent recidivism may have been reduced by improvements in implementation of the City Challenge aftercare program and/or introduction of enhanced family services through arrangements with the Children's Aid Society.

Table A1: Variables Used in Developing Risk Control Models

A Priori Group	Empirical Factor	Variable Name	Variable Label
Race	9	blknhisp	Black-Non Hispanic
	9	blkhisp	Black-Hispanic
Age	10	tranage	Age at First Release
Prior Record	10	failooh	Problems in Prior Placement
	8	chronic	Chronic Involvement
	8	minorv	History of Low-Level Violent Crime
	8	viocrim	Violent Criminal History
Length of Stay	3	t2mu	Optimum Length of Stay
Attitudes and Behavior	3	disrup_i	Disruptive Substance Abuse
	3	school_r	Problems in School
	3	behav_i	Antisocial Attitudes
	3	violence	Violent Behavioral History
Home Environment	3	famatt_r	Family Attachment
	4	crimfam	Criminogenic Family
	4	neglect	Victim of Neglect
	4	hoshom_r	Hostile Home
Reading and Math Achievement	7	rlagimp	Years Behind Grade Level in Reading
	7	mlagimp	Years Behind Grade Level in Math
Local Crime and Arrest Rates	1	ythnf_az	Precinct-level Nonfelony Arrest Rates
	1	totfrtiz	Precinct-level Felony Arrest Ratio
	1	thftrtiz	Precinct-level Theft Arrest Ratio
	5	arrest_z	Precinct-level Felony Arrest Rates
	5	offens_z	Precinct-level Serious Crime Rates
1990 Census Tract Characteristics	5	stable_z	Tract-level Singles and Service Workers
	2	income_z	Tract-level Economic Status 1
	2	malinc_z	Tract-level Economic Status 2
	2	cultur_z	Tract-level Culture Index
	6	move_z	Tract-level Population Influx (1985-1990)
	6	pcmv_89z	Tract-level Population Influx (1989-1990)

Table A2: Details of Scales Used in Developing Risk Control Models

Variable Name	Variable Label	Item Labels	Sources	Comments
blknhisp	Black-NonHispanic	*Black-NonHispanic* (dichotomy)	OCFS	Most of the remaining cadets were NonBlack-Hispanic. There were negligible numbers of cadets who were NonBlack-NonHispanic.
blkhisp	Black-Hispanic	*Black-Hispanic* (dichotomy)	OCFS	
tranage	Age at First Release	*Age at First Release* (in years)	OCFS	Calculated as of the date of first release from the YLA to community supervision.
failooh	Problems in Prior Placement	*Failure in Prior Out-of-Home Placement, Recoded* (dichotomy: 0 or 1)	YLA	Simple sum of three items. Missing values replaced by "0" (zero) for *Failure in Prior Out-of-Home Placement*, *Recoded* and *Prior Voluntary Agency Placement, Recoded*.
		Prior Voluntary Agency Placement, Recoded (dichotomy: 0 or 1)	YLA	
		Prior Escape Attempts (dichotomy: 1 or 2)	YLA	
chronic	Chronic Involvement	*Court History* (a 5-value rating ranging from "no evidence of prior troubles with police or courts" to "chronic criminality," collapsed to 4 values for analysis.)	YLA	Weighted sum of 9 items. The dichotomy *Age at First Out-of-Home Placement* and the dichotomy *Prior State Placement* were each multiplied by 2 prior to summation.
		Age at First Out-of-Home Placement (a dichotomy identifying youth who were 13 years old or younger at the time of first out-of-home placement)	YLA	
		Prior Movement Pattern (a dichotomy identifying youth transferred to the YLA from another OCFS facility at the same security level)	OCFS	
		Prior State Placement (a dichotomy identifying youth with a prior placement to DFY/OCFS)	OCFS	
		Number of Prior Offenses (the number of prior offenses recorded in the OCFS data base, collapsed to 3 values for analysis)	OCFS	
		Prior Drug Offenses (a dichotomy indicating one or more prior drug offenses recorded in the OCFS data base)	OCFS	
		Number of Prior Findings (the number of prior family court adjudications recorded in the OCFS data base, collapsed to 3 values for analysis)	OCFS	
		Prior Out-of-Home Placements (the number of prior out-of-home placements)	YLA	
		Prior Record Seriousness (the sum of the statutory-class ranks for prior offenses recorded in the OCFS data base, collapsed to 4 values for analysis.)	OCFS	

Table A2: Details of Scales Used in Developing Risk Control Models (continued)

Variable Name	Variable Label	Item Labels	Sources	Comments
minorv	History of Low-Level Violent Crime	*Number of Misdemeanors Against Persons* (recoded into 3 categories)	OCFS	Simple sum of 5 items. Raw counts for constituent items were collapsed into categories to combine low frequency cells and reduce positive skew prior to summation.
		Number of Misdemeanors (recoded into 3 categories)	OCFS	
		Number of Current Assault Offenses (number of assault offenses associated with the current placement)	OCFS	
		Number of Historical Assault Offenses	OCFS	
		Number of Historical Weapons Offenses (recoded into 3 categories)	OCFS	
viocrim	Violent Criminal History	*Felonies Against Persons* (a dichotomy identifying youth with 1 or more current felonies against persons)	OCFS	Weighted sum of 4 items. The dichotomy *Felonies Against Persons* and the dichotomy *Historical Violent Non-Sex Crimes* were each multiplied by 2 prior to summation.
		Number of Current Robberies	OCFS	
		Number of Historical Robberies	OCFS	
		Historical Violent Non-Sex Crimes (a dichotomy)	OCFS	
armedoff	Crime with firearm	*Crime with Firearm* (a dichotomy indicating whether youth was ever alleged to have committed a crime while armed with a firearm)	YLA	
t2mu	Optimum Length of Stay	*Optimum Length of Stay* (time from YLA entry to first release, coded in 3 categories: 150-179 days ÷ 0 120-149 days OR 180-209 days ÷ 1 < 120 days OR > 209 days ÷ 2)	OCFS	A value of zero reflects an optimum length of stay and higher values reflects non optimum lengths of stay.
disrup_i	Disruptive Substance Abuse	*Disruption Due to Alcohol* (a dichotomy identifying youth whose use of alcohol was judged to be disrupting normal functioning)	YLA	Simple sum of 2 items. Missing values for individual items were replaced by the respective mean values.
		Disruption Due to Drug Use (a dichotomy identifying youth whose drug use was judged to be disrupting normal functioning)	YLA	

Table A2: Details of Scales Used in Developing Risk Control Models (continued)

Variable Name	Variable Label	Item Labels	Sources	Comments
school_r	Problems in School	*Academic Performance* (a 5-point rating ranging from "honor student" to "failing most classes")	YLA	Sum of 6 items. Raw sum ranged from 4 to 20 but was collapsed to values 1 through 5 for analysis. Missing values for individual items were replaced by the respective mean values.
		School Behavior (a 5-point rating ranging from "no behavioral problems in school" to "incorrigible")	YLA	
		School Attendance (a 3-point scale ranging from "no unexcused absences" to "truancy petition filed")	YLA	
		Truancy (a 5-point scale ranging from "committed to school" to "totally out of school")	YLA	
		Disobedient in School (dichotomy)	YLA	
		Disruptive in School (dichotomy)	YLA	
behav_i	Antisocial Attitudes	*Accepts Responsibility* (a 3-point rating ranging from "accepts responsibility for anti-social behavior" to "proud of anti-social behavior")	YLA	Sum of 5 items. Missing values for individual items were replaced by the respective mean values.
		Empathy (a 3-point rating ranging from "has empathy" to "no empathy")	YLA	
		Motivational Focus (a 5-point rating ranging from "driving interest" to "no faith in future")	YLA	
		Prosocial Values (a 4-point rating ranging from "primarily positive" to "resents prosocial values")	YLA	
		Respect for Authority (a 4-point rating ranging from "respects most authority figures" to "hostile to authority")	YLA	
violence	Violent Behavioral History	*Threatened Students* (dichotomy)	YLA	Simple sum of 6 items. Missing values for individual items were replaced by 0.
		Assaulted Students (dichotomy)	YLA	
		Threatened School Staff (dichotomy)	YLA	
		Assaulted School Staff (dichotomy)	YLA	
		Threatened Shooting (dichotomy)	YLA	
		Threatened Stabbing (dichotomy)	YLA	

Table A2: Details of Scales Used in Developing Risk Control Models (continued)

Variable Name	Variable Label	Item Labels	Sources	Comments
famatt_r	Family Attachment	*Parental Control* (a 3-point rating ranging from "usually obeys" to "consistently disobeys or is hostile")	YLA	Sum of 3 items. Missing values for *Parental Control* were replaced by the mean value. The raw sum ranged from 3 to 13 but was collapsed to values 1 through 4 for analysis. Reverse coded so that a lower value reflects more family attachment and a higher value indicates less family attachment.
		Family Support (a 5-point rating ranging from "structured" to "rejecting")	YLA	
		Street History (a 5-point rating ranging from "family oriented" to "lives on the street")	YLA	
crimfam	Criminogenic Family	*Family Drug Problems* (dichotomy)	YLA	Simple sum of 3 items.
		Family Involved in Crime (dichotomy)	YLA	
		Victim of Neglect (dichotomy; same as below)	YLA	
neglect	Victim of Neglect	*Victim of Neglect* (a dichotomy indicating that youth was alleged to be the victim of neglect)	YLA	Analyzed both as a distinct item and as a component of the Criminogenic Family scale.
hoshom_r	Hostile Home	*Negative Relationship with Mother* (dichotomy)	YLA	Simple sum of 15 items. Raw sum ranged from 1 through 5 but was collapsed to values 1 through 3 for analysis.
		Negative Relationship with Stepmother (dichotomy)	YLA	
		Negative Relationship with Foster Mother (dichotomy)	YLA	
		Negative Relationship with Grandmother (dichotomy)	YLA	
		Negative Relationship with Female Sibling (dichotomy)	YLA	
		Negative Relationship with Other Female (dichotomy)	YLA	
		Negative Relationship with Father (dichotomy)	YLA	
		Negative Relationship with Stepfather (dichotomy)	YLA	
		Negative Relationship with Foster Father (dichotomy)	YLA	
		Negative Relationship with Grandfather (dichotomy)	YLA	
		Negative Relationship with Male Sibling (dichotomy)	YLA	
		Negative Relationship with Other Male (dichotomy)	YLA	
		Runaway (dichotomy)	YLA	
		Victim of Physical or Sexual Abuse (dichotomy)	YLA	
		Parents are Hostile (dichotomy indicating most extreme rating on a 4-point scale)	YLA	

Table A2: Details of Scales Used in Developing Risk Control Models (continued)

Variable Name	Variable Label	Item Labels	Sources	Comments
rlagimp	Years Behind Grade Level in Reading	Years Behind Grade Level in Reading	OCFS	Calculated as approximate age-appropriate grade level (age - 5) minus Woodcock-Johnson reading grade equivalent score (truncated to a whole number)
mlagimp	Years Behind Grade Level in Math	Years Behind Grade Level in Math	OCFS	Calculated as approximate age-appropriate grade level (age - 5) minus Woodcock-Johnson math grade equivalent score (truncated to a whole number)
mgeimp	Math Grade Equivalent	Woodcock-Johnson Math Grade Equivalent Score	OCFS	
rgeimp	Reading Grade Equivalent	Woodcock-Johnson Reading Grade Equivalent Score	OCFS	
ythnf_az	Precinct-level Nonfelony Arrest Rates	Violation Arrests per 100K Under 25 (z-score)	NYPD	Sum of 8 z-scores. Z-scores calculated among the 532 observations for 76 precincts by each of 7 years. Z-scores summed to total scale value for each of the 532 precinct by year observations prior to attaching a scale value to each person according to the year and precinct to which youth was released
		Violation Arrests per 100K Ages 21-24 (z-score)	NYPD	
		Violation Arrests per 100K Ages 16-20 (z-score)	NYPD	
		Misdemeanor Arrests per 100K Under 25 (z-score)	NYPD	
		Misdemeanor Arrests per 100K Ages 21-24 (z-score)	NYPD	
		Misdemeanor Arrests per 100K Ages 16-20 (z-score)	NYPD	
		Violation Complaint Arrests per 100K All Ages (z-score)	NYPD	
		Violation Summons Arrests per 100K All Ages (z-score)	NYPD	
thfrtiz	Precinct-level Total Felony Arrest Ratio	Precinct-level Total Felony Arrest Ratio (z-score)	NYPD	Ratio of number of felony arrests to number of reported felony crimes, by precinct-year. Z-scores calculated among the 532 observations for 76 precincts by each of 7 years (see above).
totfrtiz	Precinct-level Theft Arrest Ratio	Robbery Ratio (z-score for the ratio of the number of robbery arrests divided by number of reported robberies)	NYPD	Sum of 4 precinct-by-year z-scores (see above)
		Burglary Ratio (z-score for the ratio of the number of burglary arrests to the number of reported burglaries)	NYPD	
		Grand Larceny Ratio (z-score for the ratio of the number of larceny arrests to the number of reported grand larcenies)	NYPD	
		Other Felony Ratio (z-score for the ratio of the number of "other" felony arrests to the number of reported "other" felonies)	NYPD	

Table A2: Details of Scales Used in Developing Risk Control Models (continued)

Variable Name	Variable Label	Item Labels	Sources	Comments
arrest_z	Precinct-level Felony Arrest Rates	*Felony Assault Arrests per 100K population (z-score)*	NYPD	Sum of 6 precinct-by-year z-scores (see above)
		Murder/Non Negligent Manslaughter Arrests per 100K Population (z-score)	NYPD	
		Robbery Arrests per 100K Population (z-score)	NYPD	
		Felony Arrests per 100K Under 16 (z-score)	NYPD	
		Felony Arrests per 100K Ages 16-20 (z-score)	NYPD	
		Felony Arrests per 100K Ages 21-24 (z-score)	NYPD	
offens_z	Precinct-level Serious Crime Rates	*Felony Assault Offenses per 100K population (z-score)*	NYPD	Sum of 3 precinct-by-year z-scores (see above)
		Burglary Offenses per 100K population (z-score)	NYPD	
		Robbery Offenses per 100K population (z-score)	NYPD	
stable_z	Tract-level Singles and Service Workers	*Percent Service Workers (z-score)*	RSITE	Sum of 4 z-scores. Z-scores calculated among the 286 census tracts for the year 1990. Z-scores summed to total scale value for each tract prior to attaching a scale value to each person according to the tract to which the youth was released.
		Percent Population Black (z-score)	RSITE	
		Percent of Males Never Married (z-score)	RSITE	
		Percent of Females Never Married (z-score)	RSITE	
income_z	Tract-level Economic Status 1	*Percent of Household Income <15K (z-score)*	RSITE	Sum of 5 tract-level z-scores (see above).
		Percent of Household Income 15-25k (z-score)	RSITE	
		Median Gross Rent (z-score reversed)	RSITE	
		Percent of Occupied Units with no Vehicles (z-score)	RSITE	
		Median Value Owner Occupied (z-score reversed)	RSITE	

Table A2: Details of Scales Used in Developing Risk Control Models (continued)

Variable Name	Variable Label	Item Labels	Sources	Comments
malinc_z	Tract-level Economic Status 2	*Percent of Household Income <25K (z-score)*	RSITE	Sum of 5 tract-level z-scores (see above). The variable '*Percent of Males Ages 10-19 (z-score)* ' utilized data for the year 1991, as it was not available in the Right Site data base for this specific age group in 1990.
		Percent of Population 25+ with Education < hs (z-score)	RSITE	
		Median Household Income (z-score reversed)	RSITE	
		Percent of Males Employed (z-score reversed)	RSITE	
		Percent of Males Ages 10-19 (z-score)	RSITE	
cultur_z	Tract-level Culture Index	*Percent of Occupied Structures with 2 Units (z-score reversed)*	RSITE	Sum of 4 tract-level z-scores (see above). The variable '*Culture Index*' was collected at the county level and attributed to the tracts by the developers of the Right Site data base.
		Culture Index (z-score)	RSITE	
		Percent of Blue Collar Workers (z-score reversed)	RSITE	
		Percent of Units Occupied by Renters (z-score)	RSITE	
move_z	Tract-level Population Influx (1985-1990)	*Percent Moved Between 1989-1990 (z-score)*	RSITE	Sum of 2 tract-level z-scores (see above).
		Percent Moved Between 1985-1988 (z-score)	RSITE	
pcmv89z	Tract-level Population Influx (1989-1990)	*Percent Moved Between 1989-1990 (z-score)*	RSITE	Analyzed both as a distinct item and as a component of the Tract-level Population Influx (1985-1990) scale.

A15

Table A3: Reliabilities, Value Ranges, and Trends Across Program Development Phases for Variables Used in Developing Risk Control Models

Variable Name	Variable Label	Number Of Items	Reliability (Alpha)	Range		Mean (standard deviation)				
				Min	Max	Overall	Phase 1	Phase 2	Phase 3	Phase 4
blknhisp	Black-Non Hispanic	1	n/a	0.00	1.00	0.70 (0.46)	0.69 (0.46)	0.61 (0.49)	0.67 (0.47)	0.77 (0.42)
blkhisp	Black-Hispanic	1	n/a	0.00	1.00	0.12 (0.33)	0.11 (0.32)	0.15 (0.36)	0.13 (0.34)	0.12 (0.33)
tranage	Age at First Release	1	n/a	14.00	17.00	15.68 (0.79)	15.55 (0.76)	15.65 (0.74)	15.72 (0.92)	15.84 (0.73)
failooh	Problems in Prior Placement	3	.69	1.00	4.00	1.33 (0.73)	1.20 (0.53)	1.46 (0.89)	1.28 (0.66)	1.46 (0.88)
chronic	Chronic Involvement	9	.73	2.00	23.00	7.48 (3.66)	7.24 (3.37)	6.89 (3.42)	7.56 (3.27)	8.05 (4.32)
minorv	History of Low-Level Violent Crime	4	.70	1.00	8.00	2.42 (1.71)	2.54 (1.82)	2.00 (1.38)	2.28 (1.37)	2.55 (1.89)
viocrim	Violent Criminal History	3	.83	2.00	12.00	4.45 (2.72)	4.29 (2.80)	4.39 (2.47)	5.10 (2.80)	4.27 (2.64)
armedoff	Crime with firearm	1	n/a	0.00	1.00	0.36 (0.48)	0.31 (0.46)	0.17 (0.38)	0.36 (0.48)	0.52 (0.50)
t2mu	Optimum Length of Stay	1	n/a	0.00	2.00	0.96 (0.72)	1.01 (0.66)	0.78 (0.70)	0.82 (0.79)	1.09 (0.75)
disrup_i	Disruptive Substance Abuse	2	.69	0.00	2.00	0.82 (0.83)	0.62 (0.76)	0.74 (0.77)	1.03 (0.89)	0.98 (0.84)

Table A3: Reliabilities, Value Ranges, and Trends Across Program Development Phases for Variables Used in Developing Risk Control Models (continued)

Variable Name	Variable Label	Number Of Items	Reliability (Alpha)	Range		Mean (standard deviation)				
				Min	Max	Overall	Phase 1	Phase 2	Phase 3	Phase 4
school_r	Problems in School	5	.69	1.00	5.00	3.49 (1.24)	3.40 (1.24)	3.41 (1.48)	3.44 (1.22)	3.68 (1.13)
behav_i	Antisocial Attitudes	5	.78	5.00	20.00	13.97 (3.20)	14.21 (2.98)	13.65 (3.09)	12.77 (3.74)	14.61 (2.95)
violence	Violent Behavioral History	6	.76	0.00	6.00	2.38 (1.78)	1.90 (1.74)	2.33 (1.89)	2.33 (1.85)	3.09 (1.52)
famatt_r	Family Attachment	3	.65	1.00	4.00	2.93 (0.56)	2.99 (0.55)	2.80 (0.62)	2.80 (0.57)	2.99 (0.50)
crimfam	Criminogenic Family	3	.80	0.00	3.00	1.41 (1.26)	1.11 (1.20)	1.39 (1.31)	1.80 (1.18)	1.58 (1.30)
neglect	Victim of Neglect	1	n/a	0.00	1.00	0.40 (0.49)	0.32 (0.47)	0.46 (0.50)	0.48 (0.50)	0.42 (0.50)
hoshom_r	Hostile Home	15	.63	1.00	3.00	2.02 (0.79)	1.70 (0.73)	1.96 (0.76)	2.23 (0.74)	2.33 (0.76)
rlagimp	Years Behind Grade Level in Reading	1	n/a	-8.00	11.00	2.80 (3.59)	2.81 (3.92)	1.09 (4.03)	3.28 (3.30)	3.33 (2.81)
mlagimp	Years Behind Grade Level in Math	1	n/a	-6.00	9.00	3.18 (2.06)	3.15 (1.95)	2.41 (2.55)	3.28 (1.97)	3.54 (1.92)
mgeimp	Math Grade Equivalent	1	n/a	1.50	16.90	7.18 (2.09)	7.37 (2.08)	8.19 (2.70)	6.92 (1.68)	6.58 (1.76)
rgeimp	Reading Grade Equivalent	1	n/a	1.20	16.90	8.10 (3.75)	8.07 (3.99)	9.80 (4.22)	7.60 (3.35)	7.64 (3.18)

Table A3: Reliabilities, Value Ranges, and Trends Across Program Development Phases for Variables Used in Developing Risk Control Models (continued)

Variable Name	Variable Label	Number Of Items	Reliability (Alpha)	Range		Mean (standard deviation)				
				Min	Max	Overall	Phase 1	Phase 2	Phase 3	Phase 4
ythnf_az	Precinct-level Nonfelony Arrest Rates	8	.95	-8.86	17.22	1.84 (6.30)	-1.68 (5.56)	2.98 (6.82)	3.89 (6.28)	4.63 (4.66)
thftrtiz	Precinct-level Theft Arrest Ratio	4	.67	-4.23	8.69	1.77 (2.90)	0.00 (2.45)	2.52 (2.57)	3.14 (2.85)	2.88 (2.45)
totfrtiz	Precinct-level Total Felony Arrest Ratio	1	n/a	-1.09	3.90	0.65 (0.95)	0.13 (0.77)	0.86 (1.00)	1.02 (0.96)	1.02 (0.81)
arrest_z	Precinct-level Felony Arrest Rates	6	.92	-7.12	12.65	1.15 (4.05)	2.36 (4.31)	1.29 (4.61)	0.51 (3.65)	-0.13 (3.10)
offens_z	Precinct-level Serious Crime Rates	3	.84	-3.69	6.31	0.07 (2.05)	1.59 (2.08)	-0.43 (1.74)	-0.90 (1.27)	-1.10 (1.09)
stable_z	Tract-level Singles and Service Workers	4	.64	-4.36	7.50	1.99 (1.99)	1.96 (2.11)	1.71 (2.13)	2.10 (1.80)	2.10 (1.91)
income_z	Tract-level Economic Status 1	5	.88	-4.96	10.69	3.54 (3.62)	3.54 (3.55)	3.59 (4.33)	3.03 (3.65)	3.84 (3.31)
malinc_z	Tract-level Economic Status 2	5	.91	-6.20	10.07	3.86 (3.56)	3.92 (3.49)	3.71 (3.95)	3.05 (3.60)	4.38 (3.36)
cultur_z	Tract-level Culture Index	4	.70	-5.09	5.21	1.68 (2.15)	1.57 (2.23)	1.67 (2.81)	1.73 (2.06)	1.80 (1.70)
move_z	Tract-level Population Influx (1985-1990)	3	.77	-6.17	4.62	0.10 (2.15)	0.42 (2.33)	-0.36 (1.90)	0.12 (2.02)	-0.11 (2.08)
pcmv89z	Tract-level Population Influx (1989-1990)	1	n/a	-1.88	2.44	-0.09 (0.86)	-0.01 (0.95)	-0.26 (0.71)	-0.05 (0.75)	-0.15 (0.85)

Table A4: Correlations Between Selected Outcomes and Variables Used in Developing Risk Control Models

Pearson Correlation

	Any arrest within 365 days at risk	Felony arrest within 180 days at risk	Violent arrest within 180 days at risk	Violent arrest within 365 days at risk	VFO if any arrest in 365 days at risk	Statutory rank of 1st arrest within 365 days at risk	Violent felony arrest resulting in conviction	Days from release to 1st arrest within 365 days elapsed
Black-Non Hispanic	.127*	.064	.112*	.180*	.178*	.054	.075	.033
Black-Hispanic	-.046	-.053	-.018	-.032	-.012	-.019	-.063	.031
Age at First Release	-.004	-.100	-.060	-.074	-.109	-.096	.079	.011
Problems in Prior Placement	.031	-.041	-.074	-.074	-.135	-.086	.000	-.049
Chronic Involvement	.167**	.148**	.162**	.154**	0.09	0.109	0.034	-0.103
History of Low-Level Violent Crime	-.021	.030	.073	.110	.188*	.081	-.085	.090
Violent Criminal History	.090	.067	.138*	.056	.010	.214**	.085	.031
Optimum Length of Stay	.031	.095	.109	.086	.105	.055	.112	-.149*
Disruptive Substance Abuse	.006	-.037	-.090	-.091	-.142	-.117	-.052	.026
Problems in School	.065	.025	-.021	.035	-.001	.054	-.071	.092
Antisocial Attitudes	.201**	.130*	.141*	.168*	.095	-.013	.064	-.046
Violent Behavioral History	.154**	.045	.030	.101	.026	-.104	.001	.099
Family Attachment	.207**	.170**	.091	.087	-.046	.116	-.040	-.148*
Criminogenic Family	.089	.052	-.042	.065	.026	.010	-.089	.068
Victim of Neglect	.152**	.032	-.046	.077	-.008	-.046	-.120	.159*
Hostile Home	-.059	-.124*	-.164**	-.045	-.019	-.103	-.197**	.137
Years Behind Grade Level in Reading	-.052	-.050	-.048	-.069	-.063	-.071	.034	.077
Years Behind Grade Level in Math	-.014	-.097	-.080	-.085	-.119	-.020	-.047	.128
Precinct-level Nonfelony Arrest Rates	.067	.061	.002	-.021	-.084	.061	-.011	.003
Precinct-level Total Felony Arrest Ratio	.045	.039	-.076	-.084	-.161*	.001	-.087	-.001
Precinct-level Theft Arrest Ratio	-.040	-.038	-.125*	-.152**	-.201**	-.018	-.133	.041
Precinct-level Felony Arrest Rates	.072	.092	-.021	-.024	-.095	.179*	.033	-.048
Precinct-level Serious Crime Rates	.061	.099	.041	.074	.063	.198**	.101	-.118
Tract-level Singles and Service Workers	.094	.057	.060	.108	.088	.052	.121	-.022
Tract-level Economic Status 1	.064	.104	.060	.012	-.036	.083	.074	-.118
Tract-level Economic Status 2	.030	.107	.041	-.011	-.042	.036	.048	-.122
Tract-level Culture Index	.094	.099	.093	.054	.005	.094	.053	-.050
Tract-level Population Influx (1985-1990)	-.095	.044	.024	-.056	-.006	-.044	-.045	-.178*
Tract-level Population Influx (1989-1990)	-.101	-.070	-.055	-.136*	-.128	-.047	-.183**	-.054

*   Correlation is significant at the 0.05 level (2-tailed)
**   Correlation is significant at the 0.01 level (2-tailed)

Table A5: Correlations Between Predicted and Observed Outcomes Overall and Within Subgroups

Dependent Measure	Model	R-Square*	Point-biserial Correlations Between Predicted and Observed						
			Overall	Split halves		Program Phase			
				Odd	Even	Phase1	Phase2	Phase3	Phase4
any365r : Any arrest in 365 days at risk	full	.280	.46	.53	.40	.36	.50	.56	.55
	min	.248	.43	.48	.38	.37	.46	.54	.45
	mixed	.318	.49	.52	.46	.38	.58	.59	.55
	final	.314	.49	.52	.45	.39	.59	.57	.53
fel180r : Felony arrest in 180 days at risk	full	.263	.44	.48	.39	.42	.45	.41	.48
	min	.245	.42	.46	.38	.43	.40	.36	.45
	mixed	.326	.49	.51	.48	.56	.54	.35	.45
	final	.317	.49	.50	.47	.54	.54	.32	.48
vfo180r : VFO arrest in 180 days at risk	full	.326	.49	.48	.49	.47	.38	.62	.53
	min	.302	.47	.45	.49	.47	.38	.68	.47
	mixed	.352	.51	.49	.53	.50	.47	.63	.55
	final	.347	.51	.47	.54	.50	.49	.68	.53
vfo365r : VFO arrest in 365 days at risk	full	.289	.46	.52	.40	.54	.46	.33	.44
	min	.252	.43	.47	.38	.48	.43	.26	.44
	mixed	.330	.50	.53	.48	.61	.48	.46	.38
	final	.337	.50	.53	.47	.61	.47	.42	.41
vifa365r: VFO vs. nonVFO for 1st arrest in 365 days at risk	full	.315	.49	.51	.47	.55	.46	.29	.58
	min	.268	.44	.41	.49	.53	.45	.20	.48
	mixed	.492	.63	.69	.59	.73	.62	.60	.49
	final	.472	.61	.64	.59	.76	.60	.46	.43
rank12r : Statutory rank of 1st arrest in 365 days at risk	full	.178	.43	.43	.42	.42	.34	.35	.45
	min	.136	.37	.32	.42	.32	.36	.33	.32
	mixed	.167	.41	.38	.43	.34	.39	.38	.45
	final	.164	.41	.36	.46	.37	.36	.37	.39
vfo_con : Violent felony arrest resulting in conviction	full	.517	.69	.73	.67	.68	.85	.75	.65
	min	.378	.51	.63	.36	.39	.79	.68	.56
	mixed	.433	.54	.58	.47	.51	.82	.58	.57
	final	.378	.51	.63	.36	.39	.79	.68	.56
tff365e : N of days to 1st arrest in 365 days elapsed	full	.244	.49	.45	.54	.40	.52	.66	.44
	min	.212	.46	.42	.50	.39	.38	.68	.36
	mixed	.175	.42	.36	.48	.37	.26	.65	.33
	final	.169	.41	.36	.47	.37	.27	.64	.32

* Nagelkerke Pseudo R-Square for any365r, fel180r, vfo180r, vfo365r, vifa365r, vfo_con.

Table A6a: Risk Control Model Main Effects Coefficients for Predicting 8 Selected Outcome Measures
(With Contrasts Among Program Phases Excluded)

Potential Control Variables	Selected Outcome Measures							
	Any arrest within 365 days at risk	Felony arrest within 180 days at risk	Violent arrest within 180 days at risk	Violent arrest within 365 days at risk	VFO if any arrest in 365 days at risk	Statutory rank of 1st arrest within 365 days at risk	Violent felony arrest resulting in conviction	Days from release to 1st arrest within 365 days elapsed
Constant	-2.463	1.890	-6.151	-2.953	-1.490	2.248	-6.558	163.823
Black-Non Hispanic	.446		1.140*	.048	-1.527			
Black-Hispanic			-.425	1.049*	1.340*			
Age at First Release		-.320*						
Problems in Prior Placement		-.375	-.558*	-.489**	-.900**	-.221		
Chronic Involvement	.159**	.083*	.119*	.127**	-.176			-3.489*
History of Low-Level Violent Crime	-.136		-.100	-.219	.366**			8.660**
Violent Criminal History			.111*			.166**	.240**	
Optimum Length of Stay		-.799	.497*				.702	-25.282**
Disruptive Substance Abuse				-.301	-.481**	-.241		
Problems in School	-.235*		-.299*		-.026			6.552
Antisocial Attitudes			.178**	.103*	.208**		.206	
Violent Behavioral History	.288**			.177**				
Family Attachment	.854**	1.230**	.575			.453		
Criminogenic Family		.395*		.152		.240		-21.541**
Victim of Neglect	.679**	-.608				-.741*		74.164**
Hostile Home	-.410**	-1.284**	-.626**				-1.364**	13.071
Years Behind Grade Level in Reading								2.980
Years Behind Grade Level in Math		-.188**		-.121*				
Precinct-level Nonfelony Arrest Rates		-.023	.087**	.187**	.361**			
Precinct-level Total Felony Arrest Ratio	.894**	.672*						
Precinct-level Theft Arrest Ratio	-.143	-.036	-.261**	-.054			-.285**	
Precinct-level Felony Arrest Rates			-.082	-.117	-.424**			
Precinct-level Serious Crime Rates				.221	.953**	.183**		
Tract-level Singles and Service Workers				.064	.039		.292*	
Tract-level Economic Status 1		.025					.176*	
Tract-level Economic Status 2								
Tract-level Culture Index	.148*	.166	.308**	.132		-.012		-5.539
Tract-level Population Influx (1985-1990)	-.148	.253**	.203*		.131	.053	.409**	-12.266**
Tract-level Population Influx (1989-1990)		-.966**	-.676**	-.378*	1.129		-1.772**	13.508
Model R2 or Pseudo R2	.314	.317	.347	.337	.472	.153	.378	.169

* Effect is significant at the .10 level (2-tailed)
** Effect is significant at the .05 level (2-tailed)

Table A6b: Risk Control Model Interaction Coefficients for Predicting 8 Selected Outcome Measures
(With Contrasts Among Program Phases Excluded)

Potential Control Variables	Selected Outcome Measures							
	Any arrest within 365 days at risk	Felony arrest within 180 days at risk	Violent arrest within 180 days at risk	Violent arrest within 365 days at risk	VFO if any arrest in 365 days at risk	Statutory rank of 1st arrest within 365 days at risk	Violent felony arrest resulting in conviction	Days from release to 1st arrest within 365 days elapsed
Person-level								
History of Low-Level Violent Crime by Black-Hispanic								
History of Low-Level Violent Crime by Black-Non Hispanic			.665**	.417**				
Chronic Involvement by Black-Non Hispanic					.355**			
Optimum Length of Stay by Hostile Home		.602**						
Area-level by Person-level								
Tract-level Population Influx (1989-1990) by Problems in School					-.529**			
History of Low-Level Violent Crime by Precinct-level Felony Arrest Rates					-.066**			
Tract-level								
Tract-level Population Influx (1985-1990) by Tract-level Culture Index	.078**					-.054*		
Precinct-level								
Precinct-level Nonfelony Arrest Rates by Precinct-level Serious Crime Rates					.048**			
Precinct-level by Tract-level								
Precinct-level Nonfelony Arrest Rates by Tract-level Population Influx (1985-1990)					.043**			
Precinct-level Nonfelony Arrest Rates by Tract-level Singles and Service Workers				-.043**	-.075**			
Precinct-level Nonfelony Arrest Rates by Tract-level Culture Index		.066**						
Precinct-level Nonfelony Arrest Rates by Tract-level Economic Status 1		-.023**						
Precinct-level Theft Arrest Ratio by Tract-level Population Influx (1985-1990)			.082**					
Precinct-level Theft Arrest Ratio by Tract-level Culture Index	-.082**	-.120**		-.077**				
Precinct-level Total Felony Arrest Ratio by Tract-level Population Influx (1985-1990)	-.337**							
Model R2 or Pseudo R2	.314	.317	.347	.337	.472	.153	.378	.169

* Effect is significant at the .10 level (2-tailed)
** Effect is significant at the .05 level (2-tailed)

A22

Table A7a: Risk Control Model Main Effects Coefficients for Predicting 8 Selected Outcome Measures
(With Contrasts Among Program Phases Included)

Potential Control Variables	Selected Outcome Measures							
	Any arrest within 365 days at risk	Felony arrest within 180 days at risk	Violent arrest within 180 days at risk	Violent arrest within 365 days at risk	VFO if any arrest in 365 days at risk	Statutory rank of 1st arrest within 365 days at risk	Violent felony arrest resulting in conviction	Days from release to 1st arrest within 365 days elapsed
Constant	-2.691	1.956	-6.674	-3.602	-1.517	3.406	-7.852	171.421
Black-Non Hispanic	.489		1.302**	.255	-1.749			
Black-Hispanic			-.477	1.888*	1.541*			
Age at First Release		-.342*						
Problems in Prior Placement		-.462*	-.673**	-.465*	-.949**	-.169		
Chronic Involvement		.089*	.141**	.132**	-.206*			-3.667*
History of Low-Level Violent Crime	.157**		-.101**	-.163	.411**			9.455**
Violent Criminal History	-.127		.113**			.162**	.210	
Optimum Length of Stay		-.724	.552**				.854	-24.611**
Disruptive Substance Abuse				-.299	-.512**	-.172		
Problems in School	-.244*		-.349**					6.538
Antisocial Attitudes			.193**	.112**	.227**		.302*	
Violent Behavioral History	.313**			.200**				
Family Attachment	.887**	1.360**	.680					
Criminogenic Family		.432**		.160		.283		-22.548**
Victim of Neglect	.668**	-.711				-.695		75.023**
Hostile Home	-.368*	-1.291**	-.600**				-1.490**	10.206
Years Behind Grade Level in Reading								2.852
Years Behind Grade Level in Math		-.163**		-.080				
Precinct-level Nonfelony Arrest Rates		-.018	.101	.220**	.388**			
Precinct-level Total Felony Arrest Ratio	.940**	.673*		-.033				
Precinct-level Theft Arrest Ratio	-.132	-.083	-.312**				-.544**	
Precinct-level Felony Arrest Rates			-.096	-.157	-.451**			
Precinct-level Serious Crime Rates				.269	1.057**	.140*		
Tract-level Singles and Service Workers				.086	.071		.342**	
Tract-level Economic Status 1		.038					.298**	
Tract-level Economic Status 2								
Tract-level Culture Index	.148*	.170	.317**	.161*		.018		-5.212
Tract-level Population Influx (1985-1990)	-.147	.273**	.236*		.143	.081	.573**	-11.944**
Tract-level Population Influx (1989-1990)		-.984**	-.714**	-.369*	1.168		-2.091**	14.222
Model R2 or Pseudo R2	.320	.335	.374	.358	.494	.164	.447	.177

* Effect is significant at the .10 level (2-tailed)
** Effect is significant at the .05 level (2-tailed)

Table A7b: Risk Control Model Interaction Coefficients for Predicting 8 Selected Outcome Measures
(With Contrasts Among Program Phases Included)

Potential Control Variables	Selected Outcome Measures							
	Any arrest within 365 days at risk	Felony arrest within 180 days at risk	Violent arrest within 180 days at risk	Violent arrest within 365 days at risk	VFO if any arrest in 365 days at risk	Statutory rank of 1st arrest within 365 days at risk	Violent felony arrest resulting in conviction	Days from release to 1st arrest within 365 days elapsed
Person-level								
History of Low-Level Violent Crime by Black-Hispanic			.743**					
History of Low-Level Violent Crime by Black-Non Hispanic				.390**				
Chronic Involvement by Black-Non Hispanic					.404**			
Optimum Length of Stay by Hostile Home		.572**						
Area-level by Person-level								
History of Low-Level Violent Crime by Precinct-level Felony Arrest Rates					-.070**			
Tract-level Population Influx (1989-1990) by Problems in School					-.525**			
Tract-level								
Tract-level Population Influx (1985-1990) by Tract-level Culture Index	.076**					.066**		
Precinct-level								
Precinct-level Nonfelony Arrest Rates by Precinct-level Serious Crime Rates					.046**			
Precinct-level by Tract-level								
Precinct-level Nonfelony Arrest Rates by Tract-level Population Influx (1985-1990)					.042**			
Precinct-level Nonfelony Arrest Rates by Tract-level Singles and Service Workers				-.048**	-.086**			
Precinct-level Nonfelony Arrest Rates by Tract-level Culture Index		.067**						
Precinct-level Nonfelony Arrest Rates by Tract-level Economic Status 1		-.026**						
Precinct-level Theft Arrest Ratio by Tract-level Population Influx (1985-1990)			.089**					
Precinct-level Theft Arrest Ratio by Tract-level Culture Index	-.090**	-.118**		-.092**				
Precinct-level Total Felony Arrest Ratio by Tract-level Population Influx (1985-1990)	-.338**							
Model R2 or Pseudo R2	.320	.335	.374	.358	.494	.164	.447	.177

* Effect is significant at the .10 level (2-tailed)
** Effect is significant at the .05 level (2-tailed)

Table A7c: Risk Control Model Main Effects Coefficients for Predicting 8 Selected Outcome Measures
(With Contrasts Among Program Phases Included)

Potential Control Variables	Selected Outcome Measures							
	Any arrest within 365 days at risk	Felony arrest within 180 days at risk	Violent arrest within 180 days at risk	Violent arrest within 365 days at risk	VFO if any arrest in 365 days at risk	Statutory rank of 1st arrest within 365 days at risk	Violent felony arrest resulting in conviction	Days from release to 1st arrest within 365 days elapsed
A-Priori Contrasts								
Phases 1 & 2 v. Phases 3 & 4	.590	.302	1.523	1.346	.870	.881	-.143	-32.022
Phase 1 v. Phase 2	.193	1.104**	1.279**	.863	1.423**	-.041	2.713**	7.489
Phase 3 v. Phase 4	-.407	.272	.029	-.301	-.217	-.166	-1.758	-14.419
Repeated Contrasts								
Phase 1 v. Phase 2	.193	1.104**	1.279**	.863	1.423*	-.041	2.713**	7.489
Phase 2 v. Phase 3	-.188	-.839	-1.415**	-.954*	-1.038	-.337	-.406	19.476
Phase 3 v. Phase 4	-.407	.272	.029	-.301	-.217	-.166	-1.758	-14.419
Polynomial Contrasts								
Linear Trend	-.311	.172	-.389	-.476	-.119	-.440	.278	12.770
Quadratic Trend	-.300	-.416	-.625	-.582	-.820*	-.063	-2.235**	-10.954
Cubic Trend	.036	.683*	.925**	.552	.734	.104	.395	-10.249

* Effect is significant at the .10 level (2-tailed)
** Effect is significant at the .05 level (2-tailed)

SELECT LIST OF PUBLICATIONS

RELATED REPORTS

Validity of Commonly-Cited Risk and Protective Factors for Assessing Release Readiness Among Incarcerated Delinquents (November 2002), Bruce Frederick, Susan E. Eastman, Dina Roy, Andree Rose, and Hari Shiledar-Baxi, Bureau of Research and Evaluation. Presented at the 2002 American Society of Criminology Conference in Chicago,Illinois.

Evaluation Brief: The Juvenile Electronic Monitoring Project: The Use of Electronic Monitoring Technology on Adjudicated Juvenile Delinquents (February 2002), Thomas J. Harig, Ph.D, Bureau of Research and Evaluation.

Factors Contributing to Recidivism Among Youth Placed with the New York State Division for Youth (August 1999), Bruce Frederick, Bureau of Research and Evaluation.

Disproportionate Minority Confinement in New York State, Phase II: Assessment (January, 1997), James Nelson, Bureau of Research and Evaluation; Sharon Lansing, Bureau of Program and Policy Analysis.

Understanding Juvenile Fingerprinting In New York State: Procedures and Record Use (1996), Sharon Lansing, Bureau of Program and Policy Analysis.

OTHER DCJS PUBLICATIONS

Expanding the Offender Index of the New York State DNA Data Bank (January 2002), Bruce Frederick, James A. Gilmer, and David J. van Alstyne, Bureau of Research and Evaluation .

The First 100 Hits — Forensic-Offender Matches on the New York State DNA Data Bank (January 2002), James A. Gilmer and David J. van Alstyne, Bureau of Research and Evaluation.

2002 Directory of New York State Criminal Justice Agencies, Seventeenth Edition, Bureau of Statistical Services.

Federal Bureau of Investigation's Uniform Crime Reports v. National Incident Based Reporting: Comparison of Definitions (May 1999), Bureau of Statistical Services.

Comparison of Domestic Violence Reporting and Arrest Rates in New York State: Analysis of the 1997 and 2000 Domestic Incident Statistical Databases (May 2002) Adriana Fernandez-Lanier, PhD, Deborah J. Chard-Wierschem, PhD, and Donna Hall, PhD, Domestic Violence Research Unit.

New York State IBR Newsletter - Volume 6, No. 1, June 2002, Bureau of Statistical Services.

New York State 2001 Crime Data in the *Crime Trends* report.

1999 Crime and Justice Annual Report. Bureau of Statistical Services.

Visit our website at: http://criminaljustice.state.ny.us

New York State Division of Criminal Justice Services
Office of Justice Systems Analysis
Bureau of Research and Evaluation
4 Tower Place
Albany, NY 12203-3702