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An Outcome Evaluation of Minnesota's Challenge Incarceration Program

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Using a retrospective, quasiexperimental design, this study evaluates Minnesota's Challenge Incarceration Program (CIP), examining whether it has lowered recidivism and saved money. In addition to utilizing a lengthy follow-up period and multiple measures of recidivism and participation, a multistage sampling design was employed to create a control group that was not significantly different from the CIP group with respect to control variables. The results reveal that although CIP significantly reduced the time to reoffense, it did not have a significant effect when recidivism was measured as any return to prison. CIP reduced costs through a recidivism reduction, however, because when CIP offenders returned to prison, they stayed 40 fewer days than control group offenders because they were less likely to return for a new crime. Overall, the analyses show that CIP has saved Minnesota at least $6.2 million by providing early release to program graduates and reducing the time they later spend in prison.

Keywords: *boot camps; recidivism; cost-benefit analysis; correctional program evaluation*

Correctional boot camps first appeared in the United States in the early 1980s in Georgia and Oklahoma. A successor to the "shock probation" and "scared straight" (i.e., shock education) programs from the 1960s and 1970s, boot camps were initially based on the premise that military regimentation, strict discipline, and strenuous physical activity could jolt offenders

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into reforming their criminal ways. Moreover, by providing early release to program graduates, boot camps were also conceptualized as a means to help alleviate the problem of prison overcrowding.

Boot camps were thus widely perceived to be a tough intermediate sanction that offered the promise of significant cost savings by reducing recidivism and the size of prison populations. As a result, the boot camp concept gained a great deal of popular support during the 1980s and early 1990s. Indeed, by the mid-1990s, more than 100 boot camps were operating in federal, state, and local jurisdictions. Much of the growth occurred between 1990 and 1992, when at least 19 states first opened a boot camp (Camp & Camp, 1996, 2002).

Minnesota was one of the 19 states, for the state legislature mandated the Commissioner of Corrections to establish the Challenge Incarceration Program (CIP) in 1992. Although the earliest correctional boot camps contained little or no programming and aftercare for participants, Minnesota, such as a number of other states that implemented boot camps during the early 1990s, placed a much greater emphasis on rehabilitation during the creation and development of CIP. The enabling legislation stipulated, for example, that CIP would contain a 6-month institutional, or "boot camp," phase and two 6-month community phases in which offenders would be intensively supervised and required to participate in aftercare programming.

Although CIP has generally been well received in the state, the same cannot be said for boot camps nationwide. After reaching a peak in the mid-1990s, the number of boot camps operating in the United States has slowly declined. Most recently, the Federal Bureau of Prisons decided in January 2005 to close its 14-year-old boot camp program (i.e., the Intensive Confinement Center that operated in Pennsylvania, Texas, and California) that had, at one time, served more than 7,000 prisoners (Paulson, 2005).

Although some have attributed the decline to reported instances of physical and emotional abuse (Bottcher & Ezell, 2005), most have noted the failure of boot camp evaluations to demonstrate a reduction in offender recidivism. Of the more than 30 outcome evaluations since the 1980s, only a small minority have presented evidence showing a significant recidivism reduction among boot camp participants (Farrington et al., 2002; Jones, Olson, Karr, & Urbas, 2003; Kurlychek & Kempinen, 2006; MacKenzie & Souryal, 1994; Marcus-Mendoza, 1995). Although nearly every boot camp evaluation has examined offender recidivism, few have analyzed whether boot camps actually reduce costs. Despite the weak evidence regarding the ability of boot camps to lower recidivism, several studies have found significant reductions in prison beds and total costs (Clark, Aziz, & MacKenzie,

1994; Farrington et al., 2002; Jones et al., 2003; Marcus-Mendoza, 1995; State of New York, Department of Correctional Services, Division of Parole, 2005), whereas Austin and colleagues (2000) reported only modest savings.

The Present Study

Although it has been more than 14 years since CIP first opened in October 1992, it has yet to undergo a rigorous outcome evaluation. To this end, the present study evaluates CIP since its inception, focusing on two main questions: (a) Does CIP significantly reduce offender recidivism? and (b) Does CIP reduce costs?

Before examining these questions in more detail, the ensuing section describes CIP. Next, this study briefly reviews the boot camp and cost-benefit analysis literature, discusses the data and methods used to analyze recidivism, and presents the findings from the recidivism analyses. The methodology used for the cost-benefit analysis is then described, followed by a presentation of the results. This study concludes by discussing the implications of the findings for boot camps, in particular, and correctional program evaluations in general.

CIP: A Program Description

Consistent with the growing rehabilitative emphasis placed on boot camps that have opened since the early 1990s, CIP was created to be an intensive, structured, and disciplined program that not only protected public safety and punished offenders by holding them accountable, but also treated chemically dependent offenders and helped prepare them for successful reintegration into society. To meet these goals, CIP was designed to contain a 6-month institutional phase and two aftercare phases, each lasting at least 6 months. At 6 months, the institutional phase surpasses the national average of 4.6 months (Camp & Camp, 2002). Although data are not available on the lengths of aftercare for boot camps nationwide, it is unlikely that many exceed 12 months, the collective duration of Phases II and III. Thus, with three phases spanning a total of 18 months, CIP is arguably one of the longest boot camp programs in the country.

Unlike some boot camps in other states, where judges decide which offenders are eligible, Minnesota Department of Corrections (MDOC) staff determines which offenders will enter CIP by identifying those who meet

the admission standards and are willing to participate. When CIP was originally created, the statutory criteria excluded offenders who have a history of violent offenses, have a term of imprisonment greater than 4 years,[1] were admitted as a supervised release violator, or received a dispositional departure. In April 2000, the admission standards were modified by expanding the list of prohibited offenses,[2] excluding offenders with more extensive criminal and institutional discipline histories,[3] and including for consideration factors such as gang affiliation, victim impact, community concern, and lack of residential ties within Minnesota. In general, the admission standards have been developed to identify nonviolent drug and property offenders who are perceived to be good candidates for early release.[4]

After meeting the eligibility requirements, incarcerated offenders are later transferred to MCF (Minnesota Correctional Facility)-Willow River (males) or MCF-Togo (females), where they enter Phase I, the "boot camp" phase. Since October 1992, CIP has accepted a group, or squad, of offenders at one time each month. During Phase I, offenders undergo a rigorous 16-hr daily schedule during which they are expected to maintain a high level of program activity and discipline. As with most correctional boot camps, military drill and ceremony, rigorous physical training, and intensive manual labor are emphasized during Phase I. But in keeping with the rehabilitative emphasis of CIP, offenders also participate in a range of programming that includes critical thinking skills training, chemical dependency (CD) treatment, educational development, and transition planning. After successfully completing Phase I, offenders get released from MCF-Willow River (males) or MCF-Togo (females) and enter Phase II, the first of two community phases. Although in the community during Phase II, offenders are subject to intensive supervised release (ISR) conditions, which include contacting ISR agents daily, submitting to random drug and/or alcohol tests, maintaining full-time employment, abiding by assigned curfews, performing community service, and participating in aftercare programming.

After completing Phase II, offenders move on to Phase III, the final phase of CIP. During this phase, offenders remain in the community on ISR and are expected to maintain employment, perform community service and continue their participation in aftercare programming. Offenders are considered CIP graduates after they complete Phase III, at which point they are placed on regular supervised release until the expiration of their sentence.[5] However, if offenders voluntarily drop out or fail at any time during Phases I to III because of disciplinary reasons, they are required to serve the remainder of their term of imprisonment (i.e., two thirds of the pronounced sentence minus jail credit) plus the time spent in CIP in a Minnesota Correctional Facility.

The Boot Camp Literature

Since the early 1980s, there have been three generations of correctional boot camps in the United States (Parent, 2003). The earliest, or "first generation," boot camps were short in duration and stressed military discipline, physical training, and manual labor. In response to disappointing evaluations of these programs, second-generation camps began placing a greater emphasis on rehabilitation by incorporating therapeutic programming during the "boot camp" phase and intensively supervising program graduates. Evaluations of the second-generation camps have generally been more positive in that findings have indicated that boot camp participation increases offenders' self-esteem, lowers their anxiety levels, reduces their antisocial attitudes, and improves their problem-solving skills (Austin et al., 2000; Gover, 2005; Kempinen & Kurlychek, 2002; MacKenzie, Gover, Styve-Armstrong, & Mitchell, 2001). Nevertheless, most studies of second-generation camps have failed to demonstrate a reduction in offender recidivism (Aloisi & LeBaron, 2001; Austin et al., 2000; Austin, Jones, & Bolyard, 1993; Burns & Vito, 1995; Kempinen & Kurlychek, 2003; Stinchcomb & Terry, 2001), whereas others have found that the increased intensity of postrelease supervision can produce a higher rate of technical violations (MacKenzie & Souryal, 1994).

The most promising recidivism findings tend to be associated with "third-generation" boot camps, which generally provide therapeutic programming, intensive postrelease supervision, and aftercare services (Jones et al., 2003; Kurlychek & Kempinen, 2006; MacKenzie, Wilson, & Kider, 2001; Wells, Minor, Angel, & Stearman, 2006). In particular, several recent studies suggest that the provision of aftercare programming may be a critical link in helping explain why few evaluations have found a recidivism reduction. For example, in an evaluation of a juvenile boot camp, Wells and colleagues (2006) found that boot camp graduates recidivated at a significantly lower rate than a matched control group during the 4-month aftercare phase. Moreover, in an evaluation of Pennsylvania's Quehanna Motivational Boot Camp, Kurlychek and Kempinen (2006) found that boot camp graduates who received aftercare services were significantly less likely to be rearrested than a control group of graduates who were not provided aftercare. Although not every study that has evaluated a boot camp with aftercare has found a reduction in reoffending (e.g., Bottcher & Ezell, 2005; Zhang, 2000), the findings suggest, on balance, that providing a continuum of care from the institution to the community increases a boot camp's chances of reducing the extent to which program graduates recidivate.

The present study does not attempt to isolate the impact of either aftercare or intensive postrelease supervision on recidivism. Instead, community supervision and aftercare are conceptualized here as essential program components for an effective boot camp. Although there is clearly value to be gained from trying to better understand the effects that specific program components have on reoffending, it is, nevertheless, true that there are relatively few existing evaluations of rehabilitative boot camps that have provided both intensive community supervision and lengthy aftercare services (Kurlychek & Kempinen, 2006). Minnesota's CIP thus offers a rare opportunity to evaluate one of the few boot camps in the country that has emphasized rehabilitation, intensively supervised graduates, and provided extensive aftercare since its beginning.

Like many prior boot camp evaluations, this study uses a retrospective quasiexperimental design. This evaluation is different, however, from the majority of existing boot camp studies in several important ways. First, by examining boot camps over the span of one or, at most, a few years—often shortly after inception—most studies have been short-term evaluations of "immature" boot camps. In contrast, by examining CIP during its first 10 years of operation, this study is a relatively long-term evaluation of a "mature" boot camp. Second, on a similar note, the follow-up period for recidivism has, with few exceptions (Bottcher & Ezell, 2005; Zhang, 2000), been relatively brief, usually 3 years or less. At 7.2 years, the average follow-up period in this study is the second longest to date, trailing only Bottcher and Ezell (2005), whose average was 7.5 years. By tracking offenders over an extended period of time, this study provides a more robust assessment of the impact of boot camp participation on recidivism. Third, apart from a few studies (Kempinen & Kurlychek, 2006; MacKenzie, Souryal, Sealock, & Kashem, 1997; Zhang, 2000), most evaluations have used control groups that have been only roughly comparable to the experimental group. This study, on the other hand, uses a sampling technique to produce a carefully matched control group that is not significantly different from the CIP group with respect to the variables used in the statistical analyses. Fourth, although many evaluations have relied on a single measure of recidivism (usually rearrest or reconviction), this study uses four different measures—rearrest, reconviction, reincarceration for a new crime, and any return to prison (for either a new offense or a technical violation). Fifth, unlike most previous evaluations, this study includes program dropouts in the analyses. Finally, as discussed in the next section, this study is one of the few boot camp evaluations to include a cost-benefit analysis.

Cost-Benefit Analysis

Boot camps can, in theory, reduce prison bed space needs in two ways: (a) offering program graduates a reduction in time served and (b) decreasing the amount of time offenders spend in prison following release. The reduction in bed space needs can cut costs by not only lowering the expenses involved with clothing, feeding, and housing inmates, but also by averting the need for the expansion of existing prisons or the construction of new ones. Previous research indicates that boot camps are more likely to reduce costs when they target prison-bound offenders, function as an early-release mechanism, graduate a high rate of offenders, decrease recidivism, have larger program capacities, use less restrictive entrance criteria, and are relatively short in duration (MacKenzie & Souryal, 1994; Parent, 2003). Some of these program characteristics conflict with one another, however, as efforts to lower recidivism can militate against meeting the goal of reducing bed space needs, and vice versa. For example, lengthening a program to incorporate more therapeutic programming may help reduce recidivism, but it would also cut into the length of stay reduction, resulting in fewer bed spaces saved (Parent, 2003). Similarly, although expanding program capacity and softening the eligibility criteria might increase potential bed space savings by allowing more offenders to enter the boot camp, it may also lower the graduation rate through the admission of more high-risk offenders.

Of the boot camp evaluations that have performed cost-benefit analyses, most have focused on calculating the savings incurred from a reduction in time served for program graduates (Austin et al., 2000; Clark et al., 1994; Farrington et al., 2002; Marcus-Mendoza, 1995; State of New York, Department of Correctional Services, Division of Parole, 2005). Only two studies have tried to address the extent to which boot camps can reduce costs through a decrease in recidivism. For example, MacKenzie and Souryal (1994) generated prison bed savings estimates based on several different assumptions (as opposed to actual data) about the rate at which inmates would reoffend. In addition, Jones and colleagues (2003) attempted to account for recidivism in the cost savings analysis by deducting the amount of time served by technical violators from the overall cost savings. In the present study, however, we not only calculate the cost savings resulting from a discount in time served for program graduates, but we also use the data from the recidivism analyses to measure whether CIP decreased costs through a reduction in recidivism, which was defined as any return to prison (i.e., new offenses and technical violations).

In examining whether boot camps reduce costs, prior evaluations have generally identified the salient benefits that can be measured (e.g., prison beds saved because of early release), but have not included all of the relevant program costs, particularly the expenses involved with supervising program graduates. In this study, we include the costs resulting from both the incarceration of all Phase I participants and the supervision of Phase I completers. Moreover, consistent with the effort to avoid inflating CIP's cost savings, we use marginal costs in the cost-benefit analysis presented later. In contrast to fixed costs, which contain start-up costs associated with the construction and staffing of a prison, marginal costs include only food, clothing, medical, and other expenses that vary with the size of the inmate population. The choice of whether to use marginal or fixed costs depends on a key assumption one makes about the cost-benefit analysis. If the number of bed spaces saved is large enough to prevent the construction of a new prison, then fixed costs should be used. If not, then marginal costs should be used (Austin et al., 2000; Cohen, 2000; Lawrence & Mears, 2004).

This decision is not only a highly subjective one, but it is also a false dichotomy in that there are other options—besides construction or no construction—often available such as the expansion of existing facilities or the use of local jails or private prisons. Because the CIP population has historically represented about 1% of Minnesota's overall prison population, the number of bed spaces it has saved has never been large enough to prevent the construction of a new prison. Although we use marginal costs in our analyses, the findings shown later likely represent the most conservative cost savings estimate given that CIP's bed space savings might still be large enough to prevent the use of other measures besides new construction to deal with prison population growth.

Data and Method

In using a retrospective quasiexperimental design to compare the recidivism rates of CIP participants with a control group of offenders, this study examines all offenders who entered CIP from the time it opened, October 1992, through the end of June 2002. During this time, there were 1,347 offenders (1,216 male and 131 female) who entered CIP.[6] Given that Phase I of CIP lasts 6 months, nearly all of these offenders were released into the community by December 31, 2002. Similarly, the control group consists of offenders who were released from a MCF within a similar timeframe, January 1, 1993, to December 31, 2002.

Recidivism was operationalized as a rearrest, a felony reconviction, a return to prison for a new criminal offense (i.e., reimprisonment), and any return to prison (i.e., reincarceration because of a new crime or technical violation). It is important to emphasize that the first three recidivism measures contain only new criminal offenses, whereas the fourth measure is much broader in that it includes new crimes and supervised release violations.

For the first three recidivism measures, it was still necessary to account for supervised release violators in the recidivism analyses by deducting the amount of time spent in prison from their total at-risk period, or "street time." Failure to deduct time spent in prison as a supervised release violator would artificially increase the length of the at-risk periods for these offenders, particularly CIP participants, because they are generally subjected to more intense postrelease supervision (Bales, Bedard, Quinn, Ensley, & Holley, 2005). Therefore, the time that an offender spent in prison as a supervised release violator was subtracted from his or her "street" time (i.e., at-risk period), but only if it preceded a rearrest, felony reconviction, reincarceration for a new offense, or if the offender did not recidivate.

Operationalizing the concept of release is an important issue for the current study because it will have a bearing on how recidivism is measured and analyzed. To make the comparison among the experimental and control groups as even as possible, releases for the control group (i.e., the offenders who did not participate in CIP) are defined as the first instance in which they exit prison and are placed on some form of supervision such as supervised release, ISR, or work release. For the CIP group, releases are defined as any instance in which an offender has successfully completed Phase I of CIP (the institutional phase) and been released to the community. For those who fail during Phase I, their at-risk period begins when they are, like the control group, released to supervision from a MCF. Although offenders must complete Phases II and III to graduate from CIP and obtain the benefits of the term of imprisonment reduction, those who complete Phase I are, for the purposes of the recidivism analyses, considered program graduates because they are in the community during Phases II and III and, thus, have the opportunity to commit a new crime.

This study provides two different measures of boot camp participation. The first measure distinguishes between offenders who entered CIP (i.e., the experimental group) and those who did not (i.e., the control group). For this dichotomous variable, CIP participation was coded as 1, whereas the control group was coded as 0. The second measure, on the other hand, divides boot camp participation into three discrete categories: Phase I completers, Phase I failures, and the control group. For this measure, three dichotomous dummy

variables were created: Phase I completers (1 = *Phase I completers*, 0 = *Phase I failures and control group offenders*), Phase I failures (1 = *Phase I failures*, 0 = *CIP graduates and control group offenders*), and control group (1 = *control group*, 0 = *Phase I failures and completers*). The control group variable serves as the reference in the statistical analyses.

Arrest, conviction, and incarceration data were collected on offenders in both the experimental and comparison groups through December 31, 2005. The average follow-up period for the 2,902 offenders was 7.2 years, with a minimum of 3 years and a maximum of 13. Data on arrests and felony convictions were obtained electronically from the Minnesota Bureau of Criminal Apprehension (BCA), whereas incarceration data were derived from the MDOC's Correctional Operations Management System database. The main limitation with using these data is that they measure only arrests, felony convictions, or incarcerations that took place in the state of Minnesota. Because neither measure includes arrests, convictions, or incarcerations occurring in other states, the findings presented later likely underestimate the true rearrest, reconviction, and reincarceration rates for the offenders examined here. Still, there is little reason to believe, however, that the omission of these data would affect offenders in the experimental group more than those in the comparison group, and vice versa.

As discussed shortly, a multistage sampling design was used to carefully select a control group that is as similar to the CIP group as possible. The control group was gathered by first selecting all offenders who were released from a MCF between January 1, 1993, and December 31, 2002, the same release timeframe for the CIP group. The CIP offenders were first removed from this sample, leaving a total of 28,644 released offenders. Next, offenders who had been incarcerated for sex and other person crimes were excluded because inmates imprisoned for violent offenses are ineligible to participate in CIP, lowering the size of the sample to 17,644 released offenders. Furthermore, offenders who were discharged, as opposed to being placed on supervised or ISR, were also removed because CIP participants are released to supervision, resulting in a total of 16,096 released offenders.

The goal of the multistage sampling procedure is to create a comparison group of offenders that matches the CIP group as closely as possible for the control variables used in the recidivism analyses. The dependent variable in the analyses is whether an offender recidivates (rearrest, felony reconviction, reimprisonment for a new offense, or any return to prison) at any point from the time of release through December 31, 2005. The principal variable of interest, meanwhile, is CIP participation because the central purpose of these analyses is to determine whether CIP significantly lowers the recidivism

rates of its participants. The control variables included in the statistical model should therefore consist of those that might theoretically have an impact on whether an offender recidivates and, thus, might be considered a rival causal factor.

The following list contains the control variables used in this study and describes how they were created:

Offender sex: Dichotomized as *male* (1) or *female* (0).
Offender race: Dichotomized as *White* (1) or *minority* (0).
Offense type: Three dichotomous dummy variables were created to quantify offense type (i.e., the governing offense at the time of release).[7] The three variables were property offense (1 = *property offense*, 0 = *nonproperty offense*), drug offense (1 = *drug offense*, 0 = *nondrug offense*), and other offense (1 = *other offense*, 0 = *non-other offenses*). The other offense variable serves as the reference in the statistical analyses.
Metro area: A rough proxy of urban and rural Minnesota, this variable measures an offender's county of commitment, dichotomizing it into either *metro area* (1) or *greater Minnesota* (0). The seven counties in the Minneapolis–St. Paul metropolitan area include Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington. The remaining 80 counties were coded as non–metro area or greater Minnesota counties.
Length of stay: The number of months between admission and release dates.
Disciplinary history: The number of discipline convictions received during the term of imprisonment for which the offender was released.
Age at release: The age of the offender in years at the time of release based on the date of birth and release date.
Age at first arrest: The age of the offender in years based on the date of birth and first arrest date.
Age at first felony conviction: The age of the offender in years based on the date of birth and first felony conviction date.
Age at first prison commitment: The age of the offender in years based on the date of birth and first prison commitment date.
Prior arrests: The number of prior arrests, excluding the arrest that resulted in the offender's incarceration.
Prior felony convictions: The number of prior felony convictions, excluding the conviction or convictions that resulted in the offender's incarceration.
Prior prison commitments: The number of prior prison commitments, excluding the offender's current prison incarceration.

Previous boot camp research has suggested that the intensity of post-release supervision and aftercare programming are important factors with respect to recidivism. As noted earlier, CIP Phase I completers are intensively supervised during Phases II and III, the first 12 months following

release. Only 29 offenders in the control group, however, were released to intensive supervision. Instead, the vast majority was placed on work release or supervised release. As a result, it was not possible to include postrelease supervision as a control variable in the analyses because it was nearly perfectly collinear with program participation. Moreover, data were not available on the extent of aftercare services received by offenders in either group. The omission of these variables may be offset to some extent, however, by the relatively lengthy follow-up period used in this study. That is, if aftercare services and the intensity of postrelease supervision are significant predictors of recidivism, one might expect the beneficial impact to wear off over time, particularly after the first 12 months.

After violent offenders, CIP participants, and discharged offenders were removed from the control group, a multistage sampling design was used in which the control group was stratified by the control variables listed above. More specifically, at each stage, a simple random sample was drawn in proportion to the size of the strata (i.e., control variable) in the CIP population. For example, the first stage involved stratifying the control group by the offense type variable. Of the 1,347 CIP offenders in the experimental group, the offense type was drugs for 75%, property offenses for 21%, and other offenses for 4%. Accordingly, a simple random sample of the control group was drawn in which the offense type was drugs for 75% of the offenders in the sample, property for 21%, and other for 4%. This process was then repeated for most of the remaining control variables, resulting in a final control group sample of 1,555 offenders.[8]

As shown in Table 1, the multistage sampling technique was effective in producing a control group that is equivalent to the CIP population with respect to the control variables used in the recidivism analyses. Indeed, the results from an independent samples *t* test reveal that there are no statistically significant differences between the CIP and control groups for these control variables. Instead, the only statistically significant differences between the two groups are the rates at which they reoffended (i.e., rearrest, felony reconviction, and reincarceration for a new offense).

Of the boot camp evaluations that have used multivariate statistical methods, most have relied on binary logistic regression or Ordinary Least Squares regression. Only a few studies, however, have used survival analysis techniques to examine the recidivism rates of the experimental and comparison groups (Bottcher & Ezell, 2005; Kurlychek & Kempinen, 2006; MacKenzie, Brame, McDowall, & Souryal, 1995). In analyzing recidivism, survival analysis models are preferable in that they utilize time-dependent data, which are important in determining both whether and when offenders

Table 1
Comparison of CIP and Control Group Offenders

Characteristic	CIP	Control	*t* Test *p* Value
Percentage male	90.3	90.7	.670
Percentage White	54.6	54.0	.712
Offense type			
Percentage property	21.4	23.3	.221
Percentage drug	75.1	72.5	.125
Percentage other	3.6	4.2	.392
Percentage metro area	60.5	63.7	.074
Discipline convictions	2.4	2.6	.284
Age at release	30.3	30.4	.856
Age at first arrest	23.4	22.9	.063
Age at first conviction	25.3	25.8	.094
Age at first commitment	27.7	27.3	.160
Prior arrests	6.22	6.44	.414
Prior convictions	1.0	1.1	.228
Prior commitments	0.5	0.5	.223
Length of stay (months)	16.7	14.4	.058
Percentage rearrested	62.1	74.7	.000
Percentage reconvicted	32.3	46.4	.000
Percentage reimprisoned	21.7	34.4	.000
Percentage any return	47.6	47.0	.638
n	1,347	1,555	

Note: CIP = Challenge Incarceration Program.

recidivate. As a result, this study uses a Cox proportional hazards model to analyze the recidivism of the CIP and control groups.

The Cox proportional hazards model uses both time and status variables in estimating the impact of program participation on recidivism. For the analyses presented here, the time variable measures the amount of time from the date of release until the date of first rearrest, reconviction, reimprisonment, return to prison, or December 31, 2005, for those who did not recidivate. For offenders who returned to prison as supervised release violators, the time they spent in prison was deducted from their total survival time when (a) recidivism was defined as either a rearrest, felony reconviction or reimprisonment for a new crime, (b) the supervised release return preceded a rearrest, reconviction, or reimprisonment, or (c) the offender did not have a rearrest, reconviction, or reimprisonment. The status variable used in the analyses was one of the four recidivism variables mentioned above, for example, rearrest, reconviction, reimprisonment for a new crime, and any return to prison.

Recidivism Results

The findings reveal that the rearrest, felony reconviction, and reimprisonment rates were lower for CIP offenders compared to those in the control group. For example, at the end of the follow-up period, 62% of the 1,347 CIP offenders were rearrested following release, 32% were reconvicted, and 22% were reincarcerated for a new crime. In comparison, 75% of the control group offenders were rearrested, 46% were reconvicted, and 34% were reincarcerated. Not surprisingly, Phase I completers had the lowest recidivism rates, as 60% were rearrested, 31% were reconvicted, and 20% were reimprisoned.

Unlike the above findings, offenders in the control and CIP groups returned to prison (whether for a new crime or for a technical violation) at virtually the same rate. The similar rate of return to prison is because of the fact that CIP offenders (both Phase I completers and dropouts) were more than twice as likely to return for a technical violation than the control group, who was, in turn, much more likely to return for a new crime. Indeed, 73% of the control group offenders returned to prison because of a new crime as opposed to 46% of CIP offenders. In contrast, 54% of the CIP offenders returned to prison for a technical violation compared to 27% of the control group.

When CIP offenders recidivated with a new crime, how did the severity of their offenses compare to that of the control group? Because the arrest and felony conviction data obtained from the BCA do not always include offense type information, reincarceration data are used to address this question. The results indicate that the control group was more likely to be reimprisoned for a crime against a person (19%) than CIP offenders (11%). Phase I dropouts, however, were more likely to recidivate with a property offense (42%), whereas Phase I completers were more likely to reoffend with a drug offense (44%).

The results presented thus far suggest that CIP offenders are, compared to the control group, less likely to reoffend with a new criminal offense. But are the lower reoffense rates for CIP offenders because of their participation in CIP? Or is the reoffense reduction because of other factors such as prior criminal history, discipline history, or offender race? To address this issue, a number of different Cox proportional hazards models with the aforementioned control variables were estimated across types of recidivism (e.g., rearrest, reconviction, reimprisonment, any return) and program participation (e.g., control vs. CIP and control, Phase I failure, and Phase I completer). In addition, to determine whether the effects of CIP are dependent on any of the control variables, interaction models were estimated for each measure

of recidivism. Analogous to stepwise regression, all first-order interactions with CIP were examined and nonsignificant terms were removed until only the significant interactions remained in the model.

Rearrest

The results of the Cox regression models that analyze time to first rearrest are shown in Table 2. In Model 1, which is based on a binary measure of program participation (*CIP* = 1 and *control* = 0), the results indicate that, controlling for other factors, CIP significantly lowered the time to first rearrest. In particular, compared to the control group, CIP reduced the risk of timing to rearrest by 32%. Similarly, in Model 2, which divides CIP participants into completers and dropouts, the findings suggest that the risk of timing to rearrest for offenders who completed Phase I was 39% lower than the control group. Offenders who failed during Phase I, however, were not significantly different from the control group in terms of the rate at which they recidivated. This finding lends support to the notion that the CIP and control groups were very similar to each other, and that the recidivism reduction observed in both models is not because of a selection effect (i.e., CIP offenders differed in some unmeasured way from the control group).

The results from all three models further suggest that the number of prior arrests, offender race, county of commitment, age at first arrest, age at release, and length of stay were statistically significant predictors of rearrest. That is, the time to rearrest was significantly greater for offenders with prior felony convictions, minority offenders, inmates with a metro-area county of commitment, offenders younger at the time of first arrest and release, and inmates with shorter lengths of stay. The results in Model 3 indicate that the CIP × discipline and CIP × length of stay interaction terms were statistically significant, suggesting that CIP offenders' risk of timing to rearrest was dependent on both institutional disciplinary history and length of stay.

Felony Reconviction

The results in Table 3 indicate that CIP significantly lowered the time to first felony reconviction. In particular, compared to the control group, CIP reduced the risk of timing to reconviction by 32%. In Model 2, the findings suggest that the risk of timing to reconviction for offenders who completed Phase I was 37% lower than the control group.

The results from all three models further suggest that the number of prior felony convictions, offender race, county of commitment, and age at release

Table 2
Cox Proportional Hazards Model: Time to First Rearrest

	Model 1		Model 2		Model 3	
Variables	Hazard Ratio	*SE*	Hazard Ratio	*SE*	Hazard Ratio	*SE*
CIP	0.68*	0.046			0.52*	0.076
Phase I completer			0.61*	0.050		
Phase I failure			1.06	0.086		
Prior arrests	1.04*	0.003	1.04*	0.003	1.04*	0.003
Discipline	1.02*	0.005	1.01**	0.005	1.01	0.006
Sex (male)	1.16	0.082	1.15	0.082	1.18**	0.082
Race (minority)	1.23*	0.051	1.22*	0.051	1.23*	0.051
Metro area	1.32*	0.052	1.32*	0.052	1.34*	0.052
First arrest age	0.99**	0.005	0.99**	0.005	0.99**	0.005
Release age	0.98*	0.004	0.98*	0.004	0.98*	0.000
Offense type						
Property	1.15	0.124	1.21	0.125	1.20	0.125
Drugs	0.94	0.120	1.01	0.121	0.98	0.121
Length of stay	1.00**	0.002	0.99*	0.002	0.99*	0.003
CIP × discipline					1.02*	0.009
CIP × length of stay					1.01*	0.004

Note: CIP = Challenge Incarceration Program.
*$p < .01$. **$p < .05$.

were statistically significant predictors of felony reconvictions. Although discipline history was significant in Models 1 and 3, it failed to reach significance in Model 2. The results in Model 3 indicate that the CIP × release age, CIP × age at first conviction, and CIP × property offense interaction terms were each statistically significant.

Reimprisonment for a New Offense

As shown in Table 4, the time to reincarceration for a new offense was, once again, significantly lower for CIP participants; that is, after controlling for the effects of the other independent variables, CIP decreased the risk of timing to reimprisonment by 35%. In addition, although Phase I dropouts' risk of timing to reimprisonment was not significantly different than the control group, it was 42% lower for Phase I completers.

Unlike the rearrest and reconviction analyses, metro area, and release age were not significant predictors of reimprisonment for a new offense in any of the models. However, prior prison commitments, male offenders, and

Table 3
Cox Proportional Hazards Model: Time to First Felony Reconviction

	Model 1		Model 2		Model 3	
Variables	Hazard Ratio	*SE*	Hazard Ratio	*SE*	Hazard Ratio	*SE*
CIP	0.68*	0.061			0.57**	0.279
Phase I completer			0.63*	0.068		
Phase I failure			0.90	0.112		
Prior convictions	1.17*	0.015	1.17*	0.015	1.04*	0.154
Discipline	1.01**	0.005	1.01	0.006	1.01**	0.005
Sex (male)	1.24	0.111	1.22	0.111	1.25**	0.111
Race (minority)	1.26*	0.066	1.25*	0.066	1.27*	0.066
Metro area	1.19*	0.067	1.20*	0.067	1.20*	0.067
First conviction age	1.00	0.007	1.00	0.007	1.01	0.009
Release age	0.97*	0.006	0.97*	0.007	0.96*	0.008
Offense type						
Property	0.97	0.155	1.00	0.155	0.80	0.164
Drugs	0.77	0.149	0.81	0.150	0.76	0.149
Length of stay	1.00	0.002	1.00*	0.002	0.99*	0.001
CIP × first conviction age					0.97*	0.013
CIP × release age					1.03*	0.010
CIP × property					1.57*	0.137

Note: CIP = Challenge Incarceration Program.
*$p < .01$. **$p < .05$.

minority offenders significantly increased the risk of timing to reimprisonment in both models. The risk of timing to reimprisonment, however, was significantly lower for drug offenders than for other offenders. The results in Model 3 indicate that both the CIP × discipline and CIP × property offense interaction terms were statistically significant.

Any Return to Prison

Table 5 shows the results from the Cox proportional hazards models when recidivism is defined as any return to prison. Neither measure of CIP participation had a statistically significant impact on any return to prison when controlling for the other independent variables in the model. The results suggest, however, that prior prison commitments, age at first prison commitment, discipline history, male inmates, minority offenders, and those with a metro-area county of commitment all significantly increased the risk of timing to a return to prison for either a new crime or technical violation

Table 4
Cox Proportional Hazards Model: Time to First Reimprisonment

	Model 1		Model 2		Model 3	
Variables	Hazard Ratio	*SE*	Hazard Ratio	*SE*	Hazard Ratio	*SE*
CIP	0.65*	0.073			0.46*	0.102
Phase I completer			0.58*	0.082		
Phase I failure			0.91	0.129		
Prior commitments	1.21*	0.021	1.22*	0.021	1.22*	0.022
Discipline	1.02**	0.006	1.01	0.007	1.01	0.008
Sex (male)	1.44*	0.140	1.42**	0.140	1.45*	0.140
Race (minority)	1.27*	0.078	1.26*	0.078	1.30*	0.078
Metro area	1.04	0.078	1.04	0.078	1.05	0.078
First commitment age	0.98	0.010	0.99	0.010	0.99	0.011
Release age	0.99	0.010	0.98	0.010	0.98	0.010
Offense type						
Property	1.10	0.170	1.15	0.171	0.88	0.182
Drugs	0.64*	0.167	0.68**	0.168	0.66**	0.168
Length of stay	1.00	0.001	1.00	0.001	1.00	0.001
CIP × discipline					1.03**	0.012
CIP × property					2.02*	0.151

Note: CIP = Challenge Incarceration Program.
*$p < .01$. **$p < .05$.

in both models. The results from the interactive model are not presented in Table 5 because no interaction terms reached statistical significance.

Overall, the findings indicate that CIP significantly reduced offenders' time to reoffense, but it did not reduce their chances of returning to prison in general. The higher rate at which CIP offenders returned to prison as supervised release violators may be largely attributable to the fact that they were supervised not only more intensively than the control group (at least for the first 12 months), but also for a longer period of time. Because this study was unable to control for the intensity of postrelease supervision, it is possible that supervision intensity, rather than the boot camp itself, is the main reason why CIP offenders were less likely to reoffend but more likely to return as technical violators.

Still, if supervision intensity was largely responsible for the recidivism findings, one might expect the CIP reoffense rates to be lower, especially during the first 12 months following release, but to then converge with those from the control group over time. The recidivism findings do not support this

Table 5
Cox Proportional Hazards Model: Time to First Return to Prison

	Model 1		Model 2	
Variables	Hazard Ratio	*SE*	Hazard Ratio	*SE*
CIP	1.07	0.054		
Phase I completer			1.05	0.059
Phase I failure			1.15	0.099
Prior commitments	1.15*	0.019	1.15*	0.020
Discipline	1.02*	0.005	1.02**	0.006
Sex (male)	1.40*	0.104	1.39*	0.104
Race (minority)	1.35*	0.060	1.35*	0.060
Metro area	1.22*	0.061	1.22*	0.061
First commitment age	0.98**	0.008	0.98**	0.008
Release age	0.99	0.008	0.99	0.008
Offense type				
Property	1.13	0.145	1.13	0.145
Drugs	0.85	0.139	0.86	0.140
Length of stay	1.00	0.001	1.00	0.001

Note: CIP = Challenge Incarceration Program.
*$p < .01$. **$p < .05$.

pattern, however, as the differences between the two groups are fairly robust over time. In addition, if supervision intensity was the main causal factor, one might expect the return rate to be higher for CIP offenders during the first year after release when they are intensively supervised. Once again, however, the findings do not follow this pattern, as the control group actually had a higher return rate during the first year following release. Although the supervision intensity argument cannot be ruled out entirely, it is weakened to some extent by the relatively lengthy follow-up period used in this study.

Does CIP Reduce Costs?

Early-Release Savings

In performing a cost-benefit analysis of CIP, we determine the savings resulting from (a) early release for program graduates (i.e., a length of stay reduction) and (b) reduced recidivism (i.e., any return to prison). The early-release savings were calculated by first segregating CIP participants into 10

separate cohorts by the fiscal year in which they entered Phase I (FY 1993 to FY 2002). Next, program operating costs were determined by counting the total number of days each cohort spent in CIP and then multiplying by the full per diem associated with each phase for that fiscal year. For example, during FY 1993, the per diems were $75.63 for Phase I, $21.95 for Phases II and III, and $3.34 for supervised release; for example, "Phase IV."[9] Because the 81 offenders who entered CIP during FY 1993 spent 10,678 days in Phase I, 18,177 days in Phases II and III, and 5,822 days in "Phase IV," the total program operating costs were $1.22 million (see Table 6).

As noted earlier, offenders who fail CIP are required to repeat the days spent in the program in a MCF. Thus, an offender who fails CIP Phase I after 90 days is required to serve the remainder of his or her term of imprisonment (i.e., two thirds of the pronounced sentence) plus the 90 days spent in CIP. The additional 90 days this particular offender would serve in prison would also be considered a program cost.

The calculation of days lost because of program failure is slightly different for Phase II and III failures. Offenders who fail during Phases II and III because of a new criminal offense are required to serve their new sentence, but are not required to serve over the time they spent in CIP. For these offenders, the time spent in prison for the new crime counts against the recidivism savings, not against the early-release savings.

But offenders who fail during Phases II and III because of a technical violation are required to redo the time they spent in CIP. Moreover, because these offenders are recidivists insofar as they return to prison after their release, the amount of return time they spend in prison must be partitioned into costs against both early-release and recidivism savings. More specifically, the number of days that Phase II and III failures spent in Phase I (usually 180 days) counts against the early-release savings because the Phase I time was spent in a correctional facility. Thus, the Phase I time that these offenders must serve over again nullifies any cost savings that might have been gained from early release. However, the remainder of return time that Phase II and III failures spent in prison counts against the recidivism savings. For example, if an offender failed in Phase III after 400 days in CIP and returned to prison for 600 days, 180 of these days (the length of Phase I) would count against the early-release savings, whereas the remaining 420 would count against the recidivism savings.

The costs against the early-release savings thus consist of CIP operating costs and the Phase I days lost by offenders who failed during Phases I to III. Of the 81 offenders who entered CIP during FY 1993, there were 51 who failed during Phases I to III. The number of Phase I days these offenders

Table 6
Early Release Savings by Fiscal Year, 1993 to 2002

Fiscal Year	CIP Per Diem ($)	MDOC Marginal Per Diem ($)	Graduation Rate (%)	No. of CIP Entrants	Average Bed Days Saved	Total Beds Saved	Bed Costs Saved ($)	CIP Costs ($)	Early Release Savings ($)
1993	75.63	58.37	37.0	81	527.9	50	921,428.82	1,225,251.47	(303,822.65)
1994	137.47	57.23	49.5	97	548.6	93	1,952,344.22	3,026,474.24	(1,074,130.02)
1995	115.51	64.59	49.5	109	602.1	98	2,301,277.11	3,056,296.75	(755,019.64)
1996	148.31	66.21	60.9	92	552.7	107	2,584,838.40	3,324,609.60	(739,771.20)
1997	141.55	65.41	51.0	100	705.3	99	2,362,936.25	3,197,236.21	(834,299.96)
1998	100.78	63.29	49.7	173	762.1	180	4,151,887.29	4,047,860.19	104,027.10
1999	103.27	65.13	49.4	180	876.1	214	5,084,243.19	4,079,308.61	1,004,934.58
2000	101.48	53.72	66.2	154	818.4	229	4,481,591.00	4,072,053.55	409,537.45
2001	99.57	66.73	70.7	174	797.6	269	6,561,894.55	4,644,448.40	1,917,446.15
2002	81.08	68.80	67.3	187	780.4	270	6,774,529.60	3,708,343.36	3,066,186.24
Total	113.39	62.95	56.8	135	738.6	1,608	37,314,957.11	34,519,869.06	2,795,088.05

Note: CIP = Challenge Incarceration Program; MDOC = Minnesota Department of Corrections.

had to redo was 2,364, which resulted in an additional cost of $137,986.68 (2,364 days multiplied by the estimated marginal per diem of $58.37 for FY 1993).[10] Adding this figure to the aforementioned $1.22 million produced a total cost of $1.36 million for FY 1993.

The early-release benefits, or savings, were calculated by first counting the total number of days for each CIP Phase III graduate from the time of release from Phase I until their original supervised release date (i.e., the time they were sentenced to serve in prison but were able to serve in the community because of CIP's early-release provision). The total number of bed days saved for each cohort was then multiplied by the average marginal per diem for that fiscal year, resulting in total bed costs saved.[11] As shown in Table 6, the total bed costs saved were subtracted by total CIP costs to produce the early-release savings for each fiscal year. For example, during FY 1993, the early-release provision saved 50 prison beds, which resulted in a savings of $1,059,415.50. However, because the operating costs were $1,363,238.15, CIP produced a cost, or savings deficit, of $303,822.65 during FY 1993.

The results in Table 6 suggest that the early-release savings from FY 1993 to FY 2002 amount to $2.8 million. It is interesting to note, however, that CIP did not begin to generate early-release savings until FY 1998. Indeed, from FY 1993 to FY 1997, the early-release deficit was $3.7 million. But from FY 1998 to FY 2002, the savings totaled $6.5 million.

The increased early-release savings are chiefly because of four factors. First, as CIP was developing and expanding during the mid-1990s, the per diems were comparatively high, resulting in higher operating costs (see Table 6). Since that time, however, per diems have decreased, which has reduced the costs associated with operating CIP. Second, graduation rates have increased since 1993, especially from FY 2000 to FY 2002. Although the graduation rate was 37% for the FY 1993 cohort, the rate was 68% for the 515 offenders who entered between FY 2000 and 2002. Third, along with higher graduation rates, increased program capacity has enabled more offenders to receive the length of stay reduction, resulting in an increase in early-release savings. Finally, modifications to statutory and departmental admission standards have augmented the number of bed days saved by program graduates. In particular, statutory changes during 1996 and 1997 removed the restriction on length of sentence (the upper limit was 54 months) and increased the maximum allowable length of stay from 36 to 48 months. Therefore, by expanding the admission standards to include eligible offenders with longer terms of imprisonment, the average number of bed days saved per CIP graduate increased significantly after FY 1996.

Recidivism Savings

The recidivism savings were calculated by making a comparison between the CIP and control groups with respect to how much time each group has spent, or will spend, in prison following the release that initiated their at-risk period. For the purposes of the cost-benefit analysis, recidivism is operationalized as any return to prison, whether for a new criminal offense or for a supervised release violation. As noted above, for offenders who fail Phases II and III because of a technical violation as opposed to a new crime, the return time spent in prison (minus the Phase I days) counts against the recidivism savings.

The total number of prison days saved or lost for both the CIP and control groups was determined by first calculating the average number of days each group (i.e., CIP and control) has spent, or will spend, in prison since the release that initiated their at-risk period. The difference (in days) in the averages for the two groups was then multiplied by the number of CIP offenders because of the uneven sizes of the CIP and control groups. For example, the difference in average prison return days between the CIP and control groups was 40.48 days, which was multiplied by 1,347 (the size of the CIP group) to produce a total of 54,527 prison days saved (see Table 7). The total number of prison beds saved (149) was then multiplied by the average marginal per diem ($63.08) over the 10-year period, resulting in the total recidivism savings of $3.4 million. Overall, the results indicate that CIP has saved the state of Minnesota $6.2 million. Given that the overall benefits amount to $40.7 million and the program costs total $34.5 million (a difference of $6.2 million), the benefit-cost ratio is 1.18. Thus, during the FY 1993 to FY 2002 period, CIP generated $1.18 of benefits for every $1.00 spent.

Although CIP and control group offenders returned to prison at virtually the same rate (47.6% vs. 47.0%), they returned for different reasons. Of the offenders who returned to prison, those in the control group were much more likely to return for a new crime (73.0%, or 34.4% of 47.0%) compared to CIP (46.0%, or 21.7% of 47.6%). CIP offenders, however, were much more likely to return for a technical violation (54.0%, or 25.9% of 47.6%) than comparison group offenders (27.0%, or 12.6% of 47.0%). Because of the legislative provision requiring CIP failures to redo their program time, the average amount of return prison time for a supervised release violation was 117 days higher (140 days minus 23 days) than the control group (see Table 8). Furthermore, when CIP offenders did return to prison for a new crime, the average number of return days was 29 higher than the control group (1,136 days vs. 1,107 days). However, CIP offenders still served, on

Table 7
Recidivism, Early Release, and Total Savings, FY 1993 to FY 2002

CIP average prison return days	355.44 days
Control group average prison return days	395.92 days
Days saved	54,527 days
Prison beds saved	149 beds
Recidivism savings	$3,434,439.37
Early release savings	$2,795,088.05
Total savings	$6,229,527.42

Note: CIP = Challenge Incarceration Program.

Table 8
Prison Return Rate and Duration by Program Participation

	Control (%)	CIP Dropout (%)	CIP Graduate (%)	All CIP (%)
Return rate				
New offense	34.4	28.6	19.9	21.7
Release violation	12.6	22.3	26.8	25.9
Overall	47.0	50.9	46.7	47.6
Average prison return days	Control (Avg. Days)	CIP Dropout (Avg. Days)	CIP Graduate (Avg. Days)	All CIP (Avg. Days)
New offense	1,107	1,152	1,130	1,136
Release violation	23	63	157	140
Overall	396	374	351	355
n	1,555	273	1,074	1,347

Note: CIP = Challenge Incarceration Program.

average, a little more than 40 fewer days (355 days vs. 396 days) in prison because the control group was significantly more likely to return for a new offense and, thus, have a longer stay in prison.

Although CIP has saved the state more than $6 million to date, this amount still likely underestimates the overall savings produced by the program. The lower reoffense rates for CIP participants leads to fewer victims, reduced victim restitution costs, and decreased use of law enforcement and court resources. Moreover, following their release from prison after the completion of Phase I, CIP participants produce added cost savings by working in the community and, thus, paying taxes. It is beyond the scope of this study, however, to calculate these additional cost savings.

Conclusion

The results reported here indicate that CIP significantly reduced the rate at which offenders commit a new crime. But because of the fact that CIP offenders were more likely to come back as supervised release violators, they returned to prison at roughly the same rate as the control group. CIP still produced a recidivism savings, however, because offenders spent, on average, 40 fewer days in prison because of the shorter lengths of stay associated with supervised release violations. Although the total savings were relatively modest at $6.2 million over the 10-year period, the size of the savings, particularly those resulting from the early-release provision, increased nearly every year after FY 1998.

This study is limited in that it only evaluated a single boot camp, did not use an experimental design, and did not contain measures pertaining to community supervision and aftercare. But despite these limitations, this evaluation was rigorous to the extent that it used multiple measures of recidivism to compare boot camp participants with a carefully matched control group over a relatively long period of time. The findings from this study thus carry several implications for boot camps, in particular, and correctional program evaluations in general.

First, the evidence presented here suggests that boot camps can, indeed, deliver on the promise of reducing both recidivism and costs, but only under a fairly narrow set of conditions. As some evaluations have shown (Bottcher & Ezell, 2005; Zhang, 2000), a mixture of therapeutic programming, intensive postrelease supervision, and lengthy aftercare does not always lead to a recidivism reduction. But as this study and several recent evaluations (Kurlychek & Kempinen, 2006; Wells et al., 2006) have demonstrated, this combination likely increases the chances that boot camp participation can produce a decrease in reoffending. The apparent significance of community supervision and aftercare does not necessarily imply, however, that boot camps have no effect on reoffending. On the contrary, the rigorous structure of a boot camp greatly minimizes offenders' idle time, whereas the repetition and organization of military life may foster an environment conducive to the effective delivery of programming such as CD treatment to offenders. Given the generally positive effects that rehabilitative boot camps have on participants' attitudes and perceptions (Kempinen & Kurlychek, 2002; MacKenzie et al., 2001), it is reasonable to infer that community supervision and, in particular, aftercare are critical in preserving the changes that occur in offenders during the boot camp phase. As such, future research should more closely

examine whether outcomes for boot camp participants vary by the type, length, and quality of aftercare services provided.

Second, just as therapeutic programming, intensive supervision, and aftercare programming appear to be necessary (but perhaps not always sufficient) to decrease recidivism, so, too, are certain program characteristics likely needed to reduce costs. Most notably, the decisions to increase program capacity and accept offenders with longer sentences were instrumental in producing a reduction in costs. Still, the amount of the cost reduction was relatively modest, however, which is largely because of the small size of CIP and, by extension, the reliance on marginal costs. If, for example, fixed costs were used in the cost-benefit analysis, the total savings would have been slightly more than $18 million. Beginning in January 2007, MCF-Willow River will double its capacity by adding 90 prison beds. In doing so, CIP may begin to save enough prison beds (e.g., 500 per year) to justify the use of a fixed costs model.

The modest cost savings may also be because of the emphasis CIP has placed on lowering recidivism. Although the findings indicated that the recidivism reduction accounted for more than half of the cost savings, the average number of days saved (40) through decreased reoffending is less than that which would be saved by shortening the boot camp phase from 180 to 120 days. Of course, trimming the length of the boot camp by 2 months could also vitiate its effect on recidivism. As this evaluation has shown, boot camps can reduce reoffending, but it may come with a price in the form of smaller cost savings.

Third, the "growing pains" that CIP experienced from FY 1993 to FY 1997 imply that a great deal of caution should be exercised when conducting initial outcome evaluations of newly started boot camps or even correctional programs in general. Much like a new business that loses money before it begins to turn a profit, CIP did not reduce costs prior to FY 1998. Although Cox regression models limited to the FY 1993 to FY 1997 period reveal that CIP significantly reduced the extent to which participants reoffended (rearrest, reconviction, and reincarceration for a new offense) during this time, the recidivism savings would still not be enough to offset the early-release savings deficit. As a result, an outcome evaluation of CIP after its first 5 years of operation may have led to the premature—not to mention, erroneous—conclusion that it does not work insofar as it does not reduce costs.

Finally, the growing perception over the last decade that boot camps are largely ineffective has been based mainly on results showing that boot camp participants are no less likely to recidivate than a comparison group of offenders. But as this study illustrates, determining whether a program works should

not be limited to a simple question of "Did they recidivate or not?" Rather, in assessing whether a program is effective, perhaps the focus should be not only on whether they recidivated, but also on why they returned and for how long.

Concentrating merely on whether offenders are rearrested, reconvicted, or reincarcerated following release is often the benchmark used in correctional program evaluations because it is, generally speaking, an easier or more feasible issue to address analytically. But results can vary significantly depending on how one measures recidivism. Moreover, even if multiple measures of recidivism are used, the issue of whether offenders recidivate does not tell the full story about whether a correctional program works. Instead, it is also critical to know why and how long offenders returned to prison because the answers to these two questions will provide a more complete picture as to whether a program is effective.

Notes

1. In 1992, offenders were required to be serving a sentence of 18 to 36 months. Recent legislation has increased the sentence length allowable to 48 months or less remaining.

2. In particular, the offenses added to the list were terroristic threats, felon in possession of a firearm, drive-by shooting, burglary of an occupied residence, simple robbery, theft from a person, criminal vehicular homicide, firearm-related crimes, gang-related crimes, and offenses committed by dangerous and repeat offenders.

3. The eligibility criteria excluded offenders with three or more prior incarcerations and those with four or more prior felony convictions.

4. Aside from the main original and modified requirements outlined above, admission to the Challenge Incarceration Program (CIP) is contingent on additional mandatory and discretionary criteria. Offenders are ineligible to participate in CIP if they are in close or maximum custody status; have prior CIP experience; have active warrants, detainers, or signed criminal complaints; have a history of escape; have recent extended incarceration disciplinary convictions; or have medical conditions such as diabetes, active seizures, hypertension, or pulmonary, cardiac, homozygous sickle cell, gastrointestinal, unstable neurological, or musculoskeletal diseases. Discretionary criteria include prior treatment and supervision failures, criminal history, discipline record, aggravated offense characteristics, upward durational departures, and mental and physical health status.

5. In 1980, the state of Minnesota implemented a sentencing guidelines system in which a recommended sentence is based on the severity of the offense and the offender's criminal history. Thirteen years later, the state abolished parole, replacing it with supervised release; as a result, the sentences for offenders who have committed crimes after August 1, 1993, have consisted of two parts: a minimum prison term equal to two thirds of the total executed sentence and a supervised release term equal to the remaining one third. Because of the early-release provision, CIP offenders who complete Phase III serve less than the required two thirds of their executed sentence, thus creating bed-space savings.

6. There were 59 offenders who entered CIP more than once between FY 1993 and FY 2002. For these multiple-entry offenders, their last entry is the one considered here.

7. The "governing offense" is the crime carrying the sentence on which an offender's scheduled release date is based. Although offenders may be imprisoned for multiple offenses, each with its own sentence, the governing offense is generally the most serious crime for which an offender is incarcerated.

8. Following the removal of CIP participants, person offenders, and those not released to supervision, there were 16,096 offenders in the control group at the beginning of the multistage sampling process. After stratifying by offense type, there were 7,768 offenders in the sample. The control group sample was next stratified by length of stay, which removed 3,836 offenders, resulting in a total of 3,932. Stratifying by metro area eliminated 126 offenders, whereas age at release reduced the size of the sample by an additional 372 offenders. Stratifying by age at first felony conviction removed 115 offenders, whereas age at first prison commitment eliminated an additional 105, leaving 3,204 offenders at this stage. After stratifying by prior felony convictions, which removed 322 offenders, and prior prison commitments, which eliminated 567, there were 2,315 offenders left. Stratifying by institutional discipline convictions removed 403 offenders, whereas offender race eliminated an additional 259. After stratifying by offender sex, which removed 98 offenders, the final control group consisted of 1,555 offenders. Because there were, at this point, no statistically significant differences between the CIP and control groups, it was not necessary to stratify by either age at first arrest or prior arrests.

9. For CIP graduates, Phase IV is the period between the end of Phase III and the beginning of their supervised release period that they would have spent in prison had they not completed CIP. Because Phases II and III generally cover a period of 12 months, Phase IV time usually applies only to CIP graduates who earned a length of stay reduction in excess of 12 months. For example, a CIP graduate who received a 20-month reduction in his or her length of stay would spend 12 months in Phases II and III and 8 months in Phase IV. Because Phase IV represents time that offenders would have been incarcerated had they not completed CIP, it is necessary to account for the number of Phase IV days in both the benefits and costs.

10. For the full 10-year period, the provision requiring boot camp failures to serve more than the time they spent in Phase I resulted in a total cost of $2.9 million. Holding everything else constant, which may be a questionable assumption, removing this provision would have added $2.9 million to the early-release savings.

11. Because marginal per diems were not available prior to FY 2000, we generated estimates for the FY 1993 to FY 1999 period. During FY 2000 to FY 2002, the marginal per diem accounted for 76% of the full per diem. As a result, we multiplied this percentage by the full per diem for each year during FY 1993 to FY 1999 to produce marginal per diem estimates.

References

Aloisi, M., & LeBaron, J. (2001). The Juvenile Justice Commission's Stabilization and Reintegration Program: An updated recidivism analysis. Trenton: New Jersey Department of Law and Public Safety.

Austin, J., Camp-Blair, D., Camp, A., Castellano, T., Adams-Fuller, T., Jones, M., et al. (2000). *Multi-site evaluation of boot camp programs, final report.* Washington, DC: U.S. Department of Justice, National Institute of Justice.

Austin, J., Jones, M., & Bolyard, M. (1993). *Assessing the impact of a county operated boot camp: Evaluation of the Los Angeles County Regimented Inmate Diversion Program*. San Francisco: National Council on Crime and Delinquency.

Bales, W. D., Bedard, L. E., Quinn, S. T., Ensley, D. T., & Holley, G. P. (2005). Recidivism of public and private state prison inmates in Florida. *Criminology and Public Policy*, *4*, 57-82.

Bottcher, J., & Ezell, M. E. (2005). Examining the effectiveness of boot camps: A randomized experiment with a long-term follow up. *Journal of Research in Crime and Delinquency*, *42*, 309-332.

Burns, J. C., & Vito, G. F. (1995). An impact analysis of the Alabama boot camp program. *Federal Probation, 58*, 1, 63-68.

Camp, C. G., & Camp, G. M. (1996). *The 1996 corrections yearbook*. South Salem, NY: Criminal Justice Institute.

Camp, C. G., & Camp, G. M. (2002). *The 2002 corrections yearbook*. Middletown, CT: Criminal Justice Institute.

Clark, C. L., Aziz, D. W., & MacKenzie, D. L. (1994). *Shock incarceration in New York: Focus on treatment.* Washington, DC: U.S. Department of Justice, National Institute of Justice.

Cohen, M. A. (2000). Measuring the costs and benefits of crime and justice. In *Measurement and analysis of crime and justice, criminal justice 2000* (Vol. 4, pp. 263-316). Washington, DC: U.S. Department of Justice, National Institute of Justice.

Farrington, D. P., Ditchfield, J., Hancock, G., Howard, P., Jolliffe, D., Livingston, M. S., et al. (2002). *Evaluation of two intensive regimes for young offenders*. London: Home Office Research, Development and Statistics Directorate.

Gover, A. R. (2005). Native American ethnicity and childhood maltreatment as variables in perceptions and adjustments to boot camps vs. "traditional" correctional settings. *Journal of Offender Rehabilitation*, *40*(3/4), 177-198.

Jones, R. J., Olson, B. W., Karr, S. P., & Urbas, S. M. (2003). *Impact Incarceration Program: 2003 annual report to the governor and the general assembly*. Springfield: Illinois Department of Corrections.

Kempinen, C. A., & Kurlychek, M. C. (2002). *Pennsylvania's Motivational Boot Camp 2001 report to the legislature*. University Park: Pennsylvania State College, Pennsylvania Commission on Sentencing.

Kempinen, C. A., & Kurlychek, M. C. (2003). An outcome evaluation of Pennsylvania's boot camp: Does rehabilitative programming within a disciplinary setting reduce recidivism? *Crime & Delinquency, 49*, 581-606.

Kurlychek, M. C., & Kempinen, C. A. (2006). Beyond boot camp: The impact of aftercare on offender reentry. *Criminology & Public Policy*, *5*(2), 363-388.

Lawrence, S., & Mears, D. P. (2004). *Benefit-cost analysis of supermax prisons: Critical steps and considerations*. Washington, DC: Urban Institute.

MacKenzie, D. L., Brame, R., McDowall, D., & Souryal, C. (1995). Boot camp prisons and recidivism in eight states. *Criminology, 33*, 327-358.

MacKenzie, D. L., Gover, A. R., Styve-Armstrong, G., & Mitchell, O. (2001). *A national study comparing the environments of boot camps with traditional facilities for juvenile offenders.* Washington, DC: U.S. Department of Justice, National Institute of Justice.

MacKenzie, D. L., & Souryal, C. (1994). *Multi-site evaluation of shock incarceration*. Washington, DC: National Institute of Justice.

MacKenzie, D. L., Souryal, C., Sealock, M., & Kashem, M. B. (1997). *Outcome study of the Sergeant Henry Johnson Youth Leadership Academy (YLA)*. College Park, MD: Department of Criminology and Criminal Justice.

MacKenzie, D. L., Wilson, D. B., & Kider, S. B. (2001). Effects of correctional boot camps on offending. *Annals of the American Academy of Political and Social Science, 578*, 126-143.

Marcus-Mendoza, S. T. (1995). Preliminary investigation of Oklahoma's shock incarceration program. *Journal of the Oklahoma Criminal Justice Research Consortium*, *2*, 44-49.

Parent, D. G. (2003). *Correctional boot camps: Lessons from a decade of research*. Washington, DC: U.S. Department of Justice, National Institute of Justice.

Paulson, A. (2005, December 1). Inmates try boot camp for kicking drugs. *Christian Science Monitor*, p. 2:1.

State of New York, Department of Correctional Services, Division of Parole. (2005). *The seventeenth annual shock legislative report*. New York: Author.

Stinchcomb, J. B., & Terry, W. C. (2001). Predicting the likelihood of rearrest among shock incarceration graduates: Moving beyond another nail in the boot camp coffin. *Crime & Delinquency*, *47*, 221-242.

Wells, J. B., Minor, K. I., Angel, E., & Stearman, K. D. (2006). A quasi-experimental evaluation of a shock incarceration and aftercare program for juvenile offenders. *Youth Violence and Juvenile Justice*, *4*, 219-233.

Zhang, S. X. (2000). *An evaluation of the Los Angeles County Juvenile Drug Treatment Boot Camp*. San Marcos: California State University, San Marcos.

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