STUDY TO EVALUATE PATUXENT INSTITUTION

Volume I:

Executive Summary

A REPORT TO THE MARYLAND DEPARTMENT OF PUBLIC SAFETY AND CORRECTIONAL SERVICES

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SUMMARY

STUDY TO EVALUATE PATUXENT INSTITUTION

On March 20, 1989, the State of Maryland's legislature passed a bill calling for the Department of Public Safety and Correctional Services (hereafter called the "Department") to undertake a study of the Patuxent Institution. This law ordered:

> That the Secretary of Public Safety and Correctional Services conduct a study of the Patuxent Institution; ... that the study include an assessment of the current treatment programs to determine which programs are and are not working successfully; that the discussion of the merits of the treatment programs include an evaluation of inmate treatment programs at institutions other than Patuxent Institution; [and] that the study assess the appropriateness of the present population at Patuxent Institution and recommendations for any changes to this population....

These were translated by the Department, in a request for proposals, into three different sets of specific research questions. The first set required a quantitative study of individual inmates' performance to answer. The second set of questions required an evaluation of the efficacy of the various programs. The third set asked what would be the implications of the findings of the first two lines of inquiry for future policy regarding Patuxent and its organization. These questions included:

1. The quantitative study:

1.1) What is the overall effectiveness of the Patuxent program compared to the Division of Correction?

1.2) What are the characteristics of inmates for whom the Patuxent program has been most (and least) successful? For example, what is the nature of the relationship between demographic variables, psychosocial variables, prior criminal record, length of stay, nature of the offense, diagnostic category, institutional adjustment, progress in therapy, and post-release outcomes.

1.3) Which variables are the best predictors of success after release? What is the predictive ability of information known at the admissions stages as compared to information from subsequent institutional and/or leave or work release behavior?

1.4) How do the outcomes of fully treated Patuxent inmates (i.e., those who complete the program) compare to those of partially treated inmates (who opt out early) and to non-treated inmates in the Division of Correction?

2. The assessment of programming:

2.1) What is the current state-of-the-art in correctional treatment programs and parole/aftercare programs for general populations and special needs populations (personality disorders, substance abusers, and sexual offenders) based on a review of treatment and aftercare programs of demonstrated effectiveness in other prisons and state hospitals serving inmates?

2.2) What are the major residential correctional treatment and aftercare modalities for anti-social personalities, sexual offenders, and substance abusers?

2.3) What recommendations for changes in the Patuxent treatment and aftercare programs can be made as a result of the assessment conducted under this task?

3. Implications of findings for future policy

3.1) Given the information gathered, what are the policy implications for Patuxent Institution in the organization and delivery of treatment services in the Maryland correctional systems.

3.2) Provide an overview of the entire correctional system and the external constraints acting upon it.

3.3) Propose a model for the organization and delivery of treatment services in Maryland's correctional system.

In December 1989, the Department contracted with Abt Associates to undertake a two-stage study. The first was a two-month feasibility study, in which Abt Associates determined whether the data collected and maintained by the Department was sufficient to sustain the ambitious study requested by the legislature. In the course of this feasibility study, the findings of which were delivered to the Department on 26 February 1990, we determined that the project conceived of by the legislature and the Department could not be accomplished because of several limitations. The design of the second phase of the study was then modified to reflect our agreements.

The chief difficulty we faced in addressing any of the first set of questions was that to answer them, information would have to collected manually from over a thousand different files, many of which would have to be retrieved from the state archives, and others from institutions all over the state. The cost of such data collection would be high. If a study of the overall effectiveness of Patuxent were to be done, the scope of the entire study would have to be narrowed to keep the cost within the funds available.

Abt Associates and the Department subsequently negotiated a revised design for the study. This document is the report of that study.

The Scope of the Study

Abt Associates and the Department agreed to limit the focus of the evaluation to the first set of questions. That is, the study would aim to:

o evaluate the overall effectiveness of the Patuxent experience compared to being incarcerated in the Division of Correction;

o identify those inmates for whom the Patuxent program has been most and least successful. These inmates would be described by reference to demographic characteristics, psychosocial profiles, prior criminal records, length of stay in the institutions, nature of the offense committed, and psychiatric diagnosis;

o determine which characteristics are the best predictors of success after release. Moreover, we agreed to assess the relative predictive ability of information known at the admissions stages as compared with information acquired in the course of observing institutional and/or leave or work release behavior;

o the study would also assess how well fully treated Patuxent inmates (i.e., those who are released from Patuxent) compare to those of partially treated inmates (who opt out early), and to non-treated inmates imprisoned entirely within the Division of Correction; and

o the study would also examine the implications that these findings have for correctional policy.

Methodology

The principal strategy for evaluating the overall effectiveness of the Patuxent Institution was to compare the post-release recidivism of those released from Patuxent with the recidivism of persons released from the Division of Correction's prisons. We therefore identified all persons who applied for admission to Patuxent under the criteria established in July 1977, who were admitted to Patuxent between July 1 1977 and June 30 1988, and who were released from Patuxent prior to our data collection in June 1990. A total of 321 such persons were identified.

For the purpose of comparing these "fully treated" prisoners to "partially treated" ones, we also identified prisoners who were admitted to Patuxent during the same period but who were transferred back to the Division of Correction at some point prior to their release from the Division. These persons were transferred either because they chose to voluntarily or because the Patuxent staff "washed them out" of the program. A total of 320 such prisoners were identified.

So that we could compare the recidivism of these two populations with that of prisoners who had no experience at all of Patuxent's treatment program, we identified all persons who applied to Patuxent during this same period but who were rejected as ineligible. These persons were not treated during the time they were reviewed at Patuxent, and they were transferred back to the Department of Correction to serve their sentence prior to being released. We identified 608 such prisoners.

Because of limited time and resources, we chose not to analyze information for all prisoners in each of these three populations, but instead for randomly-drawn samples of each. Our sample of eligible persons released from Patuxent (hereafter called "EP releasees") included 280 persons, the large majority of all prisoners released during this time period. The samples of transferred prisoners ("EP transfers") and of persons found ineligible ("non-EPs") included 104 and 119 prisoners, respectively.

We did not attempt to construct a representative sample of all Division of Corrections prisoners. Our purpose was not to compare the effectiveness of the Patuxent Institution on its selected prisoners with the effectiveness of the Division of Correction's programs on all prisoners in its custody. Instead, our evaluation aimed to discern if being treated at Patuxent made more or less of a difference vis-a-vis subsequent recidivism than a stay in the Division of Correction, for that narrow class of prisoners who were thought to be intellectually deficient or emotionally imbalanced enough to be referred to Patuxent.

One alternative we considered was to sort through the nearly 70,000 inmates who were released from the Division of Correction during the twelve year period under examination in order to identify prisoners who were otherwise similar, in important respects, to those treated at Patuxent. Unfortunately, the computerized record keeping systems to not contain the information needed to make such determinations. Because the richest source of information was the review file at Patuxent for those who applied for admission, we chose instead to draw our sample of untreated non-EPs from among those rejected.

This strategy had an additional benefit: it took advantage of the natural winnowing processes by which persons not at all suited to Patuxent were discouraged or barred from applying. Of the 75,000 prisoners who were admitted to the Division of Corrections during the twelve-year study period, only 3,261 of them applied to Patuxent. Even though many of these were rejected, we find that they were strongly similar to those accepted, which makes them especially suited as a comparison group.

The fact remains, however, that these non-EPs were rejected for admission precisely because they were different from those the Institution admitted. These differences confound our ability to know whether any observed variation in recidivism is due to differences in treatment (that is, being treated at Patuxent as opposed to being held in the Division of Correction) or to differences that were created by selecting certain prisoners for admission while rejecting others.

To distinguish between these two possible sources of differences in recidivism rates, we conducted a series of complex statistical analyses designed to hold constant variations among prisoners. These permit us to estimate the effect of being treated at Patuxent, other things being equal.

More precisely: we developed mathematical models to predict the probability of recidivism following release (see below for how recidivism was measured). These models included adjustments for differences among comparison samples that resulted from preexisting differences among prisoners, from differences that resulted from the process of selecting some from Patuxent while rejecting others, and from possible differences in release practices of the Maryland Parole Commission and the Patuxent Institutional Board of Review. This latter adjustment was needed to account for the possibility that the cohorts of released prisoners from Patuxent may experience different recidivism rates simply because the Patuxent paroling authorities may be more or less willing to release risky prisoners than the Maryland Parole Commission. By means of holding constant the effects of these various differences among prisoners, one can see if any differences in recidivism that remain can be attributed to the experience of being treated at Patuxent for all or part of a sentence.

To enable us to include adjustments for the possible differences in recidivism due to differential paroling policies, we collected information about prisoners in three other samples. We needed to compare persons in each of our three samples of released prisoners with a samples of those <u>not</u> released. Consequently, we identified all persons who were admitted to Patuxent and had not yet been released at the time we began our data collection in June 1990. From among these 404 persons, we drew a random sample of 136. We also identified persons who had transferred from Patuxent but were still in the Division of Correction, as well as those found ineligible for Patuxent and who had not been released by June 1990. During the twelve-year study period, there were 421 of the former, and 1,107 of the latter. From among these populations, we drew random samples of 74 and 75, respectively. (In total, prisoners in all six samples numbered 708.)

For all offenders in our three sample of released prisoners, we chose to take as a measure of "treatment effectiveness" the prisoners' subsequent recidivism. We measured recidivism two ways. First, we considered it as being returned to prison--either the Patuxent Institution or the Division of Correction--following a release. ("Release" here was defined as excluding short-term leaves for work-release, furlough, and other purposes, as well as a transfer from Patuxent to a halfway house, a transfer to another jurisdiction's prisons or jails, or an escape.) A second method of measuring recidivism was by the occurrence of an arrest following release to supervision. Because we chose to rely upon supervision files for information about arrests, we limited our indicator of recidivism to an <u>arrest following a release while under supervision</u>.

Ultimately, we relied most upon arrest as the best measure. Returns were more frequent among Patuxent releasees, and analysis suggested that this was due in substantial part to the greater readiness of Patuxent supervision officers to pull offenders off the street for

violations of the terms and conditions of parole. Because return to prison thereby captured some measure of organizational practices as well as offender behavior, we used arrest as our preferred measure because we find it to be a more direct indicator of offender performance.

In this evaluation, we considered imprisonment at Patuxent as a single "treatment program." We made no attempt to isolate the discrete effects of different programs within the Institution. Similarly, imprisonment within the Division of Correction's prisons were considered a single "treatment program." Because prisoners in both Patuxent and the Division of Correction's prisons are exposed to a variety of different programs during their sentence, it is not possible to isolate the effects of each single program. Moreover, prisoners in the Division of Correction typically cycle through a number of different prisons before being released, a fact that also renders an evaluation of discreet programs and prisons impossible.

The Overall Effectiveness of Patuxent as Compared with the Division of Correction

The analysis reveals no evidence of any effect of Patuxent treatment on subsequent recidivism, as measured by the probability of being arrested following release to supervision. More precisely, we find no evidence that being confined at Patuxent produces lower recidivism rates, compared to spending one's sentence partly or entirely within the Division of Correction's prisons. Nor do we find evidence that Patuxent releasees do worse, as measured by subsequent arrests.

The actual probability of being arrested while under supervision following release is higher for Patuxent prisoners than for prisoners who were not admitted to Patuxent for treatment. That is, 45 percent of EPs were arrested within three years of their release from Patuxent, compared with 37 percent of the EP transfers and 27 percent of the non-EPs released from the Division of Correction. However, the statistical models that we have constructed leads us to believe that these differences are due to preexisting differences among released prisoners, and not to the exposure to the in-prison programs. It appears that the Patuxent Institution selected for treatment those persons who were also most likely to recidivate upon release. The differences in subsequent recidivism among the three comparison samples can be attributed entirely to the operation of this selection-for-treatment process.

That the Patuxent Institution selected from among its applicants those who were most likely to recidivate is not surprising. It was originally designed to do just that. It was charged with identifying inmates in the Maryland prison system who appeared to be likely to recidivate and would thereby endanger the public safety because of serious intellectual and emotional impairments. Once such prisoners were identified, Patuxent was to confine and treat them separately from other prisoners in the Maryland penal system. The law governing Patuxent's operation, Article 31B, was revised in 1977 and the Institution's mission was changed somewhat. There is good reason to think, however, that the fundamental operation of the Institution, especially with regard to its selection procedures, remained relatively intact. That is, the new law continued to charge Patuxent with identifying and treating persons found to be intellectually

and emotionally impaired. It was also charged with identifying those who were in greatest need of treatment at Patuxent. Prisoners who met these criteria also appear to be more likely to be arrested upon release.

What is surprising and, indeed, disappointing is that there is no clear evidence that the Institution's treatment program wrought positive effects on prisoners, at least as we could measure by our narrow standard--the incidence of an arrest following release. It is disappointing because a great deal of intelligence and ingenuity went into the invention and design of a program for intellectually deficient and emotionally impaired criminals who, by virtue of their handicaps, pose some threat to the larger society.

To be sure, our ability to detect a positive treatment effect (or any treatment effect) is limited by a number of unfavorable conditions. First and foremost, we are analyzing events that occurred in the past, often as long as a decade or more. Prisoners were exposed to programs in Patuxent and the Division of Correction that can no longer be analyzed directly. Some prisoners in the samples we drew were released in the late 1970s after stays as long as twenty years. In studying these prisoners' experiences, we are limited to interpreting written information in case files. Because this information was not written down for the convenience of an evaluator who was to come later, it was often inconsistently recorded. Types of information that would have been valuable for this evaluation--such as the psychiatric diagnoses of Patuxent's applicants--were not available consistently in the case files we examined.

The second obstacle to evaluating the Institution's effectiveness was the lack of an assignment procedure that would have facilitated our ability to draw inferences about treatment impacts. No attempt was made to create, on an ongoing way, a population of prisoners who might serve as a useful comparison group to those admitted and treated at Patuxent. Instead, the process of selecting prisoners for treatment was part of a larger process whereby certain types of prisoners were funneled to the Patuxent review boards, encouraged to apply for admission in some cases and discouraged in others. What resulted was the admission of a highly-distilled segment of the Maryland prisoner population. Finding a readily available and well-suited comparison group is not easy.

Our strategy of creating comparison groups from among rejected applicants and eligible persons who transferred back to the Division of Correction is about as good as one can get in these circumstances. Using such populations raises obvious questions about comparability, however. Were not the rejected applicants turned down precisely because they didn't meet the criteria for eligibility? We recognize this to be a serious methodological problem, and we have developed what we believe is an ingenious procedure for sorting out differences in recidivism that can be attributed to these selection processes from differences than can be attributed to treatment.

As powerful as these statistical model-building techniques are, they involve developing estimates of effects that would be found if all other measured factors were held constant. Being estimates, they provide somewhat uncertain grounds upon which to build

inferences about the existence and strength of treatment effects. We are reasonably confident that our methods would have detected a treatment effect at Patuxent on recidivism if it existed, but our confidence would have been greater had we been able to conduct a controlled experiment, and had we been able to institute uniform data collection procedures.

To say that a controlled experiment would have been preferred is not to argue that the after-the-fact statistical modeling techniques are without value. Most social programs are not set up and carried out with a concurrent evaluation underway. Evaluations are, unfortunately, usually called for long after the program has been in operation. In these circumstances, unless program administrators and policy makers are willing to invest the time and resources needed of controlled experiments, after-the-fact evaluations, with all their limitations, are the best that can be mounted. Such evaluations have provided policy makers with important information in a variety of different policy domains, and for a variety of programs.

Comparing the Performance of Prisoners Fully, Partially, and Never Treated at Patuxent

Our findings provide no evidence of any treatment effect at Patuxent, either for those fully or partially treated.

For Which Types of Prisoners is Patuxent Most and Least Successful?

Because we were unable to discern any effect of Patuxent's treatment program on recidivism, we were not able to identify those prisoners for whom it was most or least successful.

What Characteristics Are the Best Predictors of Success After Release from Patuxent?

Although our research indicated characteristics that were associated with a lower likelihood of recidivating following release from Patuxent, these same factors were associated with lower recidivism among those released from the Division of Correction. For example, we find that the older the prisoner is at the time of release, the less likely he is to be arrested afterwards, other things being equal. Those who had more extensive prior criminal records were more likely to be arrested. Likewise, the probability of recidivism is higher for prisoners who were sentenced to an imprisonment term before the sentence that led to his current incarceration; the more such prior terms, the higher the probability of recidivism. The more prior arrests for sex offenses, the higher the likelihood of recidivating; the more prior arrests for violent offenses, the lower the likelihood. All these association, except for that between age at release and recidivism, were not found to be statistically significant, however.

Moreover, these are general tendencies among all prisoners, and do not reflect the likelihood of the Patuxent treatment having greater or lesser success on prisoners. Because we found no evidence of a positive or negative Patuxent effect on recidivism, a list of characteristics associated with lower recidivism among Maryland prisoners gives little direction to policy makers as to whom the Patuxent treatment should be directed most successfully.

How Useful In This Prediction Is Information Known At the Admissions Stage Compared With Information Acquired In the Course of Observing the Prisoner's Behavior In the Institution and During Leaves Or Work Releases?

None of this information predicts how successful the Patuxent treatment will be for various types of offenders, because we were not able to identify any positive or negative effect at all, for any type of offender.

Policy Implications of These Findings

Drawing policy conclusions about any correctional program requires balancing its various costs with its benefits. Our evaluation was limited to evaluating a single side of this equation: the possibility that the Patuxent Institution's treatment program produced a benefit in the form of reduced likelihood of recidivism. We found no evidence of such a beneficial effect.

Because our evaluation was limited to assessing the program's impact on recidivism by a selected population of offenders, and because we were not able to discern a treatment effect on any particular type of prisoner held at Patuxent, we have no firm ground upon which to base any speculation about whether the Patuxent program would be more successful for other types of prisoners.

As discussed above, our conclusions are based on a complex method of statistical estimation rather than upon a more controlled experiment. If a stronger test of the Patuxent Institution is required, we recommend that a prospective controlled experiment be carried out, in which professional evaluators design the strategy for assigning prisoners to Patuxent as well as the procedures for measuring effects. Such a study will require several years, as one will need to follow prisoners while they are in treatment as well as after they are released.

Because such studies often take more time than policy makers or administrators have for making decisions about correctional programs, administrators should consider building strong evaluations into innovative programs from the beginning so that they will be able to develop evidence of their effects. On-going evaluations also provide program administrators with information that can be used to "fine tune" their programs, making in-course corrections and adjustments to increase their effectiveness.

STUDY TO EVALUATE PATUXENT INSTITUTION

Volume II:

Report of Findings and Technical Appendices

A REPORT TO THE MARYLAND DEPARTMENT OF PUBLIC SAFETY AND CORRECTIONAL SERVICES

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PREFACE

In December 1989, the Maryland Department of Public Safety and Correctional Services contracted with Abt Associates Inc. to conduct an evaluation of the Patuxent Institution. This report presents the findings of that evaluation.

The project's director was Dr. Douglas C. McDonald, a senior social scientist at Abt Associates. The evaluation team included Dr. William Rhodes, Catherine Conly, Paul Mahanna and Christine Smith, assisted by Katherine Merrill and Valerie Leiter. Dr. Stephen Kennedy was the technical monitor for the project, reviewing the plans for analysis as well as the results and reports. The data were obtained by a team of Abt employees, who coded information from files at the Patuxent Institution onto structured questionnaires between June and August 1990. These included: Lisa Covington, Joshua Crosslin, Mary Jacob, Lewis Miller, Grant Reiner, Martin Simson and Christine Sturek. We are grateful for their persistence in this laborious task and for their valuable contribution to this project. For keypunching and checking data, we were assisted by Abt Associates' Survey Research Group.

We are also grateful to many Maryland government officials who provided assistance to the project. Richard A. Lanham, Sr., Assistant Secretary of the Department of Public Safety and Correctional Services, acted as the Department's monitor. Dr. Henry Lesansky, Director of the Department's Audits and Compliance Division, served as our principal liaison to the various state government agencies and institutions that we relied upon for information. Officials at the Patuxent Institution provided our data collection team with the needed facilities and guidance at several stages. Of special assistance were Director Joseph Henneberry, Karen Buxton, and Devon Brown.

Ronald Knapp of the Division of Parole and Probation, assisted with the obtaining supervision files. The wardens and their staffs at several institutions also provided us with the needed files on prisoners in their custody. These included: Thomas R. Corcoran, (Maryland Pre-Release System Administration), Lloyd Waters (MCTC), Jon P. Galley (RCI), Mason W. Waters (MCIH), James N. Rollins (MPEN), Sewall B. Smith (MCAC), Merry Coplin (MRDCC), Eugene M. Nuth (MCIJ), Kenneth Taylor (MHC), Robert A. Harleston (ECI), and Patricia A. Terrangi (MCIW).

Additional assistance was provided by the Department's Research and Statistics Division, including its director, Richard Tamberrino, as well as Robert Gibson, Thomas Stough and James Brittan.

WHAT THIS REPORT COVERS

This report addresses the following topics:

- a brief overview of the Patuxent Institution's history;
- the basic strategy for the analysis of the Patuxent Institution's effectiveness as a treatment program;
- the methods used to create comparison groups;
- the nature of the data collected;
- the definitions of recidivism used in this study;
- an examination of patterns of recidivism in Patuxent and in each of the comparison groups;
- the possible explanations of the observed recidivism patterns and a description of the methods used to determine whether these patterns indicate any positive treatment effects at Patuxent;
- an examination of the process by which prisoners are selected for admission and treatment at Patuxent, and some estimates of how this selection process might affect the observed differences in recidivism;
- an assessment of the paroling practices of both the Patuxent Institutional Board of Review and the Maryland Parole Commission, and of how differences in these practices might affect the observed variation in recidivism rates;
- reporting of a statistical test to determine the extent to which the observed differences in recidivism were due to differential admission and paroling practices rather than to treatment at Patuxent or the Division of Correction;
- a discussion of what the available evidence does and does not show with regard to the difference in impact on recidivism between Patuxent and the Division of Correction; and
- a discussion of the implications of these findings for Maryland's correctional policy.

INTRODUCTION

A Short History of the Patuxent Institution and the Challenges It Poses to an Evaluation

The Patuxent Institution represents an interesting experiment in both psychiatry and the law, perhaps unparalleled in American corrections. The Institution was created in 1955, but its genesis was in the recommendations to the Maryland State Legislature by several committees and study groups in 1949 and 1950. The most influential of these reports was that of the Committee to Study Medico-Legal Psychiatry, submitted to the State Legislature in 1950, entitled "An Indeterminate Sentence Law for Defective Delinquents."[1] This committee had been formed to address the problem of "psychopathic personalities" and how the criminal justice system in Maryland should deal with them. In advocating a statutory reform to create an indeterminant sentence for defective delinquents, the report declared that:

> The primary purpose of such legislation is to protect society from this segment of the criminal population who will probably again commit crimes if released on the expiration of a fixed sentence; and thus they should be detained and specifically treated unless and until cured. A secondary purpose is more effectively and humanely to handle them, which aids in the cure, where possible.[2]

In response to these recommendations, the Maryland Legislature passed Article 31B of the Public General Laws of Maryland, called the "Defective Delinquency Law," authorizing the Institution's establishment.

There were several features of the Patuxent Institution that distinguished it from more conventional prisons. Psychiatric authorities, rather than corrections professionals, dominated the Institution's operation. Inmates were called "patients" rather than prisoners. Their terms of confinement were not limited by court-imposed sentences, but were instead superseded by an indeterminant sentence under which they could be held for life. Release was determined by Patuxent's Institutional Review Board, which assessed patients see if they were no longer a danger to society and were sufficiently cured of the emotional or intellectual deficiencies that were seen to contribute to their criminality. Whereas paroling authority in most American prison systems had for decades been separated from the direct administration of prisons, and was

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[1]Published by Reiblich and Hubbard, 1950.

[2]Ibid., p. 1.

held by independent parole boards, Patuxent retained a feature that was more common to American prisons in the late 19th and early 20th centuries: a paroling authority lodged in the institutional directors, shared with some members of the outside community.

So organized, the Patuxent Institution bore a strong resemblance to hospitals for the criminally insane, where psychiatric and legal authorities could compel someone deemed insane to be confined in a secure setting until they were found sane. The difference, however, was that the inmates at Patuxent had not been declared insane. Indeed, they had been held legally responsible for their crimes. Convicted as criminals, they were sentenced by the courts to the state's prisons. It was only after commitment to the Division of Correction that the Patuxent authorities were able to consider whether or not someone was eligible for confinement as a defective delinquent. Once prisoners were deemed to be defective delinquents, they were transferred out of the Division of Correction and involuntarily committed to Patuxent.

In 1977, the laws governing the Patuxent Institution were overturned. Article 31B was revised so that prisoners could no longer be held beyond the maximum sentence imposed by the court. Commitment to Patuxent was no longer involuntary, and prisoners could transfer back to the Division of Correction at will. Parole authority at Patuxent Institution was narrowed, so that the Institutional Board of Review could not release at its own discretion persons convicted of certain specified serious crimes until fifteen years had passed since the date of admission to the Division of Correction, regardless of whether they were found to be cured of their deficiencies.

Whereas the Patuxent Institution had been independent of the correctional system prior to 1977, the revised law brought Patuxent under the administrative and political control of the Secretary of Public Safety and Correctional Services, permitting a closer integration between corrections and Patuxent operations. The sway of the mental health professionals at the top of the Patuxent Institution was also weakened following the reform, and correctional administrators assumed more control of programming and planning within the Institution.

Moreover, the mission of the Institution was changed by the 1977 revision. The laws and procedures embodied in the original Patuxent design permitted the indefinite incarceration of criminals who, in the words of the 1950 report to the Legislature, "will probably again commit crimes if released on the expiration of a fixed sentence. . . ."[3] The primacy given to the protection of society from dangerous persons was clear in the definition of the defective delinquent. According to the original law, a defective delinquent was defined as any individual currently serving a sentence in Maryland who was (1) emotionally unbalanced and/or mentally deficient, who (2) demonstrated a history of persistent, aggravated antisocial behavior, and who (3) was deemed to be a danger to society. The law permitted that such persons could be confined and treated until they were no longer a danger to society, or until they

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[3]Ibid.

were dead, whichever was longer. Francis Carney, who served as the Chief of Psychology Services at Patuxent, wrote that "few experts expected there would be many successful cures."[4]

The 1977 revision of Article 31B stated that "the purpose of the Institution is to provide efficient and adequate programs and services for [the] treatment [and] with the goal of rehabilitation of eligible persons. This shall include a range of program alternatives indicated by the current state of knowledge to be appropriate and effective for the population being served." This constituted a significant change. Whereas the original Defective Delinquency Law authorized prisoner rehabilitation, it was to be secondary to the mission of protecting the public by means of incapacitating criminals. The 1977 revision gave primary importance to rehabilitation. To support this changed mission, the admission requirements were changed from those embodied in the definition of the defective delinquent to a new set of criteria which defined the status of an "eligible person."

An eligible person, according to the law, is a person who "(i) has been convicted of a crime and is serving a sentence of imprisonment with at least three years remaining on it, (ii) has an intellectual deficiency or emotional imbalance, (iii) is likely to respond favorably to the programs and services provided at Patuxent Institution, [and] (iv) can be better rehabilitated through those programs and services than by other incarceration, and (v) meets the eligibility criteria established by the Secretary under Section 8 of this Article."[5] The new law also made it impossible for certain classes of extremely dangerous criminals to be considered eligible as Patuxent candidates.

Given this heightened emphasis on treatment and rehabilitation, it was perhaps inevitable that it would be asked if the Patuxent Institution was indeed more successful in treating and rehabilitating "intellectually deficient or emotionally unbalanced" criminals than the more conventional prisons in the Division of Corrections.

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[4]Francis L. Carney, Criminality and Its Treatment: The Patuxent Institution (Malabar, Florida: Robert E. Kreiger Publishing Company, 1989), p. 1.

[5]"Any person who is serving a sentence of imprisonment following conviction of a crime, has more than three years remaining to serve on his sentence, has not been evaluated by or confined at the Institution within the preceding three years, is not disqualified from being an eligible person under Section 1 (f)(2) of this article, and meets the eligibility criteria established by the Secretary under Section 4A (c) of this article may be referred by the Commissioner to the Institution for evaluation as to whether he is an eligible person upon recommendation of the sentencing court, upon application to the Commissioner by the State's attorney of the county in which the person was last convicted, upon application by the inmate, or upon recommendation of the Commissioner's staff."

On March 20, 1989, the Maryland legislature passed a bill calling for the Department of Public Safety and Correctional Services to undertake a study of the Patuxent Institution. In the following December, the Department contracted with Abt Associates to undertake a two-phased study. Phase I was a two-month feasbility study, in which Abt Associates determined whether the data collected and maintained by the Department was sufficient to sustain the ambitious study requested by the legislature. After this first phase, Abt Associates and the Department established the scope of the analysis to be undertaken in Phase II. (See Volume I, Executive Summary, for a discussion of the process by which the legislature's mandate was translated into the research design that was eventually adopted.)

The Objectives of the Present Study

The evaluation reported in these pages was designed to address the following questions:

- What is the overall effectiveness of the Patuxent experience on inmates, compared to being incarcerated in the Division of Correction?
- For which types of inmates is the Patuxent program most and least successful?
- What characteristics are the best predictors of success after release from Patuxent? How useful in this prediction is information known at the admissions stage compared with information acquired in the course of observing the inmate's behavior in the Institution and during leaves or work releases?
- How does the post-release performance of fully-treated Patuxent inmates (i.e., those who are released from Patuxent) compare with that of partially treated inmates (i.e., those who opt out early and return to the Division of Correction), and with that of non-treated inmates who have passed their entire term in the Division of Correction?
- What implications do these findings have for correctional policy in Maryland?

The following chapters describe the methods used to address these questions. Chapter 1 provides a summary overview of the strategies adopted to overcome these challenges to evaluating the Patuxent Institution's effectiveness. Subsequent chapters describe the methods in greater detail, as well as the findings. Because the statistical procedures used to estimate Patuxent's effectiveness are complex, it is difficult to describe them adequately in non-technical terms. Wherever possible, references to them in the following chapters are made in non-technical language; those desiring more detailed discussion of the methods should consult the appendices.

CHAPTER 1

THE BASIC STRATEGY FOR ANALYZING PATUXENT'S EFFECTIVENESS

There exist three principal challenges to evaluating the Patuxent Institution's effectiveness as a treatment program. First, "effectiveness" must be translated into something that can be measured efficiently and reliably.

Second, it is necessary to identify a population of inmates in the Division of Correction that can be used as a standard for assessing the performance of inmates fully or partially treated at Patuxent. Whether Patuxent-treated inmates do better or worse than prisoners held entirely by the Division of Correction depends upon which inmates in the Division of Correction they are compared to. Had prisoners been committed to Patuxent in random fashion, or on a first-come, first-serve basis, it would have been relatively easy to construct a comparison group of otherwise similar inmates who would have been accepted at Patuxent were it not for the luck of the draw. As it was, however, applicants to Patuxent were screened heavily and few were accepted, while others were rejected as not eligible. This complicates the ability to find a comparison group of inmates who were similar in all respects save the prison programs to which they were exposed during their term.

Third, an analytic strategy is needed to permit one to attribute differences in inmates' post-release behavior to the different programs they were exposed to at either the Patuxent Institution or the Division of Correction's prisons, rather than to some other preexisting differences among them. Had inmates been randomly assigned to Patuxent, without any preference given to certain types of persons or crimes, it would be reasonable to assume that the various inmate characteristics which affect subsequent recidivism were randomly distributed among the comparison groups. Unfortunately, the fact that Patuxent officials exercised selectivity in their admissions decisions makes such a simple attribution of cause and effect impossible. It is necessary, therefore, to ensure that conclusions drawn from comparisons of inmates do not simply reflect that Patuxent officials selected only those most likely to succeed (that is to say, "creamed" from among their applicants), or those least likely to succeed ("reverse creamed," for want of a better term).

This chapter provides a brief overview of the basic assumptions and approaches adopted here. Subsequent chapters provide more detailed discussions of the methods as well as the findings.

The principal strategy adopted here for evaluating the impact of the Patuxent Institution's effectiveness is to create three comparison groups, measure the recidivism of prisoners in each of the three groups following their release, and then estimate, using statistical modeling techniques, the extent to which observed differences in outcomes can be reasonably attributed to differences in the treatment received by the groups rather than to other differences among them.

Measuring "Effectiveness" by Recidivism

Although there exist various ways to conceive of prisoner rehabilitation, this study focusses exclusively upon inmates' recidivism. Recidivism is measured by the occurrence of an arrest while parole supervision following a release from prison.[1] A second and more stringent measure was considered: whether a released inmate is returned to the Department's custody. This arguably sets a higher threshold for what is considered a serious violation, and is of special interest to policy makers and planners in the Department because of their need to determine future demand for cellspace. This more stringent definition was not used here, however, because it is a distorted indicator of the offenders' performance following release. That is, the two agencies that supervise prisoners released from Patuxent and from the Division of Correction differ in their practices and policies regarding reincarceration. It is, consequently, difficult to determine how much of the difference in return rates can be attributed to true differences in the behavior of released prisoners, rather than to differences in organizational practices.

It is possible that the preferred measure of recidivism--arrests following release from prison--is likewise contaminated by differences in organizational practices. That is, the likelihood of detecting an arrest might be higher in one of the supervising agencies, as might be the likelihood of recording its occurrence. An analysis of such possibilities reveals no evidence of such distortion, however, which is why arrest is relied upon entirely as the measure of recidivism in the statistical analysis.

Constructing Comparison Groups

The three groups of released prisoners that we compare are:

- persons admitted to Patuxent and subsequently released for the first time from that institution (called "eligible person releases," or "EP releasees");
- persons accepted for treatment at Patuxent, but who transferred at some point afterwards to the Division of Correction and were later released to the community (called "EP transfer releasees"); and

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[1]To make the comparisons consistent, we have defined "release to supervision" as not including a release from Patuxent to parole in a halfway house. Although this is a common method of release at Patuxent, there is no equivalent in the Division of Correction. Inmates at halfway houses are considered paroled to supervision when they are parolled "to the community."

- persons who applied to Patuxent for admission, but who were rejected as ineligible, transferred back to the Division of Correction, and were then released at a later date to the community (called "non-EP releases").

The analysis of released prisoners is based on a sample of all male prisoners who applied for admission to Patuxent after July 1, 1977, when new laws governing eligibility became effective, and were subsequently released. These prisoners were first classified as EP releasees, EP transfer releasees, or non-EP releasees. A random sample of each group was drawn for analysis, stratified by the year of release.[2]

For all prisoners in these three comparison groups, we manually collected a variety of data from institutional and supervision case files, as well as data from the state's OBSCIS system, a computerized data base maintained by the Department of Public Safety and Correctional Services to keep track of prisoners' movements. Among the information collected on each prisoner was whether or not he was arrested after being released, whether his parole was revoked, and whether he was returned to Patuxent or a Division of Correction prison. For those arrested, we recorded dates of arrest, charges, disposition of the case, and sentence imposed, if any. We also collected information about the prisoners' post-release employment experiences, their backgrounds prior to being incarcerated, their psychiatric diagnoses, their prior juvenile and criminal records, their offenses, their sentences, aspects of their current correctional supervision/placements, and various other aspects of the offender and his case.

We also collected data on three groups of prisoners who were not released:

- prisoners accepted as eligible but who were never released from the Patuxent Institution prior to our data collection in June 1990 ("EP-ins");

- prisoners who were accepted as eligible but who transferred subsequently to the DOC, from which they had not yet been released before we began data collection ("EP transfer-ins"); and

- prisoners not accepted as eligible, who where then transferred back to the DOC and not released prior to our collecting data ("non-EP-ins").

Samples of prisoners in each of these three groups, stratified by year of application to Patuxent, were drawn from among all non-released prisoners who applied for admission to Patuxent after July 1, 1977.

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[2] See Section 2 below for a discussion of sampling procedures.

It is important to understand that the comparison groups of inmates from the Division of Correction were not intended to be representative of all inmates in the Division's prisons. Rather, they were chosen to approximate, as closely as possible, the population of inmates admitted to and released from Patuxent.

The purpose of designing comparison groups in this way was to assess as precisely as possible the impact, on inmates' subsequent recidivism, of placing prisoners thought to be "intellectually deficient and emotionally unbalanced" in Patuxent rather than in the Division of Correction's prisons. This evaluation did not attempt to compare the effectiveness of Patuxent program on its releasees compared to the overall effectiveness of the Division of Correction's programs on all inmates released from its prisons. To do so would have provided useless information for policy makers. Policy makers in Maryland are arguably most interested in evaluating the two principal options they face when committing intellectually and emotionally impaired prisoners to the Department of Public Safety and Correctional Services. These prisoners can be referred to a special program designed for them at the Patuxent Institution, or they can be "mainstreamed," incarcerated with the general inmate population in the Division of Correction's facilities.

Ideally, we would develop for our comparisons a population of inmates who were nearly identical in all respects to those who were treated and released from Patuxent. However, as we discuss in Chapter 2, inmates accepted for Patuxent represented a highly-distilled segment of the inmates committed to the state's prisons. We reasoned that drawing a representative sample from all inmates released from the Division of Correction would yield a comparison group that was significantly different from those admitted to Patuxent. It is clear that many prisoners in the Division were neither intellectually deficient nor emotionally unbalanced, as the Patuxent screening panels defined the terms. One alternative would have been to identify from among all inmates who had never applied to Patuxent a sub-population that met the essential criteria of "intellectual deficiency" and "emotional unbalance," and who probably have been accepted at Patuxent had they only applied. Drawing conclusions from a comparison of Patuxent released inmates with such a group would provide powerful findings. Unfortunately, the information required to make such a diagnosis was not available for those who had not been reviewed at Patuxent.

The choice of using applicants rejected by Patuxent as the "non-treated" comparison group is not an ideal one, because they may differ in systematic ways from those accepted and treated. We compensate for this sub-ideal circumstance, however, by examining also those persons who were indeed accepted but who transferred back to the Division of Correction before being released. By comparing this partially treated population with the other two, our ability to draw inferences about treatment effects is strengthened. We also compensate for this by developing statistical models that explicitly aim to make corrections for the differences in comparison groups that were created by the exercise of selection and rejection processes.

Finally, we hypothesized that inmates who applied but were rejected were as a group more alike than unlike those who were accepted, compared to a representative sample of all inmates in the Division of Correction. The selection criteria were known to all in the system, and inmates without a chance of meeting them would be systematically discouraged from applying. This self-screening by inmates, as well as the decisions by judges and Division of Correction personnel who "fed" applicants to Patuxent, probably yielded population of "rejects" that were quite similar to accepted inmates in many significant respects. Our strategy of drawing from among these "rejects" was designed to take advantage of this larger winnowing process.

The Problem of Distinguishing "Treatment Effects" from "Selection Effects"

If prisoners had been assigned to Patuxent or to DOC prisons on a random basis, it would a simple matter to draw conclusions about the existence and direction of a treatment effect from an examination of recidivism patterns. If no difference in recidivism were found, we would conclude that Patuxent offered no better treatment (or no worse treatment). If Patuxent releasees did better, we would attribute this to superior treatment there. If they did worse, we would attribute this to inferior treatment.

But prisoners were not assigned to Patuxent on a random basis. Instead, they chose to apply for admission, and Patuxent officials then selected some to admit while rejecting others. Moreover, some prisoners transferred out of Patuxent voluntarily after being admitted for treatment, and others were transferred against their will at the discretion of Patuxent officials. Finally, two different parole boards, one for Patuxent and another for the DOC's prisons, selected which prisoners to release prior to the expiration of their sentence, and which to hold longer.

The existence of these selection processes complicates our analysis. In particular, without randomized assignment of prisoners to each of the facilities, we can never be sure whether differences in outcomes among the comparison groups reflect differences due to the treatments received by the prisoners in the three groups or differences in the prisoners selected for the groups. In this situation, we proceed as follows. First, we define the outcome measures--in this case, recidivism--that will be used to assess potential treatment effects. We then measure the differences in recidivism among each of the three comparison groups, each considered as a whole. We then pose a number of hypotheses that might reasonably explain the observed patterns of recidivism (including both selection mechanisms and treatment effects). We then examine the data for evidence of selection effects and consider various methods for distinguishing between selection and treatment effects. The procedures used here to distinguish selection from treatment effects is innovative, we believe, and provides a powerful way of compensating for the absence of a controlled experiment that relies on random assignment of test subjects.

Considering Imprisonment in Patuxent or the Division of Correction as Two Different "Treatments"

Although the legislature requested in the authorizing legislation for this evaluation that the Patuxent programs be compared with the Division of Correction's programs, we did not to attempt an evaluation of different treatment modalities within either the Patuxent Institution or the Division of Correction's prisons. It would be impossible, given the relatively small number of prisoners that have been released from Patuxent since July 1977, to isolate the effects of discreet treatments within an institution. Prisoners typically experience a great number of programs aimed at rehabilitating them. They also differ in myriad other ways, including their backgrounds, their experiences in prison, their in-born traits, their handicaps, and their talents. Lacking data on all of these variations, it is impossible to test if exposure to one or another particular treatment modality is associated with a significant difference in post-release performance.

Nor can we analyze differences among the Division of Correction's prisons. Prisoners in the Division of Correction rarely spend their full sentence in one place. Instead, they cycle through a number of different prisons between their admission and release and participate in a variety of different programs. Because these prisoners have been exposed to so many different conditions and programs during their term, it is probably impossible to isolate the effects of one program from all others.

Rather than trying to trace a complex path of causes and effects among different in-prison treatment programs, and to estimate the nature of those relationships on recidivism, we chose instead to consider the Patuxent experience as a unitary treatment. Likewise, placement in the Division of Correction was also considered here to be a unitary treatment. Both the Division of Correction and the Patuxent Institution were thereby considered "black boxes." Our analysis aims at identifying a difference in recidivism among those released from one of these two black boxes that can be reasonably attributed to the mix of programs and treatments at Patuxent and other DOC prisons rather than to differences in the types of prisoners admitted to and confined in Patuxent, on the one hand, or in DOC prisons, on the other.

Chapter 2
CONSTRUCTING THE COMPARISON GROUPS

Our analysis depends upon comparing differences in outcomes among three different groups of released prisoners: eligible persons released from Patuxent ("EP releasees"), eligible persons who transferred out of Patuxent and were subsequently released from the Division of Correction ("EP transfer releasees"), and persons never admitted to Patuxent who were released from the Division of Correction ("non-EP releasees"). In addition, for our analysis of the processes by which inmates were "selected" for acceptance and retention at Patuxent, we sampled not only those who were released from incarceration but persons not released as of the date we began data collection (June 1990). These latter samples were called "EP ins, "EP transfer ins," and "non-EP ins."

Comparing the post-release behavior of persons let out of Patuxent with that of persons who were either rejected from Patuxent or who "washed out" of the program and transferred back to the Division of Correction raises two obvious questions. Are not the latter two groups too different in important ways from Patuxent releases to be used for gauging Patuxent's effectiveness? And have not both comparison groups been exposed to the Patuxent Institution? Some of the eligible persons who transferred have spent more time in Patuxent's treatment program than some persons who were ultimately released from the institution. All persons who were rejected from Patuxent also spent some time there when they were being reviewed, as long as six months.

An alternative strategy would have been to construct an entirely different comparison sample from prisoners who were not rejected from Patuxent, but were apparently similar to those who ultimately were released from Patuxent, and who had not been exposed at all to Patuxent's program.

We chose not to adopt this alternative for four reasons. First, we determined, in consultation with Patuxent officials, that in the course of reviewing an applicant for admission, a prisoner is indeed exposed to the Patuxent program, but does not really begin treatment until he is accepted and placed in the treatment program. It is reasonable, therefore, to regard persons found not eligible and transferred back to the Division of Correction as not having been treated at Patuxent.

Second, examining a group of prisoners who have in fact been treated for some time at Patuxent but have gone back to the Division of Correction (the EP transfers) provides us with an important means of sorting out differences due to treatment, to selection into Patuxent, and to non-Patuxent experiences.

Third, there were strong practical reasons for drawing the comparison groups from the EP transfer and rejected (non-EP) populations. The richest source of data on individuals was found in the Patuxent review files. Had we decided instead to develop a matched sample of persons who had never applied to Patuxent, we would not have been able to obtain comparable data on those persons from the Division of Correction's file.

Finally, we guessed that the process of funnelling persons to Patuxent for consideration of admission produced a population of prisoners that were more alike than not. Because we wanted comparison groups that were as similar as possible in important respects, we took advantage of this funnelling by drawing our comparison groups only from those who were ultimately transferred to Patuxent for review.

Classifying Patuxent Applicants Into Separate Populations

The first task in drawing the six different samples was to determine how many prisoners had been accepted or rejected by Patuxent, transferred out, and either released or held by either the Division of Correction or Patuxent. We limited this search to prisoners applying to Patuxent between July 1, 1977 and June 30, 1988. The former date marked the beginning of a new era at Patuxent (officially, at least), because the legislature changed the mission of the facility as well as the criteria for admission effective on that date. Our analysis of the Patuxent records indicate that there were 3,348 applications for admission to the institution during this period. Of those, 87 were second applications by persons who had previously applied and had been denied. Thus, we counted 3,261 individual applicants who had applied at least once.

We then determined if these persons were accepted or rejected at Patuxent, and also if they were subsequently released from either the DOC or Patuxent. This was done by first searching the state's automated correctional data base, called OBSCIS. Misspelled names, transposed numbers, and other assorted problems often made it difficult to match OBSCIS files with the lists of Patuxent applicants. Problems were also created by missing data in OBSCIS. (This system was created in 1981, and information about events that occurred prior to that were not always recorded completely and unambiguously.) We attempted to find all missing matches by relying upon various other files, including paper files in the institutions. Ultimately, we succeeded in finding the needed records of all but 80 of the 3,261 prisoners who had applied to Patuxent during our chosen time period. Records for 49 prisoners were not found at all; in another 31 cases, records were found but the data contained in them were illogical and probably erroneous, which led us to consider the records effectively missing. This yielded a file of 3,181 prisoners.

Table 2.1 shows the distribution of these 3,181 prisoners with records.

Table 2.1
Classification of All Prisoners Who
Applied for Admission to Patuxent Between
1 July 1977 and 30 June 1988

	Number	Percent
Accepted as eligible persons and:		
Released from Patuxent	321	10.1
Never released and still in Patuxent:	404	12.7
Accepted as eligible but subsequently transferred:		
Released from DOC afterwards:	320	10.1
Never released from DOC and still in:	421	13.2
Not accepted as eligible and transferred back to DOC:		
Released from DOC	608	19.1
Never released/still in:	1,107	34.8
Total	3,181	100.0

Drawing Three Samples of Released Prisoners

We established the following targets for sample sizes, shown in Table 2.2.

Table 2.2
Target Sample Sizes

Accepted as eligible persons and:	
Released from Patuxent	321
Never released and still in Patuxent:	150
Accepted as eligible but subsequently transferred:	
Released from DOC afterwards:	125
Never released from DOC and still in:	76
Not accepted as eligible and transferred back to DOC:	
Released from DOC	125
Never released/still in:	75
Total	872

Our aim was to collect information on all Patuxent releasees and on samples from each of the five other populations. Although our original design called for a sample of 250 Patuxent releasees, we subsequently decided that if time allowed, we would analyze all 321 releases from Patuxent because of the high interest in these persons. We selected Patuxent releasees at random so that we would be able to stop at any point above the 250 mark and still have a randomly drawn, representative sample of the entire population. For the other five groups, sampling rates for the five populations were established to obtain desired sample sizes.

The samples of EP transfer and non-EP releasee comparison groups were stratified to match the release dates of the Patuxent EP releasee sample as closely as possible. This was done to control for differences associated with release dates. Such differences might arise from systematic variation in the environments to which prisoners were released. For example, there may have been significant differences in the intensity and efficiency of parole supervision practices at different times during the ten-year period covered by the study, which may have affected the likelihood of recidivating.

Stratification of the released prisoners was done by first sorting all prisoners in the three main classes (EP releasees, EP transfer releasees, and non-EP releasees) by year of release. Prisoners were then drawn at random from within each of these year-of-release strata. The number of prisoners chosen from within each stratum was determined by the number of such prisoners in each yearly stratum in the EP release group.

For the samples of prisoners still confined, random sampling was stratified by the year of transfer to Patuxent for review. This was done to minimize the bias attributable to different forces that may have encouraged or discouraged transfer at various times.

When case files from a particular release or review year were unavailable, we attempted first to find replacement cases from that release or review year, selected at random within that year. When we had already chosen all of the available cases for a given year, we sought replacement cases from the next most recent year.

We were not able to obtain all relevant files for 824 prisoners. If we had not obtained all the needed files by the end of our data collection period, we did not use the case. Ultimately, we obtained all files for over 95 percent (788 persons). Although we drew the sample to create comparison groups of a specific size, the data collected from case files sometimes indicated that the original classification was incorrect. These discrepancies reflected the incomplete information at hand when the sample was drawn. Correctly classifying these cases produced a distribution of prisoners among the comparison groups somewhat different from that initially sought.[3]

[3] For statistical analysis, we weighted each of the cases by a factor that was computed based on the odds of it being sampled from the larger population. This permitted us to extrapolate our findings from the total sample of 788 prisoner to the 3,181 prisoners in the population of Patuxent applicants. Misclassified prisoners were weighted according to their original probabilities of being sampled, and not according to the probabilities used to sample the group into which they were placed subsequently.

Table 2.3 shows the distribution of those prisoners whose records we were able to code and analyze, according to their eligibility and actual release status.

Table 2.3
The Distribution of Sampled
Prisoners Among Six Comparison Groups

	Number	Percent
Accepted as eligible persons and:		
Released from Patuxent	280	35.5%
Never released and still in Patuxent:	136	17.5
Accepted as eligible but subsequently transferred:		
Released from DOC afterwards:	104	13.2
Never released from DOC and still in:	74	9.4
Not accepted as eligible and transferred back to DOC:		
Released from DOC	119	15.1
Never released/still in:	75	9.5
Total	788	100.0

How Comparable Are the Three Samples?

As mentioned above, we hypothesized that the process by which inmates were either selected or rejected by Patuxent officials worked to funnel certain types of inmates to the Institution while screening others out. Moreover, we hypothesized that this process produced three populations -- EP releasees, EP transfers, and non-EP releasees -- that were quite similar to one another, simply because they were "culled" from a much larger and more diverse population of inmates in the Division of Correction.

A simple examination of a few numbers makes it clear that those who were ultimately transferred to Patuxent to be considered for admission constituted a highly-distilled segment of the larger population of inmates in Maryland. Between 1 July 1977 and early 1990, a total of 3,261 persons applied to Patuxent, out of approximately 75,000 inmates who were

admitted to the Division of Correction during this same period.[4] Of that small number of applicants, about half (1466) were admitted. Of those admitted number, about half (741) transferred back to the Division of Correction before being released. Of the 725 remaining, 44 percent (or 321) were released during this twelve and a half year period.[5] This compares to about 69,600 prisoners released from the Division of Correction during this same period.[6]

Our reasons for suspecting that this distillation process also yielded three quite similar populations were based on an analysis of the procedures Patuxent officials followed to select certain applicants for admission while rejecting others.

Following the change in 1977 of Article 31B of the Maryland Code, Patuxent officials were directed to accept as an "eligible person" any person who "(i) has been convicted of a crime and is serving a sentence of imprisonment with at least three years remaining on it, (ii) has an intellectual deficiency or emotional imbalance, (iii) is likely to respond favorably to the programs and services provided at Patuxent Institution, (iv) can be better rehabilitated through those programs and services than by other incarceration, and (v) meets the eligibility criteria established by the Secretary under Section 8 of this Article."[7]

Prisoners who meet the threshold criteria (items i and v) may apply for transfer to Patuxent for further review. No doubt there is some lore in the Division of Correction's prisons about which type of prisoner Patuxent is likely to admit, and this probably affects a prisoner's decision to apply. Once Patuxent agrees to consider the prisoner for admission, he is transferred

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[4]DOC admissions from FY 1979 through FY1989 from "Action Agenda Plan for Maryland Prisons," (Maryland Department of Public Safety and Correctional Services, unpublished draft dated June 4, 1990), p. 4. Numbers for FY1978 and half of FY1990 extrapolated from trend data. Numbers of applicants to Patuxent developed by Abt Associates with the cooperation of the Patuxent Institution and the Department of Public Safety and Correctional Services.

[5]Numbers developed by Abt Associates with assistance of Department of Public Safety and Correctional Services.

[6]Estimated by subtracting the increase in the daily population of DOC prisons between FY1979 and FY1989 from the estimated total number of intakes between FY1978 and mid-FY1990, discussed in note 3 above.

[7]"Any person who is serving a sentence of imprisonment following conviction of a crime, has more than three years remaining to serve on his sentence, has not been evaluated by or confined at the Institution within the preceding three years, is not disqualified from being an eligible person under Section 1 (f)(2) of this article, and meets the eligibility criteria established by the Secretary under Section 4A (c) of this article may be referred by the Commissioner to the Institution for evaluation as to whether he is an eligible person upon recommendation of the sentencing court, upon application to the Commissioner by the State's attorney of the county in which the person was last convicted, upon application by the inmate, or upon recommendation of the Commissioner's staff."

to the Institution, where he undergoes a review process that may last six months. During that period, an evaluation team gives him a complete diagnostic work-up, which includes physical and psychiatric examinations, psychological testing, and social work evaluation. Afterwards, he appears before a panel of mental health professionals, who interview him and examine him further. This panel makes not only a decision to admit the person but also arrives at a psychiatric diagnosis.

Whether or not the applicant has an "intellectual deficiency" is defined as having an I.Q. of 79 or lower. Determining whether the prisoner has an "emotional imbalance" is less precise. According to one of the first bulletins issued by the Patuxent administrators to guide the selection process, "emotional imbalance...will continue to be interpreted according to the currently accepted standards applied to these terms by the behavioral sciences." A subsequent bulletin provided slightly more guidance: "emotional imbalance is viewed in terms of the individual's life history and behavior and should be consonant with the categories established in the APA-Diagnostic and Statistical Manual of Mental Disorders. It should be emphasized that the new [law] does not exclude any category of emotional disturbance nor does it restrict definition of emotional imbalance to only certain categories of disorders, such as psychopaths, sociopaths, or other personality disorders." Later, a more objective assessment instrument was developed, the "Eligible Persons Criteria Scale" (a copy of which is included in Appendix 3).

Whether or not a prisoner "is likely to respond favorably to the programs and services provided at the Patuxent Institution," the third standard for eligibility, "is seen as referring to the acceptance of the individual that he has emotional and/or intellectual disturbance and that he evidences sincere desire for treatment--that the individual in motivated for treatment." Furthermore, according to a bulletin issued in 1978, this standard "requires a prediction," and the evaluation team is instructed to "utilize available knowledge" in making this prediction:

> For example, the individual should be relatively young (below age 30), have no or few prior convictions (not be a repetitive offender of long standing), have family or meaningful outside resources available, be a resident of the State of Maryland, disturbance not be such as to require programs and services not available at the Patuxent Institution, etc. A lengthy sentence should be viewed as a negative factor in determining treatability. Specifically, any individual with a sentence longer than thirty years should be considered to be possible "eligible" only if he is under thirty years of age, as no or few prior convictions, or the behavior and offense is unusual in nature and felt to be amenable to treatment, i.e., the young individual who kills a parent, or the young schizoid individual who for no apparent reason commits a heinous crime as a first offense and acting by himself and not as a part of a group, or the individual where there has been a waiver of juvenile jurisdiction, etc. <u>It must be stressed that the examples given above are intended for use as a general guidelines only</u>. [emphasis in the original][8]

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[8]Patuxent Institution, <u>Information Bulletin</u> PIB #2-78 (Feb. 1, 1978).

Once a prisoner is accepted as an eligible person, he is then transferred into the general population and into the treatment program. Those not deemed eligible are then transferred back to the Division of Correction.

Given the various standards that are applied to prisoners, it is not unreasonable to expect that offenders who survive the selection processes long enough to be released from Patuxent are probably different from those who were rejected, and from those who were transferred back to the Division of Correction before they had earned release from Patuxent. However, several features of the selection process give reason to suspect that the three groups were quite similar. All prisoners had to be motivated to apply. They all met the one clear-cut requirement for eligibility in that they had more than three years to serve before they could be considered for parole. They also may have decided to apply to Patuxent only after determining that they more or less fit the "picture" of an eligible person that must be a part of the lore in the prison society. Knowledge that Patuxent tends not to accept drug sellers would probably discourage them from even applying, for example. The fact that the standards of "emotional imbalance" and "likelihood to respond favorably" to Patuxent's treatment programs were quite subjective may have resulted in a less-than-clear-cut differentiation between eligible and ineligible persons. The fact that applicants were also screened by different review panels who reportedly looked for different types of people might have contributed further to a tendency away from sharp differentiation between eligibles and non-eligibles.

Examination of several tables reveal that the three groups of prisoners we selected for comparison were indeed quite similar in many respects.

Table 2.4 shows that the prisoners in each of the three groups had approximately the same average number of prior juvenile and adult arrests and incarcerations on their records.

Table 2.4
Prior Records of Prisoners in Three Comparison Groups of Releasees

	EP	EP Trans	Non-EP
Average no. juvenile arrests	2.1	2.3	3.1
Average no. juvenile incarcerations	0.6	0.6	0.7
Average no. prior adult arrests	3.9	3.3	4.1
Average no. prior adult incarceration	1.9	1.4	1.6

Table 2.5 compares the three groups on a variety of other measures. The most notable difference is that a larger proportion of Patuxent releasees was reportedly drug-free within a year of committing their offense, as compared with either non-EPs or EP transfers. Similarly, a larger proportion of Patuxent releasees did not report having abused alcohol during that period. Patuxent releasees were more likely to be unmarried at the time of offending (29 percent versus 20 percent of non-EPs). Non-EPs were somewhat more likely than EPs to have been unemployed: 80 percent versus 71 percent, respectively. They were of roughly similar intelligence (91-93 I.Q.), age at the time of first release to supervision (32), age at time of first drug use (15-16), ethnicity (39-45 percent white), and education attainment (52-64 percent reported obtaining their high school diploma or equivalent certificate).

Table 2.5
Miscellaneous Characteristics of Prisoners in Three Comparison Groups of Releasees

	EP	EP Transfer	Non-EP
Average I.Q.	93	90.5	90.3
Average age at Patuxent review	27	24	28
Average age at first release to supervision	32	31	32
Average age of first drug use	16	15	15
Proportion white	45%	42%	39%
Proportion reporting no drug use within one year prior to committing offense	38%	15%	23%
Proportion reporting no alcohol use within one year prior to committing offense	22%	12%	17%
Proportion not married (legally/"common law") at time of offense	29%	15%	20%
Proportion unemployed at time of offense	71%	75%	80%
Proportion attaining high-school diploma	59%	64%	52%

Table 2.6 shows the most serious charges for which prisoners in each of the three groups were convicted. Patuxent releasees were more likely than non-EPs to be convicted of homicide (21 versus 11 percent, respectively), of first or second degree rape (14 versus 5 percent), or of arson (12 versus 3 percent). Conversely, they were somewhat less likely to have been convicted of robbery (32 versus 40 percent), and of statutory rape or other sex offenses (3 versus 9 percent).

Table 2.6

Conviction Offenses: Most Serious Offense Charged

	EP	EP Transfer	Non-EP
Homicide, 1st & 2nd	21.0%	13.6%	11.1%
Homicide, manslaughter	0	.7	1.9
Rape, 1st & 2nd degree	14.0	17.5	5.1
Robbery, armed/unarmed	32.0	35.9	40.2
Kidnapping	1.5	1.0	.9
Assault/Battery	13.2	16.5	12.8
Burglary	9.9	9.7	9.4
Auto theft	1.7	1.0	.9
Arson	11.5	1.0	2.6
Stolen goods	1.7	1.0	0
Forgery	0	1.0	0
Fraud, false pretenses	0	0	1.7
Vandalism	0	0	0.9
Narcotics	0	1.0	3.4
Statutory rape/other sex offenses	2.9	1.0	8.5
Weapons	.4	0	0
Domestic	1.1	0	0.9
Trespassing/Disorder	.4	0	0
Criminal Proc./parole	0	0	1.7
	100%	100%	100%
	(272)	(103)	(117)

Some prisoners were convicted of more than one offense, or their offenses resulted in several different types of charges. Table 2.7 classifies all prisoners, in each release group, by whether any of their changes were for violent, drug, sex, domestic, theft or weapon-related crimes. The most notable difference is that a larger proportion of Patuxent releasees was convicted of violent offenses, compared to non-EPs (81 versus 69 percent, respectively).

Table 2.7
The Proportion of Released Prisoners Convicted of Different Types of Offenses, in Each of Three Comparison Groups

Category of Offense	EP	EP Transfer	Non-EP
Violent	81.2%	85.6%	68.9%
Drug	2.2	3.8	4.2
Sex	19.9	21.2	16.0
Domestic	1.1	1.0	0.8
Theft	19.2	25.0	19.3
Weapons	12.7	15.4	19.3

Table 2.8 provides still further detail on the offenses for which prisoners in each of the groups were convicted. Patuxent releasees were more likely than non-EPs to be convicted of offenses in which victims were strangers (72 versus 59 percent, respectively), in which the offender acted as a leader of other co-defendants (36 versus 28 percent), or was motivated by money (56 versus 35 percent). Conversely, fewer EPs (18 percent) were on probation at time of committing the offenses than non-EPs (28 percent).

Table 2.8
Characteristics of the Offense for Prisoner was Convicted, by Type of Release

	EP	EP Transfer	Non-EP
Victim was:			
Child	7.4%	8.6%	15.4%
Teenager	7.4	7.1	3.1
Adult	87.4	88.6	83.1
Weapon:			
Gun	46.5	48.5	50.4
Other weapon	27.1	26.7	21.4
No weapon	26.4	24.8	28.2
Relationship of victim to offender:			
Victim in care of Offender	3.7	1.4	9.2
Stranger	71.8	70.4	59.4
Family	6.3	7.0	13.0
Involvement with co-defendants:			
Acted alone	50.6	56.4	53.9
Was leader	36.4	37.2	27.8
Was follower	10.0	4.3	9.6
Unknown relationship	3.0	2.1	8.7
Offender was provoked:			
Verbally	10.4	2.1	2.7
Physically	2.0	4.3	4.5
No provocation	87.6	93.6	92.7
Offenses was planned:	25.2	37.5	34.5
Offender motivated by money:	55.5	37.5	34.5
Condition at time of offense:			
Drunk	46.0	50.0	46.8
On drugs	32.5	50.0	32.9
Legal status at time of offense:			
On probation	17.8	19.2	28.1
On parole	18.5	5.9	17.4

Table 2.9 shows the sentences imposed on prisoners in the three groups of releasees. Proportionately more Patuxent releasees were serving life sentences, and those not given life were serving longer terms, on average, than either transfers or non-EPs.

Table 2.9
Sentences Imposed Upon Offenders in Each of Three Comparison Groups of Released Prisoners

	EP	EP Trans	Non-EP
Proportion with Life sentence	6.9%	1.0%	4.4%
Average sentence, in years (excluding lifers)	19.7	15.9	14.0
Median sentence, in years (excluding lifers)	18.0	15.0	10.5

These tables indicate that (except for some characteristics such as length of sentence) the three groups of prisoners we chose for comparison were sufficiently similar to each other for analysis. Because we chose a statistical method that takes differences among groups into account, we were not required to find virtually identical groups of prisoner to compare. In sum: There is no reason to believe that the two groups -- EP transfers and non-EPs -- are inappropriate groups to compare with EPs.

Chapter 3

DEFINING POST-RELEASE PERFORMANCE

Our evaluation assesses the effect of the Patuxent experience versus the DOC imprisonment experience on post-release recidivism. We start the clock after the first release from Patuxent or a DOC prison that occurred subsequent to the review at Patuxent. (Any release that occurred before review at Patuxent is excluded.) **A release is defined to include parole, expiration of sentence, mandatory release or mandatory supervision, or commutation of sentence. A parole to a half-way house, which is common at Patuxent, is not considered a release.** (Even though Patuxent officials consider placement in a halfway house a release, we have chosen to begin the clock after these persons are paroled to the community, and not to a halfway house, because this is consistent with what is considered a release in the Division of Correction.) Escapes, suicides, deaths, and inter-jurisdictional transfers are not considered releases from institutions. Also excluded are furloughs, leaves for work-release, or any other short-term leaves authorized by prison administrators for any other purpose.

Recidivism is measured in two ways in the following pages. One counts a <u>return</u> to the Patuxent Institution or to a DOC prison either for a technical violation or for a new arrest and/or conviction. We also use as a measure any <u>arrest</u> following release from prison, <u>sustained while the offender is under supervision</u>. (See Appendix 1 for a more technical discussion of how these events were measured.)

Neither is a perfect indicator. Rates of returns to prison may be affected by differences in parole supervision policies. (Patuxent has a separate parole board and its own parole supervision agency.) One agency may be more ready to pull parolees off the street, and differences in return rates may reflect both the offenders' behavior and parole practices and policies. In Chapter 4 below, we examine a variety of data to estimate the extent to which returns to prison are affected by differences in parole agency practices.

Returns to Maryland prisons, for whatever reason, are also imperfect indicators of the offender's adjustment because offenders may be arrested and imprisoned in other states. We were not able track offenders in our sample to determine if any were imprisoned elsewhere. Nor were we able to track offenders to see if they had been incarcerated in county jails. However, for those offenders released to parole, we assume that reincarceration is most likely to happen not in local jails but in the state's prisons. Furthermore, reincarceration in the state's prisons represents a consistent measure, and return to prison seems to be the effect that is most relevant to state correctional policy makers.

Arrests are less likely to be influenced directly by the intensity of supervision, and we chose this measure of recidivism for our more exhaustive analyses, shown in the following chapters. Our preference for using arrest over return to prison for most of our analysis is based on the observation that arrests are usually made not by parole officials but by other law enforcement officers. We consequently hypothesized that arrests represent a more direct, and less "contaminated," measure of the offenders' behavior.

Using arrests as a measure does have limitations, however. One is that they can be used to measure performance only while under supervision by either the Division of Parole and Probation or Patuxent's parole authorities. Because we relied upon parole supervision files for information about arrests, any arrest that occurred after the offenders' release from parole was not observable by us. Nor were we able to count arrests sustained by persons released from prison who were not required to be under parole supervision at all. Our comparison of arrests and arrest rates is limited, consequently, to a subsets of our samples of released prisoners.

Another drawback is that Patuxent parole and the Division of Parole and Probation use somewhat different methods for detecting arrests. Both Patuxent and the Maryland parole authorities benefit from automatic reporting systems that apprise them of a parolee's arrest. The Division of Parole and Probation relies upon the Arrest Disposition Reporting (ADR) system, operated by the state police, for automatic notification of any fingerprintable arrest occurring within the state. In contrast, Patuxent officials receive notices from the FBI Notification System. This system has a broader reach, as it will report an arrest occurring out of state. However, the FBI system reports only felony arrests, whereas the ADR system reports all fingerprintable arrests in-state.

Although there are differences in the types of arrests that are reported to Patuxent and to Maryland parole authorities, these differences are narrowed by both agencies' use of other detection methods. Parole officials in both agencies become aware of arrests by parolees themselves, their families, police officers, stories in the news media, or by discovering that the parolee is incarcerated. Because there is a lag in notification by the FBI and the ADR methods, many arrests are discovered first by these informal methods rather than by receipt of a FBI or ADR report. This suggests that the methods for detecting arrests are generally comparable, and that the probability of discovering an arrest is about the same in both agencies.

Similarly, there are no strong grounds for suspecting that systematic differences exist between Patuxent parole and Maryland parole in the probability of recording the occurrence of arrests. Parole officers in both agencies are required to file reports of arrests--of <u>any arrests</u>--to either to Maryland Parole Commission or to the Patuxent Institutional Board of Review, whichever has jurisdiction. These bodies use these reports to consider whether to revoke the offender's parole or to change the conditions of release. To be sure, actual practice may vary from this standard. Because we did not study the practice of detecting and recording arrests, we cannot be assured that no significant departures occur. If there is an undercounting or underreporting of arrests by either agency, it is more likely to occur in the Maryland Division of Parole and Probation, according to our review of several hundred supervision files. Patuxent

files were more thorough and report greater detail, which probably reflects not only a more intensive supervision of offenders but perhaps also more time per prisoner available for recordkeeping.

Table 3.1 shows information that can be used to test the hypotheses that the detecting, reporting, and recording of arrests is systematically influenced by the intensity of parole supervision practices. Our data collection team entered systematically information about any and all arrests sustained by prisoners who had been released from the DOC or from Patuxent. These included arrests for any reason, which occurred at any time while under supervision; moreover, these arrests could have followed a second or third release from prison.

We assume that serious offenses for felony offenses are less likely to be subject to differential detection and reporting practices. Shown here are only lesser offenses, which are most likely to be affected by such practices. If intensity of supervision is directly related to the likelihood of detecting law violations, as well as recording them in the supervision files, we would expect to find Patuxent releasees more often arrested for less serious offenses. (More precisely: we would expect that the files for Patuxent releases would more often contain information about arrests for lesser offenses.) For each category of lesser offense we used to describe our data, we have computed the percentage of total arrests sustained by persons in each of the three samples that is represented by these offenses.

Table 3.1

Arrests for Lesser Offenses, as a Percentage of All Arrests Recorded in the Supervision Files for Each Comparison Group

	EP	Trans	Non-EP
Parole/failure to appear/ contempt	3.2%	3.4%	6.9%
Escape/fleeing police	5.5%	5.7%	13.8%
Resisting Arrest	0	1.1	1.7
Motor vehicle/DWI	6.3	5.7	1.7
Total lesser offenses	15.0	15.9	24.1

Of all arrests described in the supervision files of Eps, 3.2 percent were for a category of Criminal Procedure Code violations that includes parole violations, failure to appear, and contempt of court. Interesting, the proportion of all arrests sustained by EP transfers was nearly the same --3.4 percent. In contrast, 6.9 percent of all arrests of non-EP releasees recorded in the files were of this sort. These data lead in exactly the opposite direction that one would expect if the differential reporting/detecting hypothesis were true. A higher, rather than lower, percentage of all arrests of the non-EP releasees were for parole violations/FTA, or contempt. (Most of these were probably for parole violations in these groups.) Moreover, the percentages of arrests of Eps and EP transfers for lesser offenses were nearly identical, despite the fact that the two groups were supervised by two different agencies. For all categories of arrest--escaping/fleeing the police, resisting arrest, and motor vehicle/DWI offenses--the percentages of arrests sustained by Eps and EP transfers were essentially identical. In two of the categories, the percentages were highest in the non-EP sample.

These data do not support the hypothesis that our measure of arrest is biased seriously by differences in the intensity of supervision.

Count Only Serious Arrests?

Counting an arrest of any sort - for lesser offenses, violations and serious felonies - provides a measure of recidivism that is not very discriminating. An alternative would be to count only arrests that meet a defined threshold that we agree represents a "meaningful" failure. Establishing such a threshold is problematic, however.

Considering only arrests that result in convictions, or convictions and prison sentences, allows the measure to be contaminated by decisions of prosecutors and courts. Because policies regarding dismissals, plea negotiation, and sentencing may vary significantly from one county to another, measuring offender recedivisism by arrests that lead to convictions will be confounded by differences in prosecution and adjudication practices.

Another alternative would be to consider only arrests that are deemed "serious." This raises questions of values, however, which we cannot resolve satisfactorily. Are we to say that, for the purposes of evaluating Patuxent's effectiveness, we will not count as a failure any arrest for escaping or fleeing from police? Driving while intoxicated? Violating the terms and conditions of parole? A case could be made, perhaps, for disregarding arrests for disorderly conduct, but the category we used to classify these arrests include "trespassing," which is often used to charge persons suspected of committing burglaries, or of committing burglaries that were stopped in progress. Disregarding these types of offenses would reduce the arrests rates for Patuxent releases slightly more than it would for non-Eps, because a larger proportion of the arrests of Patuxent releasees arrests were for disorderly conduct/trespassing, but we have inadequate justification for doing so. We chose, therefore, not to define an arbitrary threshold of seriousness and have counted all arrests, for any and all reasons.

Chapter 4

COMPARING RETURN RATES AMONG THREE GROUPS OF RELEASEES

This chapter examines rates of returning to prison following release, and compares the rates of return of Patuxent releasees with those of releasees who had transferred out of Patuxent as well as releasees who were never accepted for treatment at Patuxent.

For reasons to be discussed below, we restrict our analysis here to counting returns to prison by offenders who were released to supervision. Prisoners are released from Maryland penal institutions under two broadly different conditions: some are released to supervision, while others are permitted to walk through the gates without any further legal obligation to the state. The former group includes all persons given parole release, mandatory release, or mandatory supervision. The latter group includes persons whose sentences have been vacated or otherwise terminated by judges (because of a prisoner's appeal, typically), because their sentences were commuted, or simply because they "maxed out"--which is to say, served their entire sentence prior to being released.

Several methods of leaving prison are not considered "releases" in this study. These include parole to a halfway house, which is common at Patuxent. (Even though Patuxent officials consider placement in a halfway hous a release, we have chosen to begin the clock after these persons are paroled to the community, and not to a halfway house, because this is consistent with what is considered a release in the Division of Correction.) Nor are escapes, suicides, deaths, and inter-jurisdictional transfers considered releases from institutions. Also exluded are furloughs, leaves for work-release, or any other short-term leaves authorized by prison administrators for any other purpose.

Prisoners released to supervision can be returned to prison for various reasons, all of which are considered "returns" in this study. If arrested and convicted of a new crime, they may be given a new prison sentence. (Indeed, the probability of receiving an imprisonment sentence if convicted is higher if one has a record of serving time in the past.) Offenders may also be returned for violating the terms and conditions of supervision. As the Maryland Annotated Code states, the Patuxent Institutional Board of Review (that is, the Patuxent parole board) "may attach reasonable conditions to the parole, at any time make reasonable and appropriate modifications of these conditions, and revoke the parole if it finds that the person has violated a condition of the parole." [Article 31b, section 11(6)] (A copy of the terms and conditions of parole at Patuxent is included in Appendix 3.) A similar authority is granted the Maryland Parole Commission, which has the power to grant parole to prisoners committed to the Division of Correction (within the bounds of several statutory constraints). Revocation of parole provides the parole authorities with a means of reimposing quickly strong controls on offenders suspected of falling from the straight and narrow. Rather than waiting for offenders to be apprehended of another crime, they will interrupt the offender's liberty.

The ease with which a released offender can be returned to prison therefore varies directly with whether they are released to supervision or not. Persons not under supervision must be sentenced for a new crime to be returned; parolees can be returned for behavior that is not criminal.

Patuxent and the Division of Correction differ in their parole release practices, which in and of itself results in a differential threshold for being returned. As Table 4.1 shows, the proportion of prisoners in our study samples who were released to supervision was lower at the Patuxent Institution than at Division of Correction.[1] A larger proportion of Patuxent releases were therefore less vulnerable to being returned to prison, simply by virtue of their not being eligible for express parole violation.

Table 4.1:
Proportions of Prisoners Released to Supervision or to No Supervision in Each Comparison Group

	EP	EP Transfer	Non-EP
RELEASED TO SUPERVISION?			
No	26%	6%	14%
Yes	74%	94%	86%
	100%	100%	100%

Because of this differential vulnerability to revocation, we have chosen to develop rates of return to prison only for those persons who were released to supervision, in each of the three comparison groups. In this chapter, we select for analysis all those persons released from either the Patuxent Institution or from other Division of Correction prisons to supervision in the community. Moreover, we begin counting the prisoners' time at risk from the date of the earliest release following review for eligibility at Patuxent, which always occurred after 1 July 1977.

Some persons, nearly all of them EPs, were actually released at prior to 1977 from the Patuxent Institution. These persons, admitted under standards established by the "defective delinquent" laws, failed on those earlier releases and were returned to Patuxent. With the passage of the revised Article 31b, Patuxent prisoners were assessed under the new standards and were either accepted as "eligible persons" or rejected and transferred to the Division of Correction. In the course of selecting persons who were reviewed following the 1977 Act, we

[1] Recall that we are excluding here transfers from Patuxent to halfway houses.

captured in our sample a total of 100 persons who had previously been held at Patuxent as "defective delinquents." (Those who did not meet the standards of eligibility under the 1977 law were transferred out, and none of these persons were included in the population from which we drew our samples.) Of those 100, 79 were subsequently released from Patuxent. Five were ultimately released from the Division of Correction, having transferred to the Division at some point after being admitted to Patuxent as an eligible. The remaining others were still in prison when we drew our samples (four were in Patuxent, twelve in the DOC).

Whether or not these one-time defective delinquents were released prior to 1977, we began counting the time at risk for our analysis only upon the first release after review under the new 1977 eligibility standards.

By restricting our focus to prisoners released to the same legal condition (supervision), we are excluding a substantial number: about 19 percent of all releasees.

Estimating Likelihood of Return
For Varying Times at Risk

The conventional way to compute recidivism rate for released prisoners is to compute the proportions of persons being returned who were in fact available to be returned during specified "observation" periods (for example: during one, three or five years of release). Because we drew our sample from persons released between July 1977 and June 1988, the numbers of prisoners who were at liberty for longer periods rapidly diminish as the observation period lengthens. Moreover, the number of persons able to be reincarcerated during this period depends not only on when they were released but also on whether they were removed from the "at risk" pool for one reason or another during this period. If they died, or were transferred to another state, they were effectively removed from the sample of at risk prisoners after the dates of their transfer or death. Because we restricted our comparisons here to persons under supervision in the community, offenders were also removed from the observation period when they were discharged from supervision, or when their sentence expired.

Making comparisons across the one, three, and five-year tables provides one way to draw conclusions about the likelihood of recidivating over time, but we are handicapped somewhat by the fact that different sub-samples are being compared in each period. Had we collected data only on persons who had been released five or more years ago, we would be able to see more clearly the different rates of reincarceration for the same set of prisoners for shorter periods at risk (e.g., for each year up to year five). Had we followed this method, we would have to throw away the information we have on recidivism rates for prisoners who were released less than five years earlier.

If we assume that recidivism rates only depend on how long a prisoner has been released and do not vary with calendar time, we can combine information from prisoners with different release periods. This is done by constructing the cumulative recidivism rates from estimates of hazard rates. The first-year hazard rate is the probability that a released prisoner recidivates within one year after release. The second-year hazard rate is the probability that a released prisoner who has not recidivated by the end of the first year does so by the end of the second year. For each year, the hazard rate is the probability that a prisoner who has not recidivated by the start of that year will recidivate during the year.

We can estimate the first-year hazard rate based on all prisoners released more than one year before the close of our observation period. We can estimate the second-year hazard rate for all prisoners who were released more than two years before the close of our observation (and did not die or otherwise cease to be at risk before two years) and who had not recidivated by the end of their first year. We can estimate the ten-year hazard rate based on all prisoners who were released (and potentially at risk) for at least ten years before the close of our observation period (and who had not recidivated by the end of their ninth year). We can then build up the cumulative recidivism rates from the hazard rates as follows:

$$R_1 = h_1$$
$$R_2 = R_1 + (1-R_1)h_2$$
$$\cdot$$
$$\cdot$$
$$R_t = R_{t-1} + (1-R_{t-1})h_t$$

where

R_t = The cumulative recidivism rate for the t^{th} period
h_t = The hazard rate for the t^{th} period

In this way our estimate of the cumulative recidivism rate for each year after release makes full use of all the information available for that year and earlier years. Hazard rate models can be developed in a variety of ways. The method we use, allowing for different rates in each period, follows the procedure developed by Kaplan and Meier.

Figure 1 graphically represents the estimated proportion of all sampled releasees under supervision who would not have been re-incarcerated on each day following their first release after review at Patuxent. This proportion is shown by the solid line. This line can also be interpreted as the probability of not being re-incarcerated as a function of time since first release from prison. For example, within one year of first release from prison, the chances of not being returned were 0.83, or approximately eighty-three in one hundred. By three years, the chances had dropped to about 0.63. Or, put another way, about 63 percent of releasees under supervision avoided reincarceration within 3 years of release.

Above and below this solid line are a dotted and a broken line. These represent the "confidence interval" that can be placed around this estimate. This tells us that the likelihood of the true probability of reincarceration being between these two interval boundaries is 95 percent.

Figures 2, 3, and 4 show the estimated probability of EP releasees, EP transfers, and non-EPs being returned, also as a function of time since first release. They indicate that the probabilities of being returned are higher throughout most of the period for EPs, and lowest for non-EPs. By the three-year point following release, approximately 24 percent of the non-EPs had been returned, compared with fifty percent of the EPs. During this same period, about 37 percent of the EP transfers were returned.

The confidence intervals indicate that the probabilities of return for EPs was significantly higher than for EP transfers and non-EPs. The differences between EP transfers and non-EPs do not appear to be statistically significant at the 95 percent confidence level.

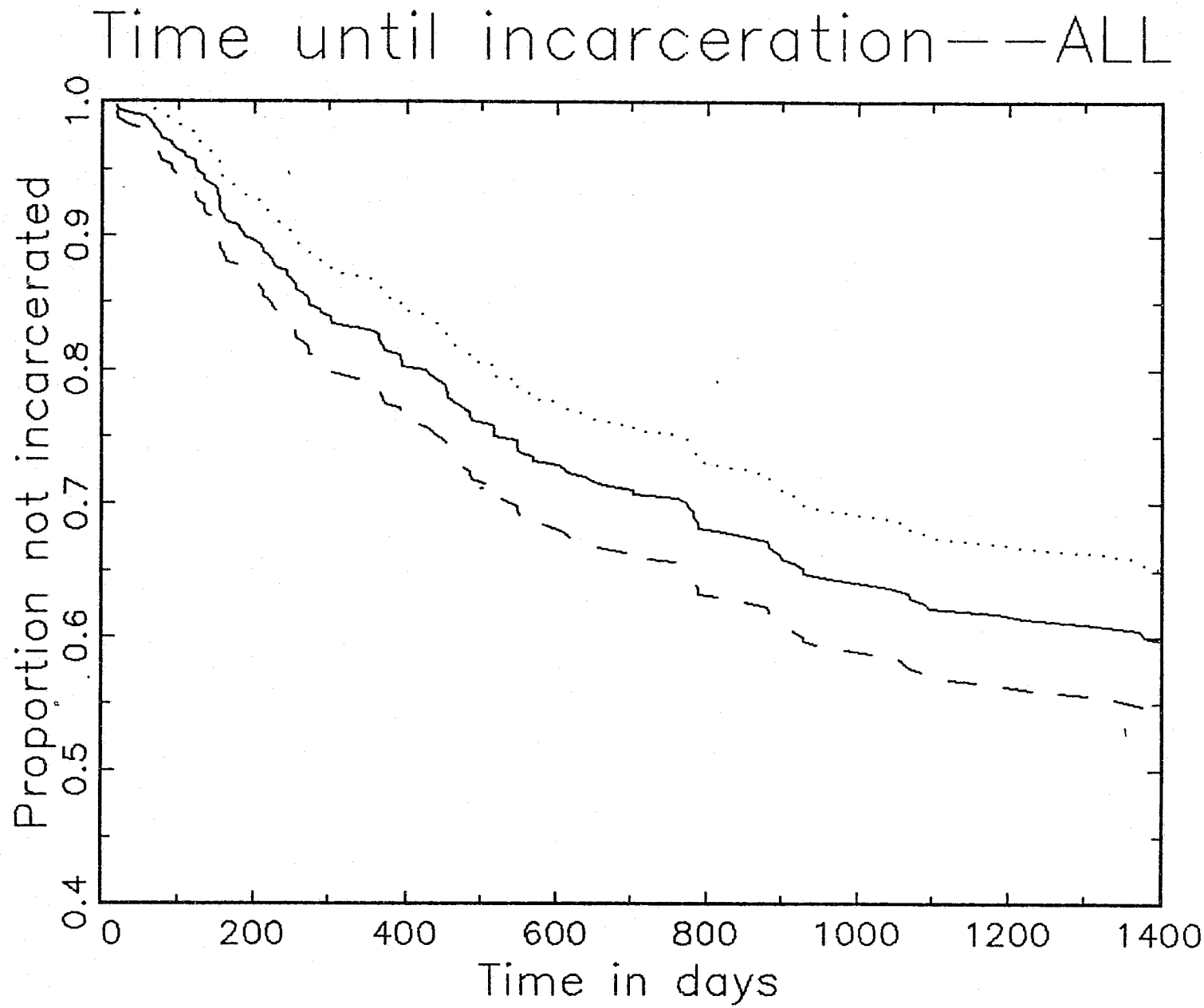

FIGURE 1

TIME TO REVOCATION:
ALL PRISONERS RELEASED TO SUPERVISION FROM PATUXENT AND DOC

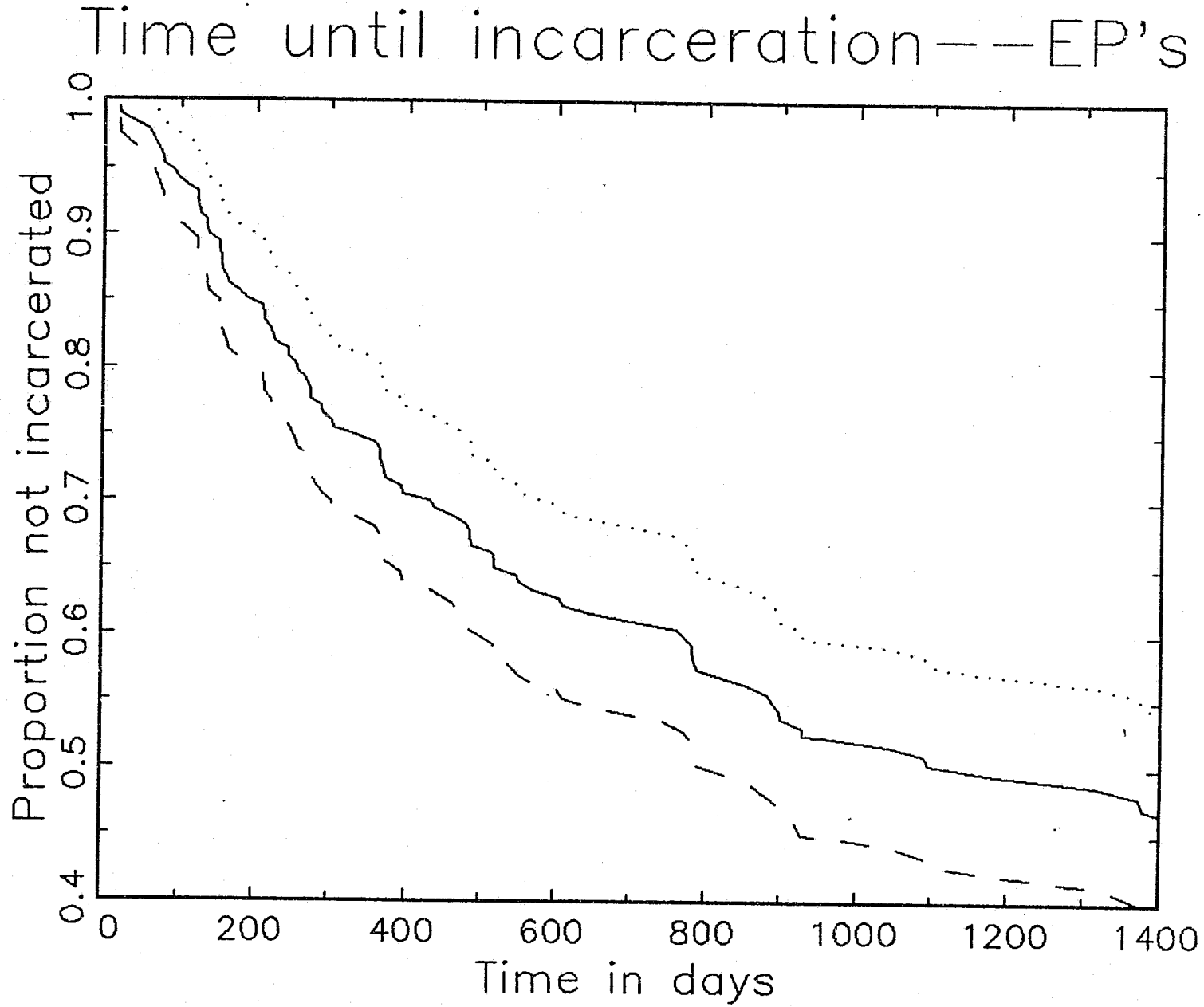

FIGURE 2

TIME TO REVOCATION:
PATUXENT (EP) PRISONERS RELEASED TO SUPERVISION

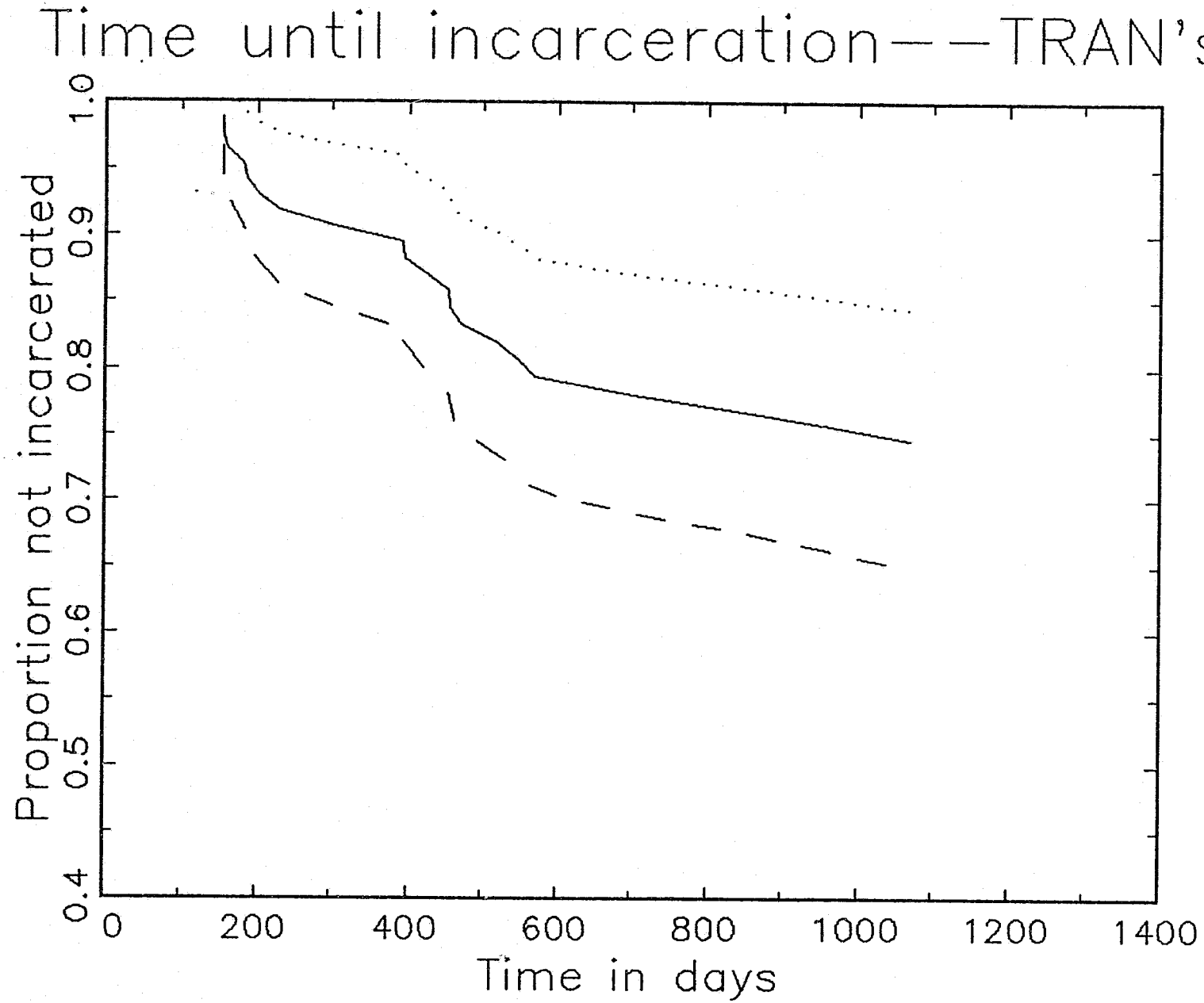

FIGURE 3

TIME TO REVOCATION:
EP TRANSFERS WHO WERE RELEASED TO SUPERVISION FROM DOC

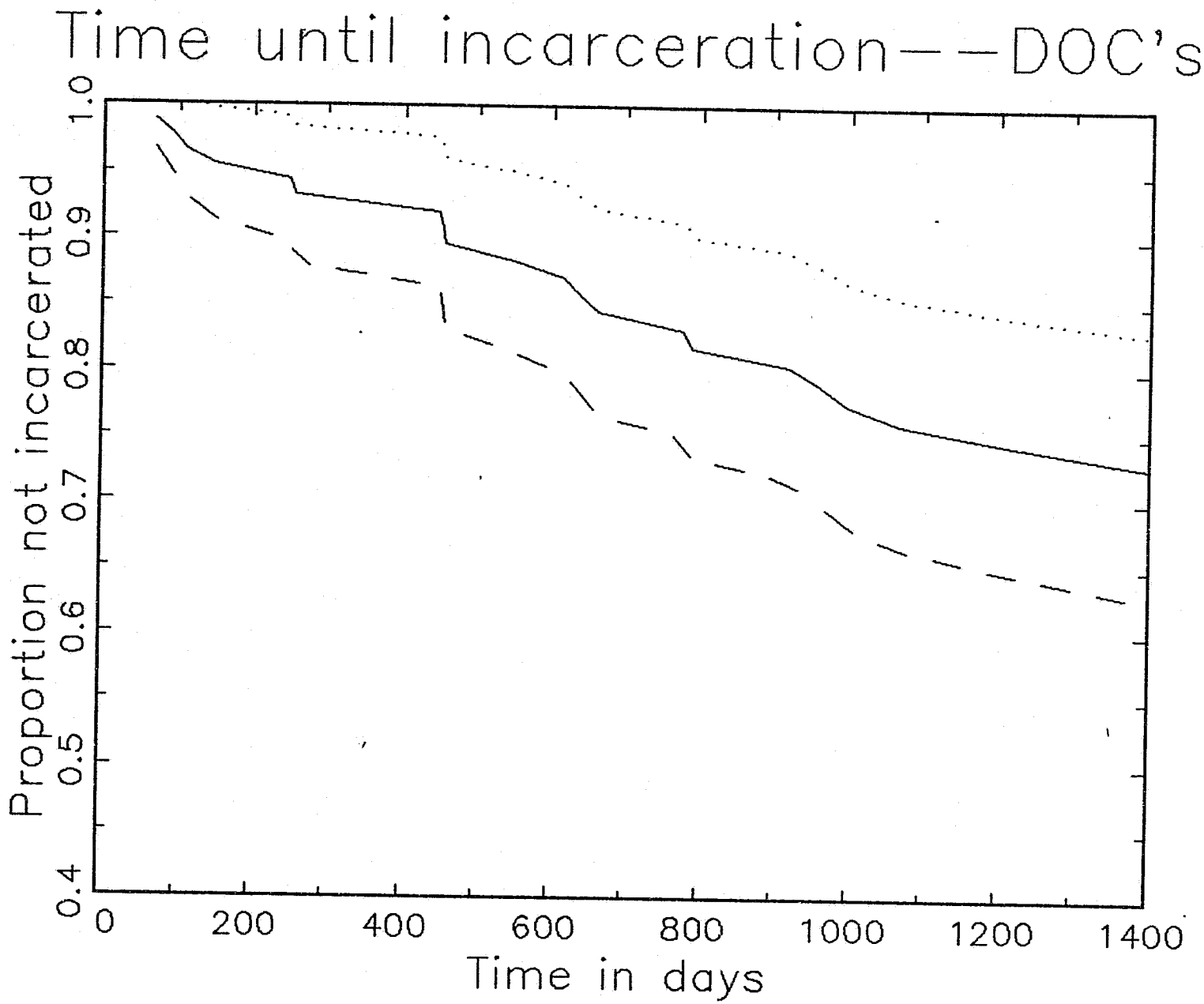

FIGURE 4

TIME TO REVOCATION:
NON-EPs RELEASED TO SUPERVISION FROM DOC

Two Types of Eligible Persons: One-Time Defective Delinquents and Prisoners Never So Classified

As discussed earlier, one hundred prisoners who were reviewed for eligibility at Patuxent under the 1977 revision of Article 31B had been held previously at Patuxent as "defective delinquents." Most of these (79) were released subsequently by Patuxent, and were thereby classified by us as eligible person (EP) releasees. Because these individuals had different experiences from the EPs who were first transferred to Patuxent after the 1977 Act took effect, we examined the return rates for these persons separately. Figures 5 and 6 show the estimated probabilities of return to prison for EPs who were previously classified as defective delinquents and those EPs who had never been held at Patuxent under the defective delinquent law. The probabilities of surviving without being arrested were approximately the same throughout the observation period.

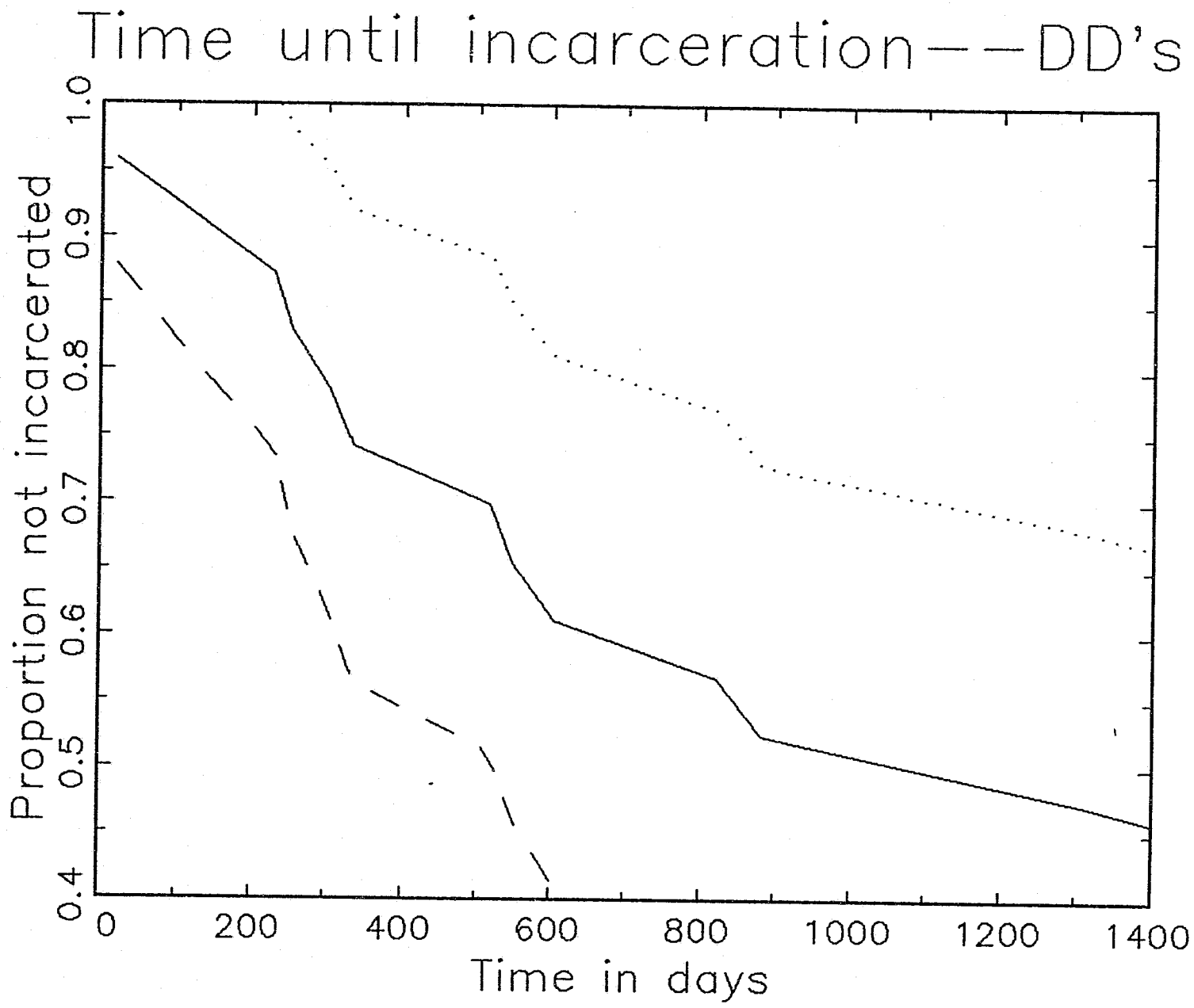

FIGURE 5

TIME TO REVOCATION:
EPs WHO HAD PREVIOUSLY BEEN HELD AT PATUXENT AS DEFECTIVE DELINQUENTS, AND WERE RELEASED TO SUPERVISION FROM PATUXENT

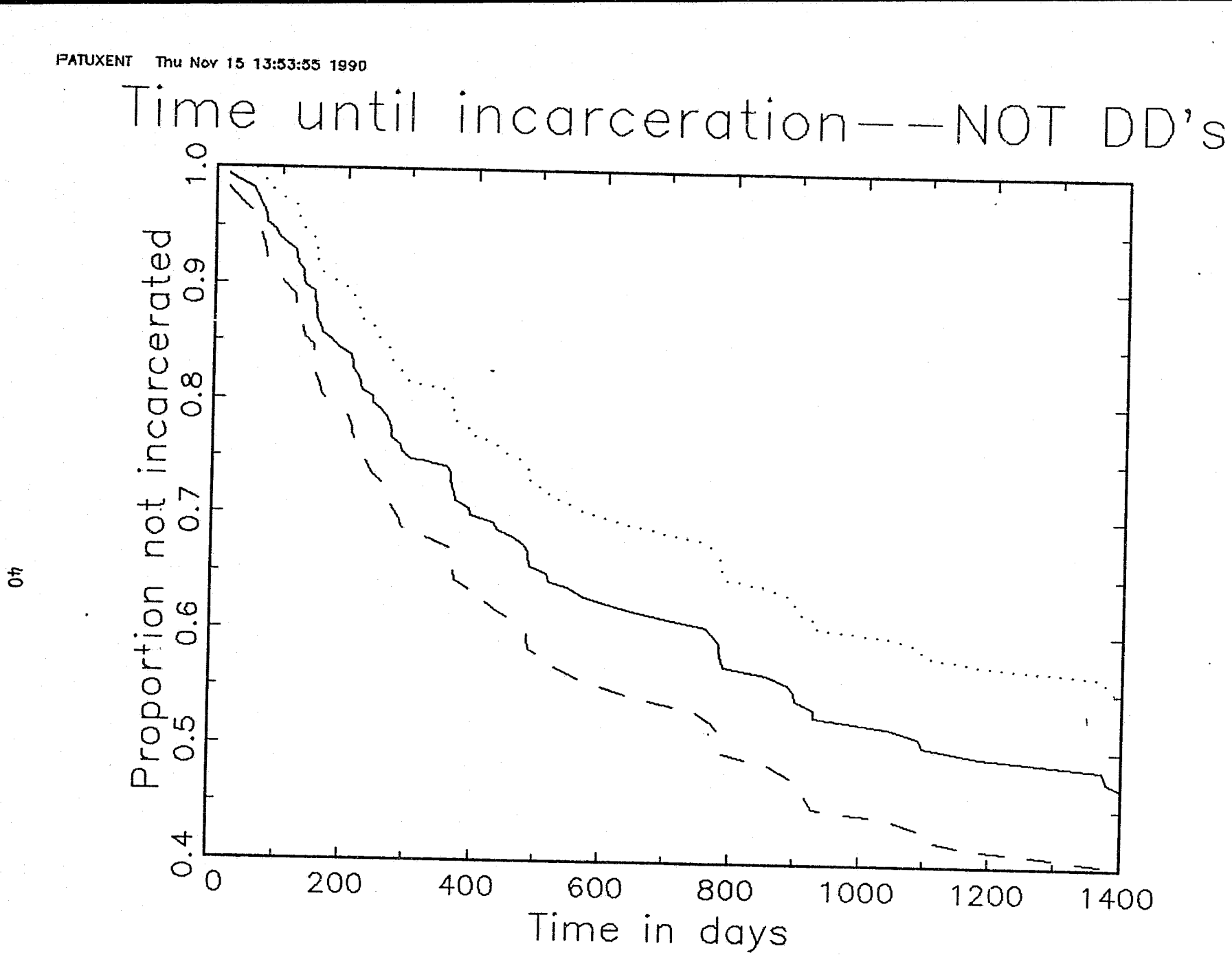

FIGURE 6

TIME TO REVOCATION:
EPs NEVER CLASSIFIED AS DEFECTIVE DELINQUENTS,
AND RELEASED TO SUPERVISION FROM PATUXENT

Do Returns to Prison Indicate Offender Behavior or Differences in Supervision Practices?

Offenders released to supervision from Patuxent reportedly face more intense surveillance, on average, than offenders released from the Division of Correction to the Division of Parole and Probation. To be sure, the latter agency does subject some offenders to "intensive supervision," but not all persons are so supervised. In contrast, all persons paroled from Patuxent are placed under close surveillance. Because parole agents have the discretionary authority to revoke an offender's liberty for violating the terms and conditions of supervision, one must ask if the fact that persons released from Patuxent to supervision were returned to prison more often reflects a different enforcement policy at Patuxent rather than differences in releasees' behavior.

Table 4.2 shows the proportions of those persons in each sample of supervised releasees who were returned to prison within three years of first release. Of all EPs returned within this period of time, 58 percent were brought back to prison following an arrest. Forty-two percent of those EPs returned were not arrested before being returned. (More precisely: the supervision files for 42 percent of the EPs in our sample did not contain any indication that the offenders had been arrested prior to revocation.) Those persons arrested may have been charged simply with violating the terms and conditions of parole, but most were alleged to have committed a new crime. What is of interest, however, is that such a large percentage was brought back for what must have been simply a violation of parole conditions. A smaller proportion of those released to supervision by the Division of Correction were returned without having first been arrested. Eighteen percent of the EP transfers were so returned, compared to 33 percent of the non-EP releasees.

Table 4.2
The Proportions of Prisoners Released to Supervision Who Were Returned Within Three Years, By Whether They Were Arrested

	EP	EP Trans	Non-EP
Not Arrested	42.1%	17.6%	33.3%
Arrested	57.9%	82.4%	66.7%
	100%	100%	100%

These findings generally support the interpretation that differences in return rates reflect, to some degree, differences in supervision policies. For this reason, we have also measured recidivism by the occurrence of an arrest after release from prison.

Chapter 5

ARRESTS FOLLOWING FIRST RELEASE

As discussed in Chapter 3, we measure recidivism also as the occurrence of an arrest following release from prison. This measure is different from that used in the previous section. There, we counted the proportions of those returned who had been arrested. Here, we count the numbers of released prisoners who were arrested subsequent to their first release, whether or not they were returned to prison as a consequence of that arrest. In comparing the numbers and percentages from one table to the next, across different measures of recidivism, it is important to remember that persons can be returned to prison for arrests or for other reasons, and that persons can be arrested without being returned to prison.

Because we were able to obtain arrest information only for persons who were under supervision, our observation "window" closes whenever supervision ended. To maximize our ability to measure rearrest rates for varying periods of time at risk, without having to throw cases away because prisoners could not all be observed for three-year periods at risk, we rely upon the method of cumulating recidivism rates built up from estimated hazard rates, as discussed in the preceding chapter.

Table 5.1 reports, in tabular form, information for two time periods (one and three years) that is shown in Figures 8, 9 and 10.

Table 5.1:
Proportions of Persons Arrested within One and Three Years of Release from Prison

	EP	EP Trans	Non-EP
1 year	22%	14%	12%
3 years	42%	36%	25%

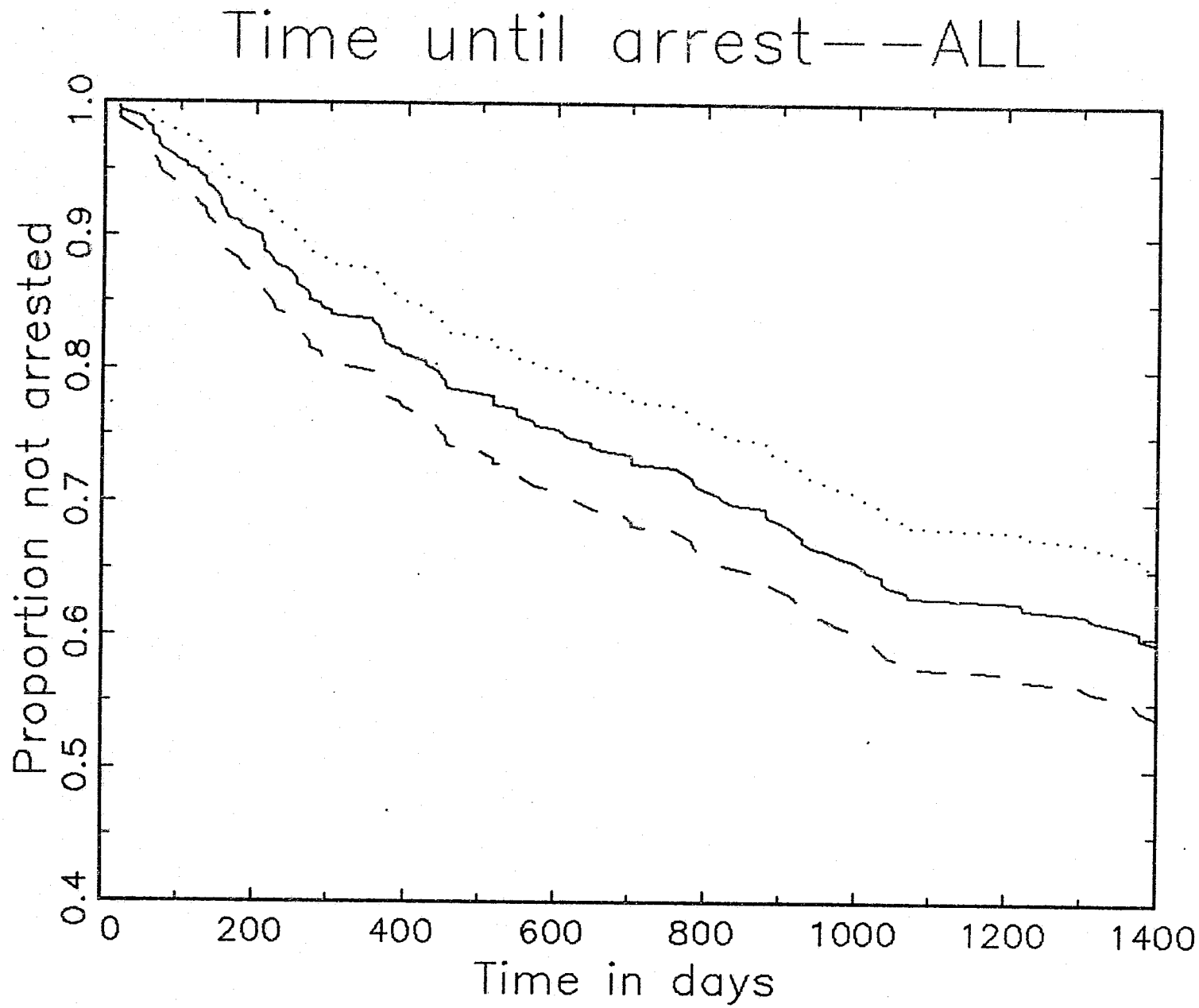

FIGURE 7

TIME TO ARREST:
ALL PRISONERS RELEASED TO SUPERVISION FROM PATUXENT AND DOC

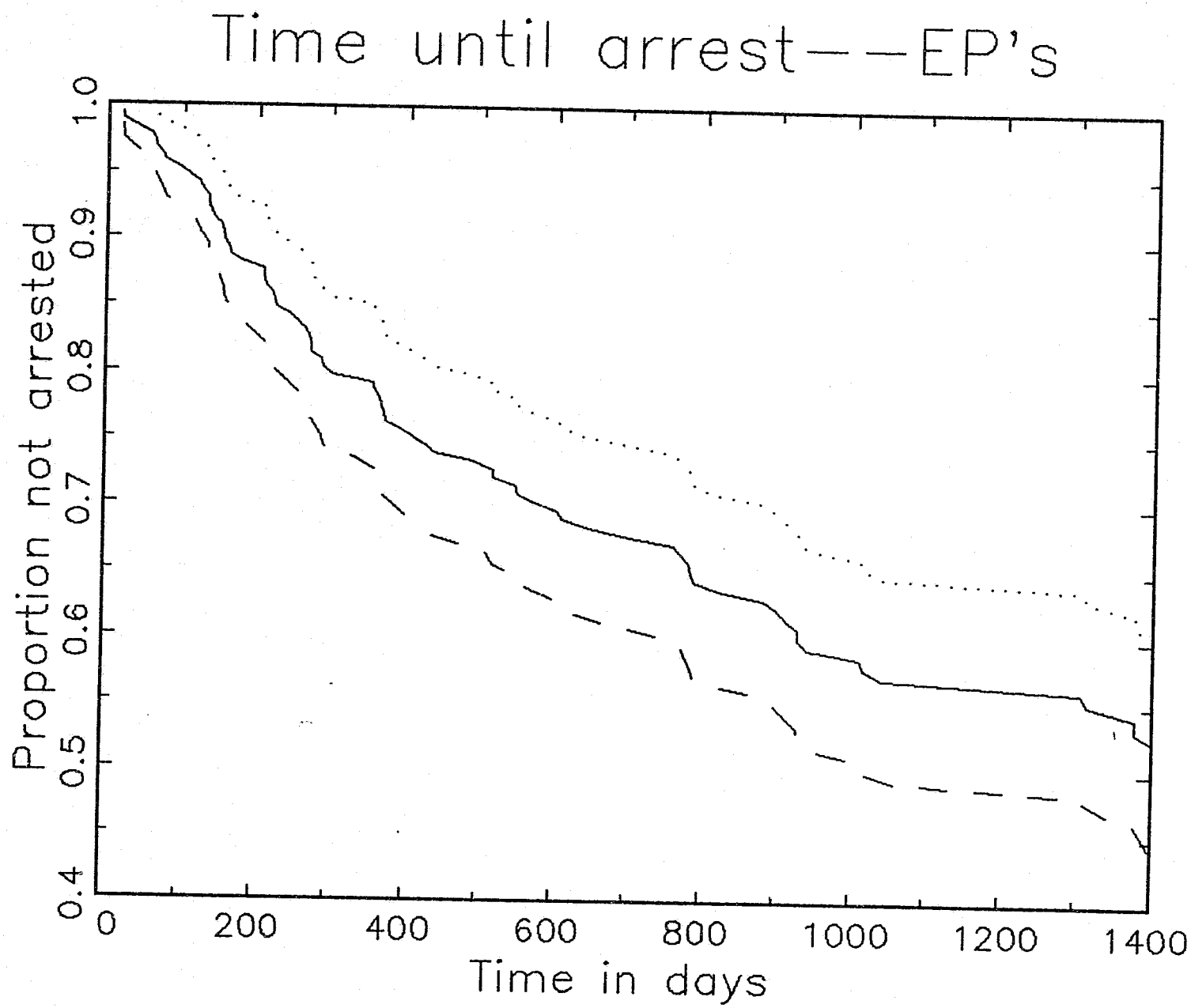

FIGURE 8

TIME TO ARREST:
PATUXENT (EP) PRISONERS RELEASED TO SUPERVISION

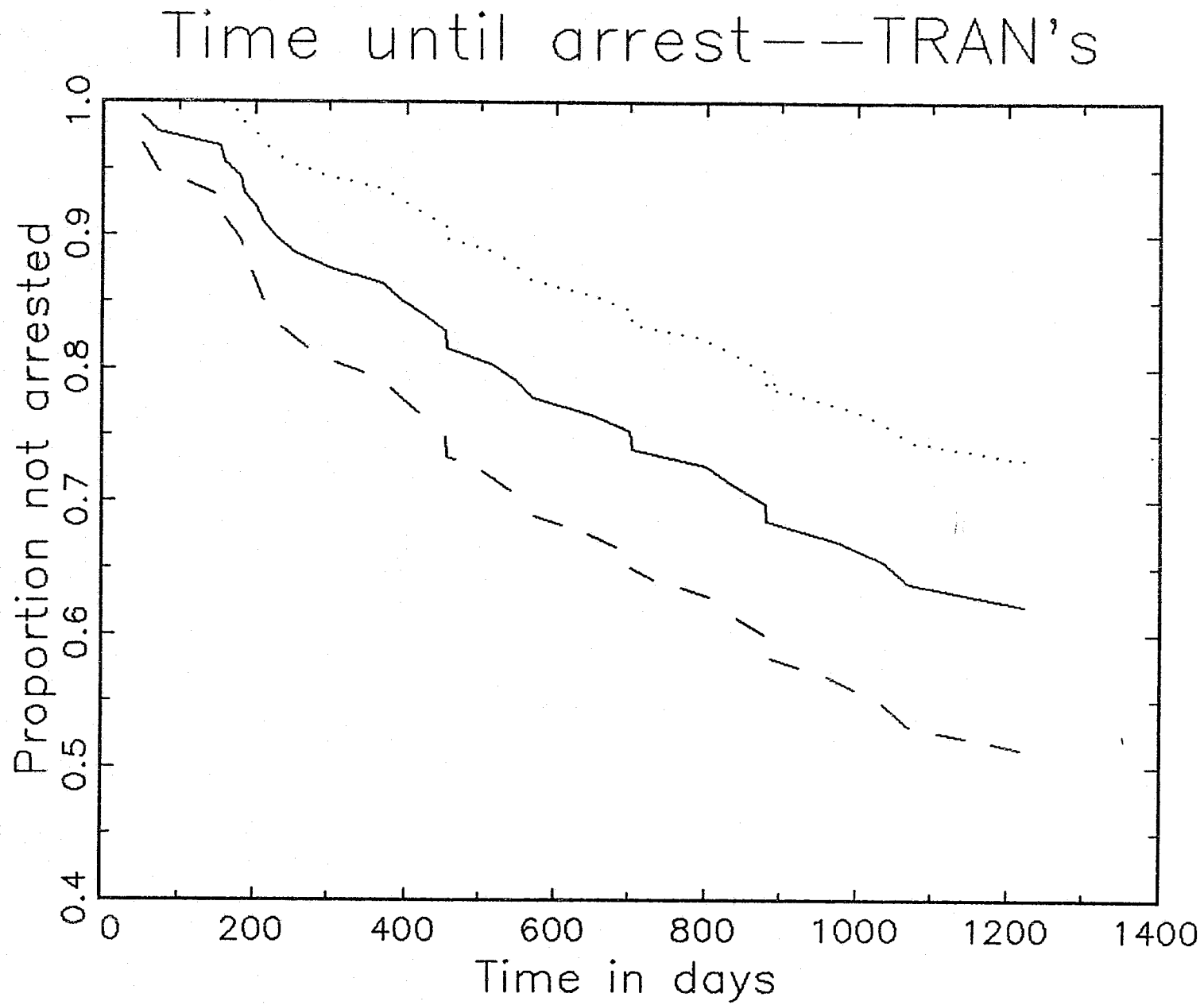

FIGURE 9

TIME TO ARREST:
EP TRANSFERS RELEASED TO SUPERVISION FROM DOC

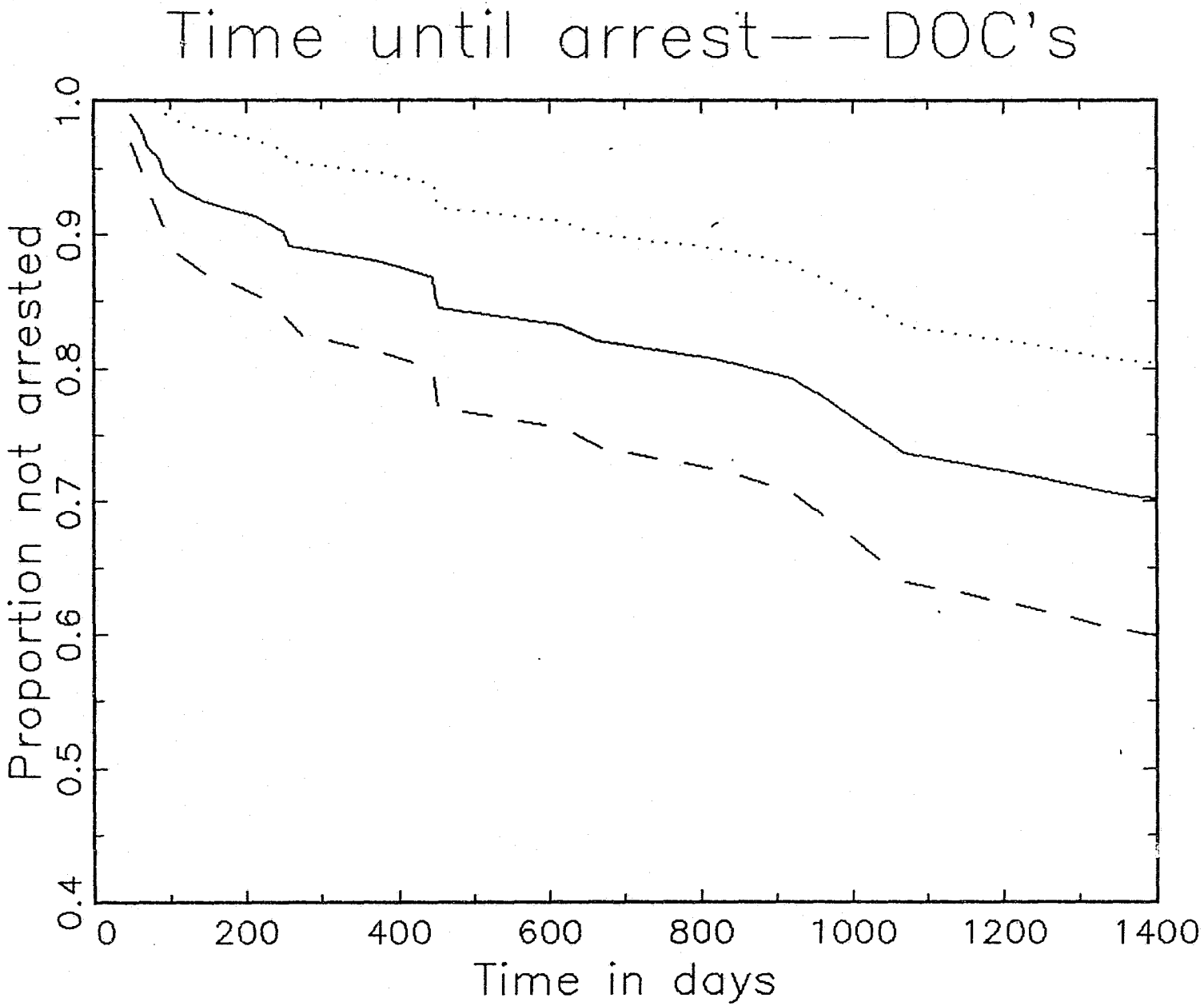

FIGURE 10

TIME TO ARREST:
NON-EPs RELEASED TO SUPERVISION FROM DOC

EPs released to supervision from the Patuxent Institution are the most likely to be arrested following their first release from custody. This holds true for both one and three years following release. Moreover, the proportion of EP transfers arrested following first release is about the same as non-EP releasees in the first year, but higher at the three-year mark (36% versus 25% for non-EPs). At three years, the Patuxent releasees continue to be arrested at even higher rates, however.

Figures 7 through 12 show the probability of not being arrested as a function of time since first release. These represent estimates analogous to those for returns to prison, shown in the previous chapter. Figure 7 shows the estimated probability of arrest for all prisoners released to supervision, regardless of which comparison group they were in. Figure 8 represents the released EPs' probability of not being arrested; Figures 9 and 10 represent EP transfers and non-EPs, respectively. These four figures indicate that the probability of not being arrested was higher for non-EPs and EP-transfers than for EPs. Moreover, the difference between EP-transfers and non-EPs may not be statistically significant. This is indicated by the fact that the solid lines for both of these groups fall within the confidence intervals in both of the graphs.

Figure 11 represents the probabilities of being arrested for EPs who had once been held at Patuxent as defective delinquents before being reclassified as "eligible persons." Figure 12 shows the probabilities for EPs who had never been held as defective delinquents.

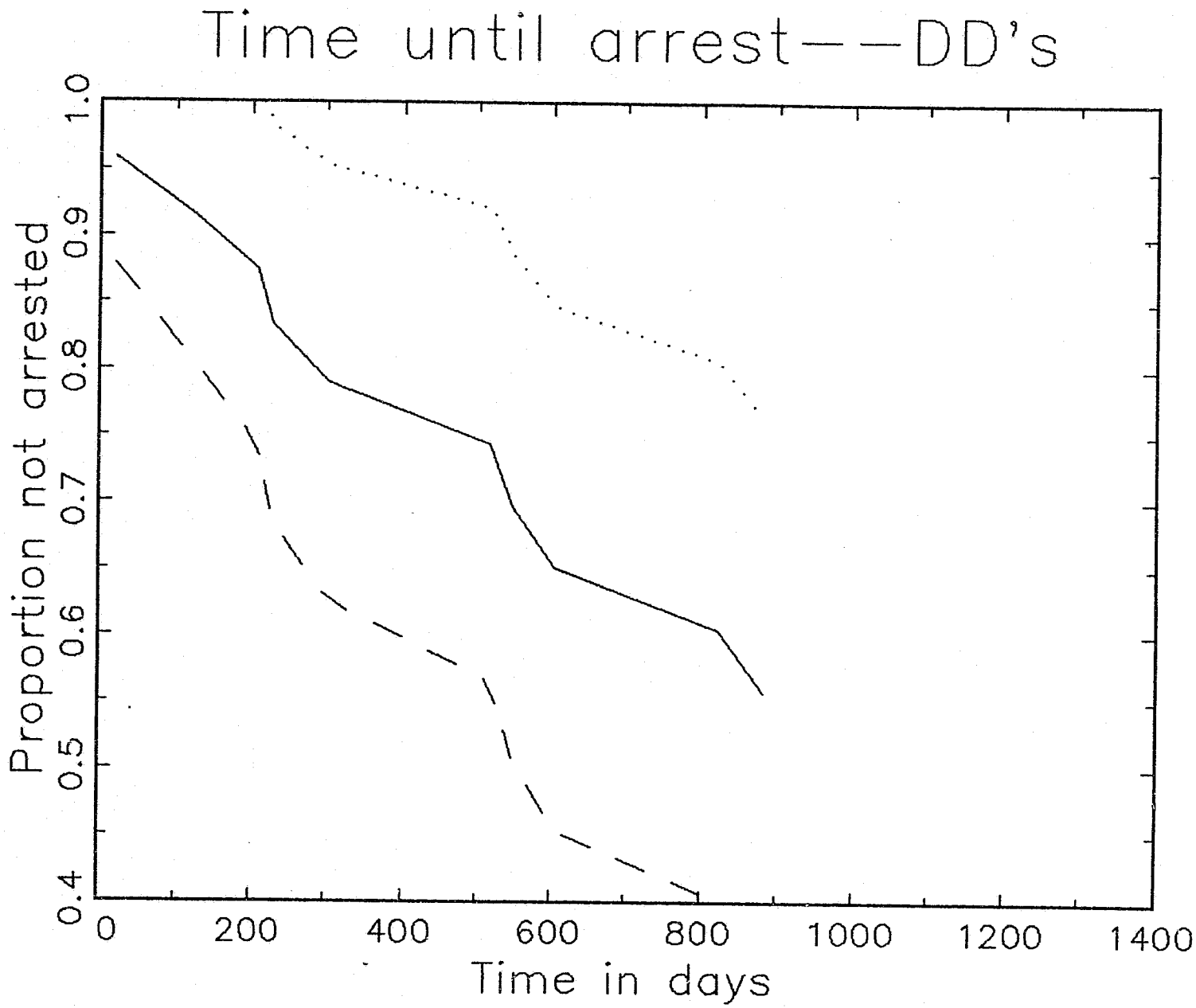

FIGURE 11

TIME TO ARREST:
ELIGIBLE PERSONS, PREVIOUSLY CLASSIFIED AS DEFECTIVE DELINQUENTS,
RELEASED FROM PATUXENT

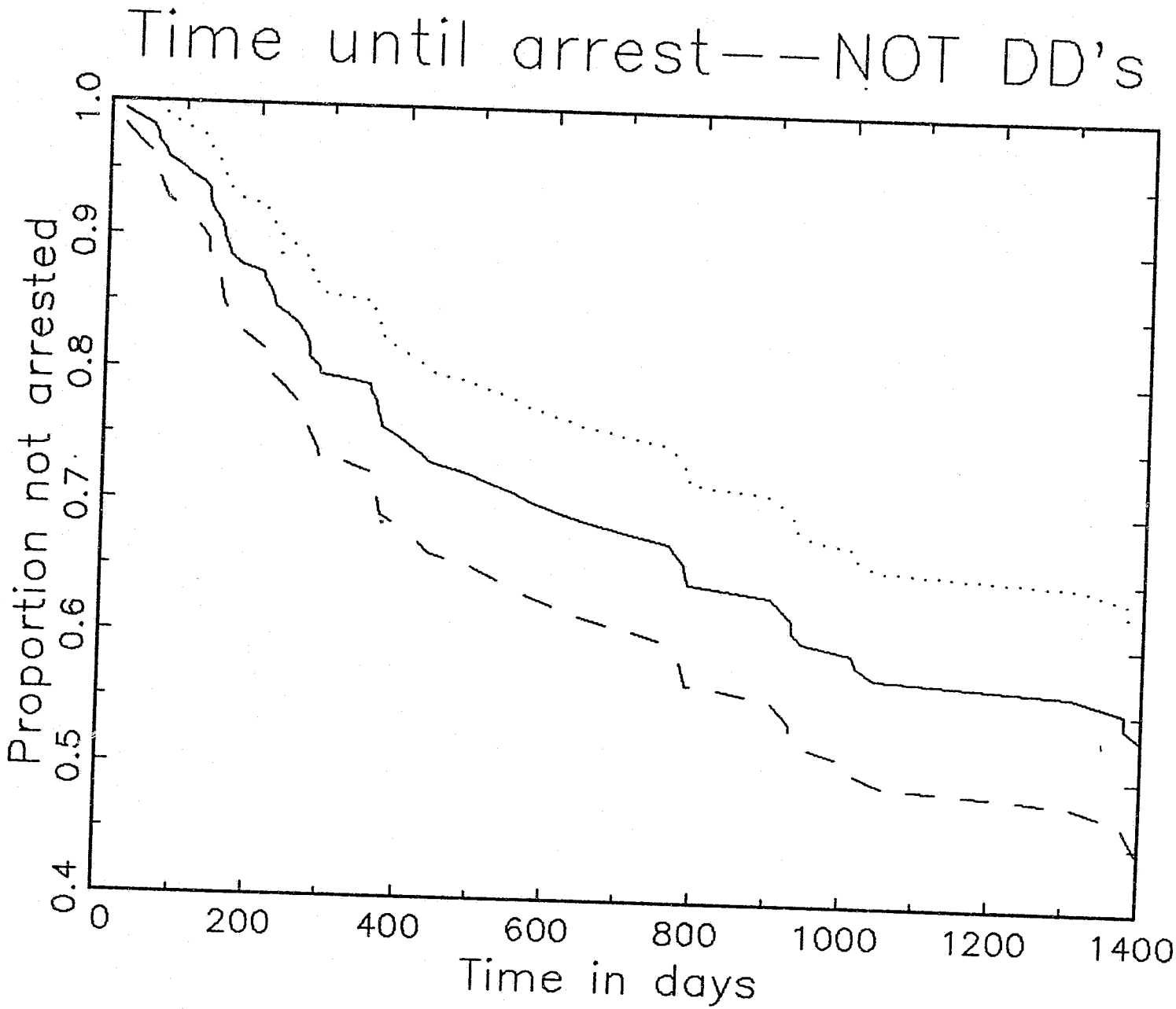

FIGURE 12

TIME TO ARREST:
ELIGIBLE PERSONS, NEVER CLASSIFIED AS DEFECTIVE DELINQUENTS,
RELEASED FROM PATUXENT

Distinguishing Among Types of Alleged Offenses

Differences in the mere occurrence of arrests following release are, to be certain, an incomplete method of comparing the recidivism of prisoners in the three samples. This section provides more detailed information about those arrests.

Table 5.2 counts the number of arrests, by type of offense charged, sustained by persons in each of the three samples of supervised releasees. In examining this table, it is important to understand what it does and does not show.

First, it counts not the numbers of persons arrested, but the number of arrests that were reported as occurring when the released prisoners were under supervision. Some individuals were arrested more than once for different alleged crimes. Second, there were unequal numbers of released prisoners in each of the three samples. There were more persons in our EP sample than in the samples of either EP transfers or non-EPs. There were also more persons in the sample of EPs who were required to be supervised in the community upon release from prison. This accounts in part for the greater number of arrests sustained by the EPs. Third, this table tallies not only arrests occurring after the offender's first release from prison (after 1 July 1977, that is), but also all other arrests that occurred while the offender was under supervision, following a second or even third release from prison. Finally, it makes no attempt to standardize--or make equal--the period of time at risk while under parole supervision. Persons who were under supervision for longer periods of time were more likely, other things being equal, to have an arrest counted against them than persons who were supervised for shorter periods of time.

A substantial proportion of arrests, in all samples of EPs, EP transfers, and non-EPs, were for serious crimes. These included homicide, manslaughter, rape, robbery, kidnapping, assault and battery, burglary, narcotics, weapons, and sex offenses. Fewer arrests were for non-violent crimes of theft. A substantial number were for less serious offenses, including trespassing, disorderly conduct, motor vehicle offenses, driving while intoxicated and/or leaving the scene of an accident. These lesser offenses also included violations of the criminal procedure laws, such as breaking the terms and conditions of parole, contempt of court, failure to appear for trial (FTA), escaping or fleeing the police, and resisting arrest.

Table 5.3 compares the proportions of persons arrested in each of the three samples for selected types of offenses. This table permits one to discern differences in the distribution of arrested persons in the three different samples. (Many persons were arrested more than once, and for different types of offenses. Because they were counted more than once in Table 5.3, computing a sum total for each column would produce a misleading statistic.)

Table 5.2
Number of Arrests Sustained by Released Prisoners
While Under Supervision in the Community,
By Type of Charge and Type Releasee

	EP	EP TRANSFER	NON-EP
Homicide, 1st & 2nd degree	5	1	1
Homicide, manslaughter	1	0	0
Rape, 1st & 2nd degree/accessory	23	4	1
Robbery, armed/unarmed	28	13	5
Kidnapping	4	0	0
Assault/Battery	56	14	8
Extortion	0	0	0
Burglary	18	6	4
Auto theft	2	1	1
Arson	2	1	0
Stolen goods, poss/trans/rec	3	0	0
Forgery	0	0	1
Fraud, false pretenses	3	0	2
Vandalism	5	0	2
Narcotics	25	13	5
Statutory Rape, Sex offense	8	0	4
Public Trust, conspir/ access/bribery	0	1	0
Weapons	14	5	1
Domestic	0	1	0
Trespassing/Disorderly conduct	17	1	2
Motor Vehicle, DWI/lv acc scene	16	5	1
Criminal Procedure, parole/ contempt/FTA	8	3	4
Criminal Procedure, escape/flee police	14	5	8
Resist arrest	0	1	1
TOTAL ARRESTS	252	75	51
Total Persons in Sample with Known Information	(276)	(104)	(119)

Table 5.3
Percentage of Persons in Each Sample Who Were Arrested
For Each Type of Crime While Under Supervision

	EP	EP TRANSFER	NON-EP
Homicide, 1st & 2nd degree	1.8	1.0	0.8
Homicide, manslaughter	0.4	0.0	0.0
Rape, 1st & 2nd degree/accessory	8.0	2.9	0.8
Robbery, armed/unarmed	8.3	10.6	4.2
Kidnapping	1.4	0.0	0.0
Assault/Battery	16.7	11.5	5.8
Burglary	5.8	4.8	3.4
Auto theft	0.4	1.0	0.8
Arson	0.7	1.0	0.0
Stolen goods, poss/trans/rec	1.1	0.0	0.0
Forgery	0.0	0.0	0.8
Fraud, false pretenses	1.1	0.0	1.7
Vandalism	1.8	0.0	1.7
Narcotics	7.6	11.6	4.2
Statutory Rape, Sex offense	2.6	0.0	3.4
Public Trust, conspir/ access/bribery	0.0	1.0	0.0
Weapons	5.1	4.8	0.8
Domestic	0.0	1.9	0.0
Trespassing/Disorderly conduct	5.5	1.0	1.7
Motor Vehicle, DWI/lv acc scene	4.7	4.8	0.8
Criminal Procedure, parole/ contempt/FTA	2.9	2.9	3.4
Criminal Procedure, escape/flee police	3.6	3.9	6.7
Resist arrest	0.0	1.0	0.8
Total Persons in Sample with Known Information	(276)	(104)	(119)

For most types of arrests, there were insignificant differences in the percentages of persons charged. For some types of offenses, however, the differences were more pronounced. For example, a significantly larger proportion of EP releasees were arrested for rape (8 percent, compared with 2.9 percent of the EP transfers and 0.8 percent of the non-EPs). Proportionately more EPs and EP transfers were arrested for robbery than non-EPs (8.3, 10.6, and 4.2 percent, respectively). Nearly seventeen percent of all EPs were arrested for assault and battery, compared with 11.5 percent of the EP transfers and 5.9 of the non-EPs. Arrests for narcotics offenses were more likely among EP transfers (11.5 percent of them were arrested for these crimes), than for EPs (7.6 percent) or non-EPs (4.2 percent). EPs and EP transfers were also slightly more likely to be arrested for weapons offenses than non-EPs (5.1 percent, 4.8 percent, and 0.8 percent, respectively).

To summarize the findings: this overall pattern of recidivism remains quite stable, regardless of which measure is used. EPs released from Patuxent fare the worst; non-EPs released from the DOC do the best. The failure rate of EP transfers is typically better than EPs, but worse than non-EPs, although on some measures the differences might not be significant.

How Do Arrest Rates Compare With National Estimates?

Upon seeing a preliminary report of these findings, one reviewer commented that the arrest rates shown here are lower than rates reported in larger national studies. This is true. One such study, published in 1987 by the federal Bureau of Justice Statistics, examined the recidivism of 3,995 young parolees released from prisons in twenty-two states in 1978. Within one year of release, 32 percent of those paroled were arrested; within two years, 47 percent; within three years, approximately 55 percent.[1] Other studies report similarly high rates of arrest.[2] However, few, if any, meaningful conclusions can be drawn from a comparison of such figures with those in our study. Not only are there differences in how arrests were counted, but the populations compared are not comparable.

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[1]Allen J. Beck, "Recidivism of Young Parolees," a Bureau of Justice Statistics Special Report (U.S. Department of Justice, 1987). The three-year recidivism rate is estimated from Figure 1, on page 2 of the report.

[2] Illinois Criminal Justice Information Authority, The Pace of Recidivism in Illinois, Research Bulletin, Number 2, April 1986; Klein, S., and M. Caggiano, The Prevalence, Predictability, and Policy Implications of Recidivism (Santa Monica, Calif.: The Rand Corporation, 1986); Delaware Statistical Analysis Center, Recidivism in Delaware--A Study of Rearrest After Release From Incarceration, December 1984.

The BJS study found a higher rate of arrest partly because it counted as arrests violations of parole or probation that resulted in incarceration. More importantly, however, that study was based on a representative sample of all parolees, between the ages of seventeen and twenty-two, who were released from the prisons in twenty-two selected states during 1978. Our study drew samples that were not representative of the larger population of Maryland prisoners, but rather of a much smaller and highly-distilled subset: those who were thought to be intellectually or emotionally impaired enough to be referred to Patuxent, as well as those who met certain other criteria for eligibility. As discussed in Chapter 2, only 3,261 prisoners applied to Patuxent during the twelve and a half years following 1 July 1977, out of the approximately 75,000 prisoners who entered the Division of Correction during that same period. No studies have attempted to sample the restricted class of prisoners that resembles those who applied to Patuxent. Lacking more comparable samples, one cannot draw any reasonable inference about the effectiveness of the Maryland penal system relative to other states' systems.

Chapter 6

ACCOUNTING FOR DIFFERENCES THAT RESULT FROM BEING SELECTED OR REJECTED FOR PATUXENT AND FROM POSSIBLE DIFFERENCES IN RELEASE PRACTICES

If the offenders in the three comparison samples were identical, or if differences among them were distributed identically within each of the three samples, it would be reasonable to conclude that, apart from chance sampling variation, differences in the aggregate recidivism rates of each sample resulted from whether or not they were treated and released from Patuxent. But the three samples were not identical in composition. We expect that differences were created by three different "selection" processes. First, prisoners were not randomly assigned to Patuxent or to other Division of Correction facilities. Instead, they themselves chose to apply for admission, and Patuxent officials chose from among those applicants prisoners some to accept and others to reject. We cannot assume that prisoners made unthinking decisions about whether to volunteer for Patuxent's demanding treatment program, or that Patuxent officials made their admission decisions without reason. Therefore, prisoners admitted to Patuxent were probably different from those rejected.

Second, decisions about which prisoners to release were made by two different bodies. Patuxent prisoners were considered for release by the Institutional Board of Review, whereas Division of Correction prisoners were reviewed by the Maryland Parole Commission. Different policies and practices regarding release would create differently-constituted populations of offenders under supervision.

Third, some prisoners admitted to Patuxent transferred back to the Division of Corrections prisons, either of their volition or because Patuxent officials "washed" them out of the program. Again, we expect that this selection and self-selection created differences.

To account for differences in recidivism that may result from differences due to the Patuxent selection (i.e., admission) process, we employ a multi-step statistical procedure. The first step is to create a mathematical model that fits the observed probabilities of arrest following release. Information about characteristics of prisoners that may be associated with the likelihood of recidivism is then entered into the model. This permits us to estimate the strength of these characteristics' effects on recidivism, as well as the effects of being fully or "partially" treated at Patuxent (that is, of being either an EP, an EP transfer, or a non-EP). We then include an adjustment to account for differences resulting from selection that we have not been able to measure for lack of sufficient data. By including all this information in the model, we obtain an estimate of the magnitude and direction of the effects due to (1) observed differences in prisoners, (2) unobserved differences that may have resulted from selection processes, and (3) differences in their experience of Patuxent (measured here as being an EP, and EP transfer, or a non-EP). These estimates provide us with the best evidence that can be used to infer the

existence and direction of a "treatment effect" at Patuxent or, conversely, at the DOC's prisons. (A more detailed discussion of the models, the statistical techniques employed, and the assumptions that we made for the analysis is available in Appendix 2.)

The Basic Model

The probabilities of being arrested on each successive day following release, shown in the figures in Chapter 5 that were generated by the Kaplan-Meier technique, roughly appear to follow what is called an "exponential" distribution. We therefore constructed a model--called a "survival model"--that was based on this exponential distribution. Such models, which were developed to estimate the probability of dying--or surviving--at certain ages if one in fact had not died prior to that, are useful for modeling other types of phenomena as well, such as recidivism. We refer to this simple model as "Model A" to distinguish it from others to be discussed subsequently. In Model A, we included for each prisoner the time between release and arrest (which is the phenomenon being modeled, or estimated), the occurrence of events other than an arrest that would remove him from the population at risk (such as a death, a return to prison, or a transfer to another state's parole agency) and whether we classified the prisoner as either an EP transfer, a non-EP, or an EP. Because we found that EPs who had previously been considered a "defective delinquent" were different in certain respects from EPs never been so classified, we distinguished between the two types. (Our shorthand term for the former are "DD/EPs," and "non-DD/EPs" for the latter.) This simple model provides the basis of our further analysis.

Table 6.1 reports the summary estimates from this model. Types of released prisoners are listed in the left column. The second column indicates the estimated probability of being arrested within 3 years for each type of releasee. The third column shows the difference in recidivism rates between each group and Patuxent EPs who had not been defective delinquents. The fourth column indicates whether this difference was found to be statistically significant. That is, tests were done to determine the probability that a difference this large would be observed by chance due to sampling variation even if there were no real difference. For the purposes of this report, we adopt the standard convention of regarding a difference as statistically significant only if the probability of observing as large a difference as this in the sample would be less than 0.05 if there were no real difference. Differences meeting this standard of significance are indicated with an asterisk.

Table 6.1

Estimated Probability of Being Arrested
within Three Years at Risk:
The Results of the Simple Exponential Model A

Type of Releasee	Probability of Arrest Within Three Years	Difference From Non-DD EPs	Statistical Significance
Non-DD/EPs	.45	NA	NA
DD/EP	.47	+0.02	
EP-Transfers	.37	-0.08	
Non-EPs	.27	-0.18	*

The interpretation of the numbers in the second column is straightforward. The probability of a non-DD/EP being arrested within three years is 45 out of 100. Or, put another way: we estimate that 45 percent of all EPs who were not previously classified as DDs were arrested within three years. This compares to 47 percent of all EPs who has previously been DDs; 37 percent of all EP-transfers, and 27 percent of non-EPs.

As indicated in the table, the estimated difference in recidivism between non-DD/EPs and non-EPs is statistically significant. The differences between non-DD/EPs and EP transfers, and between non-DD/EPs and DD/EPs, are not statistically significant, however, and may be the result of chance. For a fuller and more technical discussion of the models, the reader is referred to Appendix 2.

Accounting For Differences Among Prisoners in the Different Comparison Groups

As discussed in Chapter 2, prisoners in the three groups were not identical with one another, and the distribution of those differences among each of the groups was not identical from one group to the other. Because we do not have the benefit of having otherwise identical groups to compare (because prisoners were not assigned randomly to Patuxent or to other prisons), we are required to impose statistical "controls" after the fact. This is done to hold constant as many differences as possible so that we may estimate the effects of different

placement (that is, serving time in Patuxent as opposed to other prisons, or in both--in the case of EP transfers). This is done in several stages.

We have collected information systematically on a wide variety of prisoner characteristics. We have not, however, collected all possible information. In some instances, information about certain aspects were not available at all in the files; in others, the information was found too infrequently to be of use. (For example, we were not able to find the psychiatric diagnoses frequently enough in the files we examined to use this information.) For those characteristics we measured, we can introduce information into the basic model so that we can isolate the effects of those characteristics from the effects associated with whether these prisoners served their sentences at Patuxent or in the Division of Correction's prisons.

The basic model was so modified in Model B. Information on a variety of different prisoner characteristics ("variables") was added. Many of the variables were correlated with one another, and we sought to identify those for which we had the most complete data, those that were most strongly associated with the likelihood of recidivism, those which differentiated prisoners in the three groups, and those which have been identified in previous studies as being associated with the probability of recidivating. Through a process of adding and subtracting variables from the basic model, we arrived at a small set of variables to be included in the most efficient Model B. These include the number of prior terms of incarceration, age at time of release, the number of prior arrests, prior arrests for sex offenses, prior arrests for violent offenses, and whether the offender was under correctional supervision at the time of committing the offense that led to their current sentences. The full characteristics of this model are shown in Appendix 2.

Adjusting for these inter-group differences, Model B estimates that the probability of recidivism continues to be highest for non-DD/EPs. Non-EPs continue to be most successful upon release. Within three years, the non-EP's estimated probability of arrest, holding constant these variables in the model, was .21, compared to .39 for non-DD/EPs. This difference is statistically significant. The probability of an EP transfer being arrested within three years was somewhat higher than non-EPs (.31) but still lower than EPs. The difference between non-DD/EPs and EP transfers is not statistically significant, however, meaning that it could have been the result of random variation. Whether the difference between non-EPs and EP transfers were statistically significant was not tested.

What this tells us, in simple language, is that corrections for differences in observed characteristics of releasees do not change the basic findings: that eligible persons released from Patuxent have a higher probability of being arrested following release than persons released from the Department of Correction.

Accounting for Differences Resulting from Selection Biases

By introducing information about prisoner differences into the model, we aimed to hold constant (or "control for") the effects of these differences on the probability of recidivism, so that we may obtain an estimate of the independent effect of treatment at Patuxent or the Division of Correction. As the results discussed in the above section reveal, these differences do not seem to account for the different patterns of recidivism in the three groups of released prisoners.

However, we might not have identified and measured all factors that might account for these differences in outcomes. Although we cannot observe these factors, they may be taken into account by officials who determine whether an applicant is eligible for Patuxent. If these unobserved factors are also correlated with post-release recidivism, the findings that were presented earlier might be misleading as to Patuxent's effectiveness. To account for this possibility, we adopted a variation on the exponential regression model that is intended to account for unobserved and unmeasured differences in the probability of selection into Patuxent.

The probability of acceptance at Patuxent seems to vary over time--decreasing and then increasing--holding constant the seriousness of the offenders' crimes and the extensiveness of the offenders' criminal records. We have used this information, as well as other information, to model the decision to select certain prisoners for treatment at Patuxent while rejecting others. That model is not shown here, but is shown in Appendix 2. (Because we were not able to account adequately for the process by which DDs in Patuxent on July 1, 1977 were selected for continued treatment, we excluded them from the analysis from this point onwards.)

We then used the information derived from this model of the selection process in our full model of the probability of recidivism (Model C). This provided separate estimates of the differences in recidivism that could be attributed to selection processes as well as differences that could be attributed to being treated or not at Patuxent.

The summary results of this full model (Model C) are shown in Table 6.2.

Table 6.2
Model C: Summary Results of the Model Modified to Account for Differences Resulting From Selection Process (Admission/Rejection at Patuxent)

Type of Releasee	Probability of Arrest Within Three Years	Difference From Non-DD EPs	Statistical Significance
Non-DD/EPs	.39	NA	NA
EP-Transfers	.29	-0.10	
Non-EPs	.31	-0.08	

The findings suggest that Patuxent officials choose prisoners for treatment who are more likely to recidivate upon release. However, the estimated effect is not statistically significant. Nonetheless, once this adjustment for selection bias is introduced, the difference in rates of recidivism for people released from Patuxent and from other Department of Corrections facilities narrows and is no longer statistically significant.

Differential Paroling Practices:
Is There a Systematic Variation Among Institutions
In the Willingness to Release Riskier Prisoners?

We then explored another possible explanation of why Patuxent releasees have a higher rate of recidivism. Was the Institutional Board of Review at Patuxent more likely than the Maryland Parole Commission to let apparently riskier prisoners out to be supervised in the community? Might this account for the observed differences in arrest rates?

Parole authorities have considerable discretion to release offenders after those offenders have served only part of their term or to hold them until they have completed their full term. This discretionary authority has two important implications for our analysis.

First, our sample consists of offenders who were either released or who were confined in either Patuxent or a Department of Corrections facility as of 1977. If the Institutional Board of Review at Patuxent was more or less likely than the Maryland Parole Commission to release offenders who were likely to recidivate, Patuxent and DOC releasees would not have been equivalent groups. Our conclusions could be misleading to the extent that factors not taken into account by our models affected both the release decision and recidivism.

Second, offenders who were released after serving a maximum term could not be included in our analysis. Because we relied upon the supervision files for our reports of arrests, the arrests of persons not released to supervision could not be detected by our data collection team. If the samples of DOC releasees included a larger percentage of offenders who were released after serving a maximum sentence, our conclusions could be misleading to the extent that factors not taken into account by our models affected both the release decision and recidivism. (In fact, however, Patuxent was more likely than the DOC to hold people, with a larger proportion being held until they were released to no supervision, as Table 4.1 shows.)

Evidence of differential selection for release from Patuxent and from other DOC facilities alone will not necessarily invalidate our results. The results will only be affected if unmeasured factors affect both the parole authorities' decision to release and the probability that an offender will be arrested again.

To account for this possibility, we developed a model that adjusts for selection bias attributed to the release decision. Unfortunately, we were not able for technical reasons to create a single model containing corrections for differences due both to Patuxent admissions practices and to paroling practices. These corrections had to be estimated separately.

Two steps were required to make the adjustment for different paroling practices. The first was to develop a model (D1) that estimated the amount of time served in prison prior to release. The second was to introduce information from this model into Model B, which was used earlier to estimate the probability of recidivism. The resulting model, D2, provides an estimate of the extent to which differences in recidivism were due not to being treated or not at Patuxent but to simpler differences among paroling authorities' release practices.

The first model estimates two things: (1) the time that parole authorities required an offender to remain in prison prior to release, and (2) the time that parole authorities would have had an offender remain in prison if they had full discretion (that is, had the parole authorities not been bound by the maximum term imposed by the court). This latter estimate is needed because we cannot observe the lengths of prison terms for offenders who were still incarcerated at the time our data were collected.

The information we used to construct this first model, D1, included whether or not the prisoner received a life sentence, the length of the sentence imposed if it were not a life sentence, and the number of prior imprisonment terms served by the prisoner before being committed most recently to the Division of Correction or Patuxent. In addition, we entered the

variables indicating how we had classified each prisoner (that is, as a non-DD/EP, a DD/EP, and EP transfer, or a non-EP). The characteristics of this model D1 are shown in Appendix 2.

Information from this model was then incorporated into the second model, D2, developed to estimate the probability of recidivism. This additional information provides an adjustment for any differences in recidivism that may have resulted from varying release practices. The summary results of this modified model are shown in Table 6.3. (Remember that Model D2 of recidivism is not the one containing a correction for differences attributable to selection and rejection decisions at Patuxent. Instead, it is derived from Model B, which has no such correction.)

Table 6.3
Model D2:
Estimating the Probability of Recidivating, with Adjustments for Differences Resulting From Different Release Practices

Type of Releasee	Probability of Arrest Within Three Years	Difference From Non-DD EPs	Statistical Significance
Non-DD/EPs	.39	NA	
DD/EP	.33	-0.06	
EP-Transfers	.32	-0.07	
Non-EPs	.21	-0.18	*

Introducing a correction for possible differences due to non-uniform release decisions by the two parole authorities does not change the basic pattern of recidivism. In other words, that pattern of recidivism does not appear to be an artifact of the Institutional Board of Review taking greater chances with releasing more recidivism-prone prisoners, while keeping those less prone behind bars. Nor, conversely, does it appear to be the result of the Maryland Parole Commission releasing its least risky prisoners while holding others until they must be released at the expiration of their sentence. This is evident from the fact that introducing the correction for the possibly different release policies did not change the basic pattern found in the Model B, before corrections were introduced to account for differences arising from Patuxent admission decisions. Eligible persons who were released from Patuxent were still more likely to be arrested while at risk than non-eligible persons released from a Department of Corrections facility. This difference was statistically significant.

In summary: The apparent differences in recidivism rates, as measured by the probability of arrest following release to supervision, shrink once adjustments are made to account for differences in types of prisoners selected for Patuxent. That is, the higher recidivism rates of Patuxent releasees are attributable to Patuxent officials accepting for treatment those most likely to recidivate. Once this is accounted for, the remaining differences in recidivism rates are so small as to be statistically insignificant. This conclusion is not altered by adjustments for possible differences in release practices.

What remains, therefore, after all differences attributable to selection and rejection are accounted for, is no evidence of a superior "treatment effect" at Patuxent, compared with the Division of Correction's prisons. If such an effect existed, we would expect to see it manifested in the arrest statistics. If Patuxent's treatment program had a positive effect on reducing the likelihood of recidivism among those confined there and released, we would expect to find a lower arrest rate among those in the population we examined, compared with our samples of prisoners released from the Division of Correction. As it was, the arrest rates were found not to be significantly different, once other types of preexisting differences among prisoners were taken into account statistically, as well as differences due to selection decisions. These findings provide no support for the proposition that Patuxent's treatment program has a salutary effect on prisoners' likelihood of recidivating upon release. Nor do they support the proposition that prisoners released from Patuxent are any worse for it, as measured by their subsequent arrests, compared to those who spent their sentence in the Division of Correction.

CONCLUSION

As indicated in the opening pages of this report, this evaluation was designed to answer four principal questions:

o What is the overall effectiveness of the Patuxent experience on inmates, compared to being incarcerated in the Division of Correction?

o How does the performance of fully-treated Patuxent inmates (i.e., those released from Patuxent) compare with that of partially-treated inmates (those who are transferred back to the Division of Correction), and with that of non-treated inmates who have passed their entire term in the Division of Correction?

o For which types of prisoners is Patuxent most and least successful?

o What characteristics are the best predictors of success after release from Patuxent? How useful in this prediction is information known at the admissions stage compared with information acquired in the course of observing the prisoner's behavior in the Institution and during leaves or work releases?

The findings presented in the earlier chapters permit us to answer these.

The Overall Effectiveness of Patuxent as Compared with the Division of Correction

We find no evidence of any effect of Patuxent treatment on subsequent recidivism, as measured by the probability of being arrested following release to supervision. More precisely, we find no evidence that being confined at Patuxent contributes to lower recidivism rates, compared to spending one's sentence partly or entirely within the Division of Correction's prisons. Nor do we find evidence that Patuxent releasees do worse from the point of view of subsequent arrests.

As we described, the actual probability of being arrested while under supervision following release is higher for Patuxent prisoners than for prisoners who were not admitted to Patuxent for treatment, but the statistical models that we have constructed leads us to believe that these differences are due to preexisting differences among released prisoners, and not to the exposure to the in-prison programs. It appears that the Patuxent Institution selected for treatment those persons who were also most likely to recidivate upon release. The differences in subsequent recidivism among the three comparison samples can be attributed entirely to the operation of this selection-for-treatment process.

That the Patuxent Institution appears to have selected from among its applicants those who were most likely to recidivate is not surprising. It was originally designed to do just that. It was charged with identifying inmates in the Maryland prison system who appeared to be likely to recidivate and would thereby endanger the public safety because of serious intellectual and emotional impairments. Once such prisoners were identified, Patuxent was to confine and to treat them separately from other prisoners in the Maryland penal system. The law governing Patuxent's operation, Article 31B, was revised in 1977 and the Institution's mission was changed somewhat. There is good reason to think, however, that the fundamental operation of the Institution, especially with regard to its selection procedures, remained relatively intact and little changed. That is, the new law continued to charge Patuxent with identifying and treating persons found to be intellectually and emotionally impaired. It was also charged with identifying those who were in greatest need of treatment at Patuxent. Prisoners who met these criteria also appear to be more likely to be arrested upon release.

What is surprising and, indeed disappointing, is that there is no clear evidence that the Institution's treatment program wrought positive effects on prisoners, at least as we could measure by our narrow standard--the incidence of an arrest following release to supervision. It is disappointing because a great deal of intelligence and ingenuity went into the invention and design of a program for intellectually deficient and emotionally impaired criminals who, by virtue of their handicaps, pose some threat to the larger society.

To be sure, our ability to detect a positive treatment effect (or any treatment effect) is limited by a number of unfavorable conditions. First and foremost, we are analyzing events that occurred in the past, often as long as a decade or more. Prisoners were exposed to programs in Patuxent and the Division of Correction that can no longer be analyzed directly. Some prisoners in the samples we drew were released in the late 1970s after stays as long as twenty years. In studying these prisoners' experiences, we are limited to interpreting written information in case files. Because this information was not written down for the convenience of an evaluator who was to come later, it was often inconsistently recorded. Types of information that would have been valuable for this evaluation--such as the psychiatric diagnoses of Patuxent's applicants--were not available consistently in the case files we examined.

The second obstacle to evaluating the Institution's effectiveness was the lack of an assignment procedure that would have facilitated our ability to draw inferences about treatment impacts. No attempt was made to create, on an ongoing way, a population of prisoners who might serve as a useful comparison group to those admitted and treated at Patuxent. Instead, the process of selecting prisoners for treatment was part of a larger process whereby certain types of prisoners were funneled to the Patuxent review boards, encouraged to apply for admission in some cases and discouraged in others. What resulted was the admission of a highly-distilled segment of the Maryland prisoner population. Finding a readily available and well-suited comparison group is not easy.

Our strategy of creating comparison groups from among rejected applicants and eligible persons who transferred back to the Division of Correction is about as good as one can get in these circumstances. Using such populations raises obvious questions about comparability, however. Were not the rejected applicants turned down precisely because they didn't meet the criteria for eligibility? We recognize this to be a serious methodological problem, and we have developed what we believe is an ingenious procedure for sorting out differences in recidivism that can be attributed to these selection processes from differences than can be attributed to treatment.

In short, our method was to attempt to mimic, after the fact, the conditions best suited to drawing strong conclusions about effects--the controlled experiment. In controlled experiments, the evaluator is able to hold as many factors constant---ideally, all but the element that is being tested (in this case, the provision of a special treatment program at Patuxent). The evaluator is also able to control as best as possible the composition of those populations exposed to the treatment. Lacking the ability to have nearly homogeneous prisoner-subjects in the "experimental" and "control" conditions, evaluators adopt random assignment strategies to minimize the opportunity for biasing the findings by virtue of selecting certain types of subjects while rejecting others.

Because we were not able to impose these kinds of experimental procedures and conditions on the Patuxent Institution and its selection procedures, and because we were evaluating the Institution's effect after the fact, we sought to impose statistical controls. Lacking random assignment of prisoners to Patuxent, we developed models to estimate how these assignment decisions were actually made so that we could use this information in an attempt to eliminate effects that were attributable to purposeful selection of prisoners.

As powerful as these statistical model-building techniques are, they involve developing estimates of effects that would be found if all other measured factors were held constant. Being estimates, they provide somewhat uncertain grounds upon which to build inferences about the existence and strength of treatment effects. We are reasonably confident that our methods would have detected a treatment effect at Patuxent on recidivism if it existed, but our confidence would have been greater had we been able to conduct a controlled experiment, and had we been able to institute uniform data collection procedures.

To say that a controlled experiment would have been preferred is not to argue that the after-the-fact statistical modeling techniques are without value. Most social programs are not set up and carried out with concurrent evaluation. Evaluations are, unfortunately, usually called for long after the program has been in operation. In these circumstances, unless program administrators and policy makers are willing to invest the time and resources needed of controlled experiments, after-the-fact evaluations, with all their limitations, are the best that can be mounted. Such evaluations have provided policy makers with important information in a variety of different policy domains, and for a variety of programs.

Comparing the Performance of Prisoners Fully, Partially, and Never Treated at Patuxent

Our findings provide no evidence of any treatment effect at Patuxent, either for those fully or partially treated.

For Which Types of Prisoners is Patuxent Most and Least Successful?

Because we were unable to discern any effect of Patuxent's treatment program on recidivism, we were not able to identify those prisoners for whom it was most or least successful.

Which Characteristics Are the Best Predictors of Success After Release from Patuxent?

Although our research indicated factors that were associated with a lower likelihood of recidivating following release from Patuxent, these same factors were associated with lower recidivism among those released from the Division of Correction. For example, we find that the older the prisoner is at the time of release, the less likely he is to be arrested afterwards, other things being equal. Those who had more extensive prior criminal records were more likely to be arrested. Likewise, the probability of recidivism is higher for prisoners who were sentenced to an imprisonment term before the sentence that led to his current incarceration; the more such prior terms, the higher the probability of recidivism. The more prior arrests for sex offenses, the higher the likelihood of recidivating; the more prior arrests for violent offenses, the lower the likelihood. All these association, except for that between age at release and recidivism, were not found to be statistically significant, however.

Moreover, these are general tendencies among all prisoners, and do not reflect the likelihood of the Patuxent treatment having greater or lesser success on prisoners. Because we found no evidence of a positive or negative Patuxent effect on recidivism, a list of characteristics associated with lower recidivism among Maryland prisoners gives no real direction to policy makers as to whom the Patuxent treatment should be directed most successfully.

How Useful in This Prediction is Information Known at the Admissions Stage Compared with Information Acquired in the Course of Observing the Prisoner's Behavior in the Institution and During Leaves or Work Releases?

None of this information predicts how successful the Patuxent treatment will be for various types of offenders, because we were not able to identify any positive or negative effect at all, for any type of offender.

Policy Implications of These Findings

Drawing policy conclusions about any correctional program requires balancing its various costs with its benefits. Our evaluation was limited to evaluating a single side of this equation: the possibility that the Patuxent Institution's treatment program produced a benefit in the form of reduced likelihood of recidivism. We found no evidence of such a beneficial effect.

Because our evaluation was limited to assessing the program's impact on recidivism by a selected population of offenders, and because we were not able to discern a treatment effect on any particular type of prisoner held at Patuxent, we have no firm ground upon which to base any speculation about whether the Patuxent program would be more successful for other types of prisoners.

As discussed above, our conclusions are based on a complex method of statistical estimation rather than upon a more controlled experiment. If a stronger test of the Patuxent Institution is required, we recommend that a prospective controlled experiment be carried out, in which professional evaluators design the strategy for assigning prisoners to Patuxent as well as the procedures for measuring effects. Such a study will require several years, as one will need to follow prisoners while they are in treatment as well as after they are released.

Because such studies often take more time than policy makers or administrators have for making decisions about correctional programs, administrators should consider building strong evaluations into innovative programs from the beginning so that they will be able to develop evidence of their effects. On-going evaluations also provide program administrators with information that can be used to "fine tune" their programs, making in-course corrections and adjustments to increase their effectiveness.

Appendix 1

MEASURING RECIDIVISM

Recidivism is measured two ways in this report: by a return to Maryland prisons and by the occurrence of an arrest.

Returns to Prison

Return to prison is used as one indicator of recidivism in this study. A "return" is defined as any recommitment to the Division of Corrections or to Patuxent following a release. For the purposes of our analysis, we consider only the first release from either Patuxent or the DOC following the prisoner's review for admission to Patuxent. All such reviews occurred after the revision of Article 31B, Annotated Code of the Public General Laws of Maryland, Acts of 1977, effective July 1 1977. (Some of the prisoners had been reviewed at Patuxent in the preceding years, but the criteria for admission were different. We count as the "review date" the first date of review under the revised standards of eligibility, following 1 July 1977.)

A release is defined to include parole, expiration of sentence, mandatory release or mandatory supervision, or commutation of sentence. A parole to a half-way house, which is common at Patuxent, is considered a release. Escapes, suicides, deaths, and inter-jurisdictional transfers are not considered releases from institutions. Also excluded are furloughs, leaves for work-release, or any other short-term leaves authorized by prison administrators for any other purpose.

Returns are defined as any readmission to Patuxent or to the DOC, subsequent to being released, for any reason and for any period of time. This includes returns for violation of the terms and conditions of parole, or for receiving a new sentence. Not counted here are any returns to local jails, or to correctional facilities in other states.

Dates of return were obtained from an analysis of the institutional basefiles and the supervision files. A dataset was also obtained from the Maryland Department of Public Safety and Correctional Services' Research and Statistics Division, which contained information on dates and reasons for all movements in and out of institutions, by all offenders in our sample. These "traffic histories" were extracted from the Department's OBSCIS system, a computerized database used to record information on inmate movements. This dataset was used to complement the information we obtained from the institutional basefiles and the supervision files. In some instances where we had insufficient information in the basefiles or supervision files to determine reason and date of return, we turned to the traffic histories extracted from OBSCIS.

We relied entirely on the OBSCIS traffic histories to determine if prisoners were returned after their sentences were expired (to begin a new sentence, that is), because those returns would not be recorded in the files pertaining to the earlier offense and commitment. At our request, the Research and Statistics Division of the Department searched the OBSCIS database by SID number (a unique identifier given to each offender), and by name and date of birth, where necessary. The records of all subsequent commitments for new sentences were provided us, along with information pertaining to the commitment we had been tracking.

Because our analysis involves determining the time between being released and returned to prison, it was vital to obtain a date of return. In some instances, it was clear that the prisoner had been returned to custody, but dates were missing. In these instances, we estimated the date of return from a date of violation, if this was listed. If neither the date of return or the date of violation was found in the files, we used the date of arrest as an estimate. If none of these dates were found, but we were sure that the prisoner had indeed been returned, we considered the date missing and excluded these cases from the analysis.

If we found no evidence of a prisoner being returned, we defined this as meaning "not returned." Because a lack of information could mean either that the prisoner was not returned or that the prisoner was returned but information about that return was missing, we took considerable care to determine what missing information on returns meant in each case.

Measuring arrests

In addition to recording information about subsequent returns to prison, we recorded information on subsequent arrests. Our measure of arrest is defined here as "any arrest recorded in any of several files we examined, which occurred after the first post-1977 release from either Patuxent or the DOC, and before the end of supervision or recommitment to prison." "Release" was identified exactly as in the analysis of returns.

Because we relied upon the supervision files for arrest information, only arrests occurring before the expiration of sentence were counted. Arrests of persons who were released from prison without any supervision requirement were not counted. Also excluded were any arrests occurring after the offender was terminated from supervision. Our measure must therefore be understood as "arrests following release from prison that occurred while under supervision."

Whether or not an arrest occurred, and the date on which that arrest occurred, was determined in the following fashion. Our data examiners listed the dates of all arrests occurring after release from prison/Patuxent that were shown in the supervision files. Some of these dates clearly fell between the date of release and the date of either return to prison or the end of supervision, which came first. Others followed the date of return to prison. It was possible that some of these arrests were offenses alleged to have happened after the offender was returned to prison--such as assaulting a correctional officer or another prisoner. That a number of arrests

were clustered around the period immediately following recommitment suggests another reason, however: prisoners might have been formally arrested on charges stemming from an offense that was alleged to have occurred prior to being reimprisoned. Because the latter possibility is strong, we include in our count of post-release arrests any arrest that occurred within 30 days of returning to prison. It is possible that this overcounts slightly the number of actual arrests that can be attributable to the offenders' time on the streets, but there is no reason to suspect that this miscount is either large or that it biases the comparison in one direction or another.

If the date of arrest was missing, but we recorded other information pertaining to that event (offenses charged, disposition of case, sentence imposed, if any), and if we had another indication that the offender was returned to prison because of an arrest (this was picked up by two different questions that we asked of the files), we used the date of return to prison as the estimated date of arrest. In all likelihood, the date of return was somewhat later than the date of arrest, but we made no attempt to estimate a correction for this lag.

APPENDIX 2

ON THE STATISTICAL PROCEDURES USED IN THE MULTIVARIATE ANALYSIS OF RECIDIVISM, WITH CORRECTIONS FOR SELECTION BIAS

This appendix reports and discusses the statistical analysis summarized in Chapter Six. That analysis was framed as a test of the null hypothesis that treatment provided by the Patuxent Institution has the same effect on subsequent recidivism as treatment and services provided by other DOC prisons. The measure of recidivism used is the occurrence of an arrest following release, while under supervision. Accordingly, the specific hypothesis tested is that Patuxent releasees are arrested following release to supervision at a rate which is the same as that experienced by two other groups of released prisoners--EP transfers and non-EPs. The alternative hypothesis is that Patuxent releasees are arrested at greater or lesser rates than the two comparison groups, EP transfers and non-EPs, both of whom were treated at Department of Correction facilities. Rejecting the null hypothesis in favor of the alternative hypothesis is equivalent to inferring that Patuxent has a different treatment effect.

Kaplan-Meier Product Limit Estimates

As discussed in the text, the starting point of the analysis was the determination of the probability of avoiding arrest as a function of time at liberty for each of the comparison groups constructed for the study. To do this, we employed Kaplan-Meier survival analysis techniques (see Kalbfleisch and Prentice, 1980, and Tuma, 1982), which takes account of the fact that not all releasees are observed for the same period of time following release.

Figures 8, 9, and 10, shown in Chapter Five, represent these probabilities for eligible persons treated at Patuxent and released from this facility (EPs), eligible persons who transferred to a Department of Corrections facility (EP transfers), and persons deemed not eligible for treatment at Patuxent, who served their sentences in DOC prisons prior to release (non-EPs). When taken together, these figures support the conclusion that EPs are more likely to be arrested while under supervision than EP transfers and non-EPs.

Were the analysis to stop at this point, we would reject the null hypothesis that EPs are arrested at the same rate as other releases, although in an unexpected direction: EPs seem to be arrested at rates that exceed those of EP transfers and non-EPs.

Prisoners were not randomly assigned to Patuxent. They decided to apply, could then be accepted or rejected by Patuxent and might subsequently decide to leave Patuxent or be transferred from Patuxent to other prisons. Further, the decision to release prisoners from

Patuxent into other DOC prisons were made by two different agencies. Our analysis was based on applicants. It is possible, however, that the acceptance decision, the decision to remain in Patuxent, and the release policies pursued by the Patuxent Institutional Review Board and the Maryland Parole Commission could create different populations of releasees and that these differences could in turn lead to differences in recidivism apart from treatment effects. Much of our analysis was devoted to determining whether such selection processes materially affected the observed differences in recidivism.

We started by separating defective delinquents from other EP releasees, since there were few defective delinquents in the EP-transfer group and none in the non-EP group. Kaplan-Meier estimates for these two groups of EP releasees separately. Results appear in Figures 11 and 12. Defective delinquents (DDs) are not necessarily more likely to be arrested during long term release than EPs who were not deemed defective delinquents (NON-DDs). In any case, the higher proportion of defective delinquents does not account for the higher recidivism rates observed for EP releasees.

We then proceeded as follows. First, we adopted a simple functional form for the distribution of time to arrest that could be summarized in terms of a few parameters. This allowed us to examine recidivism rates while taking account of a number of other prisoner characteristics. Estimated EP recidivism rates were still significantly higher than those of the non-EP releasees.

We determined, however, that there was still a substantial unexplained variation in individual prisoner's probabilities of recidivism. This indicated that other factors could also be affecting the difference in recidivism. We then used the fact that acceptance rates for Patuxent varied over time to test for and correct for these possible selection effects. The results were mixed. On the one hand, we could not reject the hypothesis of no selection effects. On the other hand, if we assumed that selection effects were present, taking account of them materially reduced the estimated differences in recidivism between EP and non-EP releasees. Although EP releasees still had a higher recidivism rate, the difference was no longer significant.

Finally, we examined the release decision and its influence on recidivism. We found that there was little apparent difference in the release decisions at Patuxent and other prisons and that taking account of these had no effect on the estimated difference in recidivism rates among the three groups.

We conclude that there is no evidence that treatment at Patuxent reduces recidivism rates. There is some indication that the lack of randomized assignment created groups that were not directly comparable. It does not appear that correcting for these biases would lead to a finding of reduced recidivism among Patuxent releasees.

Exponential Regressions

When we inspected the Kaplan-Meier curves (more accurately, log transformations of these curves), time until an arrest appeared to follow an exponential distribution.[1] Therefore, we estimated a "survival model" based on the exponential distributions. Formally, we assumed that the distribution of time until an arrest could be written:

$$F(t) = 1-\exp(-\lambda t)$$

where F(t) is the probability of being arrested by time t and that

$$\lambda = \exp(x\beta)$$

where lambda is the hazard rate, ß is a row vector of parameters, and X is a column vector of independent variables Exp() denotes the exponentiation operator. The basic exponential failure time model is discussed by Kalbfleisch and Prentice (1980) and by Tuma (1982). An extension and application of this model to predicting recidivism appears in Maltz (1984).

We assumed initially that X included a constant term and dummy variables (coded 1 and 0) to distinguish among EP transfers, non-EPs, and DDs; eligible persons treated at Patuxent are a residual category. Time is measured in days. Results are presented below.

Modeling Time Until an Arrest:
Regressions Using a Simple Exponential Model

variable	parameter	t-statistic	probability of arrest within 3 years
CONSTANT (NON-DD/EP)	-7.525910	56.756519	0.45
EP TRANSFERS	-0.252108	1.118906	0.37
NON-EPs	-0.644433	2.548950	0.27
DEFECTIVE DEL	0.075760	0.219372	0.47
MEAN LOG LIKE	-2.844252		

[1] The hazard rate will be a constant when an exponential distribution is applicable. A constant hazard is indicated by a log tranformation with a constant slope, which seemed to characterize our data.

Variable names appear in the left-hand column. In this context, the constant term represents the outcomes for NON-DD EPs. The other variables represent the difference between the indicated group and the non-DD EPs. The second column contains the parameter estimates, e.g. the ß's. The third column contains asymptotic t-scores, eg. the ß's divided by their estimated standard errors. A t-statistic of 1.96 or larger is considered to be statistically significant.

The probability of being arrested within t days can be calculated as:

$$PROB = 1-\exp(-\lambda t)$$

Substituting parameter values into this equation, the probability of being arrested within three years is about 0.45 for Patuxent releasees, about 0.37 for eligible persons who transferred from Patuxent, about 0.27 for non-eligible persons, and 0.47 for defective delinquents who were released from Patuxent. These probabilities are shown in the right-hand column of the table.

The regression results indicate that non-DD EPs were arrested more frequently than non-EPs. This difference is statistically significant. The difference in recidivism between EPs and EP transfers is not statistically significant, however, indicating that it may be due to random variation. The difference between EP transfers and either DDs or non-EPs was not tested for statistical significance. The conclusion that can be drawn from these results are not much different from those drawn from the Kaplan-Meier figures: There is as yet no evidence that the treatment program at Patuxent produces releasees who are less prone to be arrested than are releasees from other DOC facilities.

This conclusion rests heavily on an assumption that EPs, EP transfers, and non-EPs were all equivalent prior to their correctional experiences. This assumption may be unrealistic, as discussed in the main text of this report. There are plausible reasons to think that the simple comparison of arrest probabilities might be biased. These include: (1) selection into Patuxent may produce significant differences in the composition of the three groups, which may in turn account for some or all of the observed differences in outcomes, (2) the practice of releasing prisoners to supervision may be systematically different in Patuxent and the DOC, which may result in one or the other agency releasing prisoners who are riskier, on average, and more likely to be arrested, and (3) the processes of selection and self-selection for transfer out of Patuxent may result in differences that affect the differences in arrest rates for the groups. The following sections are devoted to exploring all but the last of these possibilities.

Modeling Time Until an Arrest:
Exponential Regression with Unmeasured Heterogeneity

In order to account any systematic differences among the four groups of releasees, as well as for heterogeneity among them that we may not have measured, we first constructed a simple adaptation of the basic exponential model where:

$$f(t) = \lambda \exp(-\lambda t)$$

$$\lambda = \exp(X\beta + \epsilon)$$

where f(t) is the density function.

Failure-time models with unmeasured heterogeneity are discussed by Flinn and Heckman (1982), Kiefer (1988) and King (1989). Rolph, Chaiken and Houchens (1981) have used models with unmeasured heterogeneity to study criminal behavior, but not to predict criminal behavior. For reasons discussed in King (1989), the unmeasured heterogeneity is usually modeled using a gamma distribution. Our choice of the normal distribution was dictated by a need to adjust for potential selection bias, an extension that is discussed later.

In sum, we added an error term ϵ to account for unmeasured heterogeneity across EPs, EP transfers, and non-EPs. This adaptation cannot account for systematic differences across EPs, EP transfers , and non-EPs, but the model does attempt to account for unmeasured differences, an adaptation that is especially useful in a model introduced below.

Results are presented below:

Modeling Time Until an Arrest:
Regressions Assuming Unmeasured Heterogeneity

variable	parameter	t-stat	probability of arrest within 3 years
CONSTANT	-7.7027	-42.1824	0.39
EP TRANSFERS	-0.2963	-1.1296	0.31
NON-EPS	-0.7730	-2.6389	0.21
DEFECTIVE DEL	0.1082	0.2686	0.43
STANDARD ERR	0.8832	3.2015	
MEAN LOG LIKE		-2.8001	

The fact that the standard error term is statistically significant indicates that there is substantial heterogeneity among the three comparison groups. The probability of being arrested during a three year period is 0.39 for eligible persons released from Patuxent, 0.31 for eligible persons released from a Department of Corrections facility, 0.21 for non-eligible persons released from a DOC facility, and 0.43 for defective delinquents. These downward adjustments to the probability of an arrest can be attributed to the introduction of a correction for unmeasured heterogeneity.[2]

Introducing Covariates

Recounting conclusions so far, EPs seem to recidivate more often than EP transfers and non-EPs, but we cannot discount the explanation that these differences in rates of recidivism can be explained by inherent differences among EPs, EP transfers, and non-EPs and that these inherent differences--not the treatment programs--account for the systematic variation in arrest rates. One way of discounting or reinforcing this alternative explanation is to introduce covariates, that is, factors other than the treatment program as explanatory variables.

We used several variables as potential explanations of arrest patterns, including those reported below. This selection followed a limited search in which we were guided by the professional literature about recidivism, by bivariate correlations between arrest and candidate variables, and limited pretesting (not all of which is discussed here) using a multivariate model.

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[2] A mathematical property of the standard exponential survival model is that duration dependence will be biased downward when unmeasured heterogeneity is present. In practical terms, this means that an estimate of the probability of being arrested will be biased upward. This bias will be removed by the correction that we have introduced provided unmeasured heterogeneity is distributed as we have assumed. We have evaluated the probability conditional on ϵ being equal to zero, a practice that we follow throughout this report.

Modeling Time Until an Arrest:
Regressions on an Expanded Set of Covariates

variable	parameter	t-stat	probability of arrest within 3 years[3]
CONSTANT	-1.294088	0.746783	0.39
EP TRANSFERS	-0.290457	1.239824	0.31
NON-EPS	-0.761258	2.876531	0.21
DEFECTIVE DEL	-0.138248	0.385246	0.35
AGE	-1.976028	3.845760	
UNDER SUPER	-0.100850	0.469480	
ARRESTS	0.244994	1.110182	
INCARCERATION	0.346950	1.747346	
VIOLENCE	-0.313189	1.612628	
SEXUAL OFFEN	0.315580	1.054386	
MEAN LOG LIKE	-2.771644		

where variables are:

AGE	Age at release, measured in years/10
UNDER SUP	Under correction supervision when Patuxent offense committed
ARREST	LOG(1 + total prior juvenile and adult arrests)
INCARCERATION	LOG(1 + total sentences to incarceration)
VIOLENCE	LOG(1 + total prior arrests for violent crimes)
SEXUAL OFFEN	LOG(1 + total prior arrests for sexual offenses)

The probability of recidivism increases with a positive parameter so, for example, offenders with several prior sentences of incarcerations are more likely to be arrested than are offenders with no prior sentences of incarceration. These covariates had effects that were predictable based on similar analysis published in the professional literature. As offenders age, they are increasingly less likely to be arrested; offenders with extensive prior criminal records are especially prone toward being arrested. More important for our purposes, the introduction of these covariates does not alter our tentative conclusions that EPs recidivate at higher rates than others.

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[3] Arrest probability was computed by "forcing" the average EP to have a probability of arrest equal to 0.39, which implies a lambda of -7.70. Lambda--and hence the probability of an arrest--for other categories was computed by adding the parameter estimate for the other categories to -7.70 and computing the implied probability.

Additional data analysis became increasingly computer intensive. To reduce processing time, we re-estimated the above regression after dropping variables that appeared to have no more than marginal influence on predicting an arrest--that is, whether or not the offender was under supervision at the time of committing the offense for which he was sent to DOC and/or Patuxent, and the total number of prior arrests. Results from the resulting regressions are presented below. No explanation is necessary, because no important findings are affected.

Modeling Time Until an Arrest:
Regressions on a Restricted Data Set

variable	parameter	t-stat	probability of arrest within 3 years
CONSTANT	-1.093203	0.643966	0.39
EP TRANSFER	-0.270678	1.179576	0.32
NON-EP	-0.724453	2.789773	0.21
DEFECTIVE DEL	-0.116720	0.333951	0.36
AGE	-1.984002	3.899795	
INCARCERATION	0.485193	3.158950	
VIOLENCE	-0.210808	1.299400	
SEXUAL OFFENSE	0.286086	0.966886	
MEAN LOG LIKE	-2.773796		

Next, we estimated the exponential model with unmeasured heterogeneity after substituting the current list of covariates into the earlier model specification. Results, which have no strong influence on findings, are reported below. Again, however, the significant estimated standard error indicates that hazard rates did vary across individuals in ways not accounted for by the covariates. Accordingly, the possibility of unaccounted for selection effects remains.

Modeling Time Until an Arrest:
Regressions on a restricted data assuming unmeasured heterogeneity

variables	parameter	t-stat	probability of arrest within 3 years
CONSTANT	-0.6119	0.3336	0.39
EP TRANSFER	-0.2945	1.1590	0.31
NON-EP	-0.7866	2.7926	0.21
DEFECTIVE DEL	-0.1263	0.3224	0.35
AGE	-2.1756	3.9349	
INCARCERATION	0.5493	3.0523	
VIOLENCE	-0.2284	1.2709	
SEX OFFENSES	0.3186	0.9893	
STAND ERR.	0.7541	2.5674	
MEAN LOG LIKE	-2.7719		

Adjusting for Selection Biases Due to Admitting Different Types of Offenders to Patuxent

By introducing covariates into the model, we hope to "control" for factors that might account for different rates of recidivism by EPs, EP transfers, and non-EPs, independent of any possible treatment effect. It appears that the introduction of covariates alone cannot account for the different outcomes.

However, we might not have identified and measured all factors that could account for these differences in outcomes. Although we cannot observe these factors, they may be taken into account by officials who determine whether an applicant is eligible for Patuxent. If these unobserved factors are also correlated with post-release recidivism, then the regressions that were presented earlier can be misleading about Patuxent's effectiveness. To account for this possibility, and thus to overcome the biases associated with purposeful selection into Patuxent, we adopted a variation of the exponential regression model that is intended to account for differences in the probability of selection into Patuxent.

An initial step was to estimate the probability of being accepted into Patuxent. To estimate this probability, we use a sample of individuals who applied for admission to Patuxent, some of whom were accepted and some of whom were rejected. A probit model was used to estimate this probability.

The probit can be written:

$$Z = \alpha X + \tau$$

$$selected\ if\ Z > 0$$

$$probability\ of\ selection = probability \tau > -\alpha x$$

Here α is a row vector of parameters, X is a column vector of explanatory variables, and τ is an error term distributed as standard normal. Our specification of the probit model was standard, except for a modification to adjust for a sampling plan based on oversampling EPs. (That is, we oversampled offenders who were selected for admission to Patuxent; this oversampling had to be taken into accounted when computing the probability of acceptance into Patuxent based on the data at hand.) The probit model is discussed by Maddala (1983).

Results are presented below:

Modeling the Probability of Being Selected for Admission to Patuxent

variable	parameter	t-stat
CONSTANT	-0.3357	0.7251
1978	-1.2264	5.7503
1979	-1.3808	5.8200
1980	-1.3619	5.6652
1981	-1.4627	5.8615
1982	-1.4798	5.6673
1983	-1.4999	5.5177
1984	-1.7333	5.6295
1985	-1.9011	5.5793
1986-1987	-0.7871	1.7854
LOG SENTENCE	0.2823	3.7772
LOG PRIOR PRIS	-0.0807	1.0147
MEAN LOG LIKE	-0.5330	

where:

19__	The year considered for admission to Patuxent; 1986-1987 were combined because there were few cases in our sample for 1987.
LOG SENTENCE	The logarithm of sentence imposed, a measure of offense seriousness
LOG PRIOR PRIS	The logarithm of prior terms of incarceration, a measure of the offender's likelihood to recidivate

The probability of acceptance at Patuxent seems to vary over time--decreasing and then increasing--holding constant the seriousness of the offenders' crimes and the extensiveness of the offenders' criminal records. Using this observation, we developed and estimated a "selection bias" model to assess whether the apparently negative treatment effect at Patuxent could be attributed to unmeasured factors effecting both recidivism and selection into Patuxent Institution.

To estimate the probability of selection, it was necessary to eliminate defective delinquents from the data, because defective delinquent (who were already at Patuxent prior to the change in admission criteria in 1977) were likely to be considered using different standards than those used for other applicants. To be consistent, we eliminated defective delinquents from the analysis described below.

The modification of the exponential survival model to account for selection bias can be written:

$$\int \frac{\lambda \exp(-\lambda t)\phi(I\alpha X|\epsilon)\varphi(\epsilon)d\epsilon}{\phi(I\alpha X)}$$

$$\phi(I\alpha X|\epsilon) = \phi\left(I\left[\frac{\alpha X+\sigma_{e\tau}\epsilon/\sigma_e^2}{\sqrt{1-\sigma_{e\tau}^2/\sigma_e^2}}\right]\right)$$

where

φ *is the standard normal density;* ϕ *is the standard normal cdf*

$I = 1$ *when selected for Patuxent;* $I = -1$ *otherwise*

$Z = \alpha X + \tau$ *is the probit equation*

and

ϵ *and* τ *are distributed as bivariant normal*

with means $E(\epsilon) = E(\tau) = 0$, *and*

variance of σ_ϵ^2 *and* 1 , *respectively, and covariance* $\sigma_{\epsilon\tau}$

Selection bias model are discussed by Maddala (1983) and Heckman (1979). Applications to the analysis of criminal recidivism appear in Rhodes (1985) and Rhodes (1989). Based on King (1989) and Grogger and Carson (1988), we believe that this adjustment for selection bias for a exponential failure time model is innovative.

Results--which have the same interpretation as previously--appear in the table below.

Modeling Time Until an Arrest, with Correction for Biases Resulting from Differential Probability of Selection for Treatment at Patuxent

variables	parameter	t-stat	probability of arrest within 3 years
CONSTANT	-1.8455	0.9442	0.39
EP TRANSFER	-0.3857	1.4263	0.29
NON-EP	-0.2775	0.4503	0.31
AGE	-1.8815	3.3382	
INCARCERATION	0.5527	3.0073	
VIOLENCE	-0.2002	1.0834	
SEXUAL OFFENSE	0.3749	1.1644	
COVARIANCE	0.3635	0.8456	
STAND ERROR	0.7596	2.3796	
MEAN LOG LIKE		-2.7653	

The positive sign on the covariance term suggests that Patuxent applicants are screened at the time of admission so that applicants who are more likely to recidivate upon release are more likely to be accepted into Patuxent. However, the estimated effect is not statistically significant. Nonetheless, a consequence of this adjustment for selection bias is that the difference in rates of recidivism for people released from Patuxent and from other Department of Corrections facilities narrows and is no longer statistically significant.

Although these findings are suggestive that part of the reason for the higher rate of recidivism among Patuxent releasees than among DOC releasees can be found in admission procedures at Patuxent, the correction for selection bias does not cause us to reject the null hypothesis (that Patuxent releasees perform no better than DOC releasees) in favor or the alternative hypothesis (that Patuxent releasees are less likely to recidivate.)

Modeling the Process of Selecting Prisoners for Release to Supervision

Having found some indication that screening at Patuxent might account for the higher rate of recidivism by Patuxent releasees, we turned to another possible explanation of these differences: That Patuxent's Institutional Board of Review released riskier persons from among Patuxent's prisoners to supervision in the community, and that the Maryland Parole Commission was more "conservative" in its release practices.

To test this possibility, we estimated a second model that adjusts for selection bias attributed to the release decision. Two steps were required. The first step was to estimate a regression equation for time served prior to release. The second step was to use the error term from this first regression to adjust for selection bias when estimating recidivism based on the exponential model.

Step one was to estimate a model where:

$$T^* = X\gamma + \mu$$

$$T = \min[T^*, \textit{maximum sentence}, \textit{followup period}]$$

T = Time that parole authorities require an offender to remain in prison prior to release.

T* = A latent variable, time that the parole authorities would have an offender remain in prison if they had full discretion, that is, were the authorities not bound by the maximum term imposed by the court. The use of a latent variable is also relevant because we cannot observe the lengths of prison terms for offenders who were still incarcerated at the time our data were collected.

P = The probability of being selected for the sample conditional on having been released from prison divided by the probability of being selected for the sample conditional on having been detained in prison.

This model, a tobit censored regression model with endogenous stratification, has been discussed by Maddala (1983, p.170-174). Results from estimation of this model follow:

Modeling Time Served

variables	parameter	t-stat
CONSTANT	79.0614	9.1225
DOC	5.5298	0.9210
MAX SENT	0.1621	6.6245
LIFE TERM	134.5777	11.4116
PRIOR INCAR	1.2672	0.8453
STAND ERR	68.4579	17.3675
MEAN LOG LIKE	-3.8056	

where:

DOC	a dummy variable coded 1 if release was from the DOC and coded 0 otherwise.
MAX SENT	the maximum sentence imposed by a court, a measure of the severity of the offense; coded 0 if the offender received a life term.
LIFE TERM	a dummy variable coded 1 if the offender received a life term and coded 0 otherwise.
PRIOR INCAR	number of prior prison terms served as an adult or juvenile, a measure of criminal record.

Notice that there was no significant difference in estimated T^* between DOC prisons and Patuxent. This suggests that they may have followed similar release policies. We then tested whether the residual from the time served equaltion--the extent to which prisoners were released sooner or later than average--appeared to influence subsequent recidivism. Specifically, using results from this regression explaining time served, we estimated the regression for time

until recidivism, again adoptin a model of unmeasured heterogeneity. The density function can be written:

$$\int \exp(-\lambda t)\varphi(\epsilon|\mu)d\epsilon$$

$$\mu = T - X\gamma, \textit{ as estimated from the tobit model}$$

We would have liked to take the two forms of selection bias (i.e., admission to treatment at Patuxent and the parole release decisions) into account simultaneously. Unfortunately, this is a difficult problem, which we were not able to overcome.[4]

Results of the regression model are reported below:

Modeling Time Until an Arrest, With Adjustments for Biases Resulting from Differential Selection for Release to Supervision

variable	parameter	t-stat	probability of arrest within 3 years
CONSTANT (NON-DD/EP)	-0.3940	-0.2142	0.39
EP TRANSFER	-0.2992	-1.1574	0.31
NON-EP	-0.7642	-2.7286	0.21
DEFECTIVE DEL	-0.4299	-0.8960	0.27
AGE	-2.1777	-3.9213	
INCARCERATION	0.5167	2.8578	
VIOLENCE	-0.2113	-1.1583	
SEX OFFENSES	0.2535	0.7651	
COVARIANCE	0.3336	1.4073	
STANDARD ERR	0.7619	2.6732	
MEAN LOG LIKE	-2.7904		

These estimates indicate that time in prison tends to be longer for people who have a greater tendency to recidivate, but the effect is not statistically significant. (As implied by the positive covariance term, which does not reach a level of statistical significance.) Nevertheless, the bias attributable to differential selection for release appears not to alter any substantive findings. Eligible persons who are released from Patuxent are more likely to be arrested while

[4] See Toborg, M., Bellassai, J., Yezer, A. and Trost, R. (1989) Assessment of pretrial urine testing in the District of Columbia National Institute of Justice, Department of Justice, Washington, D.C., for an attempt to model a two stage selection process. The problem faced in our analysis is considerably more complicated than that solved by Toborg and colleagues.

at risk than are non-eligible persons who are released from a Department of Corrections facility. Eligible persons who are released from Patuxent appear somewhat more likely to be arrested than are eligible persons who transfer from Patuxent to a DOC facility, from which they are subsequently released. This later effect is not statistically significant, however, and may be due to chance variation.

These tests lead us to conclude that the evidence is insufficient to reject the null hypothesis that offenders who are treated and released from Patuxent are no more likely to be arrested than offenders who are treated and released from other Department of Corrections facilities.

References to Appendix 2

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Appendix 3

Guidelines for Patuxent Selection Decisions and Terms and Conditions of Patuxent Parole

ADMISSIONS: ELIGIBLE PERSONS CRITERIA SCALE

E4

As defined by law in Article 31B, an inmate shall be found to be Eligible for the program at Patuxent if: 1) he has been convicted of a crime and has three years remaining on his sentence; 2) he has an intellectual deficiency and/or emotional unbalance; 3) he is likely to respond favorably to programs and services at Patuxent; and 4) he can be better rehabilitated at Patuxent than by other incarceration. This allows us to select inmates for whom there is a reasonable chance of treatment, as we define it. Some inmates, among the sickest, are beyond our capacity to treat; some have antisocial attitudes too firmly ingrained; and some have become institutionalized. All of these may need treatment, but we may not have a program for them. To have a chance to benefit from the Patuxent program, an inmate must have some ego strength and a willingness and capacity to change.

There are several pragmatically established criteria for admission to Patuxent. These have been listed in an Eligible Persons Criteria Scale, EPCS. Although this checklist is not required to be filled out for each inmate, it provides a useful way to summarize the factors that have been used at Patuxent to evaluate inmates for admission.

1. Psychosis. We do not have the facilities to care for those with chronic psychotic illness; a history of intermittent psychotic episodes may also rule out inmates, since we can predict that the stress of therapy will bring on new psychotic episodes.

2. Onset of Antisocial Behavior. The earlier the onset, the worse the prognosis; however, if the single criminal act occurred late in the inmate's life, the prognosis is better. We distinguish between those who have rarely tried to adapt to societal norms and those who essentially have tried but failed.

3. Alcohol and Drug Use. Addiction to alcohol and/or drugs may suggest a poor prognosis because these problems are difficult to treat.

4. Affective Capacity. The more withdrawn, isolated, and schizoid the inmate, the more difficult it is to establish a therapeutic relationship with him; it requires more time. Time available is a factor as well when we consider how long it will take to treat effectively the game-playing of the antisocial personality or the dramatics of the hysterical personality.

5. Remorse and Guilt. Generally, the inmate who does not admit guilt for his crime cannot be treated; an exception may be the inmate who admits other crimes. Career criminals are likely to justify or minimize their crimes; if an inmate is bothered by his crime, if his behavior is ego-dystonic, we can infer motivation for change.

6. Life Successes. These may include a good school record, advanced academic training, reliable job performance over a period of time, or a commitment to family. But if the inmate has never searched for stability before, he may not search for it while in here.

7. Motivation. All of the above criteria should enter into the evaluation of the inmate's motivation for change. Too often, his motivation is related only to a long sentence, and to his desire to get out of prison as quickly as possible via our program. No matter how sincere he may appear, if he has never attempted to do anything positive with his life before now, his sincerity is questionable; the predictor of future success is past successes.

(cf EPCS, Forms Appendix)

FC871219

EXAMINER _____ UNIT _____ STAFFING DATE _____

ELIGIBLE PERSON CRITERIA SCALE

NAME: _____ NO._____ RACE: _____

PSYCHOSIS:

Psychotic at time of interview	0
Currently receiving psychotropic medication	1
History of psychiatric hospitalization	2
History of prescribed psychotropic medication	3
No indication of psychosis	4

ONSET OF ANTISOCIAL BEHAVIOR:

Age 12 or earlier (excluding status offenses)	0
Age 13 to 17 (including status offenses)	1
Age 18 to 21	2
Age 22 to 30	3
Over age 30	4

ALCOHOL AND DRUGS:

Addicted to: alcohol and/or heroin	0
: other opiods and/or hallucinogens	1
Multiple drug abuse (including alcohol & marijuana)	2
Moderate use of alcohol and/or marijuana	3
Drug and alcohol free	4

AFFECTIVE CAPACITY:

Cold, distant, isolated (schizoid)	0
Inappropriate affect of emotional lability	1
Anger-aggression or ingratiating-passive	2
Appropriate effect	3
Appropriate affect and capacity to relate	4

REMORSE OR GUILT:

Denies or minimizes crime	
Admits crime but justifies it	
Admits crime in cold, factual way	
Admits crime and seems puzzled by it (ego dystonic)	
Talks about crime with appropriate affect	

MOTIVATION:

Subjective evaluation:	None
	Below average
	Average
	Above average
	Very high

LIFE SUCCESSES:

Totally disorganized, unproductive lifestyle	
One indication (school, job, social) of success	
Two indications of success	
Lifestyle has been primarily productive	
No outstanding failures until current crime	

TOTAL SCORE _____

STAFF VOTE: _____ Y _____ N

PATUXENT INSTITUTION

TERMS AND CONDITIONS OF PAROLE

1. The parolee shall not go outside the limits of the State of Maryland without the written permission of the Institutional Board of Review.

2. The parolee shall promptly report to the Patuxent Institution or wherever and whenever an authorized representative may direct.

3. The parolee shall not commit any act which would be a violation of any Federal, State Law or Municipal ordinance; and shall conform to all rules of conduct imposed upon him by the Patuxent Institution or an authorized representative.

4. The parolee shall make reasonable effort to keep himself gainfully employed or otherwise occupied, as directed by the Institutional Board of Review.

5. The parolee shall not change his place of residence or employment without first having obtained the permission of the Patuxent Institution or an authorized representative thereof.

6. The parolee shall not own, possess, use, sell, or have under his control any firearm or weapon of any description, including any device which resembles and is used as a weapon.

7. The parolee shall not enter into any contract to engage in business, shall not borrow money, enter into any installment contract, incur any debt nor acquire ownership of any motor vehicle without first having obtained the permission of the Institutional Board of Review.

8. The parolee shall not unlawfully possess, use, buy, sell, or have under his control any narcotic drug, "controlled dangerous substance", or related paraphernalia.

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